

pose of facilitating the growth of oysters. This consists of a series of shallow flat baskets or trays of wire-netting on an iron frame, about 4 inches deep and 2 feet square, placed in tiers, and held together by two iron bands, the number depending on the depth of water in each case. These are either fixed to the soil, or suspended from rafts or other floating bodies, by which means depths of water otherwise inaccessible can be utilized. The other advantages claimed for the apparatus are economy of space in "planting" oysters, and of labour in collecting them, protection of the oysters from five-fingers, and from contact with unsuitable soil, and their exposure on all sides to the free circulation of the water, resulting in more rapid and regular growth, and a greater tendency to depth of shell than under the most favourable of ordinary circumstances. In the case of beds infested with the boring worm referred to, the trays in question would in all probability afford a ready means of placing the oysters beyond the reach of these marauders. The convenience of such appliances, especially in cases where French oysters are laid down temporarily on English beds, to be afterwards transferred to other grounds, e.g. during the winter, would probably be found to be very great.

AT a meeting of the Chemical Society held on June 18, a paper was read by Ludwig Mond and F. Quincke, on a volatile compound of iron and carbonic oxide. The authors describe experiments from which they conclude that iron forms a volatile compound with carbonic oxide of the formula $\text{Fe}(\text{CO})_4$, corresponding to that of nickel. Very finely divided iron—obtained by reducing iron oxalate by hydrogen at a temperature but little exceeding 400° , and allowing it to cool to 80° in hydrogen—when heated in an atmosphere of carbonic oxide gave a gas which burnt with a yellow flame; and on passing the gas through a heated tube a mirror of iron was formed at between 200° and 380° , while at higher temperatures black flakes of iron and carbon were deposited. Only about 2 grams of iron, however, were volatilized after six weeks' treatment of 12 grams of the metal; it was necessary every five or six hours to interrupt the operation, and to re-heat the iron to 400° in hydrogen during about twenty minutes. When passing carbonic oxide at the rate of about $2\frac{1}{2}$ litres per hour, not more than 0.01 gram of iron was volatilized, corresponding to less than 2 c.c. of the compound $\text{Fe}(\text{CO})_4$ in a litre of gas. The authors have effected an analysis of the compound by passing the mixture of gases into mineral oil, boiling between 250° and 300° , and heating the solution so obtained to 180° ; iron free from carbon is then deposited and carbonic oxide gas is evolved. Five analyses are quoted, the results of which give a ratio of Fe:CO, varying only from 1:4.03 to 1:4.264. Dr. Armstrong said that the authors' discovery was extremely interesting on account of the explanation which it might be held to afford of the permeability of iron by carbonic oxide at high temperatures, as well as to the production of steel by the cementation process, to which Graham had drawn special attention. Just as platinum was permeable by hydrogen and silver by oxygen at high temperatures, so iron was permeable by carbonic oxide; it might be supposed, in each case, because a dissociable compound of the metal with the gas was formed. Prof. Thorpe drew attention to the value of the experiments in connection with the production of steel by the cementation process, and stated that he had recently observed that platinum had the property of causing the separation of carbon from carbonic oxide. Mr. Mond said they had refrained from discussing the application of their discovery in the directions indicated, as the compound was only obtained at low temperatures. Dr. Armstrong said this might well be the case; but as Mr. Mond and Dr. Quincke had established the all-important fact that iron had a specific affinity for carbonic oxide, the argument he had used would apply, although the compound might not be sufficiently stable at high temperatures to exist alone.

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THE additions to the Zoological Society's Gardens during the past week include a Chimpanzee (*Anthropopithecus troglodytes* ♂) from West Africa, presented by Major Al. McDonnell Moore; a Duyker Bok (*Cephalophus mergens* ♂) from South Africa, presented by Mr. A. Barsdorf; five West Indian Agoutis (*Dasyprocta antillensis*) from Jamaica, presented by the Board of Governors of the Institute of Jamaica; a Spotted Cavy (*Calogenys paca*) from Guiana, presented by Mr. R. Kirk; two Slow Loris (*Nycticebus tardigradus*), a Javan Fish-Owl (*Ketupa javanensis*) from Java, presented by Mr. R. Dixon; an Orange-cheeked Waxbill (*Estrela melpada*), a Zebra Waxbill (*Estrela subflava*) from West Africa, a Nutmeg Finch (*Munia punctularia*) from India, presented by Mrs. Harris; a Chattering Lory (*Lorius garrulus*) from Moluccas, presented by Miss Alice Dundas; a Common Viper (*Vipera berus*), British, presented by Mr. W. H. B. Pain; four Grey Parrots (*Psittacus erithacus*) from East Africa, deposited; a Thar (*Capra jembraica*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

LUMINOUS OUTBURST OBSERVED ON THE SUN.—*Comptes rendus* for June 22 contains the information that on June 17, at 10h. 16m. Paris mean time, M. Trouvelot observed a luminous outburst on the sun, apparently of the same character as that witnessed by Carrington and Hodgson in 1859 (*Monthly Notices R.A.S.*, vol. xx. pp. 13-16). A luminous spot subtending an angle of 3° appeared near the western limb of the sun (position-angle 281°). It had not the characteristic white colour of faculae, but was yellowish, and strikingly resembled the light emitted by incandescent lamps shortly before they reach their maximum brilliancy. M. Trouvelot's first impression was that an opening at the eye-piece allowed a ubiquitous sunbeam to fall upon the screen upon which the sun's image was being projected, but an examination proved that the phenomenon was truly solar. In fact, shortly after the time of the first observation, a similar brilliant object subtending an angle of about 5° or 6° appeared slightly to the north of the first, its position-angle being about 289° . By means of spectroscopic observations it was found that the first object consisted of a central eruption from which a species of incandescent volcanic bombs were thrown to heights of 2' or 3' above the chromosphere, where they rested as if suspended, and appeared as dazzling globes on the red background on which they were projected. A few minutes later the sparkling balls were replaced by numerous brilliant filaments or jets, which at 10h. 24m. were shot out to a height of 5' 24". In spite of the vivid light of this prominence only a few lines in the spectrum were seen to be reversed. In addition to the lines C, D_3 , F, and G, which were all extremely bright, the line at λ 6676.8, the β group, and a line about λ 4394.8, were seen bright. The sodium lines, D_1 and D_2 , showed no indication of reversal. Considerable displacements of the C line towards both ends of the spectrum were observed. On the following day at 9h. 30m. the eruption was still very apparent, but diminishing in activity, and at 2h. 45m. all signs of an eruptive prominence had disappeared. The striking character of the outburst led M. Trouvelot to suggest that it might be accompanied by a simultaneous terrestrial magnetic perturbation. This was not the case, however, for after examining the records obtained at Kew Observatory, Mr. Whipple writes that there was not the slightest magnetic disturbance on the dates when the eruption was observed.

LORD HARTINGTON ON TECHNICAL EDUCATION.

THE fourth annual meeting of the National Association for the Promotion of Technical and Secondary Education took place on Friday last at 14 Dean's Yard, Westminster. Lord Hartington, President of the Association, occupied the chair. He said:—

In opening the proceedings it will be, fortunately, unnecessary for me to trouble you with more than a very few brief observations. It has not been considered necessary to make any