## Geographical Distribution of the Species of Cuscuta in North America.

By Alida M. Cunningham.

In the Year Book of the Agricultural Department, published in 1894, C. Hart Merriam, Chief of the Division of Ornithology and Mammalogy, gives a revision of the work theretofore done in an endeavor to divide the country into distinct zones according to the plant and animal life found therein. And, since the distribution of all life depends so completely upon rainfall and temperature, these have been made the principal guides in locating the lines separating these zones, taking into consideration both latitude and elevation. He has divided North America into five zones as follows: Boreal, Transition, Upper Austral, Lower Austral, and Tropical.

In the course of the study for the purpose of making a revision of the genus Cuscuta it was found of interest to note the geographical distribution of the genus in accordance with the plan adopted by Mr. Merriam. So far as the work has progressed, the material examined has been that contained in the herbaria of Harvard University, the botanical gardens of St. Louis, Missouri, and Purdue University, in all about 450 specimens. Among them, according to the nomenclature heretofore adopted and still in use, we find thirty-two species and seventeen varieties, which are distributed throughout the five zones in the manner given below. But there is found here the same difficulty that has confronted us on different occasions before, *i. e.*, that the forms are so badly confused at present that any arrangement which might be made now is almost sure to need revision after a critical study of the genus. According to the present nomenclature, the distribution is as follows:

*Potosina*, *Palmeri*, *Americana*, *corymbosa*, *tinctoria*, *Jalapensis*, *mitræformis*, *floribunda* and *gracillima* are confined to the tropical zone and constitute the greatest number found in any one zone.

The next greatest number found in only one zone is in the Transition. They are *Epithymum*, *denticulata*, *rostrata* and *epilinum*.

*Californica* and *subinclusa* are found in the Tropical and Transition.

*Leptantha* and *chlorocarpa* in the Upper Austral and Transition.

*Applanata* and *inflexa* in the Upper Austral.

*Cuspidata*, *compacta*, *decora*, *Gronovii* and *arvensis* are distributed over the Upper Austral, Lower Austral and Transition.

*Squamata* and *odontolepsis* in the Tropical and Upper Austral.

*Tenuiflora* is found in three zones, i. e., the Transition, Upper Austral and Boreal.

*Glomerata* in the Upper and Lower Austral.

*Umbellata* in the Tropical, Upper and Lower Austral.

*Obtusiflora* in the Tropical, Transition and Upper Austral.

*Salina* in the Transition and Boreal.

*Exaltata* is found only in the Lower Austral.

The above facts may be presented in tabular view as follows:

| Boreal. | Transition. | Upper Austral. | Lower Austral. | Tropical. |
|---|---|---|---|---|
| Salina. | Salina. | | | |
| Tenuiflora. | Tenuiflora. | Tenuiflora. | | |
| | | Glomerata. | Glomerata. | |
| | Californica. | | | Californica. |
| | Subinclusa. | | | Subinclusa. |
| | | Umbellata. | Umbellata. | Umbellata. |
| | Obtusiflora. | Obtusiflora. | | Obtusiflora. |
| | Epithymum. | | | |
| | Epilinum. | | | |
| | Denticulata. | | | |
| | Rostrata. | | | |
| | | Squamata. | | Squamata. |
| | | Odontolepis. | | Odontolepis. |
| | | | Exaltata. | |
| | | Inflexa. | | |
| | | Applanata. | | |
| | Cuspidata. | Cuspidata. | Cuspidata. | |
| | Compacta. | Compacta. | Compacta. | |
| | Decora | Decora. | Decora. | |
| | Gronovii. | Gronovii. | Gronovii. | |
| | Arvensis. | Arvensis. | Arvensis. | |
| | | | | Potosina. |
| | | | | Palmeri. |
| | | | | Americana. |
| | | | | Corymbosa. |
| | | | | Tinctoria. |
| | | | | Jalapensis. |
| | | | | Mitræformis. |
| | | | | Floribunda. |
| | | | | Gracillima. |
| | Chlorocarpa. | Chlorocarpa. | | |
| | Leptantha. | Leptantha. | | |

## Notes on the Germination and Seedlings of Certain Native Plants.

By Stanley Coulter.

In the study of the phanerogamic flora of the State, some problems respecting the distribution or rather the non-distribution of certain species seemed to require for their solution somewhat extended germination experiments. These experiments have been in progress for three years, under conditions to be indicated later.