and in giving assistance to the investigations of others. The volume thus consists largely of additions and notes originally appended to memoirs by other authors."

Hence, although we meet abundant evidence of Stokes's constant occupation with scientific subjects, and of the characteristic generosity with which he placed his powers at the service of others, we miss something of the more spontaneous activity which characterised his earlier period. We find various proofs, however, that the subjects which had first fascinated him were never long absent from his thoughts; and occasionally they receive a flash of unexpected illumination. We may cite the various notes on water-waves, the brilliant little paper on semi-convergent series, and the admirable interpretation of Prof. Hele-Shaw's experiments on the flow of a viscous liquid between parallel plates. We have also a record of the keen interest which in the last few years of his life he took in the subject of Röntgen rays. The lecture (p. 256) which he gave to the Manchester Literary and Philosophical Society in 1896 was written out (with the help of reporters' notes) *after* delivery; bright and genial as it is, it gives no adequate idea of the buoyant freshness and vivacity which characterised the oral exposition.

The volume includes, by a happy determination, a collection of the papers set by Stokes in the mathematical tripos, and in the old Smith's Prize examination. It is well known that through this unusual channel several important scientific results were first made known to the world; for example, the notion of group-velocity, and the famous "Stokes's Theorem," respecting which we have an interesting historical note by Prof. Larmor. We suspect that a mathematical antiquarian might make further interesting "finds." If we are not mistaken, we detect prior publications of a remarkable theorem relating to the infinite product for sin x, and of a definite integral property of Bessel's functions, which are usually attributed to Weierstrass and to H. Weber respectively. Of course, no one, least of all Stokes himself, would attach much importance to the question of priority under these conditions; but such instances are of interest as showing, in unexpected directions, the singular vigour and independence of Stokes's mind.

The Royal Society obituary notice, with its authoritative appreciation of Stokes's scientific researches by one of his keenest admirers and disciples, forms a fitting accompaniment to this monumental publication. The volume is further adorned by an excellent photograph by Mrs. Myers, of date 1892.

The scientific world will await with great interest the publication of the "volume of biographical character, to be occupied in part by a selection from Sir George Stokes's voluminous scientific correspondence, including some unpublished manuscript material," which is promised in the preface. The great energy with which Prof. Larmor has discharged his present honourable task justifies the hope that we shall not have to wait too long for the proposed supplement.

H. L.

OUR BOOK SHELF.

Notes on the Drawings for Sowerby's "English Botany." By F. N. A. Garry. Reprinted from the *Journal of Botany*, 1904–5. Pp. 276. (London: West, Newman and Co., 1905.) Price 6s.

THE series of volumes known as "English Botany" was begun in 1790 by James Sowerby, the botanic artist, who engaged Dr. James Edward Smith, the possessor of the Linnean collections and founder of the Linnean Society, to describe the plants depicted by him. At first the name of the draughtsman only appeared on the title-page, but in 1795 a preface to the fourth volume by Smith acknowledged his authorship, and he was much annoyed in after years by "the flippancy with which everybody quotes "Sowerby," whom they know merely as the delineator of these plates, without adverting to the information of the work, or the name of the author." The artist and those who followed him preserved the original drawings of the phanerogams and vascular cryptogams, which ultimately came into the possession of the trustees of the British Museum, and are now in the department of botany. Here are to be found the drawings, with impressions from the original plates, and also from the third recast edition, laid down side by side on the same sheets. The drawings (which had been submitted to Smith for his criticism and his text which accompanied them) bear many notes and directions to the engraver, which are of great interest as showing not only the state of botany at the time, but mentioning the numerous contributors of plants to the work and its supplement. Mr. Garry has done excellent service in the laborious task of transcribing and editing these notes, which can now be read by those who have not seen the originals themselves. Turning over these pages, the writer is reminded of the days when, more than thirty years ago, he first made acquaintance with the drawings in the old rooms of the department at Bloomsbury, recalling the charm they possess for all who care for the history of the native plants of Great Britain.

Without going into detail it would be impossible to set out many most interesting items which are to be found in the pages of this modest reprint from the two years' supplements to the journal in which they made their first appearance. We have here glimpses of a big book in the making, which extended in the first instance to thirty-six volumes and closed in 1814 with a general index. Further discoveries and greater discrimination of critical forms induced the beginning of a supplement in 1831, which died out in 1866 in its fifth volume; the text in these later volumes was by many hands, amongst them the most active and critical of the botanists of the day. These last plates are now in the Fielding herbarium at Oxford, whence they were borrowed by the author so as to complete his work.

B. D. J.

A Text-book of Chemical Arithmetic. By Horace L. Wells. Pp. vii + 166. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1905.) Price 5s. 6d. net.

IN the preface it is stated that this book "is designed especially for the use of students of quantitative analysis, many of whom, even after having taken extensive courses in higher mathematics, show little ability to solve simple chemical problems. Certain portions of the work are suitable also for the use of those who are studying elementary chemistry." It appears, therefore, that an American professor is no better off than his English cousin in this matter of student arithmetic. The difficulty is two-fold. In