Unités électriques absolues. By Prof. G. Lippmann. Pp. ii + 240. (Paris: Carré and Naud, 1899.)

THIS treatise is the reproduction of professorial lectures delivered at the Sorbonne in the session of 1884–85, and consists mainly of three parts. The first part deals with the electrostatic system of units, the second with the electromagnetic system, and the third with the electromagnetic theory of light. These are preceded by an introduction, which treats of units in general and the *c.g.s.* system. At the close of the book are two supplements, dealing respectively with the conservation of electricity and Lippmann's electrodynamometer.

The treatment is chiefly mathematical, the experimental methods referred to being described in outline. The analysis is, however, simple and the text illustrated by a hundred excellent figures. Indeed, the book is on the whole so good and clear that one regrets the more that the dimensional formulæ have not been brought up to date by embodiment of the progress made in the fourteen years which have elapsed between the delivery of these lectures and their publication. In our view, the value of the book would have been much enhanced by the introduction in it of Prof. Rücker's work on the usually *suppressed* dimensions of μ and k (see paper read before the Physical Society of London, November 24, 1888; NATURE, vol. xxxix. p. 165).

This, impossible in the lectures themselves delivered in 1884-85, was both possible and highly desirable in the book of 1899. E. H. B.

Elementary Practical Physiography (Section II.). By J. Thornton, M.A. Pp. viii+208. (London: Longmans, Green and Co., 1900.)

THIS is an effort to meet the requirements of candidates for the Queen's Scholarship in Section II. of the syllabus of elementary science. Its scope is best described by the sub-title "A Course of Lessons and Experiments in Elementary Science," but it is necessary to add that the only branches of science touched upon are chemistry and astronomy. In both these subjects some knowledge gained by experiment and observation is now expected; but though the author claims to have kept this in view throughout, there is little in the book to entitle it to be called practical. It is true that reference is made to seventy-four experiments in chemistry, but they are for the most part better adapted as suggestions for the teacher than for performance by the student. In the astronomical section an excellent course of reading lessons is provided, but the author has by no means taken sufficient advantage of the opportunity of directing the student's attention to the heavenly bodies themselves. Instead of the descriptions of simple apparatus for making observations which might have been expected, such, for instance, as the measurement of altitude and azimuth, half-a-dozen class-room demonstrations are alone given.

Objection may be taken to the author's statement that "most of the diagrams are new and original"; many of them seem familiar, though they may have been re-drawn for their present purpose. A. F.

Atlas de Photomicrographie des Plantes Médicinales. Par MM. les Drs. Braemer et Suis. Pp. vi + 230; 76 plates. (Paris: Vigot Frères, 1900.)

THIS book consists of series of plates derived from microphotographs of the ordinary medicinal plants. To the plates relevant to each plant a descriptive text is added, dealing with the morphology of the respective plant. The microscopic sections are very clear and well reproduced.

The book ought to be useful to those interested in *materia medica*; but although we know of no similar work, we are afraid it will only appeal to a relatively small circle of readers.

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.*]

Effects of Lightning upon Electric Lamps.

IN a communication to NATURE (p. 391), Prof. Wood pointed out the similarity of the features exhibited in Mr. Webb's photographs to the trails of luminosities exhibited in a picture taken with a moving camera.

To this I replied (p. 413), saying I had understood that the camera was fixed, and calling attention to two features which seemed to show that the phenomenon was real.

An independent suggestion similar to that of Prof. Wood, from another quarter, accompanied by photographs purposely taken with a moving camera,[1] subsequently came before me. This helped to arouse suspicion, and it occurred to me as conceivable that though the camera was fixed, Mr. Webb might as a matter of convenience have taken it up before he capped it; and if so, trails might have been left from the short exposure between lifting and capping. I wrote to him accordingly, suggesting that he should try the effect of lifting before capping. This led him to try the effect of exposure with a moving camera, with the result that there appears to be no doubt now that such was the origin of the supposed effects. In his reply, enclosing photographs taken with a camera which was purposely moved, Mr. Webb writes: "I had made so sure that there was no shake of my camera, in spite of your frequent suggestions to the contrary, that I cannot even now understand it, placed as it was on the balcony rail, excepting in the No. 6 or five-flash exposure, when I wilfully raised or depressed the camera a little to avoid getting two of the horizontal flashes on the same plane of horizon."

I must now refer briefly to the two arguments I used (p. 413) in support of the reality of the effects. I pointed out that in Fig. 4 there was a real decrease of scale in the luminosities about the nine more distant lamps, in accordance with the increasing distance from the camera. I confess it seemed to me that the difference of scale, though real, was not as great as I should have expected, but I had no measurements of the distances of the several lamps from the camera whereby to calculate what the difference of scale should have been if the luminosities were real, and of the same size for the different lamps. A difference of scale might be produced in a moving camera if the exposed plate had a movement of rotation about the line of sight. The other argument was founded on the visibility of the discharge. It seemed to me that such a discharge as those shown for instance in Fig. 1, taken as real, might be expected to be seen directly if the eye were defended from too much glare of the lightning, and I suggested to Mr. Webb to be on the look-out if an occasion should occur. He states in his letter to NATURE (p. 343), that he actually saw such a discharge. I think it is not difficult to reconcile this with the supposition that there is no real discharge. The observer on the look-out would have his eye directed to the lamp, and when the flash came might unintentionally look in a somewhat different direction. In the rapid rotation of the eyeballs the image of the lamp would leave a trail on the retina, which might easily be mistaken for an actual luminous discharge.[2]

The beading of the discharge now presents no difficulty. Indeed, the first idea which naturally occurs to one on seeing it is that it might be connected with the rapid alternation of the current; but so long as the picture is supposed to represent a real discharge, it seems difficult to imagine how the alternation could possibly account for the beading.

Cambridge, March 23. G. G. STOKES.

The Absorption of the Becquerel Rays by Solid and Gaseous Bodies.

I WISH in this note to give some observations recently made with regard to the absorption of the Becquerel rays. Though the experiments are not complete, it is hoped that the results

[1] [The photographs referred to were taken by Mr. J. Williamson, of Hove, the electric lamps towards which his camera was directed being those along King's-road, Brighton. The effects were produced by giving a stand exposure of from five to ten seconds, and then moving the camera about for a few seconds with the cap still off.—Editor, NATURE.]

[2] Mr. Webb has suggested to me another explanation.