A NOTE ON THE DEVELOPMENT OF ADVENTI-TIOUS ROOTS FROM THE PETIOLES OF THE LEAVES OF SOME ACANTHACEAE AND LABIATAE

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In a recent number of this journal (Vol. IX, No. 1, March, 1930, p. 65) Mr. C. S. Krishnamurti has described the development of adventitious roots from the petiole of the leaf of *Fittonia Verschaffeltii* (*rubro venosa*). In this connection it is interesting to note that besides *Fittonia Verschafeltii* (*rubro venosa*), the leaves of other members of the *Acanthaccae* also show a tendency to root at the cut end of the petiole when placed in moist soil.

The present writer had observed for some time that the leaves of Justicia Gendarussa, Burm., when left in water, have a tendency to root at the cut end of the petiole. In order to study whether other members of the Acanthaceae have a tendency to behave in the same way, the leaves of a number of garden plants of the family were experimented upon during the months of August, September and October. It was found that several members of the Acanthaceae, e.g., Justicia, Gendarussa, Burm., Eranthemum Andersonii, Mast., E. bicolor. Schrank., E. tricolor, E. aureo-striatum, E. nigrum, Strobilanthes isophyllus, T. Anders., S. coloratus, S. scaber, Daedalacanthus roseus. T. Anders., Graptophyllum horiense, Nees., Aphelandra squarrosa, Nees. show a ready response to a moist environment by rooting freely at the cut end of the petiole (Figs. 1, 2 and 3). The leaves of these different plants were planted in moist soil and some leaves of each specimen were left in tap water in glass jars. In both the cases the leaves began to root at the petiole in 4-8 days. The development of the roots was more vigorous and profuse in the cases of leaves which were in moist soil than in those which were kept in water. As a rule, the adventitious roots develop from the cut end of the petiole but, at times. they also sprout from the sides of the petiole (e.g., Justicia Gendarussa. Burm., Eranthemum Andersonii, Mast., etc.). In the case of Justicia Gendarussa, Burm., the leaves that were kept in water were seen to float and they retained their fresh green appearance even after more than two months of immersion. The roots developing from the leaves of the plants which were kept in glass jars showed a tendency to turn green in the presence of light.

168 THE JOURNAL OF THE INDIAN BOTANICAL SOCIETY.

Besides the above-mentioned members of the Acanthaceæ a few individuals of the Labiatae were also similarly experimented upon. Of the latter, Colcus arcmaticus, Benth, C. Marshalli (Fig. 3) and other forms of Colcus, which are grown for decorative purposes in gardens, are found to produce adventitions roots from the cut end of the petiole. The leaves of these plants, being delicate in texture, are not able, however, to withstand the action of water so well as do the leaves of the Acanthaceae previously considered.

Explanation of Figures.

Fig. I. Photograph showing the development of adventitious roots from the petiole of the leaf of: A, Eran'hemum Andersonu, Mast. B, E. aurec-struatum; C, Justicia Gendarussa, Burm. (three leaves).

A, B and C show the growth of roots after 35 days' development.

Fig. II. Photograph showing the development of adventitious roots from the petiole of the leaf of: D. Lianthemum tricolor: E. E. nigrum; F. Graptophyllum horicose, Nees. G. Strobilanthes isophyllus, T. Anders.

D shows the growth of roots after 30 days' development; E and F, after 24 days; G, after 17 days.

Fig. III. Photograph showing the development of adventitions roots from the petiole of the leaf of: H, Strobulanthes coloratus: I, S. scaber; J. Colcus arcmaticus, Benth.; K. C. Marshallı; L, Colcus sp.

H and I show the growth of roots after 35 days' development. J. after 12 days; K and L, after 22 days.

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