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## On an Archæan Plant from the White Crystalline Limestone of Sussex County, N.J. By N. L. Britton.

The abundance of graphite in certain Archæan limestones, and notably in those referred to the Laurentian systems, has often been cited as an indication of the existence of plant life at that remote period, and indeed, has seemed to the writer and others, attributable to no other source, although this view has not found ready acceptance in the minds of many geologists. The mineral generally occurs in these limestones in the form of scattered separated flakes or small masses, often somewhat crystalline in outline, thus affording neither information regarding the nature of the plant from which it has been derived, nor certainty that it is in reality of vegetable origin. Through a fortunate discovery made last September by Mr. J. O. Northrop and myself, I am able to submit evidence that in one belt of Archæan limestone in the Highlands of New Jersey, the graphite has been derived from a plant, and proof that vegetable life existed in that epoch.

The plant-remains appear as black bands on the rock, consisting of very thin films of graphite; in some the thickness reaches about 0.5 mm., but it is generally less. The average width of the bands is about 3 mm., and the greatest continuous length observed about 6 cm., though it is apparent that when entire they are much longer. In many parts of the rock these are matted together to form broad black patches, which are in reality thin carbon strata. The bands and films lie parallel with the bedding of the limestone. No cellular structure has thus far been detected.

As this is undoubtedly the most ancient plant yet discovered, I should suggest for it the generic name *Archæophyton*, and to acknowledge, in an imperfect manner, my obligation to one to whom I am indebted for encouragement and counsel in study and investigation, and at the same time, to associate with this interesting plant the name of one foremost in American Palæobotany, I would denominate the plant *Archæophyton Newberryanum.*

While the imperfect nature of the fossil forbids any definite statement as to its botanical affinity, we may, perhaps, assume its relation to the algae.