

equipment which gives a wide choice of plane table outfits. The instruments cover equipment for purely graphic plane tabling as well as tacheometric instruments, as the pattern used by the Survey of India.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—An analytical chemist at the Main Drainage Outfall Works of the Dublin Corporation—The Secretary, Local Appointments Commission, 33 St. Stephen's Green, Dublin (July 30). A junior engineer at the Forest Products Research Laboratory, Princes Risborough—The Secretary, Department of Scientific and Industrial Research, 16 Old Queen Street, S.W.1 (Aug. 4). A temporary botanist at the Royal Botanic Gardens, Kew—The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (Aug. 4). An assistant lecturer in the mathematics department of the Coventry Technical College—The Director of Education, Council House, Coventry (Aug. 5). A lecturer in physics, and assistant lecturers in mathematics, book-keeping, geography, and French at the Belfast Municipal College of Technology—The Principal, Municipal College of Technology, Belfast (Aug. 5). An assistant lecturer and demonstrator in botany at the University College of South Wales and Monmouthshire—The Registrar, University College, Cardiff (Aug. 6). A male assistant in the geological depart-

ment of the Liverpool Free Public Museums, Liverpool (Aug. 30). Appointments as follow, at the International Institute of Agriculture, Rome:—A chief of section specially qualified in tropical agriculture, and editors for, respectively, tropical agriculture, dairy science, plant diseases, rural economics, and trade in agricultural products—The Bureau du Personnel, Institut International d'Agriculture, Villa Borghese, Rome (Aug. 31). A woman B.Sc. (physiology or biochemistry) at the Wellcome Physiological Research Laboratories—The Director, Wellcome Physiological Research Laboratories, Beckenham. Two junior assistants under the Directorate of Ballistics Research of the Research Department, Woolwich—The Chief Superintendent, Research Department, Woolwich, S.E.18. An assistant entomologist at the Wellcome Tropical Research Laboratories, Khartoum—The Controller, Sudan Government London Office, Wellington House, Buckingham Gate, S.W.1. A principal of the Leicester College of Technology—The Director of Education, Leicester. A lecturer in fuel technology at the Imperial College of Science and Technology—The Registrar, Imperial College of Science and Technology, South Kensington, S.W.1.

ERRATUM.—In NATURE of July 2, p. 4, col. 2, the second term of the left-hand side of the equation should read " $2OH_2$."

Our Astronomical Column.

COSMIC DUST CLOUDS.—The question of the absorption of light in space by clouds of cosmic dust is a very difficult one, and different observational results seem to lead to inconsistent conclusions. Prof. Shapley's study of the variables in the globular clusters indicates that the phases occur appreciably simultaneously in light of all wave-lengths; further, he finds that the clusters contain stars just as blue as any in our neighbourhood. These and similar facts tend strongly against any general absorption of appreciable amount. On the other hand, the occurrence of numerous regions with sharply defined boundaries, where there is a sudden drop in the star-density (the Coal Sacks are a notable example), gives cogent reason to believe in the existence of local dust clouds which absorb nearly all the light from stars behind them.

Prof. Edward S. King, of Harvard College Observatory, makes the suggestion in a recently issued Bulletin from Science Service, that the group of stars to which the sun belongs, extending outwards to a distance of a hundred light-years, contains a sensible amount of scattered dust. He bases this on observational evidence of increasing redness with distance up to the distance mentioned: after that he finds no further increase in redness. He notes the evidence of a large amount of scattered dust in the Pleiades as being a parallel case. It is well known that the Pleiades nebulae give spectra similar to those of the stars that they surround, indicating that they shine by reflected light. So Prof. King's result implies that the sun is a member of a local cluster somewhat similar to the Pleiades. His evidence for increasing redness with distance up to a hundred light-years will be awaited with interest.

Shapley's result, mentioned above, shows that the time of passage of light through this cloud does not differ by more than a minute for light of different

colours. This gives evidence of the extreme tenuity of the supposed cloud.

SOLAR RADIATION.—In *Smithsonian Miscellaneous Collections*, vol. 80, No. 2, under the title "A Group of Solar Cycles," Dr. Abbot continues his tests of the sun's intrinsic variability, as reflected in the measures of solar radiation made with the pyrheliometer at Montezuma. One test applied is to compare, for any given month throughout the interval considered, the averages of selected pyrheliometer measures of total solar radiation with those of the solar constant determinations. This selection aims at comparing measures which have been made under as nearly as possible identical conditions, namely, when the sun is equally high above the horizon, the atmosphere equally clear, the quantity of atmospheric water vapour identical. For the observations discussed, 1921–1926, there is a very good agreement shown for each of the twelve months separately between the pyrheliometer and solar constant curves. On comparing either of these set of curves with that showing the sunspot variation for the corresponding periods, it is seen that a general similarity exists, but it is not so close for all months as was previously found for July, 1910–1920 (see *Monthly Weather Review*, May 1926).

A useful table is given of monthly averages of solar constant values determined at Chilean stations from 1918 to 1926. Dr. Abbot directs attention to indications in these figures of a 26-monthly period in solar radiation. As additional evidence of related solar and terrestrial changes, monthly solar constant values are compared with (1) ultra-violet radiation values taken at Mt. Wilson; (2) long-range radio-signal intensities. During the interval, 1924–1926, for which comparisons are available, there is a marked accord. Dr. Abbot is sanguine that his continued investigations of solar radiation will yield useful positive results