

aerodrome, and shelters are being constructed. The Soviet Union Year Book Press Service, to which we are indebted for information, lays stress on the importance of the researches in establishing regular communication by air between Europe and America across the Arctic Ocean, a modern revival in new guise of the earliest dream of a transpolar route.

Prof. Schmidt has chosen as the resident leader of the station I. D. Papanin, who has had long experience in Franz Josef Land and at Cape Chelyuskin. With him are three other experienced

men, E. T. Krenkel, P. P. Shirshov and E. K. Federov. The winter dwelling is to be a tent of duralumin and rubber lined with eiderdown, reindeer hide and canvas. It is 3.7 m. long, 2.7 m. wide and 2 m. high, and has windows of unbreakable glass. The whole tent weighs only 350 lb. This will replace the silk hut used on the expedition's arrival on May 21. Paraffin is to be used for cooking and for generating electric light. The original site of the station was 20 kilometres from the North Pole on the Franz Josef Land side.
R. N. R. B.

Obituary Notices

Prof. Alfred Adler

ALFRED ADLER, who died suddenly on May 28, was the son of a Viennese merchant. He was born in 1870 and educated in Vienna. He decided to study medicine and qualified at the age of twenty-five years. Soon after qualification he fell under the influence of Freud, and formed one of that close little group which developed the new science of psychoanalysis. He stood some of the almost universal abuse which was flung against the Psychoanalytical Society when the new ideas became known.

In spite of this, Adler's ideas never accorded closely with those of Freud and almost from the beginning he showed that he intended to take a different road from his master. Whereas Freud developed elaborate psychic entities based upon the unconscious—the id, the superego and so on—Adler tended to simplify instead of elaborate.

So early as 1907 Adler described the influence of what he called 'organ inferiority'. He described cases which showed that the inferiority of an organ or group of organs might occur as a tendency in one individual or even in a family. He noticed that one person might have a series of diseases all attacking, for example, the urinary system. In the case of a family, one member after another would suffer from diseases all centred on one organ.

From this idea of the inferiority of an organ or group of organs, Adler developed the theory of 'overcompensation'. He felt that not only did the body try to compensate itself for the weakness but even succeeded in fortifying itself to an unnecessary degree, as, for example, when the scar following a wound is thicker and stronger than the original skin. He believed that this 'overcompensation' was not limited to the somatic or body-structure but also invaded the psychic superstructure. The result of this was that the organ which started as inferior was finally so overcompensated that it became superior to the other organs. He gave Beethoven as an example of this process, his early deafness only increasing the capacity to compose more and more magnificent music.

Adler found that he could explain every phenomena by his principles of inferiority and overcompensation. He put forward his views openly, and as they did not accord with those of infantile sexuality which Freud was developing at this time, there was a feeling of tension in the Vienna group of the newly formed Psychoanalytical Society. Adler was therefore asked to read a paper in which he could put his ideas before the Society. The result was a tremendous storm and, in spite of the fact that he was president of the Vienna Group, he was asked to withdraw. He did so and took nine other members with him. He then founded the Society for Individual Psychology (first called the Society for Free Analysis).

Away from the trammels of the Freudians, Adler developed better and applied his views to all types of neurosis. He thought that all neurotic illness was caused by a feeling of inferiority and a wish to dominate the environment through illness. This feeling of inferiority was engendered in childhood by the infant's weakness and its relation to its parents and brothers and sisters. This view is, of course, in direct contradiction to that of Freud, who believes that neurosis is the result of maldevelopment of the sexual instinct, which produces fixations at various psychic levels.

Adler felt that since man has the greatest strength, women must have a desire to be masculine and that neurotic illness in them is to be attributed to their wish to possess the strength of a man. He called this the 'masculine protest'. He believed that this was the cause of prostitution, homosexuality and even crime, as well as neurosis. Much of the neurotic illness in men, he thought, was due to the feeling of inadequate masculinity. All symptoms were explicable as symbolic attempts to express a purpose—in fact all neurosis was the expression of a purpose; fear of falling, for example, was explained as a fear of 'falling' sexually. Vomiting was a desire to reject some unpleasant thought or fact, and so on. He called this symbolization 'organ ja:gon'.

Adler's psychology is explanatory and easy to understand, but it lacks a coherent systematization

such as one finds in the psychoanalytical theories. This looseness allows anyone to interpret the theories as he fancies, and tends to reduce them to art rather than science. Adler himself felt this, and a year ago told the writer that he thought that many who preached his views did not properly understand them. He was reluctant to build a rigid system, however, since he felt that the human mind was not easily crushed into any inflexible mould.

Adler worked in Vienna until a few years ago, when he left and accepted a professorship in America. He has visited England nearly every year since in order to lecture. He was a lecturer of singular patience, and would answer questions long after his lectures were supposed to have finished. He was a man of great friendliness—those who knew him might differ from him in theory but they could not quarrel with him in person for he never showed the aggression of which he wrote so much.

Major J. H. Hardcastle

MAJOR JOHN HERSCHEL HARDCASTLE, who died at Sidcup, Kent, on April 21, was born on May 9, 1870, at Netherhall, Bury St. Edmunds, a son of the late Henry Hardcastle, barrister. His maternal grandfather was Sir John Herschel, the astronomer, and his great-grandfather was the famous discoverer of the planet Uranus.

Hardcastle was educated at Haileybury and the Royal Military Academy, Woolwich, passing out ninth from the latter; thence he received his commission in the Royal Regiment of Artillery in 1889. He was promoted to captain in 1899. In 1902 he joined the advanced class for artillery officers at the Ordnance College, Woolwich, and there came under the influence of Sir George Greenhill. After obtaining the 'p.a.c.' certificate he was employed by the Ordnance Board at Woolwich in 1904–6 on important research work on the resistance of the air to artillery projectiles. This work culminated in the production of the official Ballistic Tables, in the compilation of which he assisted. These tables are still used.

Retired from the Army in 1906, Hardcastle thereafter devoted himself to research work in internal ballistics and small arms, working successively with the firms of Kynoch and Nobel's Explosives. During this period he introduced the pointed bullet. At the beginning of the Great War he returned to Woolwich, and was given charge of the small arms range in the Arsenal. Here he continued his researches into the ballistics of small arms, and towards the end of the War, produced formulæ which facilitated the rapid calculation of small arms ballistics. He remained at Woolwich until 1924 and assisted in the compilation of the "Text Book of Small Arms". After his retirement from the Service he acted as ballistic consultant to Imperial Chemical Industries, Ltd., and B.S.A. Guns, Ltd.

Most of Hardcastle's publications are in the form of papers and articles in the *Royal Artillery Journal*. He put his scientific knowledge of small arms to practical use, as he was a very fine rifle shot and was in the English Elcho team. F. R. W. HUNT.

Prof. W. Natanson

POLISH science has sustained a heavy loss by the death, on February 26, of Prof. Władysław Natanson, who had occupied the chair of physics at the Jagellonian University of Cracow since 1904, after having been assistant professor there since 1894.

Natanson was born in Warsaw on June 18, 1864, his uncle, Jacob Natanson, being a Polish chemist of some distinction. He graduated as doctor of philosophy at Dorpat in 1888, having previously studied at St. Petersburg, Graz and Cambridge. He then went to Cracow, where his post-graduate researches in physics gained him the doctorate of that university too (1891). Three years later he became *Docent* and continued his work at Cracow until his death.

Practically all his life, Natanson was working in adverse circumstances. It was never easy for him to secure adequate equipment for his laboratory from the Austrian authorities in pre-War days, nor had the Polish Government funds to spare for several years after the country had regained its independence. In spite of this, Natanson succeeded in making valuable contributions to his science, particularly by his publications on the kinetic theory of gases, which he developed to explain phenomena connected with diffusion, expansion by heat, vortex rings, molecular collisions, etc.

Theoretical and mathematical papers from his pen and dealing with isothermal formulæ, Clerk Maxwell's law, the kinetic theory and dissociation phenomena have appeared from time to time in British periodicals, but most of his work was published in Continental journals. In 1903 he observed the accidental double refraction of liquids, which he endeavoured to explain by a molecular theory of refraction, reflection and extinction. He is perhaps best known in Great Britain for his investigations on the dissociation of nitrogen peroxide on heating, and its re-association on cooling.

For his own countrymen Natanson contributed articles on scientific phenomena (several, for example, dealt with the blue colour of the sky) to the semi-popular reviews and he also wrote some standard text-books of physics. His "Elements of Physics", first published at Lwów in 1894, has gone through five editions. Prof. Natanson also had a wide knowledge of the history of science, and his biographical sketches of Bacon, Newton, Lord Kelvin and others did much to stimulate an interest in British culture and science among the Polish people. He was one of the original members of the Cracow Academy of Sciences, and was for seven years the editor of its publications. Later his work gained him recognition abroad, and among other distinctions he held the office of vice-president of the International Union of Physics. G. D.

WE regret to announce the following deaths:

M. Louis Ravaz, *correspondant* for the Section of Rural Economy of the Paris Academy of Sciences.

Prof. J. M. Reade, professor of botany in the University of Georgia, on May 8, aged sixty-one years.