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Robert Bradford Wylie
State University of Iowa

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A HYBRID RAGWEED.

ROBERT BRADFORD WYLIE.

During the summer of 1914 an unusual specimen of *Ambrosia* was noted which seems likely to have been a hybrid. The plant grew by the roadside on bottom land a few hundred yards from the Butler's Landing bridge a couple of miles north of Iowa City. It stood near the foot of the long hill beyond the bridge and near the margin of the lowland. The location in the edge of the grading was favorable in that its soil received the wash from the higher land. The plant was surrounded by various weeds and among them and near by were several specimens of the supposed parent species, *Ambrosia trifida* L., and *Ambrosia artemisiifolia* L.

Since much interest centers in hybrid forms, and further because crosses between species of this genus are not common, a brief description should perhaps be given as a matter of record.

The plant was first noted about the middle of July and was then so conspicuously different from the common ragweeds that the writer noticed it among the roadside vegetation while riding along the highway. The location was marked by a ring of small stakes in the hope that it would escape the scythe. A mowing machine subsequently passed within a few inches but it was uninjured and grew undisturbed until autumn. Flowers were produced in abundance but no seeds were set, and so the story ended with the one plant.

The plant grew to the height of about a meter—slightly taller than the surrounding specimens of *Ambrosia artemisiifolia*. At the time of its discovery it was seemingly further along in its development than either of the supposed parent species.

The stem was stoutish, branching freely at about 3 or 4 dm. from the ground, and was about 1.5 cm. in diameter at the base. The height of the plant was almost certainly retarded by a gall or distortion on the stem that seemed to involve most of its tissues 3 or 4 dm. above the ground and among the lower branches. There is a possibility, of course, that this wound, due perhaps to the sting of an insect, might have induced the abnormalities noted in the plant as a whole. But while such a wound might lead to vegetative peculiarities it would be less

likely to account for the complete sterility of a vigorous plant which flowered profusely.

The stem leaves were quite large, 2 dm. long and 1.5 dm. wide, and were distinctly different from either of the supposed parents, though intermediate between them in a general way. (Plate XXI). Long petioles without margins carried triangular blades which were palmately 3—divided with segments somewhat pinatifid, the central one distinctly so (Pl. XXI, fig. 1). From another point of view the leaf might be looked upon as a pinnate leaf with greatly enlarged and opposite basilar segments, remotely suggestive of *Ambrosia artemisiifolia*. There is less difference than in this species between the stem leaves and those of the inflorescences, the latter being somewhat simpler and considerably smaller. The leaf surface was finely puberulent on both sides, the lower surface being slightly paler in color. The leaves, and in fact the whole plant, differed strongly from *Ambrosia psilostachya* DC.

Flowers were developed abundantly and in the usual relation with long spikes of staminate heads above and the short stalked pistillate flowers in the axils below. The pollen looked normal and the stigmas of the pistillate flowers emerged in the usual fashion. Unfortunately no visit was made to the plant at a time favorable for securing collections of flowers suited for critical morphological study. The only sections obtained were those of mature staminate flowers; these showed an abundance of seemingly normal pollen though there was no opportunity to determine its capacity for germination at the time the collections were made. As the plant entered into decline in the early autumn it was uprooted and portions preserved. A careful examination was made of every pistillate flower but not one seed was found.

The close proximity of several specimens of both the common species of ragweed, *Ambrosia artemisiifolia* and *ambrosia trifida*, suggests that the plant was infertile not only with its own pollen but also with that from either of the supposed parent species. Some of these plants stood within two feet of it, and there would be the fullest opportunity for pollen transfer from plant to plant. While this sterility has interrupted an interesting experiment it may be that it has inhibited a new weed—for this plant looked like one that would make a place for itself on Iowa soil.

BOTANICAL LABORATORY,
STATE UNIVERSITY OF IOWA.



Leaves of hybrid and normal ragweeds.
FIG. 1. *Ambrosia* (Hybrid). FIG. 2. *Ambrosia artemisiifolia*.
FIG. 3. *Ambrosia trifida*.