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## The aphid genus *Aphthargelia* Hottes (Hemiptera: Aphididae), with one new species

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### Abstract

A new species of the previously monotypic aphid genus *Aphthargelia* is described and the genus reviewed. The new species, *A. rumbleboredomia* is heteroecious, alternating between host plants in *Symphoricarpos* and *Aconogonon* in the mountains of northwestern North America. Descriptive notes on *A. symphoricarpi* are given, along with diagnostic features for separating the two species of the genus. A key to related genera is presented, and biological information on both species of *Aphthargelia* is summarized.

**Key words:** *Symphoricarpos*, *Lonicera*, *Polygonum*, *Aconogonon*, Idaho, Washington, heteroecy, balsam, Macrosiphini, *Landisaphis*, *Hyadaphis*, *Hayhurstia*, *Brevicoryne*, *Rhopalomyzus*, *Lipaphis*

### Introduction

*Aphthargelia symphoricarpi* (Thomas) is a widespread, easily recognized aphid species which exploits several species of *Symphoricarpos* (Caprifoliaceae) as hosts. *Aphthargelia* has been monotypic since it was created by Hottes (1958) for *A. symphoricarpi*, which had previously been placed in *Brevicoryne* van der Goot by Palmer (1952) and others. In 2010 the author found a species of *Aphthargelia* living on *Aconogonon phytolaccifolium* in the mountains of northern Idaho. Although this host association between *Aphthargelia* and Polygonaceae had escaped notice of most aphid specialists, Andersen (1991) reported ecological experiments involving an aphid species, feeding on *Aconogonon davisiae*, identified at that time as *A. symphoricarpi* and the ant *Formica fusca* L. The species studied by Andersen and by the author is the same and is heretofore undescribed. It has a distinct life cycle, and has obvious color and morphological differences from *A. symphoricarpi*. This paper reports on two years of field research and a broad scale taxonomic study of *Aphthargelia*.

### Material and methods

Much material was collected by the author during routine work on studies of the systematics and natural history of aphids in North America. Aphids were collected into a mixture of ethanol, water, glacial acetic acid, and glycerin, based on the mixture called Oudemans' Fluid (Krantz, 1978). Experience has shown that this fluid retains the flexibility of aphid joints and improves slide mounting. Aphids were cleared through a series of steps involving NaOH, ethanol, and clove oil, then mounted in Canada Balsam purchased from a wood worker's supply house in Wisconsin, USA (Wood Finishing Enterprises, Wauwatosa, WI 53213), thinned with orange oil as necessary.

The photographs of slide-mounted aphids were made using AxioVision® 4.6 imaging and measuring software (Zeiss®, Göttingen, Germany) and a Zeiss® Axio Imager® M1 microscope. The image of the type slide of *A. symphoricarpi* was created on a digital scanner (Hewlett Packard LaserJet M1212 nf MFP). Color photos used for descriptive notes and Figure 1 were taken using a Nikon Coolpix 5400 digital camera through the eyepiece of a binocular dissecting microscope.