

## MEDICINE

## Stiff Joints Limbered By Vitamin Treatment

➤ STIFF OLD joints, or young ones for that matter, can be limbered by treatment with one of the B vitamins in addition to the diet, Dr. William Kaufmann of Bridgeport, Conn., reported at the Second International Gerontological Congress in St. Louis.

The vitamin he used is known medically as niacinamide. It is the anti-pellagra vitamin. Patients noticed improvement in their general health and they seemed younger to the doctor when getting the extra vitamin. Joints stiffened by age could be moved better and sometimes returned to full range of motion.

When the vitamin treatment was stopped, the joints stiffened again, but were once more limbered when the vitamin was started again. Although the treatment was designed for old people, whose joints are stiffer than young ones, it improves mobility of the joints at any age, Dr. Kaufmann reported.

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## BACTERIOLOGY

## Concrete Blocks Used To Raise Yeast Spores

➤ BETTER AND more efficient production of yeast spores—for beer and bread—can be secured by using concrete blocks for the growing of the spores instead of the usual gypsum blocks.

The spores are grown in the pores of the blocks.

Gypsum blocks, according to V. Hartelius and E. Ditlevsen of the Carlsberg Laboratory, Copenhagen, Denmark, often become infected on repeated use with bacteria and cannot withstand the heat necessary to sterilize them. The concrete blocks prepared by the two scientists not only withstand sterilization heat, but also give somewhat better spore formation.

The scientists reported their findings in the British journal, *NATURE* (Sept. 1).

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## AERONAUTICS

## Airplane Liability for Accidents Facing Change

➤ THE LIABILITY to be paid in case of accidents causing injury or death to airliner passengers on international flights is facing a change, the International Civil Aviation Organization announced in Montreal.

The revision of the existing international laws limiting the liability of airline companies was the main purpose of a meeting in Madrid which began on Sept. 11.

Present regulations, which have been accepted by 40 of the 50-odd nations rep-

resented in the ICAO, fix the maximum liability for each passenger in case of bodily injury or death during an international flight at the equivalent of \$8,291, American money.

There is also a maximum of \$16.58 for each kilogram of checked baggage and cargo, and \$331.67 for any possessions the passenger carries with him. These limits do not hold if an accident is due to wilful misconduct on the part of the air carrier.

What action will be taken can not be predicted. Some membership nations suggest that the present liabilities be as much as doubled. The regulations have been in effect since 1929 when adopted as a result of a convention in Warsaw. Another proposed change would affect the carrier's responsibility. If an air carrier is able now to prove that it and its agents had taken all possible measures to avoid the accident, it is not liable.

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## INVENTION

## Metal Polisher Gets Both Sides Smooth

➤ BOTH SIDES of a continuous strip of stainless steel, or other metal, are finished to a high degree of smoothness at the same time with apparatus which brought patent 2,567,163 to David A. Wallace, Grosse Pointe Farms, Mich. Chrysler Corporation, Highland Park, Mich., has acquired the rights by assignment.

The machine is claimed to finish metal strips much more rapidly than other devices for the purpose. The removal of irregularities, scale and foreign matter is accelerated by simultaneous abrading and pickling action. The liquid pickling treatment serves as a lubricating coolant in the abrading operation.

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## TECHNOLOGY

## New Image-Correcting Lens Improves Theater TV Shows

➤ CLEAR CUT television pictures on large-size motion picture theater screens are claimed with a new giant image-correcting lens developed by the American Optical Company of Southbridge, Mass. The projecting system in the theater will use this 22-inch lens in conjunction with a 26-inch spherical mirror.

The giant 15-by-20-foot pictures which appear on the screen reach the theater by private wires or radio beams and are picked up by a kineoscope, or television picture tube. The tube is small but it produces pictures of high brilliance. These pictures are magnified and thrown on the screen by the mirror. Distortions introduced by the magnification are corrected by the new lens so that the resulting picture on the screen is normal and in perfect focus.

Science News Letter, September 22, 1951

# IN SCIENCE

## ASTRONOMY

## Stars Seem Brighter With Freshly Coated Mirror

➤ TARNISH BETRAYS the age of the silver coating on the mirror of a reflecting telescope, but it is difficult to detect when an aluminum-coated mirror needs a new surface.

To the eye, the old coating often looks about as good as a fresh one, complain Dr. Joel Stebbins and J. Lynn Smith of the University of California's Lick Observatory at Mt. Hamilton, Calif.

Yet a new aluminum coating on the observatory's 36-inch Crossley mirror improved seeing 20% for ordinary photography, and even more than that for ultraviolet spectroscopy, the astronomers reported to the Astronomical Society of the Pacific.

Testing the mirror several nights just before and right after recoating, they found the same star a fifth of a magnitude brighter with the new coating.

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## PLANT PATHOLOGY

## Plants When Sick Run Temperatures, Too

➤ SICK PLANTS, like sick human beings, run a temperature.

In studying plants infested with various virus and fungus diseases, Prof. C. E. Yarwood, plant pathologist of the University of California College of Agriculture at Berkeley, found temperatures of diseased plant leaves from 0.1 degree to 2 degrees Centigrade (0.2 degree-3.6 degrees Fahrenheit) above healthy plants.

Fungus diseases produced higher temperatures than virus diseases.

The temperatures of healthy leaves tested were 0.5 degree to 1.5 degrees Centigrade (0.9 degree-2.7 degrees Fahrenheit) above that of the air. Diseased leaves were 0.6 degree to 3.5 degrees Centigrade (1.1 degrees-6.3 degrees Fahrenheit) above that of the air. Respiration raised healthy plant temperatures slightly above the surrounding air. Diseases increased respiration which in turn increased the temperature of the plant.

"In nature the heat radiated to and from the plant—plus normal growth processes—make it impossible to make accurate readings," said Dr. Yarwood. "Only in an isolated environment relatively free from all outside influences can true temperatures be taken. About four hours after plant leaves are put in thermos type containers the maximum temperatures can be read."

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# E FIELDS

## MEDICINE

### Iodine, Thyroid Linked With Artery Hardening

➤ LACK OF iodine in the diet plays an important part in production of hardening of the arteries, Dr. N. Dungal of the University of Iceland at Reykjavik reported to the Second International Gerontological Congress in St. Louis.

A normally functioning thyroid gland is of fundamental importance for preventing and delaying artery hardening, he declared.

Signs of this link between the thyroid gland, iodine and artery hardening come from comparisons Dr. Dungal made between Icelanders and people living in a part of Austria where goiter is common because the people do not get enough iodine to keep their thyroids functioning normally.

Icelanders, Dr. Dungal found from over 2,000 autopsies, have less hardening of the arteries, particularly the aorta, biggest artery of the body, than people living in the goiter region of Austria. In fact, he said, it is "not rare" to find old people in Iceland with smooth aortas, whereas in Austria marked calcification, or hardening, of the arteries often is seen in persons in their fifties.

The average weight of the thyroid gland in Icelanders is small, about half that given in medical textbooks as the normal thyroid weight. And Icelanders have a normal amount of iodine in their thyroids. Persons living in the goiter region of Austria have greatly enlarged thyroid glands.

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## INVENTION

### Cheaper Germanium Crystal Cuts Cost of Rectifier

➤ A FORWARD step in replacing vacuum tubes in radio receivers with germanium rectifiers and amplifiers is promised with cheaper germanium crystals produced by a process on which the government has issued a patent.

The process uses a less pure germanium metal as a starting material and thereby greatly reduces the cost of manufacturing. The inventor claims the process results in a germanium crystal with improved electrical characteristics.

Germanium is a rather rare metal that has the property of being a semi-conductor of electricity. That is, it will pass electric current in only one direction. For this reason it can be used to rectify a current, that is convert alternating current to direct current. It can also be used as an electric

amplifier. It is already coming into use to replace vacuum tubes in radio receivers and other instruments where simple amplifying is required.

The new crystals are made by reducing germanium dioxide in powder form in an atmosphere of hydrogen at a temperature of 700 degrees Centigrade. Then one percent of metallic tin is added, and one-tenth of one percent of additional germanium dioxide. The mixture is heated at a temperature of about 1,000 degrees.

Inventor is Salvatore F. Amico, East Boston, Mass. He received patent 2,565,338. Rights are assigned to Sylvania Electric Products, Inc., Salem, Mass.

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## ENTOMOLOGY

### Green Grass Gets Grasshoppers Green

➤ GROWING GREEN grass gets grasshoppers green.

This is the tentative conclusion of Selahattin Okay, a Turkish zoologist at the University of Cambridge in Cambridge, England. While, he says, the factors which lead to the production of green skin are still in doubt, he fed yellow grasshoppers of *Acrida turrita* various kinds of grass. They were kept in green cages, to test the theory that the grasshopper's background has something to do with his color.

When fed on growing grass, seven out of ten became green, when fed on cut grass changed every other day, only one in ten became green, and when fed on dry grass, none became green. On the other hand, only one-fifth of green grasshoppers in green cages stayed green when fed on dried grass, but three-quarters remained green on a diet of growing grass.

Mr. Okay says it seems possible that the formation of green pigment depends on the breakdown of chlorophyll. He hopes to confirm and extend his results in further laboratory experiments. The original grasshopper-feeding took place at the University of Ankara. It was reported in the British journal, NATURE (Aug. 11).

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## CHEMISTRY

### Two Heaviest Atoms Made As Fleeting Isotopes

➤ THE TWO heaviest atoms ever known to exist have been manufactured in the Radiation Laboratory of the University of California at Berkeley. They are berkelium 245 and californium 246. The new berkelium isotope has a half life of about five days. The new californium isotope has a half life of 35 hours.

These two new isotopes are reported by Drs. E. K. Hulet, S. G. Thompson, A. Ghiorso and K. Street, Jr.

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## PSYCHOLOGY

### People Shun Short-Term Plans, Admit Future Hopes

➤ PEOPLE ARE quite prepared to say what they hope to do or be in the distant future, but not what they hope to do next week or next year. Miss S. B. N. Shimmin, psychologist of London's Bedford College, found this out by having 60 intelligent young men and women answer a questionnaire.

In general the persons questioned agreed that their attitude was partly determined by a dread of showing off in any way.

In explaining their greater readiness to discuss remote ambitions and ideals, the subjects said they felt "safe" in admitting remote goals "because no one is likely to take them seriously," in contrast to any declared short-term plans.

"Once people believe you are striving to be or do something," said one person, "it's time to stop talking about it."

Miss Shimmin found that a person doesn't like people to "shine" too close to him.

Another's achievement is seen as a threat to the ego in some way. It draws recognition or approval of the crowd or of an admired person. It is considered an immediate obstacle to some desired position. This causes grudging admiration and a hostile attitude.

We don't mind people shining at a distance, Miss Shimmin found, as their achievements are often admired or taken as a goal to reach.

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## AGRICULTURE

### Yams, Chinese Kind, Seen As Important U. S. Crop

➤ THOUGH GROWN on a small scale at present, true yams might some day be another important food crop in the United States.

Already small commercial plantings have been made on the West Coast and food value tests are currently being run by Mastochi Yamaguchi, instructor in truck crops at the University of California College of Agriculture at Davis.

Moist types of sweet potatoes are often called yams in this country. Actually sweet potatoes are not related to true yams, which are native to China.

About 12,000 acres of sweet potatoes are raised in California each year. True yams are most frequently grown in the tropics where the season is longer than in this country. Both plants require a warm climate.

The long, thin tubers of Chinese yams vary in weight from less than one to several pounds. They are prepared and eaten like white or sweet potatoes.

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