pointing out the disparity, at least until very recently, in the relative amounts of investigation and interest bestowed upon 'man foods' and animal foods. He described the classes of foods rated according to their fuel values, digestibility, etc., and noted the divergence between price and actual food value of many articles, some of them not luxuries.

The papers announced on 'Volumetric Estimation of Lead,' by J. H. Wainwright, and 'Electrolytic Production of Alkali Nitrites,' by Wm. M. Grosvenor, were held over until next meeting.

DURAND WOODMAN,
Secretary.

GEOLOGICAL SOCIETY OF WASHINGTON, 58TH
MEETING, JANUARY 9, 1897.

MR. WHITMAN CROSS read a paper on 'The igneous rocks of the Leucite Hills and Pilot Butte, Wyo.,' in which he stated that the rocks of the Leucite Hills occur as surface flows and in volcanic necks or plugs. The leucite rock described by Zirkel, 20 years ago, is the least abundant type in the region, the other varieties containing more or less potash feldspar, as pointed out by Kemp in his recent communication to the Geological Society of America. Chemical analyses of various rock types were submitted, together with analyses of the pyroxene and mica.

The rock of Pilot Butte, an isolated point near the Leucite Hills, was also described and its chemical composition shown by an analysis. This rock is closely related to the leucite rocks, although containing much glass.

In a large cavity of the leucite rock was found a quantity of potash nitre, and on a protected face of the Boar's Tusk, a volcanic plug, was observed a white coating of soda nitre. The origin of these nitrates, whose mode of occurrence is so unusual, is not explained by any observations made.

This communication will soon be published in some scientific serial.

Mr. W. Lindgren read a paper on 'The Granitic Rocks of the Sierra Nevada,' in which he called attention to the large areas of intrusive granitic rocks occurring along the Pacific coast and to the fact that these intrusives are of com-

paratively recent date, probably early Cretaceous. A map of the distribution of the various kinds of granitic rocks in the northern part of the Sierra Nevada was exhibited. It was shown that, while some true granite exists, the largest mass is made up of grano-diorite, a rock intermediate between granite and diorite or, more accurately, intermediate between a quartz-mica-diorite and a quartz-monzonite, recently defined by Brögger.

W. F. MORSELL.

U. S. GEOLOGICAL SURVEY.

BOSTON SOCIETY OF NATURAL HISTORY.

A GENERAL meeting was held January 6th, eighty persons present.

Mr. A. W. Grabau read a paper on the sand-plains of Truro, Wellfleet and Eastham. (For an abstract see above p. 344.)

Professor N. S. Shaler, in commenting upon Mr. Grabau's paper, said that his observations agreed with those of Mr. Grabau as to the origin of the sand plains. The slopes are due to a complexity of causes and frequently cannot be discriminated. The hypothesis of fresh-water lakes and the ponding of streams was rejected as inadequate. Professor Shaler said that the agency of ants in the formation of these sand plains was very great, and should be considered in relation to any theory accounting for them.

Mr. J. B. Woodworth spoke of the difficulty of making out the internal structure of sand plains; he had observed that the gravels near the head were coarser than those from other parts. Mr. Woodworth compared the sand plains of the Cape region as described by Mr. Grabau with those he had studied in the Narragansett Bay district. The hypothesis of fresh-water lakes applies equally to the Narragansett Bay district. The kettle holes indicate masses of ice after the melting of the ice sheet.

Prof. W. M. Davis claimed that the slopes could be discriminated, but that they should not be solely relied upon.

Professor Shaler contended that the slope depended upon the material, and that the original angle is unreliable until the material is known. The difference of height of sea level should be