

## ASTRONOMY

**Find New Value for Length of Martian "Day"**

► A NEW value for the length of the Martian "day" has been found by Dr. Joseph Ashbrook of Yale Observatory, New Haven, Conn. It takes the "red" planet 24 hours, 37 minutes and 22.6679 seconds to make a complete rotation, his calculations, the first in nearly 50 years, show. This is 137 ten-thousandths (0.0137) of a second longer than the presently used value.

Mars, now visible in the southeastern sky a few hours before sunrise, is the only planet besides the earth whose rotation period now can be accurately measured. Dr. Ashbrook was interested in finding out whether or not Mars, like the earth, has measurable changes in rotation.

According to Dr. Dirk Brouwer, also of Yale Observatory, the earth's rotation during the decade from 1901 to 1910 took 64 ten-thousandths (0.0064) of a second longer than it did in the period from 1866 to 1875.

Since Mars is making extremely close approaches to the earth in 1954 and 1956, Dr. Ashbrook suggests in the *Astronomical Journal* (Aug., 1953) that further photographs at these times would give an even more accurate rotation period for the "red" planet.

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## MEDICINE

**Urge Anti-Tetanus Shots for Horsemen**

► GROWN-UPS WHO ride horses all year round and who are frequently in stables should be protected against tetanus, or lock-jaw, by "shots" of tetanus toxoid followed by booster "shots," the *Journal of the American Medical Association* (Jan. 2), advises.

Booster doses can be given at intervals of one to two years or at the time of an injury. Booster doses are effective for as long as 10 years after the basal immunization. If there is delay in prophylaxis with tetanus toxoid booster "shots," severe injury, marked physical weakness or blood loss, or a doubtful history of the immunizing toxoid injections, tetanus antitoxin is needed in addition to booster injections.

Science News Letter, January 16, 1954

## VETERINARY MEDICINE

**Once Rare Disease Potential Meat Threat**

► OUR MEAT and milk production are potentially threatened by a disease once so rare that it was hardly known in this country three years ago, according to the American Veterinary Medical Association.

The disease, called leptospirosis, attacks cattle, swine and horses. It has now been diagnosed in cattle in 40 states and serious outbreaks among swine have been reported in almost all leading hog raising areas, the association finds.

Leptospirosis causes breeding failures, kills some young animals, stunts others, and reduces meat and milk production. It can also become a public health problem.

Symptoms are widely varied, making diagnosis difficult.

Milk pasteurization and current U. S. Bureau of Animal Industry meat inspection standards are adequate to safeguard the interests of the public, association officials said. However, they pointed to a need for "better implements for diagnosis and control and a thorough understanding of the factors which influence this disease."

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## INVENTION

**Develop Nuworld, An American Cheese**

► NUWORLD, AN entirely new cheese variety, has been market tested and will be made available to housewives throughout the United States in the near future.

It is a cheese of light cream color, soft buttery texture at room temperature, a flavor described as neither sharp nor mild, and an ability to blend with other foods smoothly and quickly.

Nuworld was given its name because of its American origins. It is reported to be superior in some respects to the traditional cheese types of Old World origin.

It is an outgrowth of the development in 1942 of new cheese-producing organisms by Prof. S. G. Knight of the University of Wisconsin, tested in the University of Minnesota laboratories of Profs. W. B. Combs, J. J. Jezeski and Howard A. Morris.

Patented by the non-profit Wisconsin Alumni Research Foundation, proceeds from the patent will be turned back into scientific research.

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## ANIMAL NUTRITION

**Antibiotics Control Digestive Organisms**

► ANTIBIOTICS IN feed make chickens and hogs grow faster by controlling intestinal organisms that "steal" nutrients in the feed from the animals, University of Wisconsin researchers think.

Experiments have shown that the antibiotics cause important changes in the types and numbers of bacteria in the small intestines of animals.

When they were added to complete rations, however, antibiotics did not increase chick growth. When the feed was short of the vitamin thiamine, the drugs were very effective. When a small amount of thiamine was injected directly into the blood of the animal, growth was speeded up without the drug.

The scientists believe that intestinal organisms retard growth by stealing vitamins and nutrients from the animals.

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**IN SCIEN**

## PEDIATRICS

**Infant's Body Growth Competes With Activity**

► WHEN AN infant's body is growing in size and weight most rapidly, its growth in integrated activities like control of the body and limbs is slowest, Dr. Emma H. Collins, Stritch School of Medicine, Loyola University, Chicago, has reported.

Dr. Collins advances the theory that the human infant has available only a certain amount of energy for which body growth and activity growth compete.

The last three months of the prenatal period and the first six months of infancy is the most rapid time of body growth. During this period there is a minimum of integrative growth or activity in progress, she said.

As body growth slows down, the child gains control of the movements of its body and begins to talk. Dr. Collins suggested in her report to *Growth* (Sept., 1953) that the term infancy be extended to include the first three years of postnatal life.

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## ASTRONOMY

**New Member of Our Astronomical Family**

► THE EXISTENCE of a possible new member of our local astronomical family of galaxies is reported by Dr. Harlow Shapley of Harvard College Observatory as the result of his continuing researches on the borders of the great expanse of stars that we see in the sky as the Milky Way.

The suspected new member is a spiral nebula, known as NGC 2427, heavily shrouded in a heavenly haze of absorbing material. It is located in the constellation Puppis at longitude 227 degrees and latitude minus 12 degrees.

The Milky Way is the galaxy to which we are directly affiliated since our sun is a star within it. In the region of space that we occupy, that is, within a volume that 186,000-miles-per-second light can cross in about two million years (it was a million years until the universe's yardstick was doubled recently) there are seven other galaxies or star aggregations: The Andromeda nebula, or Messier 31 galaxy, its two companions, Messier 32 and NGC 205, the giant Messier 33, and the two Magellanic Clouds, and now the possible new one, NGC 2427. There are also nine dwarf nebula, but they hardly count as full-fledged members of our family of galaxies.

With Miss Ann B. Hearn, Dr. Shapley has communicated the details of the new findings to the American Astronomical Society.

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# CE FIELDS

## MARINE BIOLOGY

### Antarctic Whale Season Opens for Seven Nations

► WHALING EXPEDITIONS from seven nations started catching fin whales in the Antarctic Ocean when the international whaling season opened on Jan. 2.

The United States, once a leader in the whaling industry, has no expeditions this year though this country ratified the International Whaling Convention which has governed whaling since 1935.

The season for the valuable blue whale opened Jan. 16. This year's catch will be limited to 15,500 blue-whale units. This is a standard measurement in which one blue whale, two fin whales, two and a half humpback whales or six sei whales make one blue-whale unit. This year's limit is 500 less than last year.

Nine of the 18 expeditions this season are from Norway. Other nations represented are Japan, England, South Africa, The Netherlands, the Soviet Union and Panama.

A total of 210 whale catchers, 105 from Norway, is operating this season. This is 20 fewer catchers than last year. The catchers take the whales to the factory ships for processing after harpooning and killing them.

An agreement to reduce the number of whale catchers has been made and signed by all companies except the Soviet company.

The reduction in the number of whale catchers will not reduce the whale-oil production, but will make the season longer, experts predict. Whale-oil is used in Europe and Japan to make butter substitutes like margarine and soap.

As a special part of the season, Norwegian, British and Dutch whale research scientists are aboard a catcher marking whales in order to get more information about whale movements and total numbers.

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## GENERAL SCIENCE

### Medical Journal Adopts Summaries in Interlingua

► DESCRIBED AS "a major breakthrough in the great barrier of language," the internationally-read medical journal, *Blood*, has announced that summaries of all of its articles will appear, beginning with the January issue, in the new scientific "supranational" language, Interlingua.

"Translated abstracts in one or another language have appeared in scientific periodicals before," Henry M. Stratton, president of Grune & Stratton, publishers of *Blood*, explained. "They have performed an important service in a limited way to limited

groups. The new Interlingua summaries, however, represent a more ambitious and more telling attack on this obstacle. I am sure the use of this new scientific language will spread and spread rapidly, now that *Blood* has pioneered the example."

Dr. William Dameshek, editor-in-chief of *Blood*, the *Journal of Hematology*, and clinical professor of medicine at Tufts College Medical School, Boston, states editorially:

"The development of a common international tongue such as Interlingua may not only aid in the means of communication between scientific groups, but in the gradual filtering down of the good-will engendered there to the masses of the people in general."

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## BIOPHYSICS

### Radioactive Hormone Available for Research

► CORTICOSTERONE, adrenal gland hormone relative of arthritis-relieving cortisone, is now available in radioactive form for scientific research, the Public Health Service's National Institute of Arthritis and Metabolic Diseases has announced.

The radioactive hormone, although in limited supply, is available free of charge to qualified investigators. It was made with radioactive carbon from the U. S. Atomic Energy Commission by biosynthesis at the Worcester, Mass., Foundation for Experimental Biology, utilizing progesterone prepared by Charles E. Frosst and Company.

Because it is radioactive, scientists using it in research will be able to trace its course through the body and learn more about how and where this hormone carries on its vital functions.

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## CHEMISTRY

### Find New Method for Study of Water Eddies

► A NEW method for finding out how eddies form when a boat or submarine moves through water has been devised by Dr. S. Koncar-Djurdjevic of the Institute of Inorganic Technology, Belgrade, Yugoslavia.

Using this method, scientists can study what they call "fluid flow," such as water running out of faucets or through pipes in your house, or the meandering of rivers and streams. The flow is investigated by placing objects coated with silica gel in a water stream containing a very small amount of blue dye. The amount of dye that coats on different places of the object's surface is a measure of how the water passed over it, and how it forms eddies.

Dr. Koncar-Djurdjevic says in *Nature* (Nov. 7, 1953) that his adsorption method has several advantages over those now in use. It gives permanent records without need for photography, it is simple and can be applied to large surfaces.

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## PUBLIC SAFETY

### Women Drivers Differ From Men: They Do Better

► THE IDEA that men and women have the same driving characteristics and habits is wrong. The women do better.

A research team from the Iowa State College, consisting of Dr. A. R. Lauer, Elmer B. Siebrecht and Charles F. Schumacher, reported to the American Association for the Advancement of Science meeting in Boston that:

1. One woman in nine has an accident record and only about one in 25 has a violation record, whereas for men the figures are one in four for both accidents and violations.

2. Proportion of women drivers is increasing in the population; one in four in 1951 and nearly one in three in 1953.

3. Younger women have fewer accidents than older women, while the older men have better driving records than young men.

4. Annual mileage for women on the average runs about one-third that for men. Women have fewer years of driving experience. Women drive only about 20% of the annual mileage of the nation.

The studies were aimed at a practical system for judging driving efficiency.

A new index of accident susceptibility was proposed by the scientists to take into consideration the experience of the driver and the mileage driven each year.

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## ASTRONOMY

### Rocket-Like Ejection From Around Hot Stars

► THE TREMENDOUS rushing of gas and dust in interstellar space is due to a rocket-like ejection of material from around very hot stars.

Dr. Lyman Spitzer Jr., director of the Princeton University Observatory, N. J., presented this theory in the seventh Henry Norris Russell lecture at the American Astronomical Society meeting in Nashville, Tenn. Expansion of "hot spots" in regions around very hot stars, he said, may result in the turbulent velocities of the vast, interstellar clouds of gas and dust.

He explained what he called the "natural rocket" effect this way:

"A dense cloud of neutral hydrogen constitutes a natural rocket when placed near a luminous star of high surface temperature. The stellar radiation heats up the cloud, on the side facing the star, to about 10,000 degrees [absolute].

"The heated material expands, and shoots away from the cloud; since only one side is heated, the gas will stream away predominantly in one direction, towards the hot star. The recoil from this stream of gas will then accelerate the [remainder of the] cloud away from the star."

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