

with no winding on it, revolving freely in the field of a small model multiphase magnet. Loose powders of any of these materials rotated in such multiphase fields in a direction opposite to that in which solid masses of the same materials rotate, a reversal of direction due to a rolling action of the particles. No eddy currents are induced in any of the conducting materials when powdered. Dr. W. H. Eccles and Dr. Winifred Leyshon showed a neon tube and tuning fork combination for producing electrical oscillations of harmonic frequencies suitable for calibrating wave-meters. The neon tube is connected in parallel with a condenser and in series with a resistance and a battery; it then gives an intermittent luminous discharge and the current can be used to keep a steel tuning-fork in continuous vibration. The current in such a circuit has many high harmonics, and therefore induces an oscillatory current of any chosen harmonic frequency in a neighboring circuit tuned to that frequency.

Sir Robert Hadfield, Bart., exhibited a number of specimens of alloy steels for special purposes. These included a rotor in "ERA/ATV" steel used in the construction of exhaust gas turbines. These rotors are driven by the exhaust gases from internal combustion engines; they work continuously at a temperature of from about 800° to 950° C., and run up to the very high testing speed of 53,000 revolutions and working speeds of about 30,000 revolutions per minute. A tuning-fork of high nickel chromium alloy steel was shown which has constant frequency under varying temperature. For this purpose the metal must have a very low temperature coefficient of the modulus of elasticity.

THE RUSSIAN MINING CONGRESS

A REPORT of the proceedings of the first Federal Mining Technical Congress of the Soviet Union, held in Moscow, from April 13 to 27, and attended by 503 delegates, is made public by the Russian Information Bureau. The delegates included administrative and technical representatives of the various Soviet mining trusts, mineralogists and geologists of the Russian Academy of Sciences, officers of the labor organizations and representatives of the supreme economic council and other departments of the government.

All phases of the mining industry, including the oil industry, were discussed, including the latest technical methods and the training of engineers and technicians to direct the rapidly increasing output.

Representatives of the oil industry reported that the output would be increased from 8,500,000 metric tons during the present fiscal year, to 12,000,000 tons in 1929-30. Professor Taneyev pointed out that the

Soviet Union contained 75 per cent. of the world's resources in peat, and the development of this fuel was of great importance to the electric generating plants and to the textile industry.

A report on recent explorations in the Urals cited important prospects for the mining of iron, copper, coal, gold, platinum, asbestos and other minerals in hitherto untouched territory. Professor P. P. Lazarev, chemist, and other members of the Academy of Sciences reported on extensive explorations and surveys undertaken by the academy to discover for exploitation new sources of mineral wealth. Plans were discussed for the production of arsenic, aluminum and the mining of graphite, tin and other metals not hitherto produced in the Soviet Union. Prospective plans for the development of the various branches of the mining industry were also fully discussed.

OPHTHALMOLOGICAL LABORATORY FOR HARVARD UNIVERSITY

A GIFT of \$250,000 to Harvard University toward the foundation of an ophthalmological laboratory in memory of members of his family has been made by Dr. Lucien Howe, of Buffalo. Dr. Howe will become director of the laboratory when it is inaugurated next fall or winter.

The laboratory is expected to cost half a million dollars in all. Dr. Howe's donation will be supplemented by \$175,000 from the General Education Board and \$75,000 from Harvard University. The laboratory will serve for both research and teaching.

The institution will be officially called the Howe Laboratory of Ophthalmology, but Dr. Howe has explained that he would prefer to have it known as a memorial to his father, brother and father-in-law.

The father of Mrs. Howe commanded a division of the sixth corps in the Army of the Potomac in the Civil War, Dr. Howe's father commanded the 3d Cavalry, while his brother, a captain in the 4th Artillery, was killed in action early in life. These three men served in the regular army a total of over 70 years. It was therefore in accordance with the family plans to establish some memorial to that record which would seem lasting and also useful. The gift to Harvard University is the result.

The laboratory will be for some years to come in the present eye patient department of the Massachusetts Eye and Ear Infirmary, whose clinical opportunities are well known. A preliminary year will be given to forming a plan for its work, perhaps clearing up one corner of the field in physiological optics, or eye movements. It is hoped that the laboratory will in future become useful to research residents and to occasional workers at some special problem.