

sanction of the Czar's government, our author has shown us the interior of the other prisons to which political prisoners are sent, and has added a sketch of the life led by the suspects in exile. This occupies the middle of the volume, which opens with an account of the constitutional development of Russia—if it can be called development, when nearly all the movement has been backwards—and it is followed by a dry though useful description of the educational system of the country, written with a view to show its utter inadequacy. Stepniak, whose recent articles in the *London Times* on the present state of the Russian army are full of interest, possesses a talent for describing scenes of suffering and woe, which would have made his or her fortune if turned into the profitable channel of sensational novel-writing. But this same faculty prejudices his reader against him as the truthful narrator of scenes in actual life, and one puts the book down with a feeling that, after all, the author has been trifling with his sympathies.

JOHNSON'S SURVEYING.

THE method of ascertaining distances and elevations by means of the engineer's transit instrument and stadia—where the apparent length on a staff intercepted by two parallel wires in a telescope gives the distance of the staff from the instrument, and the vertical angle serves to determine the elevation—has not, as yet, become well established in private surveying practice, although no one who is well informed in such matters doubts its applicability to a large range of geodetic work, its accuracy and convenience.

The use of the stadia has been confined almost altogether to the U. S. and state surveys. The experience which Professor Johnson, of Washington university, St. Louis, gained while engaged on the surveys of the great lakes and the Mississippi River, has enabled him to prepare a very clear and concise manual of the operations of topographical surveying as there practised. He also gives a detailed description of the work of measuring a base-line and triangulating when the survey is of moderate magnitude, indeed for any work except the most important, and he explains the projection of maps for large and small areas.

The book is well suited to the class-room and the field. We should have preferred, however, to find his discussion of utility and universal applicability of the method placed in the introduction instead of the body of the text, or gathered

A manual of the theory and practice of topographical surveying by means of the transit and stadia; including secondary base-line and the triangulation measurements and the projection of maps. By J. B. JOHNSON, C. E. New York, Wiley, 1885.

into a note, for, when the reader is once assured of its reliability, he will be likely to feel that a manual is needlessly encumbered with such arguments.

NEW BOOKS.

*** For full titles see 'Publications received at editor's office.'*

'Aid to engineering solution' (Jackson) is intended to correspond with 'Aid to survey practice,' and to afford a succinct account of a simple general method of effecting engineering solutions, as well as to give a complete set of solutions useful to the engineer.—'Commercial organic analysis' (Allen) is the first volume of a revised edition, devoted chiefly to the consideration of bodies of the fatty series and of vegetable origin, and includes chapters on alcohols, ethers, and other neutral derivatives of the alcohols, sugars, starch and its isomers, and vegetable acids. The second volume is already on the press, and treats more especially of coal-tar products and bodies of the aromatic series, the fixed oils, and the products of their saponification; and the tannins will also be considered. It is proposed to devote a third volume to nitrogenized organic substances.—'Henfrey's English coins' (Keary) is a new edition of Henfrey's 'Guide to English coins,' with some corrections and enlargements, without any decided alterations in the form of the book.—'Silos for British fodder crops' (*The field*) is a third edition, the same as the last excepting that 48 pages have been appended to supply particulars respecting the ensilage competition of 1884.—'Mikroskopische reactionen' (Holtzendorff) is an attempt to bring together, for the use of chemists, reactions based on the crystalline form and optical qualities of substances, which can be used under the microscope.—'Spezial-karte von Africa' (Habenicht, Domann, and Lüddecke). This map, published by Justus Perthes in Gotha on the occasion of the centennial of the foundation of that house, is being made under the direction of Hermann Habenicht, Bruno Domann, and Dr. Richard Lüddecke. It will be published in ten parts on a scale of 1:4,000,000.

GEOGRAPHICAL NOTES.

CHAFFAUJON writes from Ciudad-Bolivar of his recent journey to the upper Orinoco and Cauca rivers. He was accompanied by Indian guides, two from the Arigua tribe, an Arebato and a Gagnungomo, the latter belonging to a tribe feared for its valor and ferocity by all the people of the region. The party passed without difficulty as far as a little village near the Brazilian frontier, where