

THE youthful Society of Glass Technology has begun its career with every indication of a vigorous and useful future. At the meeting on January 18, held at Leeds, two papers were read on the subject of British glass sands. The first, by Dr. P. G. H. Boswell, on "British Sands: their Location and Characteristics," dealt with the chemical, mechanical, and mineral analysis of sands. The author stated that the analysis of British sands had proved their value. The proof of the pudding, however, is in the eating, and Mr. C. J. Peddle, in the second paper, "British Glass Sands: the Substitution of Foreign Sands by British Sands for High-grade Glass-making," demonstrated by actual melts made from native sands what could be done with the material. A good glass sand should attain the requisite degree of purity; it should be evenly graded, and the grains should be angular; consignments should not vary in character and should be ready for use when they reach the manufacturer. The author pointed out that all these essentials are fulfilled by Fontainebleau sand, but not all by British sand as at present supplied. That some British sands compare favourably with those of Fontainebleau as regards purity and grading has been established by the author, whose results in general were in agreement with those of Dr. Boswell. Much depends upon the treatment of the sand for the market. Excellent results were obtainable with properly prepared British sands, as was shown by the samples of glasses made from them, some of which could not be distinguished from similar melts made from Fontainebleau sand. The question of transport charges is one which closely affects the home sand industry; in the past, on account of through rates for carriage, foreign sands have frequently been delivered at the works at a lower cost than it was possible to supply the British material.

WE have received from the Cambridge Scientific Instrument Co., Ltd., a new list of their resistance pyrometers for indicating or recording temperatures from -200° to 1200° C. They all depend on the platinum thermometer, of which four types suitable for different purposes are figured and described. The temperature is shown either on a Whipple indicator or on a Callendar recorder. A sample chart shows a continuous record of the temperature of a hot blast in an ironworks during twenty-five hours. The information given is sufficient to enable anyone with an elementary knowledge of electricity to set up and understand the working of the instruments.

MESSRS. HENRY HOLT AND CO. (New York) are publishing very shortly new and revised editions of Prof. A. L. Kimball's "College Text-book of Physics" and Prof. Martin's "The Human Body: Advanced Course."

THE new list of announcements of Messrs. John Wiley and Sons, Inc. (New York) (London: Messrs. Chapman and Hall, Ltd.) includes: "The Sun's Radiation and other Solar Phenomena," F. H. Bigelow; "Interior Wiring and Systems for Electric Light and Power Service," A. L. Cook; "Irrigation Works Constructed by the United States Government," A. P. Davis; "Bio-Chemical Catalysts," J. Efront (being vol. ii. of "Enzymes and their Applications"), translated by Prof. S. C. Prescott; "Microscopic Examination of Steel," Prof. H. Fay; "Fats and Fatty Degeneration," Prof. M. H. Fischer and Dr. M. O. Hooper; "Agricultural Chemistry," Prof. T. E. Keitt; "The Essentials of American Timber Law," J. P. Kinney; "Elements of Hydrology," Prof. A. F. Meyer; "A German-English Dictionary for Chemists," Dr. A. M. Patterson; "Mechanical Equipment of Buildings"—part ii., "Power Plants and Refrigeration," L. A. Harding and Prof. A. C. Willard; "Printing: A Text-book for Printers, Apprentices,

Continuation Classes in Printing, and General Use in Schools and Colleges," F. S. Henry; "The Efficient Purchase and Utilization of Mine Supplies," H. N. Stronck and J. R. Billyard; "Stresses in Structural Steel Angles," Prof. L. A. Waterbury; "Sanitation Practically Applied," H. B. Wood; and "French Forests and Forestry," T. S. Woolsey, jun.

THE classified list of second-hand instruments for sale or hire, just received from Messrs. C. Baker, 244 High Holborn, London, includes particulars of hundreds of microscopes, surveying and drawing instruments, telescopes, spectrometers, optical lanterns, and other apparatus and accessories. The list is well arranged, and should be of real service to intending purchasers of second-hand optical instruments.

OUR ASTRONOMICAL COLUMN.

DETERMINATION OF STAR COLOURS.—An expeditious photographic method of investigating the colour-indices of stars has been tested by Mr. F. H. Seares at Mt. Wilson (Proc. Nat. Acad. Sci., vol. iii., p. 29). The method consists of making a series of exposures with graduated exposure-times, first through a yellow filter and then without filter. In this way the ratio of exposure-times necessary to give images of the same size in yellow and blue light is determined. The colour-indices are then derived by reference to a curve showing similar ratios for standard polar stars, the colours of which have already been ascertained by a comparison of their photographic and visual magnitudes. In general, the method of exposure-ratios gives excellent results, showing no systematic errors of any importance which depend upon stellar magnitude. The probable error of a colour-index derived from a single exposure-ratio is 0.07 magnitude. The method would appear to be of special value on account of its independence of stellar magnitude, and because it gives a direct measure of the colour. The results obviously include that part of the colour which is a function of the star's intrinsic luminosity, and also such colour effect as may be due to the scattering of light in space. An interesting outcome of the new observations is the confirmation of the previously reported conclusion that there are no faint white stars in the vicinity of the pole, though this is apparently not true of all parts of the sky.

MANCHESTER ASTRONOMICAL SOCIETY.—It is gratifying to note that the activity of the Manchester Astronomical Society has been well maintained. The journal for the session 1915-16 indicates a membership of about 120, and an average attendance at the meetings of forty-seven, while no fewer than eighteen members contributed papers relating to their own observations. A summary of the proceedings is given, and the papers printed at length include "The Colours and Spectra of the Stars," by Father Cortie; "Satellite Systems," by Prof. R. A. Sampson; and "Astronomical Drawings," by W. Porthouse.

CANADIAN OBSERVER'S HANDBOOK.—The Royal Astronomical Society of Canada renders a valuable service to amateur astronomers in the Dominion by the annual issue of "The Observer's Handbook." The volume for 1917 includes the usual astronomical information in a convenient form, and an extensive set of tables by means of which the times of sunrise and sunset in any part of the country can very readily be determined. Another feature calling for special mention is a catalogue giving the chief known facts regarding 276 stars and 13 nebulae, including proper motion, parallax, spectral type, and radial velocity. There is also a simple guide to the constellations, with maps. The price of the handbook is 25 cents.