THE NATIONAL ACADEMY OF SCIENCES.

The National Academy of Sciences met on Tuesday, the 16th inst., at Columbia College, New York city, and continued in session during the three following days. The President, Dr. William B. Rogers, was prevented by sickness from being present, and the chair was occupied by Professor O. C. Marsh, of Yale College, the Vice-President of the Society.

Among the members present were: John H. C. Coffin, U. S. N.; Professor George F. Barker, Philadelphia; James Hall, Albany; Samuel H. Scudder, Cambridge, Mass.; Professor Charles F. Chandler, Columbia College; Professor Walcott Gibbs, Cambridge, Mass.; J. Hammond Trumbull, Hartford; J. Sterry Hunt, Montreal; Professor B. Silliman, Yale College; Professor E. C. Pickering, Cambridge, Mass.; Professor C. A. Young, Princeton; Louis M. Rutherford, New York; E. H. F. Peters, Hamilton College; Edward S. Morse, Salem, Mass.; Professor Edward D. Cope, Philadelphia; Professor H. A. Newton, New Haven; Professor Alfred M. Meyer, Hoboken; Professor J. S. Newberry, Columbia School of Mines; Professor Henry Morton, Hoboken; Professor John W. Draper, Hastings, N. Y. Professor Ogden N. Rood, and Professor Eggleston, New York; Professor S. F. Baird, Washington; Professor William H. Brewer, of Yale College, and Professor A. Guyot, of Princeton, N. J.; Professor George J. Brush, of New York.

Professor Marsh, after calling the Academy to order, stated that the present session was for the reading of scientific papers only.

We postpone until next week the report of the papers read at this meeting of the Academy, to enable authors to prepare abstracts, or correct those already rendered.

THE ANTHROPOLOGICAL SOCIETY.

The Anthropological Society of Washington met November 16, in the Smithsonian Institution, Dr. J. Meredeth Toner in the chair. Two papers were read: "Aboriginal Remains in the Valley of the Shenandoah River," by Dr. Elmer R. Reynolds, and "Tuckahoe or Indian Bread-root," by Professor J. Howard Gore. Dr. Reynolds was one of a company sent out last Summer to examine the celebrated Luray cave. While upon this journey he was so fortunate as to discover in the vicinity of Luray a group of three very interesting mounds, one of which he examined in person and received the report of the exploration of others from some of the residents of the valley. The tumulus opened by Dr. Reynolds was identical in its strata with many opened in the Mississippi valley, and refutes the oft-repeated theory that no mounds are to be found on waters emptying into the Atlantic ocean. There were in this mound forty-three chipped implements, four tablets, pieces of pottery, four plates of mica, charred bones (indicative of cremation), quartz crystals, lumps of white quartzite and rude flakes. These objects were grouped about the head of the buried chieftain.

In regard to the second paper, Mr. Gore first mentioned the circumstances which suggested the subject for investigation, and the unsettled condition of the various theories now held concerning the nature and use of Tuckahoe. The early writers attributed to it great nutritive qualities, and nearly every author writing upon the subject since then has made the same assertion. In order to determine its exact value as an article of sustenance to the Indians, it was necessary to ascertain the geographical distribution, and the prevalence of Tuckahoe in those localities.

This was accomplished by sending circulars of inquiry through the Smithsonian Institution to nearly every Cryptogamic Botanist in the United States, to the newspapers along the Atlantic coast and in the Mississippi valley.

It is found that it is more or less abundant in the States from New Jerssy to Florada, in Kansas and Arkansas.

The question "Does its growth depend upon circumstances always existing?" was answered by giving an outline of the process of its development, and specimens were exhibited by way of proof. Likewise the means by which it could have been found by the natives, if its value as food was sufficient to pay for the trouble.

Its exact nutritive value was determined by an elaborate analysis made by Dr. Parsons, which gave only three-fourths of one per cent. of nitrogenous matter; this being insufficient to repair the waste in the animal tissues it was pronounced *valueless* as *food*.

The speaker then suggested that there must have been other roots or tubers called Tuckahoe, and quoted from a number of histories, showing that a root by this name was frequently described, which was entirely different from the one in question, finally succeeding in identifying five roots, which were once known as Tuckahoe, or similar to roots known as such. Also the derivation of the word Tuckahoe given the speaker by the distinguished Ethnologist, Dr. Trumbull, shows that it is from "pluckqui," meaning something round, or rounded, and not from a word meaning bread as heretofore supposed.

The conclusion then given was, that Tuckahoe was a term applied to all roots which were rendered esculent by cooking, until all of these, except *Pachyma cocos*, received a special name, this alone retaining the appellation Tuckahoe; and that when we read of Tuckahoe contributing so largely towards the support of the aborigines, we can only know that an edible root was referred to. The paper was illustrated by six large charts, giving twelve Botanical Synonyms, eight Affinities, five roots once known as Tuckahoe; an analysis of one of these, showing that it was nutritious, ten Indian Synonyms, and an analysis of Tuckahoe.

ASTRONOMY.

THE VELOCITY OF LIGHT.

Vol. I, Part III, of the "Astronomical Papers prepared for the use of the American Ephemeris and Nautical Almanac," containing the experiments upon the velocity of light, made by Master A. A. Michelson, U. S. N., has just been published. Mr. Michelson read a paper upon this subject at the St. Louis meeting of the American Association in 1878, and has since published the results of his work in the *American Journal of Science, Third Series, vol.* 18, *page* 390, so that his method of investigation (an improved form of Foucault's method) may be considered not unfamiliar. In brief this method is as follows: A beam of light is allowed to pass through a slit and to fall upon the face of a mirror free to move about a vertical axis. From this free mirror the light passes through a lens of long focus, and falls upon a fixed plane (or slightly concave) mirror, from which it is returned through the lens to the movable mirror, and thence, if the mirror is at rest, to the slit. If, however, the movable mirror is made to revolve rapidly, the light will not return directly to the slit, but will be deviated by a certain amount which depends upon the time it takes the light to transverse twice the space between the mirrors, and also upon the distance through which the mirror has revolved during that time.

It is upon the accuracy of the measurement of this displacement that the value of the determination largely depends; and to render the displacement as great as possibie, Mr. Michelson placed the revolving mirror within the principal focus of the lens, and increased the speeed of rotation. The lens, having a focal length of 150 feet, was at a distance of about 80 feet from the re-