ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** IIEPH88100
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Homoleptohyphes quercus*
COMMON NAME: A Mayfly
SYNONYMS: *Leptohyphes quercus*
FAMILY: Leptohyphidae

AUTHOR, PLACE OF PUBLICATION: J.I. Kilgore & R.K. Allen, Ann. Entomol. Soc. Am. 66: 321-332. 1973.

TYPE LOCALITY: Arizona.

TYPE SPECIMEN: HT: CAS-13605. Kilgore & Allen.

TAXONOMIC UNIQUENESS: There are 7 genera in this family and 120 species known worldwide. In North America there are 2 genera and 24 species.

DESCRIPTION: For the family the larvae body length is 3-10 mm (mature larvae, not including antennae and tails). In top view, the only structures that are visible on the abdomen other than the tails are a pair of large, thick, movable plates. These plates are attached to the rear abdomen segment two, and they cover and protect four pairs of gills on abdomen segments three to six. The plate-like gill protectors are shaped nearly like triangles, and there is a space between them in the middle. The gills underneath the protective plates do not have any fringe on their edges. Several segments at the rear of the abdomen do not have any gills.

AIDS TO IDENTIFICATION: See "**Description.**"

ILLUSTRATIONS: Color drawing of larvae (Voshell 2002: Plate 52)

TOTAL RANGE: Coconino and Pinal counties, Arizona.

RANGE WITHIN ARIZONA: See "**Total Range**."

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Mayflies date from Carboniferous and Permian times and represent the oldest order of the existing winged insects. They are unique among the insects in having two winged

adult stages. As adults they generally live from 1 to 2 hours to a few days, and mayflies spend most of their life in the aquatic environment, either as eggs or nymphs. Because of their winged adult stage and a propensity for drift as nymphs, mayflies are often among the first macroinvertebrates to colonize virgin habitats. They are primarily crawlers and are very poor swimmers. The gills for this family of mayflies are specially adapted for existence in silty habitats. The first pair of gills on abdomen segment two is thickened and plate like, and does not function for obtaining oxygen. The plate like gills cover the other functional gills and protect them from being covered with silt, which would prevent the passage of dissolved from the water to the organism. To obtain dissolved oxygen, little stout crawlers raise the plate like gills slightly and circulate water under them by waving the other gills. Many species diapause in the egg state over winter, which explains why they may be found in temporary streams.

REPRODUCTION: Swarming is a male activity. The female's fly into these swarms, and mating occurs almost immediately and usually in flight. Swarming may take place over the water itself, over the shore area, or even away from the water. Mayfly eggs have a variety of attachment structures that enable them to adhere to submerged objects or to the substrate. Differences in egg morphology have enabled the construction of identification keys, purely on the basis of eggs.

FOOD HABITS: They do not feed as adults, but as nymphs they eat detritus and periphyton (algal communities on stones and plants).

HABITAT: For this family it is primarily lotic-depositional, some lentic-littoral. Larvae of little stout crawlers are common in flowing waters ranging from small streams to large rivers, but they occur in areas of slow current. Substrates where they reside include silt, fine sand, gravel, woody debris, moss and other plant growth on stones, exposed roots of terrestrial plants, and at the base of rooted aquatic vegetation. Sometimes larvae are found along the shores of lakes where they sprawl on the sediments.

ELEVATION:

PLANT COMMUNITY:

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: None. USDA, FS Region 3, 2013
[Forest Service Sensitive (USDA, FS Region 3 2007)]

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Life history, population status, and distribution studies need to be performed.

LAND MANAGEMENT/OWNERSHIP:

SOURCES OF FURTHER INFORMATION

REFERENCES:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

These mayflies are known as Little Stout Crawlers.

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