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AMERICAN INSECT GALLS.

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American gall insects constitute an exceedingly interesting assemblage, representing at least five of the larger and better known orders. It is worthy of note that by far the greater majority of plant galls are produced by members of the dipterous family, Itonididæ, and the hymenopterous family, Cynipidæ. Of approximately one thousand insect galls listed, members of the above mentioned groups are responsible for over 90% (nearly 95%), with two species of the delicate gall midges producing deformations to every one of the relatively better known gall wasps. The plant lice or aphids come next in the number of species, though they would be outranked if the gall mites, the Eriophyidæ, were included in this discussion. The other gall-making Diptera, Hymenoptera, and the Hemiptera and the gall-making Coleoptera and Lepidoptera are, numerically speaking, of comparatively little importance.

The numerous gall midges show a diversity of taste not evidenced among the gall wasps. The more than 600 galls produced by the midges occur on plants belonging to 69 botanical families and 202 genera. There is no such specialization, as we shall see later, in the Cynipidæ. The larvae of 60 species of midges live at the expense of the Salicaceæ; 48 of these are found on *Salix*; 28 occur upon the Juglandaceæ, all but one infesting *Carya*; 37 attack the Fagaceæ (31 of these being upon *Quercus*); 52 species produce galls on the Rosaceæ, 23 on the Leguminosæ, 18 upon the Vitaceæ, and 125 on the Compositæ. The most obvious concentration of species, aside from those mentioned above, is the 41 species reared from solidago and the 20 to be found upon aster. These figures are approximate, yet taken in connection with the great diversity in the structure of these small insect, indicate that this group has been able to maintain itself upon a great many different plants through a considerable physiological adaptability, and that the distinctness of the species has been established by relatively small modifications in structure.