HOST PLANTS OF CUSCUTA GRONOVII[1]

H. L. Dean

During the summer of 1930 while studying the flora of West Virginia the writer had most favorable opportunity for observing the host relations of *Cuscuta Gronovii* Willd. This species of *Cuscuta* occurring, as it does, very commonly throughout the state facilitated the many observations made. At the suggestion of Professor P. D. Strausbaugh, of West Virginia University, a record of host plants was compiled for this species of dodder.

Since subsequent examination of the literature indicates that no extensive list of specific host plants for *C. Gronovii* has been published, it is believed that the appended list should be of interest. Although practically all representative areas of West Virginia were visited by the writer, doubtless further study would add new species to the present list.

Early writers believed that a given species of *Cuscuta* infested only one species of host plant. In harmony with this belief Engelmann (1842) in his earlier monograph of the genus named several species of *Cuscuta* after the genera of plants upon which they grew. A year later (1843) he published his "Additions and Corrections to a Monography of North American Cuscutineae" and stated: "I am now convinced, that, although many Cuscutae prefer some plants to others, yet there is no constancy in this respect, but the same species often grows upon a great variety of widely different plants. I did wrong, therefore, to name them from the genera upon which they grew; and I should much prefer to see the names of *C. Cephalanthi* changed into *C. tenuiflora*, *C. Coryli* into *C. incurva*, *C. Saururi* into *C. umbrosa* Beyr.?, *C. Polygonorum* into *C. chlorocarpa*, and *Lepidanche Compositarum* into *L. squarrosa*, if they had not yet been published."

Hooker (1899) reported *C. Gronovii* as parasitizing "grass, solidago, alder, and the like." Munte (1902) on the other hand stated that this species did not attack *Solidago* but preferred *Impatiens* or *Eupatorium*. Yuncker (1919) described this species of dodder for Indiana and stated that it was often found growing on onions, tomatoes and occasionally on *Equisetum*. In the same paper this author expressed the belief that *C. Gronovii* would grow on any host within reach.

[1] Published with aid to Rhodora from the National Academy of Sciences.

Moss (1928), studying the haustorium of *C. Gronovii*, listed four host plants for this species, *viz. Monarda mollis* L., *Lathryus ochroleucus* Hook., *Artemisia gnaphalodes* Nutt. and *Symphoricarpos racemosus* Michx. Yuncker (1932) in a later monograph listed 31 genera of host plants for this species of dodder. Fourteen of this number of host genera were not observed by the present writer in West Virginia and are designated in the following list, as taken from Yuncker's later Monograph, by an asterisk (*). Concerning *C. Gronovii* Yuncker stated (1932), "this species shows no specialization of hosts but grows on a large number of different species of herbaceous and woody plants, e.g., *Rubus, Cephalanthus, Aster, Solidago, Dianthera, *Tecoma, Impatiens, Eupatorium, Polygonum, Salix, *Saururus, Hypericum, Desmodium, Rhus, *Vernonia, *Rudbeckia, *Pelargonium, Laportea, Lactuca, Phytolacca, Artemisia, *Solanum, *Allium, *Polypodium, *Urtica, *Chrysanthemum, *Mikania, Boehmeria, *Acalypha, *Jussiaea, *Mesosphaerum*, etc." The present writer's observations support the later belief of Engelmann and corroborate the statements of Yuncker.

Eighty-three species of host plants, all Angiosperms,[1] were listed by the writer for *C. Gronovii* during the summer of 1930. Of these plants 59 are herbaceous, three twiners, three woody vines, six shrubs, six trees, two sedges and four grasses. Twenty-nine families and sixty-eight genera are represented in this list.

A majority of the infested plants were found growing in low, moist, places under conditions similar to those present along creek and river banks, wet bottom-lands and various poorly drained areas. In the case of the trees and shrubs only the younger parts, or shoots, were attacked while both young and mature herbaceous plants were infested.

In conjunction with certain experiments at the State University of Iowa additional infestations were brought about. Host plants of *C. Gronovii* thus added to the 1930 list include *Helianthus annuus* L., *Fagopyrum esculentum* Moench., *Cucurbita maxima* Duchesne, *C. Pepo* L., *Cucumis sativus* L. and *C. Melo* L. These plants, grown and infested under greenhouse conditions, increase the total number of host plants observed by the writer for *C. Gronovii* to eighty-nine species.

[1] Species of *Cuscuta* have previously been reported, except for Yuncker's reference to Equisetum, as parasitizing Angiosperms only. Singh (1933), however, has succeeded in growing *C. reflexa* upon one fern, *Athyrium pectinatum* Wall.

ALPHABETICAL LIST OF HOST PLANTS OF CUSCUTA GRONOVII WILLD.[1]

Acer Negundo L.
A. saccharinum L.
Achillea Millefolium L.
Actinomeris alternifolia (L.) DC.
Agrimonia parviflora Ait.
Ambrosia trifida L.
A. artemisiifolia L.
Anemone virginiana L.
Apios tuberosa Moench.
Aster prenanthoides Muhl.
Betula nigra L.
B. lutea Michx. f.
Bidens bipinnata L.
Boehmeria cylindrica (L.) Sw.
Carex lurida var. gracilis (Boott) Bailey
Cephalanthus occidentalis L.
Chenopodium album L.
Chelone glabra L.
Cicuta maculata L.
Cimicifuga racemosa (L.) Nutt.
Clematis virginiana L.
Convolvulus sepium L.
Cryptotaenia canadensis (L.) DC.
Cucurbita maxima Duchesne.
Cucurbita Pepo L.
Cucumis sativus L.
C. Melo L.
Daucus Carota L.
Desmodium canescens (L.) DC.
Dianthera americana L.
Elymus virginicus L.
Epilobium adenocaulon Haussk.
Erigeron canadensis L.
E. annuus (L.) Pers.
Eupatorium perfoliatum L.
E. purpureum L.
E. urticaefolium Reichard.
Fagopyrum esculentum Moench.
Galinsoga parviflora var. hispida DC.
Galium Aparine L.
Glycine soja Sieb. & Zucc.
Helianthus annuus L.
Hydrangea arborescens L.
Impatiens pallida Nutt.
I. biflora Walt.
Ipomoea pandurata (L.) G. F. W. Mey.
Kalmia latifolia L.
Lactuca scariola L.
L. saligna L.
Laportea canadensis (L.) Gaud.
Medicago sativa L.
Melilotus alba Desr.
M. officinalis (L.) Lam.
Menispermum canadense L.
Monarda mollis L.
Oenothera biennis L.
Oxalis corniculata L.
Panicum clandestinum L.
Perilla frutescens (L.) Britton
Phytolacca decandra L.
Phleum pratense L.
Plantago Rugelii Dcne.
P. lanceolata L.
Polygonum sagittatum L.
P. Hydropiper L.
Poa pratensis L.
Prunella vulgaris L.
Ranunculus recurvatus Poir.
Rhus Toxicodendron L.
Rosa carolina L.
Rubus canadensis L.
Rumex obtusifolius L.
R. crispus L.
Sambucus canadensis L.
S. racemosa L.
Salix nigra Marsh.
S. sericea Marsh.
Scirpus americanus Pers.
Sida spinosa L.
Solidago rugosa Mill.
S. sp.
Stachys tenuifolia var. aspera (Michx.) Fernald.
Ulmus fulva Michx.
Verbesina occidentalis Walt.
Viola papilionacea Pursh.
Vitis cordifolia Michx.
Trifolium pratense L.
Teucrium canadense L.
Xanthium canadense Mill.

BIBLIOGRAPHY

Engelmann, G. A Monography of North American Cuscutineae. Am. Jour. Sci. & Arts, 43: 333–345. 1842.

———— Corrections and additions to the Monography of North American Cuscutineae. Am. Jour. Sci. & Arts. 45: 73–77. 1843.

Gray's New Manual of Botany 7th Edition. Robinson & Fernald.

Hooker, H. E. On Cuscuta Gronovii. Bot. Gaz. 14: 31–37. 1889.

Moss, E. M. The Haustorium of Cuscuta Gronovii. (Abstract) Phytopathology. 18(5): 478. 1928.

[1] Nomenclature following Gray's Manual of Botany (7th edition) in most instances

Munte, M. E. Host plants of the dodder. Am. Bot. 2: 91. 1902.
Singh, T. C. N. Cuscuta as a parasite on a fern. Ann. Bot. 47: 423–425. 1933.
Yuncker, T. G. Notes on our Indiana dodders. Proc. Indiana Acad. of Sci. for 1919. (1921) pp. 157–163.
———— The Genus Cuscuta. Memoirs of the Torrey Botanical Club. Vol. 18, No. 2, pp. 109–331. 1932.

University of Iowa

Recent Additions to the Flora of St. Louis County, Missouri. —Although St. Louis county is as well known botanically as any other county in Missouri, species new to its flora are being found each year as a result of more careful search along railroad rights-of-way, ballast and other waste ground, and sand-bars and mud flats along the Mississippi and Missouri Rivers. In the summer of 1931 *Picris Sprengeriana* Poir. was collected for the first time in Missouri along railroad tracks in St. Louis Co. During the summer and autumn of 1933 the writer found several species in St. Louis Co. which proved to be new additions to the flora of that county. These additions are *Nicotiana longiflora* Cav. and *Datura Metel* L. from ballast ground near the Mississippi River in South St. Louis; *Solanum Torreyi* Gray and *Croton Engelmanni* Ferg. along railroad tracks in St. Louis; *Solidago rugosa* Mill. in low woods along the Mississippi River north of Chain-of-Rocks; *Rubus trivialis* Michx.[1] from low alluvial woods along the Meramec River near its confluence with the Mississippi; and *Tamarix gallica* L. and *Corispermum hyssopifolium* L. from sand-dunes on an island at the junction of the Missouri and Mississippi Rivers. The last two species are interesting discoveries. The former had been known only from along the sand-bars in Jackson Co., extreme western Missouri, where it had been first reported for the state in 1932. Only two small plants of *Tamarix* were found on the island, the seeds probably having but recently been transported from further west along the Missouri River. The latter, *Corispermum hyssopifolium*, had been known previously in Missouri from only two western counties, namely, Jackson and Clay. This species was growing profusely on the sand-dunes which covered this island, and together with *Cycloloma atriplicifolium* (Spreng.) Coult., comprised the dominant vegetation. Other ammophilous species, such as *Sporobolus cryptandrus* (Torr.) Gray and *Triplasis purpurea* (Walt.) Chapm., occurred on the xerophytic dunes of the island. The occur-

[1] Also *Smilax Bona-nox* L.