

## PLANTS WITH NODDING TIPS.

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In the plant kingdom are to be found many peculiar adaptations. One of the most interesting is the habit which some species have of keeping the growing tip curved downward during the period of development or until the stem has attained its

growth for the season. This curving of the tip of the stem appears much like the arch commonly developed in sprouting seedlings but must be for a different purpose.

The nodding of the growing tip is strikingly seen in such plants as *Solidago canadensis* (Fig. 1) and *Asimina triloba*. Some species of a genus may nod while others show no sign of a curve in the stem tip. Thus *Gaura parviflora* nods very strongly while *Gaura biennis*, it appears, does not nod at all. In most cases the curve is quite rigid but in some the nodding is merely the result of the flexibility of the stem. A few species have the tips nod at night but become nearly



Fig. 1. *Solidago canadensis* showing nodding tips.

straight in the daytime. Whatever the cause or factor which induces plants to nod, there is probably no doubt but that the habit is a means of protection to the delicate terminal bud.

*Species with Rigid Nodding Tips.*

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| <i>Salix cordata</i> Muhl.        | <i>Vitis vulpina</i> L.                          |
| <i>Ulmus americana</i> L.         | <i>Ampelopsis cordata</i> Mx.                    |
| <i>Ulmus fulva</i> Mx.            | <i>Parthenocissus tricuspidata</i> (S. & Z.) Pl. |
| <i>Asimina triloba</i> (L.) Dun.  | <i>Gaura parviflora</i> Dougl.                   |
| <i>Albizzia julibrissin</i> Boiv. | <i>Solidago canadensis</i> L.                    |
| <i>Vitis labrusca</i> L.          | <i>Erigeron philadelphicus</i> L.                |

*Species with Flexible Tips.*

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| <i>Tsuga canadensis</i> (L.) Carr. | <i>Juniperus communis</i> L. |
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*Species with Tips which Nod at Night.*

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| <i>Cassia chamaecrista</i> L. | <i>Euphorbia nutans</i> Lag. |
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