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The North American Gall Midges (Diptera: Cecidomyiidae) of Hackberries (Cannabaceae: *Celtis* spp.)

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TWENTY-THREE species of gall midges occur exclusively on hackberries in North America north of Mexico. Twenty-one of them belong to the genus *Celticecis* and form complex, dehiscent galls on leaves and the current year's twigs. *Celticecis* species are definitely known only from the typical subgenus of *Celtis*, distributed through much of the Holarctic Region. Nearctic species do not appear to discriminate among hosts within the subgenus but each has

its individual geographic limits. Galls of most species of *Celticecis* grow quickly in early spring, but some have a delayed, late summer development. When full-grown, larvae form cocoons in the galls that subsequently dehisce at various times during summer and autumn. Larvae pupate early the following spring and adults appear shortly after. Some larvae remain in the galls through the entire next year to pupate only in the following spring. Lar-

vae of the second and third (ultimate) instars present some of the best characters for determining species and their affinities. Seven of the ten previously described species of North American *Celticecis* are valid: *Celticecis capsularis* (Patton) (= *Celticecis painteri* (Felt), **new synonym**), *Celticecis celtiphyllia* (Felt), *Celticecis oviformis* (Patton), *Celticecis pubescens* (Patton) (= *Celticecis texana* (Felt), **new synonym**), *Celticecis semenrumicis* (Patton), *Celticecis spiniformis* (Patton) (= *Celticecis unguicula* (Beutenmüller), **new synonym**), and *Celticecis wellsii* (Wells). Fourteen **new species** of *Celticecis* are named and described: *Celticecis aciculata* Gagné, *Celticecis acuminata* Gagné, *Celticecis conica* Gagné, *Celticecis connata* Gagné, *Celticecis cornuata* Gagné, *Celticecis cupiformis* Gagné, *Celticecis expulsa* Gagné, *Celticecis globosa* Gagné, *Celticecis ovata* Gagné, *Celticecis pilosa* Gagné, *Celticecis pyriformis* Gagné, *Celticecis ramicola* Gagné, *Celticecis subulata* Gagné, and *Celticecis supina* Gagné. *Celticecis* is to date known also from the Japanese *Celticecis japonica* and an undescribed species from Turkey. *Peracecis* Gagné, **new genus**, is described for a **new species**, *P. fugitiva* Gagné, responsible for an integral leaf gall found in southern U.S. *Parallelodiplosis acernea* (Felt), a widespread inquiline in cecidomyiid and psyllid galls of hackberry, is redescribed and compared to its congeners. Keys to galls and larvae (second and third instars) of Nearctic gall midges on hackberry are presented. Other cecidomyiid galls previously reported on *Celtis* outside North America are noted.

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