ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** IINEU04010
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Oliarces clara*
COMMON NAME: Cheese-weed Owlfly, Cheese-weed Moth Lacewing, Lacewing, Ally
SYNONYMS:
FAMILY: Ithonidae

AUTHOR, PLACE OF PUBLICATION: Banks, N. 1908. A new genus and species of Neuroptera. Ent. News, 19:203-204:

TYPE LOCALITY: Walters Station, California.

TYPE SPECIMEN: MCZ, John B. Smith. April, 1908.

TAXONOMIC UNIQUENESS: The North American genus (*Oliarces*) has only one species, *O. clara*.

DESCRIPTION: Clypeus, mouthparts and antennae light reddish brown; pronotum and mesonotum dark brown to black; metanotum dark reddish brown, lighter near wing bases; legs yellow-gray to medium brown; abdominal tergites medium brown, membranous areas yellow-brown; last two abdominal segments dark reddish brown above, abdomen yellow from beneath. Body in general covered with long brown or black hairs. Both pairs of wings are of similar texture being colorless and hyaline, bases tinted reddish brown. Fore wing about 16 mm (0.72 in) long and 5 mm (0.02 in) wide. The wingspread is 35-40 mm. Each wing bears two distinct nygmata. Antennae with 40 subequal segments. According to Johnson (1992a), they have a lacewing-like appearance; body 18 mm (0.72 in) long, front and hind wings similar in size and longer than 16 mm (0.64 in); thoracic membranes rose pink, abdominal membranes and part of venter greenish, antenna filliform. See Carpenter (1951) for a full discussion of morphology.

AIDS TO IDENTIFICATION: Terminal abdominal segments of male are significant in determining generic relationships.

ILLUSTRATIONS: Line drawings of fore and hind wings (Carpenter 1951:33)
Line drawing of terminal abdominal segments of female (Carpenter 1951:33)
Line drawings of terminal abdominal segments of male (Carpenter 1951:34)

Line drawings of females, dorsal view (Belkin 1954)
Line drawing of male, dorsal view (Belkin 1954)
Line drawing of venation of fore and hind wing of female (Belkin 1954)
Photo (Faulkner 1990)

TOTAL RANGE: Colorado River drainage, southwestern Arizona, southern California and Clark County, Nevada.

RANGE WITHIN ARIZONA: Colorado Desert (within Colorado River drainage), southwestern Arizona.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Johnson (1992b) states "this species has an extended larval stage, probably upwards of one year, and a 3-4 day adult stage during which individuals mate and die, apparently without feeding. Synchronized adult emergence occurs from mid-April to mid-May. The females are present only during the first few days following emergence and the males are encountered later. This is why most single records are male. Several large-scale adult emergences have been observed with densities estimated at up to 250,000/acre (D.K. Faulkner pers. comm. to R. Johnson cited in Johnson 1992). Environmental cue triggering emergence is unknown but may relate to earlier weather conditions. Individuals often seen running on ground. Only one specimen has been captured using black lights, indicates that *O. clara* shows very little nocturnal activity. Males outnumber females by about 2:1. Mating appears to be a form of hill topping, with individuals aggregating in leks at local high topographic features. Such lekking behavior is also indicated in that males typically gather first and the females are later attracted to these areas, probably by pheromones. After a pair is *in copulo*, the female leads the male to a sheltered area under rocks or vegetation, where they remain until the next day. Both males and females appear to only mate with one other individual (Faulkner 1990). *O. clara* is eaten by numerous vertebrate (birds), invertebrate (flies and spiders) and scavenger (woodrats, harvestman, ants) predators.

REPRODUCTION: Insects most likely oviposit under the surface of the sand but are believed to have the ability to oviposit in somewhat harder ground. According to Johnson (1992) females lay up to 500 greenish eggs on soil surface. Eggs are sticky, adhering to sand particles, which provide additional protection and camouflage. Larvae and empty cocoons always associated with creosote bush, even though eggs appear to be deposited randomly around vegetation.

FOOD HABITS: Association with creosote appears to be caused by the larvae burrowing into the ground and actively seeking the roots of creosote bush upon which they likely feed (Faulkner 1990).

HABITAT: Populations occur on or near bajadas. Larvae are associated with creosote-bush roots, upon which they likely feed. Adults typically aggregate at local high topographic features to mate.

ELEVATION: Sea level-328 ft (0-100 m).

PLANT COMMUNITY: Unknown

POPULATION TRENDS: Land development for agriculture and housing may have extirpated some populations. At present, about 10 isolated populations are known.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1994]
[C2 USDI, FWS 1991]

STATE STATUS: None

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)
[Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005)]

MANAGEMENT FACTORS: Land development for agriculture and housing are threats to consider for this species.

PROTECTIVE MEASURES TAKEN: Unknown

SUGGESTED PROJECTS: The following questions and projects need to be considered: What environmental cues trigger *Oliarces* to assure a synchronized adult emergence; is there a gland present in the males that produces a pheremone to attract females; what soil and nutritional requirements are necessary for larval survival; are the larvae truly phytophagous or is there some other nutritional component associated with plants that is needed; is *Larrea tridentata* the only plant source exploited; what maintains the integrity of these scattered populations; does drifting of adults by wind play an essential role; the phylogenetic relationship of *Oliarces* needs to be re-examined not only within Ithonidae but also with regard to Polystoechotidae and Rapismatidae. There appear to be a number of similarities between larval stages. More information on the larval stage of this species is needed.

LAND MANAGEMENT/OWNERSHIP: Various state and federal agencies and private lands.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

According to Johnson, 1992b, species much more widespread and abundant than previously believed. Federal status should be lowered to 3C.

Revised: 1993-06-17 (DBI)
1997-03-02 (SMS)
2003-07-10 (AMS)

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