Messrs. Ward & Howell. 4°. Collection of animals especially illustrative of geology. 5°. Large slabs of Laurentian limestone, with Eozoon canadense.

The whole of these are labelled 'Logan memorial collection,' and a large commemorative inscription is attached to the support of the skeleton of Megatherium.

Carpenter collection of Mollusca. — This magnificent collection now appears with all the advantages of ample space and light; the four table cases occupied in the old museum having been increased to eight, with upright cases for the larger specimens and alcoholic preparations. In the process of removal, the arrangement has been carried out in the manner originally contemplated by Dr. Carpenter; and all the tablets have been carefully gone over by Mr. Curry, and cleaned, and loose specimens re-cemented; while additional species have been mounted or removed from the drawers to the glass cases, so as to render the exhibited collection more complete. The collection is now in excellent condition, and thoroughly available for scientific use, and, it is hoped, is so protected that it will remain free from dust or other injury for an indefinite period.

Collections of Principal Dawson. — These include: 1°. Specimens of Eozoon canadense and illustrative forms, as Stromatopora, etc. 2°. Cambrian fossils from New Brunswick, etc. 3°. Upper Silurian fossils from Nova Scotia, Gaspé, etc. 4°. Devonian plants and fishes from Gaspé, New Brunswick, Maine, etc. 5°. Carboniferous reptiles, fishes, insects, millipedes, crustaceans, shells, etc., mostly from Nova Scotia. 6°. Carboniferous plants, principally from Nova Scotia and New Brunswick. 7°. Post-pliocene fossils of Canada, with additional specimens from the United States and Europe. 8°. Recent shells dredged in the Gulf and River St. Lawrence, illustrating the modern fauna and the post-pliocene fossils. Also collections of Canadian crustaceans, hydroids, bryozoons, sponges, etc. 9°. Miscellaneous collections of Canadian and foreign fossils, rocks, etc.

The whole of these specimens are disposed in their places in the general collection, with the exception of the fossil plants and recent shells, which are in separate cases. They include the greater part of the types of the species described or catalogued by Dr. Dawson, and many of the specimens are unique.

Illinois state laboratory of natural history, Normal.

Distribution of school collections. — This institution, which seems to be unique in some of its characters, makes regular provision for the supply of small synoptical collections in zoölogy to the public high schools of the state. A distribution recently closed includes 10,170 specimens of pinned insects, representing 529 species, belonging to all the orders except Diptera; 2,350 alcoholic specimens of Illinois fishes, belonging to 71 species; and 890 echinoderms, coelenterates, and other aquatic invertebrates in alcohol. Similar collections were issued two years ago, the present distribution completing the supply of all the public high schools of Illinois in which zoölogy is taught as a regular study of the course. It is interesting to note that the number of high schools in which this subject is systematically studied is between seventy and eighty.

NOTES AND NEWS.

— The treasurer of the Balfour memorial fund acknowledges the following subscriptions: Thomas J. Clarke, New York, $2; Henry Sewall, Univ. Michigan $15,; C. V. Riley, Agric. Dept., Washington, $5; C. E. Hanaman, New York, $25; Dental classes 1883 and 1884, Univ. Michigan, $6; O. C. Marsh, New Haven, $25; Alex. Agassiz, Cambridge, $50; Henry Holt, New York, $10; previously acknowledged, $247.

— Peter Merian died last month at Basel, his native town, at the age of eighty-seven, having been born in 1795. After studying at Paris from 1817 to 1819 under Cuvier, Brongniart, and Geoffroy St. Hilaire, Merian returned to Basel, and began at once the study of the geology of the Swiss Jura, and the formation of one of the best collections of fossils now in existence. Attached to the university of his native place as professor of physics and chemistry, then as rector, and finally as professor of geology, he devoted nearly all his time to the development and progress of the museum of natural history, which is mainly his work. There he first classified the large and important family of Ammonites, separating them into groups according to their external forms. During a visit from Leopold von Buch (the great Prussian paleontologist and geologist, engaged then on his monograph of the Ammonitidae), this *savant* was not a little impressed to find that Merian had anticipated his classification in all the main points. From that time a most intimate friendship existed between the two men until the death of von Buch in 1853. By its central position in western Europe, Basel was a place of necessary detention for all travellers, especially before the construction of railways; and few travelling geologists have passed through it without visiting the museum of Peter Merian. Rarely absent, very hospitable, having inherited a large estate, he gladly received at his table in town or at his country-place all who called on him. Scientific men certainly are not always rich, nor always most particular in their dress or manners; yet all, rich or poor, well or shabbily clothed, were received with equal cordiality. His wife, however, somehow came to the conclusion that all scientific men were a ragged or extraordinary set, even the rich; such, for instance, as Leopold von Buch, always so odd, the absent-minded Charles Lyell, the original Ami Boué, or the stiff and formal Elie de Beaumont. One day, in 1846, a young geologist presented himself at the museum, taking notes of all the fossils. Merian, struck by the application and good air of the foreigner, asked him to dine with him; "because," said he, "Madame Merian is always reproaching me for bringing home the most indecorous and rough-looking set of fellows; and I shall be glad to show her one man at least on whom she will look without contempt."

Merian never published much; but all his memoirs are very suggestive and important. The first was on the Jurassic formation in the canton Basel. It appeared as long ago as 1821, and was completed in 1826 by a new survey of the cantons of Basel and

Solothurn. Of the last, Jules Thurmann, the author of the classification of the remarkable orography of the Jura mountains, says, "La coupe de M. Merian fut pour moi un vif trait de lumière, qui me donna sur le champ la clef du dédale où mon imagination avait souvent cherché un fil conducteur." The Black Forest was also carefully studied by Merian. Finally, in company with his friend, the late Escher von der Linth, he solved that vexed problem, the geological age of the celebrated formation of St. Cassian in the Alps. Merian was a great friend of Agassiz, who published his fossils in his *Poissons fossiles*, *Echinodermes de la Suisse* and *Monographie des myes;* and he was among the first to accept the theory of glaciers and a 'glacial epoch.'

— Those who have profited by Troschel's valuable work, *Das gebiss der schnecken*, will be glad to know that it is not to be left incomplete by the author's death. The publishers, at the suggestion of Professor von Martens, have made arrangements with Herr Schako of Berlin to carry the work on at least to the end of the Rhiphidoglossa, and perhaps through the Docoglossa. Time will determine whether a still farther extension of its scope will be practicable. Professor Troschel left no unpublished manuscript, but a certain number of unfigured preparations; while the whole series previously figured are in good condition, mounted on microscopic slides, and form a large and valuable collection, now at Berlin.

— The American academy of arts and sciences held an adjourned stated meeting on Wednesday, Feb. 14. Louis Pasteur was elected as foreign honorary member in place of the late Charles R. Darwin, and Matthew Arnold as foreign honorary member in place of the late Arthur P. Stanley. The following papers were presented: Quantitative researches in photography, by William H. Pickering; Photography as a means of determining the light and color of the stars, by Edward C. Pickering and William H. Pickering; On the historical hydrography of the west coast of North America, by Justin Winsor.

— The Philosophical society of Washington, at its meeting Feb. 24, listened to papers by Prof. J. W. Chickering, on the Thermal belts of North Carolina; by Mr. G. K. Gilbert, on The response of terrestrial climate to secular variations in solar radiation; and by Capt. C. E. Dutton, on The geology of the Hawaiian islands.

— The National academy of sciences will hold its annual meeting in Washington, April 17 and succeeding days, and, on the last day of the session, witness the unveiling of the statue of Professor Henry, by Story, upon the Smithsonian grounds.

— At a meeting of the section of chemistry and physics of the Ohio mechanics' institute, March 1, papers were presented on the Discovery of a method for iridium-plating, by Prof. William L. Dudley; Studies in chemical dynamics (abstract from Ostwald); the Phosphides of platinum, and a Chemical theory of odors, by Prof. F. W. Clarke. The latter provoked considerable discussion.

At a meeting of the section of mechanics and engineering, Feb. 27, Mr. J. G. Danks read a paper on the History of the mechanical puddling-furnace.

— Those of our readers who happen to live at a little distance from the heart of a city must frequently have noticed a lack of accord between the readings of their own standard thermometers and the published observations of the signal-service observer of their locality. The reason of the discord is plain; viz., the perturbing action of the heat which the city emits: and, however gratifying it may be to the outsider to find himself superior to the government observers, it is very little to the credit of the weather bureau that this particular source of error was not long since recognized and avoided. From the scientific point of view, it is simply lamentable that many an old suburban fogy, operating, perhaps, with a shilling thermometer, is to-day getting better observations of minimum temperatures — observations which, poor and incomplete as they are, are really more accurate, and which would in the future be more useful if they could only be preserved and published — than the U. S. signal-service observers can obtain within the city, in spite of their training and prestige, and of their perfected instruments and appliances.

The remarks of Professor Whitney on this subject, as applied to observations made at London, are so pertinent and convincing, and they bear so directly upon our own city of Boston, that we quote them here as a just expression of scientific opinion. In his 'Climatic changes of later geological times' (p. 228), while criticising certain conclusions of Glaisher, Professor Whitney says, —

> "It is a well-known fact, that cities are considerably warmer than the more thinly inhabited country, otherwise under similar climatic conditions. Statistics prove this to be true; and there could be no doubt that such would be the effect of an immense aggregation of population within a limited space, even if there were no statistics bearing on this question. Many millions of tons of coal are burned in and about London during every year; and the whole mass of brick of which the city is built is heated during the entire winter, and more or less in the summer, many degrees above the natural temperature. There can be no question that conditions such as are here indicated vitiate all observations made in or near large cities, with a view to the determination of any possible secular variation of the temperature." It is to be regretted that "most of the longer records of temperature come from observatories situated either within or very near to cities where the conditions have not remained the same, but have been rapidly changing, and in such a way, we have good reason to believe, as to produce a decided effect on the temperature."

— Dr. G. Steinmann, privat docent at the Deutschland university of Strassburg, writes from the Straits of Magellan, under date of Dec. 23, that he has explored the whole Brunswick peninsula (Tierra del Fuego), and that at Mount Tarn, Port Famine, he

has collected the Crioceras simplex, as Darwin did, besides other cretaceous fossils, several of them new to science. He found the southern extremity of the Cordilleras to be formed wholly of cretaceous strata, mainly of neocomian age. The strata are very complicated, and recalled to his mind the neocomian of the French Alps, near Escragnolles (Var.).

— An entertainment fund has recently been endowed in the Philadelphia college of physicians by Dr. S. Weir Mitchell. The income is to be used, under the direction of a standing committee, to defray the expenses of occasional receptions, at which refreshments suited to the dignified character of the society are to be provided. It is proposed to issue invitations not only to members of the college and other physicians, but also to laymen who may be identified with the intellectual welfare of the city.

— We regret to learn that Mr. Alexander Murray, director of the Geological survey of Newfoundland, owing to illness and old age, is obliged to relinquish field-work, and to retire altogether, his medical adviser having recommended him to go to a milder climate. Mr. Murray is one of the pioneers of American geology, having commenced as the first and only assistant on the Geological survey of Canada when it was organized in 1842, and then as director of the survey in Newfoundland since 1864. His assistant, Mr. J. P. Howley, will continue the survey of the island.

— There has been an unusual awakening in scientific circles in Cincinnati this winter; a polytechnic school has been organized; a state forestry association formed, with its headquarters in Cincinnati; and courses of popular lectures on chemistry, zoölogy, botany, and history, have been given at the Afternoon school in popular science and history.

— The students of the Institute of technology in Boston propose to place in the entrance-hall of the building a bronze tablet in memory of the late Professor William B. Rogers. The committee in charge of the matter recommend that it be peculiarly a student memorial, and that the sum required for its erection be raised by contributions from the students exclusively.

— Dr. F. G. Hahn gives a favorable review of A. Penck's *Schwankungen des meeresspiegels* (*Ausland*, 1883, 91). The review calls attention to previous suggestions by Bruchhausen, Stokes, and others, of unevenness of the sea-surface caused by continental attraction, and thinks that the departure of the ocean's surface from the theoretic spheroid may be as much as 1,000 or even 1,500 metres.

— According to official returns, there were in Australasia in 1880, 75,237,917 sheep, 8,104,786 cattle, 1,206,100 horses, 1,026,898 pigs. Forty-seven per cent of the sheep were owned in New South Wales.

— Dr. Ritzema, in the 'Versleg van den landbouw in Nederland,' highly compliments the work of the entomological division of the Department of agriculture.

— The ninth and tenth parts of the *Geologische tabellen und durchschnitte* of the St. Gotthard tunnel have appeared.

— At the meeting of the Biological society of Washington, March 2, Prof. O. T. Mason gave a paper on the Human fauna of the District of Columbia, which was an exceedingly interesting review of the constitution of the population of the district, the nationalities represented, the percentage of crime and disease in each nationality, etc., derived from a study of the records of the census, the health-office, and the police-service. Dr. M. G. Ellzey read a paper on Hybrid sterility.

— At the meeting of the Boston society of natural history, March 7, Prof. G. Fred. Wright of Oberlin read a paper on the Glacial phenomena of Ohio, and Prof. A. Hyatt proposed for the whole range of the sciences which directly treat of the earth and its products, whether organic or inorganic, the term 'Physiognosy.'

— No work upon anthropology of recent date has invaded a more unworked field, or has cultivated its area with more thoroughness, than Col. Mallery's 'Sign language.' The most flattering notices have appeared in many of the foreign journals; and a translation into the German language has been made by Agnes Brauer, bearing the title: Forschungen und anregungen über die zeichensprache der Indianer Nord-Amerikas. Von Garrick Mallery. Uebersetzt von Agnes Brauer. Mit Anmerkungen von Wilhelm Keil. Sonderdruck aus den Mittheilungen des vereins für erdkunde zu Halle, a.-S., 1882 (Halle a-S., 1882).

— At the meeting, yesterday, of the Society of arts of the Massachusetts institute of technology, Mr. H. A. Hill described the Cummer steam-engine, and Mr. F. C. Childs exhibited and described the new and sensitive electro-thermostat of the Automatic fire-alarm association.

— The 47th Congress included in its appropriation bills several items for the U. S. geological survey. They amount in total to $341,140, and are available during the fiscal year beginning July 1, 1883. This is $82,700 greater than the appropriation for the current fiscal year.

— Dr. H. O. Marcy has again brought to public notice the researches of Ercolani on the placenta, by publishing in the *Annals of anatomy and surgery* for November, 1882, a well written abstract of a part of the results of the Italian embryologist. Under the designation of "A unity of anatomical and physiological modality in all vertebrates," he also renews the familiar comparison between the absorption of food by the blood-vessels from the yolk and from the placenta.

— With the current number the *Quarterly journal of microscopical science* assumes a new dress. An enlarged page and better paper permit an improve-

ment in the typography, while the plates are also more capacious. The whole result is a higher excellence in all the material qualities of the journal, which is well matched by the worth and importance of the articles. Professor Lankester has been most successful in his management of this publication; for, when he began, its value was so much inferior to that it now has, that the progress is remarkable. What was the not very important organ of amateurs has become a leading journal.

— The death is announced, Dec. 7, of Mr. G. W. Belfrage, an assiduous collector of insects in Bosque County, Texas.

— A new natural history society has been organized at Trenton, N.J., with Prof. Ellis A. Apgar, state superintendent of public instruction, as president, and Dr. C. C. Abbott as secretary.

— In the year 1800 there was founded at Paris a society entitled 'La société des observateurs de l'homme.' While no one would expect to find such an organization invested with all the modern improvements, a perusal of their first instructions to observers will both gratify and agreeably astonish the student of to-day. The document appears in full in the January number of the *Revue d'anthropologie*, filling twenty-two closely printed pages.

— A plate reproducing the appearance of a part of the relief-map of France, by E. Guillemin, is given in *La Nature*, Jan. 6, 1883.

— The scientific results of the fourth polar voyage (1881) of the 'William Barents' are reviewed in *Ausland*, 1883, 61–68.

— Mr. Charles Henry Hart is the author of a memoir on Lewis H. Morgan of Rochester, N.Y., read before the Numismatic and antiquarian society of Philadelphia, May 4, 1882, and published by the society. The works of Mr. Morgan are briefly reviewed; but a bibliography, which would be of great service to students of anthropology, is wanting.

— In article 189 of our 'Summary,' the reading should be: "as has been done by M. Marey in his 'photographic gun,'" and not 'photographic sun.'

RECENT BOOKS AND PAMPHLETS.

Continuations and brief papers extracted from serial literature without repagination are not included in this list. Exceptions are made for annual reports of American institutions, newly established periodicals, and memoirs of considerable extent.

Buckley, A. B. Botanical tables for the use of students. *New ed.* London, *Stanford*, 1883. 12°.

Cameron, J. Gaelic names of plants, Scottish and Irish. London, *Blackwood*, 1883. 8°.

Dutton, Clarence E. Tertiary history of the Grand Cañon district, with atlas. Wash., *Government*, 1882 (U. S. geol. surv. — monogr. ii.). Text 264 p., 42 pl. 4°; atlas 23 pl. f°.

Echegaray, J. Teorías modernas de la física, unidad de las fuerzas materiales. *2a ser.* Madrid, *Gaspar*, 1883. 238 p. 8°.

Electricidad (La.) — Revista general de sus progresos científicos é industriales. Dir. Rojas. Aña i. núm. 1, Barcelona. Enero, 1883. 12 p. 4°. (Bimonthly.)

Garrido Villlazán, A. — Topografía militar. Madrid, *Guirnalda*, 1882. 135 p., 4 pl. 8°.

Greer, Henry. A dictionary of electricity or the electrician's hand-book of reference. N.Y., *Allison*, 1883. 192 p. 12°.

Guillaume, Dr. L'eau du Seyon et la fièvre typhoïde à Neuchâtel. Rapport présenté à la direction de l'intérieur au nom de la commission d'état de santé. Neuchâtel, *imp. Borel*, 1882. 60 p., 1 pl. 8°.

Heitzmann, C. Microscopical morphology of the animal body in health and disease. With 380 original engravings. N.Y., *Vail*, 1883. 19 + 849 p. 8°.

Hoffer, R. Practical treatise of caoutchouc and gutta percha. London, *Low*, 1883. 12°.

Hopley, Catherine C. Snakes: curiosities and wonders of serpent life. London, *Griffith*, 1883. 618 p. 8°.

Hunziker, O. Die übergangszeit des volksschulwesens der Schweiz. Zürich, *Schulthess*, 1883. 8°.

—— Vorgeschichte und anfänge des volksschulwesens in der Schweiz. Zürich, *Schulthess*, 1883. 8°.

Lawrence, W. T. Principles of agriculture. Stage 1–2; 2–3. Edinburgh, *Chambers*, 1883.

Marcet, W. The principal southern and Swiss health resorts; their climate and medical aspects. London, *Churchill*, 1883. 408 p. 8°.

Marshall, G. F. L., and **Nicéville**, L. de. — Butterflies of India, Burma and Ceylon; all the known species of rhopalocerous Lepidoptera, and allied species of neighbouring countries. Vol. i., part 1. London, *Quaritch*, 1883. 8°.

Martin, H. Newell, and **Moale**, William A. Handbook of vertebrate dissection. Part. ii. How to dissect a bird. N.Y., *Macmillan*, 1883. pp. 89-174. 4 pl. 12°.

McAdams, W. Antiquities of Cahokia, or Monks' Mound in Madison County, Illinois. Edwardsville, Ill., 1883. 13 p., plates. 4°.

Mendive, José. Elementos de cosmología. Valladolid, *Vinda*, 1882. 150 p. 4°.

Modet y Riglos, Andrés. Ensayo sobre el establecimiento y la conservación del catastro en España. Precedido de un prólogo de A. Blanco. Madrid, *Murillo*, 1882. 16+403 p., 3 pl. 4°.

Nasmyth, J. Engineer; an autobiography; ed. by Samuel Smiles; with a portrait by George Reid and numerous illustrations. London, *Murray*, 1883. 468 p. 8°.

Newcomb, Simon. Popular astronomy. *2d ed. revised.* With 116 engravings and 5 maps of the stars. London, *Macmillan*, 1883. 596 p. 8°.

Pinner, Adolph. An introduction to the study of organic chemistry. Transl. and revised from the fifth German edition by Peter T. Austen. N.Y., *Wiley*, 1883. 19+403 p. 16°.

Pocock, R. The Gravesend historian, naturalist, antiquarian, botanist and printer; by George M. Arnold. London, *Low*, 1883. 276 p. 8°.

Report of the Smoke abatement committee, 1882; with reports of the jurors of the exhibition at South Kensington, and reports of the testing engineer, to which are added the official reports on the Manchester exhibition, 76 plates of illustrations, and 34 tables of results of tests of heating and cooking grates and stoves, steam boilers, appliances, fuels, etc. London, *Smith & E.*, 1883. 4°.

Ridsdale, B. Scenes and adventures in great Namaqualand. London, *Woolmer*, 1883. 294 p. 8°.

Ridsdale, C. H. Chemical percentage tables and laboratory calculation. London, *Lockwood*, 1883. 80 p. 8°.

Spencer, Herbert. Education, intellectual, moral, and physical. *New ed.* London, *Williams & Norgate*, 1883. 168 p. 12°.

—— Principios de sociología, trad. por Eduardo Cazorla. 2 tom. Madrid, *Calleja*, 1883. 16+488 p. 4°.

Swindell, J. G., and **Burnell**, G. R. Rudimentary treatise on wells and well-sinking. *Rev. ed.;* with a new appendix on the qualities of water. London, *Lockwood*, 1883. 106 p. 12°.

Townsend, F. — Flora of Hampshire, including the Isle of Wight; or a List of the flowering plants and ferns found in the county of Southampton, with localities of the less common species. Illustrated with 2 plates and a map. London, *Reeve*, 1883. 544 p. 8°.

Triboulet, Maurice de. Cours de minéralogie générale et appliquée, professé à l'académie de Neuchâtel (1877–82). Neuchâtel, *Berthoud*, 1883. 264 p., 16 pl. 8°.

Westwood, T. and **Satchell**, T. — Bibliotheca piscatoria: a Catalogue of books on angling, the fisheries and fish culture; with bibliographical notes and an appendix of citations touching on angling and fishing from old authors. London, *Satchell*, 1883. 410 p. 8°.

Williams, F. S. — Our iron roads; their history, construction and administration. With numerous illustrations. *2d ed., rev.* London, *Bemrose*, 1883. 530 p. 8°.