

## MEDICINE

**Husband Responsible for 35% of Childlessness**

CONTRARY to popular opinion, the fact that a couple is unable to have children is not always the "woman's fault." Involuntary childlessness affects 10% of American couples and the husband is the responsible agent in about 35% of these cases.

The need to pay more attention to the sub-fertile husband was emphasized at a meeting of the American Society for the Study of Sterility in Cincinnati, Ohio, by Dr. Paul L. Getzoff of the Touro Infirmary, New Orleans, who said that the term "sterile male" is used too loosely.

In many cases, he pointed out, a man may be diagnosed as sterile solely on the basis of a semen analysis that shows a low sperm count. Physicians may have a wrong idea of how many sperm need be present for conception, Dr. Getzoff believes. A qualified urologist should be called upon to help diagnose the cause of sub-fertility, he said.

To substantiate his statements, Dr. Getzoff presented a five-year follow-up study of 100 men presumed to be sterile because of low sperm counts. In subsequent examinations, however, all but seven produced adequate sperm specimens. In the group as a whole, 67 of their wives later became pregnant at least once. Wives of all seven of the "infertile" men were among those who conceived.

Another aspect of the problem of inadequate sperm count was presented by Drs. Edmond J. Farris and Douglas P. Murphy of the Wistar Institute of Anatomy and Biology in Philadelphia. They described a technique for concentrating the husband's active sperm and then using this portion for intra-uterine insemination of the wife.

Science News Letter, May 21, 1960

## ASTRONOMY

**Next High in Sunspot Activity Due in 1968**

THE NEXT PEAK in the sun's 11-year cycle of sunspot activity, expected in 1968, will not be as high as that reached in 1958.

Calculations reported in London by Dr. C. M. Minnis of the Radio Research Station, Slough, Bucks., show that conditions for world-wide communications during the 1964-1974 solar cycle will be roughly like those during the 1934 through 1944 and the 1944 through 1954 solar cycles. The chances are only one in three that the 1968 peak will be higher than the 1958 one, he has found.

The 1958 high, which occurred during the International Geophysical Year, hit a record not previously exceeded since accurate observations of sunspot activity started more than 200 years ago. Solar activity rises and falls in an 11-year cycle, reaching a peak quite soon after the beginning of a cycle, then gradually dropping to its low.

The possibility that the next cycle might reach a maximum higher than that in 1958 is of more than academic or scientific in-

terest, Dr. Minnis reports in *Nature*, 186:462, 1960. Solar activity affects the ionosphere, the earth's radio reflecting roof, which is the basis for a world-wide network of short-wave radio communications.

A solar cycle that reached only a low peak, instead of a high one, might lead to unforeseen difficulties in long-distance communications because the radio spectrum is already crowded.

Although it is now impossible to make an accurate estimate, Dr. Minnis determined the statistical possibilities of a high peak. By two differing methods he found that the smoothed sunspot number during the next solar cycle will fall between 110 and 160. The high reached during 1958 was slightly more than 200. The two previous peaks were between 110 and 160.

Science News Letter, May 21, 1960

## BACTERIOLOGY

**New Data on Radiation And Body Defenses**

INFORMATION on how radiation interferes with the body's defense against invaders is reported from the University of California, Los Angeles.

Bacteriologists Marvin B. Rittenberg and Dr. Eric L. Nelson have evidence that radiation may scramble coding of nucleic acid, which contains blueprints for proteins such as antibodies. Thus antibodies designed to destroy a specific foreign substance are not formed.

They irradiated experimental animals, then immunized them with bovine albumin. In normal animals injection of the bovine albumin resulted in rapid production of antibodies to the albumin, but in irradiated animals there was no evidence of antibodies being produced.

However, there was evidence that in the irradiated animals the injection stimulated the production of antibody-like protein, globulin.

The investigators suggested that radiation does not interfere with the mechanism that manufactures antibody proteins, as had been thought. Instead it may scramble the coding system of the nucleic acid which blueprints the antibody.

Thus the antibody protein is nonspecific in that it is not designed to defend against a specific invader.

The study was supported by the U.S. Public Health Service.

Science News Letter, May 21, 1960

## MINING

**Coal Mining With Water Shown Feasible in Tests**

EXPERIMENTS have shown bituminous coal can be mined with water. The system uses water at a pressure of 4,000 pounds per square inch, a pump run by a 900-horsepower diesel engine and extremely heavy carbon-steel piping. Nozzles used in the tests ranged from one-eighth to one-half inch. The tests were made in Indiana County, Pa., and reported to the 1960 Coal Convention of the American Mining Congress in Pittsburgh, Pa.

Science News Letter, May 21, 1960

**IN SCIEN**

## ICHTHYOLOGY

**Fish in Shallow Lakes Helped by Ice Skating**

USING A SHALLOW lake for ice skating may save fish from suffocation, C. W. Threinen, administrative assistant for the Wisconsin Conservation Department, reported.

Mr. Threinen said that in order to ice skate, it is first necessary to remove the snow cover. He said snow removal permits light to filter through the ice; this in turn lets plants under the ice continue to work and give off oxygen.

If the shallow lakes remain covered with snow they become short of oxygen, Mr. Threinen said, and the fish may suffocate. But turning such lakes into skating rinks can make the skaters happy and increase the chance of survival for fish.

Science News Letter, May 21, 1960

## PUBLIC SAFETY

**Some Detergents Remove Radiation Contamination**

SPECIAL DETERGENT compounds are being used by the United Kingdom Atomic Energy Authority, London, to remove contamination by radioactive metals and their salts.

One of these detergents is reported to have reached a high degree of perfection and can deal successfully with radioactive contamination even when it has become chemically bound to working surfaces or to clothing. Its composition has been chosen to prevent re-adsorption of the contaminant during dilution and rinsing, such as can occur with acid decontamination.

This detergent compound comes in various forms. One of the easiest to handle is a cream, made by adding a thickening agent such as sodium alginate to the detergent solution. This may be applied to aircraft by brushing, the coating kept moist by light spraying and then removed with hot water or wet steam. Where contamination has penetrated into the surfaces to be treated, the compound can include an abrasive such as powdered pumice.

The detergent provides mild conditions of acidity that allow practically any material to be treated, being especially suitable for textiles (including wool), plastics, paints, rubber and metals.

In one test, aluminum and stainless steel surfaces contaminated with a plutonium salt solution and with a cerium-144 salt solution were exposed to the detergent for 15 minutes at room temperature. At the end of the test, plutonium contamination on the aluminum had been reduced to 0.5% and on the stainless steel to 0.8%, while cerium-144 on the aluminum had dropped to 0.2% and on the stainless steel to 3.2%.

Science News Letter, May 21, 1960

# CE FIELDS

## PHARMACOLOGY

### Recommend Numorphan As Childbirth Aid

NUMORPHAN, a new synthetic derivative of morphine, is more effective and safer for use during childbirth than other analgesics, or pain killers, such as meperidine, according to a report at the Pan American Medical Association meeting in Mexico City.

Drs. Donald L. Snow and Edward Sattenspiel, of the Maricopa County General Hospital, Phoenix, Ariz., presented a paper showing that a high percentage of patients obtained marked relief from pain and discomfort faster than possible with other drugs. Shortened labor and an almost negligible depressing effect on infants are notable advantages.

Previous studies showed a close relationship between infant suffocation at birth and later defects in children caused by analgesic drugs requiring strong doses. Numorphan, discovered and produced by Endo Laboratories of Richmond Hill, N. Y., was given to 349 patients in labor during the study, which was undertaken on all obstetric patients admitted to the Maricopa Hospital from Oct. 1, 1959, to April 15, 1960. Ages of the women ranged from 13 to 42.

Science News Letter, May 21, 1960

## SEISMOLOGY

### Microtremors Could Influence Building

MEASUREMENT of microtremors of the earth at 250 places in six western states may provide new information on building in earthquake regions of the world.

The measurements will be made by Dr. Kiyoshi Kanai, engineering seismologist at Tokyo University's Earthquake Research Institute and currently visiting lecturer at the University of California, Los Angeles. Microtremors are the continuous but barely detectable earth motions caused by traffic, heavy construction, and industrial machines. A major purpose of his research, supported in part by the U. S. Coast and Geodetic Survey, is to study American earthquake data and compare it with earlier Japanese research.

Dr. Kanai's measuring instrument will be a unique portable seismograph, developed by him during a ten-year period, and especially designed to easily record and analyze microtremors.

His joint research with associate dean C. Martin Duke of the UCLA College of Engineering could have far-reaching effects for city planners and the California construction industry.

Analysis of microtremors gives a clue to the motion that might be expected in a real earthquake. On the whole, the degree of

destruction depends on the relation between soil conditions and the type and quality of structures, with buildings on hard ground generally having a better chance of survival than those on soft soil.

Many quake-prone countries take these soil differences into account in their building codes. In Tokyo, for instance, ground conditions are pin-pointed block by block.

If this system were adopted by American cities, Dr. Kanai believes, it would not only increase the safety factor but help cut construction costs for buildings resting on relatively safe ground.

Science News Letter, May 21, 1960

## AGRICULTURE

### Early-Cut Silage Feed Increases Cows' Milk

DAIRYMEN can save millions each year by feeding their cattle early-cut silage instead of late-cut field-cured hay, two researchers reported. New York State alone should save more than \$50,000,000 by using this kind of feed.

Prof. S. T. Slack and Keith Kennedy of the New York State College of Agriculture at Cornell University found in three years of experiments that cows produce an average of 16 pounds more milk a day if fed the early-cut silage diet.

Their experiments were carried out on purebred Holstein and Brown Swiss cows. Cows fed the early-cut silage gave slightly more than 50 pounds of milk a day. Those fed early-cut barn-dried hay produced 44 pounds and those on the late-cut field-cured hay diet produced less than 35 pounds daily.

Agricultural specialists are not sure why the early-cut feed gives better results. However, they believe that the acids formed in the silage as it develops may aid the cow's digestive processes and enable it to produce more milk. The acids in the silage are similar to those in a cow's digestive tract.

Science News Letter, May 21, 1960

## ZOOLOGY

### Southeast Asia Swiftlets Find Location as Bats Do

THE SWIFTLETS, birds of southeast Asia, find their locations in the same manner as bats do—by sending out sound waves, then listening for the answering echo.

Lord Medway of the University of Birmingham, England, reported discovering this method of location by swiftlets after he had tested them experimentally in a dark room under controlled conditions.

It has long been known that these birds are able to fly in total darkness in the caves in which they nest. When approaching the opening of a cave from the outside in darkness, however, they have now been found to utter a rattle type of sound. Frequency of the sound varies from one to five kilocycles per second—within range of human hearing—it is reported in the Journal of the Acoustical Society of America, 32:518, 1960.

Science News Letter, May 21, 1960

## MEDICINE

### Dope Addicts Fool Unsuspecting Doctors

DRUG ADDICTS can fool an unsuspecting doctor and get him into legal trouble before the doctor knows he is even dealing with an addict.

LeRoy W. Morrison of the U. S. Bureau of Narcotics in Washington, D. C., said addicts are experts at describing and imitating any ailment requiring narcotic drugs to kill pain. As a rule, addicts use kidney or gall-bladder ailments as their first approach, he said.

In describing the devious ways in which addicts obtain drugs, Mr. Morrison reported in the Medical Annals of the District of Columbia, 29:234, 1960, that a doctor can often distinguish the addict from the patient who really needs narcotics if he knows what to look for.

The average addict has a sallow or ashen complexion, needle marks over veins of the hands and arms. He often wears long sleeves to cover these marks. The pupils of the eyes are pinpoint size when there is no immediate need of narcotics, and dilated when the effect wears off or when the addict is using synthetics or cocaine.

Science News Letter, May 21, 1960

## GENERAL SCIENCE

### Arts and Sciences Olympiad Proposed

A NATIONAL SHOWCASE and an International Olympiad have been proposed in Congress to encourage and recognize youthful ability in the sciences and in four categories of the arts.

The national program would recognize and present to the public the work of outstanding young American scientists and artists. International exhibitions, productions, festivals and programs in these fields are envisioned as strengthening mutual understanding, offering opportunities for young people to win distinction, and enriching the world through the exchange of ideas.

These goals were outlined by Rep. Harris B. McDowell Jr. (D.-Del.), who introduced legislation with Rep. Frank Thompson (D.-N. J.) setting up the National Showcase-International Olympiad (H.R. 9503 and H.R. 9467). Similar bills were sponsored in the House by Rep. Carl Elliott (D.-Ala.) and Rep. Edith Green (D.-Ore.), and in the Senate by Sen. Wayne Morse (D.-Ore.), (S. 3256).

In the field of the sciences, Rep. McDowell has suggested that the patterns established in the Science Talent Search and the National Science Fair-International conducted by SCIENCE SERVICE might be followed, with a group of distinguished international scientists deciding the specific type of competition to be held.

In the arts, Rep. McDowell proposed including a folk festival of dances, songs and handicrafts, a festival of classic and original drama and classic dance forms, a music festival involving individual competition of performers on all principal instruments, and a competition in painting and sculpture.

Science News Letter, May 21, 1960