

improve it only in that direction. The exercise of the ear in hearing does not improve the power of vision, nor, while we strengthen the memory for sounds, do we improve that for sights. Even in a single sense or faculty, we find different forms and degrees of memory, as in sight for persons, places, forms, colors, and the like. Hence we may cultivate the memory for persons without at all improving that for places, and a good memory for colors may afford little help toward the remembrance of forms. . . . Another error that may be traced to the same cause is that of regarding the memory only or chiefly as it is manifested in its lower forms, and hence depreciating or undervaluing its importance. . . . The memory for names and words is the lowest form of memory, and fools and even idiots are sometimes found to manifest it in a very remarkable degree. Hence to judge of the value and importance of memory simply from the lower aspects of it is manifestly unfair. The memory for words is only one form of memory, besides which there are memories for ideas, for processes of reasoning, for creations of the imagination; and to say that memory interferes with efficiency of any of the other faculties is to regard as one thing what is in reality many things, and to confound the lower forms of it with the higher." The author distinguishes three kinds of forms of memory. The first, or lowest, is the local or verbal memory, which is the power of remembering facts in the order in which they occur, or words in the order in which they were addressed to the individual. This form of memory is very ready, and more or less imposing; it is nevertheless a manifestation merely of a mind which is very receptive to sense-impressions, and which consequently recalls them with great accuracy.

The second and higher form of memory is that in which not merely an individual past state of the mind, with its attending circumstances, is recalled, but where a number of past states having some resemblance to each other are reproduced at the same time. In the first kind of memory the associative principle at work was contiguity; in the second form it is similarity. The third and highest form of memory is that in which past ideas or past sensations are, as it were, imaged forth as if they were objects of actual perception. Wherever we find this power of imagination most highly developed, there we have memory in its most perfect form.

It will be seen that Mr. Kay is writing strictly on physiological lines when he makes this division of memory and his estimate of the importance of its various manifestations. He proceeds from the fact that there is a nervous discharge to correspond to every mental change, and that in the case of memory the discharge in question takes place in the same tract as it did when the presentation, now recalled, was originally perceived. He does not, however, confine himself to the opinion generally held by physiologists, that the movements on which our recalled sensations depend are confined to the brain, which may therefore be regarded as the sole seat of the memory. Mr. Kay says that this is the case in many instances; for instance, where the previous sensation is but imperfectly recalled. He contends, however, that where the previous sensation is brought back with any degree of vividness, as in the highest form of memory, the motion is not confined to the brain, but is conducted "also to the connecting nerves, and often to the special organ of sense, as in the original sensation, with this difference: that in sensation the motion originates in the external organ, and travels inward to the centre; whereas in recollection it originates in the centre, and passes outward to the outer organ" (p. 33). He supports himself in this opinion with a quotation from Professor Bain, and with some interesting experimental cases which we have not space to record. As a result of this opinion, the author can conclude that the senses are not only necessary for receiving impressions, but are necessary also for imaging them in the memory; and the muscles are not only necessary for the performance of actions, but necessary also for the full remembrance of them. Hence not the brain alone, but the whole body, is the true seat of memory.

We have given this rather full digest of Mr. Kay's views, because it is necessary, in reading and estimating the book, to know on precisely what foundation it builds. We cannot follow him over the remaining chapters of his book in as much detail, but we most cordially recommend his pages to the attention of all students of memory, and all who are engaged in the practical work of teaching. What he says about attention and association is, of course,

well known to all save those who spend large sums of money in endeavoring to train the memory according to some secret and newly discovered "physiological" process. A careful study of Mr. Kay's book will dispel all illusions concerning such memory-training, and also make it plain that mnemonics as popularly understood is a self-evident absurdity; in that, instead of grasping a natural and real association, it calls up an artificial one, and makes it necessary for the mind to retain not merely the things associated, but the artificial bond of association which has been placed between them.

Mr. Kay's chapter on "How to Improve the Memory" is the shortest in the book, and reasonably so. If a clear impression of a sensation increases the likelihood of its being remembered, it is evident, that, in order to train the memory, we must begin by training the attention; if an idea can be the more readily recalled according as it is more easily associated with other ideas, then it is evident, that, after training the attention, we must train the power of associating ideas—not in an artificial and superficial way, but in accordance with the real connection existing between the ideas themselves; and, lastly, if there are memories, and not a memory, practice and exercise of any particular kind of memory is necessary in order to make it efficient. These are the practical rules resulting from Mr. Kay's treatment, and they are rules fully justified by physiology and psychology. The author has given us the best and most compact, the most accurate and the most practical, treatment of memory that we know of.

*Case of Emperor Frederick III.* Full Official Reports by the German Physicians and by Sir Morell Mackenzie. New York, Edgar S. Werner. 12°. \$1.25.

THIS volume of 276 pages gives a complete account of one of the most celebrated cases of modern times, beginning with the month of January, 1887, when the Crown Prince of Germany felt the initial symptoms of his fatal illness, to June 15, 1888, the day on which as emperor he succumbed to its ravages. Twenty-two illustrations serve to make the reports of the physicians more intelligible than they otherwise would be. These represent the growth in the larynx at different stages of its progress, and the trachea after the operation of tracheotomy had been performed, with the canula through which air was admitted to the lungs. A perusal of this book leaves the disputed questions no nearer a solution than before, and we must be content to wait until sufficient time has elapsed to permit the subject to be considered from a purely scientific standpoint, without bias, either national or professional.

#### AMONG THE PUBLISHERS.

THE January number of *The Chautauquan* is replete with valuable and interesting matter. The following is the table of contents: 'Gossip about Greece,' by J. P. Mahaffy, M.A., of Dublin University; 'Nicias,' by Thomas D. Seymour, M.A., of Yale University; 'Greek Mythology,' by James Baldwin, Ph.D.; 'Sunday Readings,' selected by Bishop Vincent; 'Music among Animals,' by the Rev. J. G. Wood; 'The Effect of Explosives on Civilization,' by Charles E. Munroe, chemist of United States Torpedo Corps; 'Hospitals,' by Susan Hayes Ward; 'The Indians of the United States,' by J. B. Harrison; 'An Autocrat in Feathers,' by Olive Thorne Miller; 'Educate the Hand,' by Dr. T. L. Flood; 'The Chinese in the United States,' by Wong Chin Foo; 'Finland and the Finns,' by Bishop W. F. Mallalieu, LL.D.; 'Temperance Laws in the States and Territories,' by the Hon. H. W. Blair, United States Senator from New Hampshire; 'Working Girls' Societies,' by Grace H. Dodge; 'Alexander Hamilton,' by Coleman E. Bishop; 'Chapultepec,' by Eugene McQuillin; besides the usual editorial and C. L. S. C. departments. The poetry of the number is by Ada Iddings Gale and Hjalmer Hjorth Boyesen.

— The December number of *The Canada Educational Monthly* opens with an article on 'Some Antecedents of Montreal,' by Sir J. William Dawson, followed by the second part of the annual convocation address of President Sir Daniel Wilson of University College, Toronto. The first instalment of a brief history of Knox College, from the pen of Professor Gregg, next appears; then an article by Professor Fletcher, of Queen's, on 'University Matricula-

tion in Classics;' another on 'Botany in Country Schools;' and one on 'Professor Montgomery's Recent Explorations in Dakota of the Remains of Mound-Builders.'

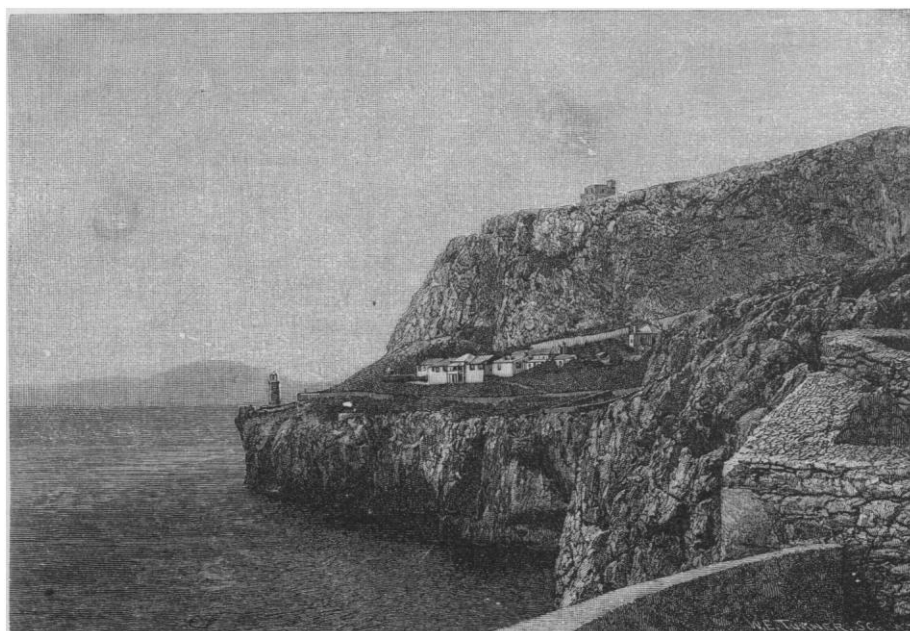
— Charles Scribner's Sons have just ready a new volume by the Rev. Dr. Henry M. Field, in which the famous traveller describes Gibraltar,' giving an historical survey of the fortress and town. The Diary and Letters of Gouverneur Morris,' edited by Anne Cary Morris, also just issued, is crowded with material of international interest.

— Scores of books have been written about Spain and about northern Africa, but it has been left for Dr. Henry M. Field to write a most interesting volume about that unique bit of English territory that lies between these regions, 'Gibraltar' (New York, Scribner). The place is one that travellers are wont to give the go-by, and this fact imparts an unusual degree of novelty and freshness to Dr. Field's picture. The book gives, in a lively, entertaining narrative, just what we would wish to know about the fortress of Gibraltar, its appearance, history, construction, military and social life, etc. One climbs the rock with the author as a guide and com-

glances at the traits of its great marshals; the social conditions, both as they promise development and as they are still unripe for the complete freedom of expression of public opinion in the press or otherwise; the Philistine and his carping pettiness; society and the womankind; the family life and recreation and amusement, — all are glanced at and commented on, and anecdotes and instances supplied.

— D. Lothrop Co. have under way a book of travel by Henry E. Rhoades, of the Engineer Corps of the Navy, who was associated with Lieut.-Commander De Long, Lieutenant Chipp, and Chief Engineer Melville in the 'Polaris' Search Expedition in the Arctic in 1873, and who has been twice almost around the world. It will deal in an interesting way with the habits and customs of the people of the West Indies, of Brazil and other countries of South America, of Africa, Madagascar, the Comoro Islands, Arabia, India, China, Japan, Greenland, etc., and will be appropriately illustrated.

— It is a great compliment that the *Youth's Companion* has been appointed to be read in schools in various localities, Toledo among them.



From 'Gibraltar.'

A VIEW OF GIBRALTAR.

Charles Scribner's Sons.

mentator, goes through the fortifications, strolls around the town, is present at a parade, gets a glimpse of the society of the place, reviews the great siege more than a hundred years ago, with all of its details of heroism on the part of the besieged English and their French and Spanish assailants, and finally sails away from the picturesque spot to Africa. The numerous illustrations aid the reader materially in getting a capital idea of the famous fortress and town, and their surroundings.

— Macmillan & Co. will issue immediately 'Japan and its Art,' by Marcus B. Huish, founded on papers in the *Art Journal*, but revised and extended. The book, say the publishers, is the result of a year's constant intercourse with the most competent Japanese experts, and of study of the principal European collections. It will contain upwards of one hundred illustrations.

— Messrs. Ticknor & Co. published on Dec. 11, 'Imperial Germany,' a critical study of fact and character, by Sidney Whitman. This book deals with some characteristics of Germany as a nation, socially, politically, and intellectually, passing in survey over the historical development, and showing the elements by which German unity has been achieved, and especially noticing the play of the ideal element in the process. The growth of the Hohenzollern power and the characteristics in its more prominent personages which have gone to form the grit of the Prussian nation, and finally to make it supreme in Germany; the condition of the army and the leading influences that have combined to make it what it is, with

— A. D. F. Randolph & Co. will publish at once 'The Fisherman's Daughter,' by Florence Montgomery.

— The Christmas number of *Harper's Weekly*, issued Dec. 12, consists of twenty-four pages. It contains an interesting sketch of Christmas customs in Germany by the Countess von Krockow.

— The sumptuous new volume of 'Mendelssohn's Letters,' lately published by Ticknor & Co., has received many most favorable notices. Mr. Gladstone says, "To Mendelssohn I feel grateful for his works, and I have also had the pleasure of hearing him play, some thirty or thirty-five years ago, in London. A few glances have shown me that the book will afford me a most agreeable perusal." Sir George Grove, author of the 'Dictionary of Music,' writes, "You have made me most happy with your beautiful book, and by the dedication, which is more than I deserve." Georg Henschel, the *maestro*, says, "I am almost through with it, and cannot tell you how I enjoyed it, and how splendidly the selections are made, and altogether how thoroughly you have succeeded in making the book highly interesting from beginning to end." Mendelssohn's eldest daughter says, "How charming the sketches are, and how very well done! I like every thing in and about the book, and personally enjoy it immensely. The letters read quite as if they had been written in English." And Robert Browning writes, "While I sat preparing the paper whereon to write, came the very book itself, — the dearest of books, just now. The best way will be to thank you at once, and be certain of finding plenty more to

thank you for when I have read what will interest me more than any thing else I can imagine in the way of biography."

— The English lady who writes under the pen name of 'E. Nesbit' has just made a collection of her later lyrics, which Longmans, Green, & Co. are about to publish. The book is called 'Leaves of Life.' The verse ranges from neatly turned and sharply pointed *vers de société* to serious poems of a high aspiration, frequently dramatic. Perhaps the most obvious characteristic of these poems is the sympathy the author reveals in them for modern moods of thought, and especially for the ambitions and revolts of the lowly.

— The late Lord Stanhope's 'Notes of Conversations with the Duke of Wellington,' just published in England by John Murray, will be issued in America by Longmans, Green, & Co. Lord Mahon was very intimate with the victor of Waterloo for the last twelve years of the Iron Duke's life, and he set down from day to day Wellington's table-talk, which is always interesting and often important. Wellington was as frank and as direct as Grant, and, like the great American commander, the Englishman was prompt to praise his chief adversary. Besides giving us Wellington's opinions of Napoleon, of Talleyrand, of his own army, and of the comparison of himself to Marlborough, Lord Stanhope's book abounds in quotable anecdotes.

— An extra number of the Riverside Literature Series (published monthly by Houghton, Mifflin, & Co., Boston, at fifteen cents a number) has just been issued, entitled 'Scenes and Dialogues from the Writings of Harriet Beecher Stowe,' by Emily Weaver. The number contains selections from 'Uncle Tom's Cabin,' 'The Minister's Wooing,' and 'Old Town Folks.' The dialogues are well adapted for private theatricals, and are also especially suited to take the place of readings or recitations in school exercises. The same firm now have ready a new edition of Andrews and Stoddard's 'Latin Grammar,' revised by Professor Henry Preble of Harvard University.

— The *Publishers' Weekly* states that on the 29th of August next year the *Journal des Débats* will have been a hundred years in existence. Unlike other newspapers, its daily impressions are not numbered, so the reader looks in vain on the front sheet for evidence of its age. "Though founded in August, 1789, the *Débats*," so says the London *Athenæum*, "did not attain a leading place among French newspapers till some time after it had become the property of the brothers Bertin, who bought it in 1799." It has had an eventful career, and, as Lamartine wrote, its history during sixty years forms a part of the history of France. It is still regarded as a sort of stepping-stone or ante-chamber to the French academy on account of the large number of its eminent contributors who have become academicians. An historical account of the paper will be issued in celebration of its centenary.

— Houghton, Mifflin, & Co. will publish next February, F. Hopkinson Smith's new book of travel, 'A White Umbrella in Mexico,' with illustrations by the author. One of the chapters is given in the December *Century*, and another will appear in the January *Atlantic*.

— Mr. George Hannah, librarian of the Long Island Historical Society, addressed the Grolier Club, 64 Madison Ave., on the evening of Dec. 10, on 'Early Printed Books relating to America.' On Dec. 14 the Grolier Club opened an exhibition of the printed matter of which Mr. Hannah spoke, which will continue ten days. It was reported that work on the new club-house was progressing rapidly.

— The town of Dedham, Mass., has just issued a second volume of records, under the title of 'The Record of Baptisms, Marriages, and Deaths, and Admission to the Church, and Dismissals therefrom, transcribed from the Church Records in the Town of Dedham, Mass., 1638-1845; also all the Epitaphs in the Ancient Burial-Place in Dedham, together with the other Inscriptions before 1845 in the Three Parish Cemeteries,' edited by Don Gleason Hill, president of the Dedham Historical Society, and town clerk. Supplied by G. W. Humphrey, Dedham, Mass.

— George Forbes Kelly, 31 E. 17th Street, New York, has just issued the first series of 'The American Art Portfolio.' This is

practically the cream of the first two volumes of *The Art Review*, now out of print.

— Gen. Benjamin Harrison, the President-elect of the United States, makes this pleasant allusion to Gen. W. T. Sherman, in a recent letter recommending the new Ticknor illustrated edition of 'Marching through Georgia:' "I was delighted to see how perfectly the artists have succeeded in illustrating the text of a song that no soldier, except it be the great captain who led the march, ever tires of hearing, and he, I think, only because his modesty is as great as his leadership was dashing and successful. The portrait of General Sherman is very spirited and lifelike."

— Gen. Regis de Trobriand, the gallant veteran of a hundred battles in defence of the Union, now lives in New Orleans, on the retired list of the United States Army. He is much pleased with Lieutenant Dauchy's translation of his 'Four Years in the Army of the Potomac' (just published by Ticknor & Co., Boston), and writes to the publishers, "My work enters a new career, all rejuvenated to bring back in vivid colors memories of great things accomplished by our generation, and not to be forgotten by those who come after us. The translation is excellent, and I can but be grateful to Mr. Dauchy, who undertook the labor and carried it through so successfully, and to you who took so good care to present it to the public in such an elegant form."

— The *Technology Architectural Review*, issued from the Architectural Department of the Massachusetts Institute of Technology eight times a year, promises to give American students of architecture "some of the broad training in design that must form part of the only foundation upon which any successful architectural career can be built."

— 'John Ward, Preacher,' the brilliant novel by Margaret Deland, is in its fifteenth thousand. The avidity with which the public seized upon this book was almost equal to that with which it has devoured 'Robert Elsmere.'

— William Q. Judge, New York, has just issued Mme. H. P. Blavatsky's new book, 'The Secret Doctrine,' the purpose of which is to "lay before the thinking world so much of the 'hidden wisdom'" — that is, of a divine degree of knowledge possible to human beings under certain conditions — "as it is thought expedient to make known at present to men in general."

— John Wiley & Sons have in preparation 'A Technical Dictionary, which will define, as an Authority, All the Terms of Art and Industry,' by Park Benjamin; 'The Guide to Piece Dyeing,' by F. W. Reisig, a practical dyer and chemist, and giving specimens of his own color-work and 100 recipes for the same; 'Steam-Engine Design for the Use of Mechanical Engineers, Students, and Draughtsmen,' by Prof. J. M. Witham, late assistant engineer U. S. Navy; and a 'Treatise on Linear Differential Equations,' by Prof. T. Craig of the Johns Hopkins University.

— The 'Johns Hopkins University Studies for 1889' will be devoted to (1) 'Arnold Toynbee,' by F. C. Montague, fellow of Oriel College, with an account of the work of Toynbee Hall in East London by Philip Lyttelton Gell, chairman of the council; also an account of the Neighborhood Guild in New York, by Charles B. Stover, A.B.; (2-3) 'The Establishment of Municipal Government in San Francisco,' by Bernard Moses, professor of history and politics in the University of California; (4) 'The City Government of New Orleans,' by Judge William W. Howe; (5) 'The City Government of Chicago, with a Bibliography on Municipal Government in the United States,' by F. H. Hodder, instructor in history in Cornell University; (6) 'A New England Village Community, a Study of Wethersfield, Windsor, and Hartford,' by Charles M. Andrews; (7) 'The Study of History in France and Germany,' by Prof. Paul Fredericq of the University of Ghent, translated by Henrietta Leonard; (8) 'Federal Government in Canada,' by James G. Bourinot, clerk of the Canadian House of Commons; (9) 'Local Government in Wisconsin,' by David E. Spencer; (10-11) 'The Gilmer Letters, an Account of the English Professors obtained by Gilmer and Jefferson for the University of Virginia,' by William P. Trent, professor of history and English in the University of the South; (12) 'Higher Education of the People, a Series of Social

and Educational Studies,' by Herbert B. Adams of Johns Hopkins University.

—Charles W. Sever, Cambridge, Mass., announces a new and enlarged edition of 'Songs of Harvard.' It contains all the latest and most popular songs and glees sung by the Harvard Glee Club and students of other American colleges. The book has already run through three large editions, and has met with great favor wherever introduced. Of Stories from the Persian, 'Abdulla of Khorassan' and 'Ahmed the Cobbler,' published by the same house, and edited by Prof. F. J. Child, the Boston *Advertiser* says, "These tales are taken from Malcolm's 'Sketches of Persia,' one of the most agreeable books in the English language, though it seems scarcely to be known to the present generation of Americans. If the two tales herein preserved are a sample of the entire book, it fully deserves the high praise that Professor Child has given it.

—In the *Magazine of Art* for January (New York, Cassell & Co.) the frontispiece is a photogravure from a painting by R. Caton Woodville, called 'Saving the Guns at Mainward.' The opening article, by Cosmo Monkhouse, gives a sketch of [the young English sculptor, Alfred Gilbert, and a portrait. 'Art in the Theatre' is the subject of the next paper, giving some illustrations from the work of some famous scene-painters. 'Salisbury Hall' is a description with pen and pencil of one of those picturesque old places found nowhere in such perfection as in England. The second paper on the 'Liverpool Corporation Collection' shows that shipping-centre to be a liberal patron of the fine arts. William G. Rossetti has another paper on the portraits of his brother Dante Gabriel. 'Expressions in Drapery' is a carefully prepared paper by Annie Williams, for which studies by Sir Frederick Leighton serve as illustrations. A full-page engraving of Mr. Homo Thornycroft's statue of General Gordon, erected in Trafalgar Square, brings us to the notes, which are full.

—The romantic and picturesque side of 'Castle Life' in the Middle Ages' will be described by E. H. and E. W. Blashfield in the January *Scribner's*, with many illustrations from drawings by E. H. Blashfield; Gen. E. P. Alexander, president of the Georgia Central Railroad, and one of the most widely known railroad men in the South, will write of 'Railway Management'; Thomas Bailey Aldrich, editor of *The Atlantic*, will write of some bright memories of his birthplace, Portsmouth, N.H. (his paper, entitled 'Odd Sticks,' is the first of the series of final papers which replaces the feature contributed last year by Robert Louis Stevenson); Miss Sarah Orne Jewett, whose work has heretofore dwelt with New England character, will contribute a story in an entirely different field, describing the family life of a respectable Irish-American saloon-keeper; and Robert Louis Stevenson, who spent last winter in the Adirondacks, describes a series of remarkable adventures in that region. The time is in the last century, when the wilderness was almost pathless.

—The United States Geological Survey has just published Bulletin 47, an analysis of the waters of the Yellowstone Park, by Messrs. Gooch and Whitfield of Prof. F. W. Clarke's staff. The analyses seem to have been very thorough, and sufficiently numerous to make accurate generalization possible. Physicians will be interested in the fact that arsenic and lithia were present in appreciable quantities, while iodine was conspicuously absent, and bromine was rarely found.

—John Wiley & Sons have just issued a new and improved edition of 'The Principles of Thermodynamics, with Special Applications to Hot-Air, Gas, and Steam Engines,' by Robert Röntgen, teacher in the Polytechnic School at Remscheid; translated, revised, and enlarged by A. Jay Du Bois, Ph.D., professor of dynamic engineering in the Sheffield Scientific School of Yale College. Very considerable additions have been made to the present edition. The application of the calculus to the subject has been given with sufficient fulness, in the shape of additions to Chapters VII. and XVIII. All examples and formulæ are given throughout the work in both French and English units, and the steam tables of Zeuner are given complete, both in their original French units, and also

reduced throughout to English units. Many new examples have been added.

—Prof. David P. Todd of Amherst College, Amherst, Mass., has published a very useful pamphlet, 'Instructions for observing the Total Eclipse of the Sun, Jan. 1, 1889.' In a recent issue of *Science* we traced the course of this eclipse through California. It will be visible from northern California to Manitoba, the duration of totality decreasing from 1m 57s to 0m 12s. Valuable observations may be made by amateurs without the aid of elaborate instruments, and it is particularly for the use of this class of observers that these instructions have been compiled. Professor Todd desires them to make sketches of the entire corona, and of the corona near the north and south poles of the sun's disk; sketches of the outer corona; and observations of the duration of the total eclipse. The latter observation is particularly desirable at places near the limits of totality. Instructions to amateur photographers conclude the useful pamphlet. The author requests that drawings or observations of this kind be forwarded to him.

—The third number of the *Journal of American Folk-Lore*, which has just been issued, concludes the first volume. While the journal was originally not intended to appear at regular intervals, the large amount of available material, and the general interest in its contents, have made it necessary to issue it as a quarterly. The present number contains a valuable paper by Prof. Horatio Hale on 'Huron Folk-Lore,' which will be continued in the next number; descriptions of Onondaga customs, by De Cost Smith and W. M. Beauchamp, and several other papers on Indian lore. Mr. W. W. Newell publishes a collection of a number of English folk-tales as told in America. For the coming volume a number of interesting contributions are announced on Indian lore as well as on that of Europeans settled in America. Attention will be paid to a full record of publications on American folk-lore.

—With the recent publication of the sixth part of his 'Butterflies of North America,' Mr. Edwards has issued eighteen plates of that incomparable iconography within two years, which is almost exactly fulfilling the promise of the first part. Considering the special difficulties which have stood in his way, this result is very gratifying. The present part is a most interesting one, giving such full illustrations of every stage of *Anthocharis genutia* and *Neonympha areolatus* as to leave hardly any thing to be desired. The artists have taken such evident pains in the execution of every detail, that the truthfulness of the illustrations is almost self-evident. We miss in part the exquisite work that Mrs. Peart has done, for she was unquestionably without a rival among American artists in this class of delineation on stone; but her standard has induced such excellence in her followers, that, but for what had preceded, we should be inclined to call this perfection. Credit must be given Mr. Edwards for this, for such excellence comes only from demand and from persistent purpose. Western species of *Anthocharis* and *Papilio*, with the chrysalis of the former, complete the series. Thanks mainly to Edwards, the complete histories of nearly all the various types of Satyrids in our country are now very well known, — better known, indeed, than are those of Europe, where, from the greater diversity of forms in this group, the opportunities are very much greater.

—Prof. Robert T. Hill, in a recent bulletin of the United States Geological Survey, gives a very useful summary of the history of geological investigation in Texas up to the year 1886. The first part of his work treats of the history of surveys, describing those of European travellers — among whom F. Roemer's work is of special importance — first. Next the United States military reconnaissances and explorations are recorded, and a history of the attempts to establish a State geological survey is given. The second part treats in a concise manner of the results of these investigations, the foundations on which the present work is to be carried on. Professor Hill has worked hard to arouse interest in geological work in Texas, and it is a matter of congratulation that his endeavors have been successful. His own contributions warrant that the work undertaken under his direction will yield important results.