was indicated. Dr. Boas and others contributed supplementary information.

'Views of the Paleolithic Question,' by Rev. Stephen D. Peet, and 'The Collection of Anthropometric Data,' by Professor J. McKeen Cattell, were read by title.

The next communication was presented under the title 'Conditions attending the Rise of Civilization,' by W J McGee. The author pointed out that the development of civilization on the shores of the Mediterranean was attended by growing recognition of proprietary right in land, together with concomitant recognition of the territorial rights of others, and the gradual growth of law relating to boundaries, monuments and inheritances. He gave special emphasis to the altruistic character of the laws regulating territorial interest. Considering, then, the characteristics of life in desert regions, he showed that the tendency of common strife against hard physical environment is toward the development of an intimate coperation and interaction of such sort as to simulate the altruism of civilization. He then touched briefly on the influence of desert conditions in promoting the recognition first of custom and then of law corresponding to the customs and laws of advanced culture. The communication was discussed by Professor J. Mark Baldwin, Dr. Farrand and Dr. Boas.

An informal symposium followed on the question 'Will Winter Meetings Meet the Need of American Anthropologists for Organization?' It resulted in a decision to recommend to the Association that provision be made for a meeting of the Section of Anthropology to be held in New York during the Christmas holidays of 1898. Incidentally the need of a medium for the publication of anthropologic papers received consideration, and a special committee was appointed and given power to act toward the establishment or adoption of an American anthropological journal, the committee consisting of Messrs. Boas (chairman), Brinton, Putnam, Frank Baker and McGee.

The Section adjourned at 5 p. m. to meet with others at Boston.

W J McGEE,
Vice-President Section H.

ALONZO S. KIMBALL.

PROFESSOR ALONZO S. KIMBALL, who was for a quarter of a century professor of physics in the Worcester Polytechnic Institute, was born at Center Harbor, New Hampshire, in 1843. He was prepared for college at New Hampton Academy, and was graduated from Amherst College in 1866. In 1871 he was called to the Worcester Polytechnic Institute, which had just graduated its first class. He organized the department of physics, and the Institute was among the first in the country to provide systematic instruction in a physical laboratory. After seven or eight years of great activity and usefulness, shown alike in the development of the important department of which he had charge, and in a series of valuable original contributions to physical science, he was, in 1879, attacked by a painful disease, which, in spite of the highest medical skill in both this country and Europe, proved to be incurable, and from the effects of which he died on December 2, 1897. Notwithstanding the steady progress of a malady which entailed nearly continuous suffering, Professor Kimball, through all these years, discharged the constantly increasing duties of his position to the great satisfaction of the officers of the Institute and of the hundreds of pupils to whom his life and work were always inspiring. In addition to his regular work in Worcester, he was for several years a lecturer at Mt. Holyoke College, of which institution he was for many years and at the time of his death a Trustee. While the Salisbury Laboratories of the Polytechnic Institute were being built he spent a year

in Europe, engaged in the study of the best European establishments, and in selecting apparatus for the better equipment of the new building to which his department was to be transferred. While there he suffered from a more than usually acute attack and submitted to a difficult and dangerous surgical operation, which it was hoped might lead to a permanent recovery. Only temporary results followed, however, and within the past five or six years several similar operations were performed with the same result. His work in the lecture room and laboratory was not seriously interrupted, although carried on under conditions that would have made it impossible with most men. When, ten or fifteen years ago, the creation of a new branch of engineering began, Professor Kimball was not slow to appreciate its importance, and the Institute was among the first schools of applied science to offer a course in electricity with ample equipment of electrical machinery and other appliances necessary to its success. The management and development of this course, along with the courses in pure physics, remained with him until about two years ago, when its magnitude became such that it was necessary to set off the electrical engineering as a separate department with a special professor at its head. With lessened responsibility, his enthusiasm and, for a time, his activity greatly increased, but his enjoyment of the new conditions was cut off by his death, a few weeks ago.

Professor Kimball was uncommonly skillful in experiment, possessing originality in design and his work was done with that sense of refinement and precision which is essential to original research. Between the years 1875 and 1880 he published in various scientific journals a series of papers, each the result of wisely planned and carefully conducted experiment and all of much value. The first was on 'Sliding Friction,' published in the *American Journal of Science*, March, 1876. It marked the beginning of an important investigation of the general subject of friction, the results of which were published in subsequent numbers of the same journal, in Van Nostrand's *Engineering Magazine* and elsewhere. In these papers he shows that friction between sliding surfaces is independent of neither velocity nor pressure, experiment pointing to the existence of a maximum coefficient of friction depending on both velocity and pressure. During these years there were also other papers on the influence of temper upon the physical properties of steel, the effect of magnetization on the physical properties of iron, etc. There was also prepared and printed a small treatise on thermodynamics, arranged especially for the use of his pupils, exhibiting much originality and clearness in method of presentation.

From the quality of Professor Kimball's work during this period there can be little doubt that he would have achieved marked distinction in his chosen field but for the failure of his health, from which he never recovered. From 1879 to his death, a period of nearly twenty years, his fight was against odds that must have long ago defeated any one endowed with only the average human courage and tenacity of purpose. Conscientiously discharging every duty that the day brought, he had little energy left for research work, although he published occasional papers and was always anxious to utilize any temporary increment of vitality in that way.

Although a member of numerous scientific societies, Professor Kimball was rarely seen at their meetings, his long illness thus standing in the way of those intimate personal and social relations with his confreres for which he was by nature so admirably fitted. His manner was charming, his good nature unceasing, his instincts fine and noble.

To those with whom he was associated in work, or who were otherwise privileged to know him intimately, his prolonged but splendidly heroic struggle with a fatal disease, together with the uniformly high standard of performance which that struggle did not sensibly affect, will ever remain an inspiring example of the best of human qualities.

T. C. M.

CURRENT NOTES ON PHYSIOGRAPHY.

MILNE ON SUBOCEANIC CHANGES.

THIS topic, already noted in SCIENCE (September 3, 1897), receives further details (London Geog. Journ., X., 1897, 259–289), which will well repay study. Their practical importance may be inferred from the expense—half a million sterling—of fifteen cable repairs necessitated by submarine disturbances. Their specific character appears in the items of place and date, as well as in the photographic illustrations of torn cables, gathered by the author with much care from usually inaccessible sources. Their novelty is illustrated in such items as the following: "The Bilbao cable broke down periodically, usually in March during or after a heavy northwest gale, at a point about thirty miles off shore; when repaired, it was invariably found that three or four miles of cable had been buried. This is attributed to a strong submarine current, caused by the piling up of surface water by the wind; the under current crossing the drowned prolongation of a river valley with steep walls, which, when undercut, fell in masses." Again: "The military and naval reserves were called out in Australia, in 1888, when the simultaneous interruption of two cables cut off communication with the rest of the world for nineteen days and gave rise to the fear that war had broken out in Europe." The physiographical interest of the article comes from the constant association of cable fractures with the steeper slopes of continental margins where the submarine contours are not only irregular but variable; this being in strong contrast to the undisturbed condition of cables in deep water on a soft level bottom, of which Kipling says:

> There is no sound, no echo of sound, in the deserts of the deep,
> Or the great gray level plains of ooze where the shell-barred cables creep.

Near the continents, slopes of 1 in 7, or even 1 in 3 are discovered. Changes of depth amounting to 100 or 200 fathoms are determined by soundings before and after cable fractures in regions of disturbance.

In conclusion, Milne makes two suggestions: First, that he would be glad to receive (at Shide Hill House, Newport, Isle of Wight, England) details regarding cable interruptions in any part of the world; second, that seismographs, similar to the one he has on the Isle of Wight, should be installed in various countries, their cost being about £50; this suggestion being adopted by the British Association, whose circular on the subject may be obtained from their Seismological Committee (Burlington House, London, W.).

HATCHER'S EXPLORATIONS IN PATAGONIA.

PRIMARILY with the object of collecting fossil mammals, Princeton University sent J. B. Hatcher to Patagonia in January, 1896. He returned in July, 1897, and after leaving reports on his geological and geographical results (*American Journal of Science* and *National Geographical Magazine* for November) he has gone out on a second expedition. The geographical description gives an excellent picture of the Patagonian pampas. They consist of a heavy series of fresh-water (continental) deposits, deeply cut by west-east valleys and strewn over with drift from the Andes, morainic near the mountains and water-washed farther east. The terraces, by which succes-