BOTANY.—*A new acid-soil onion from West Virginia.* EDGAR T. WHERRY, Bureau of Chemistry.

The widespread Nodding Onion, *Allium cernuum* Roth, grows on limestone ledges, in alluvial soil, and in other situations where the soil is circumneutral in reaction. In the course of the writer's studies of the relations between soil reaction and the distribution of native plants, a relative of that species was found to occur in southeastern West Virginia and adjoining Virginia, where the soil reaction is often decidedly acid. In the usual keys this runs down to *A. cernuum*, but close examination indicates it to be sufficiently different to justify its recognition as a distinct species. In view of its preference for acid soil habitats, it may be named *Allium oxyphilum*. Its features are as follows:

Allium oxyphilum sp. nov.

Plants occurring in scattered small colonies on rocky or gravelly slopes over shale and sandstone, and in residual clay over limestone, the soil reaction being more or less strongly acid. Bulb slender, tapering gradually upward; coatings membranous, outermost gray, inner white to dull reddish (Ridgway purplish vinaceous, 1″″b). Leaves basal, 10–25 cm. long, 2–7 mm. wide, flat toward the tip, keeled and crescentic in cross-section toward the base. Scape 25–45 cm. long, 1–3 mm. thick, in cross section rhombic with the acute angles prolonged, thus appearing two-edged. Umbel nodding in anthesis, becoming erect in fruit, of 10 to 40 flowers, subtended by two scarious bracts formed by the splitting of the spathe which surrounds the buds. Pedicels slender and flexuous, 2–4 cm. long. Flowers campanulate, green at the base of the sepals, otherwise pure white or exceptionally pale pink. Perianth segments oblong-ovate, obtuse, concave and somewhat keeled, of two sorts, the sepals 4–5 mm. long, spreading, the petals 5–6 mm. long, connivent. Stamens in two groups, those opposite the petals elongating and maturing a day or two earlier than those opposite the sepals. Capsule at maturity triangular-top-shaped, about 4 mm. high and 5 mm. broad; the 6 narrowly deltoid crests grouped in pairs, and the members of each pair lying practically in the same plane; crests 1.5–3 mm. long, slightly erose, granular-margined. Blooming period from mid-July to late August.

As the type locality may be designated open woods along the road 2 km. ($1\frac{1}{4}$ miles) westnorthwest of Lillydale, Springfield Township, Monroe County, West Virginia (Alderson quadrangle, U. S. G. S.). Type specimens collected there by Messrs. W. A. Benfield, F. W. Gray and the writer August 12, 1924, have been deposited in the U. S. National Herbarium. The rock there is limestone, but it is covered with dense residual clay of minimacid reaction. The plant has been observed growing at a number of other places in the Appalachian Valley and Appalachian Plateau provinces in southwestern Virginia and southeastern West Virginia, but so far as known is endemic in an area not more than 100 km. (60 miles) in diameter. It is particularly abundant in subacid to mediacid soil in open woods on shale rock, growing in association with other endemics such as *Trifolium virginicum* Small and *Pseudotaenidia montana* Mackenzie. It has been found to grow well in cultivation, and should make a desirable addition to any rock

garden. When planted in neutral soil it produces few viable seeds, and so does not spread as rapidly as do some species of *Allium*. It may be assigned the common name of Acid-soil Onion.

The most striking differences between this new species and *A. cernuum*, evident in field and herbarium alike, lie in the flower color and the length of the pedicels. In addition, the race of *A. cernuum* which grows in the same general region has the petals and sepals less differentiated, the stamens maturing more nearly together, and the crests on the capsule shorter, more broadly deltoid, and with more markedly erose and notched margins, while the

Fig. 1.—*Allium oxyphilum*, sp. nov. Lillydale, West Virginia

members of the pairs lie at considerable angles with one another instead of being essentially coplanar. It also blooms two to three weeks earlier than *A. oxyphilum*, all of these divergences remaining constant when the two are cultivated side by side. Fresh material of western races of *A. cernuum* or of *A. allegheniense* Small have not been available for comparison; descriptions and herbarium specimens indicate that they may approach the new species in having distinct sepals and petals, but not in the other respects enumerated.

In order to complete the characterization of *Allium oxyphilum* as a distinct species, two photographs of it by the writer are here reproduced.

The first (Fig. 1), taken at the type locality, brings out the general aspect of the plant, which is sufficiently different from that of *A. cernuum* to enable the two to be distinguished at a distance, or from a moving vehicle; the prominent divided leaves in the background are those of *Delphinium exaltatum*

Fig. 2.—*Allium oxyphilum*, sp. nov. In cultivation, Washington, D. C.

Ait. The second (Fig. 2), taken in the writer's garden in mid-August, 1925, shows the long flexuous pedicels, the separation of the perianth segments into two groups, and even the dimorphism of the stamens, in that only three of these are in evidence in any one flower, the other set being still included in the corolla or withered away.