

ly marked style of their own. They have nothing of the flavor of eclecticism. Nor can we admit that any hypothesis of the 'Two Treatises' is so precisely accordant with that of the 'Principia' that it is necessary to attribute them to one author. Digby, by the way, is a better psychologist than physicist. He treats of the association of ideas, and even proposes a physical hypothesis to account for it.

We find it very difficult to let this interesting work go without saying anything more about it. An excellent present for a scientifically minded young person would be Motteley's translation of Gilbert on the Magnet (Wiley) and Benjamin's 'Intellectual Rise' (Appleton).

*The Herschels and Modern Astronomy.* By Agnes M. Clerke. [The Century Science Series.] Macmillan. 1895.

LITTLE could Dr. (afterwards Sir William) Watson, as he strolled through Walcot Turnpike, Bath, late in an evening about Christmas time, 1778, have thought that his stopping in the street to look through the telescope of a "moon-struck musician" was to lead the way to the immediate inception of one of the most remarkable careers in the history of astronomy. Such, however, was the fact. Frederick William Herschel, born at Hanover, November 15, 1738, into a family possessed of an irresistible instinct and aptitude for music, having landed as a lad at Dover with but a French crown-piece in his pocket, drifted through a series of ably filled engagements as a professional musician until, in 1776, he had become Director of the public concerts at Bath. But while all this time a musician in body, he was an astronomer in spirit, at no time losing sight of the vision of the skies; and it was in the latter capacity that he had the good fortune to attract an able and willing patron, whose friendship provided precisely that opportunity which was needed for full development of his powers. All the while that, in his official capacity, he had "to engage performers, to appease discontents, to supply casual failures, to write glees and catches expressly adapted to the voices of his executants, and frequently to come forward himself as a soloist on the hautboy or the harpsichord," he was absorbingly occupied with a self-imposed task of minutely reviewing all the heavenly bodies and every spot of the celestial vault. During the progress of this unprecedented task it was that the above incident happened; for young Herschel, then engaged in a series of observations on the lunar mountains, had brought his seven-foot reflector into the street in front of his house, and was gazing diligently when Dr. Watson chanced to pass by. Fortunately he did not rest with merely expressing great satisfaction at the view of the moon courteously afforded by the young German; he called the next morning to make his further acquaintance. Instantly this led to an introduction to a local philosophical society, then to the Royal Society of London, and in little more than two years to an audience with his Majesty George III. Thenceforward the great Herschel's life and work are the common knowledge of every astronomer—and it is a little singular that a century should have elapsed with no thoroughly competent history of that life and work, and no republication of Herschel's unsurpassed volume of technical papers, which have still to be sought in the original editions of the 'Philosophical Transactions.'

No less astonishing is it that his equally fa-

mous son, Sir John Herschel, now dead nearly a quarter of a century, has thus far experienced a like fate. Miss Clerke's 'The Herschels and Modern Astronomy' is almost the sole attempt to acquaint the lay reader with these great names. Sir William's sister, Caroline, has been more fortunate, and her accurate 'Journals and Recollections' form the chief authority for her brother's eminent life. Indeed, he often referred to her for the dates of events in his earlier years. Collateral information about him is meagre; but in the case of Sir John Herschel there is this important difference, that his long and intimate friendship with Sir William Rowan Hamilton led his conscientious biographer, the late Dean Graves, to make ample inclusions of Herschel's letters. Still, his life, as Miss Clerke modestly says, has yet to be written; and, as we are at liberty to judge from her excellent success with the little volume now before us, no one could tell the fascinating story of that life more entertainingly than Miss Clerke herself. Her evident sympathy with the breadth of his aims in physical investigation, her accurate knowledge of methods, and her singular felicity of expression all fit her worthily for this noble task.

But to return to Sir William. Miss Clerke has admirably told the authentic anecdote of the odd old German organ-builder, Schnetzel, who, exasperated at the staccato performance of Herschel's rival, became wild with delight when, on ascending to the loft, Herschel took from his pocket two leaden weights with which he held down an octave, all the while improvising a majestic counterpoint. "I vil luf dis man," cried Schnetzel, "because he gif my pipes time for to shpeak." And here is her crisp description of the very beginnings of Herschel's building of his own telescopes (page 15):

"In June, 1773, when fine folk had mostly deserted Bath for summer resorts, work was begun in earnest. The house was turned topsy-turvy; the two brothers attacked the novel enterprise with boyish glee. Alexander, a born mechanic, set up a huge lathe in one of the bed rooms; a cabinet-maker was installed in the drawing-room; Caroline, in spite of secret dismay at such unruly proceedings, lent a hand, and kept meals going; William directed, inspired, tolled, with the ardor of a man who had staked his life on the issue. Meanwhile, music could not be neglected. Practising and choir-training went on; novelties for the ensuing season were prepared, compositions written and parts copied. Then the winter brought the usual round of tuitions and performances, while all the time mirrors were being ground and polished, tried and rejected, without intermission. At last, after two hundred failures, a tolerable reflecting telescope was produced, about five inches in aperture; but those two hundred failures made the Octagon Chapel organist an expert, unapproached and unapproachable, in the construction of specula."

It was with this new instrument that, in the following March, Herschel began his astronomical work by an observation of the great nebula in Orion, the record of which is still preserved by the Royal Society.

Herschel married at fifty Mary Baldwin, only daughter of a London merchant, and widow of Mr. John Pitt. Her jointure, we are told, relieved him from pecuniary care, and her sweetness of disposition secured his domestic happiness. Miss Burney records in her diary a tea at Mr. De Luc's, adding, of the newly married wife, "She was rich, too! And astronomers are as able as other men to discern that gold can glitter as well as stars." Their only child was John Frederick William, born 1792, and his biography is here presented for the first

time by Miss Clerke with some approach to suitability. The wider sympathies of the son make his life of greater general interest than his father's, and not a single phase of his beautiful character escapes that careful touch which marks the perfect biographer.

Astronomy, before the Herschels, had been mostly dry formulæ and drier figures, and the irresistible momentum imparted to modern physical astronomy by the elder Herschel received a marked accession of impulse from the life and work of his brilliant son. Before their day, astronomers had mainly been content with inquiry as to precisely where the heavenly bodies had been and would be; anything beyond the crudest speculation as to what these orbs might themselves be, rarely occurred. Not only has the older astronomy not been neglected, but the new astronomy of the nineteenth century has made uninterrupted progress with every decade; and this broad movement, begun by the Herschels in England, was ably promoted by Arago in France, nor has America failed to lend a hand. Not only was a "knowledge of the construction of the heavens" the ultimate object of the elder Herschel's observations, but his conception of the sun, as ruler, fire, light, and life of our planetary system, was more than a half century in advance of his time, and no less prophetic. As early as 1801 he wrote: "The influence of this eminent body on the globe we inhabit is so great, and so widely diffused, that it becomes almost a duty to study the operations which are carried on upon the solar surface." In our day many great observatories are charged with almost the sole duty of that study. Neither to the younger Herschel was astronomy merely a matter of right ascension and declination; of poising, clamping, and reading off; of cataloguing and correcting—a mere "inventory of God's property," as Thoreau has aptly said. "It was his peculiar privilege," remarked Dean Stanley in his funeral sermon, "to combine with those more special studies such a width of view and such a power of expression as to make him an interpreter, a poet of science, even beyond his immediate sphere."

Unintentionally we have left little space for Miss Clerke's chapter on Caroline Herschel—probably the best of all the brief treatments of her life extant. Traits of modest simplicity and singular self-effacement were preëminently hers, and the story of her self denial for her brother's sake will never grow old. Miss Clerke's welcome book is one which no philosophical student of modern astronomy can pass over, and its importance as pure biography places it in the first rank among the lives of famous pioneers in science.

*The Oxford Church Movement: Sketches and Recollections.* By the late G. Wakeling. With an Introduction by Earl Nelson. London: Swan Sonnenschein & Co.; New York: Macmillan. 1895.

In the great variety of books that have grown up about the Oxford Movement there have been many degrees of interest. Mr. Wakeling's place is near the bottom of the scale. It comes very near to being a *lucus a non lucendo*, there is so little in it about the Oxford Movement, speaking carefully. Dean Church, in his admirable history of the Movement, dates its conclusion from the condemnation of Ward in 1845. Certainly its influence upon the church for good or ill went on for a long time after that, but, though nearly related to the Ritualistic Movement, it was quite a differ-

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days ago, that he was ignorant of the information that it contains.

In the same library there is also a book, published by Sir Robert H. Schomburgk, entitled 'A Description of British Guiana, Geographical and Statistical,' etc. It was published in London in 1840, and contains a map. The preface by the author states that it contains "the result of my personal examinations during successive years from 1835 to 1839." At page 62 there is a "List of Estates" in the parishes of St. John and Trinity, which shows that in 1832 and in 1839 there were forty-nine "estates" in sugar, coffee, cotton, etc., in those two parishes. On a previous page the author states that the whole colony is divided into parishes, and that the two parishes just mentioned take in the territory between the Essequibo and Pomeroon Rivers, west of the Essequibo. In a list of towns and villages within the colony the author mentions two villages on the west bank of the Essequibo: Williamstown, "with fifteen houses, a good mercantile store, and a church capable of holding five hundred persons. . . . About seven miles higher up is a village called Catharinesburg, with about fifteen houses, a Wesleyan chapel, a store, and an apothecary's shop." All of these settlements were within the disputed territory.

CHARLES H. HARTSHORNE.

JERSEY CITY, January 3, 1890.

#### THE HOT-BED OF JINGOISM.

TO THE EDITOR OF THE NATION:

SIR: One explanation of the extraordinary bellicose attitude of a large portion of the citizens of the United States will undoubtedly be found in the false and pernicious teaching of history which they had in their youth. It is not too much to say that, twenty years ago, the only part of United States history that was well taught in the public schools was war. The French and Indian wars, the Revolution, the War of 1812, and the Rebellion were the only cases in the dreary desert of American history. The internal development of the country, the progress of the useful arts, our national experiments in political economy and finance, our foreign relations, were all slighted in the text-books in American schools twenty years ago, and the only time when the woman, who generally taught history to the present generation, felt she was on firm ground was when the class followed up and witnessed vicariously the barbarous slaughter, destruction, rapine, and brutality of sea and land engagements. With us Americans the average citizen never goes to a high school. He "quits" study when he "quits" the grammar school, and about all that he recollects of his school history is the wars; and about all he brings away from the little "red" school-house is a blind hatred of the country with which his ancestors fought.

The inability of the American people to profit by the economic and financial blunders of the previous generation has often been commented on. The explanation is that they know nothing about, and have never been taught in school, our financial, economic, and industrial history. Furthermore, it may be said without exaggeration that the masses of our people who got their education in the grammar schools departed from those schools with the idea that there was really no other history worth knowing except American, barring a dim idea that away back in the abyss of time there were such countries as Greece and Rome. The only existing foreign country

of whose history the masses of America know anything at all is England, and of her history they know very little, and that little is altogether bad.

E. L. M.

#### INSIDIOUS MONARCHISM.

TO THE EDITOR OF THE NATION:

SIR: I have failed to see, in all the discussions of the "Schomburgk line," any mention of perhaps the most interesting result of Sir Robert Schomburgk's explorations. On the first of January, 1837, he discovered, in the River Berbice, a new and magnificent water plant, specimens of which he sent to England, where it was propagated. At the time of the discovery William IV. was King, but, before it received recognition from naturalists, his niece had succeeded to the throne, so that the new water-lily was named Victoria Regia, and is now cultivated under that designation. Surely this was a high-handed attempt to extend monarchical institutions to the Western Hemisphere. American botanists have been very supine in this matter; they ought to hold a conference at once at the Smithsonian rooms and have the name changed to *Monrovia Olneyensis*. As a popular designation, "Lodge's lily" might answer.

W. E.

JANUARY 5, 1890.

#### "GALLO."

TO THE EDITOR OF THE NATION:

SIR: In a review of a book entitled 'Among the Pueblo Indians' in your issue of December 19, 1895, you say:

"There is nothing new in the story, unless the account of the game of 'gallo' which they saw played on San Juan's day, in the village of Cochiti, can be so considered. In one portion of the game 'a living rooster [gallo] was buried in the sand' up to the neck, and the object of the player as he rode by was to 'catch the bird' and bear it off to his home. Evidently this is the game of 'gander-pulling,' well known in early times in portions of the South and West; the only difference being that with us the bird was hung by the legs to a cross piece and the riders 'grabbed for the head' as they galloped by under the pole. Whether the Indians borrowed the game from their Spanish neighbors, if indeed they had it, or from ourselves, we cannot say, but that they did borrow it, is, we think, beyond all question."

The game is mentioned by many writers, travellers, novelists, etc., who treat of life in countries once owned by Spain; but at present I can give you only one quotation referring to it. In Bret Harte's poem of "Concepcion de Arguello" (which is a picture of life in California during the days of Spanish-American occupancy), we find the following lines:

"Vainly, leaning from their saddles, caballeros, bold  
Plucked for her the buried chicken from beneath their  
mustang's feet."

The game was probably introduced from Spain. It certainly could not have existed in America previous to the discovery by Columbus, for both horses and roosters were unknown in our continent before that time.

W. M.

WASHINGTON, D. C., January 3, 1890.

#### ADDITION AND SUBTRACTION.

TO THE EDITOR OF THE NATION:

SIR: To your admirable review of 'The Psychology of Number,' by McLellan and Dewey, in the issue of November 23, this addition may be seasonable.

We read of a scholastic discussion as to how

many angels could stand on the point of a needle. Suppose that some investigator had decided that the true number was exactly one hundred and eleven, and had recorded this result in a text-book. Suppose that all subsequent text-book-makers had adopted this conclusion, until finally some one thought out and published "The Psychology of the Angelico-humanistic Interrelations, founded on the Number 'One Hundred and Eleven.'" Undoubtedly, we should be interested in it as an instance of mental ingenuity, but should consider that its purely arbitrary foundation rendered it of slight practical value.

As regards one phase, at least, of the work under discussion, the above illustration would be a fair parallel—the phase which treats of "addition" and "subtraction," wherein the authors travel a purely arbitrary path. To illustrate: In the school-room, a child's attention is directed to two groups of blocks, and he is asked to tell the total number in both. Counting those in either group, he goes on counting from that point till he has the sum of both sets. He is now asked to tell the difference between the two sets of blocks. Again he counts from the number in the larger set backwards till he comes to the number in the smaller set, or from the smaller number forward; in either case, finding the same difference. If he wishes to record on paper each of these steps, he arranges the symbols representing the number of blocks in each set in convenient position to aid him in his counting, by custom (not by necessity) one under the other. He still finds sums or differences wholly by counting or by memory of previous countings.

In an evil day of the long ago, some genius determined to call it "addition" when counting totals, "subtraction" when counting differences. Not only was this purely arbitrary, but its effect was to completely obscure and keep out of the arithmetics the real addition and subtraction as we know them in our daily experience. The child, e. g., could have really added blocks to the place where either group was situated, but he could have done it only by a simultaneous subtraction from some other place. He could have subtracted any block from its place in either set, but he must have added it at once to some other place. Addition and subtraction form inseparable parts of one operation, and the child would have represented this operation on paper in very different fashion from his representation of the artificial "addition" and "subtraction."

In arithmetic, where the so-called "subtraction" is confined to counting from a smaller number to a larger, the mischief was confined to a wrong order of development, and to the suppression of the equation that follows at once the true addition and subtraction. When it came to counting from a larger number to a smaller—calling it "subtracting"—a larger number from a smaller—the mischief was complete; for the scholars, at any rate, thought the attending concepts applicable to dollars and other material objects, instead of being purely imaginative. It is unfortunate that these conventional terms, with their affixed conventional meanings, should have been so long followed by the text-books; a careful examination, so far, revealing but one honorable exception, which is worth noting. In a little text-book, published at Exeter, N. H., in 1845, by Z. Jones, principal of Hampton Academy, the common use of the terms "addition" and "subtraction" is noted, but the author studiously avoids them, choosing more exact terms.

It is still more unfortunate that two author

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of such repute as Messrs. McLellan and Dewey should have incorporated into their 'Psychology' a fundamental arbitrary concept. Had they searched carefully, they would have found it the source of many contradictions and absurdities in our mathematics, and might have changed some of their own psychological conclusions.

WILLIAM D. MACKINTOSH.

CHAUNCEY HALL SCHOOL, BOSTON, MASS., JAN. 8, 1896.

#### USE AND ABUSE.

TO THE EDITOR OF THE NATION:

SIR: Among recent abuses of the word woman, the worst is the curious trick of substituting the plural of the substantive form for that of the adjective, as *women* writers, *women* students, *women* graduates, *women* bicyclists, *women* prisoners. I have not the time nor do I care to verify quotations, but may I say that I have within six months seen this error committed twice in my home daily, twice in the official report of the State Superintendent of Prisons, once on the title-page of a semi-official and once in the body of an official publication of Cornell University, once in a literary letter of Mr. Zangwill's to the *Cosmopolitan*, and once in the columns of the *New York Evening Post*? Would it occur to those who take *women* in such connection for an apposition to praise the valor of our *sailors* boys or to refer with a touch of pride to their *soldiers* ancestors?

If woman is going to be *supra grammaticam*, like King Sigismund, her progress is backwards. Folk grammar, to be sure, admits "teeth-brushes."—Yours very truly,

ALFRED EMERSON.

ITHACA, N. Y., December 30, 1895.

[So long as we say "men folk(s)" and "women folk(s)," and Shakespeare is not scouted for writing "Bring forth *men*-children only," and "Will you not go the way of *women*-kind?" the "abuse" pointed out by Prof. Emerson will perhaps not appear such to the majority. We cannot admit his analogy in the case of "*sailors* boys." It lacks the essential feature of "mutation" (man, men), which folk grammar (or should we say idiom?) has preserved in *teeth*-brushes. We might in English have had the word "teeth-brush" as the Germans say *Augenglas* (eyeglass), *Bücherschrank* (bookcase), etc. Their *Männerchor* corresponds to our "men folk."—ED. NATION.]

#### Notes.

MACMILLAN & Co. announce 'Jewish Ideals, and Other Essays,' by Joseph Jacobs; a volume on the evidences of Christianity from Brownie's point of view, by Dr. Berdoe; a translation of Erdmann's 'Grundriss der Logik und Metaphysik,' by Dr. B. C. Burt of Ann Arbor; 'The Number Concept; Its Origin and Development,' by Prof. Levi L. Conant; an 'Atlas of Nerve Cells,' by Dr. M. Allen Starr; and 'Plant Breeding,' by Prof. L. H. Bailey, which will in September introduce the "Garden-Craft Series."

T. Y. Crowell & Co. enlarge their "Library of Economics and Politics" with 'Proportional Representation,' by Prof. John R. Commons of Syracuse University, and 'The Inter-

nal Revenue System of the United States,' by Dr. Frederic C. Howe of Cleveland, Ohio.

Charles Scribner's Sons have in press 'The Near East,' by Henry Norman, and 'One Hundred Games' for social amusement.

Roberts Bros. will soon issue the 'Family Letters of Dante Gabriel Rossetti,' with a memoir by W. M. Rossetti; and 'Modern Women.'

Elphingham Wilson & Co., London, besides a new and revised edition of Alexander Del Mar's 'Science of Money,' will issue a 'Handy Guide to the Patent Laws,' by G. F. Emery.

We have received the printed catalogue of the Avery Architectural Library, the sub-title of which sets forth that it is a memorial library of architecture, archaeology, and decorative art, and that it is connected with the library of Columbia College. The book is a massive quarto of 1,139 pages, with an introduction and a few illustrations at the beginning; it is sumptuously printed, and the matter of composition and proofreading seems to have been attended to with much more than usual thoroughness. It is not possible to ascertain from the text how many volumes, or how many separate works, the library contains, but the introduction states that there were about 13,000 volumes when the catalogue went to press, and reminds the reader that so many volumes devoted to a branch of the fine arts are of more pecuniary and actual consequence than the same number devoted to history or literature. Of course, the majority are richly illustrated, and, again of course, either a majority or a large minority are of folio size. The introduction is signed by the commission of purchase, which is composed of the professor of architecture in the School of Mines ex officio, now William R. Ware; the librarian of Columbia College ex officio, now George H. Baker, and Russell Sturgis of New York. It was in April, 1890, that Henry O. Avery died, and his parents, Mr. and Mrs. Samuel P. Avery, shortly afterward founded in his name and to his memory this great benefaction to students. The foundation has been increased and its range extended, until now it consists of the important collection of books above named and an invested fund of \$15,000 for further acquisitions.

If we were to pick out the most timely reading from the closed volume 28 of the *Century* (May-October, 1895), we should designate the account of the naval battle of the Yalu in the late Sino-Japanese war. It is a peace tract of the first quality written by an American participant. Besides Prof. Sloane's continuing *Life of Napoleon* (which also has its peace lessons), and the serials that have already become books—Crawford's 'Casa Braccio,' Mrs. Harrison's 'Errant Wooing,' and 'Life in the Tuileries under the Second Empire'—there is nothing significant that we have not touched upon in our monthly notices. Still, we will recall Mr. Janvier's graphic story of the *Comédie-Française* in the old amphitheatre at Orange, France; and, among the illustrations, the several portraits of Rubinstein, Bryant, Clay, and Keats.

The two volumes of Scribner's for 1895 have also their books in embryo—Meredith's 'Amazing Marriage,' Mrs. Ward's 'Story of Bessie Costrell,' and Robert Grant's 'Art of Living,' to say nothing of President Andrews's unfinished scrap-book 'History of the Last Quarter-Century,' begun in the March number. The papers on Golf and on Posters, French, English, and American, bespeak attention to current fads. Theodore Roosevelt's 'Six Years of Civil Service Reform' must now be

read with melancholy reflections on the fine gold that has become dimmed. The biographical-critical sketches of wood-engravers have been worthily continued. It is well to remember the late portrait of Huxley, and to forget certain eccentricities of illustration, which will be found in the second volume.

Continuing its standard edition of papers read before it, the Massachusetts Military Historical Society has published, through Houghton, Mifflin & Co., another fine octavo volume entitled 'The Virginia Campaign of 1862 under General Pope.' The papers, fourteen in number, were nearly all read before the Society in 1877, and have a double interest: first, of course, for the historical and critical matter contained in them, but, second, for the instructive evidence of the change of sentiment and judgment which has come to intelligent military men in the progress of twenty years. Half of the papers show the strong predilections (not to say prejudices) which were rife among army men at the close of the war. The publication of the Official Records by the Government has made obsolete such ardent advocacy of favorites and sweeping condemnation of others. There is also another portion, calm and judicial in character, which has not lost in weight or influence. Noteworthy among these are the papers of Mr. John C. Ropes and Colonel Thomas L. Livermore. Outside of the controversial list are admirable descriptive papers, like Gen. Walcott's 'Revisit to the Field of Chantilly,' and Gen. Andrews's 'Battle of Cedar Mountain.'

In spite of rather careless style and wayward punctuation, Mr. Bernhard C. Steiner's monograph on 'Citizenship and Suffrage in Maryland' (Baltimore: Cushing & Co.) is likely to be useful to several classes of persons. Historical students will probably be most interested in the earlier pages, dealing with citizenship and suffrage during the early colonial period, and based on diligent study of early laws and records; the summaries of important cases in State courts involving the suffrage and election laws ought to be of some value to lawyers; while the dark picture which Mr. Steiner draws of the political and judicial corruption attending elections in Baltimore from time to time during the past thirty years, though presenting nothing new, is nevertheless a forcible illustration of the conditions against which municipal reform has to contend.

The "verse renderings of typical passages" of 'The Song of Roland: A Summary for the Use of English Readers,' by Arthur Way and Frederic Spencer (London: Nutt; New York: Macmillan), are not of such a quality as to distinguish the little pamphlet which serves as an excuse for printing them. And if we admit that "small service is true service," we must add that with little trouble a much greater help could have been rendered. If interest is to be aroused in the 'Chanson de Roland,' the English reader might at least be directed to the most convenient original text—say, Léon Gautier's, with its parallel translation into modern French prose, line for line, and all its apparatus. Our editors would also have done well to borrow freely from Prof. Gautier's full introduction as calculated to whet the student's appetite.

It will be strange if some Jingo Furioso does not speedily translate into pure American-English Paulo Fambri's 'La Ginnastica Bellica' (Rome: Casa Editrice Italiana). Its brawny giant of an author examines Galen's three divisions of gymnastics, namely, "medica, sive sapientia, bellica, sive patriótica, athletica, sive