tion of minerals deals with their chemical peculiarities. It occupies not quite four pages, and has evidently been inserted for the sake of completeness, that the learner, even though specially intent upon microscopic work, should not be left wholly in the dark as to what he can accomplish himself in the way of chemical analysis.

The second and by much the more important and useful part of the treatise deals with the microscopic characters of minerals, and more particularly of those which enter largely into the composition of crystalline rocks. Considerably over a hundred minerals are treated in this way, and these, of course, include all those which are of prime consequence to the petrographer. For example, the felspars, augite, hornblende, calcite, quartz, pyrite, and other common ingredients of rocks are fully described. The author has worked hard at the subject himself, though he has not hitherto published much. One excellent feature of his volume is the full references which he gives to the papers of previous writers on the same subject. Not only at the beginning of the description of each mineral does he quote, in legible print, the titles of the papers in which information about the microscopic characters of that mineral may be found, but at the end of the volume he inserts a long alphabetical list of authors, with the names and dates of their papers. This is a most welcome boon to all those who, especially in our own country, have the courage to attack the voluminous, but hitherto hardly known or accessible literature of the subject. Two sorts of illustrations are given—woodcuts and coloured plates. Of the former rather more than 100 occur, mostly illustrative of the crystalline forms or optical characters of the minerals. They do not call for special remark, except that they might with advantage have been more numerously inserted to explain the internal peculiarities of some of the numerous species described. The coloured plates are singularly effective. Ten in number, they contain sixty figures of the microscopic structure of upwards of thirty more or less common minerals. We have seen nothing so good since Vogelsang's large and admirable drawings published six years ago at Bonn. It appears that it was originally intended to have included more plates, but that the cost proved so great that the number had to be restricted to ten. This, no doubt, is the reason why some not very important minerals have a place on the plates, while others of greater consequence have been left out.

This volume, even had it been less painstaking than it is, would have deserved commendation as an introduction to a study for which no text-book at all previously existed. But, as its author frankly acknowledges, it will not and is not intended to supply the place of actual personal work—"he who would learn microscopic mineralogy must to the cutting-lathe and the microscope." The greater the number of observers who can be induced to betake themselves to this pursuit, the sooner may we hope for some definite and broad well-established results. At present the work accomplished, most excellent and praiseworthy though it be, belongs rather to the hewing-of-wood and drawing-of-water order. The facts are weekly accumulating out of which, in the end, a flood of light will unquestionably be cast upon the genesis of rocks, and consequently upon the history of the earth itself. All honour, therefore, to the enthusiastic workmen by whom this labour is so cheerfully and actively undertaken, and none the less to Mr. Rosenbusch for publishing a most useful volume, which will, no doubt, increase their numbers.

OUR BOOK SHELF

Solid Geometry and Conic Sections, with Appendices on Transversals, and Harmonic Division, for the Use of Schools. By J. M. Wilson, M.A. Second Edition. (Macmillan and Co., 1873.)

Elementary Geometry, Books i. ii. iii., following the "Syllabus of Geometry," prepared by the Geometrical Association. By J. M. Wilson, M.A. Third Edition. (Same publishers, 1873.)

THE portions of the title-pages we have above given sufficiently indicate the scope of the two works under review and the measure of acceptance they have met with. As we have already given an account of the former work it will not be necessary to give any detailed account of it now. It has been considerably improved by the addition of some eighteen pages of new matter, consisting of a slight rearrangement of Section I., which treats of planes, the addition of a section (IV.) on the sphere, which is almost entirely new to the work, and some slight changes in the articles on the Ellipse and Hyperbola. The result is a close approximation to the views we expressed in our previous notice, and the book can be recommended as an excellent, if not the only English, treatise suited to the requirements of candidates for the first B.A. Pass Examination of the London University. We point out an obvious slip of *inscribed* for *circumscribed* circles, on p. 55; in the fifth paragraph, p. 56, all the A's but one should be accented; the last exercise, on p. 68, is misplaced, and repeated in its proper place, as Exercise 29 on p. 71; other minor slips can be easily corrected.

The "Elementary Geometry" is to our mind a vast improvement upon the first edition; the changes are all, we believe, in the right direction. We never took kindly to that first edition; the most confirmed euclidophilist must be led by a perusal of this to a more favourable view of the aims of anti-euclidean agitators. Seeing that the aim of teachers of both parties, if they are in earnest, should be the *improvement* of geometrical teaching, we trust that neither party will lose sight of this high mark through intervening clouds of dust raised on irrelevant grounds.

The "get-up" of both books is excellent, the printing of the "Elementary Geometry" most accurate (we have detected but one or two slight errors). We wish to add a closing remark on this subject of *errata:* we consider that an author is bound to bestow every care in this matter, and it is with regret that we find some works of recent date have been brought out, it is reasonable to suppose, in such haste to meet a possible demand for them that they may be said to teem with mistakes. This entails great waste of time and trial of patience upon junior students and appears to us unfair treatment. R. T.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.*]

The Southern Uplands of Scotland

TO the able articles on this subject contributed to your pages by Prof. Harkness, I should like to be permitted to make an addition. He has referred to some opinions and observations of mine, but I am anxious that it should be generally known to what an extent the results obtained by the Geological Survey