

astigmatism, and chromatic aberration, and their remedies, are all fully considered. A useful bibliography is also appended to each chapter.

*Les Levers Photographiques, et la Photographie en Voyage.* By Dr. Gustave Le Bon. Part I. (Paris: Gauthier-Villars et Fils, 1889.)

THIS work treats of methods of obtaining by means of photography elevations and plans of monuments, buildings, &c., the intention being to render unnecessary the laborious tasks and long calculations which up to the present time have been unavoidable.

The modifications a camera has to undergo before operations are begun consist of the addition, first, of an india-rubber support fitted between the camera and the tripod, and, secondly, of a graduated ground glass in the place of a plain one. The india-rubber support is to enable the camera always to assume a horizontal position in whatever position the tripod may be; the ground glass thus being parallel to the face of the building which is about to be photographed. There is also an arrangement by which the camera can be rotated. By means of the ground glass the dimensions of objects can be easily measured, and horizontal and vertical angles can be read off.

The first few chapters relate to methods of graduating this glass, and its employment in the measurement of angular distances, also the mode of determining the focal lengths of the lenses employed, and the measurement of the sizes of objects after they have been photographed. Chapter v. treats of the general principles of photographic perspective, followed by the applications of those principles to the solutions of various problems, such as, "To determine the height of an inaccessible tower by a single photograph;" "To obtain without any measurement on the object itself its various dimensions," &c. Lastly, Chapter vi. deals with photographic triangulation and methods of measuring large base lines.

*The International Annual of Anthony's Photographic Bulletin.* Edited by W. J. Harrison, F.G.S., and A. H. Elliot, Ph.D., F.C.S. (London: Illiffe and Son, 1889.)

THIS is the second issue of an interesting and useful work. The number of articles has been considerably increased, and there is also an increase in the number of tables at the end, which will be of service both to professional and to amateur photographers. Various methods of printing are displayed in the illustrations. Two pretty views are given, one of which is taken with Dallmeyer's long-focus rapid landscape lens, and the other with his wide-angle landscape lens, showing well the effect of these different focus lenses. No pains seem to have been spared to make this issue surpass the first one, and the editors are to be congratulated on the results of their labours.

*Industrial Education.* By Sir Philip Magnus. (London: Kegan Paul, Trench, and Co.)

THE articles and addresses brought together in this volume form a valuable contribution to the study of one of the most important and interesting questions of the present day. Sir Philip Magnus has not attempted to exhaust his subject, or to deal with it systematically. He merely presents it from various points of view, offering suggestions as to the urgent need for a proper technical training, and as to the methods which may be most fitly used for the attainment of the ends in view. Every page bears witness not only to the writer's general knowledge and ability, but to his practical familiarity with all the aspects of the problems he discusses. One of the best papers in the book is that in which he gives an account

of the school system of Bavaria, whose educational arrangements are not so well understood in this country as those of Prussia. No one who reads this paper, and takes into account all that has been done for education in the other States of Germany, will find much difficulty in explaining the fact that in industry and trade the Germans have become our most formidable competitors. Another excellent paper is on mercantile training, and there is also a good paper on technical instruction in elementary schools.

#### LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

#### An Index to Science.

I AM glad to see that Mr. Taylor Kay has again brought forward the question of a subject index to scientific periodicals. I say again, because the proposal to make such an index was suggested by me in a short letter in NATURE, vol. xviii. p. 251, and more fully at the first meeting of the Library Association at Oxford, in October 1878 (Transactions of Library Association, 1878, p. 85). Dr. Garnett also read a paper before the same Association on this subject in 1879, which was fully printed in NATURE, vol. xx. p. 554. In my original letter I suggested making the index from the papers themselves, and not from the Royal Society's Catalogue; my reason for this was the difficulty that must be experienced in indexing many papers, should the indexer have nothing but the title in front of him. Reference to the paper is absolutely necessary in many instances, especially when the title does not fully set forth its contents. Dr. Garnett, however, pointed out that much labour might be saved if the Royal Society would give two copies of its Catalogue of Scientific Papers, which might be cut up to form the copy of the subject-index. There can be no doubt that Dr. Garnett is right, because, by his plan, however many papers it might be necessary to refer to, the amount of labour as regards manuscript would be very materially diminished. The greatest difficulty of all is the money. Mr. Taylor Kay takes comfort in a Treasury Minute of November 1864, and hopes, from that, that help might be obtained from the Government. I am afraid, however, it will damp his ardour to be told that the Government have refused to bear the cost of printing the Catalogue for the decade 1874-83, although the matter is all ready for the press. It seems to me that, as suggested in my original paper, the co-operation of the learned Societies is the only way in which the necessary funds can be obtained.

I gather from Mr. Taylor Kay's paper that he rather suggests a "classified" list of papers. If that be so, I would like to protest against such an undertaking, feeling sure that it will, like all its predecessors, be doomed to failure. What is wanted is an index pure and simple, in which information can be turned up without consideration as to what "class" or "classes" the indexer has thought fit to enter the subject under. Anyone who has used the admirable catalogue of Dr. Billings will at once admit its superiority to any "classified" arrangement, whether it be that of Comte or of any other philosopher.

The question of this index has been hanging fire too long, and I should be delighted if Mr. Taylor Kay's paper were the means of some active steps being taken to start the work. Poole's Index is a standing answer to those who say it cannot be done. All that we want are willing hands and a long purse: if the scientific Societies or an enterprising publisher will fund the latter, I cannot believe the former will be wanting.

JAMES BLAKE BAILEY.

Royal College of Surgeons, July 5.

#### A Cordial Recognition.

I HAVE just witnessed a curious case of bird instinct which seems worth recording. A gardener living at Zukaleria, three miles from here, caught in his garden a young but fully fledged sparrow, which he brought to the house of a friend with whom