

PHILOSOPHY

Original Antigenic Sin

"ORIGINAL ANTIGENIC SIN" was seen as a cause of and clue to vaccination against influenza epidemics.

The type of virus causing the initial influenza plays a "dominant role" in later immunity to the disease, Dr. Thomas Francis Jr. told the American Philosophical Society meeting in Philadelphia.

The professor of epidemiology at the University of Michigan School of Public Health and Medical School said he had formulated the "doctrine of original antigenic sin" after measuring immune substances, or antibodies, in the blood of persons of different ages against different strains of Type A influenza virus.

He found that the most prominent antibody of an age group seemed to be related to the family of virus that had been prevalent at the time of childhood. Therefore, Dr. Francis concluded, the first infection during life conditioned later immunity.

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Industrial Socialism

The internal economics and politics of giants of American industry show features of "private socialism," or the "welfare state," Dr. Wilbert E. Moore, sociology professor at Princeton University, said. He reported that there is ample evidence of deliberate cultivation of "pure collectivism" within such corporations, even though the pressure for conforming conduct has been exaggerated by critics.

Dr. Moore said that "loyal identification with the company, patriotic acceptance of its 'party line,' the periodic attempts to minimize differences in rank and function through educational and recreational 'mixers,' and appeals to such metaphors as 'family' and 'team'" all show an earnest attempt by giant business corporations to secure unity in the face of competitors, the Government or the public at large.

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Past Is Basis for Future

All past experience is a basis for possible future action, Dr. Hadley Cantril of the Institute for International Social Research, Princeton, N. J., told the meeting. He said that in the course of living "each of us thus builds up his own reality world to attain as high a degree of correspondence as he can between what he perceives and what he experiences after he acts according to his perceptions."

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Explain Superconductors

The remarkable flow properties of liquid helium at temperatures near absolute zero, or 459.7 degrees below zero Fahrenheit, and of electrons in superconductors can be explained in terms of the quantum theory, Dr. John Bardeen, Nobelist in physics of the

University of Illinois, said. At absolute zero, superconductors and superfluid helium may be regarded as a single quantum state extending throughout the system, with long-range correlation of the average momentum of the particles.

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Higher Education in U.S.

A "CONSPIRACY of silence" covers the fact that college degrees granted in the United States are based on a "vast range" of standards, Dr. James Bryant Conant, president emeritus of Harvard University, told the meeting.

He said this difference in standards was a "consequence of the American doctrine of equality of status" and that he did not condemn or discredit it. However, Dr. Conant emphasized, the existence of a range of standards for college degrees makes suggestions to raise entrance requirements over the entire nation "ridiculous."

Although the United States has never had the equivalent of European state examinations for determining university study ability and probably never will have, Dr. Conant urged that professional schools of law and medicine and graduate schools of arts and science require their candidates to pass a set of examinations.

These examinations should demonstrate that applicants have a "good reading, writing, and speaking knowledge of at least one

ASTROPHYSICS

Tame H-Bomb Reaction

MAN-MADE satellites probing space within the solar system may glean information leading to new ideas for the control of fiery H-bomb reactions.

This could be one result of the inner solar system's having become a "vast laboratory," Dr. John A. Simpson of the University of Chicago reported. One of today's major problems in physics, he said, is discovering how electromagnetic fields originate in stars and space and speed up particles to such high energies that auroras, cosmic rays and other effects result.

In a report on solar system physics by the National Academy of Sciences' Space Science Board in Washington, D. C., Dr. Simpson said this problem is already under investigation with satellites and space probes. The report, "Physics of Fields and Energetic Particles in Space," is one of nine chapters in the Academy's survey of "Science in Space."

Energetic particles are believed to exist throughout the universe, so that understanding of their behavior within the solar system should also lead to knowledge of such questions as how galaxies developed. In the solar system, the sun, a star shining

modern foreign language; a knowledge of mathematics through the calculus; a knowledge of physics, chemistry and biology at the freshman college level; the ability to write a competent essay; a knowledge of American history and political institutions at a sophisticated level; and a knowledge of English and American literature at a corresponding level."

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ICHTHYOLOGY

Shark With 114 Embryos Is "Obstetrical" Marvel

"A MARVEL in fish obstetrics" has been brought to light in the world-wide census of shark attacks now being conducted under the auspices of the Smithsonian Institution.

A pregnant shark containing 114 embryos, each about 10 inches long, was found off the Hawaiian Islands. The total mass of embryos amounted to about five gallons, probably a record for the fish race, Dr. Leonard P. Schultz, Smithsonian curator of fishes, reported.

The shark belonged to a species of the bramble shark, with a body covered with short, sharp spines. About 10 feet long, it is not really dangerous and dwells on the bottom in deep water, seldom coming near enough to the surface to molest humans.

As far as is known, the species is not especially numerous despite the apparently enormous birth rate. Infant mortality among the defenseless offspring may be assumed to be equally enormous in the dark depths of the natural habitat.

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by its own light, is a fundamental energy source for generation of magnetic fields and acceleration of particles. The method by which the sun's energy is transferred is not yet understood.

However, its extreme brightness is more a consequence of its large mass than the fact the sun is burning up its substance, by turning hydrogen into helium. If a comparable mass of living, breathing humans composed the sun, they would generate 5,000 times as much heat as the sun, Dr. E. N. Parker, also of the University of Chicago, reported.

He described the "solar wind" as a stream of gas flowing continuously from the sun at 300 miles a second and carrying with it a solar magnetic field. Solar winds may account for auroras and magnetic storms in the earth's atmosphere, he said.

Dr. James A. Van Allen of the State University of Iowa reported on the present knowledge of trapped radiation in the earth's magnetic field. He believes this radiation is concentrated in two large belts around the earth. Mars and Venus, but not the moon, may also have such trapped radiation, he said.

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