

PHYSICS

Continual Creation

That matter is continually being created in the universe is one of the most exciting of new physical theories now being widely discussed in scientific circles.

► ONE OF the most exciting of new physical theories to come on the scientific scene is the idea that there is continual creation of matter in the universe.

It is a new slant on the unanswered question of where the universe started and how. The suggestion is that, regardless of how it all got going and when, some stuff of the universe is being "born" right now.

The continual creation idea or the steady-state theory of the universe is being discussed in letters that appear in the British science journal *NATURE* (Jan. 26).

A new formulation of electrodynamics by Dr. P. A. M. Dirac, Nobelist of St. John's College, Cambridge, recently revived the idea that there is an all-pervading ether or medium that is used by light and other electromagnetic radiations, a conception that was thought to have been laid to rest many years ago by failure to find its effects experimentally, as in the famous Michelson-Morley experiment.

The continual creation theory is discussed by its originators, Drs. H. Bondi and T. Gold also of Cambridge University, who suggest that their idea first expressed in 1948 might give physical reality to Dirac's concept. He proposed introducing a charge

into a vacuum without fields destroying the vacuum character of the region. This small charge created would possess the velocity of the ether which is resurrected.

The new Dirac electrodynamics has a preferred motion for each point of space. The astronomers when they observe the distant nebulae find a red-shift of the spectrum of their light which is interpreted to mean that these bodies are rushing away in all directions at the same time, what is called an apparent isotropy. This is a cosmologically preferred state of motion.

Dr. Dirac points out that modern dynamical theory is founded on variation principles. A variation principle requires one to make a small change in the physical conditions and thereby violates some of the laws of nature. An electric charge introduced would violate the law of conservation of electricity. Dr. Dirac observes that the more powerful the variation principle, the greater the number of laws of nature which are considered to be violated.

In the new Dirac theory some of the violations involve the creation of small charges. The theory makes the velocity of these charges quite definite and this provides the ether velocity.

Science News Letter, February 9, 1952

MEDICINE

Eight Iron Lung Centers

► SUCCESS OF the first iron lung center for poliomyelitis patients, opened in Baltimore in 1946, has led to establishment of four more of these centers with another three to come, Basil O'Connor, president of the National Foundation for Infantile Paralysis, has announced.

The four now in operation besides the Baltimore one are located in Wellesley Hills, Mass., Houston, Tex., Ann Arbor, Mich., and Buffalo, N. Y.

Iron lungers, or respirator cases as doctors term them, benefit greatly when grouped for treatment, the pilot center in Baltimore showed.

Among the first important discoveries made in Baltimore was that group treatment produced psychological improvement, so that many of the fears and anxieties of these patients could be diminished or even overcome. Patients suffering from the same difficulties helped each other to try breathing without their respirators, even if only for brief periods. They gained hope and will from each other.

From the three-year pilot study the National Foundation evolved its plan aimed at achieving four basic objectives, Mr. O'Connor said. These objectives are:

1. To free patients as completely and as safely as possible from dependence upon respiratory aids such as iron lungs and rocking beds, so that they may return home.

2. To develop better diagnostic and care techniques, including mechanical devices, for victims of bulbar and respiratory polio, the most serious forms of the disease.

3. To develop special teaching and consultative service to physicians and hospitals both in the care of acute and long-term patients with breathing difficulties, and to establish and maintain teaching programs for professional personnel in the care of bulbar and respiratory patients, so that developments at the center will be available to other institutions.

4. To serve as laboratories for the evaluation and development of equipment used by respiratory patients.

Science News Letter, February 9, 1952

● RADIO

Saturday, Feb. 16, 1952, 3:15-3:30 p.m. EST
"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Some of the winners of the Eleventh Annual Science Talent Search from various parts of the country will talk about their scientific projects.

AERONAUTICS

Radical Aviation Advances Predicted Through Research

► RADICALLY NEW developments in aeronautics that should "pay off in the design of future aircraft" are being sought by the National Advisory Committee for Aeronautics, it was indicated by Dr. J. C. Hunsaker, chairman, in the NACA annual report.

Great gains in airplane performance of great military significance, details of which can not be told because of security regulations, are in prospect, the report declared. But the report warns that such gains are also obtainable by a potential enemy.

Because the military research and development program has been tripled since the beginning of the Korean conflict, the committee urges more support for its researches which have not kept pace with the military effort due to fund limitations. The committee believes that expansion should be limited only by the availability of scientific manpower.

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INVENTION

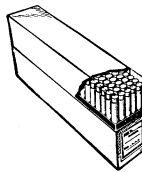
Automatic Door Mat For Automobiles Patented

► AN AUTOMATIC door mat for automobiles may replace, in part, the dead-a-dodo running boards. James L. Shuck, Corydon, Ind., received patent number 2,583,894 for his invention. His door mat, a little larger than a person's foot, slides out from under the body of the car when the door is opened.

Science News Letter, February 9, 1952

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