

this reference to Homer, has unwittingly chosen the worst possible illustration for his purpose, quite apart from his supposed quotation: for Homer does indeed tell us, in one passage (in the last book of the *Odyssey*), about the death of Achilles; but that passage informs us of a seventeen-days mourning of gods and men over the hero, with funeral ceremonies of extraordinary splendor, that would have done the dead man's heart good if he could only have been there to see. Nobody doubts Homer's simplicity, but Dr. Maudsley wholly misapprehends what it means. How he could have been so deceived in his quotation, we cannot guess; but such gratuitous blunders show us what to expect of a man that can make them.

If we have little space left to refer to our author's discussion of matters that he is eminently competent to discuss, that is not our fault. On the pathology of the will we receive instruction in the brief space before spoken of. Of heredity of mental disease we here find some illustrations, but we learn nothing new about the obscure subject of the actual laws that govern heredity. As to mental disease and its phenomena, Dr. Maudsley insists with considerable emphasis upon his view that the will, and in particular the most developed activity of the will, as seen in the moral consciousness of the civilized man, is the least stable, because the highest and latest element of man's mind, and must therefore show the signs of decay and disease soonest. This, he assures us, is actually the case. He illustrates his position by means of a good many instances of certain forms of mental disease. The view is not absolutely novel, and Dr. Maudsley has described most of the facts before. But all this is well worth telling, and would have made a useful essay if the rest of the book had reached the fire instead of the printer. As it is, this part of the book is the only one from which a student of such psychology as Dr. Maudsley so well describes in his preface can learn any thing of importance that is in any sense novel.

Our task in reading and reviewing has been no pleasant one. With Dr. Maudsley we hope for a psychology of 'concrete minds,' that may teach us "why individuals feel, think, and do as they do, how they may be actuated to think, feel, and do differently, and in what way best to deal with them so as to do one's duty to one's self and them." We see in the humblest experimental researches conscientiously conducted, in every observation of the mental pathologist, in every advance in nervous physiology, in every new discovery in animal psy-

chology, and, let us freely add, in every fruitful philosophic research into the deeper problems of thought, in all these things, not only aids, but necessary conditions of the approach to the great end thus defined. But we also see in vague rambling disquisitions *de omnibus rebus*, such as nearly fill this book; in efforts at philosophy by a man who is confessedly and very manifestly unable to understand philosophic terms, who ignores the history of thought, and who insists upon writing pages of contradictory statements,—in all this we see, not advance, but serious injury. And when not only the book is such as it is, but also the author is a man whose position and previous services command respect, and who is therefore able to call the attention of busy students to whatever he may choose to publish upon the subject,—then we say that such conduct is a serious breach of the privileges of authorship, and we wish to raise a decided protest against it. For the rest we have no quarrel with the author's determinism, nor with his materialistic basis for mental science, so long as he confines both the doctrines to their only proper sphere; that is, employs them as regulative principles in discussing and explaining the facts of experience. We quarrel only with his confused and purposeless fashion of discussion.

NOTES AND NEWS.

—THE report of the committee of the Geodetic association was presented at a general meeting of the conference, Oct. 23, at Rome, and was adopted after an animated debate. The report favors the universal adoption of the Greenwich meridian, and also recommends, as the point of departure of the universal hour and cosmopolitan dates, the mean noon of Greenwich. The conference hopes, that, if the whole world agrees to the unification of longitudes and hours by accepting the Greenwich meridian, England will advance the unification of weights and measures by joining the metrical convention of 1875. The government of Italy will be requested to officially communicate the foregoing action of the conference to all nations.

—In the October number of the *Harvard university bulletin*, further instalments are given of the geographical index to the maps in *Petermann's mittheilungen*, by Mr. Bliss, and of Mr. Winsor's 'Bibliography of Ptolemy's geography,' containing important notes on early American cartography. Mr. Winsor also commences an account, of which six pages are printed in the present number, of the Kohl collection of early maps in the Department of state at Washington, prefacing it with a brief account of Dr. Kohl's labors.

In the official portion of the bulletin, we find the following appointments gazetted: Arthur Searle as

assistant professor of astronomy; Robert H. Harrison, Harold Whiting, Charles E. Faxon, and Edward Burgess, instructors in anatomy, physics, botany, and entomology, severally; O. W. Huntington, assistant in chemistry, G. T. Hartshorn in organic chemistry, and G. W. Perkins in biology; and Dr. C. S. Minot, lecturer in embryology. The establishment of ten fellowships in the Lawrence scientific school, with an annual income of five hundred dollars each, is recommended by the corporation.

—The subjects to be presented at the Society of arts of the Massachusetts institute of technology the coming season will embrace a wide range of scientific and practical topics, arrangements having already been made as follows:—

Oct. 11, Professor Edward S. Morse of Salem spoke on Japanese pottery; Oct. 25, Professor William H. Brewer of New Haven read a paper on the evolution and breeds of domestic animals, as illustrated in swine; Nov. 8, Mr. Thomas Gaffield of Boston will read a paper on glass and glass-making.

At the subsequent meetings, the arrangements for which have not yet been definitely made, Dr. Charles S. Minot of the Harvard medical school will probably speak on some biological subject; Capt. D. A. Lyle, U.S.A., on the rise, progress, and methods of the U. S. life-saving service; Mr. Chauncey Smith of Boston, on the influence of inventions; Mr. R. B. Forbes, on the rigging of ships; and Major C. W. Raymond of the U.S. engineers will speak on Boston harbor. Various mechanical contrivances of interest will also be exhibited.

—A very valuable work on German meteorological bibliography has been prepared by Dr. Hellman. It contains a bibliography proper, limited to German authors, and also historical notices upon meteorological observations, and the progress of the science in that country.

—A free course of popular lectures upon zoölogy, specially intended for teachers and students, will be given by the Cincinnati society of natural history on Friday evenings, commencing to-day. The following is the programme: Oct. 19, Introduction, The study of zoölogy, by Prof. J. Mickleborough; Oct. 26, The human skeleton as compared with that of other animals, by Prof. J. Mickleborough; Nov. 2, The trochilidae, or humming-birds, by Charles Dury; Nov. 9, Fish fauna of Cincinnati, by Dr. D. S. Young; Nov. 16, Comparative anatomy of the mollusca, by Prof. A. G. Wetherby; Nov. 23, The mollusca from an evolutionary stand-point, by Prof. A. G. Wetherby; Nov. 30, Some curious insects, by Charles Dury; Dec. 7, Practical manipulation of the microscope, by Dr. J. H. Hunt.

When this is completed, a second course of equal length will be given on geology and mineralogy, the special topics of which will be announced later.

—Active movements are making to supply, as far as possible, the losses sustained by the Indiana state university in its recent fire. When the first meeting of the board of trustees was held, about a week after the fire, Monroe county was prepared to guarantee

fifty thousand dollars; and this, with over twenty-seven thousand dollars' insurance, gave the officials great confidence. No definite action, however, was taken, until a recent meeting of the trustees at Indianapolis, when it was decided to purchase a larger tract of land, just east of the city of Bloomington, much more favorably located than before, and to erect at once two fire-proof buildings, one of which can be used for the present for the literary department, and the other for the scientific department, museum, and library. Later, another building will be added, to which the literary department will be transferred, when the scientific department will occupy one of those now to be built, and the other will be given wholly to the museum and library.

For the present the university will occupy the old building, which was saved. It is reported that the trustees have in view the purchase of some valuable collections and a good library.

—A correspondent of *La Nature* gives a sketch, which we reproduce, of a group of French soldiers, as they appeared when resting on their marches in



Algeria, when they were obliged to stop on marshy land, and had nothing upon which to rest. The soldiers seated themselves each on the knees of the one behind, and were arranged in a circle, so that there was no end man. The correspondent vouches for having often seen the operation. *La Nature* recommends the collegians to try the experiment in equilibrium when they return from their vacations, —advice which it would hardly do to transmit to Americans.

—Trouvelot has made an examination of the sky near the place of the sun at the May eclipse, for the purpose of rediscovering, if possible, the red star which he saw at that time, and suspected to be an intra-mercurial planet.

In the re-examination, he used a telescope of the same aperture and power as at the eclipse. He found again, without trouble, his two 'white stars,' and identified them as forty-one Arietis and ϵ Arietis. As to 'the brilliant star of a pronounced red,' he says he could not find it, and that it is certain that no star of that magnitude and color now exists near the position assigned, nor even within a distance much greater than it is permissible to attribute to the probable error.

At the same time, seeing he failed to obtain a determination of its position, or to notice any disk or phase, he considers it only right to reserve any conclusion as to the probable nature of the object (*Comptes rendus*, Sept. 17). Astronomers generally will be disposed to believe, with those who observed the eclipse at the same station with M. Trouvelot, that his limits of probable error were, under the peculiar circumstances, some of which are mentioned in his original report, much larger than he seems disposed to admit, and quite extensive enough to include the star α Arietis, which was not far from the place he assigns, and in magnitude and color corresponds well with his description.

— The department of entomology, of the New-York state museum of natural history, issues a circular (no. 1) giving directions for 'arresting the chinch-bug invasion' of northern New York, with good figures of the insect enlarged and of natural size.

— Wood sections and vegetable tissue was the subject discussed by Mr. J. F. Whiteaves at the meeting of the Ottawa microscopical society, Oct. 16. Mr. Whiteaves was elected president, and Dr. R. J. Wicksteed secretary, for the ensuing year.

— Among the prizes given to American exhibitors at the International fisheries exhibition just closed, at London, gold medals were awarded to G. Brown Goode, for work on ichthyology; D. S. Jordan, for work on ichthyology; Alexander Agassiz, for work on ichthyology; J. E. Hilgard, for optical densimeter; Capt. C. Sigsbee, U.S.N., for deep-sea sounding apparatus; W. L. Bailee, U.S.N., for deep-sea thermometer; silver medals to G. Brown Goode, for publications relating to the fisheries; Marshall McDonald, for universal hatching-jar; Lieut. Z. L. Tanner, U.S.N., for deep-sea sounding apparatus; W. G. Farlow, for collection of marine algae; J. H. Emerton, for model of squid and octopus; T. H. Bean, for works on ichthyology; Marshall McDonald, for map showing shad fisheries; and diplomas to J. E. Hilgard, for salinometer; Capt. C. Sigsbee, U.S.N., for parallel ruler.

The United States receives 48 gold medals, 18 of which go to the fish-commission, mostly on collective exhibits, 47 silver medals, 29 bronze medals, 24 diplomas, and 7 special prizes. Other gold medals are to the national museum, for collective exhibit of fishes; signal-service, for most complete collection of apparatus for weather prediction; and lighthouse board.

— The French government has just issued a geological map of Algeria in five sheets, scale of 1:800,000, with two explanatory memoirs. This work is only preliminary; and appropriations have been made to organize a geological survey, which will make a careful and detailed geological map, first on the scale of 1:400,000, and then on a larger one, say 1:80,000, or even 1:40,000. The directors are A. Pomel, J. Pouyanne, and J. Tissot.

— Col. A. Parnell, R.A., states (*Journ. sc.*, September), that, as recorded by official returns, the number of persons killed by thunderbolts in Russia (not including Poland and Finland), in the five years from 1870 to 1874, was 2,270, of whom no less than

2,161 were dwellers in the country; and that during this period, in the same area, 4,192 fires were occasioned by thunderbolts, 4,099 of them being in the country.

— The speeches of Sir Lyon Playfair and Sir Charles Dilke, during the recent debate in the House of commons on the vaccination question, have been published by Messrs. Jarrold & Sons in pamphlet form, under the title of 'Facts about vaccination.' It is hoped that this little publication may prove a useful antidote to the present mischievous and ignorant agitation against Jenner's great discovery. The Cloth-workers' company, one of the old London guilds, has devoted a fund at its disposal for the encouragement of research to offering a prize of a thousand pounds for the discovery of a method of procuring lymph that would obviate the present objections.

— At a recent meeting of the Société d'encouragement pour l'industrie nationale, M. G. Meyer of Paris submitted specimens of paper specially manufactured to resist fire. It was stated by him that the papers and documents shown had been for four hours in a retort in a pottery furnace; and it is further affirmed, that those present were unable to distinguish, either by appearance or texture, the papers so treated from others which had not undergone the ordeal of fire. "From experiments made with a specimen of wall-paper sent us," says a writer in *Iron*, "we are enabled to say, that, although the appearance of the paper does change, the fire-resisting properties claimed for it are undoubted: the paper certainly does not ignite." The paper can be made of a quality suitable for deeds and other important documents, or of a quality suitable for wall-paper, theatrical decorations, or, in fact, for any purpose for which paper is used. Mr. Meyer has also invented an incombustible ink and incombustible colors. Artists using those colors may preserve their works to a certain extent. The invention would appear to be of the greatest value to theatrical managers. By using thick cardboard of Mr. Meyer's material, together with his paints, they are able to render their scenery unflammable. At the same time, for documents of importance, — deeds, wills, and agreements, — the invention should come into universal use.

— The catalogue of the Miller manual labor school was issued recently, bearing date of June, 1883. It is a neat pamphlet of some thirty pages, printed by the boys of the school. The school is situated in Albemarle county, Va., and was founded by the late Samuel Miller of Campbell county, who left property to the value of more than one million of dollars, to be expended in the erection of buildings, and the endowment of a school in which the students are to be instructed in the branches of a 'good, plain, sound, English education,' in ancient and modern languages, and in the useful arts. The school is now in operation, and a considerable number of students are in attendance, who are not only taught, but are fed and clothed, at the expense of the fund, which yields an income of sixty or seventy thousand dollars a year. Every student works in the shop, in the printing-office, on the farm, or in the garden. The workshop

is built from the plans of Mr. M. P. Higgins of Worcester, and a class of twenty-five boys is making good progress. The farm comprises eight hundred and fifty acres, of which a hundred and twenty are fine, rich bottom-lands in the valley of Mechem's River. The farm last year yielded an income of four thousand dollars. Boys are received at from nine to fourteen years of age, and are kept until eighteen.

—The White Mountain club of Portland held their autumn meeting, Oct. 17. The president (Rev. Dr. Thomas Hill) narrated his labors in identifying a mountain seen from Portland, and hitherto taken for the Imp. He finds it is a part of Carter range: the true Imp is scarcely visible. Still another 'Imp' is seen from Copp's house, near the Glen and Gorham road, where it is pointed out by stage-drivers, etc., as the south-west side of the true Imp. Cline's map correctly locates this as another peak.

—The collections of plants made by the late President Chadbourne, comprising thirty-four distinct lots, and containing among them some of interest and value, are offered for sale by his executor, A. Schenck, 30 Union Square, New York.

—Herr Hugo Zöller, who visited the Isthmus of Panama and the South-American states as correspondent of the *Cologne gazette*, has published his experiences in two books, the first called 'Der Panamakanal,' in which he contradicts the too favorable reports spread in the European papers as to Mr. Lesseps' work on the canal, and says his company has too little capital to accomplish the undertaking. He gives a map of the district, and fully expects to see the water-way a fact, and not an idea, within ten years, but not through Mr. Lesseps' means. The second book concerns Brazil, and is called 'Die deutschen im brasilianischen urwald.'

—T. W. Blakiston contributes to the *Japan gazette* of Sept. 8 an account of a voyage across the North Pacific, in the ship *Undaunted*, from Yedo to Victoria, V.I., between May 20 and June 21, 1883. Temperatures, winds, etc., were carefully noted, and the author came to the conclusion that the Kuro siwo at that season disappears between latitudes 37° and 39°, and west from east longitude 154°. Eastward from this point nothing was seen of warm water referable to that current.

—In a paper recently read before the Geographical society of the Pacific, some remarkable statements were made in regard to the Mahlemuts of Norton Sound, Alaska. Among other things, if correctly reported, the author stated that 'their customs and part of their language resemble the Chinese greatly.' The Mahlemuts are an ordinary small tribe of western Eskimo, who have been studied by a number of ethnologists, and in no respect differ from the other Eskimo tribes of the region. Such wild statements, especially when made before a scientific society, are almost invariably reproduced in European journals, and for that reason should be noticed and corrected.

—J. G. Swan, who has been investigating the Queen Charlotte Islands, returned to Victoria, Sept. 27. He discovered a fine deep-water fish, which is new to the food-supply of the coast, and is said to

occur in large numbers. He also reports finding a good harbor hitherto unknown.

—The volume of Washington astronomical and meteorological observations for 1879 has just been received at the naval observatory from the government printing-office, and will be distributed to correspondents immediately.

—A third edition, enlarged and improved, of Paetel's useful catalogue of mollusks, is announced. Though by no means available for text-book purposes, and with the usual allowance of errors, this publication cannot fail to be useful to all who have a large collection of shells to arrange, if it were only to furnish a workable foundation.

—The Iowa academy of sciences met at Ames on Sept. 27. Prof. C. E. Bessey of Ames read papers on the hybridization of *Spirogyra majuscula* and *S. protecta*; the effect of frost on leaf-cells, and on certain insect-catching glands on a grass. The glands referred to in the last paper are located on the blossom stems of *Sporobolus*, and secrete a viscous fluid, in which insects are entrapped. Their utility in these plants seems difficult to understand. In reply to a question by Professor Stalker, whether they could protect the blossoms from injurious insects, Professor Osborn said he thought they might possibly give protection from *Cecidomyia*. Professor Herrick of Grinnell described a water-still for obtaining a constant supply of distilled water in laboratories, and offered some observations on the Grinnell tornado, tending to show that at that point the tornado formed a loop in its course. Prof. H. Osborn of Ames offered some additions to the list of Iowa insects, in *Lepidoptera*, *Coleoptera*, *Hemiptera*, and *Neuroptera*; notes on *Mallophaga*, taken in Iowa; and a paper on an epidemic disease attacking *Caloptenus differentialis*. This last is a disease similar in nature to that caused by *Entomophthora muscae* in the common house-fly, and very fatal to these locusts. It is caused by a species apparently new, and shortly to be described by Professor Bessey in the *American naturalist*.

—The third and fourth parts of volume xiv. of the *Archiv für anthropologie* contain three original papers, as follows: on Hypertrichosis, by Dr. Ranke; on the eyes of the Fuegians, by Dr. Seggel; and on copper in ancient times, by Dr. Reyer. Reviews of the anthropological literature in Russia are prepared by Dr. Stieda; in Scandinavian literature, by Miss Julia Mestorf; in American literature, by Dr. Emil Schmidt. The last named covers twenty-three closely printed quarto pages, and embraces about every paper of importance published in our country during the last year, relating to anthropology. The bibliography occupies 161 pages, and many of the titles are accompanied by a brief note stating the purpose of the publication. It is a thorough piece of work, and is distributed as follows: archeology and prehistoric history (*urgeschichte*), by J. H. Müller, 41 pages; anatomy, by Dr. Pausch, 6 pages; ethnology and travels, by Dr. Albrecht Penck, 90 pages; zoölogy in relation to anthropology, by Dr. George Boehm, 23 pages.

Students in all branches of science know how diffi-

cult it is to find the thing they are seeking. Between those piled up and stowed in great collections and those hid away in private museums, much time is wasted. Now, the anthropologists of Germany long ago felt the necessity of publishing the catalogues of the specimens in their great museums; and already have appeared five of these in former numbers of the *Archiv*. The current number devotes 36 pages to the Senckenberg museums in Frankfurt-a.-M., with tables of measurements and descriptions; and 25 pages to the anthropological collection in the Grossherzoglichen naturalien-cabinets im alten schlosse, in Darmstadt, also with measurements and descriptions. Comparisons, of course, are always odious; but it cannot fail to strike our American anthropologists that the especial merit of the German system, that is, co-operation, is wanting with us. It may also be mentioned that none of the foreign anthropological societies seem to know any thing about the work in progress at the surgeon-general's office at Washington.

— There have been issued by the government, under the direction of Gen. W. B. Hazen, chief signal-officer, the meteorological and physical observations on the east coast of British America, by Oray Taft Sherman, as no. 11 of the 'professional papers.' Nos. 8 and 12 consist of papers on the 'Motions of fluids and solids' and 'Popular essays on the movements of the atmosphere,' by Prof. W. Ferrel; the first edited, with notes, by Mr. Frank Waldo. No. 9 contains charts and tables showing the geographical distribution of rainfall in the United States.

— The new British patent law will go into effect Jan. 1, 1884. The patent fee is reduced to about a hundred dollars for all fees, including agents' ordinary charges. Provisional protection is extended to nine months. Annual taxes are substituted for the stamp-duties now charged, although no change has been made in the total amount. The new provisions apply to applications now in the office. No change has been made in regard to examinations. The patent is issued to any applicant who chooses to pay the fees, and without formal examination. A system of comparison of the patent claim with the claim for which provisional protection has been granted, is, however, established, — a commendable innovation, and one which might well be supplemented by the system of complete examination practised in the United States. The duration of the patent is to be fourteen years in all cases, irrespective of the expiration of earlier foreign patents on the same device. The publication in Great Britain of the foreign specification of the invention does not, under the new law, invalidate the British patent. The new law will evidently greatly favor the inventor, and the change will be likely to prove to be very greatly to the advantage of that country as well.

RECENT BOOKS AND PAMPHLETS.

Bodländer, G. Das optische drehungsvermögen isomorpher mischungen aus den dithionaten des bleis und des strontiums. Inaug. diss. Breslau, *Köhler*, 1883. 34 p. 8°.

Edwards, Emory. Modern American locomotive engines; their design, construction, and management: a practical work

for practical men. Philadelphia, *Baird*, 1883. 383 p., illustr. 12°.

Houston, Edwin J. The elements of chemistry; for the use of schools, academies, and colleges. Philadelphia, *Eldredge*, 1883. 444 p. 12°.

Johonnot, J. A natural history reader, for school and home. New York, *Appleton*, 18+414 p., illustr. 12°.

Ladenburg. Handwörterbuch der chemie. band i. illustr. 8°.

Planteau, H. Développement de la colonne vertébrale. Paris, 1883. 116 p., illustr. 4°.

Pouy, F. Les anciennes vues d'optique. Amiens, *impr. Jeunet*, 1883. 39 p. 8°.

Rochebrune, A. T. de. De l'emploi des mollusques chez les peuples anciens et modernes. i. Amerique. livr. i. Paris, *Leroux*, 1883. 23 p. 8°.

Rohde, E. Beiträge zur kenntniss der anatomie der nematoden. Inaug. diss. Breslau, *Köhler*, 1883. 26 p. 8°.

Routledge, R. Discoveries and inventions of the 19th century. London, 1883. 8°.

Ruhnke, C. Die einwirkung von alkyldiodüren auf triazobenzoensäure. Inaug. diss. Göttingen, *Vandenhoeck & Ruprecht*, 1882. 36 p. 8°.

Schuerer, J. M. Reisen im oberen Nilgebiet. Gotha, 1883. 95 p., map. 4°.

Siebenmann, F. Die fadenpilze *Aspergillus flavus*, *niger* und *fumigatus*; *Eurotium repens* (und *Aspergillus glaucus*) und ihre beziehungen zur Otomycosis *Aspergillina*. Medicinisch-botanische studien auf grund experimenteller untersuchungen. Mit vorwort von Dr. Alb. Burckhardt-Merian. 8°.

Smith, Adolphe. Pneumatic drainage: a description of the Berlin method. New York, *Spon*, 1883. 50 p., 6 pl. 8°.

Società crittogomologica italiana. Memorie. vol. i. Varese, *tip. Mainati*, 1883. 10+516 p. 8°.

Staudé, O. Geometrische deutung der additionstheoreme der hyperelliptischen integrale und functionen erster ordnung im system der confocalen flächen zweiten grades. Habilitationsschrift. Breslau, *Köhler*, 1883. 71 p. 8°.

Stewart, A. Nether Lochaber. Natural history, legends, and folk-lore of the West Highlands. Edinburgh, 1883. 424 p. 8°.

Streintz, H. Die physikalischen grundlagen der mechanik. Leipzig, *Teubner*, 1883. 12+142 p. 8°.

Studer, Th. Die fauna der pfahlbauten des Bieler Sees. Bern, 1883. 100 p., 5 pl. 8°.

Swinburne, J. Practical electrical units popularly explained. London, *Spon*, 1883. 62 p., illustr. 12°.

Tresca, Cours de mécanique appliquée. division i. Paris, 1883. 327 p. 4°.

Van Tricht, V. Les enregistreurs en météorologie. Description d'un nouveau météorographe électrique. Bruxelles, 1883. 75 p. 8°.

Waechter, F. Die anwendung der elektricität für militärische zwecke. Wien, 1883. 256 p., illustr. 8°.

Wahnschaffe, M. Verzeichniss der im gebiete des Allereins zwischen Helmstedt und Magdeburg aufgefundenen käfer. Neuhaldensleben, *Eyraud*, 1883. 5+455 p. 8°.

Wainwright, S. Scientific sophisms: a review of current theories concerning atoms, apes, and men. New York, *Funk & Wagnalls*, 1883. (Standard lib., no. 97). 302 p. 12°.

Waitz, K. Ueber den einfluss der galvanischen polarisation auf die aenderung der reibung. Habilitationsschrift. Tübingen, *Fues*, 1883. 39 p. 8°.

Walter, H., und Dunikowski, E. von. Das petroleumgebiet der galizischen Westkarpathen. Wien, *Manz*, 1883. 4+100 p., 2 pl., 1 map. 8°.

Ward, G. Mason. A compend of chemistry. Philadelphia, *Blakiston*, 1883. 111 p. 8°.

Wenghoffer, L. Lehrbuch der anorganischen, reinen, und technischen chemie, auf grundlage der neuesten forschungen und der fortschritte der technik, wesentlich für studierende auf universitäten und technische lehranstalten, etc. abth. i. Stuttgart, *Wittwer*, 1883. 302 p., illustr. 8°.

Willgrod, H. Flächen, welche sich durch ihre krümmungslinien in unendliche kleine quadrate theilen lassen. Inaug. diss. Göttingen, *Vandenhoeck & Ruprecht*, 1882. 50 p. 8°.

Wilke, A. Die volkswirtschaftliche bedeutung der elektricität und das elektromonopol. (Elektrische zeitfragen, no. 1.) 8°.

Zeitschrift, internationale für die elektrische ausstellung in Wien 1883. Red.: J. Kramer und Dr. Ernst Lecher. Wochenschrift für die gesamt-interessen der internationalen elektrotechnischen ausstellung 1883. Erscheint in 24 nummern. 16 p., illustr. 4°.

Ziegler, J. M. Ein geographischer text zur geologischen karte der erde. atlas. 8°.