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## A CHECKLIST OF THE MACROINVERTEBRATES OF THE PROVO RIVER, UTAH

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ABSTRACT.— A checklist of the aquatic macroinvertebrate species from the Provo River, Utah, was compiled from field collections and from literature sources.

Recent water control activities and proposed developments along the Provo River in Provo Canyon have served to stimulate research on aquatic life in this river. Many studies of aquatic life deal either directly or indirectly with the aquatic insects in the stream. Previous studies of aquatic insects in the Provo River are either unpublished theses or incidental references in papers of a broader scope (Edmunds, 1952). The most complete studies were conducted by Gaufin (1949, 1951, 1959).

Students at the University of Utah studied the Trichoptera (Merkley, 1948), aquatic Coleoptera (Todd, 1952), Chironomidae (Brooks, 1955), and Plecoptera (Sessions, 1960) of the Provo River.

Incidental references to the species of aquatic insects were made by Needham and Christensen (1927), Hazzard (1934), Moffet (1936), Chandler (1941), Tanner (1941), Anonymous (1948), Dunstan (1951), Anderson (1960), Musser (1961), and Braithwaite (1962).

The present study was conducted during the winter of 1969-70. Collections were taken from 10 stations located along the Provo River from 5½ miles above Woodland, Utah, downstream to the U. S. 91 highway bridge in Provo, Utah.

The main purpose of this paper is to make available, in one place, a complete list of the aquatic invertebrates which have been collected from the Provo River. Table 1 lists all organisms collected during the present study and from previous pertinent studies (Merkley, 1948; Gaufin, 1951; Todd, 1952; Gaumer, 1952; Brooks, 1955; Sessions, 1960; Gaufin, Nebeker, and Sessions, 1966).

The collection of *Sialis* sp. (Sialidae) has not, as far as we know, been previously reported in the literature for northern Utah. In this study, immatures of *Sialis* were collected on several occasions in the Provo River downstream from Woodland, Wasatch Co., Utah. One specimen of *Sialis* has been collected from Hobbles Creek, east of Springville, Utah Co., Utah. Dr. Arden R. Gaufin, University of Utah (Pers. Comm., 1972), has collected *Sialis* from the Weber, Provo, and Bear rivers.

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in this study. Thanks are also due to Dr. Roy T. Sawyer, College of Charleston, Charleston, South Carolina, who identified the Hirudinea.

TABLE 1. Checklist of the Macroinvertebrates of the Provo River, Utah. (Parentheses around number indicates specimens not classified to species. 1 = present study; 2 = Gaufin, 1951; 3 = Merkley, 1948; 4 = Sessions, 1960; 5 = Todd, 1952; 6 = Brooks, 1955; 7 = Gaufin, Nebeker, and Sessions, 1966; 8 = Gaumer, 1952; 9 = Edmunds, 1952.)

ORGANISM	COLLECTOR
Collembola	2
Coleoptera	
Caraboidea	
Amphizoidae	
<i>Amphizoa lecontei</i> Matthews	5
Dytiscidae	
<i>Bidessus affinis</i> (Say)	5
<i>Hydroporus planiusculus</i> Fall	(2), 5
<i>Hydroporus pervicinus</i> Fall	5
<i>Hydroporus occidentalis</i> Sharp	5
<i>Hydroporus transpunctatus</i> Chandler	
<i>Hygrotus masculinus</i> (Crotch)	5
<i>Hygrotus patruelis</i> (LeConte)	5
<i>Hygrotus tumidiventris</i> (Fall)	5
<i>Laccophilus decipiens</i> LeConte	5
<i>Laccophilus astristernalis</i> Crotch	5
<i>Oreodytes crassulus</i> (Fall)	5
<i>Oreodytes congruus</i> (LeConte)	5
<i>Agabus cordatus</i> (LeConte)	5
<i>Agabus hypomelas</i> Mannerheim	5
<i>Agabus seriatus intersectus</i> Leech	5
<i>Agabus oblongus</i> Fall	5
<i>Agabus approximatus</i> Fall	5
<i>Agabus austini</i> Sharp	5
<i>Agabus strigulosus</i> (Crotch)	5
<i>Agabus kenaiensis</i> Fall	5
<i>Agabus erichsoni</i> Gemminger & Harold	5
<i>Agabus tristis</i> Aubé	5
<i>Ilybius subaenus</i> Erickson	5
<i>Ilybius fraterculus</i> LeConte	5
<i>Rantus divisus</i> (Aubé)	5
<i>Rantus longipes</i> Sharp	5
<i>Rantus hoppingi</i> Wallis	5
<i>Dytiscus marginicollis</i> LeConte	5
<i>Dytiscus dauricus</i> Gebl.	(1), (2), 5
<i>Dytiscus circumscriptus</i> Ahrens	5
<i>Acilius semisulcatus</i> Aubé	5
<i>Cybister explanatus</i> LeConte	5
Haliphlidae	
<i>Brychius horni</i> Crotch	5
<i>Haliplus immaculicollis</i> Harris	(1), (2), 5
<i>Haliplus leechi</i> Wallis	5
<i>Peltodytes callosus</i> (LeConte)	5
Gyrinoidea	
Gyrinidae	
<i>Gyrinus bifarius</i> Fall	5
<i>Gyrinus consobrinus</i> LeConte	5

Table 1. (Continued)

<i>Gyrinus pleuralis</i> Fall	5
<i>Gyrinus picipes</i> Aubé	5
<i>Gyrinus affinis</i> Aubé	5
Hydrophiloidea	
Hydrophilidae	
<i>Helophorus oblongus</i> LeConte	(2), 5
<i>Helophorus obscurus</i> LeConte	5
<i>Telophorus nitidulus</i> LeConte	5
<i>Berosus infuscatus</i> LeConte	5
<i>Berosus styliferous</i> Horn	5
<i>Hydrous triangularis</i> (Say)	5
<i>Tropisternus ellipticus</i> (LeConte)	5
<i>Tropisternus dorsalis</i> (Brullé)	5
<i>Tropisternus californicus</i> (LeConte)	5
<i>Hydrobius fuscipes</i> Linnaeus	(2), 5
<i>Hydrobius scabrosus</i> Horn	5
<i>Paracymus subcuprens</i> (Say)	5
<i>Crepitis moratus</i> (Horn)	5
<i>Helochares maculicollis</i> Mulsant	5
<i>Enochrus hamiltoni</i> (Horn)	5
<i>Enochrus conjunctus</i> (Fall)	5
Dryopoidea	
Dryopidae	
<i>Helichus striatus</i> LeConte	(1), 2, 5
Elmidae	
<i>Elmis ornata</i> Schaffer	5
<i>Heterlimnius quadrimaculatus</i> (Horn)	(1), 2, 5
<i>Heterlimnius corpulentus</i> (LeConte)	2, 5
<i>Narpus concolor</i> (LeConte)	5
<i>Narpus angustus</i> Casey	2
<i>Simsonia quadrinotata</i> (Say)	5
<i>Zaitzevia parvulus</i> (Horn)	(1), 2, 5
<i>Microcylloepus pusillus</i> LeConte	2
Diptera	
Chironomidae	(1)
<i>Calospectra</i> sp.	6
<i>Chironomus</i> sp.	2
<i>Diamesa</i> sp.	6
<i>Harnischia</i> sp.	6
<i>Hydrobaenus</i> sp.	6
<i>Cricotopus</i> sp.	6
<i>Corynoneura</i> sp.	6
<i>Psilodiamesa</i> sp.	6
<i>Syndiamesa</i> sp.	6
<i>Pentaneura</i> sp.	2, 6
<i>Tendipes</i> sp.	6
<i>Tanytarsus</i> sp.	2
<i>Procladius</i> sp.	2
<i>Spaniotoma</i> sp.	2
Tipulidae	
<i>Antocha</i> sp.	1, 2
<i>Eriocera</i> sp.	2
<i>Dicranota</i> sp.	2
<i>Hexatoma</i> sp.	1, 2
<i>Pedicia</i> sp.	2
<i>Holorusia</i> sp.	2
<i>Phalacroceres</i> sp.	2
<i>Tipula</i> sp.	1, 2
<i>Rhaphidolabis</i> sp.	2

Table 1. (Continued)

Psychodidae	
<i>Pericoma</i> sp.	1, 2
Empididae	
<i>Hemerodromia</i> sp.	2
<i>Roederiodes</i> sp.	2
Simuliidae	
<i>Simulium</i> sp.	1, 2
Tabanidae	
<i>Chrysops</i> sp.	2
Dixidae	
<i>Dixa</i> sp.	2
Rhagionidae	
<i>Atherix variegata</i> Walker	1, 2
Muscidae	
<i>Limnophora aequifrons</i> Stein	2
Heleidae	
<i>Palpomyia</i> sp.	2
Stratiomyidae	
<i>Euparyphus</i> sp.	2
<i>Odontomyia</i> sp.	2
Deuterophlebiidae	
<i>Deuterophlebia</i> sp.	2
Blepharoceridae	
<i>Agathon</i> sp.	1
<i>Blepharicera</i> sp.	2
Ephemeroptera	
Baetidae	
<i>Baetis bicaudatus</i> Dodds	2
<i>Baetis intermedius</i> Dodds	2
<i>Baetis tricaudatus</i> Dodds	1, 2
<i>Callibaetis fuscus</i> Dodds	9
Ephemerellidae	
<i>Ephemerella coloradensis</i> Dodds	2
<i>Ephemerella doddsi</i> Needham	1, 2
<i>Ephemerella grandis grandis</i> Eaton	1, 2
<i>Ephemerella hecuba</i> (Eaton)	2
<i>Ephemerella inermis</i> Eaton	1, 2
<i>Ephemerella infrequens</i> McDunnough	2
<i>Ephemerella maragrita</i> Needham	9
<i>Ephemerella tibialis</i> McDunnough	2
Heptageniidae	
<i>Cinygmula mimus</i> (Eaton)	9
<i>Cinygmula par</i> (Eaton)	9
<i>Epeorus</i> (Iron) <i>albertae</i> (McDunnough)	2
<i>Epeorus deceptivus</i> (McDunnough)	2
<i>Epeorus longimanus</i> (Eaton)	2
<i>Epeorus</i> sp.	2
<i>Heptagenia criddlei</i> McDunnough	2
<i>Heptagenia solitaria</i> McDunnough	1, 2
<i>Heptagenia elegantula</i> (Eaton)	2
<i>Rhithrogena doddsi</i> McDunnough	9
<i>Rhithrogena morrisoni</i> (Banks)	9
<i>Rhithrogena robusta</i> Dodds	9
Siphonuridae	
<i>Ameletus oregonensis</i> McDunnough	1
<i>Ameletus velox</i> Dodds	2
<i>Ameletus</i> sp.	1

Table 1. (Continued)

<i>Siphonurus occidentalis</i> Eaton	2
<i>Parameletus columbiae</i> McDunnough	9
Leptophlebiidae	
<i>Paraleptophlebia debilis</i> (Walker)	2
<i>Paraleptophlebia heteronea</i> (McDonnough)	1, 2
<i>Paraleptophlebia memorialis</i> Eaton	9
<i>Paraleptophlebia packi</i> (Needham)	
Tricorythidae	
<i>Tricorythodes minutus minutus</i> Traver	1, 2
Plecoptera	
Chloroperlidae	
<i>Alloperla pallidula</i> (Banks)	(1), 2, 4, 7
<i>Alloperla borealis</i> (Banks)	4, 7
<i>Alloperla lamba</i> Needham and Cleasen	2, 7
<i>Alloperla pintada</i> Ricker	4, 7
<i>Alloperla coloradensis</i> (Banks)	4, 7
<i>Alloperla severa</i> (Hagen)	4, 7
<i>Alloperla signata</i> (Hagen)	4, 7
<i>Paraperla frontalis</i> Banks	4, 7
<i>Utaperla sopladora</i> Ricker	4, 7
Nemouridae	
<i>Brachyptera nigripennis</i> (Banks)	1, 2, 4, 7
<i>Brachyptera pacifica</i> (Banks)	2, 4, 7
<i>Brachyptera pallida</i> (Banks)	1, 7
<i>Capnia confusa</i> Claassen	1, 4, 7
<i>Capnia columbiana</i> Claassen	2, 4, 7
<i>Capnia gracilaria</i> Claassen	4, 7
<i>Capnia lemoniana</i> Nebeker and Gaufin	7
<i>Capnia ligulata</i> Hansen	7
<i>Capnia logana</i> Nebeker and Gaufin	7
<i>Capnia nana wasatchae</i> Claassen	7
<i>Capnia uintahi</i> Gaufin	7
<i>Eucapnopsis brevicauda</i> (Claassen)	4, 7
<i>Paraleuctra occidentalis</i> (Banks)	2, 7
<i>Paraleuctra sara</i> (Claassen)	(2), 4, 7
<i>Isocapania crinata</i> (Needham and Claassen)	7
<i>Isocapania grandis</i> (Banks)	7
<i>Nemoura californica</i> Claassen	(1), 4, 7
<i>Nemoura cinctipes</i> Banks	2, 4, 7
<i>Nemoura columbiana</i> Claassen	4, 7
<i>Nemoura besametsa</i> Ricker	1, 2, 4, 7
<i>Nemoura oregonensis</i> Claassen	2, 4, 7
<i>Nemoura haysi</i> Ricker	7
<i>Perlomyia utahensis</i> Needham and Claassen	7
Perlidae	
<i>Acroneuria pacifica</i> Banks	1, 2, 4, 7
<i>Claassenia sabulosa</i> (Banks)	1, 2, 4, 7
Perlodidae	
<i>Arcynopteryx signata</i> (Hagen)	(1), 2, 4, 7
<i>Arcynopteryx parallela</i> (Frison)	1, 4, 7
<i>Isogenus aestivalis</i> (Needham and Claassen)	2, 4, 7
<i>Isogenus modestus</i> (Banks)	7
<i>Isoperla ebria</i> (Hagen)	(1), (2), 4, 7
<i>Isoperla fulva</i> Claassen	1, 2, 4, 7
<i>Isoperla mormona</i> Banks	4, 7
<i>Isoperla patricia</i> Frison	2, 4, 7
<i>Isoperla pinta</i> Frison	4, 7
<i>Diura knowltoni</i> (Frison)	4, 7

Table 1. (Continued)

Pteronarcidae	
<i>Pteronarcys californica</i> Newport	1, 2, 4, 7
<i>Pteronarcella badia</i> (Hagen)	1, 2, 4, 7
Trichoptera	
Brachycentridae	
<i>Brachycentrus aspolus</i> Ross	3
<i>Brachycentrus americanus</i> (Banks)	1
<i>Brachycentrus occidentalis</i> (Banks)	2, 3
<i>Brachycentrus</i> sp.	1, 2, 3
<i>Micrasema bactro</i> Ross	2, 3
Helicopsychidae	
<i>Helicopsyche borealis</i> (Hagen)	1, 2, 3
Hydropsychidae	
<i>Arctopsyche grandis</i> (Banks)	(1), 2, 3
<i>Cheumatopsyche analis</i> (Banks)	(2), 3
<i>Hydropsyche californica</i> Banks	(1), (2)
<i>Hydropsyche cockerelli</i> Banks	3
<i>Hydropsyche occidentalis</i> Banks	3
<i>Hydropsyche oslari</i> Banks	3
<i>Parapsyche elsis</i> Milne	2, 3
<i>Pycnopsyche</i> sp.	3
Hydroptilidae	
<i>Agraylea multipunctata</i> Curtis	3
<i>Agraylea saltessa</i> Ross	3
<i>Hydroptila consimilis</i> Morton	3
<i>Hydroptila</i> sp.	(2), 3
<i>Neotrichia panneus</i> Denning	3
<i>Neotrichia</i> sp.	2
<i>Ochrotrichia atylata</i> Ross	3
<i>Ochrotrichia logana</i> (Ross)	2
<i>Tascobia brustia</i> (Ross)	2, 3
Lepidostomatidae	
<i>Lepisostoma pluviale</i> (Milne)	(2), 3
<i>Lepisostoma unicolor</i> (Banks)	3
<i>Lepisostoma podager</i> (McLachlan)	3
<i>Lepisostoma cascadenae</i> (Milne)	3
Leptoceridae	
<i>Oecetis</i> sp.	1, 2, 3
Limnephilidae	
<i>Chyranda centralis</i> (Banks)	3
<i>Dicosmoecus atripes</i> (Hagen)	(2), 3
<i>Dicosmoecus unicolor</i> (Banks)	3
<i>Hesperophylax consimilis</i> (Banks)	(1), 2, 3
<i>Limnephilus arizona</i> Ross	2, 3
<i>Limnephilus</i> sp.	(1), 3
<i>Neophylax</i> sp.	2
<i>Neothremma alicia</i> Banks	(1), 3
<i>Oligophlebodes minutus</i> (Banks)	3
Philoptomidae	
<i>Dolophilus garbriella</i> (Banks)	2, 3
<i>Trentonius aequalis</i> (Banks)	2, 3
<i>Chimarra</i> sp.	2
Psycomyiidae	
<i>Psychomyia flavida</i> Hagen	3
<i>Tinodes</i> sp.	3
Rhyacophilidae	
<i>Anagapetus debilis</i> Ross	3
<i>Glossosoma alascense</i> Banks	(1), 3

Table 1. (Continued)

<i>Glossosoma parvulum</i> Banks	2, 3
<i>Glossosoma verdoni</i> Ross	3
<i>Rhyacophila acropedes</i> Banks	(1), (2), 3
<i>Rhyacophila angelita</i> Banks	3
<i>Rhyacophila coloradensis</i> Banks	3
<i>Rhyacophila harmstoni</i> Ross	3
<i>Rhyacophila hyalinata</i> Banks	3
<i>Rhyacophila lobifera</i> Betten	1
<i>Rhyacophila pellisa</i> Ross	3
<i>Rhyacophila verrula</i> Milne	3
Hemiptera	
Corixidae	1, 2
Gerridae	1, 2
Mesoveliidae	1, 2
Saldidae	1
Belostomatidae	1
Odonata	
Coenagrionidae	1, 2
Aeshnidae	1
<i>Aeshna palmata</i> Hagen	•
Corduliidae	
<i>Somatochlora semicircularis</i> Selys	•
Megaloptera	
Sialidae	
<i>Sialis</i> sp.	1
Crustacea	
Cladocera	
<i>Daphnia</i> sp.	1
Amphipoda	
<i>Gammarus</i> sp.	1, 2
<i>Hyalrella azteca</i> (Saussure)	2
Isopoda	
<i>Asellus tomalensis</i> Harford	1
Hydracarina	
<i>Atractides</i> sp.	1, 2
<i>Calonyx</i> sp.	8
<i>Eylais</i> sp.	8
<i>Hydryphantes</i> sp.	8
<i>Hygrobates</i> sp.	8
<i>Laminipes</i> sp.	8
<i>Lebertia</i> sp.	8
<i>Limnesia</i> sp.	8
<i>Megapus</i> sp.	8
<i>Paninus</i> sp.	8
<i>Piona</i> sp.	8
<i>Sperchon</i> sp.	8
<i>Testudacarus</i> sp.	8
Oligochaeta	1, 2
Hirudinea	2
<i>Cystobranchnus verrilli</i> Meyer	1
<i>Dina dubia</i> Moore and Meyer	1
<i>Dina parva</i> Moore	1
<i>Eropbdella punctata</i> (Leidy)	1
<i>Helobdella stagnalis</i> (Linnaeus)	1
<i>Nephelopsis obscura</i> Verrill	1



Turbellaria	1, 2
<i>Polycelis</i> sp.	..
Nematoda	1, 2
Mollusca	
Physidae	
<i>Physa</i> sp.	1
Planorbidae	
<i>Gyraulus</i> sp.	1
Lymnaeidae	
<i>Lymnaea</i> sp.	1
Bulimidae	
<i>Fluminicola</i> sp.	1
Ancyliidae	
<i>Ferrissia</i> sp.	1
Sphaeriidae	
<i>Sphaerium</i> sp.	1, 2

\*Musser, 1961.

\*\*Braithwaite, 1962.

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