

Geography, Natural History and Zoology, Botany and Horticulture, Agriculture, Household Economy, Mechanics and Engineering, Technology, Medicine, &c. In the preparation of this interesting and instructive work, Mr. Baird (of the Smithsonian Institution, Washington U. S.) has been assisted by many eminent men of science, and he has produced a volume, the design of which has been to furnish abstracts only, divesting the different subjects as far as practicable of mere technicalities, and omitting what was not properly relevant. In addition to the subject matter of the book, Mr. B. has added a chapter on the summary of scientific progress of the year 1871, a short biographical notice of many of the scientific men who died during that year, also an Index to the References and a Classified Index.

Force. By Jacob Abbott. pp 305 :—This volume is the fourth of a series of books, entitled "Science for the Young." The object of the Series, as stated by Mr. Abbott, is not mainly to amuse the readers with the interest of incident and adventure, but to give some substantial and thorough instruction in respect to the fundamental principles of the sciences treated of in the several volumes. The book is furnished with woodcuts, which serve to illustrate the subject matter. Mr. Abbott has succeeded in making the various topics on which he has written, both interesting and instructive. The other members of the series are "Heat," "Light," "Water" and "Land," which are dealt with in the same readable and interesting way. The idea of bringing scientific knowledge to young minds, in the way Mr. Abbott has done, is indeed an admirable one. We wish him every success.

St. Paul in Rome. By J. R. Macduff, D. D.—This volume is a collection of sermons preached by Dr. Macduff in the "Eternal City" in the spring of 1871. They are thoughts on the Teachings, Fellowships and Dying Testimony of the great Apostle of the Gentiles in the city of the Caesars. In the introductory chapter, Dr. Macduff speaks of the various places in Rome, connected with the personal history of St. Paul, which were visited by him. His purpose in the sermons, as stated by himself, is to convey a few impressions gathered recently on the spot regarding localities, associated with the great Apostle. The sermons, which are eight in number, were preached on eight successive sabbaths, in fulfilment of a duty devolved upon the author by the church at home. The following are among the subjects embraced in the collection :—St. Paul's announcement of his purpose of going to Rome, as set forth in Romans i. 15-16; St. Paul's letter to the Romans; St. Paul's fellowships in Rome; The Bible in Rome; St. Paul's converts in Rome; St. Paul's prayer in Rome for Onesiphorus; St. Paul's dying testimony in Rome; His Martyrdom. This work cannot fail to be of great use to the student of the Bible, on account of the many interesting and instructive facts which it relates of the great Apostle to the Gentiles in the "Imperial City of the seven Hills," a subject which must ever be fraught with great interest, on account of the man of whom the narrative speaks.

The Ocean. By Elisée Reclus. pp 534 :—This valuable scientific work is from the pen of Elisée Reclus and is the second series of a descriptive history of the life of the globe. M. Reclus is the author of a similar work entitled "The Earth." The subject has been very thoroughly gone into by the author, and we have no doubt but that the information it contains will be very useful to lovers of science. The volume is illustrated with 250 cuts and 27 maps which are most beautifully printed in colours. The maps we perceive were printed in England. The book is divided into three parts, 1st. The ocean, 2nd. The Atmosphere and Meteorology, 3rd. Life.

The Revision of the English Version of the New Testament. By Philip Schaff D. D. Divinity Professor in the Union Theological Seminary, New York. pp 178 :—This book consists of three valuable Treatises respectively by Dr. Lightfoot, Canon of St. Pauls, Archbishop Trenchard and Dr. Ellicott, Bishop of Gloucester and Bristol, on the Revision of the Bible, with an introduction by Dr. Schaff. The introduction contains many interesting facts relative to the revision of the Bible, among which are the names of the British Revision Committee, Rules of the British Committee, American Co-operation, List of American revisers, Constitution, Character of the English Version. The improvements suggested. Dr. Schaff himself is a member of the American revision Committee.

History of Journalism in the United States from 1690 to 1872. By Frederic Hudson. pp 789. In this volume Mr. Hudson has presented to the reading public a most valuable book on an interesting subject of which he seems to be entirely master, and into which he has fully entered. He has divided the period from 1690-1872 into six eras, each of which becomes more entertaining than the previous one, as he gradually approaches the history of journals in our own day. The volume is brought to a close by a fitting tribute to one of the greatest of American Journalists, Horace Greeley, for whom Mr. Hudson seems to have entertained a great respect.

Sermons. By the Rev. T. DeWitt Talmage. pp 405, 416 :—We

have before us the sermons of the Rev. T. DeWitt Talmage, delivered in the Tabernacle, Brooklyn N. Y. They are divided into two series, the second of which contains a biographical sketch of Mr. Talmage, who is perhaps one of the most striking preachers in the United States at the present time. His sermons have received much attention both from the public and the press. He possesses great power of description, and his pictures are graphic and startling. Spurgeon, in speaking of Mr. Talmage's sermons says "they lay hold of my inmost soul" the sermons are phonetically reported and revised, and any one reading them may depend on having the exact words of Mr. Talmage, and we recommend them to the perusal of the Christian public, as examples of earnest faithful preaching of a special kind.

XI: Mathematical Department.

MATHEMATICAL NOTES.

1st. "City of Toronto Debentures. &c."—It is to be regretted that Mr. Scudamore did not so explain wherein his method of solution differs from Mr. McLellan's, as to show to the general reader that his is the correct one. The difference is this :—At the end of the first year the City pays the holder of the debenture \$6. Mr. Scudamore immediately credits the City with the amount, and continues to charge interest on the balance. Mr. McLellan continues to charge ten per cent. on the whole amount, and allows the City but six per cent. on its \$6, at the end of the six years giving credit for the amount thus produced. This is repeated at the end of each of the first five years. If one charges ten per cent. on a transaction, he should allow the same on every payment made. Were Mr. McLellan to do this, he would obtain the same result as Mr. Scudamore. The problem is simply: Find the present worth of a six term annuity of \$6, payable at the end of each year, and a sum of \$100 payable at the end of six years, money being worth 10 per cent.

2nd. "A. lends B. \$1,000, &c."—Mr. White's solution is not for simple interest, as required, but for compound interest. Mr. White says he has no satisfactory solution. The formula is $(1.16)^{10} R = 16$ (Annuities at compound interest). Horner's method may be used, or the following :—Find an approximate solution from the above, and substitute it in the right hand side of $R = 1.16 - \log -1 \{ 4.19382 - 10 \log \frac{1}{2} R \}$.

Similarly substitute the value of R thus found. Repeat until the desired approximation is obtained. Only one log. and an anti-log. has to be found at each substitution. I take $\frac{1}{2} R$ to throw the log. into the middle of the table. $R = 1.09606$.

J. C. GLASHAN.

MATHEMATICAL NOTES.

MR. EDITOR,—In opening the June *Journal*, I see some criticisms on my problems by Mr. Glashan, and I want to explain. I proposed them first to myself and made formulas as necessity suggested. The wording, and my numerical solution of the easy little Diophantine, "The Carpenter's Square," show it was meant for mechanics; and if after the lapse of two months, he found a formula better than my "awkward" one, the credit is his. The "old college one," he says, Mr. Kidd mentions, originated thus: When the latter lived in Fergus, I published a new problem in the *News Record*, and called it "The Belfast College" problem, because I came from Belfast, and had read and admired a treatise on the Diophantine Analysis, by J. R. Young, Professor in the College. A solution resembling my own was given. The "Indian Reserve," also a new one, appeared in September, 1870, and Mr. Glashan, in July, 1872, solved it by a formula which, he says, he found in Todhunter, although, he says, "Authorities are no authorities in mathematics." Mr. Scudamore gave it a neat and noiseless solution. Mr. Doyle's suggestions on "Friendly Competition," and his questions, are worth reflection. His fourth question, $x^3 + y^3 = z^3$, I tried years ago, but never could find rational values. Will some one publish a solution?

Mr. Glashan's expression of Newton's "Binomial Theorem," and his extraction of roots of polynomials, by the usual way, evinces much patience. Still, science is not measured by the square foot. It is only by trying men, detached from books, and on a variety of strange questions, with a limited time to work, that their relative merits can be known.

Yours, &c. &c.

JOHN IRELAND, Teacher,
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December 1st, 1872.