

state. It is of particular interest for its bird life, notably as the sole British breeding ground of the Kentish plover. Other uncommon birds also nest there, such as the stone curlew, and there is a large colony of terns. All this may soon be irretrievably lost if a threat of bungalow building along the sea-front cannot be averted. To secure the position, therefore, efforts are being made to raise £9000 for the purchase of 271 acres as a bird sanctuary and Nature reserve, to be administered either by the National Trust or by the Royal Society for the Protection of Birds. This area, with its half-mile of shore frontage, is the part immediately in danger, and its price is, unfortunately, already that of a building site. Its acquisition, however, would increase the sanctuary value of adjacent land that is already preserved, and would make inaccessible to development a further stretch of coast lying beyond. The area is thus a key position, and the success of the scheme for its security is very greatly to be desired. The treasurer of the fund is Mr. Percival Jackling, Lloyds Bank, Folkestone.

#### The Grid and the Cost of Electricity

IN connexion with Sir Archibald Page's speech, a résumé of which was given in *NATURE* of Aug. 6, p. 212, Col. H. L. Crosthwait, late R.E., writes asking whether the advent of the 'grid' is likely to reduce the price of electricity or not. So far as can be seen at present, it will reduce the price to numerous consumers. The large stations recently built are generating electricity with far greater economy than the older stations which they replace. The use of the grid will be a great help in securing continuity of supply, and will make it unnecessary to keep a large number of costly machines in reserve in case of breakdowns. The standardisation of the pressures and frequency of supply has cheapened the cost of machines, apparatus, and lamps. We have not heard complaints from any consumer that the electricity companies have been raising the price of electricity; on the contrary, many of them have recently made substantial reductions. It is probable that some consumers will be little affected by the advent of the grid, but many will get their electricity cheaper, and very many dwellers in towns and villages will be able to get electric light and power which they otherwise would not have obtained. The grid is the logical engineering outcome of Ferranti's scheme for lighting London, using electricity at high pressures, first put into operation about forty-four years ago. Its critics have suggested nothing better; as a rule, they desire progress to be made by costly competitive methods. In the future the grid will probably be considerably modified, but at present consumers can look forward to a gradual lowering of the price of electric light and power.

#### Monument to Otto Lilienthal

ON Aug. 10 a monument to Otto Lilienthal, the German pioneer of gliding flight, was inaugurated at East Lichterfelde, Berlin, on the mound from which Lilienthal made many of his flights forty years ago. The mound, which was piled up for the purpose by

Lilienthal, is some forty-nine feet high, and a photograph taken some years ago shows its sides covered by shrubs and the top surmounted by a small temple-like construction consisting of pillars supporting a slightly sloping round roof. According to the *Times* for Aug. 10, the mound has now been cleared of the trees and shrubs, while in the monument at the top, and beneath the central opening in the roof, is a silver globe inscribed with particulars of famous flights. The globe is mounted on a basalt block. A photograph of the inauguration of the memorial appeared in the *Times* for Aug. 11. Lilienthal was a successful engineer and manufacturer. He was born on May 23, 1848, at Anklam and died on Aug. 10, 1896, at Rhinow through an accident while gliding. Another monument to Lilienthal was inaugurated at Lichterfelde in 1914. This consists of a stone pyramid, bearing on one side a bust and on the summit a figure of a man with outstretched arms supporting a pair of wings.

#### The Workers' Educational Association and Science

AT the Annual Conference of the Workers' Educational Association last year, it was resolved "to investigate the possibilities of stimulating further interest in the study of science [that is, natural science] on a non-vocational basis", and the result of the investigation by the Executive Committee has now been circulated. To a scientific worker, it seems in some respects a strange document to be produced in 1932. It says, "The Adult Education Movement cannot afford to neglect scientific thought and knowledge. Ignorance of the influence of science should belong to the past"; and then, "The study of science, in some of its branches, provided the approach is of the right character, is as attractive and has as great a bearing on social conditions as some of the social sciences". As if the very foundations of social conditions did not rest upon heredity, and health, and the fight against disease, and the production of food, whether from the fisheries or agriculture, and the growing of the raw materials of commerce, and the constant battle against pests, whether they be parasites or plagues, and upon life itself! The Report says, further, "It is only in relation to the question as to how far and in what ways natural science influences and affects society, that our classes can maintain their interest in subjects of this character". It is on strong ground, however, in holding that the teaching of natural science, in so far as it is to be promoted, should avoid the formal lines of a university degree course, and should be of such a character as to attract the uninitiated.

THE Committee, basing upon its district reports, finds that "there is a lack of interest so far as the adult population is concerned in the study of science". We think this may be due partly to the ignorance of people as to what natural science means, and partly to the failure to offer suitable courses. But we congratulate the Committee on its unanimous opinion "that the Association should seek to stimulate further interest amongst adult students in the study of science on a non-vocational basis". Towards this end it makes several recommendations, of which the most

promising seem to be the organising of district panels of suitable lecturers, the inclusion of provisional science courses in the programmes of classes, and propaganda to encourage interest in the study of science, by printed leaflets and by peripatetic lecturers capable of interesting popular audiences. Two interesting "general recommendations" are added: that there should be "a rapid and progressive improvement in the supply of films and slides applicable to science teaching", and that for this purpose "the Association should investigate the possibilities of the setting up of a national organisation for the production and distribution of educational films".

#### The Science Museum during 1931

THE Report of the Advisory Council of the Science Museum of 1931 is the first issued since the Council was reorganised on lines suggested by the Royal Commission on National Museums and Galleries. With Sir Richard Glazebrook as chairman, the Council now includes three representatives appointed by the Board of Education, and twenty-six representatives of various scientific, technical, and industrial institutions. The Royal Commission also recommended that the Advisory Council should be assigned a more active part in the management and development of the Museum, and the adoption of this recommendation has already resulted in the appointment of a Standing Committee which will meet four or five times annually, and of three small sub-committees which are to report on the Science Library, the development of the Electrical Engineering Section, and on an exhibition of pottery and porcelain manufacture. The Report contains details of the attendances, lectures, temporary exhibitions, acquisitions, and of the Library. It also contains a tribute to the late Sir Hugh Bell, who was chairman of the Advisory Council from 1912 until 1931, and to the Director, Sir Henry Lyons, and his staff. Among the acquisitions during the year are the apparatus used by Sir William Ramsay in his work on the rare gases of the atmosphere, the fine collection of optical instruments, numbering nearly 600, given by Mr. T. H. Court, and the cinematographic apparatus invented in 1887-89 by Louis Augustin Le Prince, who disappeared while travelling in France in 1890.

#### Safety in Mines

THE Safety in Mines Research Board has just issued Paper No. 74, which contains an account of an important conference on safety in mines held at Buxton last year. There seems no adequate reason why information about this important conference should have been so long delayed, though there may have been difficulty in getting the authors of the various papers to correct their contributions. The meeting derives its great importance from the fact that it was the first international conference of this kind. In addition to the British representatives, there were delegates from Belgium, France, Germany, and the United States. A number of important papers on mining explosives were read, and proposals were made for future international meetings, subject to ratification by the organisations concerned—a ratification

which, we presume, will certainly be forthcoming. Perhaps the most important of the suggested future arrangements was that "Periodical meetings of the directors of research shall be arranged at each research station in rotation". This arrangement would thoroughly ensure the international character of future conferences, and it is a most welcome sign that the question of safety in collieries is for the future to be treated as an international question and not as one possessing local interest only.

#### Geodetic Surveying in the United States

THE annual report of the Director of the United States Coast and Geodetic Survey for the year 1930-31 (Washington, 1931, 45 pp., 60 cents) describes briefly the wide range and large extent of the activities of this important and progressive organisation. It has as a frontispiece a photograph of the new surveying vessel (one of several possessed by the Survey) *Hydrographer*, commissioned in March 1931, and fully equipped with sound-ranging apparatus for depth-surveys; sound-ranging is also used for locating the position of the ship from the shore at the time of each depth-measurement. The use of these methods has greatly increased the rapidity of the coastal survey work. The control survey work on land has also been rendered much more rapid and less expensive by abandoning the erection of the large wooden towers formerly used in flat or rolling country, at points about ten miles apart, to enable the observers to see across such distances over intervening trees and other obstructions. These towers were often 100 feet or more in height, each being double, so that the observer could walk on the outer platform, unconnected with the inner tower carrying the instrument. They contained large quantities of material, used once only, and required much time to erect. They are now replaced by portable steel towers, which can be erected by five men in less than a single working day, and used many times, their transport from one place to another being made by trailer trucks. An improved and smaller theodolite has also been devised and brought into use.

#### Czechoslovakian Contributions to Science

THE scientific communications to the Czech Academy of Sciences during 1928 and 1929 have now been published in French or English in volumes 29 and 30 of the *Bulletin International* of the Academy. Among the papers presented are several by Dr. F. Němejc dealing with his palaeobotanical investigations on some quaternary deposits in the district around Ružomberok in Slovakia. Dr. R. Kettner has made a similar study of the geological formations in the Hron Valley, and Prof. Ulrich describes the minerals variscite and barrandite from Třenice and also a Slovakian rutile. Dr. J. Hahn's account of the life history of *Monocystis Mrazeki* is illustrated with some fine photomicrographic plates, whilst M. Uher's communication dealing with the genesis of nerve elements cultivated *in vitro* is similarly illustrated. Dr. O. Jirovec has succeeded in observing and recording on a coloured plate some twenty stages in the nuclear