



“Rush skeletonplant pea gall wasp”

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Lygodesmia juncea with galls of *Antistrophus lygodesmiaepisum* (Hymenoptera: Cynipidae) on stem.

The Loess Hills landform along the western edge of Iowa and extreme northwestern Missouri is home to a unique assemblage of plants and animals. The majority of these are associated with loess hilltop prairies – grassland remnants that have their origins in the hypsithermal maximum of several thousand years ago and that persist as small relicts on the landform’s steep, dry, south- and west-facing slopes. Many of the plants and animals found in these grassland remnants are more typically found further west in the Great Plains but hang on in the Loess Hills as hypsithermal relicts.

One such hypsithermal relict is rush skeletonplant, *Lygodesmia juncea*, a wirey, leafless-looking plant in the family Asteraceae². More common in the Great Plains, this plant occurs in Missouri only on these loess hilltop prairie remnants. The first time one encounters this plant, they are left with the impression that the plant bears small, pea-like fruiting structures along the length of its stem.

¹ Reprinted from an article posted January 20, 2011 at <http://beetlesinthebush.wordpress.com>. Photos by the author.

² Not to be confused with rush skeletonweed, *Chondrilla juncea* - also in the Asteraceae, which despite the similarity of common names, specific epithet, and general appearance (except with yellow flowers) is an altogether different plant that was introduced from the Mediterranean Region and is now considered an invasive weed in much of the Great Plains.



Antistrophus lygodesmiaepisum galls on stem of *Lygodesmia juncea*.

These are not fruiting structures, however, but galls made by the cynipid wasp *Antistrophus lygodesmiaepisum*. Although this insect does not have a common name, it is associated exclusively with *L. juncea*, as suggested by its specific epithet (which also alludes to the pea-like galls with the suffix *-pisum*), so I see no reason why this wasp cannot be called the “rush skeletonplant pea gall wasp.” Some sources variably misspell the genus as *Anistrophus* (without the first “t”) or the species name as simply *pisum*, a synonym first introduced by Ashmead in the late 19th century a few years after the species was described (I made both mistakes [and also erroneously referred to *L. juncea* as skeletonweed] in one of my earliest posts: [The Loess Hills in Missouri](#)). It would seem that *Antistrophus lygodesmiaepisum* is the correct name, according to Pickering (2009).

Rush skeletonplant exudes a latex-like sap when damaged, making it unpalatable to most grazers – this latex-like sap can be seen when the galls made by the wasps are cut open. Cynipid wasps are the second most diverse group of gall-making insects behind the gall midges, and many species are mono- or oligophagous (Ronquist and Liljeblad 2001), meaning that they are associated exclusively with a single plant species or group of closely related species. *Antistrophus lygodesmiaepisum* is one such monophagous species, thus its occurrence in Missouri, like that of *L. juncea*, is restricted to the tiny loess hilltop prairie remnants in extreme northwestern Missouri. In recent years, these prairie relicts have suffered heavily from conversion to agriculture, abusive grazing, and suppression of fire that has led to invasion by woody and exotic plants. In Missouri, only about



Antistrophus lygodesmiaepisum larva in gall on stem of *Lygodesmia juncea*.

50 acres of loess hilltop prairie remain, and only half of these are in conservation ownership, making it among the most critically imperiled of natural communities in Missouri. While lacking the conservation charisma of *L. juncea* and the dozen or so other plants and vertebrates that are restricted in Missouri to these prairie remnants, the occurrence of *A. lygodesmiaepisum* in Missouri is every bit as tenuous as those species. It thus deserves equal consideration as a [Missouri species of conservation concern](#).

REFERENCES:

- [Pickering, J. 2009.](#) Database of Hymenoptera in America north of Mexico. <http://www.discoverlife.org/proceedings/0000/6/html/Cynipidae> (accessed 20 Jan 2011).
- [Ronquist, F. and J. Liljeblad. 2001.](#) Evolution of the gall wasp-host plant association. *Evolution* 55(12):2503–2522.



8-Week Native Landscaping Course at Meramec

Native Landscaping for Wildlife and People (BIO:156), an 8-week course at St. Louis Community College at Meramec, will be offered from March 24 to May 7. It will meet on Thursday evenings from 5:00 pm to 7:00 pm and for four Saturday field trips (3/26, 4/09, 4/23, & 5/07) from 8:00 am to 3:15 pm. This unique landscaping class focuses on native plant species, which are not only aesthetically appealing to humans but also furnish crucial habitat for wildlife groups such as songbirds, butterflies and hummingbirds. Using native wildflowers, grasses, shrubs, and trees, people will learn how to design, plant and maintain gardens and landscapes around homes, common grounds, businesses and public lands such as parks. Besides having an interest in nature, there are no prerequisites for this course that can be either audited or taken for credit. Dave Tylka, keynote speaker for Missouri's Grow Native program, will teach this course. For more information, call him at 636/942-3142.



TNC Spring 2011 Conservation Speaker Series

The Nature Conservancy has announced their **Spring 2011 Conservation Speaker Series**. Mark your calendars – all talks are free & open to the public and are held at Schlafly Bottleworks in Maplewood.

Tuesday, March 15; 7 p.m.

Conservation and Fire – Blane Heumann, Director of Fire Management, The Nature Conservancy.

Tuesday, April 12; 7 p.m.

Genetically Modified Agriculture and the Environment – Barbara Schaal, Evolutionary Biologist, Washington University, St. Louis.

Tuesday, May 24; 7 p.m.

Natural History, Human Culture, and Conservation in Missouri – Doug Ladd, Director of Conservation Science, The Nature Conservancy in Missouri.