

## MEDICINE

**Aspirin As Effective As ACTH and Cortisone**

► ASPIRIN is as effective in treating rheumatic fever as ACTH and cortisone, a five-year international study shows.

The British Medical Journal, Oct. 8, 1960, reports that only 14, or three percent, of 497 children studied in Britain, the United States and Canada died of rheumatic heart disease during the five-year period. All were under 16 years old.

The major factor in determining whether a patient will have rheumatic heart disease at the end of five years, the study shows, is the status of his heart at the time treatment is begun. It is important to know the initial condition of the heart to evaluate treatment.

In 96% of the children studied who had no inflammation of the heart when treatment began, there was no heart disease at the end of five years. In cases with pre-existing heart trouble, the outlook was poor. Some response was seen among patients with mild or serious heart conditions that began only at the time of the first onset of rheumatic fever.

Modern treatment of rheumatic fever, associated with streptococcal infection, is not alone responsible for the small number of deaths in this study as compared with previous investigations. Penicillin and sulfadiazine treatment, along with improved standards of living and a change in the natural history of rheumatic fever, are taken into account.

The cooperative research was made possible by grants and aid from agencies in the three countries: the U. S. Public Health Service, the American Heart Association, the Canadian Arthritis and Rheumatism Society and the Medical Research Council of Great Britain.

A previous report published in 1955 compared treatments at the end of one year. The present report compares the amount and severity of rheumatic heart disease in each of three groups at the end of five years. Both say there is no evidence that hormone treatment is superior to aspirin.

• Science News Letter, 78:264 October 22, 1960

## MEDICINE

**Three Physicians Get Albert Lasker Award**

► THE THREE PIONEERING scientists who revolutionized treatment of heart patients by developing and prescribing anticoagulant drugs were named joint winners of the 1960 Albert Lasker Award of the American Heart Association in New York.

Anticoagulant drugs, given to slow down clotting time and prevent clot formation in blood vessels, can reduce the heart attack death rate by one-third.

For their work in this field, the scientists sharing the award are: Dr. Karl Paul Link, professor of biochemistry, University of Wisconsin; Dr. Irving S. Wright, professor of clinical medicine, Cornell University Medical College, New York; and Dr. Edgar V. Allen, senior consultant in medicine, Mayo Clinic, Rochester, Minn.

Dr. Link's research goes back 20 years to the time when cattle were bleeding to death after they ate spoiled sweet clover. The fatal ingredient in the clover, Dr. Link discovered, is dicoumarin.

After providing an antidote for the cattle, he went on to synthesize dicoumarol, the first orally administered anticoagulant.

Dr. Wright made medical history in 1938 by becoming the first physician in the U. S. to treat a patient with heparin, the intravenously administered anticoagulant. He later advanced the clinical use of dicoumarol and was among the first to use and advocate anticoagulants for treatment of heart attacks and strokes. The first large-scale cooperative study of anticoagulant therapy for coronary thrombosis, inspired and coordinated by Dr. Wright, resulted in wide medical adoption of this treatment.

Dr. Allen, who foresaw the clinical possibilities of dicoumarol long before they had been proved, was among the first to test the drug in the laboratory and then to use it clinically. In 1941, the same year Dr. Link announced the synthesis of dicoumarol, Dr. Allen's laboratory team released the first published report on the administration of this drug to human beings.

The awards are being presented at the American Heart Association's St. Louis, Mo., meeting on Oct. 22. Each investigator is to receive an honorarium of \$2,500, an illuminated scroll and a gold statuette of The Winged Victory of Samothrace, symbolizing victory over death and disease.

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## BIOLOGY

**Man Needs Both Night And Day in Outer Space**

► MAN MAY HAVE TO take night and day artificially with him into space to keep him and his "living clocks" ticking, Dr. Colin S. Pittendrigh, professor of biology at Princeton University, reported.

"Living clocks" are the innate physiological rhythms that govern the biological functioning of all living organisms except bacteria. The rhythms depend to a great degree upon the light cycle alternating from day to night, the biologist explained.

"In man, for instance, there is a regular waxing and waning of sugar content in the blood, of body temperature, of endocrine gland activity," during this alternation, Dr. Pittendrigh said in an interview for Voice of America. His research has shown that these rhythms are matched to the period of the earth's rotation, which produces cycles of light and dark.

Without the cycle, these "living clocks" either might run too fast, too slow or even break down altogether, causing "stress, damage, even death to the organism.

"This means, among other things, that an aperiodic space capsule could very likely damage human passengers," Dr. Pittendrigh warned. The solution, however, is simple, he said. "It's simply a matter of lighting." He recommended more research on the subject, including a study of human rhythms in prolonged daylight such as occurs in the Arctic.

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**IN SCIEN**

## MEDICINE

**Nasal Surgery Needed By Air-Blocked Babies**

► NEEDLESS DEATHS of newborn infants with closed openings in the back part of the nose can be prevented by immediate nasal surgery.

Three speakers at the American Rhinologic Society meeting in Chicago said that in cases where both nasal airways are completely or partially blocked at birth, the child will suffocate rather than use his mouth to breathe. Babies instinctively breathe through the nose.

The obstruction may be bony, membranous or a combination of the two, the nose specialists said. In one-third of the blockage cases, the occlusion is in both nasal airways and must be recognized by the physician if immediate steps to save the child are to be taken.

If only one nasal airway remains closed, the child may grow up before the condition is recognized.

Mothers were warned that a child known to have a single closed passage should not sleep on the side of the good opening, as this might cause suffocation.

Symptoms to watch for are difficulty of breathing at feeding times, unexplained crying spells that might be caused by intermittent oxygen insufficiency, or continued white, egg-like, mucus discharges from one nostril.

Speakers on the subject, which was discussed at a symposium, were Drs. Henry H. Beinfeld, Prospect Heights and Long Island College Hospitals, Brooklyn; G. Slaughter Fitz-Hugh, head, department of otolaryngology, University of Virginia Hospital, Charlottesville; and Francis J. McGovern of Danville, Va., also associated with the University of Virginia Hospital.

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## AERONAUTICS

**Air Traffic Control Computer Planned**

► INSTALLATION of a new computer designed specifically for use in air traffic control will be made by the Federal Aviation Agency early in 1961.

The computer, developed for the FAA by the Librascope Division of General Precision, Inc., of New York, automatically performs a number of routine operations heretofore done by hand by the air traffic controller. It prints flight progress information, updates, changes and stores this information, exchanges it with other control facilities concerned with the flight, warns the controller of impending conflicts of air traffic and generally assists him in controlling traffic from airport to airport.

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# CE FIELDS

## GENERAL SCIENCE

### State Department Restrict U. S. Scientists

► UNITED STATES Government scientists are subject to a special State Department ruling limiting their freedom to attend meetings abroad, the journal *Science*, 132:863, 1960, charges editorially.

They are prevented from presenting papers at international meetings attended by scientists from countries not recognized diplomatically by the United States.

The editor of *Science*, Dr. Graham DuShane, points out that the U. S. stands to lose more than it gains by this policy. Any non-recognized country can block the attendance of our Government scientists at an international meeting merely by sending a representative.

The International Council of Scientific Unions passed a resolution in 1958 affirming the right of scientists to participate in international scientific activity "without regard to race, religion, or political philosophy" and stating that such participation "has no implications with respect to recognition of the government of the country or territory concerned." The Governing Board of the National Academy of Sciences-National Research Council endorsed this resolution in April, 1960.

• *Science News Letter*, 78:265 October 22, 1960

## PHYSICS

### Second Big Atomic Power Plant Formally Dedicated

See Front Cover

► NUCLEAR POWER being generated, or about to be generated, and fed into electric transmission lines of the nation now totals 350,000 electric kilowatts.

Shown on the cover of this week's *SCIENCE NEWS LETTER* is the 180,000-kilowatt Dresden Nuclear Power Station built by General Electric. Dedicated Oct. 12 by the Commonwealth Edison Company at Dresden, Ill., it reached full power in June.

The Shippingport, Pa., Atomic Power Station, built by Westinghouse, has been in operation since 1957. It produces 60,000-electric kilowatts. The Yankee Atomic Electric Company in Rowe, Mass., another Westinghouse installation, will produce 110,000 kilowatts at full capacity. All three of these nuclear plants are producing power for commercial use.

Nuclear power represents more than two-tenths of a percent of the installed capacity of United States electric generating plants with these three plants on line.

Twenty experimental and power nuclear plants, which will produce a total of 1,193,250 electric kilowatts, are being constructed at the present time. Seven more are in the planning stage. There are presently a number of experimental plants

throughout the country being used for a wide variety of experimental programs.

Russia has announced only one reactor, producing 5,000 kilowatts, which has been in operation since June, 1954. However, experts believe that Russia has five reactors being built or in the planning stage, including one that will produce 210,000 electric kilowatts.

Great Britain has four reactor plants that serve the dual purpose of producing plutonium as well as electric power. Three additional stations are under construction. It is estimated that Great Britain will have to rely wholly on nuclear power within the next hundred years, because conventional sources are being dissipated so rapidly.

France has three plutonium producing reactors, and a 63,000-kilowatt power reactor is due to be in operation this year. Two others are in the planning stage, including one that promises to produce 250,000 to 320,000 electric kilowatt power.

Belgium and Germany each has purchased from U. S. contractors power generation reactors, respectively 11,500 kilowatt and 15,000 kilowatt, which will be operating this year.

Several hundred guests attended the dedication of the \$51,000,000 Dresden Station, which produces enough electricity to meet the needs of a city of more than 200,000 population. John A. McCone, chairman of the U. S. Atomic Energy Commission, was the main speaker at the ceremony.

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## ASTRONAUTICS

### Plasma Around Missiles Distorts Radio Signals

► A PLASMA RESEARCH PROJECT at the University of California, Los Angeles, promises to help keep open radio contact with earth, the lifeline of future astronauts.

When a missile or spaceship leaves and enters the atmosphere, it cooks up the air to a point where the atoms break up into ions and electrons, forming layers of ionized gas, or plasma.

The plasma surrounds the space vehicle like an insulating envelope, which can block or distort radio signals to the ground.

Dr. Warren Flock, an associate engineer who did research for his Ph.D. at UCLA, simulated the spaceship's plasma problem in the laboratory.

He found that the electrons in the plasma layer can change the direction of radio waves sent to the ground, and that the degree of distortion depends on the number of electrons and the thickness of the plasma layer.

Using a higher radio wave frequency might be one way of overcoming the difficulty, but this, in turn, can raise a number of new problems.

Dr. Flock believes that his research helps to define what the problem is, which is a necessary first step in finding a solution.

In September Dr. Flock joined the University of Alaska as associate professor of geophysics, where he hopes to continue his research.

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## RADIO ASTRONOMY

### Universal Decoding Plan for Interstellar Messages

► A UNIVERSAL DECODING scheme for revealing possible messages in radio waves detected from stars near the solar system has been reported by Dr. Philip Morrison of Cornell University, Ithaca, N. Y.

He told the Philosophical Society of Washington that signals containing intelligent information could be incorporated in the radio waves without the use of language.

Dr. Morrison said the search made at the National Radio Astronomy Observatory, Green Bank, W. Va., for radio signals from intelligent life forms on other planets of relatively nearby stars had, at best, only one chance in 20 of detecting such signals, because the radio antenna used was too small.

Another try, with improved electronic equipment, will be made soon at this observatory, the National Science Foundation reported, but Dr. Morrison believes a bigger receiving antenna would give much better chances of success.

He suggested the best chance would be from about half a dozen non-steerable, but very large radio dishes, such as the 500-foot antenna now under construction in Puerto Rico.

Dr. Morrison said that only after several years of unsuccessful listening to outer space signals with several of such large reflectors would he be convinced there were no such signals.

Dr. Otto Struve, director of the National Radio Astronomy Observatory, agrees with Dr. Morrison that the chances are good of eventually achieving positive results from Project Ozma, when the largest possible sample of solar type stars has been examined over a period of time.

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## CHEMISTRY

### Synthetic Rubber Now Made Into Foam

► SYNTHETIC RUBBER LATEX can now be made into a foam product by a "cheap and fast" method reported to the International Synthetic Rubber Symposium in London.

The technique, called chemical agglomeration, uses polyvinyl methylether to enlarge the size of the tiny solid rubber particles in the latex, raising the amount of rubber solids so that the synthetic can be used for foam products.

Foam rubber manufacturers require a free-flowing latex that is approximately two-thirds solid rubber. While natural latex fills these requirements, most synthetic latexes take on the consistency of putty when concentrated to this high rubber content.

E. L. Borg of the Naugatuck Chemical Division of United States Rubber Company said the polyvinyl methylether causes the rubber particles to cluster, or agglomerate, into larger particles. The chemical is used during the concentration process.

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