institution. Professor Cattell recently said in an address at Harvard that "The first step of a really great president would be to refuse to accept a larger salary than is paid to the professors."[1] In the University of Pittsburgh, however, there is an increasing difference between the salaries for teaching and for administration.

There seems to be a diversity of opinion on the matter of presidents' salaries. In Bulletin No. 2 of the Carnegie Foundation, May, 1908, it is stated that "the salaries [of presidents] are not much above the upper range of what a professor may receive" (p. 25). From the figures just given it will be seen that this statement holds approximately true for the two state universities referred to, but is very wide of the mark for the University of Pittsburgh. And there is every reason to believe that many more small colleges and universities show a similar disproportion. In view of these and other considerations, it seems to me that the Carnegie Foundation should make a complete and thorough investigation of the matter, especially of those institutions now on the accepted list. The foundation has already done great service by publishing the average and the maximum salaries for professors in many institutions, but this has been as much in the interests of institutions as of the faculties. A very great service could be rendered to the professors themselves by publishing also the minimum professor's salary and the president's salary. Inasmuch as the prime purpose of the foundation is to advance the profession of teaching, and not institutions as such, a thorough investigation should be made, and at the earliest possible moment.

A. W. Crawford
University of Manitoba,
June 30, 1910

On the Origin of Flint-like Slate near Chapel Hill, N. C.

To the Editor of Science: In a recent bulletin of the North Carolina Geological and Economic Survey Dr. F. B. Laney[1] has occasion to refer to an article by me[2] on the flint-like slate near Chapel Hill, and concludes from the partial chemical analysis and petrographic description there given that I am unwarranted in ascribing to the rock a sedimentary origin. In the quotations from my article no reference is made to the field data upon which the classification of the rock as a sediment was based.

The rock in question lies in distinct beds in a sedimentary series which includes sandstones and conglomerates, and in places it grades off into a fine sandstone. It coincides in dip with the other members of the series and can be traced for miles along the strike, and does not pinch out as would be the case with a lava flow. At several localities along Morgan's Creek, the one nearest Chapel Hill being at King's Mill, two miles distant, the slate lies unconformably upon sheared felsite or rhyolite, the marked difference between the two rocks being apparent at a glance.

The partial chemical analysis of the rock was given to show specifically its close resemblance to the local sheared felsites from which it was supposedly derived by mechanical wear. Dr. Laney does not seem to realize that the material of a felsite or rhyolite, broken down and reconsolidated, may show the same essential characteristics as the original rock. It is evident that he has not seen the flint-like slate in place in this neighborhood.

H. N. Eaton
University of North Carolina

The Oscillations of Swinging Bodies

To the Editor of Science: May I be allowed to say that farther investigation shows that the forms of two of the curves in a

[1] "The Case of Harvard College," *Popular Science Monthly*, p. 613, Vol. LXXVI., No. 6, June, 1910.

[1] North Carolina Geological and Economic Survey, Bull. 21, 1910, "The Gold Hill Mining District of North Carolina," by F. B. Laney, p. 18.

[2] Elisha Mitchell Scientific Society, *Journal*, Vol. 24, No. 1, April, 1908, "Micro-structure and Probable Origin of Flint-like Slate near Chapel Hill, North Carolina," by H. N. Eaton.

paper on the "Damping of the Oscillations of Swinging Bodies by the Resistance of the Air" which I published last year, must have been somewhat affected by a minute spark which escaped my notice, but which lasted for perhaps the thousandth part of a second and thus effectually prevented the break in the circuit of the deflecting current from being abrupt? The very interesting discontinuities in the motion of bodies swinging under certain laws of damping are not very appreciable in the air at the small velocities described in the paper mentioned.

HARVARD UNIVERSITY B. O. PEIRCE

SCIENTIFIC BOOKS

Birds of New York. By ELON HOWARD EATON. Memoir 12, New York State Museum, John M. Clarke, Director. Part I. Introductory Chapters; Water Birds and Game Birds. Albany, University of the State of New York. 1910. 4to, pp. 501 (+160 pp. of unpaged tabular matter between pp. 86 and 87), 42 colored plates, and many half-tone illustrations in the text.

Of the many manuals and reports on birds issued under the authority of the various state governments none approaches in voluminous detail and fullness of illustration the present work (which will form two thick volumes in quarto) on the "Birds of New York," of which Part I., comprising the introductory matter and the water birds and game birds, has recently appeared. The author, Elon Howard Eaton, has shown himself well fitted for the task, both the introductory matter and the systematic part giving evidence of thorough research and good judgment. The present work is therefore a worthy successor to the illustrated quarto volume on birds by Dr. J. E. DeKay, published in 1844 as Part II. of the "Natural History of New York"—a work of great usefulness for many years, beyond as well as within the boundaries of the state.

The first part of the present work opens with a "Summary of the New York State Avifauna," in which the 411 species that have been recorded as occurring in the state are classified in six categories, in accordance with their manner of occurrence, as residents, summer residents, transients, winter visitants, summer visitants and accidental visitants. This is followed by a consideration of the life zones of the state, namely, the Canadian, Alleghanian and Carolinian, illustrated by a map shaded to indicate relative elevation, with cross-hatching in red and blue to demark the life zones; but unfortunately many of the place names are practically illegible, even with the aid of a hand-glass. Other smaller maps of similar character illustrate the breeding ranges of twenty-two species, while several pages of charts graphically indicate the breeding ranges of all the species that breed in the state with reference to their representation in the different life zones. Consideration of the Mount Marcy region, of the increase and decrease of species and the cause, a few pages of appropriate "suggestions to bird students," and such other topics as "bird migration," "spring arrivals," "county schedules" and "classification," make up the rest of the 90 pages of introduction. Under "spring arrivals" the dates of arrival of 90 species at 30 localities are given for a series of years in three tabular inserts, and two maps show the dates of spring arrival of the Baltimore oriole and barn swallow for the year 1905 at different points throughout the state. Under "county schedules" an attempt is made "to show in condensed form the status of our knowledge concerning the birds of each county in New York State." This laborious compilation is tabulated in 75 inserts placed between pages 86 and 87.

The systematic part (pp. 91–390) follows the classification and nomenclature of the American Ornithologists' Union Check-List of North American Birds, and includes the species from the grebes to the end of the pigeons. Diagnoses are given of the family and higher groups, with some additional comment, as well as of the species. The matter relating to the latter is classified under the subheadings "description," "field marks," "distribution," "migration," "haunts and habits," "food," "nests and eggs," etc., and varies in