

Australian Seals Get Five-Year Reprieve

➤ HUNDREDS of seals living off the Victorian coast have won a five-year lease on life.

The Australian Primary Producers Union wanted to kill the seals for meat because they claimed the seals were hindering the State's fishing industry.

But the Victorian Government said the seals would remain unharmed after a research officer who had been studying the seals' habits, declared that the APPU's claim was unfounded.

No action will be taken, an official said, until the Department of Fisheries and Wildlife had completed a five-year observation project at Seal Rock off Philip Island, southeast of Melbourne.

The president of the Victorian Royal Society for the Prevention of Cruelty to Animals, Miss V. Carter, applauded the Government's decision, accused the APPU of "ignorance," and claimed no one had any substantial information as to the eating habits of the seal.

BIOLOGY

Crayfish's Computer Is Danger Monitor

➤ CRAYFISH have a remarkable biological computer that automatically turns itself on to warn of any possible danger, a biologist has discovered.

By intercepting electrical signals sent along the crayfish's optic pathways to the brain, the computer can calculate the speed and direction of any object moving in front of it.

If a creature were swimming within sight of a crayfish, the computer would make its calculations and let the information pass on to the animal's brain.

Then, it would switch off so that no further signals would be registered.

If, however, the swimmer suddenly altered his course, the crayfish's computer would spontaneously swing into action and let signals travel along the optic nerve fibers to notify the brain.

This handy warning system was discovered by Dr. C. A. G. Wiersma of the California Institute of Technology, Pasadena, who is doing research on the principles of sight with the support of the National Institutes of Health, Bethesda, Md.

The crayfish, a variety of freshwater lobster, is an ideal subject because its optic nerve is readily accessible to "tapping" with an electrode, and the biologist is able to identify the special functions of various individual fibers. One, for instance, is apparently linked to the balance organs and helps keep the crayfish right side up. A set of 14 "dimming fibers" that have been mapped

carry impulses when the fish is in the dark.

However, the biological mechanism converting darkness into these impulses is not yet understood.

Another set of 14 fibers lead to the biological computer.

Not all of the crayfish's fibers are related to vision, however. Some, for example, are undoubtedly paths used to transmit chemicals such as hormones.

"Some of the principles of sight used by the crayfish no doubt are found in other creatures, including humans," Dr. Wiersma said.

"What we are learning brings us nearer to understanding the basic principles of seeing."

GENERAL SCIENCE

White House Gifts Said To Trigger Health Law

➤ THE MULTIMILLION DOLLAR Heart Disease, Cancer and Stroke Law was triggered by gifts of furniture and pictures during redecoration of the White House in the Kennedy Administration, according to a special article in the *New England Journal of Medicine*, 275:309, 1966.

In spite of being started for "the wrong reasons," the new Federal regional medical programs may "improve the health of the American people beyond anything seen in this country for generations," said John M. Russell of New York, president of the John and Mary R. Markle Foundation.

The story "floating around Washington," which Mr. Russell said there is some reason to believe, is that President and Mrs. John F. Kennedy asked the donor of period furnishings if they could do something in return, and the answer was "please do something to conquer cancer."

This set the President thinking, the story goes, and heart disease was added "perhaps out of concern elsewhere in the executive branch." Stroke was added when President Kennedy's father became ill. Thus the killer-disease concept came into being and was passed on to President Lyndon B. Johnson, who announced that a commission would be made up of persons prominent in medicine and public affairs.

So, although Americans have had drummed in their ears the dangers that would follow if politicians got their "dirty paws" on the nation's health, Mr. Russell said, the mixture of health and politics can result in good.

The new bill allows enough latitude for flexible programs to be fitted to different local situations and for good men now being recruited by the National Institutes of Health to show their ability as leaders.

"It is amazing," Mr. Russell concluded, "what a gift of a few pictures to the White House can do."

IN SCIENCE

PUBLIC HEALTH

Birth Control Pills Not Proved Unsafe Yet

➤ BIRTH CONTROL pills have not been actually proved unsafe, so the U.S. Food and Drug Administration has removed the time limit heretofore stipulated during which women are permitted to take them legally.

Leaving the door open for further research, the FDA's advisory committee on obstetrics and gynecology after a nine-month study said that although there is no adequate scientific data proving these compounds unsafe for human use, there are "possible theoretical risks."

More facts are needed about differences in women who use the pills, and the committee recommends studies to acquire these facts, as well as to improve surveillance of the drugs.

Up to now the FDA has limited the use of oral contraceptives to maximum periods ranging from 18 months to four years, depending on the brand, but the report said the restrictions are often circumvented and only penalize needy persons who have to go to clinics where enforcements are carried out.

In a report made public on Aug. 15, the FDA committee also recommended uniform labeling of all contraceptive drugs now on the market; simplification of procedures to allow reduction in dosage of already approved compounds; and priority for laboratory investigation on all aspects of the hormonal contraceptive compounds.

The recommendations were part of a 200-page document that included four task force and three special reports.

The task forces had considered the pill in relation to blood-clotting diseases, possible cause of cancer and the metabolic effect on the function of certain organs and glands; for example, the liver and the thyroid and pituitary glands.

The special reports included one by Dr. Roy Hertz, formerly of the National Institutes of Health, who is now a professor of obstetrics and gynecology, George Washington University, Washington, D.C. He called for more extensive studies on the effect of estrogens on malignancies.

Dr. Louis M. Hellman, professor and chairman of obstetrics and gynecology, State University of New York Downstate Medical Center, Brooklyn, was chairman of the advisory committee.

Among other recommendations made by Dr. James L. Goddard, FDA Commissioner, was expansion of a study of possible relations of oral contraceptives to thromboembolism, or blood clots.

ENGINEERING

Explosion Quencher Being Developed for Coal Mine

► AN EXPERIMENTAL device designed to choke off coal-mine explosions almost instantaneously has been developed by engineers at the Department of the Interior's Bureau of Mines.

Mounted in a mine passageway, the device would detect an ignition of methane (or coal dust) by the ultraviolet radiation given off, and in 10 thousandths of a second would spray the air with a finely powdered chemical that quenches flame. Thus, the devastating pressure caused by the rapid combustion that characterizes an explosion would never have time to build up.

The objective of a study is to find a method of halting ignitions of methane gas in the critical fraction of a second before they become shattering explosions.

The device is still under study, Bureau director Walter R. Hibbard, Jr., emphasized. He said that it must pass rigorous tests before it can be approved by the Bureau for regular use underground. Results of tests conducted so far have been promising, however, Mr. Hibbard noted; so much so that the Department of the Interior will shortly apply for a patent on the device.

Methane—an explosive gas often liberated during the mining of coal—has always been a serious menace to coal miners. When it is present in the atmosphere in concentrations between five and 15%, a tiny spark can set it off. Such explosions can, in turn, stir into the air and ignite clouds of coal dust, spreading the force of the blast to other parts of a mine.

GENERAL SCIENCE

Hill-Burton Health Act Marks Second Decade

► FORMER President Harry S. Truman, recently discharged from a Kansas City, Mo., hospital in good condition for a man of 82 years, is marking an anniversary that has had far-reaching and practical health applications for the United States and its territories. He signed the Hospital Survey and Construction Act on Aug. 13, 1946, an act that has given the country an additional \$8.2 billion worth of hospitals and health projects.

Popularly known as the Hill-Burton program, named after Sen. Lister Hill

(D-Ala.) and the late Justice Harold Burton, who helped initiate the bill when he was a Republican Ohio senator, the legislation has reached down into communities of all 50 states with the aid of \$5.6 billion in state and local funds. The Federal share, dribbled out by annual Congressional apportionments, has been \$2.6 billion as of July 1, 1966.

Only last summer, Mr. Truman saw the culmination of his vision in the long-awaited signing of the Medicare bill, brought to his home town in Independence, Mo., July 30, 1965, by President Lyndon B. Johnson, who honored the former executive for delivering the first legislative message to Congress (Nov. 19, 1945) on the nation's health needs.

As the 20th anniversary of Hill-Burton is celebrated by many states with hospital dedications and groundbreaking ceremonies, the program's next 20 years can be anticipated partly as a provider of additional facilities for the old people who will need them under Medicare.

It is expected that nearly \$10 billion more will be needed by 1986 to provide modernization and additional beds in existing urban hospitals. On July 1, 1966, a total of 8,378 projects had been approved by Hill-Burton, including 357,867 beds in hospitals and nursing homes, and 2,437 other health facilities.

In connection with the Hill-Burton anniversary celebration, the American Hospital Association at its convention in Chicago, Aug. 29 will present Senator Hill with its first award of honor for his contribution to the hospital field and the health of the nation.

MEDICINE

Arthritis Drug Brought From Mexico Dangerous

► ARTHRITIS patients have been bringing home an unlabeled injectable drug from Mexico that they say gives dramatic relief from pain, but the American Medical Association warned that serious or even fatal side effects may result from it.

The U.S. Food and Drug Administration is investigating the importing of dipyrone, whose use is justified in only a few instances, such as controlling fever in Hodgkins disease and similar malignant ailments, when other methods fail. It is classified as a new drug, which means it cannot be distributed in interstate commerce or imported into the United States for commercial purposes unless application is made for a specific kind of treatment.

Rep. Otto E. Passmann (D-La.) said the drug has been administered to arthritis victims in at least five southern states. Travelers to Mexico have asked him to make it available in the United States.

ASTRONOMY

Year's Second Comet Found in Southern Sky

► THE YEAR'S second comet has been spotted in the southwestern sky, but it is too faint to be seen without a good-sized telescope, 10 inches or larger.

The comet was discovered by Stephen Kilston, after whom it is named, from photographs made with the 24-inch telescope at Lick Observatory in California.

News of the discovery was telegraphed to astronomers by the Smithsonian Astrophysical Observatory, Cambridge, Mass., clearing house for astronomical information in the Western Hemisphere.

When first detected on Aug. 8, the comet's position was 17 hours, 55 minutes in right ascension and plus 21 degrees, 41 minutes in declination, which is in the constellation of Hercules in the southwestern sky. The 11th magnitude object is diffuse, but has a central nucleus. Its motion, plus two-tenths of a minute a day in right ascension and minus 21 minutes in declination, marks it as a comet.

GENERAL SCIENCE

Fields Math Medal Awarded Two in Moscow

► THE FIELDS MEDAL, the world's highest award in mathematics, was presented to two mathematicians at the International Congress of Mathematicians meeting in Moscow.

The medal, considered to be as prestigious as the Nobel Prize by mathematicians, who are not eligible for the latter, is awarded every four years when the congress meets.

Prof. Paul J. Cohen of Stanford University was one of the 1966 winners.

The award recognizes Prof. Cohen's highly original work of 1963 which answered a fundamental question that had puzzled mathematicians for nearly half a century. He showed that the "continuum hypothesis" is independent of the axioms of set theory; therefore the hypothesis cannot be proved until new axioms are formulated.

The second winner, Dr. Stephen Smale of the University of California at Berkeley, developed the Smale Theorem, an incredibly complex solution to a problem in differential topology. The theorem proves that a sphere can be turned inside out without forming a "crease."

A fund establishing the prize was provided in 1932 by a Canadian mathematician, Prof. J. C. Fields. The award is open to young mathematicians (under 40) throughout the world in recognition not only of work they already have done, but to encourage their further mathematical achievements.