

"Physics in the Food Industry." The application of physical methods to the conservation of food resources is a subject of national importance, and the lecture should be of considerable interest to a far wider public than the membership of the Institute of Physics. The Board of the Institute wishes it to be known that the lecture is open to the public, without charge. Admission is by ticket, and tickets may be obtained on application to the secretary of the Institute of Physics, 1 Lowther Gardens, Exhibition Road, London, S.W.7.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—Two junior assistants (engineering) for research work at the Fuel Research Station, East Greenwich. Special knowledge of mechanical engineering in the case of one vacancy, and of physics and mathematics in the other case, is desirable—The Secretary, Department of Scientific and Industrial Research, 16 Old Queen Street, S.W.1 (Nov. 14). A head of the building department of the Leeds Technical College—The

Director of Education, Education Offices, Leeds (Nov. 14). A bacteriologist at the Devonshire Hospital, Buxton—The General Superintendent and Secretary, Devonshire Hospital, Buxton (Nov. 15). A plant physiologist and a plant pathologist at the Imperial College of Tropical Agriculture, St. Augustine, Trinidad, for banana research—The Secretary, Imperial College of Tropical Agriculture, 14 Trinity Square, E.C.3 (Nov. 30). A professor of pathology and bacteriology at the Welsh National School of Medicine—The Registrar, University College, Cardiff (Dec. 1.) A dairy research bacteriologist at the Research Laboratories, New Zealand—The High Commissioner for New Zealand, 415 Strand, W.C.2 (Dec. 17). A lady tracer at the Admiralty Engineering Laboratory, West Drayton, Middlesex—The Superintendent, Admiralty Engineering Laboratory, West Drayton, Middlesex. A signal inspector for the Engineering Department of the Egyptian State Railways, Telegraphs and Telephones—The Chief Inspecting Engineer, Egyptian Government, 41 Tothill Street, S.W.1.

Our Astronomical Column.

MAGNETIC DISTURBANCES AND SUNSPOTS.—On Oct. 22, a magnetic disturbance commenced sharply at 6 $\frac{1}{2}$ h and continued until 10h on Oct. 23 with an intervening diminution between 16h and midnight. During the first phase the excursion shown by the Greenwich deflection magnetograph traces was $\frac{3}{4}^{\circ}$, and during the second about 40'. The disturbance is worth comment on account of its being one of those instances in which it does not appear possible to ascribe a connexion between a pronounced magnetic disturbance and a particular sunspot. A small stream of spots crossed the sun's central meridian on Oct. 22-26, but in general appearance it was but one of many which are now of frequent occurrence. An examination by Mr. Evershed of spectroheliograms taken at his observatory at Ewhurst, Surrey, also failed to show any unusual solar activity (the daily record at Ewhurst, as elsewhere in Great Britain, was, however, broken by cloudy weather).

It may perhaps be noted that at the time of the commencement of the magnetic disturbance the longitude of the sun's central meridian was 282°, and that this particular longitude was the position of three very large spots seen successively on the central meridian on May 12, June 8, and July 5 respectively. At the time, attention was directed to the absence of corresponding magnetic disturbances which might reasonably have been expected in view of the size and nature of the spots (see NATURE, June 18, p. 903, and *Proceedings of the Astronomical Society of the Pacific*, August, p. 246).

Another instance this year of the occurrence of a magnetic 'storm' and the apparent absence of any solar activity of note was afforded on July 21-22.

THE TRANSIT OF MERCURY ON NOV. 10.—The British Isles have been favoured as regards visibility of transits of Mercury in recent years. In the period since 1881 there have been nine transits, 3 in May, 6 in November, of which only one, that of 1881, was wholly invisible here, while those of 1907, 1914 were wholly visible, the middle occurring at noon. There will be a transit on the morning of Thursday, Nov. 10, of which the end will be visible in Great Britain, the sun rising at Greenwich at 7h 8m, and internal contact at egress occurring at 8h 28m. The transit is

a nearly central one, Mercury being 2' 9" south of the sun's centre at 5h 46m.

Now that accurate time can be obtained so readily by radio signals, it is well to point out that amateurs can do most useful work by carefully timing the contacts, both internal and external. Such observations have a double value. First, it was largely through observations of transits that the anomalous motion of the perihelion of Mercury was detected, which was afterwards explained by Einstein. The amount of the advance of the perihelion is not yet known with absolute precision, and more observations are desirable. Secondly, it is suspected that the unexplained irregularities in the moon's motion are due to changes in the rate of the earth's rotation. This suggestion can best be checked by observing the other rapidly moving bodies in the solar system, of which Mercury takes the first place.

Another desirable research is to examine whether any ring of light can be discerned round the portion of the planet outside the sun's disc. Such a ring was plainly seen at the last transits of Venus, being due to sunlight refracted by the planet's atmosphere. It is known that Mercury's atmosphere must be rare, but it is desirable to test whether it has any that can be detected.

The next three transits are in Nov. 1940 (invisible here), Nov. 1953 (beginning visible here), May 1957 (invisible here). Most of the text-books indicate a transit in May 1937. There will be a near approach, when Mercury will probably be discernible in the spectroscope, projected on the chromosphere, but no actual transit.

THE ASTROGRAPHIC CATALOGUE.—Several more volumes of this catalogue have lately been published, and the end seems to be nearly in sight. The Cape volume for -49° is the last volume but one of the zone undertaken by that Observatory. It consists of 452 pages with 180 stars on each full page. Further instalments of the Catania Catalogue have lately appeared, containing 0h to 3h of $+47^{\circ}$, and 3h to 6h of $+49^{\circ}$. They give right ascension and declination for every star, which is undoubtedly convenient, but was rejected by most observatories as adding too much to the labour and expense of publication.