
OHIO PLANTS WITH TENDRILS.

OPAL I. TILLMAN.

Tendrill plants are for the greater part, plants of the tropics, where the vegetation is so dense that the plants have developed such organs by means of which they are brought to a more favorable position with respect to light. The tendrils attach themselves to supports and thus bring the plant to an upright position or aid it in climbing over various objects. In the different species the tendrils morphologically represent different parts of the plant and this furnishes a basis of classification. Some tendrils attach themselves by twining entirely around the support, others as the Virginia Creeper, attach themselves by means of little discs with adhesive surfaces developed at the tips of the tendril. The tendril usually grows straight until the tip touches some object of support around which it hooks to secure a firm hold, then it shortens usually by coiling in a double spiral.

All tendril plants may be divided into two main divisions: first the leaf climbers, and second the shoot or branch climbers. Each of these main divisions may be subdivided depending upon the degree of development.

In the leaf tendrils the entire leaf, terminal leaflet, petiole, or petiolule or other parts may be modified into the tendril. There are five families in Ohio which have plants belonging to this group with twenty-three species.

In the SMILACEÆ the two tendrils are located on either side of the base of the petiole, which persists, the blade being cast off

beyond the tendril. They are simple and coil in the usual manner. In case of *Smilax bona-nox* there is a decided widening at the base of the tendril; *S. ecirrhata* is usually without tendrils.

The following greenbriers occur in Ohio:

- | | |
|--------------------------------------|--------------------------------|
| 1. <i>Smilax herbacea</i> L. | 5. <i>Smilax hispida</i> Muhl. |
| 2. " <i>ecirrhata</i> (Engelm) Wats. | 6. " <i>pseudo-China</i> L. |
| 3. " <i>glauca</i> Walt. | 7. " <i>bona-nox</i> L. |
| 4. " <i>rotundifolia</i> L. | |

In our *RANUNCULACEÆ* the leaves are the climbing organs, the petiole or petiolule is the sensitive part. In *Clematis virginiana* there are cases showing the transition from leaf to tendril. The leaflets drop off and leave the petiole persistent. There are two species in Ohio:

- | | |
|----------------------------------|------------------------------|
| 8. <i>Clematis virginiana</i> L. | 9. <i>Clematis viorna</i> L. |
|----------------------------------|------------------------------|

One of the *PAPAVERACEÆ* has modified leaves which act as tendrils. The petiolule is the sensitive part. The leaflets are very much reduced often showing a transition from ordinary leaf parts to tendril. Our species is:

10. *Adlumia fungosa* (Ait) Greene.

The *FABACEÆ* which have tendrils belong to the pea tribe, *Vicieæ*. The ends of the leaves develop into tendrils which have from two to five branches, except *Lathyrus ochroleucus* in which the tendril is simple. The Ohio species are:

- | | |
|--------------------------------------|-------------------------------------------|
| 11. <i>Vicia cracca</i> L. | 17. <i>Vicia angustifolia</i> Roth. |
| 12. " <i>americana</i> Muhl. | 18. <i>Lathyrus maritimus</i> (L.) Bigel. |
| 13. " <i>carolina</i> Walt. | 19. " <i>venosus</i> Muhl. |
| 14. " <i>tetrasperma</i> (L.) Mœnch. | 20. " <i>palustris</i> L. |
| 15. " <i>hirsuta</i> (L.) Koch. | 21. " <i>myrtifolius</i> Muhl. |
| 16. " <i>sativa</i> (L.) | 22. " <i>ochroleucus</i> Hook. |

In our species belonging to the *BIGNONIACEÆ* there are two leaflets and one branched tendril coming from the end of the persistent petiole.

23. *Bignonia crucigera* L.

The twig or shoot tendrils may represent ordinary branches or modified parts of a flower cluster and as in the leaf tendrils they may be either simple or branched. In Ohio are found four families with seventeen species belonging to this division or group.

In the climbing *SAPINDACEÆ* two tendrils occur at the base of the flower cluster. Our only species is the introduced:

24. *Cardiospermum halicacabum* L.

In the *VITACEÆ* the tendrils appear on the twig opposite the leaf. They are usually branched several times. In some cases one of the branches of the tendril develops a rudimentary bunch of grapes, or there may be a well developed bunch of grapes with a rudimentary tendril. In *Ampelopsis cordata* and most other species of this family every third leaf node is without a tendril. The Ohio species are:

- | | |
|--------------------------------|----------------------------------------|
| 25. <i>Vitis labrusca</i> L. | 29. <i>Vitis cordifolia</i> Michx. |
| 26. " <i>æstivalis</i> Michx. | 30. <i>Ampelopsis cordata</i> Michx. |
| 27. " <i>bicolor</i> Le Conte. | 31. <i>Parthenocissus quinquefolia</i> |
| 28. " <i>vulpina</i> L. | (L.) Planch. |

In our species belonging to the PASSIFLORACEÆ there is a single unbranched tendril coming from the axil of the leaf. It coils in the usual manner.

32. *Passiflora lutea* L.

The tendrils in the CUCURBITACEÆ represent modified shoots; part of the tendril being stem and part leaf. They are from two to five branched, all the branches coming from the same point. They usually appear beside the leaf. The Ohio species are:

- | | |
|---------------------------------------|--------------------------------------------|
| 33. <i>Micrampelis lobata</i> (Michx) | 37. <i>Cucurbita maxima</i> L. |
| Greene. | 38. <i>Citrullus citrullus</i> (L.) Karst. |
| 34. <i>Sicyos angulatus</i> L. | 39. <i>Cucumis melo</i> L. |
| 35. <i>Cucurbita pepo</i> L. | 40. " <i>sativus</i> L. |
| 36. " <i>pepo ovifera</i> L. | |
-