

## NOBEL AWARDS FOR PHYSICS, CHEMISTRY AND MEDICINE, 1949

THE Swedish Academy of Sciences has awarded the Nobel Prize for Physics to Prof. Hideki Yukawa, the distinguished atomic scientist, now on the staff of Columbia University, N.Y.

As early as 1935, Prof. Yukawa introduced a new field of force, responsible for short-range interaction of the neutron with the proton, but different from the so-called neutrino-electron field. Its most important consequence was that the field should be accompanied by new types of quanta, obeying Bose statistics and each having the elementary charge  $+e$  or  $-e$  and proper mass  $m_{\mu}$  about 200 times that of the electron. The subsequent discovery of mesons in cosmic radiations with mass about 200 times the electron mass has confirmed that these mesons are identical with the quanta associated with the nuclear field. His other outstanding contributions include those on Dirac's generalised wave equations, slow neutrons, theory of  $\beta$ -disintegration,  $\gamma$ -ray encounter, scattering of mesons by nuclear particles, etc., etc. Dr. Yukawa is the first Japanese scientist to be awarded this exceptional and world renowned distinction.

The Nobel Prize for Chemistry of this year has been awarded to Dr. Williams Francis Giaque, Professor of Chemistry, Berkeley, University of California. For his invention and first application of adiabatic demagnetisation method of producing low temperatures below  $1^{\circ}$  absolute, he was awarded the Chandler Medal of the Columbia University in 1936; and for his

discovery with Dr. H. L. Johnson of Oxygen Isotopes 17 and 18 by means of absorption of sunlight in the earth's atmosphere, he was awarded the Elliott Cresson Medal of the Franklin Institute in 1937. He has been a member of the American Philosophical Society since 1947.

His publications include many papers on the third law of thermodynamics; application of spectroscopy and quantum statistics to calculation of chemical equilibria; and low temperature calorimetric investigations of condensed gases.

The Nobel Prize for Physiology and Medicine has been jointly awarded to Dr. Walter Rudolf Hess, Swiss Physiologist, Director of Physiological Institute, Zurich University, and to Dr. Antonio Caetano de Abreu Freire Egas Moniz, skilled neurologist of Lisbon University.

A specialist in the circulatory and nervous systems, Prof. Hess has studied the reactions of animals to electric shocks, and has been able to determine how parts of the brain control organs of the body.

By applying electrodes to different parts of a cat's brain and by stimulating, he was able to reproduce specific normal responses to external stimuli in the animal.

Dr. Moniz, famous neurologist, was the first to work out the way to treat psychosis by prefrontal lobotomy, by which important nerve connections in the thalamus and prefrontal lobe can be severed so as to provide relief for schizophrenics and maniac depressives. Dr. Moniz is the first Portuguese to be awarded the Nobel Prize.

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## INDIAN SCIENCE CONGRESS, POONA

THE 37th Session of the Indian Science Congress Association is due to be held at Poona from January 3 to 8, 1950 under the presidentship of Professor P. C. Mahalanobis, F.R.S.

The executive committee of the Association has planned a detailed programme to cover all branches of Science.

Distinguished scholars and administrators from many parts of India are expected to attend. A number of distinguished foreign scientists from the U.K., the U.S.A., France and the U.S.S.R. have also been

invited. Information has been received that Professor Desmond Bernal of Birbeck College, University of London, Sir Robert Robinson, President of the Royal Society, accompanied by Lady Robinson, the Atomic Physicists Professor Joliot-Curie and Madame Joliot-Curie, Prof. Herman Mark, who is an authority on Polymer Chemistry, and Dr. E. U. Condon, Director of the National Bureau of Standards, Washington, will attend the session. It is also hoped that Prof. W. A. Engelhardt, Pavlov Institute of Physiology, Academy of Sciences, U.S.S.R., will come.

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