ed form every important result attained in the progress of the survey, including the illustrative maps and sections. It is more pleasant than properly characterizing this short-sighted policy of the state, to call attention at this late day to the fact that this reprint of the annual reports is accompanied by a very satisfactory geological map of the Virginias, colored by Professor Rogers; by a generalized section from Chesapeake Bay to the Ohio River; and by ninety-six more local and detailed sections, traversing nearly every part of the two states, but especially the great valley and the neighboring mountain ranges. The sections are colored, and are exact reproductions of the originals drawn by the author. They are indicated on the map by lines numbered to correspond with the plates.

The arrangement of the book is chronological; and the annual reports are followed by several papers, published between 1840 and 1842, on the thermal springs of Virginia, illustrated by a plate of sections.

The often quoted paper on the physical structure of the Appalachian chain, by Profs. William B. and Henry D. Rogers, with three plates, dates from the same period, and must be regarded not only as an admirable summary of the characteristics of the Appalachian system, but also as an important chapter in the history of geological theories. This is followed by the evidence supporting Professor Rogers's view that the coal-bearing rocks of eastern Virginia are Jurassic, with a plate of coal-plants; and a discussion of the divisions of the tertiary, with five plates of eocene and miocene shells.

The volume concludes with an account of the infusorial deposit of Virginia, as exposed in the Fort Monroe artesian well, five hundred and fifty-eight feet below the surface. This was published in 1882, and, in the language of the editor, has a special interest, not only as the last published investigation made by Professor Rogers, but as being in the *same* field in which he began his labors half a century before.

The volume is provided with a good general index, and a full index of persons and places; and it is so conveniently compact, that the magnitude of the work is not realized until one attempts to read it.

NOTES AND NEWS.

THE statue in marble erected to the memory of Charles Darwin, executed by Mr. Boehm for the subscribers to the Darwin memorial, has been placed in the great hall of the new building at South Kensington containing the natural-history collections of the British museum. It is conspicuously placed at the head of the first flight of the great staircase, "as though," says the *Times*, "to welcome all coming generations of students as they enter the door of the building in which so many of the materials of their work are gathered together. So far as was possible, Mr. Boehm has rendered the very features and character of his subject; and all Mr. Darwin's friends agree, that a likeness more characteristic, whether in face or attitude, could hardly have been produced, even by a sculptor who had been intimately acquainted with him in his lifetime. The head is full of dignity: the great brow, the flowing beard, the expression, full at once of intense thought and of human feeling, have been caught and fixed in the marble." We have given elsewhere the address of Professor Huxley on the occasion.

— Among recent appointments at Harvard college, we note that of Winfield Scott Chaplin as professor of engineering; William Morris Davis, assistant professor of physical geography for five years; and Dr. Harold C. Ernst, demonstrator of bacteriology for 1885–86. The degree of LL.D. was conferred on Alexander Agassiz the naturalist, and Benjamin Apthorp Gould the astronomer.

— We learn from *Nature*, that on the receipt of communications concerning the proposed change in the time for beginning the astronomical day, as recommended by the recent International meridian conference at Washington, the lords of the committee of council on education requested the following committee to advise them as to what steps should be taken in the matter: Prof. J. C. Adams, the astronomer royal; Capt. Sir F. Evans, the hydrographer of the navy; Gen. Strachey; Dr. Hind; and Col. Donnelly. In accordance with their recommendations, copies of the report of the delegates to the conference at Washington, together with the resolutions adopted by that body, have been sent to various departments of the state, and to the following societies, etc.: Society of telegraphic engineers, Royal astronomical society, Royal society, Submarine telegraph company, Eastern telegraph company, Eastern and South-African telegraph company, Eastern extension, Australasia and China telegraph company, and the Railway clearing-house. They have been informed that these resolutions of the conference appear to my lords of the committee of council to be such as commend themselves for adoption; but, before informing the American government to that effect, their lordships would be glad to receive the opinion of the various societies on the subject.

— The last annual report of the Russian geographical society contains extracts from letters addressed by Prjevalski to the Grand Duke Alexander Alexandrovitch, which contains some further interesting details about his Hoang-ho journey. About the end of May he reached, as known, the foot of the Burkhan-budda Mountains, which enclose the high Thibet plateau separating it from Tsaidam.

Leaving there his baggage, he went with only thirteen men to the sources of the Yellow River. The climbing on the 15,700-feet-high passage of the Burkhan-budda ridge took three days. The descent, on the contrary, was very short, the plateau of Thibet being there 14,000 to 15,000 feet high. Further, 60 miles across the desert plateau brought the traveller to the sources of the Yellow River. They are 13,600 feet above the sea-level, and consist of two rivers coming from the south and west, and rising in the hills scattered on the plateau. A wide marshy valley, Odon-tala, 40 miles long and 20 miles wide, feeds numerous springs. The Hoang-ho itself is only a rivulet, dividing into two or three branches, each of them but 80 to 100 feet wide, and only 2 feet deep at low water. Some 13 miles below this place the Hoang-ho enters a broad lake, coloring its southern part with its muddy water; and, after leaving it on the east, it enters again another lake, whence it flows out as a large river; farther down it makes a great curve to avoid the snow-covered Amis-matchin range, and breaks through, in a wild course, the parallel ridges of the Xuen-lun. On the Thibet plateau the expedition experienced dreadful cold. In the second half of May, snow-storms were as strong as in winter, and the night frosts reached —23° C. Still the thin grass covering did not perish, and a few flowers re-appeared every day under the sun's rays. Even in June and July the thermometer fell, during bright nights, as low as —5°. As to rain, it poured every day, sometimes several days without interruption. The amount of vapor brought by the south-west monsoon, and deposited there, is so great, that during the summer northern Thibet becomes an immense marsh; needless to say, that the advance was difficult for camels. Though uninhabited by man, these deserts were full of herds of yakes, khoulans, antelopes, and mountain sheep. Even bears were seen in groups, sometimes of more than ten at once. Some thirty pairs were shot down. They are altogether very cowardly, and fly even when wounded. After having spent a few days at the source of the Hoang-ho, Prjevalski went south to the Blue River, called there Dy-tchou by the Tangoutes.

— Dr. Stephen Bowers, who is well known to archeologists from his extensive collecting in California, has recently described in the Ventura *Free press* an interesting discovery made by him in a dry cave in the San Martin Mountains, Los Angeles county. The cave was about twelve feet by sixteen. In it were nine baskets from six to twenty inches in diameter, made from tule, one of which contained fourteen pieces of red wood about a foot ong, notched, and painted with red and blue in streaks. Some of these sticks had as many as one hundred notches, and each stick was perforated at the ends. Another basket contained thirty-three head-dresses from four to five feet in length, made of feathers; another, forty-five whistles made from the tibiae of deer, the 'stop' being formed by inserting a mass of asphaltum, and the larger end of the bone covered with asphaltum in which is embedded a piece of haliotis shell. The most important objects found were four perforated stones mounted on handles of the hard wood of the bearberry, held fast in the holes by asphaltum. The discovery of these perforated stones, with short handles attached, is an important confirmation of F. W. Putnam's conclusions in relation to the probable use of the majority of similar stones, of which hundreds have been found in graves in southern California. The cave gave no evidence of having been used for any other purpose than as the place of deposit of these articles. Considerable basket-work was discovered in the *débris*, as also a haliotis shell-cup, a shell ornament, an implement made of deer's antler, and a smoothing-implement made of serpentine. No determination could be arrived at as to the length of time the articles had been in the cave; but, as it was perfectly dry, they may have been there for centuries.

— *Nature* gives the results of some recent experiments by Fol et Sarasin on the depth to which the light of the sun will penetrate into the sea. It will be remembered that in November last they recounted the results of their experiments on the same subject in the Lake of Geneva. The present paper describes similar experiments made in the Mediterranean off the zoölogical station and harbor of Villefranche. By means of photographic plates they have proved, that in the month of March, in the middle of a sunny day, the rays of the sun do not penetrate beyond four hundred metres below the surface of the Mediterranean. This is established by seven separate experiments, at varying depths, and different hours of the morning. At 380 metres, shortly before 11 A.M., the impression on the plate was less than that which would have been left on exposure to the air on a clear night without a moon. Between 1.20 and 1.30 P.M., at a depth of from 405 to 420 metres, there was no trace of any impression whatever on the plate. Light clouds do not appear to cause any notable diminution in the depth to which the light penetrates. In the Lake of Geneva the writers also undertook a new series of investigations to determine the effect of the season on the penetration of light. They give 200 metres as the extreme limit for winter in the lake; but they found that there is as much light at 380 metres in the Mediterranean as at 192 metres in the Lake of Geneva; and, by a comparison of these with previous experiments, it appears, the light penetrates from twenty to thirty metres deeper in March than in September: in the month of August, perhaps the difference is a little more. Compared with the series of plates exposed in the lake, those of the Mediterranean are characterized by a slower and more regular gradation. This gives rise to the idea, that while in the lake the light would be promptly intercepted by the deeper layers more or less disturbed or muddy, in the Mediterranean the absorption proper to pure water would be the principal, if not the sole, factor in arresting the luminous rays.

— One of the questions for discussion at the Sanitary congress at Rome was the measures to be adopted in regard to vessels from the east when they arrive in Mediterranean ports. Dr. Proust, the French

delegate, proposed "that vessels which had cases of cholera on board should be subjected to seven days' isolation, and that all the people on board should be divided off into groups, each of which should be released separately, if, after five days' observation, no case of cholera should have appeared among the persons composing such a group."

— The U. S. entomologist informs us that the destructive locust of California this year, as appears from larvae recently received, is Melanoplus devastator. Caloptenus differentialis has also been sent, but the former must be the chief source of injury.

— The Meteorological society of Vienna has resolved, says *Nature*, to erect a meteorological station on Mount Sonnenblick, near Tauern, in the central range of the Tyrolese Alps, thirty-one hundred metres above sea-level, and thus the highest station of the kind in Europe.

— The *Geological magazine* of London attains its majority the present summer; and as the present editor, Dr. Henry Woodward of the British museum, has been connected with it from the beginning, and during almost the whole time as its editor in chief, his friends are proposing to present him with a testimonial for the ability and fairness with which this successful magazine has been conducted. Friends of Dr. Woodward and of the magazine can forward any subscriptions to the treasurer, Mr. G. J. Hinde, 11 Glebe Villas, Mitcham, Surrey.

— One 'Prof. A. H. Lockwood,' *alias* 'Rev. J. H. Rockwell,' was arrested on June 17, at Garden Grove, Io., charged with using the U. S. mails for conducting fraudulent operations in the purchase and sale of scientific books. Any of our subscribers who have been defrauded will do well to communicate with D. H. Pulcifer, post-office inspector at Des Moines, Io.

— We learn from *Nature* that important experiments in aerial navigation are now being made by Mr. A. F. Gower, well known in connection with the Gower-Bell telephone. The operations being carried on are more particularly directed towards the adaptation of balloons to war purposes. On May 31, the wind being favorable, one of the automatic pilot balloons invented by Mr. Gower, with appliances for giving out its own gas and ballast, one compensating for the loss of the other, was filled with twenty-three hundred feet of gas, and ascended at about 11 o'clock. In the car a written statement was of course placed, explaining the ownership of the machine and its object, with the result that it was next heard of at Dieppe, having made a rapid passage of about seventy-two miles in a straight direction, and descended at 2.30 in the afternoon. On June 1 another pilot balloon, with a capacity of forty-three hundred feet, was started, and immediately followed by Mr. Gower in his own balloon (containing twenty-three thousand feet of gas). The object of Mr. Gower in ascending was to watch the action of the pilot; but the smaller machine made such rapid progress, that it got out of his observation, and came down in the vicinity of Paris. Meanwhile, Mr. Gower, who ascended about noon, reached the French coast at Boulogne at 2.15, and then, taking a northerly curve, travelled overland to Calais, where he made a smooth descent at 4 P.M.

— Among recent deaths we note the following: Professor Dunkes of Marburg, a well-known mineralogist and paleontologist; Samuel Cabot, ornithologist, at Boston (the type specimens of his collection are left to the Boston society of natural history); Prof. H. Weyenbergh, professor of zoölogy at the University of Cordoba, during a visit to his home in Holland; Dr. Fred. Gustave Henle, physiologist and anatomist, at Berlin, May 18, in his seventy-sixth year; Dr. Richard Böhm of Berlin, African explorer, in his thirty-second year; Dr. Carl Ohrtmann, mathematician, at Berlin, April 22; T. R. Peale, entomologist, at Philadelphia, March 13; C. Cornelius, entomologist, at Elberfeld, April 1, in his eightieth year; J. P. Jacobsen, at Thisthdt, Jutland, April 30; Prof. P. L. Panum, physiologist, at Copenhagen, May 1, in his sixty-sixth year; Paul Desains, physicist, at Paris, May 3; Dr. K. J. Andrae, professor of mineralogy and paleontology at the University of Bonn, at Bonn, May 8; Mr. William Ladd, the well-known scientific instrument-maker, in his seventy-first year; Robert von Schlagintweit, professor of geography and ethnology at the University of Giessen, in his fifty-third year.

— Dr. Herman Koch, the bacteriologist, has been created professor in the University of Berlin.

— Last year was a tolerably productive one for the collectors of prehistoric remains in Switzerland. The water of the lakes was almost constantly below the highest level, which is the most favorable state of things for explorations around the lake-dwellings. The remains discovered belong mostly to the bronze period; and the chief localities in which they were found were Lake Neuchâtel, and the settlement of Walleshofen near Zurich, the latter of which is the only station of the bronze period yet known in eastern Switzerland. Amongst the most remarkable articles discovered at this settlement in 1884 were a splendidly preserved bronze sword, several dozens of bronze hatchets, bracelets, etc. Of the remains of the stone period discovered in the same year, the most notable are those obtained at Robenhausen, including several pretty knife-handles made of yew; some excellent specimens of mechanical industry, such as thread, woven fabrics, fishing-nets, etc.; and ears of barley and wheat, one being a specimen of the rare Triticum turgidum.

— The sultan of Zanzibar claims the whole coast from Cape Delgado to the mouth of the river Juba, which is on the equator. Nevertheless, the German explorers, the brothers Denhardt, have planted the German flag at Vitu, thirty German miles south of the river Juba, and six miles inland. The explorers report the district as fertile. A German squadron, consisting of three frigates and two transports, has been sent to the coast of Zanzibar to protect this new annexation; to which, of course, the sultan objects. Three German exploring expeditions have already started from Vitu for the interior of Africa.