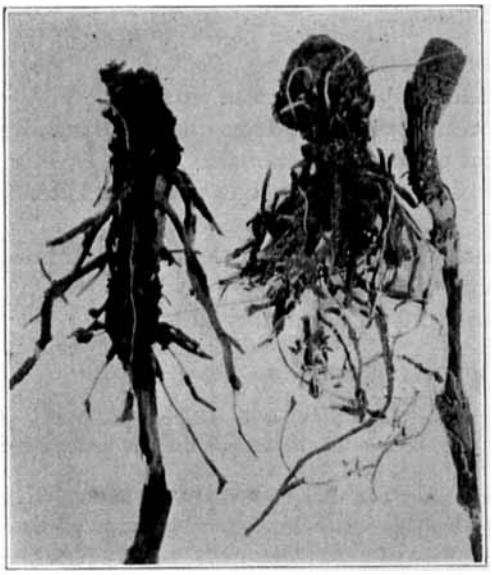

Fig. 1.—Roots substituted for Lily of the Valley. 1/2 natural size.

LILY OF THE VALLEY ROOT.

BY HOWARD H. CROSBIE.

Recently there has been admitted into the country and offered for sale as Convallaria N. F. V, a substitute which one can see at a glance is not genuine (Fig. 1). This substitute has approximately four-fifths of the action of the genuine article when tested by the One-Hour Frog Method. We can dismiss this without further comment except that should anyone wish to follow up this subject it may be a useful hint that in the changing nomenclature of botany one of the False Soloman Seal plants once rejoiced in the name of Convallaria.

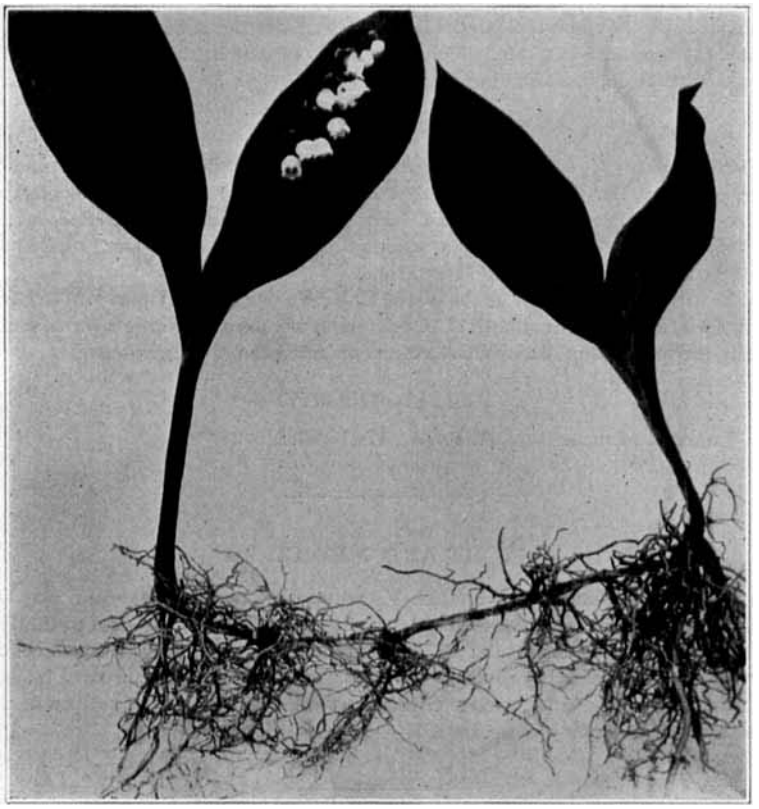

Fig. 2.—Lily of the Valley. 1/2 natural size.

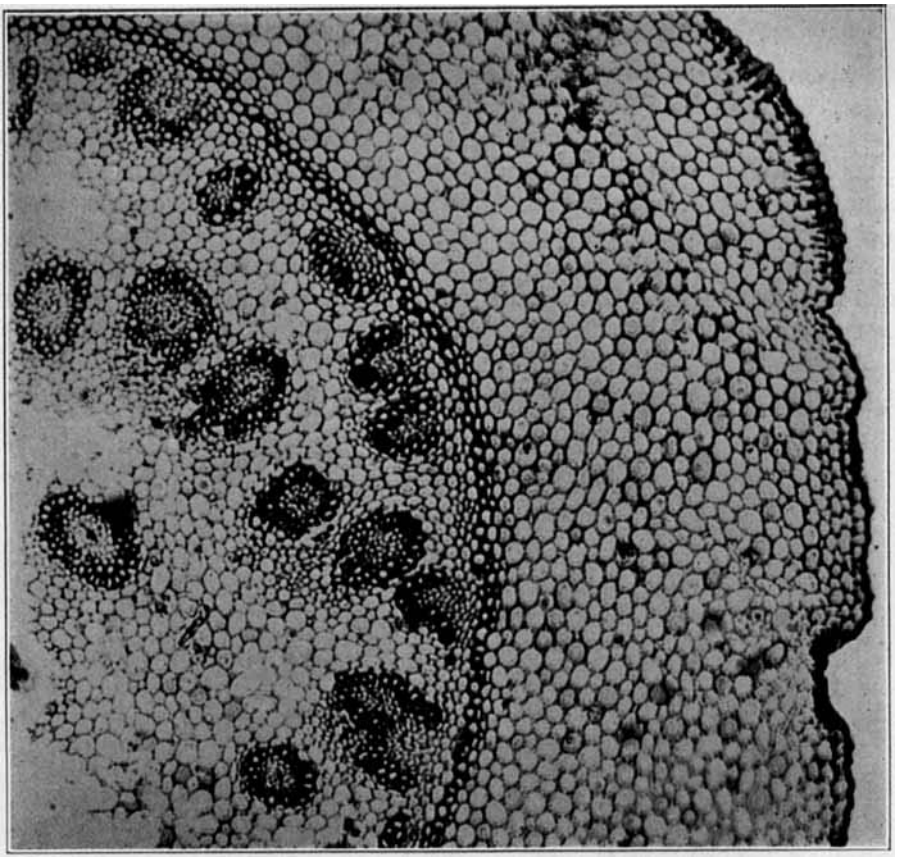

Fig. 4.—Rhizome of Lily of the Valley. Cross section: 80 diameters.

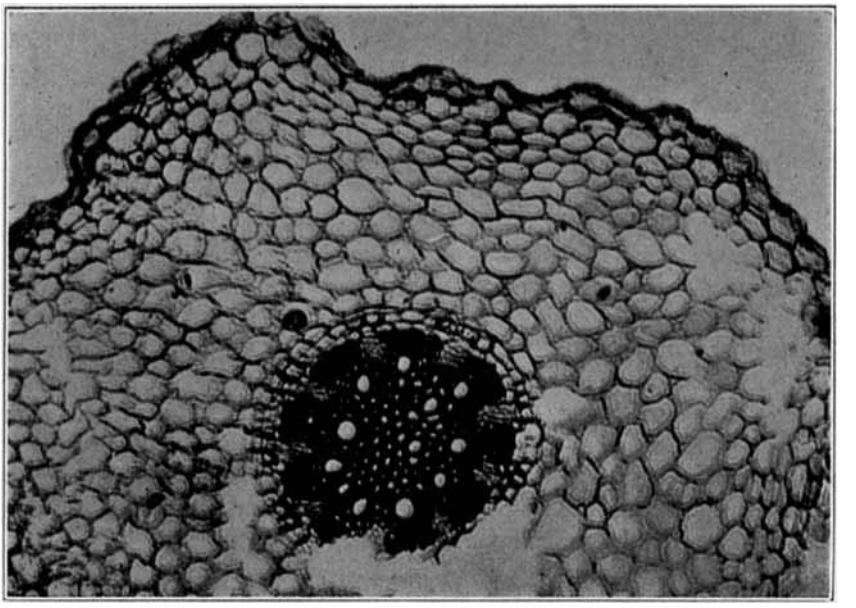

Fig. 5.—Root of Lily of the Valley. Cross section: 80 diameters.

In comparing the roots of true Lily of the Valley with the N. F. V description, we find discrepancies that should not be. A wild growing plant in bloom was photographed to show that the material worked on was genuine. This is shown in Fig. 2. It is obvious that there are more than five roots at the nodes and a cross section at one of these nodes (Fig. 3) shows that the roots do not arise from the underside only; both of these facts contradict the N. F. V wording.

When we come to the internal structure, we see that photomicrograph No. 4, which is a cross section of the internode of the rhizome, fails to reveal any trace of a collenchymatous hypodermis which according to N. F. V is characteristic.

A cross section of the root (Fig. 5) shows that the endodermis of the root does not resemble that of the rhizome as stated; they are entirely different. In the

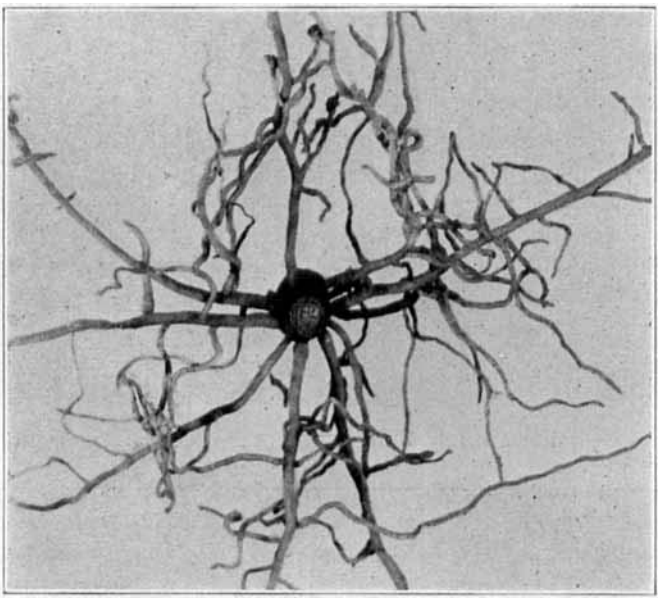

Fig. 3.—Lily of the Valley: Rhizome at the node, showing disposition and number of the roots. Natural size.

rhizome the endodermis is composed of "beaker cells" thickened on three sides and strongly lignified, whereas in the root the cells are thin walled and show Casparian Spots.

There is one other point that should be raised; the photomicrograph No. 5 shows a poly-arch radial structure to the stele. Now the N. F. V says "fibro-vascular bundles mostly five." Not to raise the point of number, this expression is surely a very bad misfit. Who can say which phloem patch belongs to a particular xylem bundle—that on the right, or that on the left? We must consider the stele as one mestome strand of poly-arch structure, and it is wiser not to be too definite about the number of component rays.

LABORATORIES OF SHARP & DOHME,
May 22, 1930.