

many years pressed for the establishment of a National Institute of Technical Optics. In the spring of 1916 the Higher Education Sub-Committee of the London County Council put a scheme before the Board of Education, which included the establishment of a new department for post-graduate education and research at the Imperial College, the strengthening of the existing department of technical optics at the Northampton Polytechnic Institute, and the appointment of a single director with a specially constituted committee to supervise the work, both at South Kensington and Clerkenwell. The London County Council offered to defray one-quarter of the capital and maintenance charges of the new department at the Imperial College, and has accordingly contributed 1000*l.* a year for maintenance, with a special capital sum of 2500*l.* for alterations and equipment. The scheme appeared to us to be promising, and after conference with the Board of Education, the London County Council, and the Imperial College, we recommended your lordships to make a grant of 750*l.* for special apparatus and an annual maintenance grant of 1000*l.* a year for five years provided the scheme agreed upon at the joint conference was put in force. The governors of the Imperial College offered the necessary accommodation for the proposed department, and later voted a sum of 2000*l.* for equipment. After further negotiation with the governors of the Northampton Polytechnic Institute and with the Board of Scientific Societies, which had interested itself in the project, the scheme was adopted by all the bodies immediately concerned.

NEW SERIES OF OPTICAL TEXT-BOOKS.

With a due regard to the needs of the industry and of research students in technical optics, our Glass and Optical Instruments Committee have directed our attention to the deficiency of books in the English language on geometrical and technical optics. They recommend that a series of foreign works on these subjects should be translated and published, with corrections and additions, a proposal strongly supported by the Ministry of Munitions. We have endorsed this recommendation, and the Committee of Council have accordingly authorised the issue by the department of revised versions in English of the following standard works at cost price:—

Von Rohr: "Die Theorie der optischen Instrumente," vol. i., "Die Bilderzeugung in optischen Instrumenten."

Gleichen: "Die Theorie der modernen optischen Instrumente."

Ferraris (Tr. by Lippich): "Die Fundamental-Eigenschaften der dioptrischen Instrumente."

At the close of our report last year we remarked that "if it is supposed that modern industry can be developed or even maintained by a process of detailed investigations, a series of particular inquiries, however careful, the time, trouble, and expense will be largely wasted." We are not likely, therefore, to suppose that the considerable number of inquiries we have initiated or aided and have referred to in this part of our report are any adequate measure of the progress made in dealing with the difficult situation with which British industry is faced. Whatever has been accomplished would be better understood by comparing the general attitude of manufacturers to-day with their attitude before the war, or even eighteen months ago; by noticing the rapidity with which men of science at long last are coming to their own; by listening to the altered tone of all classes, and not least the men of business, towards the claims of education. May we add that if our labours are helping to prepare one of the roads for the coming advance, it will be due in the main to our conviction that roads can only be built in country that has been adequately surveyed?

NO. 2497, VOL. 100]

BOOKS RECEIVED.

- Chile. Pp. 301. (Santiago: Chilian Government.)
 Hygrometric Tables for Use with Rotating Dry and Wet Bulb Thermometers. By Dr. W. Doberck. Pp. 17. (London: Williams and Norgate.) 2s. 6*d.* net.
 Introduction to the Calculus of Variations. By Prof. W. E. Byerly. Pp. 48. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press.) 3s. 6*d.* net.
 Health in Camp. By Dr. A. T. Nankivell. Pp. ix+84. (London: Constable and Co., Ltd.) 1s. net.
 Papers from the Geological Department, Glasgow University. Vol. iii., 1916. (Glasgow: J. Maclehose and Sons.)
 Introduction to the Physiology and Psychology of Sex. By Dr. S. Herbert. Pp. xii+136. (London: A. and C. Black, Ltd.) 3s. 6*d.* net.
 Technical Handbook of Oils, Fats, and Waxes. By P. J. Fryer and F. E. Weston. Vol. i., Chemical and General. Pp. x+279+plates xxxvi. (Cambridge: At the University Press.) 9s. net.
 Bedfordshire. By C. G. Chambers. Pp. x+195. (Cambridge: At the University Press.) 1s. 6*d.* net.
 The Theory of the Submarine Telegraph and Telephone Cable. By Dr. H. W. Malcolm. Pp. xi+565. (London: *Electrician* Printing and Publishing Co., Ltd.) 18s. net.
 The Jewish Child: Its History, Folklore, Biology, and Sociology. By W. M. Feldman. Pp. xxvi+451+plates ii. (London: Baillière and Co.) 10s. 6*d.* net.
 Zur Auffassung der Verwandtschafts-Verhältnisse der Tiere. By J. E. V. Boas. Pp. 61. (Kopenhagen: A. Bays.) 3 kroner.

CONTENTS.

	PAGE
The Psychopathy of the Barbed Wire. By Sir Robert Armstrong-Jones	1
Scientific Home-Making. By M. R. T.	3
Speculative Anthropology	4
Identification of Plants	5
Letters to the Editor:—	
Unusual Rainbows.—J. L.; C. T. Whitmell; Dr. F. W. Aston; Lieut. W. Neilson Jones (<i>With Diagram.</i>)	5
The Sounds of Gunfire.—C. Carus-Wilson	6
Education and Industry	6
National Worth of Chemical Laboratories	8
Some Recent Danish Medico-Historical Writings. By W. B.	9
Notes	9
Our Astronomical Column:—	
Solar Radiation and Terrestrial Meteorology	14
Proper Motion of the Great Andromeda Nebula	14
The Lunar Eclipse of July 4	14
The Modern Range-Finder. By Prof. C. V. Boys, F.R.S.	14
The Relations of Mathematics to the Natural Sciences. By Prof. J. W. Nicholson, F.R.S.	16
Precise Levelling in the West of England. By H. G. L.	16
Scientific and Industrial Research	17
Books Received	20

Editorial and Publishing Offices:

MACMILLAN AND CO., LTD.,
ST. MARTIN'S STREET, LONDON, W.C.2.

Advertisements and business letters to be addressed to the Publishers.

Editorial Communications to the Editor

Telegraphic Address: PHUSIS, LONDON.

Telephone Number: GERRARD 8830.