

## GENERAL SCIENCE

# Franklin Medal to Seaborg

Another medal given fiction writer for his satellite communication prediction. Strong focusing, radio astronomy, solar battery, turbojet and high-speed printer also win medals.

► DR. GLENN T. SEABORG, chairman of the U. S. Atomic Energy Commission and 1951 Nobelist in Chemistry, received the 1963 Franklin Medal, highest honor of the Franklin Institute, Philadelphia, in ceremonies Oct. 16.

Founded in 1914, the Franklin Medal has been given to such famous scientists as Thomas A. Edison, Guglielmo Marconi, Niels Bohr, Albert Einstein and Enrico Fermi.

Dr. Seaborg played a key role in the discovery of nine transuranium elements, and he and his colleagues were responsible for the identification of more than 100 isotopes of elements throughout the periodic table.

Nicholas Christofilos, of the University of California's Lawrence Radiation Laboratory, received a Franklin Institute Elliott Cresson Medal for his contributions exemplified by his development of the "strong-focusing" principle in synchrotrons, his ingenious and imaginative proposal leading to the successful Argus experiment, and his creative principles embodied in the promising Astron development.

Another Elliott Cresson Medal was awarded to the pioneer in radio astronomy, Grote Reber, of the Research Corporation, New York City. Mr. Reber constructed the world's first radio telescope during his spare time and made numerous measurements of galactic and solar natural radio waves. Mr. Reber now is living in Tasmania and working on long wave radio astronomy.

The three scientists responsible for the solar battery, used in terrestrial and space projects, were given John Price Wetherill Medals. They are Dr. Daryl M. Chapin, of Basking Ridge, N. J.; Dr. Calvin S. Fuller, of Chatham, N. J., and Prof. Gerald L. Pearson, of Menlo Park, Calif. The lightweight batteries, developed at Bell Telephone Laboratories, convert solar radiation into electric energy and perform reliably for years, even in outer space.

A French railway expert, Henri Ruhlmann, received a George R. Henderson Medal for his application of rubber-tired wheels to the Paris "Metro," improving safety, decreasing construction costs and lessening noise.

Two men most responsible for the design and construction of this country's first axial-flow turbojet engine were given Edward Longstreth Medals. They are Dr. Stewart Way, an engineer with the Pittsburgh Research and Development Center of Westinghouse, and Prof. Reinout P. Kroon, a former Westinghouse engineer now teaching engineering at the University of Pennsylvania.

An Edward Longstreth Medal also was given to Norman M. Imbertson, Pasadena,

Calif., engineering consultant who invented the "Fabridam," an inflatable and deflatable rubberized fabric dam, now in use by the Los Angeles Department of Water and Power as well as other companies elsewhere.

Dr. Herman Epstein, of Philadelphia's Omnitronics, Inc., a Borg-Warner Corporation subsidiary, received an Edward Longstreth Medal for his invention of a unique electrostatic high-speed printer for use with digital computers and radio and telegraphic transmissions, the theoretical limit of printing speed of which is said to be as high as 50,000 words per minute.

A science fiction writer, Arthur C. Clarke, a war-time radar engineer with the Royal Air Force, was given the Stuart Ballantine Medal. He now resides at Colombo, Ceylon. In 1945, he made the first technical proposal for communications satellites, and many of the theories in that paper were proved 12 years later when the first satellite was launched.

Keith D. Millis, a metallurgical engineer of International Nickel Co., Scotch Plains, N. J., was honored with the Francis J. Clamer Medal for the discovery and development of ductile cast iron.

A Philadelphia engineer, Paul Ganser, received the Walton Clark Medal for development of a unique forced-drainage-type cathodic protection system, thus preventing corrosion of gas mains.

Prof. Sik-Sang Yau, Northwestern University mathematician, was awarded the Louis E. Levy Medal for the outstanding paper published in the Journal of the Franklin Institute, 273:31, 1962.

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## METEOROLOGY

## Deadliest Hurricane In Western Hemisphere

► THE DEADLIEST STORM in the history of the Western Hemisphere, hurricane Flora, was unusual in its slow, wavering pace and the force it maintained over land.

Usually hurricanes lose their force when they blow across land, stated officials of the U.S. Weather Bureau. Then as they move again over open water, they sometimes can regenerate their force.

For nearly five days the giant mass of whirlwinds hovered over Cuba, the longest a hurricane has been known to stay in one place. The circulation of air high in the sky contributed to this phenomenon.

The powerful storm may have killed more than 9,000 people in the Caribbean islands, as well as leaving many thousands homeless, collapsing houses and buildings, flooding crops and food stocks, and inundating highways and lands. Damage estimates approach \$500 million.

Another hurricane causing vast devastation was the one in 1900 that hit Galveston and left 6,000 dead.

Flora was first spotted by the weather satellite Tiros on Monday morning, Sept. 30. Springing up from the tropical waters of the Atlantic, it hurled 100-mile-an-hour winds and high seas at a chain of islands off the uppermost coast of South America. This area had not been struck by hurricanes for the past 30 years.

Hurricanes are giant whirlpools of winds that build up around the equator at this time of year and move slowly westward at rates of about 15 miles per hour. Some of them die out, but others continue in a westerly direction, then turn north to travel up the East Coast of the United States or out into the Atlantic.

They can build up their force to travel at the rate of about 50 miles an hour, with internal speeds as high as 150 miles an hour.

The entire circumference of the storm can expand to hundreds of miles—sometimes as much as 600 miles. Blowing in a counterclockwise direction, the high winds circle around the calm center called the eye.

Other hurricanes of 1963 caused little or no damage. Arlene rode over Bermuda causing about \$300,000 damage, but no deaths. Beulah hit no land at all but rode up the Atlantic Ocean to a point east of Newfoundland. Cindy caused a lot of flood damage in parts of Texas and Louisiana. Debra blew itself out. Edith was moving fairly fast and caused little damage in the Lesser Antilles and Puerto Rico.

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## CHEMISTRY

## Nylon Chemical Made By New Process

► AN ECONOMICAL electrochemical process for the large-scale manufacture of organic chemicals, including an intermediate used in nylon, has been found by Dr. Manuel M. Baizer of Monsanto Chemical Company, St. Louis.

Electric energy is used to transform a number of different organic molecules into more complex units. The new process can be operated continuously as long as concentrations of the molecules and the acidity of the liquid solution employed are carefully controlled.

The first application of the new electrolytic process will be in the manufacture of adiponitrile, used in the manufacture of nylon. Chemstrand Company, a Monsanto division, carried the discovery through the engineering stages.

Chemstrand chemists and engineers led by Dr. Frank S. Riordan at the company's Pensacola, Fla., Development Center, constructed an electrochemical cell in which the new system has been operated continuously for some time. The process makes it possible to use acrylonitrile instead of adipic acid in the manufacture of adiponitrile, a key ingredient in the nylon manufacture. Acrylonitrile is the same starting material used in Chemstrand's "Acrilan" acrylic fiber. A new plant at Decatur, Ala., will use the process.

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