

## NEW RECORDS, DISTRIBUTION AND TAXONOMIC STATUS OF SOME NORTHERN ARIZONA CADDISFLIES (TRICHOPTERA)<sup>1</sup>

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**ABSTRACT:** Forty-nine caddisfly species were collected in northern Arizona during April and June, 1993. These included *Protoptila balmorhea*, previously known from its type locality in west Texas, the presumed rare *Ochrotrichia (Metrichia) volada*, that we determined to be a synonym of the widely distributed *O. (M.) nigrutta* and an undescribed species and new Nearctic record of the xiphocentronid genus *Cnodocentron*. New distributional records and taxonomic notes are provided for regional species.

A regional collection of caddisflies was made in north-central Arizona in spring, 1993, in conjunction with a study to determine the population status of the two presumed rare species *Protoptila balmorhea* Ross (Glossosomatidae) and *Ochrotrichia (Metrichia) volada* Blickle and Denning (Hydroptilidae). Both are considered "Category 2" species under the Federal Endangered Species Act of 1973 (USFWS 1991). Collections were made at five sites in Oak Creek from upper to lower Oak Creek Canyon, in the outflows of two major springs, Page Springs and Bubbling Ponds in Yavapai County near the town of Page Springs, and reaches and adjacent springs of the Verde (Yavapai Co.) and East Fork Verde Rivers (Gila Co.). Portable ultra-violet light traps, hand-collecting with an aspirator, sweeping vegetation, and 6 m Malaise traps (Debby Focks Co., Gainesville, FL) were variously employed for collecting adults at these sites. Larvae and pupae were hand-picked from submerged objects and netted from the springs, ponds and streams. Larvae of six species were air-transported to our laboratory in Texas, and reared in a Frigid Units Living Stream™ at simulated habitat temperatures (12 - 14°C) and photoperiod. All material is preserved in 70% ethanol and deposited in the University of North Texas (UNT) Insect Museum Collection. A synoptic collection of species has also been placed in the National Museum of Natural History. Holotypes examined herein are deposited in either the California Academy of Sciences (CAS) or the Illinois Natural History Survey (INHS).

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*Protoptila balmorhea* Ross

*Protoptila balmorhea* Ross 1941:45.

Material Examined.- ARIZONA: YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 4-5-VI-1993, 9 ♂♂; same but, 5-6-VI-1993, 3 ♂♂; spring outfall at Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 7 ♂♂ 11 ♀♀; Oak Cr., below Page Springs Fish Hatchery, 5-6-VI-1993, 4 ♂♂, 5 ♀♀, same but, 17-V-1978, M. W. Sanderson, 2 ♂♂; TEXAS: Reeves Co., Balmorhea, irrigation flume, 19-IV-1939, H. H. & J. A. Ross, Holotype ♂.

**Comments.**- Morse (1988) did not include Arizona in his distributional summary of *P. balmorhea*. This species was previously known only from its type locality at Balmorhea, in the Trans Pecos region of west Texas (Ross 1941). Specimens were reportedly collected from Oak Creek by Milton Sanderson in May, 1978. We located and confirmed some of this material in the INHS collection. Presence of *P. balmorhea* in both west Texas and Arizona suggests that it may have been a widespread southwestern species that now occurs as disjunct, post-glacial relict populations. It is likely to be found in other southwestern states and northern Mexico where its larval habitat requirements are met. These include swift, spring outfalls with sufficient cobble substrate to support the algal grazing habits of the larvae.

*Ochrotrichia (Metrichia) nigritta* (Banks)

*Orthotrichia nigritta* Banks 1907:163.

*Metrichia volada* Blickle & Denning 1977:295. NEW SYNONYM.

Material Examined.- ARIZONA: YAVAPAI CO., Page Springs Fish Hatchery, 3-IV-1968, R.W. Baumann, Holotype ♂, Allotype ♀ (CAS Type No. 16363); same but 23-IV-1993, 18 ♂♂♀♀, pupae, larvae; same but 5-6-VI-1993, 22 ♂♂♀♀; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 3 ♂♂, same but 5-6-VI-1993, 1 ♂; Bubbling Ponds, 1 km N Page Springs (town), 22-23-IV-1993, 8 ♂♂♀♀; same but 4-6-VI-1993, 332 ♂♂♀♀; OKLAHOMA: MURRAY CO., Buffalo Springs, Travertine Cr., Chickasaw Nat. Rec. Area, 28-IV-1991, Moulton & Kennedy, 66 ♂♂, 22 ♂♂; TEXAS: MENARD CO., San Saba R., at FM 864, Fort McKavitt, 11-IV-1992, 2 ♂♂; VAL VERDE CO., unnamed spring, Dolan Cr., near confluence with Devil's R., 17-III-1993, Stringer, Nelson, & Alexander, 2 ♂♂.

**Comments.** Prior to this study it was thought that *O. (M.) volada* was a rare and threatened species restricted to the spring outfalls near Page Springs, Arizona. The spring outfall above Page Springs Fish Hatchery had been fenced to protect the habitat, and our work was intended to assess the distribution and health of the population. In June 1993 at the

Page Springs and Bubbling Ponds outfalls, aggregations of 20 to 30 males were often found in heavily shaded areas on blades of streamside grasses and at the apex of the large arrowhead-shaped leaves of *Sagittaria*. Larvae and pupae were found only on heavily shaded, moss-covered cobbles in swift water. Some of these were successfully reared in the laboratory, and upon comparison with written descriptions and figures of *O. (M.) volada* and *O. (M.) nigritta*, it appeared that the two species might be synonyms. The ♂ holotype and ♀ allotype of *O. (M.) volada* were borrowed from the CAS and further comparisons confirmed that they were synonymous with confirmed material of *O. (M.) nigritta* in our reference collections from Texas and Oklahoma. In addition, larvae and cases collected from Page Springs were identical to those in our collection from a similar spring habitat in southern Oklahoma and to the written description by Edwards and Arnold (1961). *Ochrotrichia (M.) nigritta* is locally distributed in spring habitats throughout the southwestern United States (Arizona, Oklahoma, Texas), Mexico, and El Salvador (Blickle 1979, Flint 1972).

#### NEW DISTRIBUTION RECORDS

In addition to resolving the status of *P. balmorhea* and *O. nigritta* in the region, we were able to increase substantially the knowledge of forty-seven regional species, some of which were known previously from limited localities. An undescribed species of the xiphocentronid genus *Cnodocentron* was also discovered. Following is an annotated listing of these species. An asterisk denotes a new state record; only Arizona counties are listed.

##### Family Brachycentridae

\**Micrasema bactro* Ross, COCONINO CO., Oak Cr. at Manzanita Rec. Area, along US Hwy 89A 25-IV-1993, 3 larvae; YAVAPAI CO., Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 1 ♀.

This species has been reported previously from Alaska (Vineyard 1982) and the Yukon Territory (Schmid 1983) to California (Schmid 1983), Utah (Baumann and Unzicker 1981), and Colorado (Herrmann *et al.* 1986).

##### Family Calamoceratidae

*Phylloicus aeneus* (Hagen), COCONINO CO., Oak Cr. at Manzanita Rec. Area, along US Hwy 89A, 5-VI-1993, 3 larvae; YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 22-IV-1993, 1 larva.

Wiggins (1977) illustrated the larva of this species from Cochise Co., AZ.

### Family Glossosomatidae

\**Agapetus boulderensis* Milne. COCONINO CO., Oak Cr. along US Hwy 89A, S of Pine Flats Rec. Area, 7-VI-1993, 1 ♂ mmt, many larvae.

This species has been previously reported from Colorado (Milne 1936), Utah (Baumann and Unzicker 1981), and Wyoming (Denning 1948).

*Culoptila kimminsi* Denning. APACHE CO., the location label contained with the holotype reads, "Greer, White Mountains; 8000' Arizona; June 7, 1958; C.P. Alexander", Holotype ♂ (CAS Type No. 16165).

We borrowed the ♂ holotype of this species with the possibility that it might be a synonym of *C. moselyi*, since both species were apparently collected together (see comments below for *C. moselyi*) and subsequently described by Denning (1965). The type is contained in a cork-stoppered, shell vial containing alcohol and it is brittle and in poor condition; the head, right fore- and hind-wings, and right meso- and meta-thoracic legs are missing. The genitalia however, were intact and somewhat flattened. Genitalic characters differed from those of *C. moselyi* in the shape of the tenth tergite and the inferior appendages.

*Culoptila moselyi* Denning. Material Examined: COCONINO CO., West Fork Oak Cr., N Sedona, 15-VI-1978, M. W. Sanderson, 2 ♂♂; Oak Cr. at Manzanita Rec. Area, along US Hwy 89A, 25-IV-1993, 1 larva; Oak Creek Canyon, 13-16-VI-1961, S.G. Jewett. Holotype ♂ (CAS Type No. 16166); same as previous but 16-VI-1961, Allotype ♀ (CAS Type No. 16166).

The type data given by Denning (1965) reads, "Greer, White Mountains (near Springerville), Apache County, Arizona, 8000 feet, 7 June 1958, C.P. Alexander". This is apparently erroneous, as we discovered during our examination of the ♂ holotype that its hand written locality label read, "Oak Creek Canyon, Arizona; June 13-16, 1961; S.G. Jewett". The allotype location label was correctly reported by Denning (1965). Two male paratypes were reported as being deposited in the CAS, but we were unable to locate them despite the presence of a fourth label with the allotype that read, "Paratype ♂; *Culoptila moselyi*; D.G. Denning 1965". Wiggins (1977) illustrated and reported the larva of *C. moselyi* from the Chiricahua Mountains, Arizona. The holotype and allotype are contained in alcohol but are dried and brittle; the specimens are intact except for a few missing legs and antennae. The Sanderson material examined herein and three additional vials (not examined by us) are deposited in the INHS.

*Glossosoma ventrale* Banks. COCONINO CO., Oak Cr. at Manzanita Rec. Area, along US Hwy 89A, 25-VI-1993, 7 larvae; Oak Cr. along US Hwy 89A, S of Pine Flats Rec. Area, 7-VI-1993, 1 ♂ mmt, 3 pupae.

### Family Helicopsychidae

\**Helicopsyche borealis* (Hagen). COCONINO CO., Oak Cr., at Manzanita Rec. Area, along US Hwy 89A, 5-VI-1993, 2 larvae; YAVAPAI CO., Verde R., at US 89A, Cottonwood, AZ, 4-5-VI-1993, 4 ♂♂; Bubbling Ponds, 1 km N Page Springs (town), 46-VI-1993, 2 ♂♂; Oak Cr. below Page Springs Fish Hatchery, 5-6-VI-1993, 5 ♂♂, 3 ♀♀.

This species has been reported previously as "widely distributed on nearly all of the North American continent, from Mexico to Nova Scotia and Alberta" (Schmid 1983).

*Helicopsyche mexicana* Banks. COCONINO CO., Oak Cr. at Manzanita Rec. Area, along US Hwy 89A, 25-IV-1993, 1 larva; Oak Cr., at Sterling Spring Fish Hatchery, along US Hwy 89A, 4-5-VI-1993, 1 ♂.

### Family Hydrobiosidae

*Atopsyche sperryi* Denning. APACHE CO., Greer, White Mts., Government Spring, 7-VI-1993, P. Wagner, 4 pupae, 6 larvae; COCONINO CO., Oak Cr., at Manzanita Rec. Area, along US Hwy 89A, 25-IV-1993, 1 ♂, 1 ♀, 7 larvae; same but 5-6-VI-1993, 1 ♂; Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-5-VI-1993, 1 ♂; Oak Cr., along US Hwy 89A, S of Pine flats Rec. Area, 7-VI-1993, 1 ♂, 1 ♀.

Some males and females were reared from pupae in the laboratory. Larval and metamorphic material compare well with the undetermined *Atopsyche* illustrated from Coconino Co. by Wiggins (1977).

### Family Hydropsychidae

*Ceratopsyche oslari* (Banks). COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-5-VI-1993, 6 ♂♂.

*Ceratopsyche venada* (Ross). COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 22-IV-1993, 2 ♂♂, 12 larvae; same but, 4-6-VI-1993, 6 ♂♂; Oak Cr., at Manzanita Rec. Area, along US Hwy 89A, 5-VI-1993, 2 pupae, 1 larva; YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 22-IV-1993, 2 larvae; same but 4-6-VI-1993, 4 ♂♂; Bubbling Ponds Fish Hatchery, Page Springs (town), 7 ♂♂, 14 larvae; same but 5-VI-1993, 9 larvae; Oak Cr., below Page Springs Fish Hatchery, 22-IV-1993, 1 ♂, same but 5-6-VI-1993, 2 ♂♂.

*Cheumatopsyche arizonensis* (Ling). COCONINO CO., Oak Cr. at Sterling Spring Fish Hatchery, US Hwy 89A, 4-5-VI-1993, 1 ♂; YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 22-23-IV-1993, 55 ♂♂♀♀; same but 4-6-VI-1993, 11 ♂♂; Bubbling Ponds Fish Hatchery, 23-IV-1993, 31 ♂♂; Oak Cr., below Page Springs Fish Hatchery, 5-6-VI-1993, 12 ♂♂.

*Cheumatopsyche pinula* Denning. YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 22-IV-1993, 3 ♂♂; same but 4-5-VI-1993, 3 ♂♂; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 4 ♂♂; Page Springs, at Page Springs Fish

Hatchery, Page Springs (town), 23-IV-1993, 4 ♂♂; Page Springs, at Page Springs Fish Hatchery, 22-IV-1993, 5 ♂♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 3 ♂♂.

*\*Hydropsyche auricolor* Ulmer. YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 23-IV-1993, 8 ♂♂; same but 4-5-VI-1993, 1 ♂; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 14 ♂♂; Oak Cr., below Page Springs Fish Hatchery, 5-6-VI-1993, 62 ♂♂; Page Springs, at Page Springs Fish Hatchery, 22-IV-1993, 1 ♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 73 ♂♂.

This species was known for a long time in the southwestern United States and northwestern Mexico as *H. solex* Ross (Flint 1967); Buenosoria and Flint (1978) listed the latter as a junior synonym of the former.

*Hydropsyche occidentalis* Banks. YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs, 4-5-VI-1993, 1 ♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 104 ♂♂.

*Smicridea arizonensis* Flint. YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 22-IV-1993, 1 ♂; same but 5-6-VI-1993, 1 ♀; Bubbling Ponds, 1 km N Page Springs (town), 4-5-VI-1993, 1 ♂, 1 ♀; Verde R., at US Hwy 89A bridge, Cottonwood, AZ, 4 ♀♀.

### Family Hydroptilidae

*Alisotrichia arizonica* (Blickle & Denning). YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs, 4-5-VI-1993, 1 ♂, 1 ♀.

This rare micro-caddisfly was originally designated as the type species for the new genus *Rioptila* described from Oak Creek (Blickle and Denning 1977). Recently, Harris and Holzenthal (1993) reduced *Rioptila* to the status of a junior synonym of *Alisotrichia* based on characters of adult males and females. To our knowledge, the collection reported here represents the third collection of this rare species in Arizona since the type series in 1949. Blickle (1979), Baumann and Unzicker (1981), and Harris and Holzenthal (1993) recorded this species from Utah.

*Hydroptila arctica* Ross. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-6-VI-1993, 52 ♂♂.

*Hydroptila icona* Mosely. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, 4-6-VI-1993, 7 ♂♂; YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 5-6-VI-1993, 6 ♂♂; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 2 ♂♂; Bubbling Ponds, 1 km N Page Springs (town), 4-5-VI-1993, 54 ♂♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 134 ♂♂.

*Hydroptila rono* Ross. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-6-VI-1993, 9 ♂♂.

*\*Ithytrichia clavata* Morton. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-5-VI-1993, 2 ♂♂.

This holarctic species has been reported previously from California (Ross 1944), Oklahoma (Ross 1944), Texas (Cloud and Stewart 1974), and Utah (Baumann and Unzicker 1981) as well as 17 other Nearctic states and provinces.

*Leucotrichia limpia* Ross. YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 22-IV-1993, 91 ♂♂; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 1 ♂; Bubbling Ponds, 1 km N Page Springs, 23-IV-1993, 1 ♂.

Larvae of this species were abundant on rock surfaces.

*\*Mayatrachia ayama* Mosely. YAVAPAI CO., Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 1 ♂.

This species has been reported previously from New Brunswick to Alberta (Blickle 1979) to Costa Rica (Bueno-Soria and Flint 1978).

*Ochrotrichia dactylophora* Flint. YAVAPAI CO., Page Springs, at Page Springs Fish Hatchery, 23-IV-1993, 2 ♂♂.

Flint (1965) listed the type locality for this species as "Arizona, Coconino County, West Fork, 16 miles southwest of Flagstaff, 6500 ft. elevation". Denning and Blickle (1972) noted that Oak Creek Canyon may be the northern limit of this species.

*Ochrotrichia ildria* Denning & Blickle. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 22-IV-1993, 1 ♂.

The type locality for this species is Oak Creek Canyon (Denning and Blickle 1972).

*Ochrotrichia quadrispina* Denning & Blickle. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 22-IV-1993, 1 ♂; same but 4-6-VI-1993, 2 ♂♂; YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 22-IV-1993, 1 ♂; same but 5-6-VI-1993, 1 ♂.

This species was described from Portal, Cochise Co., Arizona.

*Ochrotrichia stylata* (Ross). COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, 4-5-VI-1993, 1 ♂; YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 5-6-VI-1993, 80 ♂♂; Page Springs, at Page Springs Fish Hatchery, 23-IV 1993, 2 ♂♂; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 1 ♂; Bubbling Ponds, 1 km N Page Springs (town), 10 ♂♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 30 ♂♂.

*Ochrotrichia tarsalis* (Hagen). YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 5-6-VI-1993, 2 ♂♂.

*Oxyethira aculea* Ross. YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 4-5-VI-1993, 1 ♂.

*Oxyethira dualis* Morton. YAVAPAI CO., Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 2 ♂♂; Bubbling Ponds, 1 km N Page Springs (town), 23 IV-1993, 1 ♂; same but 4-5-VI-1993, 2 ♂♂.

*Oxyethira pallida* (Banks). YAVAPAI CO., LoLo Mai Spring, 1 km N Page Springs (town), 5-6-VI-1993, 1 ♂.

### Family Lepidostomatidae

*Lepidostoma knulli* Ross. APACHE CO., Government Spring, Hwy 377, Greer, White Mts, 7-VI-1993, P. Wagner, many larvae; COCONINO CO., Oak Cr., at Manzanita Rec. Area, 5-VI-1993, 16 larvae.

*Lepidostoma ormeum* Ross. COCONINO CO., Oak Cr., at Manzanita Rec. Area, 25-IV-1993, 1 larva.

Weaver (1988) has previously recorded this species from Oak Creek.

### Family Leptoceridae

*Nectopsyche stigmatica* (Banks). COCONINO CO., Oak Cr., at Manzanita Rec. Area, US Hwy 89A, 5-VI-1993, 10 larvae; YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 5-6-VI-1993, 12 ♂♂♀♀; Bubbling Ponds Fish Hatchery, Page Springs (town), 23-IV-1993, 10 ♂♂♀♀; Bubbling Ponds, 1 km N Page Springs (town), 22-23-IV-1993, 21 ♂♂♀♀; same but 4-5-VI-1993, 6 ♂♂♀♀.

\**Ocetis avara* (Banks). GILA CO., East Fork Verde R., at Control Rd., 24-IV 1993, 1 ♂; YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 23-IV-1993, 1 ♀; same but 5-6-VI-1993, 7 ♂♂♀♀; Bubbling Ponds, 1 km N Page Springs (town), 23 IV-1993, 32 ♂♂♀♀; same but 4-5-VI-1993, 6 ♂♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 8 ♂♂.

This species has been reported previously from Canada to Ecuador, Colombia, and Venezuela (Flint 1991),

### Family Limnephilidae

*Apatania arizona* Wiggins. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-7-VI-1993, 2 ♂♂, 1 ♀, 1 larva; same but Pumphouse Wash, 28-X-1978, M. W. Sanderson, 1 ♂.

*Hesperophylax magnus* (Banks). COCONINO CO., Oak Cr., at Manzanita Rec. Area, along US Hwy 89A, 5-VI-1993, 3 larvae

### Family Odontoceridae

\**Marilia nobscia* Milne. YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs, 22-IV-1993, 1 ♂, 1 ♀, 1 larva; Page Springs, at Page Springs Fish Hatchery, 22-IV-1993, 2 ♂♂, 1 ♀ .



This species has been reported previously from Texas (Milne 1936) and Baja California in Mexico (Ross 1951).

### Family Philopotamidae

*Chimarra utahensis* Ross. Several hundred males, females, pupae, and larvae were examined from locations throughout the Oak Creek and Verde River drainages in Coconino and Yavapai Counties during April and June, 1993.

This species was the most abundant and frequently encountered species. Adults could be collected throughout the day and at night with all methods described herein.

*Wormaldia arizonensis* (Ling). YAVAPAI CO., Oak Cr., below Page Springs Fish Hatchery, 22-IV-1993, 2 ♂♂; Page Springs, at Page Springs Fish Hatchery, 23-IV-1993, 1 ♂; Bubbling Ponds, 1 km N Page Springs (town), 23-IV-1993, 1 ♂; same but 4-5-VI 1993, 1 ♂.

### Family Polycentropodidae

*Polycentropus arizonensis* Banks. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-5-VI-1993, 6 ♂♂.

*Polycentropus halidus* Milne. YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs (town), 23-IV-1993, 1 ♂; Verde R., at US Hwy 89A, Cottonwood, AZ, 4-5-VI-1993, 22 ♂♂.

### Family Rhyacophilidae

*Rhyacophila coloradensis* Banks. COCONINO CO., Oak Cr., at Sterling Spring Fish Hatchery, 5-6-VI-1993, 3 ♂♂.

### Family Sericostomatidae

*Gumaga griseola* Mac Lachlan. YAVAPAI CO., Oak Cr., at Sterling Spring Fish Hatchery, US Hwy 89A, 4-5-VI-1993, 5 ♂♂.

*Gumaga nigricula* Mac Lachlan. COCONINO CO., Oak Cr., at Manzanita Rec. Area, along US Hwy 89A, 5-VI-1993, 2 larvae.

These larvae are identical to the one figured and reported from Coconino Co. by Wiggins (1977) as *G. nigricula*.

### Family Uenoidae

*Oligophlebodes minutus* (Banks). APACHE CO., Greer, White Mts., Government Sprin , Co. Rd . 1120, 6-VI-1993, P. Wagner, many pupae, ♂♂ mmt.

### Family Xiphocentronidae

*Cnodocentron sp.* A YAVAPAI CO., Bubbling Ponds, 1 km N Page Springs, 22-23-IV-1992, 7 ♂♂.

This undescribed species of *Cnodocentron* represents the first record of this genus occurring in the Nearctic region. Despite intense usage of all adult collecting methods at the Bubbling Ponds site, specimens were only collected in the 6 m Malaise trap. Attempts to collect the female and associate the larva from this site are in progress. This species will be described by Moulton and Stewart in a later paper.

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