

MEDICINE

\$21,000 Award Shared by Outstanding Researchers

► **STREPTOMYCIN**, cancer detection and treatment, an artificial kidney and sex hormone research shared honors in distribution of the \$21,000 Amory prize money awarded by the American Academy of Arts and Sciences in Boston.

The Amory prizes are given every seven years for research in disorders of reproduction in accordance with the terms of a bequest of Francis Amory of Boston who died in 1912.

The awards this year go to:

Dr. W. J. Kolff of Holland for his artificial kidney, developed during the war in spite of difficulties created by the Nazis and lack of funds.

Prof. Selman A. Waksman of Rutgers University for discovery of streptomycin.

Dr. George N. Papanicolaou of Cornell University for research on sex hormones and discovery that cancer can be diagnosed early in some of its forms by detection in body secretions of malignant cells shed from the cancer.

Prof. Guy F. Marrian of Edinburgh, Scotland, for outstanding research in the chemistry of sex hormones.

Dr. Alexander B. Gutman of Presbyterian Hospital, New York, for work with his late wife, Ethel Gutman, leading to development of the acid phosphatase blood test for detecting cancer of the prostate gland.

Dr. Charles B. Huggins of the University of Chicago for discovering that cancers of the prostate depend for their existence on the male sex hormone. From this has come treatment for prostate gland cancer with good results in about 90% of the cases, and beneficial use of sex hormones in treatment of some patients, men and women, with breast cancer.

Science News Letter, January 1, 1949

GENERAL SCIENCE

German Scientists in West Envy Those Under Soviets

► **WHILE** the Soviet Union is recruiting German scientists and giving them "every encouragement," western zone German scientists are handicapped by confusion and lack of funds and facilities, a former State Department official said.

Most German scientists in the West envy their fellows in the Soviet-controlled areas, Julius C. C. Edelstein, former special advisor to the Secretary of State on reparations, declared in **PHYSICS TODAY** (Dec.), published by the American Institute of Physics.

Scientists in the American zone have been split into two groups under different jurisdictions. University scientists are in one group, while industrial scientists are in another.

"Research projects must be approved by

Military Government officials whose understanding of science is not excessive," Mr. Edelstein commented. He added that a major prewar research institution in the American zone is now an officers' club.

British officials show more concern about the status of scientists in their areas, but, in general, Mr. Edelstein found "a sense of envy of the relatively privileged position of German scientists in the Soviet zone" among those in the West.

German scientific skills in the West are being wasted, while the Soviet rehabilitates German science in the East for its own purposes, the former reparations official charged.

"Every encouragement should certainly be given to scientists in Germany who can contribute to German economic recovery," Mr. Edelstein contended, "subject, of course, to those controls which should be exercised over insurgent and resurgent German nationalism."

But a real solution to the problem of German science, he concluded, will come only when other issues are solved.

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MEDICINE

Aureomycin Best Drug for Severe Undulant Fever

► **AUREOMYCIN**, one of the newest anti-germ remedies from a mold, has proved to be the best drug so far available for the malignant form of undulant fever acquired from goats.

Prompt improvement in every one of 24 patients after getting the golden yellow mold drug is reported by Drs. Wesley W. Spink and Abraham I. Braude of the University of Minnesota Hospitals and Medical School and Drs. M. Ruiz Castaneda and Roberto Sylva Goytia of the Mexico General Hospital, Mexico City, in the **JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION** (Dec. 18).

A combination of streptomycin and sulfadiazine had previously proved effective in treatment of undulant fever in the United States. But when tried in Mexico, where thousands of persons are victims of the disease, the sulfa drug-streptomycin combination did not work so well. In the Mexican patients the disease was caused by a different strain of undulant fever germs, *Brucella melitensis*, which are much more malignant than the *Brucella abortus* germs, against which the sulfa-streptomycin treatment was effective. The streptomycin-sulfadiazine treatment has also the disadvantage that it must be given in a hospital, since the streptomycin must be given by hypodermic injection.

Aureomycin can be given by mouth. Patients can take it at home without being in bed. It causes only slight side-effects, whereas streptomycin in large doses causes disturbance of the balancing mechanism in the ear and even deafness.

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ENTOMOLOGY-BIOCHEMISTRY

Antibacterial Compound Found in Insect Blood

► **NEWEST** source of germ-stopping compounds: insects. A substance that checks the multiplication of the germ that causes common boils and one type of food poisoning, *Staphylococcus aureus*, has been found in the blood of the large milkweed bug by Drs. Hubert Frings, Edith Goldberg and J. Caroline Arentzen of Pennsylvania State College. Reporting their discovery in **SCIENCE** (Dec. 17), they also note that antibiotic substances have been found in various types of "bug juice" extracted from several insect species by other workers.

The large milkweed bug proved convenient laboratory material for the present research, they state, because it is easily reared in captivity, requiring only a supply of milkweed seed for food and some water to drink.

They suggest that "insects, famous for their hardiness and rapidity of reproduction, may be, directly or indirectly, sources of new antibacterial agents of possible practical value."

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WILDLIFE

Airplanes Not Welcome Over National Parks

► **AIRPLANES** are not welcome too low in the air over the National Parks, John D. Coffman, chief forester of the National Park Service, told the Society of American Foresters meeting in Boston. Present recommendations call for them to stay at least 2,000 feet above the ground in and near the parks. This is because it is felt that low-flying planes disrupt the atmosphere of quiet, undisturbed nature which is the chief asset of the National Parks and the principal reason for the coming of the millions of visitors every year.

At the same time, it is recognized that many persons will want to come up to the entrance of the parks by plane, so that the development of airports near the parks is encouraged.

There have been a few bad plane crashes within National Park boundaries, Mr. Coffman stated. In these cases, men of the National Park Service have cooperated to the limit, even at the risk of their own lives. Such crashes, even of small planes, always present the hazard of bad forest fires, he pointed out; it is also quite troublesome, and usually costly, to remove the disfiguring wreckage afterwards.

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CE FIELDS

ENGINEERING

New Process Aids Making Tube Faces for Television

➤ A CHEAPER but satisfactory method of making glass face plates for television tubes, which uses a technique in which the material is optically ground and polished while the glass is still flat, was revealed by the Pittsburgh Plate Glass Company.

A newly developed bending process permits the polished glass to be shaped into proper sphericity without marring the precision surface obtained before the blanks are cut to size. The new face plates can now be manufactured on a production line basis, with a great reduction in time.

In the old process, glass blanks were molded to general spherical shape and then put through rigorous optical grinding and polishing operations to obtain perfection. It is a slow process. The new method has already broken the bottleneck in the production of face plates of 5-inch size, and will be used for larger size tube faces as soon as the necessary machinery is installed.

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NATURAL RESOURCES

America Faces Challenge To Live Within Own Means

➤ AMERICA faces a challenge to live within its means, in terms of utilization of its natural resources, declared Fairfield Osborn, president of the New York Zoological Society and author of the best-selling conservation book *OUR PLUNDERED PLANET* (Little, Brown), before the Cooper Union Forum in New York.

We have not been doing so, but instead have been eating up our national capital, the speaker asserted: "Our famed high standard of living has been built to a considerable degree upon consuming our reserves. One wonders why we Americans cling to the illusion—the pap of seekers for political office—that our standard of living is always going up."

We should not count too much on the development of the tropics for a new frontier, either, Mr. Osborn told his audience. In the rainy region south of the Sahara in Africa soil erosion is already a recognized and severe problem. The Amazon basin is a thickly forested wilderness, but it is unsafe to clear it because as soon as the forest cover is removed the diluvial rainfall of the region begins to waste the land. The cost of the development of the tropics presents difficulties.

We must therefore learn to live mainly on our own resources, and to take care of those resources so that they will continue to serve the nation indefinitely. At present, the good, productive land in the United States averages about 3.5 acres per inhabitant. Curiously enough, citizens of the USSR have almost exactly the same number of acres to support each person in that country. It remains to be seen which of the two socio-political systems will prove best in terms of intelligent land use.

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ANTHROPOLOGY

Casts of Pygmy Ape-Man's Bones Arrive in U. S.

➤ CASTS OF BONES of a pre-human race of pygmies—natives of South Africa a million years ago—have just been added to the collection of the Smithsonian Institution in Washington. These fire-making, weapon-carrying "ape-men", who may represent the earliest known of man's ancestors, were discovered in the Transvaal by Prof. Raymond A. Dart of the University of Witwatersrand in Johannesburg.

Prof. Dart had the casts specially made for Dr. T. D. Stewart, Smithsonian curator of physical anthropology. They represent the first casts to reach this country.

The long-extinct creature, who weighed from 80 to 100 pounds had a brain comparable in size to that of a gorilla, and showed near-human physical traits, has been given the name of *Australopithecus prometheus*. Although it is not known if the *Australopithecus* is directly related to man, Prof. Dart believes that his researches show a closer relationship between ourselves and the pygmies than was previously supposed (See *SNL*, Oct. 30, 1948).

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VETERINARY MEDICINE

Drug Combination Makes Surgery Painless for Dogs

➤ DOGS can now undergo surgical operations as painlessly as human beings, thanks to a new drug combination developed by a two-man research team in Detroit, Dr. T. F. Reutner, veterinarian, and Dr. O. M. Gruhzt, physician.

The drugs used are methadon, a synthetic pain-killer that takes the place of morphine, and surital sodium, a sleep-inducing compound of the barbiturate series. Anesthesia lasts only about 15 minutes, but this is long enough for ordinary veterinary surgery. Recovery takes place in from three to five hours. There are no unpleasant after-effects, and no apparent tendency to addiction.

The new method is announced in the *JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION*.

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CHEMISTRY

DFDT, Cousin of DDT, Even Deadlier to Flies

➤ AN APPLE-scented German cousin of DDT, known as DFDT, proves to be a better killer of houseflies and certain other flying insects than DDT. At the same time DFDT is apparently less toxic to warm-blooded animals and fish, Dr. W. T. Sumerford of the U. S. Public Health Service told members of the American Chemical Society at a regional meeting in Shreveport, La.

The "F" in DFDT stands for fluorine, two atoms of which are substituted for chlorine atoms in the original DDT formula. Spelled out in full, the compound is di-fluoro-diphenyl-trichloro-ethane. It was much used in Germany during the war, but is only now being investigated in this country. Although it kills fewer insect species than DDT, it has quicker knock-down power against the ones it does affect.

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BIOCHEMISTRY

Sex Hormone in Grass May Increase Milk Yield

➤ MORE MILK may be produced, thanks to a sex hormone in grass.

A female sex hormone in the fresh young grass that cows eat in springtime may have more to do with the seasonal increase in milk production than the larger quantities of food they eat, as has always been supposed. This suggestion is offered by two cooperating British research teams, in a joint letter to the editor of the journal, *NATURE* (Nov. 27).

They also suggest that a greater year-round milk yield may be obtained by supplying the hormone artificially to the cows in their off-peak seasons, when spring grass is not naturally available.

In a series of tests, it was found that extra feed did not increase the milk proteins and sugars; neither did the feeding of year-old hay. Feeding on young grasses did produce a noticeable improvement in milk yield.

The various hays and grasses were then subjected to standard hormone-extracting processes, and the extracts were tried on laboratory animals for their potency in producing typical female physiological reactions. The grass extracts produced as great effects as pure female sex hormones, whereas the extracts from year-old hay had no effect whatever.

Participating in this research were S. Bartlett, S. J. Folley and S. J. Rowland of the National Institute for Research in Dairying at Shinfield; and D. H. Curnow and Sylvia A. Simpson of the Courtauld Institute of Biochemistry, Middlesex Hospital, London.

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