

THE LONDON CONFERENCE ON OPTICAL INSTRUMENTS

THE London Conference on Optical Instruments, held at the Imperial College of Science and Technology during July 19–26, was timed to follow the meetings of the International Optical Commission, and was attended by nearly all the delegates of the latter. This helped to give a genuinely international flavour to a very successful series of meetings.

The declared object of the Conference was "to obtain a survey of modern practice and trends in the construction of actual instruments"; but the proceedings also included symposia on the diffraction theory of optical instruments and on phase-contrast microscopy, and from the scientific point of view these were the most interesting sessions. Also noteworthy were the papers and discussions on reflecting microscopes; here the interest was mainly technological.

After the opening address by Sir Thomas Merton, president of the Conference, an account was given by Prof. S. S. Ballard of recent optical developments in the United States. Next, M. A. Maréchal (Paris) spoke about recent French researches on diffraction in optical instruments and showed interesting slides of particular cases of diffraction patterns, calculated on his integrating machine in the Institut d'Optique, associated with aberrations amounting to several wave-lengths, that is, of amounts not at present easy to deal with by more analytical methods.

Dr. H. H. Hopkins described some investigations of his own into partial coherence and its connexion with microscopic resolution. Mr. Barham gave an account of his joint paper with Dr. Hopkins entitled "The Influence of Condenser Aperture on Microscopic Resolution".

Dr. E. Wolf then spoke about his recent work on the three-dimensional distribution of light in diffraction images near focus; this work has some important applications to the theory of telescopic star images. Dr. E. H. Linfoot described in outline how diffraction theory could be applied to discuss the systematic errors inherent in phase contrast testing with a slit-source; his main result was that these errors do not impair the usefulness of the test for ordinary purposes.

The second day, July 20, was devoted to purely technical accounts of certain newly designed lenses for photography and for television. Mr. R. Kingslake (Eastman Kodak) described some recent developments of photographic objectives in the United States. Dr. Hopkins spoke about the 'zoom' lenses on which he has been working recently, and Mr. Warmisham (of Taylor, Taylor and Hobson, Ltd.) described a new $f/1$ objective with an 18° spherical field, intended primarily for radiology. A reception at the Royal Institution, followed by a discourse on phosphorescence by Prof. E. N. da C. Andrade, concluded the day.

July 21 was occupied by visits to the National Physical Laboratory and to other centres of optical activity.

On July 24 the proceedings began with a general survey by Dr. R. Barar, entitled "Practical Requirements in a Reflecting Microscope". Dr. A. Bouwers (Delft) followed with an account of the concentric mirror microscopes recently put on the market by his firm. Finally, Mr. D. S. Grey (Polaroid Corporation, U.S.A.) spoke on catadioptric microscopes.

In the afternoon, Prof. Curtis, Dr. G. R. Harrison and Mr. C. L. Bausch (Massachusetts Institute of

Technology), Dr. E. Ingelstam and Dr. E. Hulthén (Sweden), and Mr. E. Lind (University of Stockholm) read papers on various aspects of grating spectroscopy.

July 25 was mainly devoted to phase contrast microscopy. Papers were given by Prof. F. Scandone (Italy), Mr. F. W. Cuckow, and Dr. M. Françon (France), the last of whom described with rapidly and beautifully executed blackboard drawings his interesting devices for adapting standard microscopes to phase contrast work by the addition of an auxiliary optical system in front of the objective. Mr. E. Bergstrand (Sweden) discussed work on the velocity of light and the measurement of distances by a development of the Kerr cell method which uses crystal-controlled high-frequency fields. Mr. J. Guild (National Physical Laboratory) spoke on photometry. In the evening a large gathering at the Royal Astronomical Society's rooms in Burlington House received with enthusiasm a talk by Dr. M. A. Ellison on "New Tools for Solar Physics", which included a showing of Menzel's exciting film, "Explosions in the Sun". A parallel gathering in the Royal Photographic Society's rooms heard Mr. R. McV. Weston on the filming of living tissues with the microscope.

The morning of the concluding day, July 26, was occupied by three papers on spectrophotometry, the speakers being Prof. S. S. Ballard (United States), Dr. F. Devignes (France), and Dr. H. W. Thompson (Oxford). In the afternoon, talks on "The Modern Reflecting Telescope" and on a lens-mirror system for high-precision theodolites were given by Dr. E. H. Linfoot and by Dr. W. Lotmar (Switzerland), respectively; the Astronomer Royal was in the chair.

Most of the papers were followed by well-informed discussions, and a tendency to refrain from mutual criticism, noticeable at the early meetings, was corrected later on at the urgent request of the Conference's efficient secretary, Prof. L. C. Martin.

E. H. LINFOOT

INDUSTRY AND THE UNIVERSITIES IN GREAT BRITAIN

THE report of the Conference on Industry and the Universities, organised by the Education and Industrial Research Committees of the Federation of British Industries last November* and at which both industry and all the universities of Great Britain were represented, as well as the British Institute of Management and the Administrative Staff College, has now been published; it includes an analysis of the forty-three replies received to a twelve-point questionnaire previously sent out to individual industrialists regarding their experience in employing university graduates or reasons for being unable to make use of them. These replies, which covered positions in industry for which graduates are recruited, opportunities and prospects, periods of training after recruitment, qualities and characteristics sought by industry in its graduate recruits and comments on the current standard of graduates and the success of the universities in educating men for industry, were summarized and circulated to those attending the Conference and provided a basis for discussion.

Sir Hubert Henderson, opening the discussion on behalf of the universities, commented that the general

* Report of the Conference on Industry and the Universities, organised by the FBI Education and Industrial Research Committees and held at Ashorne Hill, Leamington Spa, 25 to 28 November 1949. Pp. 94. (London: Federation of British Industries, 1950.) 3s.