

integrating counting mechanism was then available and was also as remotely situated from the type producer (the caster) as the present telegraphic typesetter keyboard, yet it is only comparatively recently that telegraphic typesetting has been accomplished.

### Reducing Noise in Enclosed Spaces

DURING the last two years, progress has been made in the problem of noise reduction, especially in sound-proofing rooms against the transmission of external noise. In *Engineering* of October 25 the allied problem is described of sound-proofing rooms by using Accousti-Celotex tiles of sugar-cane fibre, manufactured by Messrs. Celotex, Ltd., Stonebridge Park, London, N.W.10. Under present-day conditions, many offices, etc., are more congested, with resultant increased noise. It is of interest, therefore, to cite certain data on sound absorption in offices which have recently become available. They are derived from tests made in the offices of an insurance company in the United States. This company has had about 300,000 square feet of Accousti-Celotex tiling fitted to its offices. Records were kept for a year preceding the fitting of the tiles and for a year after they had been installed. In two selected rooms, the increase of efficiency of the persons working therein was respectively 9.2 per cent and 7.7 per cent. Typists' errors were reduced by 29 per cent, and calculating machine operators' by 52 per cent.

It would appear that apparent loudness or annoyance increases much more rapidly at the higher loudness levels (in phons) than it does at the lower sound-levels, with the result that a relatively small reduction in phons at the higher levels decreases the apparent loudness very considerably. Thus it was found that a 7-phon reduction in a typing room with an average maximum loudness of 70 phons results in a decrease of 43 per cent in the apparent loudness or real annoyance, which condition is equivalent to the effect gained by the removal of about 80 per cent of the noise-making units. It is of interest to note that the tiles, from the material employed, are of light weight and are not affected as regards their sound-absorbing properties by painting. The grade of tile fitted in any particular case varies with the amount of noise normally present and the amount of absorption desired.

### Mineral Resources of South Africa

THE Executive Committee of the Third Empire Mining and Metallurgical Congress, which met in South Africa in 1930, prepared for the Congress a review of the mineral resources of the Union of South Africa. The success which attended the issue of this book led to its revision in 1936, and now, in 1940, the Department of Mines has published a third and again thoroughly revised edition. Introductory chapters deal with the geography and geology and with various historical and legal aspects of the mineral industry; but the bulk of the work, which extends to 544 pages, is devoted to individual economic minerals, of which the chief, in order of

total output, are gold, diamonds, coal, copper ores, tin ores, asbestos, silver ores and the platinum metals.

Recent expansion of mining activity in the case of gold has led to results which indicate that former estimates of the future life of the goldfields were below the true figure. The opinion now expressed is that unless gold materially decreases in value, the future of gold mining in South Africa is secure for many decades to come. Diamond mining has recently been almost at a standstill, apart from the alluvial fields; existing reserves are sufficient to maintain normal production for nearly a century. Similarly, there are immense reserves of platinum in the Bushveld complex, and when prices become more favourable a great expansion of this branch of the industry is inevitable. Of coal and iron the Union possesses vast resources, coal being sufficient to provide for the needs of the country for many centuries. The book is copiously illustrated and well provided with maps and statistical tables, and will prove to be of great interest to a wide variety of readers.

### Indian Association for the Cultivation of Science

THE annual report for the year 1939 of the Indian Association for the Cultivation of Science includes as an appendix a report by Prof. K. S. Krishnan on the scientific work of the Association. This has included investigations on the magnetic properties of a free-electron gas with the view of determining the energy distribution, and Pauli's observation of a feeble paramagnetism independent of temperature in the electron gas has been verified for several metals. Landau's discovery of the appreciable diamagnetism of an electron gas has been experimentally verified, and recent measurements by Prof. Krishnan and Mr. N. Ganguli have shown that the conductivity of graphite in the basal plane is at least 10,000 times that along the normal to the plane. Other investigations have related to the mobile electrons in aromatic molecules, the diamagnetism of aromatic molecules, optical studies on aromatic molecules, magnetic studies on bismuth in the neighbourhood of its melting point, and paramagnetic studies on single crystals of the salts of the rare earth and the iron groups of metals, as well as structural studies on organic crystals, including the halogen derivatives of benzoquinone and related compounds. Notes on some spectroscopic work on the sulphides of the transitional group of elements and on the discovery of a new ionization layer in the upper atmosphere are also included.

### Replenishing the Fauna of the Caspian

As a first measure to replenish the fauna of the Caspian—a problem on which the Soviet Ichthyological Research Institute has been working for some years—Nereis, the Polychæte worm relished by the sturgeon, bream and other fish, is to be brought to this land-locked sea from the Azov. The worm will be transported from the Azov Sea in isothermal boxes and put into the Caspian. Experiments carried out during the past three years have proved the

possibility of transplanting certain species of invertebrates from the Azov to the Caspian. The Ichthyological Research Institute has decided to begin with the transplantation of Nereis, which is able to withstand changes in salinity and temperature and is unaffected by lower contents of oxygen.

#### Wilhelm Erb

PROF. WILHELM HEINRICH ERB, a pioneer in neuropathology and electrotherapy, was born at Winnweiler in the Palatinate on November 30, 1840. He received his medical education at Heidelberg, where he was assistant to Nikolaus Friedreich, and qualified in 1864. After working with Buhl at Munich on morbid anatomy, he was appointed extraordinary professor of special pathology and treatment at Leipzig in 1867 and full professor in 1880. Three years later he was transferred to the corresponding chair at Heidelberg, where he remained until his retirement in 1917. His first work was in connexion with toxicology, histology and therapeutics, but afterwards he devoted himself almost entirely to neurology. Erb's name, either alone or in association with those of other neurologists such as Duclenne, Charcot and Goldflam, has been given to several nervous diseases. He was also the first to describe the knee-jerk, independently of Westphal, and simultaneously with Fournier demonstrated the close etiological association between syphilis and tabes and general paralysis. He died on October 29, 1921.

#### The Night Sky in December

ON December 22 the sun enters the sign Capricornus (the winter solstice). The night reckoned from sunset to sunrise then lasts  $16\frac{1}{4}$  hours in the latitude of London. Full moon is on December 14 and new moon on December 28. At meridian passage soon after 0h. on December 15 at Greenwich, the moon's altitude is  $57^\circ$ . Jupiter and Saturn, the conspicuous pair of bright planets, are visible throughout the greater part of the night. On December 11, they are in conjunction with the moon at 1h. and 6h. respectively. (All times are given in Universal Time; add 1h. to convert into Summer Time.) Mars is a morning star rising about half an hour before Venus on December 15. These two planets are in conjunction with one another on December 2 at 12h. On December 25 at 18h., Mars is in conjunction with the moon, and Venus is likewise in conjunction on December 26 at 18h. The rapidly changing positions of Jupiter's four inner satellites, their transits and eclipses, may be followed from the data given on p. 630 of the *Nautical Almanac* or on p. 182 of *Whitaker's Almanack*. Saturn's unique ring system is well open; a refractor of 2 inches aperture or larger is, however, required to resolve the rings. The bright stars of Perseus, Auriga, Taurus and Orion (with Procyon and Sirius in train), bring glory to the December night skies. There are the open star clusters of Perseus, the Pleiades and the Hyades: many well-known double stars, variable stars and nebulae in abundance. Near  $\phi$  Tauri is a dark nebulous region which Barnard considered as giving the strongest

proof of the existence of obscuring matter in space. Near the irregular variable star, *T* Tauri, is the remarkable object known as Hind's variable nebula. Two notable nebulae, exemplifying two distinct types, are both visible to the naked eye on moonless nights during this month. These are the great nebulae of Orion and Andromeda—the first a greatly extended diffuse nebula of radiating gas lying within our Milky Way system: the second, a vastly remote stellar system in itself, the prototype of many millions which are shown on long-exposure plates taken with the largest reflecting telescopes. At midnight on December 31–January 1, 1941, Sirius, the brightest star in the heavens, is within 2 minutes of the southern meridian of Greenwich.

#### Announcements

DURING a recent air raid, the Great Hall of the University of Bristol was damaged. The Great Hall is one of a series of magnificent buildings presented to the University by Sir George Wills and Mr. H. H. Wills, in memory of their father, the first Chancellor, and opened by King George V in 1925.

IT is announced in *France*, the journal for Free Frenchmen published daily in Great Britain, that Prof. P. Langevin, who has just been awarded the Copley Medal of the Royal Society (see *NATURE*, Nov. 23, p. 679) is now in prison.

DR. G. ROUSSY, rector of the University of Paris and formerly dean of the medical faculty and professor of pathological anatomy, and M. Maurice Guyot, general secretary of the University, have been removed by order of the Vichy Government.

DR. D. H. PEACOCK, professor of chemistry in the University of Rangoon and special chemical adviser (Customs) to the Government of Burma, is retiring from the service of the Government of Burma.

DR. DONTCHO KOSTOFF, of the Institute of Genetics, Academy of Sciences, U.S.S.R., has been appointed to a position in the Central Agricultural Experiment Station at Sofia, Bulgaria.

MR. HAROLD HARTLEY has been appointed lecturer in mine surveying in the University of Leeds, in succession to Mr. T. Brown, resigned.

MRS. J. R. OGDEN and her family have presented to the Brotherton Library of the University of Leeds a large collection of lantern slides. These, added to the slides given by Mr. Ogden during his lifetime, bring the number in the Collection to more than five thousand. The slides deal largely with Palestine and Egypt, and include more than four hundred slides on the tomb of Tutankhamen.

IT has been found necessary to close the Museum of the Royal College of Surgeons until further notice. Those who wish to present specimens to the Museum should retain them in their possession, but should notify the Curators of their intention to present them at a later date.