

**New Distribution Records for Some Nearctic Dryinid Wasps, with a
Species List from a Flume in Tulare County, California
(Hymenoptera: Dryinidae)**

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Abstract.—A species list, collection periods, and distributional notes (including 12 new California-state records) for 23 species of dryinid wasps collected from a hydroelectric flume in Tulare County, California are presented. Additionally, new state records for *Gonatopus mimoides* in California and *G. cyphonotus* in Minnesota are presented. *G. pallidiceps* and *G. portalensis* are each reported from a third locality in California. Twelve genera and 34 species of dryinid wasps are known from California.

Recently, the world fauna of the wasp family Dryinidae was revised and distributional information was updated for each species (Olmi, 1984). Prior to this revision, distribution information for the Dryinidae in America north of Mexico was available in Krombein (1979).

Presented herein are the results of collecting dryinid wasps from a hydroelectric flume located at Kaweah Powerhouse #3, Ash Mountain, Tulare Co, California. Included are a list of 23 species collected from this site, collection periods, the number of specimens collected thus indicating how common or rare each species is, and distributional comments (including 12 new California-state records and many county records) for each species (see Table 1 and text).

The flume winds through approximately five miles of Foothill Woodland and Chamise Chaparral habitats at an elevation of 660 m (2200 ft) (Halstead and Haines, in prep.). A total of 62 flume collecting trips (approximately 1100 man hours of collecting) were conducted from 1982 to 1985. Trips were made throughout the calendar year though most were conducted between May and October. More trips were made and man hours spent in 1982 than in other years.

Additionally, new state records of *Gonatopus cyphonotus* Bradley in Minnesota and *G. mimoides* (Perkins) in California are presented. Also, *G. pallidiceps* (Perkins) and *G. portalensis* Olmi are each reported from a third locality in California.

Anteon funestum.—Widely distributed throughout North America. The flume specimens represent a new state record for California and the westernmost record for the species. The nearest record is approximately 1000 km (600 mi) to the southeast in Tucson, Arizona.

Table 1. Species list, collection period(s) and number of dryinid wasps collected from the Kaweah Powerhouse #3 flume, Ash Mountain, Tulare County, California in 1982–85. Species are listed alphabetically.

Scientific Name	Months Collected	No. Specimens Collected
<i>Anteon funestum</i> (Perkins)*	IV, IX	2
<i>A. popenoei</i> (Ashmead)*	VI	2
<i>A. rugosiceps</i> Kieffer	VI	2
<i>Aphelopus albopictus</i> Ashmead	V–VI	13
<i>A. varicornis</i> Brues	III–V	6
<i>Apterodryinus californicus</i> (Ash.)	III–V	10
<i>A. torvus</i> Perkins*	VII	1
<i>Bocchus flavipes</i> Kieffer	VI–VII	29
<i>B. hainesi</i> n. sp. ¹ *	VI–VIII	20
<i>Crovetia theliae</i> (Gahan)	IV	1
<i>Deinodryinus atriventris</i> (Cres.)*	VI–VII	14
<i>Dryinus halsteadii</i> n. sp. ¹ *	IV–VIII	10
<i>Esagonatopus niger</i> (Fenton)*	VII–VIII	4
<i>Gonatopus agropyri</i> Fenton*	VII	2
<i>G. herbarum</i> (Perkins)	VI–VII, IX	10
<i>G. mayori</i> Olmi	VI	1
<i>G. paraleptias</i> (Perkins)	VI–VII, IX	15
<i>Lonchodryinus bakeri</i> (Kieffer)	VII–IX	7
<i>L. flavus</i> Olmi*	VI	1
<i>L. masneri</i> (Olmi)*	VIII	2
<i>Pseudogonatopus sjoestedti</i> (Kief.)*	V	1
<i>Tetradontochelys peculiaris</i> Brues	VI–VII	3
<i>T. unicus</i> (Perkins)*	IX	1

*Denotes a new state record for California.

¹Olmi, in prep.

Anteon popenoei.—Known from the central and eastern United States and Canada. The flume specimens represent a new state record for California and the westernmost record for the species. The nearest locality record is approximately 1700 km (1000 mi) to the northeast in Alberta, Canada or to the southeast in Texas.

Anteon rugosiceps.—The few locality records are from southeastern Canada, the western United States, and Mexico. The flume specimens represent a new county record, the fourth locality record for California, and the second record for the Sierra Nevada Mountain Range. Other California counties include Kern, Santa Clara, and Siskiyou.

Aphelopus albopictus.—Widely distributed in North America. Recorded from four localities in California but the flume specimens represent a new county record and the second and southernmost record for the Sierra Nevada. The other Sierran record is from Somerset, El Dorado Co. Other California records (Needles, Alameda, and Chocolate Mts.) are coastal or southern desert.

Aphelopus varicornis.—Widely distributed in North America. Several records are noted for California but the flume specimens represent a new county record and the fifth and southernmost record from the Sierra Nevada. Other Sierran records include Alta, Placer Co; Summerset, El Dorado Co; Strawberry, Alpine Co; and Sierra City, Sierra Co. Other California counties include Monterey, Ventura, Alpine, San Luis Obispo, and Del Norte.

Apterodryinus californicus.—Known from Los Angeles and Marsh Or. Spr. in

California and Prescott, Arizona. The flume specimens represent a new county record and the third locality record for California.

Apterodryinus torvus.—Known from Arizona, Texas, and New York. The flume specimens represent a new state record for California and the westernmost locality record for the species. The nearest locality record is approximately 1200 km (700 mi) to the southeast in Nogales, Arizona.

Bocchus flavipes.—Known from Plumas Co, California and Ormsby Co, Nevada. The flume specimens represent a new county record, the second locality record for California, and the southernmost record for the species.

Crovettia theliae.—Known from British Columbia and Ontario, Canada; New York, Washington D.C., Michigan, Louisiana, Arizona, and California. The flume specimen represents a new county record and the third locality record for California. Other California localities include Glenville, Kern Co and Ione, Amador Co.

Deinodryinus atriventris.—Widely distributed in North America. The flume specimens represent a new county record and the third and northernmost locality record for California. Other California counties include San Bernardino and San Diego.

Esagonatopus niger.—Known from Ontario Canada, North Dakota, Iowa, Kentucky, Pennsylvania, and Mexico. The flume specimens represent a new state record for California. The nearest locality records are approximately 2200 km (2000 mi) to the northeast in Ames, Iowa and 4300 km (2600 mi) to the southeast in Cuernavaca, Mexico.

Gonatopus agropyrus.—Known from southeastern Canada, Texas, Wisconsin, Kentucky, Iowa, Georgia, New York, and Arizona. The flume specimens represent a new state record for California. The nearest locality record is approximately 1200 km (700 mi) to the southeast in Sunnyside, Arizona.

Gonatopus cyphonotus.—Known from Florida and throughout southern Canada. Two females from Cushing, Morrison County, Minnesota (VII-24-1983, P. S. Simpson and J. A. Halstead, sweeping grassy vegetation near marsh) represent a new state record for Minnesota.

Gonatopus herbarum.—Known from Arizona, Texas, and three California localities (Summerset, El Dorado Co; San Bernardino Co; and Apple Valley, San Bernardino Co). The flume specimens represent a new county record and the fourth locality record for California, coming from the central region of the state in the southern Sierra Nevada.

Gonatopus mayori.—The flume specimen represents a new country record. Olmi (1984) incorrectly listed the type locality and distribution as El Mayor (California, U.S.A.). A review of the holotype, deposited in the California Academy of Sciences, San Francisco, shows the type locality to be "El Mayor, L. California." The distribution should therefore read, "Nearctic region: U.S.A.: Ash Mtn. (Tulare County, California) MEXICO: El Mayor (Baja California Norte)."

Gonatopus mimoides.—Known from Utah, Arizona and Texas. Five females and one male from 3 mi SE Madera, Madera Co, California (VII-29-1985, J. A. Halstead, sweeping grass in pistachio orchard) represents a new state record for California and a westward range extension of approximately 1300 km (800 mi).

Gonatopus pallidiceps.—Known from Nova Scotia and British Columbia Canada, California, North Dakota, Kansas, Tennessee, and Florida. One female from 3 mi SE Madera, Madera Co, California (VII-29-1985, J. A. Halstead, sweeping grass in

pistachio orchard) represents a new county record and the third locality record for California. The two other California records are from Alameda Co.

Gonatopus paraleptias.—Known from Arizona, Wyoming, and five localities in California. The flume specimens represent a new county record and the first record for the Sierra Nevada. Other California counties include Riverside, Los Angeles, Santa Clara, and Marin.

Gonatopus portalensis.—Recently described from Sagehen Creek, Nevada Co and Omira, Lassen Co, California; Portal, Arizona; Ward, Colorado; and Kerrville, Texas (Olm 1984). Three females from Hopkins Well, 18 miles West of Blythe, Riverside County, California (X-4-1984, N. J. Smith) represent a new county record, and the southernmost and the third locality record for California.

Lonchodryinus bakeri.—Widely distributed in North America. The flume specimens represent a new county record and the third locality record for California. Also, they represent the first record from the Sierra Nevada. Other California counties include Siskiyou and Del Norte.

Lonchodryinus flavus.—Recently described from throughout Canada, Michigan, Georgia, Maryland, New Jersey, New York, and New Hampshire (Olm 1984). The flume specimen represents a new state record for California. The nearest locality record is approximately 2333 km (1400 mi) to the northeast in Alberta, Canada.

Lonchodryinus masneri.—Recently described from two localities near Portal, Arizona and Culberson Co, Texas (Olm 1984). The flume specimens represent a new state record for California and a northwestern range extension of approximately 1200 km (700 mi). Also, one female was collected from a Gypsy Moth Trap at Clough's Cave, Tulare Co, California (I-XII-1985, R. D. Haines).

Pseudogonatopus sjoestedti.—Known from Texas, Ohio, Kentucky, North Carolina, and New York. The flume specimens represent a new state record for California and the westernmost locality record for the species. The nearest locality record is approximately 1700 km (1000 mi) to the southeast in Texas.

Tetrodontochelys peculiaris.—Known from Manitoba and Ontario Canada, Arizona, Texas, Iowa, South Carolina, and one locality in California (Stanford University, Marin Co). The flume specimens represent a new county record and the second locality record for California.

Tetrodontochelys unicus.—Known from throughout southern Canada, Washington, Idaho, Arizona, Texas, North Dakota, South Dakota, and Minnesota. The flume specimens represent a new state record for California. The nearest locality record is approximately 1200 km (700 mi) to the southeast in Nogales, Arizona.

In summary, this data improves the distribution information for several species, depicts their habitat and seasonality, indicates how common or rare each species is (flume collectability), and shows that a large diversity of species occur at the Kaweah flume location.

In all, 12 genera and 23 species of dryinid wasps were collected from the flume. This material contains 3 genera and 12 species (including 2 new species) which were not previously recorded from California. Additionally, *G. mimoides* is recorded for the first time in California. Olm (1984) listed 9 genera and 21 species from California. The California fauna is now known to contain 12 genera and 34 species. It's astonishing to note that approximately 68 percent of the species of California's dryinid wasp fauna has been collected at a single locality, the Kaweah flume.

As denoted in Table 1, most adult wasp activity occurred at the flume in June and July though various species were collected between March and October. Despite the

many collecting trips and man-hours of collecting, most species were rarely collected. We feel that without the use of the great collecting ability of the flume and our intense collecting effort, many species would have gone undetected. Also, we feel that flumes collect a better representation of an area's fauna, at least at the Kaweah locality, than do other collecting techniques such as Malaise traps and screen sweeping.

In addition to improving the knowledge of the Nearctic Dryinidae and especially that of California, this paper illustrates that flumes can be an important collecting source and we hope that it encourages other researchers to utilize them.

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