

of appending subject indices to the papers published by the Society. Sir Joseph Lister then referred to the universal attention attracted to Röntgen's great discovery. He then passed in review some of the more important papers communicated to the Society during the year, and, in speaking of biology, alluded especially to the work of Prof. Schäfer, Prof. Farmer and Mr. Lloyd Williams. The presentation of medals then took place in the manner that we have already announced. In the evening Sir Joseph Lister presided at a dinner at which were present many distinguished guests and a large number of Fellows of the Society.

THE Appalachian Mountain Club, of Boston, has secured new and commodious rooms in the Tremont Building. They are centrally located and with a fine view, stretching from Big Blue to Prospect (the highest elevations near Boston), and including the Charles River basin and the State House. The library is now safely housed in a fire-proof building. The rooms are used for Council and Committee meetings, exhibitions and small social gatherings; they contain the library and collections, and are the workshop and office headquarters of the Club. The rooms are under the general supervision of the Room Committee and are open to all members from 3 to 5:30 p. m., under the charge of volunteer custodians.

Natural Science gives some account of the Institute of Jamaica, taken from its report for the year ending March, 1896. The museum has been removed from the lower floor of Date Tree Hall to adjoining new premises. These consist of two floors, the lower devoted to the collections of the Government Geological Survey, the Jamaica woods and most of the natural history collections; the upper floor is filled with the anthropological and the rock and mineral collections. By reason of these changes the library accommodation has been greatly increased, and the art department given room to develop. An attempt has been made to increase the public interest in the museum and natural history generally by the publication of museum notes in the Kingston newspapers. There has been an increase of 28 per cent. in the attendance of visitors to the museum.

UNIVERSITY AND EDUCATIONAL NEWS.

PROF. M. J. ELROD, of the Illinois Wesleyan University, has resigned to accept the chair of biology in the Montana State University.

THE following further appointments have been made at the Massachusetts Institute of Technology: Samuel C. Prescott, instructor in biology; Edward M. Bragg, assistant in mechanical engineering; Leonard H. Goodhue, assistant in analytic chemistry; Amadeus W. Grabau, assistant in geology; Minor S. Jamieson, assistant in civil engineering; Albert J. Wells, assistant in mechanical drawing; Clarence W. Perley, assistant in biology.

M. POINCARÉ, now professor of mathematical physics and the theory of probabilities in the faculty of sciences of the University of Paris, has, at his request, been transferred to the chair of mathematical astronomy. M. Boussinesq, now professor of mechanics, takes the chair vacated by M. Poincaré.

THERE is now once more a University of Paris. The various faculties at Paris have been reorganized with a certain freedom from government control. The inauguration of the University has been celebrated in the new buildings of the Sorbonne with suitable ceremonies, which included an oration by M. Lavissee.

DISCUSSION AND CORRESPONDENCE.

X-RAYS.

TO THE EDITOR OF SCIENCE: The remark has been frequently made that the almost complete absence of specular reflection in the case of the X-rays may depend upon the want of sufficient polish of the reflecting surface. So far as I have noticed, no one has tried the experiment with mercury as the reflector. Very simple arrangements would admit of obtaining a perfectly plane surface, which, as to reflecting power, would leave nothing to be desired. A concave surface of mercury might be found to converge the rays.

M. CAREY LEA.

REPLY TO PROFESSOR HALSTED.

In the last number of SCIENCE Prof. Halsted, by bringing into juxtaposition two statements which were widely separated in a recent note

of mine published in *SCIENCE*, appears to convict me of inconsistency and to derive the conclusion that certain subjects introduced in an illogical manner into his 'Elements of Geometry' find a satisfactory treatment in his 'Elementary Synthetic Geometry.' These subjects are *the straight line as a minimum length* and the general notion of *the length of a curved line*. As a matter of fact, neither of these subjects is discussed in the latter work. The only curved line there considered is the circle.

THOMAS S. FISKE.

A QUESTION OF CLASSIFICATION.

TO THE EDITOR OF *SCIENCE*: The communications by Profs. Hollick and Ward in your recent numbers, commenting upon Prof. Marsh's determination of the Jurassic age of the Potomac and Amboy clays of the south New England island series and New Jersey-Virginia coast, and Prof. Marsh's reply to Prof. Hollick in the November number of the *American Journal of Science*, are of interest to all workers in American Mesozoic formations.

Prof. Marsh, in his early papers on the vertebrates of the *Atlantosaurus* beds of the age of Colorado and the Potomac beds, has referred both of these to the Wealden epoch. American geologists* do not assert the existence, in this country along the present Atlantic slope, of Jurassic beds of Atlantic sedimentation representing the whole or part of that vast period of time below the Wealden. In view of these facts, it is no inference to state that the broad generic term 'Jurassic period,' as applied by Prof. Marsh to this portion of our country, is a synonym for the term Wealden epoch, as used by others. Hence that part of the controversy, so far as it involves the oldest or Potomac beds, narrows down to the question of whether the beds of the Wealden epoch should be classified as the top of the Jurassic or the base of the Cretaceous period of geologic time.

* With the exception of Prof. Jules Marcou, who originally maintained that the Middle and Lower Cretaceous of Texas and the Plains Tertiary were Jurassic, and who still maintains the Jurassic age of the Middle Cretaceous beds of New Mexico and the Lower Cretaceous of Texas. This position has been disproved by research.

This is an old and much discussed question of English geology. It would be impossible here to give even brief reference to the extensive literature of the question. It is sufficient to say that, after the most thorough sifting of the evidence pro and con, European opinion and usage of to-day uphold the Cretaceous age of the Wealden beds. Against the opinions of a few who hold to the contrary, a volume could be filled with the data of eminent European authorities who maintain the Cretaceous age of the Wealden, including L. Agassiz, Lyell, Jukes, Prestwich, Zittel, Etheridge, Woodward, Pavlow, Fischer and others. Even as I write these lines the mail brings, fresh from the press of the official Geological Survey of Great Britain, an elaborate monograph of five volumes on the English Jurassic by H. B. Woodward, which excludes the Wealden from the Jurassic and places it at the base of the Cretaceous period. Furthermore, the consensus of opinion in all the reports of the meetings of the International Congress of Geologists places the Wealden as the base of the Cretaceous system.

Prof. Marsh, however, has assumed the position in several writings that the Wealden epoch belongs to the Jurassic period and not to the Cretaceous, and this opinion explains his use of the term Jurassic in this country. On the other hand, all the able authorities of this country, except Prof. Marsh, who have studied or reviewed the Potomac and allied formations of Wealden affinities have reached the final conclusion that they are of Cretaceous age. Among these may be mentioned Dana, Newberry, Ward, McGee, Hollick and others. The U. S. Geological Survey has also mapped these formations as Cretaceous upon its latest atlas sheets.

The controversy, in part, thus narrows down to the problem of the age of the beds of the Wealden epoch, and naturally arouses an inquiry as to what criteria can be depended upon to settle the limitations of the geologic periods. There are three plausible methods that suggest themselves: (1) precedents and usage; (2) correspondence of the rock of each period with great cycles of sedimentation, and (3) the presence of characteristic, distinguishing fossils.