

## TECHNOLOGY

**Skidding Machine Helps Develop Non-Slip Tires**

➤ CHEMISTS HOPE to develop better non-skid automobile tires with the help of a skidding machine.

Dr. C. S. Wilkinson, Jr., chemist at Good-year Tire and Rubber Co., Akron, Ohio, has devised an apparatus that consists of a circular aluminum ice tray that turns under rubber test blocks. Highly sensitive measurements yield the amount of friction between the rubber and ice.

The laboratory machine gets around drawbacks of outdoor test sites where many conditions are subject to sudden change. The temperature may go up, the ice surface may deteriorate under the test skids and even the driver's ability may vary from test to test. The machine, however, permits these factors to be controlled or eliminated.

By using the device scientists have found that temperature has the greatest influence on tire friction on ice. At the lowest test temperatures, from about minus 22 to minus 40 degrees Fahrenheit, the coefficient of friction is about twice its value at a temperature just below freezing.

The kind of rubber and its hardness also affect friction. In similar compounds, the softer samples had higher coefficients of friction, Dr. Wilkinson has reported to the American Chemical Society.

Science News Letter, November 15, 1952

## NUTRITION

**Vitamin C a Must In the Daily Diet**

➤ VITAMIN C is a must on the daily diet. This is because the body cannot store much of it. Vitamin C is known also as ascorbic acid. It is the anti-scurvy vitamin and is essential for keeping body tissues in good condition.

Many persons rely on the breakfast fruit juice for their vitamin C ration. If you do this, check your choice because some fruit juices supply more than others. Orange juice and other citrus juices, fresh, frozen and canned, rank high in content of this vitamin.

Tomato juice is another good source of vitamin C, though, unless fortified with added vitamin C, it takes more than twice as much canned tomato juice to match canned orange juice. Pineapple juice has much less of this vitamin, and only traces—unless the juice is fortified—are to be found in apple, prune, or grape juice, all popular for flavor and variety.

Extra vitamin C is sometimes added to apple juice and other canned, bottled and frozen juices which are short on it. The fortified juices may have as much or more vitamin C as citrus, the nutritionists explain, but be sure to check the label to see if the vitamin has been added.

If your breakfast juice is short on C, be sure to get this vitamin in some other dish

or later in the day. Among other vitamin-C-rich dishes are the fruit itself of citrus and tomatoes which can be served many ways in any meal. Excellent sources of ascorbic acid are strawberries, kale, turnip greens, broccoli, raw cabbage, green peppers, and the dark-colored raw salad greens. Good providers are lightly cooked cabbage or collards, cantaloupe, sweetpotatoes, cauliflower and spinach.

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## BACTERIOLOGY

**Washed Cherries Keep Better Than Unwashed**

➤ CONTRARY TO the old idea, washed cherries will resist decay much better than unwashed fruit, University of California scientists have discovered.

It is a popular notion among fruit growers that fruit keeps better if it is not washed. But when a grower recently reported that he got less decay from cherries washed in water, C. E. Yarwood and H. T. Harvey of the department of pathology of the university set out to find the facts.

The scientists selected a number of freshly picked cherries, Lamberts and Royal Anns, washed part of them in plain water, part in a mild detergent solution, and left the rest as they came off the tree. Then all the cherries were put aside for a week.

At the week's end, only 29% of the unwashed Lambert cherries were not spoiled, while 43% of the water-washed and 55% of the detergent-washed fruits remained sound. In one test with the Royal Ann cherries, only 19% of the unwashed fruit was all right, while 83% of those washed with water and detergent was unspoiled.

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## ENTOMOLOGY

**Hitch-Hiking Insects Cross Desert Barriers**

➤ INSECT PESTS have crashed the natural barriers of lifeless deserts by hopping rides on man-made transport, Prof. P. E. L. Vayssiere of the Paris Museum of Natural History told an international body of desert scientists in London.

In a natural state, most undesirable insects are unable to spread across barren desert areas, he said, and their destructive powers are held in check. But with the increase of caravan travel across the deserts, insects have been accidentally carried along and spread to parts of the world where their natural enemies are few and plants have not developed resistance to them.

The process has been speeded up with the coming of highways, railroads and airplane routes across the deserts, and now the spread of these hitch-hiking pests has become a major problem. Prof. Vayssiere said there is serious danger of such newly introduced insect pests becoming menaces in areas where they were completely absent before.

Science News Letter, November 15, 1952

**IN SCIENCE**

## ASTRONOMY

**Many Bright Stars Born Since Life on Earth Began**

➤ MANY OF the brightest stars in the heavens have been created since life began here on earth, Dr. Cecilia Payne-Gaposchkin of Harvard University has reported.

White dwarf stars are stellar bankrupts, having already lived out their lives. Other stars have been born since life came into being here on earth. Still others are yet to be born.

The birth of a star might take a million years, Dr. Payne-Gaposchkin states. Enough atomic clouds, the stuff from which stars are made, are still floating within our galaxy for a thousand million stars to be created out of the matter they contain.

The life expectancy of the sun is estimated at 5,000 million years. The probable life spans of many of the best-known stars also are presented in "Stars in the Making," published by the Harvard University Press. (See SNL, Nov. 8, p. 300.)

Science News Letter, November 15, 1952

## ENGINEERING

**Vast Projects Reclaim Desert in Soviet Russia**

➤ VAST PROJECTS for the reclaiming of desert land in the USSR were described at an Institute of Biology symposium on deserts in London by Dr. Sidnie Manton, London University zoologist. Dr. Manton said she is still puzzled as to why she was invited to accompany a party of five other scientists behind the Iron Curtain since she is "not a member of any group associated with the Soviet Union in any way."

"I have seen the desert blooming like a rose," Dr. Manton told the group of desert experts, describing some of the Soviet's grandiose plans that were told to her.

A hydroelectric scheme, begun in 1950, will convert 2,400 miles of the Volga River into a series of lakes to serve an area as large as Scotland, and a 650-mile canal from the Amu Darya River to the Caspian Sea will water the arid Turkmenistan plain, the Russians told her.

The Turkmenistan plain covers an area of 20 million acres, 3,000,000 of which will be watered for crops, the rest to be flooded for pastures, she said. Three hundred scientists are already working on the scheme, Dr. Manton was told, with another 200 to be added later.

According to Dr. Manton, the Soviets say that, by 1956, 2,000,000 gallons of water which now run into the Arctic annually will be diverted south and west to irrigate Central Asia.

Science News Letter, November 15, 1952

# E FIELDS

## VETERINARY MEDICINE

### Sheep Disease Outbreak Has One-Year Incubation

► WOOL AND lamb chops from California sheep are threatened by an outbreak of the sheep disease, "scrapie," appearing for the first time in U. S. flocks.

Outbreak of the fatal virus disease is dangerous because its incubation period is a year. Symptoms then include first a violent trembling of the ears, lips and limbs, followed by a serious itchininess that causes the sheep to scratch constantly. The name of the disease, scrapie, is thought to be based on this scratching. Over three or four months, the animals lose weight, become extremely emaciated and die.

U. S. Department of Agriculture scientists do not know how the disease was introduced into this country, and to prevent its further spread, California sheep have been quarantined. It is expected that the flocks in which the infected sheep were found will be slaughtered and buried.

A California veterinarian has suggested that the disease might be spread at breeding time. The virus has been transmitted experimentally by injecting an infusion of scrapie-diseased brain tissue into healthy sheep.

The disease is known to occur in Canada, Australia and northern Scotland, where it is eradicated by slaughter.

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## AERONAUTICS

### Belly for Airplane Becomes Highway Trailer

► A HIGHWAY cargo trailer body that is easily attached to become the belly of a special airplane is one of the newest developments to provide fast and convenient handling of freight from factory to destination. This "flying trailer" was developed by Fairchild Engine and Airplane Corporation, Hagerstown, Md., and is about ready for extensive service.

On the highway its rectangular body resembles an ordinary trailer as it is towed along on its own wheels behind a truck, tractor or car. In the air, however, it looks more like the under-body compartment of a cargo plane because its front and rear end doors can be opened and locked in a "V" shape to cut air resistance aloft. The same doors fold over each other to give a flat front and rear when traveling the roadway.

The airplane to carry this cargo trailer is the Fairchild XC-120 Pack plane. It is a plane without space in its fuselage to carry cargo, but designed for use with a detachable cargo compartment of boxcar size. The body of the plane, with its extended land-

ing gear, can straddle the giant "capsule" it is designed to carry. The trailer is a new type of capsule.

Wheel assemblies, which include shock-absorbers and truck-type wheels and tires, are removed prior to flight and stowed aboard the flying trailer. On landing they are easily attached. Wide use of the trailer is expected because it can be loaded at the factory, towed to the airport, carried to a distant flying field, then towed again to its final destination.

Science News Letter, November 15, 1952

## ENGINEERING

### Scientists Build Asparagus Cutter

► A MECHANICAL harvester for green asparagus that may save farmers about \$80 per acre in labor costs annually has been built by agricultural engineering scientists at the University of California's College of Agriculture.

Under the direction of Robert A. Kepner, associate professor of agricultural engineering, experiments indicated that such a mechanical harvester is feasible—mechanically and economically.

The harvester, which is mounted on the rear of a tractor, grips the asparagus spears, cuts them with a band saw, and deposits them in a hopper. The test model was designed to cover a bed only 15 inches wide, but can be readily expanded for the normal bed width of 30 to 36 inches.

The machine, which travels at about two and one-half miles per hour, cuts all asparagus spears, regardless of length; it recovers about 90% of all spears longer than four inches.

Mr. Kepner estimates that one full-sized machine, operated 10 hours per day, could take care of 80 acres of asparagus on a five-day cutting schedule. The machine would require a driver and one man to box the asparagus, but would replace 10 to 12 hand cutters.

Science News Letter, November 15, 1952

## VETERINARY MEDICINE

### Spinal Discs Give Dogs Backaches Also

► DOGS AS well as their masters can have backache and difficulty in walking because of protruded discs in the spine.

The pain is intense, because of pressure on a nerve root. The protruding disc may be in the region of the neck or farther down the back.

Success with an operation for removal of the disc nucleus in afflicted dogs is reported by Drs. Sten-Erik Olsson and Hans-Jorgen Hansen of the Royal Veterinary College at Stockholm, Sweden, in the *Journal of the American Veterinary Medical Association* (Nov.). After the operation, the pain was gone and the dogs were able to walk normally. Six months later their owners reported them still in good health.

Science News Letter, November 15, 1952

## MEDICINE

### Aspirin Promotes Deep Breathing, Oxygen Use

► ASPIRIN MAKES a person breathe more deeply and use more oxygen. The "marked and progressive" increase in oxygen consumption is probably responsible for the drug's action as a remedy.

The new finding on aspirin's effect is announced by Dr. J. B. Cochran of the University of Glasgow, Scotland, in a report to the *British Medical Journal* (Nov. 1).

Five healthy young men who volunteered for the study and four patients, one with rheumatoid arthritis and three with subacute rheumatism, were tested. Some swallowed aspirin and some got the drug in the form of a salicylate injection into the veins.

Those who swallowed the aspirin consumed up to 30% to 40% more oxygen, and those who got it by vein consumed up to 60% to 70% more than they did without aspirin.

This increased oxygen consumption must, Dr. Cochran points out, be due to a speeding of the rate at which the body is burning fuel. Probably it is protein or fat or both, rather than sugars and starches, that is being predominantly combusted.

Science News Letter, November 15, 1952

## GENETICS

### Identical Twins Alike in Old Age as When Young

► IDENTICAL, or one-egg, twins are as much alike when they grow old as they were in childhood when even their parents had difficulty telling them apart.

This likeness, which stays with them throughout life, shows in both physical and mental qualities. Environment has little effect on it.

Studies of more than 2,000 twin pairs over 60 years old show this, Dr. Franz Joseph Kallmann of the New York State Psychiatric Institute and Columbia University reported to the New York Academy of Medicine.

To understand fully the basic principles of mental and physical health one must, Dr. Kallmann said, "delve into the substratum of gene action as well as into the subconscious."

"The habit of disputing the effect of heredity in man," he stated, "is apparently as satisfactory a method as any of sublimating hidden family resentments provoked by one's station in life."

Genetic problems are so complex, he said, that it is fortunate most of them can be studied "within a pure line" by means of the twin study method.

Although the identical twins, from one fertilized egg, remain identical throughout life, two-egg pairs of twins show a wide range of variability in the physical signs of aging. This is true even when members of the two-egg pairs always lived in a comparable environment.

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