

PHYSICS

Eta Meson Discovered

► **DISCOVERY** of a new inhabitant of the complex core of an atom, called the eta meson, was reported to the American Physical Society meeting in Washington, D. C.

The eta meson lives such a short time that its existence can be detected only by observation of the products left when it disintegrates. More than 30 so-called elementary particles, inhabitants of the nucleus, are known.

The new particle is expected to give important insight into the structure and behavior of the atomic nucleus. It also plays an important role in the structure of protons and neutrons, the basic building blocks of atomic nuclei.

The eta meson was discovered by observing the ways in which a specific kind of nuclear collision results in the formation of a number of pi mesons, one of the first kinds of mesons ever detected.

A group of physicists under the direction of Dr. Aihud Pevsner at John Hopkins University, Baltimore, Md., in collaboration with a group at Northwestern University headed by Dr. Martin Block, analyzed the specific kind of three-meson event by observing tracks produced in a bubble cham-

ber. Some 35,000 photographs were analyzed for the required class of disintegration.

A few dozen were found indicating that the three pi mesons came from an unstable particle whose mass was 550 million electron volts, a little more than 1,000 times the mass of an electron. Observations indicate this eta meson lives a long time compared to so-called nuclear times, which are so short that 22 zeroes are needed after the decimal point and before the figure one to measure them.

Besides disintegrating into two charged pi mesons and one that is neutral, the eta meson seems to decay into other particles that carry no electric charge.

The same category of events also confirms the discovery of the omega meson, which was found by scientists at the University of California at Berkeley. Existence of the eta meson was, in turn, confirmed by the Berkeley group in other types of nuclear reactions.

The Air Force Office of Scientific Research, the National Science Foundation and the Office of Naval Research supported the work leading to discovery of the eta meson.

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MEDICINE

Doctors Are Reading—

► **HOPE THAT SOME** stillborn babies may live was seen in the successful treatment of a case by closed-chest heart massage, physicians reported in the *Journal of the American Medical Association*, 180:328, 1962.

Closed-chest heart massage appears to be the "method of choice" in cases where babies have had good fetal heart beats in the five-to-ten-minute period before delivery. Open-chest cardiac resuscitation on stillborns has been only partially successful, Drs. Sylvan N. Surks and William Ladner of Long Island Jewish Hospital, New Hyde Park, N. Y., reported.

Victims of Sex Crime

Personality disturbances among victims of sex crimes can be helped by the family physician if the problems are not serious enough to be referred to a psychiatrist, Dr. Seymour L. Halleck of the State Department of Public Welfare, Madison, Wis., reported. More attention has been paid to understanding the sex offender, he said, while the victim "has been less intensively studied." (p. 273).

Skin Bleaching Dangerous

Monobenzone, the color-inhibiting chemical compound, should be restricted to use on small areas of normal skin color remaining in persons with large areas of depigmented skin, a condition known as vitiligo, an editorial and accompanying article warned.

Drs. S. W. Becker Jr. and Malcolm C. Spencer of Chicago said it is not monobenzone that affects the skin, but another active compound that monobenzone causes in the skin. Unsightly and perhaps permanent white spots may appear beyond the applied area, and in other cases increased pigmentation occurs. Inflammation and other allergic reactions can result. This study was made on 43 Negro and 40 white men with similar response in both races (p. 279).

Ski Injuries

The ski season is nearly over, even in the colder mountain areas of the United States, but injuries from skiing have been studied and reported as a warning for next season. Drs. A. Scott Earle, John R. Moritz, George B. Saviers and James D. Ball of the Sun Valley (Idaho) Medical Department and Sun Valley Village Hospital reported that the increased use of safety bindings over the past ten years has had no effect on the rate of injury among skiers. The accident rate is approaching one percent of skiers per day (p. 285).

Dogs' Licks Can Harm

Many diseases may be transmitted to dog owners with affectionate animals that lick the owner's face and neck, a physician was told who wrote to the Questions and Answers section of the *Journal* (p. 353). Dog saliva may contain viral zoonoses that include rabies and other infections.

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Do You Know?

An estimated 9.98 million tons of *earth* was excavated in building the Panama Canal.

A machine designed to fight forest fires by smothering them with sand or dirt has been developed.

India's *population* is over twice that of the United States but her land area is scarcely more than one-third as large.

Cesium-137 will be used to power an experimental underwater seismograph which will be placed on the floor of the Atlantic Ocean.

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