

example, Ikeda, Osaka, and Matsubara, becoming themselves university professors and leaders of chemical research. He retired from his University professorship in 1919, having served the cause of science and education for nearly forty years, not only as inspiring teacher and investigator, but also as University councillor, dean of the Faculty of Science, and acting president of the University (elected honorary professor soon after his retirement).

It is not possible to exaggerate the importance of the work which Sakurai did in promoting the establishment and development of great organizations for scientific research in Japan. Indeed, it is only fair to say that the eminent position which that country occupies to-day in the world of pure and applied science is largely due to his initiative, energy, and foresight. Having been for more than thirty years before the outbreak of the Great War one of the most active members of the Tokyo Chemical Society, of which he was several times elected president, the events of 1914-18 convinced him (and others in Japan) that a great development of scientific research was necessary for the well-being, prosperity and safety of that country. The first result of these efforts was the establishment in 1917 of the important "Institute of Physical and Chemical Research". Not content with this great success, Sakurai, with his colleagues and friends, worked for many years for the establishment of a national organization of much wider scope, which would have for its main object the promotion of research in *all* branches of science. The final result was that, backed by the influence and a splendid gift of H.M. the Emperor, and provided with an ample subsidy voted by the two Houses of the Imperial Diet, the Japanese Society for the Promotion of Scientific Research, with H.I.H. Prince Chichibu as patron, Viscount Saito (then premier) as president, and Prof. Sakurai as chairman of the Board of Directors, came into existence in 1933.

The labours involved in the accomplishment of these great designs by no means exhaust all that Sakurai did for his country and for science. He was elected president of the National Research Council of Japan soon after the international conferences held in 1918 in London and Paris, and retained this position until his death. He attended, as the leader of the Japanese delegation, the second Pan-Pacific Science Congress, held in Australia in 1923, and at the third Congress, in Tokyo in 1926, prepared, as chairman of the International Committee, a draft constitution and by-laws for the permanent organization of the Congress. These were adopted with only slight verbal alterations, and the Pan-Pacific Science Association came into existence.

Prof. Sakurai attended, as the scientific representative of his country, very many international meetings and congresses. His dignified bearing, clear-sighted wisdom, and charming personality became in this way widely known to men of science of many nations. He was twice elected a vice-president of the International Chemical Union, namely, in 1923 and 1928, and at the third general assembly of the International Council of Scientific Unions (London,

1937), was elected a vice-president, filling the vacancy created by the death of Marconi.

Many honours came to Sakurai from foreign countries. Thus he received the honorary degree of LL.D. from the University of Glasgow in 1901, and was elected an honorary member of the Chemical Society of France, the Society of Chemical Industry, the Royal Institution of Great Britain, the American Chemical Society, the Academy of Sciences of the U.S.S.R., and the Chemical Society of Poland. In 1931 he was elected an honorary fellow of the Chemical Society, and in 1937 an honorary fellow of University College, London. This very high distinction from his old *alma mater* gave him particular pleasure.

It was natural and just that the great and meritorious services which he rendered to his country were signalized by distinguished honours: Order of the First Class of the Sacred Treasure (1916); appointed by the throne a member of the House of Peers (1920) and Privy Councillor (1926); Grand Cordon of the Rising Sun (1929). Shortly before his death he received the Grand Cordon of the Rising Sun and Paulownia, and was created a baron*.

Owing to the old connexion of University College, London, with Prof. Sakurai and with the development of the Empire of Japan as one of the scientific great powers of the world, I had the privilege of welcoming to the Chemical Department of University College a number of Japanese men of science, including many Ramsay Scholars, amongst whom may be mentioned K. Matsuno, K. Suzuki, R. Azuma, H. Tsukamoto, Y. Hori, N. Kameyama, K. Kodama, R. Sato, S. Takagi, Y. Yamaguchi, M. Emi, R. Shinoda, Y. Nagai, T. Somiya, I. Sawai, R. Tsuchida, R. Matsuda, N. Ando, and H. Oosaka. The pleasant and friendly association with these young men, many if not all of whom now occupy important positions in their own country, was a very happy experience in my life; and to have been able to contribute to the preservation of a long and faithful friendship an especial joy.

The name of Joji Sakurai will live in the history of science and civilization. As a great patriot, his name will shine in the history of his country. Joji Sakurai, the man, lives as a fragrant memory in the minds of his host of friends. F. G. DONNAN.

I am deeply indebted to Prof. Koichi Matsubara for much of the biographical information embodied in this notice.

Prof. M. V. Shuleikin

SOVIET science has suffered a great loss in the death on July 17 of Prof. M. V. Shuleikin, member of the Academy of Sciences of the U.S.S.R. and chief engineer of the Department of Communications of the Red Army.

Prof. Shuleikin spent thirty years of strenuous work in the preparation of numerous scientific workers in the field of radio-communications and in the development of Soviet radio-technics. He commenced his scientific and teaching career in 1908 after graduating from the St. Petersburg Polytechnical Institute. Soon after the Revolution he

removed to Moscow, where he worked in the Red Army on the development of military communications. As a result of this work he was successful in solving many complex problems; he produced numerous valuable works dealing with the strengthening of the country's defence capacity. At the same time, Prof. Shuleikin was engaged in extensive educational work. He gave all the principal courses in radio-technics at the former Moscow Higher Technical School, at the Military Electro-Technical Academy, at the Institute of National Economy and at the Moscow Electro-Technical Institute of Communications.

The last six years of Prof. Shuleikin's activities were closely connected with the Academy of Sciences of the U.S.S.R. In 1933 he organized the work at the Academy relating to electro-communications. Under his guidance this work helped to solve a number of problems connected with the diffusion of radio waves, the maintenance of regular communications on the main radio services, and also the adoption of measures to combat magnetic storms.

Prof. Shuleikin was elected a member of the Academy of Sciences of the U.S.S.R. at the beginning of this year. He threw himself with still greater energy into the work of solving the complex problems relating to modern radio-technics and the working out of material for a general plan of development of communications in the Third Five-Year Plan. He also took part in the building of the Palace of Soviets in Moscow, in the capacity of chief consultant on questions relating to communications.

Mr. F. W. Jones, O.B.E.

MR. F. W. JONES, well known for his work in small-arm ballistics, died at a London nursing home on June 25. He was a native of Nottingham but received his training (1887-89) at the Royal College of Science, South Kensington. On leaving college, he joined Colonel Schultze's factory in the New Forest, where the first smokeless shotgun powder, 'Schultze granulated gunpowder', was in its initial stage of development. Within two years, Jones became the manager of the factory and he was thus one of the earliest pioneers of the smokeless powder industry.

Shortly afterwards, Jones joined the Smokeless Powder Company, Ltd., at the works at Barwick, Hertfordshire, and in the following year became works manager. At this factory colloidal nitro-cellulose powders were first manufactured in Great Britain, and a wide series of 'rifletes' was prepared for military and sporting use. In 1898, Jones was the principal witness for the defence in a long and important action brought by Heidemann against the Company for infringement. Although the Company won the action, it was crippled financially and soon passed into liquidation.

Jones then became a consultant on explosives. His early clients included Eley Bros., New Explosives Co., Ltd., Cogswell and Harrison, and the *Field* newspaper, and he was also 'proof master' to the London

Proof House. At this time he advanced considerably the science of ballistics, both in rifles and shotguns, and published many articles on this subject in *Arms and Explosives*. A large portion of his work was incorporated in the "Service Textbook of 1929" and justifies his title as the greatest small arms ballisticians in Great Britain.

Jones was not only pre-eminent in the theory of rifle shooting, but also at the target, using the match rifle. At his first visit to Bisley some twenty-eight years ago, he was the winner of the aggregates, only to lose the prize because the barrel of his Ross rifle was slightly overweight. His successes at Bisley have continued regularly ever since, and last year, at seventy-one years of age, he won the first three of the match rifle competitions. He was generally one of the first selections for the English team. He worked indefatigably after the Great War for the production of a British military cartridge firing nitro-cellulose powder and a streamline bullet, and he lived just long enough to see this cartridge, largely the result of his own personal labours, adopted by the British Government. His successes at Bisley were most popular, since his advice and great experience were always at the service of those who desired them.

During the Great War, Jones rendered assistance to the Ministry of Munitions in the large field of experimental and research work found necessary in meeting ever-changing war conditions. Development of caps and tracer and armour-piercing rifle bullets were some of the most important items.

After the War, on the concentration in Imperial Chemical Industries of the manufacture of powder and ammunition, Jones was appointed technical adviser, and his services were invaluable in assisting the improvements and developments in powder and cartridges.

We regret to announce the following deaths:

Dr. Vladimir Brandstätter, who has collaborated with Prof. Absolon, curator of the Moravian Museum, in extensive local archaeological excavations, on July 18, aged forty years.

Dr. Alfred Harker, F.R.S., emeritus reader in petrology in the University of Cambridge, on July 28, aged eighty years.

Prof. W. P. Lombard, emeritus professor of physiology in the University of Michigan, on July 13, aged eighty-four years.

Prof. J. H. McFadden, assistant professor of psychology in the University of Pittsburgh, on May 28, aged forty years.

Dr. W. J. Mayo, co-founder with his brother, the late Dr. C. H. Mayo (see *NATURE* of July 15, p. 103), of the Mayo Clinic, Rochester, Minnesota, on July 28, aged seventy-eight years.

Prof. R. W. Reid, emeritus regius professor of anatomy in the University of Aberdeen, on July 28.

Mr. Scoresby Routledge, known for his investigations among the Akikuyu of East Africa and of the archaeology and ethnology of Easter Island, on July 31, in his eightieth year.