Laboratory work. — Dr. Mellville, in the laboratory at San Francisco, has been busy with analyses of the minerals, rocks, and waters collected at Sulphur Bank, and with other analytic work in connection with the examinations of the quicksilver deposits. He and Mr. Becker have been investigating some of the chemical relations of quicksilver.

Study of the volcanic rocks. — Capt. C. E. Dutton has been placed in charge of the investigation and study of the volcanic rocks in this division, with Mr. J. S. Diller as assistant. Capt. Dutton, during most of the past season, was busy in the preparation of his memoir on the Hawaiian volcanoes, which will be completed in time for publication in the fourth annual report of the director. Owing to the as yet incomplete state of the topographic work (which is progressing satisfactorily under the charge of Mr. Gilbert Thompson) in northern California, the field geologic work has been confined mainly to preliminary reconnoissance work, which has been carried on by Mr. J. S. Diller. Mr. Diller and his assistants took the field at Red Bluff, Cal., early in July, and immediately began work in that vicinity. The plain east of Red Bluff is a volcanic conglomerate of andesitic basaltic fragments of tufa. This formation is apparently of great extent, and reaches to the eastward for twenty-five miles. Late in July the party left Red Bluff, after having made a trip of six days' duration to Lassen's Peak, and proceeded *viâ* Redding to Yreka. From this point the ascent of Mount Shasta was made, after which they went to Linkville, Ore., taking the valley of the Klamath River to cross the main platform of the Cascade Range. Mr. Diller spent some time in the region of Mount Scott and Crater Lake, the geological features of which he found especially interesting. A brief but careful examination was made of the valley which the Klamath River cuts across the Cascade Range, in order to ascertain the geologic structure of that mountain platform. Interesting studies were also made of the faults and dislocations on the eastern side of the range, near Klamath Lake. The work thus detailed kept the party busy during August; and during September the reconnoissance along the eastern side of the range was continued. Union Peak, Mount Thielson, Crescent and Summit lakes, and Diamond Peak were all visited. From the latter Mr. Diller proceeded to the group of volcanic cones known as the Three Sisters, where both Mr. Diller and his assistant, Mr. Hayden, met with the accident already noted, which obliged them to suspend work temporarily. Later on, however, the work was continued to the northward. An account of the return trip to Red Bluff, *viâ* the western side of the Cascade Range, has been already given in *Science*. The entire trip occupied a hundred and eleven days, and the distance travelled was twenty-five hundred miles. The work done will be of great service in the determination of many of the problems connected with the range, and will form an excellent basis for future field-work. Mr. Diller is of the opinion that a special study of Lassen's Peak, if made before the detailed examination of the Cascade Range is begun, will be of great service. He says, no other ancient volcano in the United States is known that has erupted such a variety of lavas, or placed them in so favorable a position for study of their succession, as has Lassen's Peak. The solfataric phenomena at 'Bumpass' Hill,' and other places in the vicinity of Lassen, are much more extensive than at any other point in the Cascade Range. The region is also readily accessible. To the northward and southward, there are good exposures of the rocks which form the foundation of the Cascade Range, whereas north of Mount Shasta the exposures of these rocks are limited.

RECENT PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Appalachian mountain-club, Boston.

March 12. — The following resolution was adopted by the club: holding in high esteem the geographical labors of the late Professor Arnold Guyot, be it resolved, that the Appalachian mountain club is impressed with the loss it is now called to sustain in the death of an honored and illustrious member, and that the club receives with gratitude that rich store of knowledge his researches have disclosed to those who seek the truths of nature among the Appalachian Mountains. —— A paper on mountain adventures by Mr. Alessandro di Placido, including a winter ascent of Fujiyama, Japan, and one by Dr. S. Kneeland on a visit to the crater of Vesuvius at night, in April, 1882, were read. —— Mr. C. H. Ames described the mountains around the Ktaadn iron-works in Maine. This group consists of thirty-one peaks, ranging in height from fifteen hundred to four thousand feet, the highest being White Cap. Mr. Ames exhibited a beaver-skin, moose-antlers, and a reindeer-head. —— Mr. W. M. Davis, representing the U. S. geological survey, explained the proposition which the survey has made to this state for the production of a map, and the following resolution was passed: resolved, that the Appalachian mountain club, in view of the great insufficiency of the existing maps of Massachusetts, recognizes, in the proposal recently made to the legislature by the U. S. geological survey, an opportunity to obtain a topographical map of the state which should not be lost, unless the legislature is prepared to inaugurate a more thorough and expensive plan.

Linnaean society, New York.

March 7. — The following officers were elected for the ensuing year: president, E. P. Bicknell; vice-president, Dr. A. K. Fisher; recording secretary, L. S. Foster; corresponding secretary and treasurer, N. T. Lawrence. —— Mr. E. P. Bicknell read the con-

tinuation of his paper, 'A study of the singing of our birds,' the first instalment of which has appeared in *The auk*. The portion of the paper read consisted of a consideration of the arrival, departure, and song periods, with their duration and lapse, of thirty-eight birds. His observations were made at Riverdale, N.Y. —— A paper was presented by Dr. C. Hart Merriam, giving a life-history of the woodchuck as he had found it in the Adirondack region; recording its change of abode from the meadows to the edges of the woods as the hibernating-time approached, its weak attempts at tree-climbing, its almost total abstinence from water, the rare exercise of its swimming-powers, its occasional evidence of carnivorous propensities; and closing with an extract from the laws of New Hampshire that offer a bounty of ten cents for each woodchuck destroyed in that state. Dr. E. A. Means stated that about two per cent of the Adirondack woodchucks were melanistic. —— Notes concerning a few early spring birds were given by Mr. N. T. Lawrence; and Mr. William Dutcher spoke of the recent capture of a fine female Archibuteo lagopus Sancti-Johannis in black plumage on Long Island. —— Mr. E. P. Bicknell mentioned the blooming of those early spring flowers, the skunk-cabbage and the golden saxifrage, at present at Riverdale, N.Y.

Cincinnati society of natural history.

March 4. — Mr. Charles Dury read a paper on North-American hares, with notes on the peculiarities and distribution of all the known species and varieties. He said that in Kansas and Colorado the common prairie hare, Lepus campestris, is commonly though erroneously called the jackass-rabbit. The true jack-rabbit, L. callotis, has a more southern range. A skin of a specimen shot by Mr. Dury in New Mexico was exhibited. He had measured tracks of this hare which were twelve feet apart. The flesh of L. callotis Mr. Dury found to be very coarse and unpalatable. Not so, however, that of the little sage hare, L. Nuttalli, which was very good, providing the animal be drawn immediately after being killed. If the intestines are allowed to remain for even half an hour, their contents give the flesh a sagy flavor. —— Prof. Joseph F. James read an abstract of notes on some plants of the vicinity of Cincinnati. He exhibited a series of specimens of Cardamine (Dentaria) laciniata and C. (Dentaria) multifida, which showed that the two species could not be separated, and should be included under one specific name. —— Mr. Davis L. James read a notice of Mr. Thomas W. Spurlock, a botanist of local reputation, — a sort of Tam Edwards, who followed botanical pursuits from a pure love of them, and who, by his liberal distribution of rare specimens, and by his simple and child-like love for flowers and plants, had laid collectors under many obligations, and made his memory dear to them.

Engineers' club, Philadelphia.

March 1. — Mr. William Ludlow described tests of the crushing-strength of ice which were made by him in order to learn approximately the strength required for an ice harbor of iron screw-piles, in mid-channel, at the head of Delaware Bay. Eighteen pieces were tried with government testing-machines at Frankford, Philadelphia, and at Fort Tompkins, Staten Island. The specimens were carefully prepared six-inch and twelve-inch cubes, and roughly cut slabs about three inches thick, of different qualities and from different localities. For pure Kennebec ice the lowest strength obtained was three hundred and twenty-seven pounds, and the highest a thousand pounds, per square inch. For inferior qualities the strengths varied from two hundred and thirty-five to nine hundred and seventeen pounds. The higher results were obtained generally when the air temperature in the testing-room was from 29° to 36° F., as against 55° to 68° F. for the lower results. The pieces generally compressed half an inch to an inch before crushing. —— The secretary exhibited for Mr. C. A. Ashburner a set of blue prints of some yet unpublished details of the Chicago cable railways. —— The secretary presented a note, by Prof. W. S. Chaplin, upon a prevalent error in data given for determining the true meridian, by observing the instant at which Polaris and Alioth come into the same vertical, and then following Polaris for a *certain time*, at the expiration of which it is said to be on the meridian. He gives as the true time the following: latitude 40°, 25 m. 36 s.; latitude 50°, 25 m. 24 s.; latitude 60°, 25 m. 5 s.; latitude 70°, 24 m. 29 s. —— Mr. C. J. Quetil exhibited models of the wire truss recently described by him. —— Professor Mansfield Merriman presented a statement of the progress of the triangulation carried on in Pennsylvania by the U. S. coast and geodetic survey.

Academy of natural sciences, Philadelphia.

Feb. 28. — Dr. Joseph Leidy directed attention to some parasitic worms, which included specimens of supposed leeches from the mouth of the Florida alligator. Herodotus states that the crocodile of the Nile had the inside of his mouth almost beset with leeches. The truth of this assertion has been confirmed by modern zoölogists, the species being the Bdella nilotica. The Florida specimens are, however, not leeches, but pertain to a species of Distoma or fluke, apparently not previously described, for which the name Distoma oricola was proposed. Of several Filariae, or thread-worms exhibited, two, a female and a male, belong to the species Filaria horrida. The former is twenty-eight, and the latter eleven, inches long. They were obtained from the thorax of the American ostrich. Other specimens were found in the abdomen of the marsh-owl. Two species of thread-worm have been previously observed in the bodies of owls, to neither of which the specimens under examination appear to belong. They so closely accord, however, with the descriptions of another species, Filaria labiata, infesting the black stork of Europe and northern Africa, that, notwithstanding the remote relationship in the host, the speaker believed them to belong to that species. —— Dr. N. A. Randolph spoke of the changes which occur in milk during boiling. Although but little difference can be detected by the unaided senses between raw and boiled milk, it was well

known, that, during the process of boiling, certain gases are given off; and the behavior of the fluid afterwards, under certain reagents, is different from that in its original state. If rennet be added to boiled milk at the temperature of the body, no change occurs for some hours; while, if added to raw milk, coagulation takes place rapidly. If diluted acid be added to boiled milk, it produces immediate coagulation; but, if mixed with the raw fluid, coagulation takes place much less rapidly. If alkali be added to the former, cream arises with rapidity and completeness, while no marked change occurs when it is added to the latter. Observations made, of forty-six specimens of gastric contents obtained from six men fed on milk, established the fact that unboiled milk had slightly the advantage as a nutrient, being somewhat more digestible than when boiled. Peptone was found to be present at all stages of digestion. His observations on the effect of rennet confirmed those of Schreiner, published some time ago in Munich. —— A communication was read from Miss S. G. Foulke on the structure and habits of Manayunkia speciosa, the fresh-water worm recently described by Professor Leidy. Miss Foulke has had an opportunity of studying mature specimens, and has consequently been able to make important additions to Dr. Leidy's account of the species, which was based on young specimens.

NOTES AND NEWS.

A GENERAL meeting of the American forestry congress will be held at Washington, D.C., on May 7. Time and place have been chosen contrary to precedent, in order to find an opportunity of calling attention to the society's active work, and impressing upon Congress, then assembled, the needs and requirements of forestry in this country. It is therefore desirable that such meeting should be well attended; and no individual efforts should be spared by the members and friends of this association to make the same particularly interesting and effective. The following subjects have been selected as leading topics of discussion, referees having been appointed to prepare papers in regard to them: Value of American timber-lands; Management of timber-lands and timber in Canada, and legislation thereon; Value and management of government timber-lands; Best method of planting trees on unoccupied government lands; Influence of forests on climate and health; Insects injurious to trees, causes and dangers of their excessive multiplication, and how to meet them in their wholesale ravages; Growing forests from seed by farmers; Preservation of forests on head waters of streams; Planting of trees by railroad companies; Irrigation in connection with tree-planting; Experiment-stations and forest-schools; How can we best promote the interest in, and knowledge of, forestry among all classes of this country?

— The yearly meeting of the Russian geographical society was, as usual, largely taken up by the report of the secretary about the yearly work. Nothing of special interest, not yet known, was included. In the yearly award of the medals which followed, the greatest gift of the society, the Constantine medal, was given to N. A. Sewertzow, the celebrated zoölogist and explorer of central Asia, for his lifelong work. The great gold medals of the sections of ethnography and statistics were not awarded this time. The Lütke medal was given to H. A. Wild for meteorological works. Four gold medals and a considerable number of silver and bronze ones were also awarded.

At the February meeting of the society a communication was received from Bukharow, Russian consul at Hammerfest, Norway, about his extensive travels in the Lapland peninsula in the fall of 1883. The fourth number of the society's *Izviestiya* has been issued. It contains, besides matter mentioned here, Konshin's account of the Kara-Kum sands in central Asia, and Vasenew's travels into western Mongolia.

— At a meeting of railroad engineers in Moscow in December, 1883, the establishment of meteorological stations at the railroad-stations, and of weather-telegrams sent by the railway-wires to Moscow, so as to be able to get information about the state of the weather, and predictions of events of interest to railroads (as snow-storms, heavy rains, and sudden thaws), was proposed. A meeting of the railroad boards, held soon after, agreed to this proposal; and so it is to be hoped Russia may soon have a system of observations by properly paid and controlled men, instead of relying entirely, as now, on unpaid and voluntary observers.

— A call has been issued for a meeting of inventors and persons interested in the perpetuation of the present system of U. S. patent-laws, to be held at Music Hall, Cincinnati, March 25, 26, and 27. The call is signed by gentlemen from twenty states, and delegates are expected from thirty-two states. Arrangements are being perfected for a probable attendance of three thousand.

The first object of this meeting is to effect a permanent organization for the purpose of protecting the rights of inventors and patentees. Over two hundred and fifty thousand patents have been issued by the United States, from which it is clear that very large interests are at stake in any changes of the patent-laws such as are now pending before Congress. Twenty-eight bills have been introduced in the present Congress, which interfere more or less directly with patents or their owners, and diminish in one way or another the protection afforded to inventors. One bill provides that no damages can be recovered for infringements prior to written notice served on the infringed by the patentee, thus rewarding the secret manufacture of patented articles. Another bill is to prevent the recovery of damages in cases where the amount involved is less than twenty dollars; and another bill fixes this amount at fifty dollars.

— On the 11th of February died John Hutton Balfour, for many years professor of botany in the University of Edinburgh, director of the Royal botanic garden, and Queen's botanist for Scotland. He was born in that city on the 15th of September, 1808, and