

## Professor Bunsaku Arakatsu

Professor Bunsaku Arakatsu, the sixtieth anniversary of whose birth we celebrate, was born on March 25th, 1890, in Hyogo Prefecture, Japan. He studied physics at the College of Science of the Kyoto Imperial University from 1915 to 1918. On graduation he was immediately appointed a Lecturer of Physics, and three years later, he was appointed an Assistant Professor of Physics.

In 1926 he was sent to Europe and the United States of America to study physics. He first visited Professor P. Scherrer's laboratory at the Eidgenössische Technische Hochschule, Zürich, Switzerland, where he worked on electron distribution in the lithium atom. It was one of the most important problems in those days, since it had an intimate bearing on wave mechanics which had been initiated by Professor Schrödinger some time ago. He then visited Cambridge, England, and stayed for some months in the late Lord Rutherford's laboratory at the Cavendish Laboratory. There he was greatly impressed by the atmosphere of the laboratory and its attitude towards scientific researches.

When he returned home in 1928, he took the degree of *Rigaku-hakushi* (D. Sc.) at the Kyoto Imperial University and was appointed a Professor of Physics in the Taihoku Imperial University, Formosa, which had been newly established there. He set up a physical laboratory and worked on various important problems in atomic physics as well as in nuclear physics.

In 1936 he was appointed a Professor of Physics in his Alma Mater, the Kyoto Imperial University, in succession to the late Professor M. Ishino who had then retired from his post. In 1938 he was elected a member of the Institute of Chemical Research attached to the Kyoto Imperial University, and established a physical laboratory there.

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Professor Arakatsu was of good service to his University as a member of the University Senate and Dean of the Faculty of Science. Also, he has made great contributions to the academic world as the editor of the Japanese Journal of Physics and as a member of the Japan Society for the Promotion of Scientific Research. In 1948 he was elected a member of the Research Conference of National Arts and Sciences of the New System.

His keen interest being invariably fixed upon the investigation of atomic and nuclear physics, Professor Arakatsu has been, and still is, with ever increasing ardour, engaged in both theoretical and experimental researches in those fields. As will be seen from a list of his published papers, his earlier work was concerned with positive ray analysis, which was carried out with the late Professor Ishino and by which the existence of chlorine isotope was clearly indicated. During the next ten years he published some papers on atomic spectra as well as on general relativity.

In 1932 he built up a high voltage generator of the Cockcroft-Walton type in the Taihoku Imperial University and investigated  $\text{Li}+p$ ,  $\text{B}+p$  and  $\text{D}+\text{D}$  reactions under various unfavourable conditions in Formosa. The heavy hydrogen used in his experiments was prepared by electrolysis in his laboratory itself.

A 600 Kv generator was established in 1937 in the Institute of Physics of the Kyoto Imperial University through the financial support of his intimate friend, the late H. Kuroda, a Managing Director of the Ensuiko Sugar Company. With this apparatus he and his pupils observed the photo-fission of uranium and thorium, the photo-disintegration of various elements and the Compton scattering as well as pair creation phenomena by using 17 and 6.1 Mev  $\gamma$ -rays. Recently he certified  $\alpha$ -ray-emission in the case of beryllium by the bombardment of 17 and 6.1 Mev  $\gamma$ -rays.

Professor Arakatsu has long been interested in the application of

nuclear physics to other branches of science for the sake of human welfare, and several important topics of research using radio-isotopes have been, and are being, pursued with his advice. He has also been interested in producing high speed rotation by magnetic suspension, the rotating speed recently obtained being  $3 \times 10^6$  revolutions per minute.

The key-note of his character is his extraordinary love of Science. His unusual energy both in pursuing his own researches and in keeping himself informed of every item concerning the latest developments in physical science, seems to have its source in this love, and does not fail to impart inspiration to those who come within the sphere of his personal influence. Being a good teacher and excellent director, more than thirty pupils are now working in various departments of both pure and applied physics under his kind direction. The works carried out by his pupils in his laboratory are also given in the appended list of papers by his pupils.

Having just reached the age of sixty, Professor Arakatsu has retired from his post, but his ideas and the activity of his laboratory will be carried forwards by his successors.

In celebration of the sixtieth anniversary of his birth, his friends and pupils present this commemoration number. They take this opportunity of expressing their sincere and heartfelt appreciation for his warm friendship and kind guidance for many years, and of acknowledging his valuable contributions to scientific progress. They also wish him good health and happiness for the future.

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