SPECIES FACT SHEET

<u>Common Name</u>: Scott's apatanian caddisfly <u>Scientific Name</u>: *Allomyia scottia* Wiggins 1973 (*Imania*)

Synonyms: *Imania scottia* Phylum: Arthropoda Class: Insecta Order: Trichoptera Family Limniphilidae

Type Locality: ORE, Clackamas County, Mount Hood, 3.3-miles below Timberline Lodge, at 4200-feet, April 20, 1964. Most material was collected in a stream about 2 m in width that falls rapidly over boulderstrewn course. Water was clear and cold, temperature in July 2°C (36°F), and presumably comes from springs supplied by permanent snowfields around the summit of Mt. Hood. Rocks in the stream bear dense growths of a wiry moss.

OR/WA BLM and FS Region 6 Units where Suspected or Documented:

BLM:	Cascades Resource Area.
	Salem District.
USFS:	Mt. Hood National Forest (documented).

Description:

Adult caddisflies resemble small moths with wings held tent-like over their back when at rest. They have long hair-like antennae and lack the coiled mouthparts that moths and butterflies have. The adult wings are covered by hairs. The forewings are usually darker and stronger. Adult *Allomyia scottia* are dark brown with dark brown hairs covering the forewings, and are 7.7-9.0 mm in length.



Adult Caddisfly (NC State 2005).

Larval stages are 7.0-8.9 mm in length with prominent horns above a flattened area of the head. A medial carina arises on the flattened area. Larvae usually are found inside of a case made of silk and small stones. The case is unique in being sharply constricted along the basal quarter.



Figures 27-32. Allomyia scottia. (See next page)

27. Head and thorax, frontolateral view.

28. Larva: a. lateral view; b. mesotarsal claw; c. ninth abdominal segment and anal prolegs, dorsal view; d. claw of right anal proleg.

- 29. Head capsule, ventral view.
- 30. Mandible, left side, ventral view.
- 31. Labrum, dorsal view.
- 32. Larval case: a. ventrolateral view; b. posterior end, facial view.



Figures 33-36. Allomyia scottia.

- 33. Head of pupa, facial view.
- 34. Pupal abdomen: a. dorsal view with scleritized plates enlarged;, b. anal process, dorsal view.
- 35. Pupal case: a. anterior end, facial view; b. posterior end, facial view.
- 36. Maxillae and labium of larva.

The genus *Allomyia* comprises 12 species that generally occur in montane areas of western North America. Identification of adult caddisflies requires taxonomic expertise and suspected specimens of *Allomyia scotti* should be submitted to experts for confirmation.

<u>Morphology</u>:

The Allomyia larval head is flattened dorsally, the area frequently concave and bounded by a sharp, semicircular carina; and prominent posterior horns on the head are known only in Allomyia scottia Wiggins. The head and pronotum have a pebbled texture, pronotum is strongly convex. Abdominal gills are lacking (Wiggins 1977).

Larvae build a tapered, cylindrical case of small, rather coarse rock fragments. The case of *Allomyia scottia* is unique in having the basal quarter sharply constricted from the remainder.

<u>Life History</u>:

Female Limnephilidae deposit their egg masses above the water in a gelatinous material on various objects (Usinger 1968). Newly hatched larvae drop or migrate into the water nearby. Larvae and pupae inhabit small, cold mountain streams, often at high elevations. The larvae occur at the base of moss fronds and pupal cases are attached to moss (Wigginis 1973). Larvae are shredders, chewing plant material, probably mosses (Merritt and Cummins 1984) Two years are required to complete the life cycle. Prepupae occur as early as June and are still present in September, but have changed to pupae by the following April.

Based on gut content analysis of larvae in this genus, the diet is apparently consistent with the interpretation that *Allomyia* larvae scrape the upper surface of rocks and plants.

Range and Distribution:

Known from four locations, all on Mt. Hood: from an alpine stream 3.3 miles below Timberline Lodge, 4,200 feet (SW ¹/₄ Sec13 T3S R8E) (Wigginis 1973); the south fork of Iron Creek (Sec15-16 T3S R9E) (Anderson 1976); from a stream at the Junction of Highways 35 and 48 (SE ¹/₄ Sec16 T3S R9E) (ONHP 2005), and on a tributary of the Salmon River (ONHP 2005). The species may occur in other localities on or near Mt. Hood, however extensive surveys have not been conducted.

<u>Habitat Associations</u>:

Species of *Allomyia* occur in montane areas of North America, The larvae inhabit small, cold mountain streams. The larvae of *Allomyia scotti* may be associated with moss in their habitats (Wigginis 1973).

<u>Threats</u>:

- (1) Destruction of small creeks by roads and other construction.
- (2) Silt building up from upslope erosion that covers rocks.

Conservation Considerations:

Protection of small creeks should be considered during the construction of roads and during forest management activities. Slope stability is important to prevent erosion that washes silt into small creeks and destroys habitat by covering small rocks and by filling interstitial spaces.

Adults are most susceptible to disturbance whenever they are present. Larval caddisflies are most susceptible to disturbance from late Winter through the Spring. To avoid disturbance, management activities should include precautions that prevent soil erosion near streams where caddisflies reside.

The limiting factors for caddisflies include availability of habitat, and for *A. scottia* moss fronds in small, cold, alpine streams.

Survey Techniques:

Adult Trichoptera (caddisflies) can be captured in an insect sweep net by walking along a stream and sweeping the net over the top of the water. Captured adults can be placed directly into a vial containing 70% ethyl alcohol. Adults are active after snow melts in late Spring and early Summer. Field identification requires taxonomic expertise and is not practical for the inexperienced.

Larval caddisflies can be collected by using a kick net, a D-frame dip net, or a Surber Sampler or similar device. Kick nets are made of fiberglass screen material attached to 2 poles, and functions similarly to a fish kick seine. D-frame dip nets or Surber Samplers are commercially available from equipment suppliers. Larvae are found in the rocks and cobbles on the bottom of the stream or attached at the base of moss fronds. Larvae should be placed in vials of 70% ethyl alcohol for preservation. Larvae can be found in streams during the late Winter and early Spring. Field identification of larval *A. scottia* is possible using a hand lens. Identifications should be confirmed with taxonomic experts.

Other pertinent information (includes references to Survey Protocols, etc):

The species is named after Mr. Robert S. Scott. The name of the genus is taken from the Iman River in south Ussuri region of Russia, where, along the upper reaches, the genus was first collected.

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ATTACHMENTS:

- (1) Map of Range and Distribution
- (2) BLM Resource Areas and Districts Distribution Maps
- (3) Locality Topographic Maps
- (4) List of Pertinent References/Literature
- (5) Technical Description
- (6) Original Published Description

Wiggins, G.B. 1973. Contributions to the Systematics of the Caddisfly Family Limnephilidae (Trichoptera). I. Life Sciences Contributions Royal Ontario Museum No. 94. 32 pp.

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Distribution Map of Allomyia scottia Wiggins 1973.

BLM Distribution Maps



BLM Resource Areas in Oregon where Allomyia scottia Wiggins has been found.



BLM Districts/USFS Forests in Oregon where Allomyia scottia Wiggins has been found.

Locality Topographic Maps





Locality Topographic Map of South Fork of Iron Creek Site. Approximate sampling locality within yellow circle.

References

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Technical Description:

Adult: Length of forewing male 7.7-8.1 mm, female 7.7-9.0 mm. General structure typical of the genus and for tripunctata group; dark brown in color, forewings covered uniformly with dark brown hairs. Venation similar in two sexes, essentially as illustrated for *Imania bifosa* Ross by Schmid (1955, see fig 15). Wing coupling mechanism consisting of approximately eight stout, non-clavate, bristles at base of hind wing, and line of short, stout, hooked setae along costal margin of hind wing which engage upon long hairs arising from anal margin of forewing (as illustrated for *Lepania cascadia* by Wiggins 1973a, see fig 21).

Male and female genitalia described in Wiggins 1973b.

Larva: Generally similar to other larvae in this genus, but distinguished primarily by the prominent horns on the head. Length of larva 7.0-8.9 mm. Head with very prominent dorsal carina arising just behind eyes and extending completely around anterolateral margin; two clusters of three or four prominent horns arising from raised posterodorsal area of head; central part of head concave, with coarse granulations extending posterior to horns; head capsule in dorsal view wider than long, broadly elliptical; secondary setae absent; primary setae reduced. But what appear to be setae 14 and 15 arise close together as in Apatania. Mandibles with cutting edge entire, teeth lacking; gular sclerite t-shaped, lateral margins of postgula linear; maximum width of postgula less than one-half maximum width of pregula; labrum with anterolateral margins membranous as in Apatania. Labium with both mesal and lateral submental sclerites; sclerite of palpiger extending somewhat more than half way around base of labial palp. Maxilla with galea flattened and dome-like.

Pronotum wide, inflated and strongly convex, surface granulate, anterodorsal area with short golden pubescence; prosternal horn well developed. Mesonotum short and wide, shorter mesally than laterally. Metanotum with all three primary setal areas represented by well-developed sclerites. Legs as illustrated, tarsal claws somewhat longer and more slender than in *Apatania*, but with basal seta reaching almost to tip of claw; trochanteral brushes absent from all legs.

Abdomen lacking gills; first abdominal segment with 15-19 dark setae between dorsal hump and each lateral hump, and 68-76 dark setae on venter; venters II to VII inclusive each an ovoid scleritized ring; posterodorsal sclerite of IX with four major setae and 15-18 minor setae; claw of anal proleg with accessory tooth; basal tuft of anal proleg with three setae, lateral seta less than half as long as two mesal setae. Larval case of small stones, without lateral ridges, but basal quarter sharply constricted from remainder; posterior end reduced with silk to a round, central hole; length of larval case up to 8.1-9.3 mm.

Pupa: Length of pupa 7.7-8.6 mm. Mandibles with cutting edge proximal to apex, lacking dentations; labrum with al major setae lacking apical hook of *Apatania* and *Manophlax*. Abdomen without gills; anal process heavily scleritized and stout, not slender as in many genera of family, and bearing three stout setae along posteromesal face of terminal enlargement; some variation seen in scleritized anal processes, stouter than illustrated in some pupae.

Pupal case similar to larval case in every respect, retaining characteristic constricted basal portion; silken closure membrane of anterior opening with small holes scattered over entire surface, some small stones fastened to silk; posterior opening apparently not modified from condition in larval case. Length of pupal case 10.1-12.2 mm.

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