

WINTER STONEFLIES (PLECOPTERA) OF NEW MEXICO

Gerald Z. Jacobi¹ and Richard W. Baumann²

ABSTRACT.— Twenty-two species of winter emerging Plecoptera were collected in New Mexico from 1979 to 1982. Distributional records are given for 13 that are new state records, including 2 new species, and 9 previously reported species.

Winter stoneflies, usually defined, mean species in the families Capniidae (Nebeker and Gaufin 1968) and Nemouridae (Baumann et al. 1977). For this study, we have expanded the list to include additional cold lotic species (Baumann 1979) in the Taeniopterygidae and Perlodidae. These emerged on snow or ice, or prior to peak spring runoff when air and water temperatures were below 12 C and 8 C, respectively.

New state records, including two previously undescribed species, follow: *Capnia barbata* Frison, *C. coloradensis* Claassen, *C. vernalis* Newport, *C. wanica* Frison, *Iso-capnia vedderensis* (Ricker), *Mesocapnia arizonensis* (Baumann & Gaufin), *M. werneri* (Baumann & Gaufin), *Utacapnia logana* (Nebeker & Gaufin), *Utacapnia poda* (Nebeker & Gaufin), *Doddsia occidentalis* (Banks), *Taenionema pacificum* (Banks), *Taenionema* sp. A, and *Taeniopteryx* sp. A.

Previously recorded species (Stewart et al. 1974, Stark et al. 1975, and Baumann et al. 1977) are: *Capnia confusa* Claassen, *C. gracilaria* Claassen, *C. fibula* Claassen, *Eucapnopsis brevicauda* (Claassen), *Mesocapnia frisoni* (Baumann and Gaufin), *Prostoia besametsa* (Ricker), *Zapada cinctipes* (Banks), *Z. haysi* (Ricker), and *Skwala parallela* (Frison).

In addition to distributional data for new state records, recent distributional data are given for previously reported species. All specimens were collected by G. Z. Jacobi unless otherwise noted.

Capnia barbata Frison

Capnia barbata Frison, 1944.

This species was listed as being restricted to the Southern Rocky Mountain Zone

(Nebeker and Gaufin 1967). It had been collected in Arizona and Colorado but not in New Mexico (Baumann et al. 1977). Here it is reported from seven counties in New Mexico, which include the northern Sangre de Cristo, central Manzano, south central Sacramento, and southwestern Black and Mogollon mountain ranges. GRANT Co., Cherry Creek, Pinos Altos, 2,012 m, 6-XI-80, 3 ♀ (dried); Little Cherry Creek, Hwy 255, 2,012 m, 25-III-81, 3 ♀; Sapello River, Hwy 15, 1,767 m, 25-III-81, G. Z. J. and L. R. Smolka, 50 ♀. LINCOLN Co., Rio Bonito, Mill Creek Picnic Area, 2,164 m, 14-III-80, 2 ♂ 29 ♀; Rio Ruidoso, 2,188 m, 14-III-80, 1 ♀; Eagle Creek, Hwy 127, 2,179 m, 14-III-80, 2 ♀; Eagle Creek, Hwy 117, 2,164 m, 14-III-80, 1 ♂ 8 ♀; Nogal Creek, Nogal, 1,975 m, 14-III-80, 1 ♀. Three Rivers, Three Rivers Cmpgd., 1,859 m, 7-III-82, 1 ♂ 1 ♀. RIO ARRIBA Co., Canjilon Creek, north of Ghost Ranch, 2,102 m, 22-III-82, 1 ♂; Brazos River, Hwy 84-64 bridge, 2,256 m, 22-III-82, G. Z. J. and L. R. Smolka, 6 ♂ 4 ♀. SAN MIGUEL Co., Dalton Creek Canyon, 2,195 m, 28-II-79 reared to 2-IV-79, 1 ♂ 2 ♀; 28-II-79, 3 ♂ 11 ♀ 5n; 3-III-80, 26 ♂ 29 ♀; Pecos River, Hwy 63, 2,115 m, 30-III-80, 1 ♂; Macho Creek Canyon, 2,225 m, 30-III-80, 3 ♀. SANTA FE Co., Little Tesuque Creek, 2,377 m, 17-II-79, 4 ♂ 12n; La Cueva Creek, 2,256 m, 6-IV-80, G. Z. and C. L. Jacobi, 6 ♂ 3 ♀. SIERRA Co., Percha Creek, 1,905 m, 6-IV-79, R. Gordon, 1 ♀ (NMSU). SOCORRO Co., Water Canyon, 1,981 m, 23-III-81, 8 ♀. TAOS Co., Rio Hondo, Twining, 2,862 m, 17-III-80, 1 ♀; Red River, West Fork, 2,804 m, 18-III-80, 5 ♀; Red River, Middle Fork, 2,865 m, 5-V-80,

¹State of New Mexico, Health and Environment Department, P.O. Box 968, Santa Fe, New Mexico 87503.

²Bean Life Science Museum and Department of Zoology, Brigham Young University, Provo, Utah 84602.

2 ♀. TORRANCE Co., Canon de Tajique, 1.5 km above 4th of July Picnic Area, 2,331 m, 9-VI-80, 2 ♀; 11-IV-80, 2 ♀; 2.4 km above 4th of July Picnic Area, 2,377 m, 9-IV-80, 3 ♀.

Capnia coloradensis Claassen

Capnia coloradensis Claassen, 1937.

Capnia coloradensis, Ricker, 1965.

Capnia coloradensis had not been reported previously from New Mexico. The records from Taos County extend the distribution southward from the Sangre de Cristo Mountains in southern Colorado into northern New Mexico. All New Mexico locations are within a 25 km radius of each other. TAOS Co., Arroyo Seco, 2,426 m, 16-III-79, 4 ♂ 3 ♀; 19-III-80, 1 ♂; Red River, jct East and West forks, 2,865 m, 18-III-79, 1 ♂ 3 ♀; Red River, Red River, 2,651 m, 18-III-79, 3 ♀; Red River, USGS gage, 2,706 m, 18-III-80, S. J. Oppenheimer and A. M. Young, 5 ♂ 4 ♀; 31-III-80, 2 ♂ 5 ♀; Cabresto Creek, 2,401 m, 19-III-80, 1 ♀.

Capnia confusa Claassen

Capnia nivalis Neave, 1929.

Capnia confusa Claassen, 1936.

Capnia ligulata Hanson, 1943.

This species has a wide distribution in the Central Rocky Mountains (Nebeker and Gaufin 1967) and has been recorded from counties in northern New Mexico. Collections in Lincoln County are new records and extend the southern distribution limit approximately 250 km. Recent New Mexico records include: COLFAX Co., small trib. Cieneguilla Creek, Rd. B 5, 2,520 m, 24-IV-82, 1 ♂ 2 ♀. LINCOLN Co., Rio Ruidoso, 2,164 m, 14-III-80, 1 ♂ 1 ♀; 2,188 m, 14-III-80, 4 ♀. SAN MIGUEL Co., Dalton Creek Canyon, 2,195 m, 30-III-80, 1 ♂ 1 ♀; Holy Ghost Creek, 2,335 m, 30-III-80, 5 ♂ 1 ♀; Macho Creek Canyon, 2,225 m, 30-III-80, 1 ♂ 1 ♀; Pecos River, The Box, 2,438 m, 30-III-80, 22 ♂ 33 ♀; Pecos River, below Rio Mora, 2,405 m, 30-III-80, 24 ♂ 26 ♀; Pecos River, Hwy 63, 2,115 m, 30-III-80, 1 ♂ 5 ♀; 6-IV-80, 2 ♂ 6 ♀; Pecos River, Windy Bridge Picnic Area, 2,286 m, 30-III-80, 24 ♂ 14 ♀; Pecos River, Willow Creek Picnic Area, 2,377 m, 30-III-80, 15 ♂ 7 ♀ 1n; Pecos

River, above Dalton Creek Canyon, 2,195 m, 20-IV-80, 2 ♂; Rio Mora, USGS gage, 2,408 m, 30-III-80, 1 ♂; 8-V-80, 11 ♂ 6 ♀. TAOS Co., Cabresto Creek, 2,401 m, 5-IV-80, 1 ♀; Rio Fernando de Taos, La Sombra Picnic Area, 2,377 m, 17-III-79, 1 ♀; Rio Hondo, Twining, 2,862 m, 17-III-79, 1 ♂; Rio Hondo, USGS gage, 2,331 m, 24-IV-79, 1 ♂; Red River, Hwy 3, 2,219 m, 19-III-80, 6 ♂ 11 ♀; 1-IV-80, 22 ♂; Red River, 2,621 m, 5-IV-80, 7 ♂ 2 ♀; Red River, Red River, 2,637 m, 5-IV-80, 2 ♂ 3 ♀.

Capnia fibula Claassen

Capnia fibula Claassen, 1924.

T. D. A. Cockerell first collected this species at the "Las Vegas Hot Springs" in 1902 (Claassen 1924). His collection site was probably the Gallinas River above the Hot Springs (Hanson 1946). The only other locality this species has been previously recorded from is in central Arizona, Coconino Co., West Fork of Oak Creek, approximately 700 km west of the New Mexico site (Baumann et al. 1977). Our recent New Mexico collections, 77 years later, are: SAN MIGUEL Co., Gallinas River, above Las Vegas Hot Springs, 2,073 m, 27-II-79, 14 ♂ 5 ♀ 14 n; Sapello River, Hwy 3, 2,102 m, 8-III-81, L. R. Smolka, 6 ♂ 2 ♀; 15-III-81, L. R. Smolka, 20 ♂ 22 ♀; Manuelitas Creek, Hwy 94, 2,164 m, 8-III-81, L. R. Smolka, 4 ♂.

Capnia gracilaria Claassen

Capnia gracilaria Claassen, 1924.

Capnia gracilaria was recorded by Nebeker and Gaufin (1967) as being common to four western mountain zones: the Pacific Northwest, Northern Rockies, Southern Rockies, and the Wasatch Range. It had been recorded previously from Taos and Santa Fe counties in New Mexico. Additional records are: COLFAX Co., small trib. Cieneguilla Creek, Rd B 5, 2,520 m, 12-III-82, 6 ♂, 1 ♀. GRANT Co., Little Cherry Creek, 2,001 m, 25-III-81, G. Z. J. and L. R. Smolka, 1 ♀. LINCOLN Co., Nogal Creek, 1,975 m, 14-III-80, 5 ♀. SANDOVAL Co., San Antonio Creek, Hwy. 125, 2,331 m, 25-III-79, 1 ♂. SANTA FE Co., Little Tesuque Creek, Hyde Park, 2,453 m, 29-III-81, 6 ♂ 8 ♀. TAOS Co.,

Arroyo Seco, 2,426 m, 16-III-79, 6 ♀; 19-III-80, 1 ♂, 1 ♀; Gavilan Canyon, 2,743 m, 16-III-79, 12 ♂; 24-IV-79, 1 ♂; Italianos Creek, 2,640 m, 23-II-79, 1 ♂ 1 ♀; 24-IV-79, 1 ♀; Rio del Medio, El Rito, 2,429 m, 8-III-80, 2 ♂ 1 ♀; Rio Hondo, Twining, 2,862 m, 16-III-79, 4 ♂ 3 ♀; 20-III-79, 3 ♂ 3 ♀; 23-III-79, 2 ♀; 17-III-80, 1 ♂ 1 ♀; Rio Hondo, 2,575 m, 16-III-79, 1 ♂ 1 ♀; 19-III-80, 1 ♂ 4 ♀; Rio Hondo, USGS gage, 2,331 m, 16-II-80, 4 ♂ 2 ♀; Rio Hondo, above Italianos Creek, 2,633 m, 19-III-80, 5 ♂ 4 ♀; Rio Hondo, Upper Chuchilla Picnic Area, 2,401 m, 19-III-80, 8 ♂ 10 ♀; Rito de La Olla, 2,286 m, 8-III-80, 2 ♀; South Fork Creek, 2,545 m, 16-III-79, 2 ♂.

Capnia vernalis Newport

Capnia vernalis Newport, 1848.

Capnia limata Frison, 1944.

This species is typically found in the northern United States and Canada (Nebeker and Gaufin 1967). Baumann et al. (1977) reported it from several western states, including Colorado and Utah. The following records are the first for New Mexico: COLFAX Co., Cienegulla Creek, above Eagle Nest Lake, 2,499 m, 16-III-81, 8 ♂ 13 ♀. RIO ARRIBA Co., Brazos River, Hwy 84-64 bridge, 2,256 m, 22-III-82, G. Z. J. and L. R. Smolka, 3 ♂ 6 ♀; Chamita River, 1.5 km above Chama, 2,431 m, 23-III-82, G. Z. J. and L. R. Smolka, 10 ♂ 12 ♀.

Capnia wanica Frison

Capnia wanica Frison, 1944.

Capnia wanica is said to be confined to the Southern Rockies and has been recorded from Colorado and Utah (Baumann et al. 1977). This single collecting locality in the Sangre de Cristo Mountains of New Mexico is a new record for the state: COLFAX Co., Vermejo River, above York Creek, 2,179 m, 7-III-79, 5 ♂, 3 ♀.

Eucapnopsis brevicauda (Claassen)

Capnia brevicauda Claassen, 1924.

Eucapnopsis brevicauda, Needham and Claassen, 1925.

Eucapnopsis brevicauda is one of the most common species of Capniidae in western North America (Nebeker and Gaufin 1967

and Baumann et al. 1977). Previous New Mexico records have been from Santa Fe and Taos counties: New records for New Mexico include: GRANT Co., Iron Creek, Hwy 90, 2,149 m, 25-III-81, 2 ♀. LINCOLN Co., Rio Ruidoso, 2,164 m, 14-III-80, 1 ♂; 2,188 m, 14-III-80, 2 ♂. SANDOVAL Co., Rio de Las Vacas, 2,499 m, 1-VI-80, 3 ♂ 2 ♀. SAN MIGUEL Co., Pecos River, Hwy 63, 2,115 m, 30-III-80, 1 ♂ 1 ♀; 20-IV-80, 3 ♀; Pecos River, above Dalton Canyon, 2,210 m, 20-IV-80, 1 ♀. TAOS Co., Cabresto Creek, 2,401 m, 5-V-80, 2 ♀; Gavilan Canyon, 2,743 m, 24-IV-79, 1 ♂; Rio Hondo, 2,545 m, 1-V-80, 9 ♂ 8 ♀; 7-V-80, 7 ♂ 1 ♀ 3n; 14-V-80, 1 ♂ 1 ♀; 2,499 m, 7-V-80, 7 ♂ 15 ♀; Rio Hondo, jct Italianos Creek, 2,640 m, 6-V-80, 1 ♂ 1 ♀; Rio Hondo, Twining, 2,862 m, 24-IV-79, 1 ♂; Rio Hondo, USGS gage, 2,331 m, 14-III-79, 1 ♂; 24-IV-79, 2 ♂ 1 ♀; 6-V-80, 6 ♂ 11 ♀; 14-V-80, 1 ♂; Red River, USGS gage, 2,706 m, 5-V-80, L. R. Smolka, 1 ♂ 1 ♀; Red River, jct East and Middle forks, 2,880 m, 5-V-80, 1 ♂ 1 ♀.

Isocapnia vedderensis (Ricker)

Eucapnopsis vedderensis Ricker, 1943.

Isocapnia vedderensis (Ricker), 1965.

This species is found in the Pacific Northwest, Northern Rockies, and Wasatch Mountains (Nebeker and Gaufin 1967). These New Mexico records, the first from the Southern Rockies, extend the range approximately 1000 km to the southeast: LINCOLN Co., Three Rivers, Three Rivers Cmpgd, 1,859 m, 7-III-82, 1 ♂. SAN MIGUEL Co., Pecos River, above jct Dalton Creek, 2,210 m, 20-IV-80, 1 ♀. TAOS Co., Red River, Hwy 3, 2,219 m, 5-V-80, 2 ♂.

Mesocapnia arizonensis (Baumann & Gaufin)

Capnia arizonensis Baumann & Gaufin, 1969.

Mesocapnia arizonensis, Zwick, 1973.

Mesocapnia arizonensis has been previously recorded only from three Arizona counties in the Southern Rockies. This New Mexico record in the Black Range (Gila National Forest) extends the distribution approximately 200 km eastward: SIERRA Co., Percha Creek, 1,905 m, 6-IV-79, J. R. Zimmerman, 1 ♂ 1 ♀ 7n (NMSU).

Mesocapnia frisoni (Baumann and Gaufin)*Capnia frisoni* Baumann and Gaufin, 1970.*Mesocapnia frisoni*, Zwick, 1973.

Mesocapnia frisoni is an infrequently collected species found in the Southern Rockies at low elevations near mountains (Baumann et al. 1977). Previous New Mexico records include two central counties: Guadalupe Co., (Middle Pecos River) and Lincoln Co., (Sacramento Mountains). Recent records are from: CATRON Co., East Fork Gila River, 1,620 m, 9-IV-79, J. Anderson, 8 ♂ 12 ♀ 4n (NMSU). GUADALUPE Co., Pecos River, Anton Chico, 1,585 m, 5-I-80, 5n. OTERO Co., Tularosa River, Hwy 70, below Bent, 1,676 m, 7-III-82, G. Z. J. and S. J. Cary, 7 ♂, 10 ♀. SAN MIGUEL Co., Pecos River, Villanueva, 1,798 m, 27-II-79, 1 ♂ (mature nymph) 1 ♀ 3n; Sapello River, Hwy 3, 2,102 m, 8-III-81, L. R. Smolka, 3 ♂ 6 ♀; 15-III-81, L. R. Smolka, 25 ♂ 15 ♀. SIERRA Co., Percha Creek, 6-IV-79, 1,605 m, J. R. Zimmerman, 1 ♂ 6 ♀ (NMSU).

Mesocapnia weneri (Baumann & Gaufin)*Capnia weneri* Baumann & Gaufin, 1970.*Mesocapnia weneri*, Zwick, 1973.

This species had been reported only from central Arizona (Baumann et al. 1977). These two new records from New Mexico extend the distribution approximately 250 km eastward: GRANT Co., Cherry Creek, Hwy 255, 2,012 m, 25-III-81, G. Z. J. and L. R. Smolka, 2 ♂ 10 ♀; Iron Creek, Hwy 90, 2,149 m, 25-III-81, 1 ♂ 1 ♀.

Utacapnia logana (Nebeker & Gaufin)*Capnia logana* Nebeker & Gaufin, 1965.*Utacapnia logana*, Zwick, 1973.

The following collections from New Mexico are new state records. This species is restricted in its distribution to mountain streams in the Rocky Mountains (Baumann et al. 1977). It was recorded previously from Colorado, Utah, and Wyoming (Nebeker and Gaufin 1967). New Mexico localities include: COLFAX Co., Cimarron River, jct Tolby Creek, 2,438 m, 18-III-79, 2 ♂. SAN MIGUEL Co., Pecos River, above jct Willow Creek, 2,377 m, 4-III-80, 2 ♂ 2 ♀; Holy Ghost Creek, 2,335 m, 4-III-80, 4 ♂; Rio Mora,

2,408 m, 30-III-80, 2 ♂; Pecos River, 1 km below Rio Mora, 2,405 m, 30-III-80, 1 ♂; Pecos River, The Box, 2,438 m, 30-III-80, 1 ♂. TAOS Co., Arroyo Seco, 2,426 m, 16-III-79, 5 ♂ 5 ♀; Cabresto Creek, 2,401 m, 17-II-80, G. Z. J. and D. F. Tague, 4 ♂ 2 ♀; Cerro Ditch, El Rito, 2,426 m, 8-III-80, 1 ♂; Rio Chiquito, 2,280 m, 8-III-80, 2 ♂; Rio Fernando de Taos, La Sombra Picnic Area, 2,377 m, 17-III-80, 5 ♂ 3 ♀; Rio Hondo, USGS gage, 2,331 m, 14-III-79, 1 ♂; 16-III-79, 1 ♂; 16-II-80, 1 ♂; Rio Hondo, Hwy 3, 2,115 m, 16-II-80, 1 ♂; Rio Pueblo, 2,721 m, 8-III-80, 1 ♀; Rito del Medio, El Rito, 2,429 m, 8-III-80, 5 ♂ 3 ♀; Rito de La Olla, 2,286 m, 8-III-80, 4 ♂.

Utacapnia poda (Nebeker & Gaufin)*Capnia poda* Nebeker & Gaufin, 1965.*Utacapnia poda*, Zwick, 1973.

Utacapnia poda is found in the Northern and Southern Rockies (Nebeker and Gaufin 1967). The following new state records are from northern New Mexico near the Colorado border: RIO ARRIBA Co., Chama River, below jct Chamita River, 2,342 m, 23-III-82, G. Z. J. and L. R. Smolka, 5 ♂; Chama River, Hwy 84-64 bridge, 2,370 m, 22-IV-82, 6 ♂ 11 ♀; Chamita River, near jct Chama River, 2,370 m, 22-IV-82, 11 ♂ 21 ♀.

Prostoia besametsa (Ricker)*Nemoura glabra* Claassen, 1923.*Nemoura completa*, Ricker, 1943.*Nemoura (Prostoia) besametsa* Ricker, 1952.*Prostoia besametsa*, Illies, 1966.

This species had been collected previously in some northern New Mexico counties (Baumann et al., 1977). Recent records include: RIO ARRIBA Co., Rio Puerco, Rio Puerco Cmpgd, 2,484 m, 11-IV-81, 1 ♂ 1 ♀. SANDOVAL Co., San Antonio Creek, Hwy 126, 2,780 m, 1-VI-80, 1 ♂ 2 ♀. SAN MIGUEL Co., Pecos River Hwy 63, 2,305 m, 30-III-80, 3 ♂ 4 ♀; 20-IV-80, 6 ♂ 12 ♀. TAOS Co., Rio Fernando de Taos, Capulin Picnic Area, 2,390 m, 9-V-82, 3 ♂ 1 ♀; Rio Hondo, 2,545 m, 1-V-80, 2 ♂; 7-V-80, 7 ♂ 4 ♀; 14-V-80, 2 ♂; Rio Hondo, Hwy 3, 2,219 m, 19-III-80, 5 ♂ 1 ♀; Rio Hondo, USGS gage, 2,331 m, 16-II-79, G. Z. J. and M. R. Snaveley, 2n;

24-IV-79, 2 ♂ 1 ♀; 6-V-80, 3 ♂; 14-V-80, 1 ♂ 6 ♀ 7n; Rio Hondo, Hondo Cabin, 2,499 m, 7-V-80, 13 ♂ 11 ♀; Rio Hondo, above jct Italianos Creek, 2,640 m, 6-V-80, 22 ♂, 12 ♀; Red River, Middle Fork, 2,865 m, 5-V-80, 1 ♀; Red River, jct East and Middle forks, 2,880 m, 5-V-80, 1 ♂; Red River, USGS gage, 2,706 m, 5-V-80, 1 ♂.

Zapada cinctipes (Banks)

Nemoura cinctipes Banks, 1897.

Nemoura (Zapada) cinctipes, Castle, 1939.

Zapada cinctipes, Illies, 1966.

This is the most frequently collected winter stonefly. New records for New Mexico include: COLFAX Co., Cimarron Creek, jct Tolby Creek, 2,438 m, 18-III-79, 2 ♂ 1 ♀; small trib Cimarron River, Hwy 64, 2,557 m, 18-III-79, 2 ♀. RIO ARriba Co., Rio Puerco, Rio Puerco Cmpgd, 2,184 m, 11-IV-81, 2 ♂ 2 ♀; Rio Embudo, Hwy 68, 1,787 m, 12-III-81, 3 ♂ 3 ♀. SANDOVAL Co., Las Huertas Creek, Sandia Mountains, 2,195 m, 23-II-80, 14 ♂ 5 ♀; Las Huertas Creek, Ellis Ranch, 2,438 m, 23-II-80, 1 ♂ 1 ♀; Las Huertas Creek, Las Huertas Picnic Area, 2,316 m, 23-II-80, 21 ♂ 24 ♀; 25-III-80, 2 ♂ 1 ♀; 9-IV-80, 1 ♂ 2 ♀; Las Huertas Creek, Sandia Man Cave Area, 2,079 m, 25-III-80, 9 ♂ 7 ♀; 9-IV-80, 1 ♂ 2 ♀; Redondo Creek, 2,362 m, 25-III-79, 3 ♂ 4 ♀; East Fork, Las Conchas Picnic Area, 2,578 m, 25-III-79, G. Z. and M. D. Jacobi, 22 ♂ 12 ♀; San Antonio Creek, 2,331 m, 25-III-79, 18 ♂ 16 ♀. SAN MIGUEL Co., Dalton Creek, 2,195 m, 28-II-79, 2 ♂ 2 ♀ 2n; 30-III-80, 7 ♂ 5 ♀; 2,210 m, 20-IV-80, 3 ♀; Holy Ghost Creek, 2,335 m, 3-III-80, 25 ♂ 15 ♀; Macho Creek, 2,225 m, 30-III-80, 6 ♂ 6 ♀; Pecos River, above Willow Creek, 2,377 m, 4-III-79, 1 ♂; Pecos River, 1 km below jct Rio Mora, 2,393 m, 30-III-80, 6 ♂ 4 ♀; Pecos River, The Box, 2,438 m, 30-III-80, 4 ♂; Pecos River, Windy Bridge Picnic Area, 2,286 m, 30-III-80, 1 ♂; Pecos River, Hwy 63 bridge, 2,115 m, 6-IV-80, 1 ♂; Pecos River, above jct Dalton Creek, 2,210 m, 20-IV-80, 1 ♀; Rio Mora, 2,408 m, 30-III-80, 7 ♂ 6 ♀; Willow Creek, 2,377 m, 30-III-80, 10 ♂ 10 ♀. SANTA FE Co., North Fork Tesuque Creek, USFS Exp Watershed, 2,947 m, 22-IV-79, 1 ♀. TAOS Co., Arroyo

Seco, 2,426 m, 16-III-79, 1 ♂ 2 ♀; 19-III-80, 2 ♂; Cabresto Creek, USGS gage, 2,401 m, 19-III-80, 2 ♀; Rio Chiquito, 2,280 m, 8-III-80, 3 ♂ 2 ♀; Rio Fernando de Taos, La Sombra Picnic Area, 2,401 m, 17-III-79, 7 ♀; Gavilan Creek, 2,743 m, 16-III-79, 3 ♂; 24-IV-79, 4 ♂ 2 ♀; 3-IV-80, 2 ♂ 1 ♀; Italianos Creek, 2,640 m, 16-III-79, 1 ♂; 23-III-79, 1 ♂ 4 ♀; 14-V-80, 2 ♂ 1 ♀; Rio Hondo, USGS gage, 2,331 m, 16-II-79, G. Z. J. and M. R. Snively, 2n; 14-III-79, 6 ♂ 3 ♀; 16-III-79, 8 ♂ 3 ♀; 29-III-79, 8 ♂ 11 ♀; 24-IV-79, 1 ♀; Rio Hondo, Hondo Cabin, 2,499 m, 16-III-79, 2 ♂; 7-V-80, 2 ♂; Rio Hondo, 2,545 m, 19-III-80, 1 ♂ 2 ♀; Rio Hondo, above jct Italianos Creek, 2,640 m, 19-III-80, 1 ♀; Rio Hondo, Upper Chuchilla Picnic Area, 2,401 m, 19-III-80, 2 ♂ 1 ♀; Manzanita Creek, 2,560 m, 16-III-79, 9 ♂ 4 ♀; 7-V-80, 2 ♀; Rito de La Olla, 2,286 m, 8-III-80, 2 ♂ 1 ♀; Red River, Hwy 3, 2,219 m, 1-IV-80, 1 ♂; Red River, Middle Fork, 2,865 m, 5-V-80, 8 ♂ 3 ♀.

Zapada haysi (Ricker)

Nemoura (Zapada) haysi Ricker, 1952.

Zapada haysi, Illies, 1966.

This species has previously been confused with *Zapada oregonensis* (Claassen) (Stewart et al., 1974). It begins emerging in April and is often still present at higher elevations into the summer. It is known in New Mexico from three counties: Lincoln, Santa Fe, and Taos (Baumann et al. 1977). A recent collection is from: TAOS Co., Rio Hondo, 2,862 m, 22-VII-80, 1 ♀.

Doddsia occidentalis (Banks)

Taeniopteryx occidentalis Banks, 1900.

Taeniopteryx (Doddsia) occidentalis, Needham and Claassen, 1925.

Brachyptera (Doddsia) occidentalis, Jewett, 1959.

Doddsia occidentalis, Illies, 1966.

The following records extend the distribution of this species to New Mexico: SAN MIGUEL Co., Pecos River, 1 km below jct Rio Mora, 2,393 m, 30-III-80, 4 ♂. TAOS Co., Cabresto Creek, 2,401 m, 19-III-80, 3 ♂; Gavilan Canyon, 2,743 m, 24-IV-79, 1 ♂ 1 ♀; Rio Hondo, USGS gage, 2,331 m, 29-III-79, 1 ♂; 6-V-80, 1 ♀; 14-V-80, 1 ♂; Rio Hondo, Twining, 2,862 m, 18-III-80,

2 ♀; 1-V-80, 3 ♂ 1 ♀; 7-V-80, 2 ♀; Rio Hondo, Upper Chuchilla Cmpgd, 2,401 m, 19-III-80, 1 ♂; Rio Hondo, 2,545 m, 19-III-80, 3 ♂ 2n; 30-IV-80, 19 ♀; 1-V-80, 9 ♀; 7-V-80, 5 ♀; Rio Hondo, Hondo Cabin, 2,499 m, 7-V-80, 6 ♀; Rio Hondo, jct Italianos Creek, 2,640 m, 14-V-80, 2 ♂ 1 ♀; Red River, Hwy 3, 2,219 m, 19-III-80, 1 ♂; 31-III-80, 1 ♀; Red River, Middle Fork, 2,880 m, 5-V-80, 4 ♂ 2 ♀; Red River, jct East and Middle forks, 2,865 m, 5-V-80, 1 ♂.

Taenionema pacificum (Banks)

Taeniopteryx pacifica Banks, 1900.

Taenionema analis Banks, 1905.

Taeniopteryx pacifica, Needham and Claassen, 1925.

Brachyptera (*Taenionema*) *pacifica*, Jewett, 1959.

Taenionema pacifica, Illies, 1966.

Taenionema pacificum, Ricker and Ross, 1975.

This species has been recorded previously from New Mexico (Stewart et al. 1974) and (Baumann et al., 1977). New state records for *T. pacificum* include the northern Sangre de Cristo Mountains and the south central Sacramento Mountains: LINCOLN Co., Rio Bonito, Mills Creek Cmpgd 2,164 m, 14-III-80, 7 ♂ 6 ♀. RIO ARRIBA Co., Chama River, Hwy 84-64 bridge, 2,370 m, 23-III-82, G. Z. J. and L. R. Smolka, 6n; 22-IV-82, 3 ♂ 2 ♀ 3n; Chavez Creek, trib Brazos River, 22-IV-82, 1 ♂. SAN MIGUEL Co., Pecos River, Hwy 63, 2,115 m, 30-III-80, 6 ♂ 4 ♀; 7-IV-80, 7 ♂ 5 ♀; 20-IV-80, 1 ♂ 1 ♀. TAOS Co., Rio Hondo, USGS gage, 2,331 m, 16-II-79, 55n.

Taenionema sp. A.

This species is known from only two localities less than 2 km apart in the same drainage of the Gila National Forest in southwestern New Mexico: GRANT Co., Little Cherry Creek, Hwy 255, 2,100 m, 25-III-81, G. Z. J. and L. R. Smolka, 7 ♂ 5 ♀; Bear Creek, Ben Lilly Cmpgd 1,950 m, 25-III-81, 1 ♂ 1 ♀.

It was studied as part of a revision of the genus *Taenionema* by Jean A. Stanger and is described in a forthcoming publication (Stanger and Baumann, in press).

Taeniopteryx sp. A.

A single nymph collected in 1970 from the Pecos River near Santa Rosa was tentatively

identified as *T. nivalis* (Baumann et al., 1977). Collections of adults and nymphs in 1979-80 upstream near Tecolotito and Anton Chico resulted in the discovery of a previously undescribed species of *Taeniopteryx* (Baumann and Jacobi, in press). The following sites are the lowest elevations, thus far, at which winter stoneflies have been collected in New Mexico: GUADALUPE Co., Pecos River, Hwy 119, Anton Chico, 1,585 m, 5-I-80, 3n. SAN MIGUEL Co., Pecos River, Hwy. 119, Tecolotito, 1,615 m, 27-II-79, 10 ♂ 5 ♀; 5-I-80, 5n.

Skwala parallela (Frison)

Perlodes americana, Needham and Claassen, 1925.

Hydroperla parallela Frison, 1936.

Arcynopteryx americana, Hanson, 1942.

Arcynopteryx (*Skwala*) *parallela*, Ricker, 1943.

Skwala parallela, Illies, 1966.

This large perlodid emerges from February through July (Baumann et al. 1977). In New Mexico, it was found in the Pecos River above the town of Pecos (Hwy 63 bridge), during ice-free conditions in March. One female with an egg mass was captured in April after crawling out of a crack in the 0.5 m thick ice covering Dalton Creek, a small tributary of the Pecos River. Recent New Mexico records include: COLFAX Co., Cienequilla Creek, above Eagle Nest Lake, 2,499 m, 16-II-81, 1n. RIO ARRIBA Co., Rio Embudo, Hwy 68, 1,790 m, 16-II-79, 2n. SAN MIGUEL Co., Pecos River, Hwy 63, 2,115 m, 30-III-80, 1 ♂ 8 ♀; 7-IV-80, 4 ♂ 14 ♀; 20-IV-80, 10 ♂ 12 ♀; Dalton Creek, 2,210 m, 20-IV-80, 1 ♀.

ACKNOWLEDGMENTS

We appreciate the assistance of L. R. Smolka in field collecting and the opportunity to study the winter stoneflies in the New Mexico State University (NMSU) collection provided by Dr. James R. Zimmerman.

LITERATURE CITED

- BANKS, N. 1897. New North American neuropteroid insects. *Trans. Amer. Entomol. Soc.* 24:21-31.
 ———. 1900. New genera and species of Nearctic neuropteroid Insects. *Trans. Amer. Entomol. Soc.* 26:239-259.
 ———. 1905. New genera and species of Perlidae. *Psyche* 12:55-57.



Jacobi, Gerald Z and Baumann, Richard W. 1983. "WINTER STONEFLIES (PLECOPTERA) OF NEW MEXICO." *The Great Basin naturalist* 43, 585–591.

View This Item Online: <https://www.biodiversitylibrary.org/item/35769>

Permalink: <https://www.biodiversitylibrary.org/partpdf/248063>

Holding Institution

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Sponsored by

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Brigham Young University

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.