

selected at random from the cranial stumps of the anterior and posterior rami of the eighth nerve of the frog, Ross³ described gravity responses from the anterior ramus which were presumed to be derived from the utricle and generally reacted to one only of two opposite directions of tilting in the 'maximally stimulating' plane. The reaction obtained from the posterior ramus also included typical gravity responses, the accurate localization of which was, however, impossible.

Single-unit discharges from the vestibular nucleus of the brain-stem of the cat were recorded by Adrian¹², who was able to distinguish between gravity-controlled and rotation-controlled responses. The gravity receptors were increasingly stimulated during displacement from the normal. In the level position a low-frequency resting discharge was sometimes found which could be abolished by tilting in one direction and increased by tilting in the opposite direction. Response to lateral tilt and to fore-and-aft tilting was found to be separately localized in the vestibular nucleus, but Adrian points out in the discussion of his results that this does not necessarily imply their localization in two different otolith organs.

A discussion of these findings in comparison with the evidence reported in the present communication will be appended to the forthcoming full account of the work.

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³ Ross, D. A., *J. Physiol.*, **84**, 14P (1935); **86**, 117 (1936).
⁴ Lowenstein, O., and Sand, A., *J. Exp. Biol.*, **13**, 416 (1936).
⁵ Lowenstein, O., *J. Exp. Biol.*, **14**, 473 (1937).
⁶ Lowenstein, O., and Sand, A., *J. Physiol.*, **99**, 89 (1940).
⁷ Lorente de Nó, R., *Ergebn. Physiol.*, **32**, 73 (1931).
⁸ Lowenstein, O., and Sand, A., *Proc. Roy. Soc., B.*, **129**, 256 (1940).
⁹ Steinhausen, W., *Pflüg. Arch. ges. Physiol.*, **228**, 323 (1931); **232**, 500 (1933); *Z. Laryngol. Rhinol.*, **26**, 29 (1935).
¹⁰ Lowenstein, O., *Z. vergl. Physiol.*, **17**, 806 (1932).
¹¹ Magnus, R., "Körperstellung", Berlin (1924).
¹² Adrian, E. D., *J. Physiol.*, **101**, 389 (1942).

POWER AND PERSONAL LEADERSHIP

THE Thomas W. Salmon Memorial Lectures, given in previous years by psychiatrists, were delivered at the New York Academy of Medicine last November by Prof. H. D. Lasswell, a social scientist known mainly for his studies of propaganda and his application of psychoanalytic concepts to problems of political science. His topic was "The Dynamics of Power and Personality". "The long-run aim of societies aspiring towards human freedom," said Prof. Lasswell, "is to get rid of power and to bring into existence a free-man's commonwealth in which coercion is neither threatened, applied nor desired. This is the thread of anarchist idealism that appears in all uncompromising applications of the key conception of human dignity." But the more accessible goal, to which Prof. Lasswell gave his main attention, is to secure a democracy in which power is shared as widely as possible and is subordinated to respect for the dignity of the human personality. He therefore discussed the types of people who in our society seek for power and provide leadership. He saw them as drawn very largely from the middle class, as a result not of economic accident but of the psychological characteristics of the class, in particular its tradition of sacrificing immediate gratifications to the

acquisition of skills which will ultimately bring a larger reward. "We know that middle-class homes are hothouses of ambition, holding their children to high standards of achievement, and providing the tension between indulgence and deprivation so congenial to the accentuation of power [as a goal]." Within the middle class, professional families contribute a disproportionately large number of leaders, partly because their tradition of public service deters them from seeking purely private advantage in business life. Prof. Lasswell seemed to imply that political leaders' ideals of public service are largely rationalizations of narrower personal needs for power.

It was the less admirable types of power-holder to whom Prof. Lasswell gave most attention. He distinguished the compulsive (or obsessional) type, often bureaucratic in inclination; the dramatizing type, highly concerned with the emotional response he can elicit from others, and characteristically producing the agitator; and the detached type, whose own emotional response is largely screened from his consciousness, and who may supply "useful judges, arbitrators, conciliators, diplomatic negotiators and scientists", but in whom "the absence of lively emotional states can lead to calm, pitiless, destructive conduct". Apropos the obsessional bureaucrat, Prof. Lasswell developed the interesting suggestion that he harbours strong unconscious hostility to the authority of the system he is serving, and by excessive scruples and doubts in interpreting detailed rules he forces his superiors to take responsibility which they had intended to delegate, and so undermines the authority that he means most scrupulously to obey.

Prof. Lasswell pointed out that to understand the destructive form of power seen in war we must attend not only to war itself but also to manifestations of power found everywhere in our social structure; and he suggested that "concentrations of destructive impulse" occur as a result of competitive practices that we take for granted in commerce, industry and public life. "It is impossible to abolish acute destructiveness without altering the equilibrium of the entire social process, since such acute disturbances mainly give vent to stress that has accumulated through the social system as a whole." Hence he advocated a "social psychiatry", one function of which would be to study the tensions created by "the struggle to express native impulses in ways forbidden by authority", the sexual impulse providing one example. For the rest, his prescription against war was "Physical Defence, Psychological Offence", and he urged the opponents of Marxism to emulate the Marxists' effectiveness in political education and propaganda, especially in giving the public as clear a conception as possible of the goal of national policies.

THE FOURTH SOUTH AMERICAN CHEMICAL CONGRESS

THE Fourth South American Chemical Congress was held in Santiago, Chile, during March 1-7, with more than four hundred delegates attending from all the South American republics. Invitations to attend were also extended to a number of countries outside South America: Great Britain was represented by Prof. J. W. Cook, Prof. E. C. Dodds and Dr. F. N. Woodward, the United States of America by Dr. Alfred Gauger, Sweden by Prof. The Svedberg and Republican Spain by Dr. Francisco Giral.

At the inaugural session in the Law School of the University of Chile, where most of the sessions were held, the delegates and representatives were welcomed by Don Enrique Molina, the Minister for Education, and Don Juvenal Hernández, rector of the University; Dr. Felipe Justo, president of the Chemical Society of Argentina, replied on behalf of the delegates.

In his speech formally opening the Congress, Dr. Edouardo Cruz-Coke, professor of biochemistry in the University of Chile and president of the executive committee of the Congress, stated that this Congress was the largest yet held in South America and was planned to cover a wider field of chemistry than was possible at the Third Congress held at Rio de Janeiro in 1940. He indicated the executive committee's particular pleasure at the presence of so many representatives of non-South American countries, and later accepted on behalf of the committee a letter of greetings from the president of the Chemical Society brought from London by Prof. Cook and a copy of the fellows' register presented by Prof. Dodds on behalf of the Royal Society.

The Congress, which was particularly well organized, due largely to the efforts of Prof. Cruz-Coke, the two secretaries, Prof. Jorge Mardones and Prof. Hermann Schmidt-Hebbel, and their associates on the executive committee, was divided into thirteen sections. These covered the fields of physical and electro-chemistry, inorganic and geochemistry, organic chemistry, biochemistry, chemistry in relation to medicine and toxicology, nutritional chemistry, chemistry in relation to agriculture and applied botany, industrial inorganic and organic chemistry, metallurgy, fuels, chemical engineering and chemical education. During the course of the week, some four hundred papers were read, abstracts of which were made available to delegates in the form of a well-prepared 131-page printed booklet before the opening of the Congress. In addition to these, there were also eight 'Conferencia', two of which were given by British representatives. On March 3 Prof. Cook read a paper on "The Chemical and Biochemical Oxidation of the Aromatic Polynuclear Hydrocarbons", and on the following day Prof. Dodds lectured on "The Proteins as Biochemically Active Substances".

During the course of the week, the British representatives, who were very hospitably received, were given an opportunity of visiting many of the Chilean chemical and medical schools, museums and industrial organisations. The tour around the impressively equipped and staffed Hospital del Salvador was made in the company of Profs. Alessandri and De Amesti, who have been largely responsible for making this one of the most modern and efficient hospitals in South America, comparing favourably with the best European and North American hospitals.

The work of Profs. Edouardo Cruz-Coke and Hector Croxatto and their colleagues at the Medical Schools of the University of Chile and the Catholic University respectively on a wide variety of subjects, including the cardiac stimulants, the biochemistry of the hormones and vitamins, biological oxidations, organic iodo compounds, antibiotics, etc., was found to be both academic and developmental in outlook and conception. The science schools of the Chilean universities, unlike those in Britain and the United States, rely on outside sources for much of their income, and the teachers and students of these two schools consequently associate themselves closely with certain industrial organisations, and particularly with the Instituto Médico Técnico "Sanitas" S.A., a

company producing a wide variety of organic chemicals including penicillin, organic arsenicals, D.D.T., and the more common pharmaceuticals. The Government-sponsored Instituto Bacteriologico operates in a similar field, and like Sanitas has modern and well-equipped factories and laboratories, and a well-informed and research-minded staff.

For the final sessions, the delegates were taken by road and special train to Valparaiso, where they were first entertained by the directors of the Nitrate Corporation at an impressive alfresco luncheon in the beautiful Parque de Salitre under conditions reminiscent, as one distinguished delegate observed, of Europe before the First World War. In the afternoon, the delegates were shown round the Santa Maria Technical University, where the formal closing session was held later.

The week's activities were rounded off at a colourful reception at the Vergara Palace, in the hills behind Vina del Mar, the beautiful and world-famous South Pacific health resort.

SCIENCE MASTERS' ASSOCIATION (SCOTTISH BRANCH)

THE first annual general meeting of the Scottish Branch of the Science Masters' Association took the form of a three-day meeting in the University of Glasgow during April 1-3, under the presidency of Sir Hector Hetherington, principal of the University. The meeting was attended by about 250 members of the Branch, and there were many visitors. The close and active co-operation of the staffs of the various departments of the University resulted in many exhibitions and demonstrations being available.

During the first day the Department of Chemistry staged exhibitions of the first-year practical course, new apparatus for esterification and distillation, fluorescence spectroscopy and photochemistry. Specimens of rare chemicals were also on view. The Department of Natural Philosophy had much to show in connexion with research in nuclear physics. Cloud-chamber experiments were demonstrated, a large magnet was seen in course of erection for cosmic ray studies, and various artificial radioactive isotopes were produced by neutron bombardment. Great interest was shown in the new 30-million volt synchrotron, under construction by Messrs. Metropolitan-Vickers, and the million-volt proton accelerator attracted many visitors. Prof. W. M. Smart, of the Department of Astronomy, arranged for the Observatory to be open for inspection during the afternoon, while in the Zoology Department the magnificent museum was open to members, and new biology films were shown. The Botany Department contributed a series of demonstrations in plant physiology, antibiotics (penicillin and streptomycin) and products manufactured from marine algae. New methods of preserving biological specimens in transparent plastics were also shown.

The afternoon of the second day was set apart for visits to well-known Scottish firms specializing in the manufacture of special steels, coal-cutting machinery, nautical instruments, optical instruments, sulphuric acid and in shipbuilding.

One feature of the meeting was the exhibition of apparatus designed and constructed by members, and there was a special exhibit showing surplus apparatus available at very low prices to schools