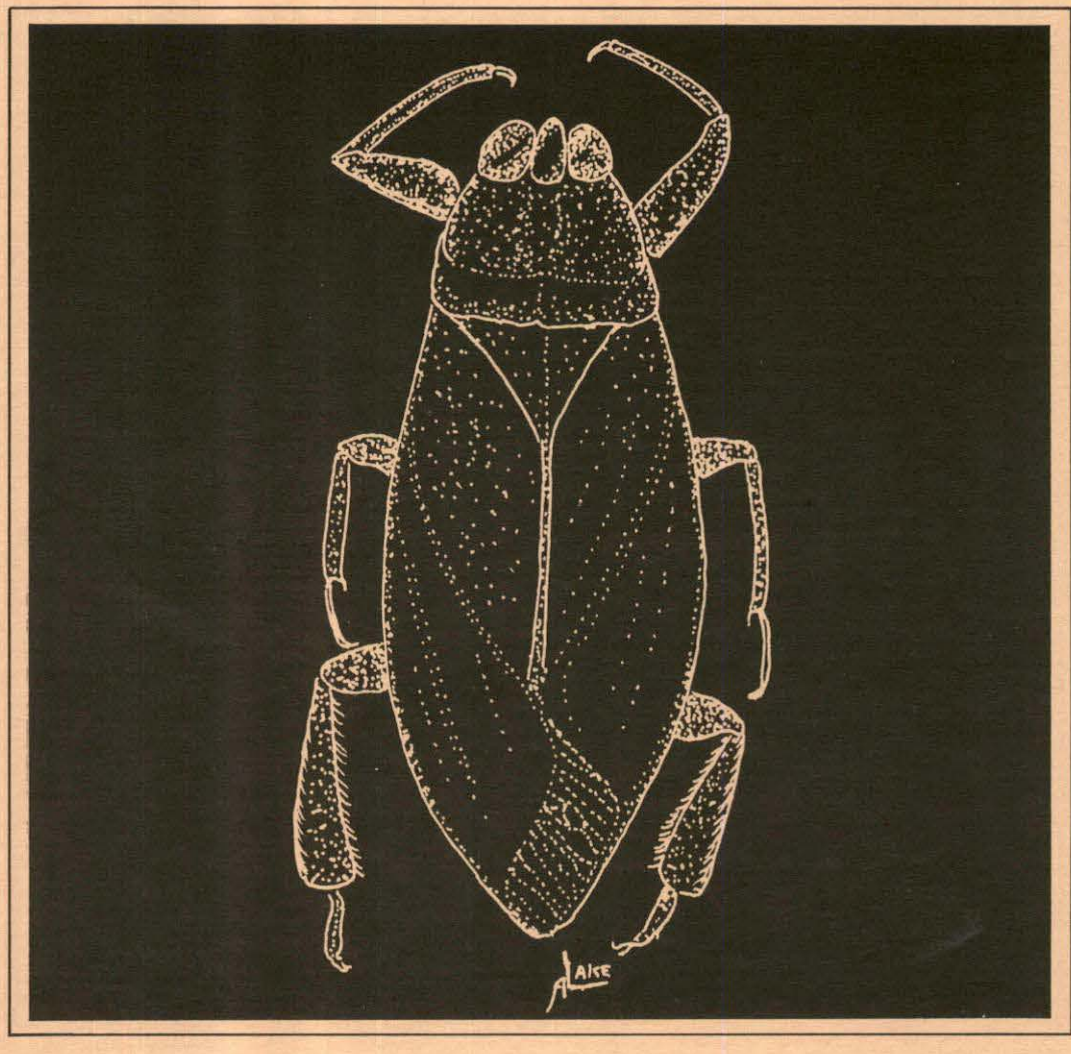
Macroinvertebrates of the Big Sandy River Basin with Special Emphasis on the Levisa Fork

GERALD DeMOSS



Research Report No. 6
APPALACHIAN DEVELOPMENT CENTER
Morehead State University
Morehead, Kentucky

APPALACHIAN DEVELOPMENT CENTER RESEARCH REPORT SERIES

Morehead State University

The purpose of this series is to provide a forum for the dissemination of significant scholarly work concerned with economic, social, educational, and environmental issues affecting Appalachia, with particular emphasis on Eastern Kentucky. A special focus of the series is the development of possible courses of action for the region.

Copies of any of the reports in this series are available upon request. Any individual or organization wishing to be on the mailing list for future reports should so indicate. Any general comments on the series or scholarly contributions which meet the guidelines for this series should be forwarded to: Douglas Dotterweich, Editor, Appalachian Development Center Research Report Series, Appalachian Development Center, Morehead State University, Morehead, Kentucky 40351, telephone (606) 783-2077.

Reports in this Series

An Analysis of Population Changes in Eastern Kentucky 1970-2000 by Gary Cox, June 1979. (Research Report Number 1.)

The Ichthyofauna of the Big Sandy River Basin with Special Emphasis on the Levisa Fork Drainage by Jerry Howell, January 1981. (Research Report Number 2.)

The Impact of Federal Regulations on the Small Coal Mine in Appalachia by Bernard Davis, November 1981. (Research Report Number 3.)

Fiscal Effort in Eastern Kentucky: Implications for Financing Public Services by Douglas Dotterweich, March 1982. (Research Report Number 4.)

Current and Projected Socioeconomic Conditions of the Levisa Fork of the Big Sandy River Basin in Kentucky and Virginia by Gary Cox, August 1982. (Research Report Number 5.)

Macroinvertebrates of the Big Sandy River Basin with Special Emphasis on the Levisa Fork by Gerald DeMoss, January 1983. (Research Report Number 6.)

Macroinvertebrates of the Big Sandy River Basin with Special Emphasis on the Levisa Fork

Gerald DeMoss
Professor of Biology
Morehead State University
Morehead, Kentucky

Research Report No. 6

Appalachian Development Center
Morehead State University
Morehead, Kentucky

January 1983

TABLE OF CONTENTS

List of Tables And Figures

PREFACE

While water resources of commercial value do not exist in the Big Sandy River Basin, the basin is important locally in providing such benefits as water for residential purposes, flood control, and recreational uses. Recent and expected increases in the level of utilization of coal resources in the region will increase sedimentation and acid mine drainage, and cause incompatability with future water quality management plans.

The purpose of this report is to review the known collections of aquatic macroinvertebrates in the basin through published literature so that it might serve as a valuable tool in monitoring future Levisa Fork degradation. The data provided in this report should be of particular interest to biologists, zoologists, and public officials concerned with the environmental impact of coal mining on water quality and aquatic animal life.

Douglas Dotterweich
Editor

ABSTRACT

This distributional study of the aquatic macroinvertebrates of the Big Sandy River Basin was based on a review of published literature and utilized other professional sources. Data generated include 493 taxa of aquatic macroinvertebrates from the Big Sandy River and its tributaries and from adjacent drainages within the counties of the Big Sandy River Basin. Taxa represented in the study, including the 360 taxa occurring within the Levisa Fork Drainage, are generally distributed fauna in the eastern United States and none of these representatives are considered as rare, threatened or endangered.

INTRODUCTION

Headwaters of the Big Sandy River Basin occur in the extreme western portion of Virginia and flow northwestwardly through three states, Virginia, West Virginia, and Kentucky, to join the Ohio River at Catlettsburg, Kentucky. The basin is primarily composed of the Big Sandy River and its two major tributaries, the Tug Fork and the Levisa Fork. Tug Fork, forming the major portion of the boundary between West Virginia and Kentucky, has its origins in the mountains of Virginia about 2,200 feet above sea level and is characterized by narrow, sepentine valleys. Levisa Fork, the larger of the two component rivers, has its origins at elevations of 2,400 feet above sea level and is characterized by steep, narrow valleys with high, sharp crested ridges and very little level upland.

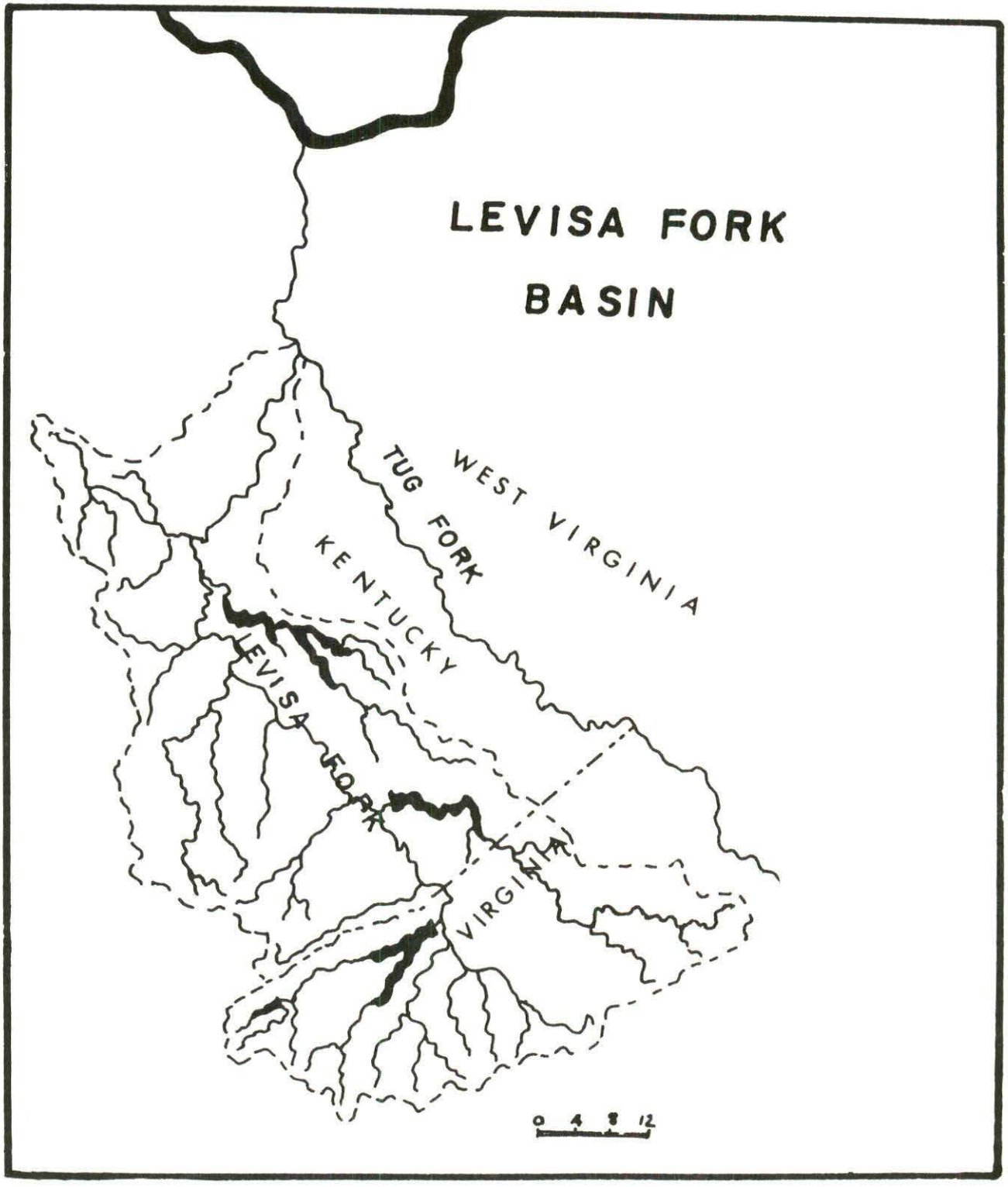
The Big Sandy Basin lies within the Eastern Mountains and Coal Field Physiographic Region (Harker et al., 1979) and is one of the most important coal producing regions in Kentucky. All but five square miles of the drainage basin, the plateau area at Catlettsburg, is described as Mountain and Creek Bottom Areas due to the steep, narrow valleys and limited plateaus and the basin is included as a portion of the Kanawha Geographic Section of the Appalachian Plateau (Kentucky Department for Natural Resources and Environmental Protection, 1978). The Big Sandy Basin has a characteristic strata of paleozoic rocks of Pennsylvanian Age, predominately sandstones and shales.

Waters of the Levisa Fork River travel some 34 miles through three Virginia counties, Buchanan, Dickenson, and Wise, to the Kentucky Border. The river continues approximately 130 miles to Louisa, Kentucky where it joins the Tug Fork River to form the Big Sandy River. Levisa Fork and its tributaries traverse eight eastern Kentucky counties, Pike, Letcher, Knott, Floyd, Johnson, Magoffin, Morgan, and Lawrence. Kirkwood (1957) and Evenhuis (1973) provide descriptions for the Levisa Fork River and its major tributaries, with special references to stream order and physical habitats. Tributaries of Levisa Fork have relatively high gradients, averaging 12 feet/mile (Howell, 1980) and are characteristically very similar in topography. Major tributaries include Paint Creek, Johns Creek, Beaver Creek, and Russell Fork (Figure I).

Mining is the major industry within the Big Sandy River Basin (Kentucky Department for Natural Resources and Environmental Protection, 1978). Water resources of commerical value do not exist within the basin and the potential for future development will depend on national energy policies and the resultant demand placed on regional coal resources. Expanding development of coal resources will increase sedimentation and acid mine drainage, and such activity will be incompatible with future water quality management plans.

No doubt, the macroinvertebrate fauna of the Big Sandy River Basin was once much richer and more diverse than it is today. Stream degredation, primarily in association with mining activity, has reduced benthic macroinvertebrate communities throughout the Eastern United States (Evenhuis, 1973; Harker et al., 1979; Harker et al., 1980; Harrell and Dorris, 1968; Henley, 1970; Herricks, 1977; Hill and Grim, 1977; Matter et al., 1978; Preston and Green, 1978; Winger, 1978) and such declines in the community complexes of Levisa Fork Drainage have doubtlessly been experienced. This report reviews and summarizes the known collections of aquatic macroinvertebrates through published literature and other professional sources and will serve as a valuable tool in monitoring any continued degredation of Levisa Fork Drainage.

Figure 1
The Levisa Fork Drainage System
(Big Sandy River Basin)



Literature Review

Surface and underground mining are the principal industries within the Levisa Fork Drainage and the impact of these activities on freshwater habitats throughout the eastern coalfields have been investigated by numerous researchers (Curtis, 1972; Harrell and Dorris, 1968; Henley, 1970; Herricks, 1977; Hill and Grim, 1977; Matter el al., 1978; Preston and Green, 1978; Winger, 1978; and others). Hill and Grim, (1977),Preston and Green (1978), and Winger (1978) suggest that the major environmental problems associated with coal mining in the eastern United States are sedimentation and acid mine drainage and that improper mining techniques have caused, and will continue to cause, major environmental problems for benthic communities. Henley (1970), Matter el al. (1978), and Winger (1978) report conclusively that acid water and sediment generated by strip mining of coal produced significant declines in benthic invertebrates. Curtis (1972) suggests that acid mine drainage is not a major problem in some eastern Kentucky streams and that sedimentation alone will produce significant reductions in stream biota. Gammon (1970), studying the effects of limestone dust on aquatic communities, found that invertebrates responded very quickly to both positive and negative changes in the sedimentation rate.

Benthos productivity for aquatic substrates characteristically depends upon particle sizes, with substrates become increasing less productive as particle size decreases (Crisp and Crisp, 1974). Published data suggest that particle sizes may be the determing factor for benthos distribution and that increased sedimentation may eliminate characteristic biota (Harker et al., 1979; Henley, 1970). Harrell and Dorris (1968) indicate that stream order will greatly influence the effect of siltation on macroinvertebrate communities, especially in 5th and 6th order tributaries. Fourth order tributaries are reported to have the most diverse faunal assemblages (Harrell and Dorris, 1968) and productivity in streams of lower numerical order decreases. Recovery of aquatic communities following temporary decreases in sedimentation may be rapid (Gammon, 1970; Harrell and Dorris, 1968) provided the stress situation has not eliminated the benthic communities. Minshall (1968) reports similar recovery following stream scouring. Macroinvertebrate communities can, and will, re-establish in damaged ecosystems and factors instrumental to benthos recovery include restoration of damaged habitats and that there be sources of organisms for recolonization (Herricks, 1977).

Stressed communities may be identified by the existing taxa or by the absence of particular taxa. Aquatic insects are characteristically the dominant forms in communities not subjected to stress and distribution within these communities may be determined by available food resources and feeding techniques (Cummins, 1973). Communities stressed by mining activities are characteristically dominated by freshwater oligochaetes and chironomid larvae (Harker et al., 1979; Matter et al., 1978; Winger, 1978).

Mollusk communities are greatly reduced or even absent in streams subjected to acid mine drainage (Winger, 1978). The paucity of references to molluscan collections from the Big Sandy River Basin suggests that these forms have been greatly reduced within the basin. Aliff (1977) reported a sparse population of trematodes in the fishes of the Big Sandy River and stated the probable cause to be drastically reduced molluscan (host) populations influenced by acid mine drainage.

Mining activities are not the only problems to affect benthic communities. Hilsenhoff (1971) and Jordan (1980) investigated the effects of impoundments with hypolimnionic discharges on tailwater communities and both researchers reported significant declines in aquatic macroinvertebrates. Chironomid and simuliid larvae were the only insect groups to show increased population densities following impoundment and most aquatic insects could not re-establish in upper riffle areas. Batch (personal communication) suggests that declining bivalve communities in the Licking River immediately below Cave Run Lake might be attributed to hypolimnionic discharges. There are four existing impoundments with hypolimnion discharges on the Levisa Fork River.

Studies of the benthic macroinvertebrates of western Virginia and eastern Kentucky are limited, for the most part, to field investigations focusing on environmental assessments for flood control projects and on subsequent follow up research. Data for Levisa Drainage, as well as other portions of the Big Sandy Basin, have been generated through projects of the U.S. Army Corps of Engineers, Huntington District and through inventory studies conducted by the Kentucky Nature Preserves Commission (Harker et al., 1979). Other researchers have not spent a great deal of time or effort in studying the aquatic macroinvertebrates of the Big Sandy River Basin and the minimal published literature reflects the lack of professional interest in this region. The paucity of field studies centering on macroinvertebrates is not unique to the Big Sandy Basin, but is a regional problem throughout much of Virginia, West Virginia, and Kentucky.

Many tributaries of the Big Sandy River, including the Levisa Fork, are impacted by mining and the aquatic macroinvertebrate fauna exist under stressed, depauperate conditions (Harker et al., 1979). Silt-laden streams show decreased diversity and marginal benthic populations, which are common to other Eastern Kentucky tributaries, and continued monitoring of these habitats is essential as the demand for coal resources increases. Table I provided a listing of the known aquatic macroinvertebrates of the Big Sandy River Basin. The data have been compiled in tabular form according to the various invertebrate taxa in an attempt to include all of the available collection information.

Table I includes approximately 500 different taxa of macroinvertebrates collected in or adjacent to the Big Sandy River Basin. These taxa have been identified to different levels, from the phylum down to specific and subspecific levels, based mainly on the availability of keys and on the stage of the life cycle collected. Early instars of aquatic insects are characteristically difficult to determine to specific levels due to the lack of development of key characters and/or the degree to which the instars are understood. Some aquatic insect larvae such as the chironomids, require detailed studies under compound microscopy for specific determination and such studies are characteristically not feasible due to the man hours involved for such determinations. Other aquatic invertebrate groups, such as the freshwater oligochaetes and nematodes, require equally detailed investigations and most aquatic biologists are not sufficiently familiar with these groups to allow for species determinations.

Methodological Issues

Data summarized into Table I are generally reported as they appeared in the literature or as they were received from other sources. There are, however, a couple of notable exceptions and it is necessary that they be recognized in an attempt to eliminate confusion within the literature.

Data generated by the U.S. Army Corps of Engineers, Huntington District, abbreviated as ACE–HD, were taken from computer data bases for existing projects within the Big Sandy River Basin or from environmental assessments sponsored by the U.S. Army Corps of Engineers, Huntington District. Kentucky Nature Preserves Commission data, abbreviated as KNPC, were obtained from two different state documents, *Aquatic Biota and Water Quality Survey of the Appalachian Province (Harker et al., 1979) and Aquatic Biota and Water Quality Survey of the Upper Cumberland River Basin* (Harker et al., 1980). Data for the U. S. Army Corps of Engineers, Huntington District and for the Kentucky Nature Preserves Commission were taken at fixed stations and much of this research is ongoing. Other sources of data, cited in Table I, were obtained either from published literature or through personal communications with professional sources. Specimens reported for the Morehead State University Entomological Collection, abbreviated as MSU in Table I, were randomly taken on class related field trips.

Data reported for the Kentucky Nature Preserves Commission, KNPC-79 in Table I, have been revised since that publication and the revised data were made available through Mr. Skip Call of the Kentucky Nature Preserves Commission. References credited to KNPC-79, Table I, are more detailed, with more specimens having been identified to the species level than in the publication on the Appalachian Province (Harker et al., 1979). Resh (1975), in his study of the caddisflies of Kentucky, includes a long list of specimens from Paint Creek. These same data are also reported in the Paintsville Lake Environmental Assessment (United States Department of the Army, Huntington District Army Corps of Engineers, 1975). Caddisfly data included in both of the publicatons are without a doubt the same specimens; both were published in 1975, and neither publication credits the other publication. An assumption that the Paintsville Lake data (ACE-HD, Paintsville Lk) were the original sources for the specimens can be made, based on some taxonomic references and changes in the data presented by Resh (1975). However, it was necessary to give credit to both authors in Table I in order to avoid misrepresenting the data.

Introduced Species

Most of the aquatic macroinvertebrates included in Table I are generally distributed forms throughout the eastern United States. As far as is known, none of these data represent introduced species; all of the taxa included in Table I are included in the natural biota of North America. The reported occurrence of several species in the Big Sandy River Basin represent range extensions and these specimens need to be re-examined.

Species of Special Concern

None of the aquatic macroinvertebrates listed in Table I are considered as endangered or threatened species. Most of the federal and state published lists of rare or endangered species do not include benthic macroinvertebrates, and those lists that do characteristically restrict themselves to mollusks, mainly bivalves, and decapod crustaceans. The bivalve communities of the Big Sandy River Basin have probably been radically reduced and existing forms remain threatened, but those forms listed in Table I are common to other drainage basins and may not be threatened elsewhere. Some of the rare or endangered macroinvertebrate species that appear on federal and state lists may have existed in the Big Sandy River Basin, but if they did, it is probable that they have already been eliminated through environmental stress.

Summary

Data for the aquatic macroinvertebrates of the Big Sandy River Basin, Table I, are more numerous and reflect greater diversity than supposed when this project was initiated. These data do not represent the complete macroinvertebrate fauna of the Big Sandy River Basin, but do include several excellent preliminary field investigations that may serve as baseline studies for future aquatic research projects. Overall, the basin has not been the subject of extensive research projects and the aquatic biota of the Big Sandy and its tributaries are poorly understood. Future studies will obviously increase the number of taxa for the basin and will broaden our understanding of its biota.

In future studies, sampling techniques and habitat selections need to be more varied, so as to include opportunities for expanding our knowledge of aquatic macroinvertebrates of the Big Sandy River Basin. Most of the studies reported here concentrate on riffle areas, lotic habitats, where stream diversity and productivity are greatest. Standing pools and impoundments, lentic habitats, offer a different faunal assemblage and are not adequately represented in these data. Semiaquatic macroinvertebrates are virtually unsampled within the basin.

Table 2 includes a county-by-county summary of the known aquatic macroinvertebrates of the Big Sandy River Basin. Data for Levisa Fork occurrence are distinquished from those of other basins in an attempt to show the diversity of aquatic macroinvertebrates in the Levisa Fork. Of the 493 taxa reported in Table I for the Big Sandy River Basin and adjacent basins, 360 of these forms are reported to occur within the Levisa Fork Drainage.

TABLE I
Aquatic Macroinvetebrates of the Levisa Fork Draniage*

Key to Table Abbreviations

ABBREVIATIONS	MEANING
ACE–HD	Army Corps of Engineers, Huntington District
Br	Branch
Cem	Cemetery
Co	County
Cr	Creek

ABBREVIATIONS	MEANING
Fk	Fork
KNPC	Kentucky Nature Preserves Commission
Ky	Kentucky
Lk	Lake
Sp	Species

Taxa	Sources and Distributions
Porifera	
Calcarea (Sponges)	
Spongilla lacustris	Not reported from Levisa Fork or adjacent basins. Pennak (1978) describes these four species as common and widely distributed over North America.
Eunapius fragilis	
Ephydatia muelleri	
Heteromeyenia tubisperma	
Coelenterate (=Cnidaria)	
Hydrozoa	
*Hydra sp	Dickenson Co, outflow at Pound River ACE–HD (Project JWF).
*Hydra americana	Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV).
Craspedacusta sowerbyi	Not reported from Levisa Fork or other tributaries of the Big Sandy. Pennak (1978) describes this medusa as common in the eastern U. S. and the author has taken C. sowerbyi from the Licking River, Tygarts Creek, and Kinniconick Creek.
Platyhelminthes	
*Turbellaria (Planarians)	Floyd Co, Johns Cr outflow ACE–HD (Project DEW); Pike Co, outflow Levisa Fk ACE–HD (Project FRL); Wise Co. outflow North Fk Pound Lk ACE–HD (Project NFP).
Cura foremanii	These triclads are widely distributed and common forms in the eastern half of the United States Kenk (1972); Pennak (1978) but specimens reported from the Levisa Fk have not been determined to this level. Sphalloplana sp are common cave forms and are known from caves in both Kentucky and Virginia Kenk (1972); Phagocata morgani is known from Ky. Kenk (1972).
Dugesia tigrina	
Dugesia dorotocephala	
Phagocata velata	
Phagocata morgani	
Procotyla fluviatillis	
Sphalloplana sp	

*Denotes confrimed Levisa Fork occurrence. Data on species found in other drainage basins but in counties covered partly by the Levisa Fork Basin were included to indicate possible occurrence in the Levisa Fork Basin. Only those macroinvertebrates commonly found in the general area of the Basin were included in the table.

Table 1 Continued

Taxa	Sources and Distributions
Nemertea (=Rhynchocoela) Enopla *Prostoma rubrum (*P. graecense)	Pennak (1978) reports P. rubrum as a synonym of P. graecense. Lawrence Co, Blaine Cr below Long Branch, Blaine Cr below Backbone Cr ACE–HD (Project YBC); Morgan Co, Open Fk of Paint Cr, Lost Cr of Little Paint Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Pike Co, outflow Levisa Fk HCE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Nematoda (Roundworms)	Nematodes are an extremely difficult group to handle and classify, and are generally overlooked or avoided by most aquatic biologists Pennk (1978). Ferris et al. (1973) provides keys to 56 genera of aquatic nematodes for eastern North America and many of these no doubt occur within the Big Sandy Drainage System. Collected forms have not been classified beyond the level of the phylum. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk of Paint Cr, Lost Cr of Little Paint Cr, Paint Cr above Ostorne Br, Little Paint Cr below entrance of Lost Cr ACE–HD (Project PIV); Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR), outflow Levisa Fk ACE–HD (Project FPL), Johns Cr inflow ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr ACE–HD (Project NFP); Buchanan Co, Russell Fk Bad Cr ACE–HD (Project NFP); Dickenson Co, McClure River at Haysi, Russell Fk Dam Site ACE–HD (Project LFR).
Nematomorpha Gordioidea Gordiidae *Gordius sp	This genus is considered as cosmopolitan Pennak (1978). G robustus and Paragordius varius are the most widely distributed species of horsehair worms in the U. S. Johnson Co, Paint Cr at Staffordsville ACE–HD (Paintsville Lk).
Bryozoa (=Ectoprocta)	Not reported from the Levisa Fk or adjacent drainage basins. Pennak (1978) suggests that the paucity of data for North America reflects the lack of interest on the part of ecologists and taxonomists. Bryozoans are particularly successful in slow streams and impounded waters. Pectinatella magnifica is a common inhabitant of reservoirs in eastern Ky and has been collected by the author on numerous occasions throughout the region.
Annelida *Oligochaeta	North American aquatic oligochaetes are very poorly understood Pennak (1978). For many groups, identification is dependent upon internal variations of reproductive systems which require sectioning and/or dissection. Most of the available data are not identified beyond the level of the class. Lawrence Co. Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk), Little Blaine Cr, Blaine Cr KNPC (1979), Blaine Cr at móuth of Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at mouth of Cherokee Cr, Blaine Cr below Long Br, Blaine Cr near Martha, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Paint Cr at Staffordsville, Open Fk of Paint Cr at confluence with Little Paint Cr, ACE–HD (Paintsville Lk), Levisa Fk below Toms

Table 1 Continued

Taxa	Sources and Distributions
*Oligochaeta Continued	
*Haplotaxida (=Plesiopora)	Cr, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint Cr, Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk above Relief ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Pine Co, outflow Levisa Fk ACE–HD (Project FRL), Shelby Cr near Shelbiana, Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project FLR), inflow Johns Cr, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL), Slate Cr at Grundy, Russell Fk ACE–HD (Project LFR); Dickenson Co, McClure River at Haysi, Russell Fk at Dam Site ACE–HD (Project LFR). outflow at Pound River, Pound River inflow at Norland, inflow at Cranesnest River ACE–HD (Project JWF). Adjacent basin collections include Boyd Co, East Fk of Little Sandy KNPC (1979); Martin Co, Rockcastle Cr of Tug Fk KNPC (1979). Pennak (1978) recognizes a revision of the orders of Oligochates and Haplotaxida replaces Plesiopora. Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lake, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
Haplotaxida Tubificidae *Branchiura sowerbyi	Pennak (1970) reports this species as "RARE". Floyd Co, Johns Cr outflow ACE–HD (Project DEW).
*Naididae	This is one of the largest families of aquatic oligochaetes and some of the specimens listed above no doubt belong to this family. Hiltunen and Klemm (1980) provide annotations for Naididae suggesting wide distributions for representatives of several genera. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk,Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint Cr, Little Paint Cr below Lost Cr ACE–HD (Project PIV).
*Naidium sp	Representatives of Naidium have been reassigned to other genera, Dero and Pristina, thus eliminating this taxa Pennak (1978). Without the specimens for examination the determination of the proper taxon is impossible. Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk ACE–HD (Project PIV).
*Nais sp	Morgan Co, Paint Cr below confluence of Open Fk and Little Paint Cr, Open Fk ACE–HD (Project PIV).
Lumbriculida *Lumbriculidae	Morgan Co, Patoker Br of Open Fk ACE–HD (Project PIV).
Branchiobdellida *Branchiobdellidae Cambarincola heterognatha Cambarincola fallax Cambarincola philadelphica	The status of this group of commensala is undetermined. Many authorities have viewed them as leeches but a modern approach suggests that this group arose from anchstral stock before the Oligochaete-Hirudinea split Pennak (1978). Branchiobdellids are commensals on crayfish and Holt (1969) provides ranges for this species of the southern Appalachians. Morgan Co, Lost Cr of Little Paint Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).

Table 1 Continued

Taxa	Sources and Distributions
*Hirudinea	Specimens taken from Levisa Fk and adjacent basins have not been identified beyond the level of the class. Lawrence Co, Little Blaine Cr, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Floyd Co, Spurlock Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979). Specimens from adjacent basins include Knott Co, Carr Fk of the North Fk of the Licking River KNPC (1979).
Rhynchobdellida	Klemm (1972) presents a listing of North American leeches and includes their ranges, but does not provide information concerning southwestern Virginia or eastern Ky. H. stagnalis and G. complanata are described as very common and wide ranging in North America Klemm (1972); Pennak (1978).
Glossiphoniidae	
Glossiphonia complanata	
Helobdella stagnalis	
Helobdella fusca	
Helobdella triserialis	
Placobdella ornata	
Placobdella parasitica	
Gnathobdellida	
Hirudinidae	
Percymoorensis marmoratis	
Macrobdella decora	
Mollusca	
Gastropoda	Dickenson Co, Russell Fk at Haysi, Russell Fk at Dam Site ACE–HD (Project LFR).
	Pike Co, Levisa Fk outflow ACE–HD (Project FRL).
Mesogastropoda	
Pleuroceridae	
Goniobasis costifera	Known from Lawrence and Boyd Counties Branson (1970). Range includes the Ohio River and Big Sandy.
Goniobasis semicarinata	Known from Morgan Co and ranges throughout the Licking River Basin Branson (1970).
Lithasia plicata	Known from Morgan and Magoffin Counties but not from the Levisa Fk Branson (1970).
Lithasia obovata	Known from Letcher Co and ranges throughout the Cumberland Basin Branson (1970).
Nitocris trilineata	Known from Lawrence and Boyd Counties Branson (1970). Range includes the Ohio River and Big Sandy.
Basommatophora	
*Ancylidae	Johnson Co, Paint Cr at Staffordsville, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Laevapex sp	Johnson Co, Levisa Fk below Toms Cr KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979).
*Ferrissia sp	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint Cr, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Buchanan Co, Russell Fk ACE–HD (Project LFR); Dickenson Cr, Russell Fk at Haysi ACE–HD (Project LFR).
*Physidae	Known from Dry Fk of Tug Fk and Pigeon Cr of Tug Fk Tarter (1976).

Table 1 Continued

Taxa	Sources and Distributions
*Physa sp	Lawrence Co, Blaine Cr below Little Blaine Cr ACE–HD (Yatesville Lk), Blaine below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Staffordsville, Paint Cr at Fishtrap Church, Little Paint Cr above confluence with Open Fk, Open Fk at confluence with Little Paint Cr, Mine Fk ACE–HD (Paintsville Lk), Levisa Fk below Toms Cr KNPC (1979); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979); Letcher Co, Colliers Br of Poor Fk of Cumberland River KNPC (1979); Buchanan Co. Levisa Fk inflow ACE–HD (Project FRL).
*Planorbidae	Morgan Co, Paint Cr below confluence of Open Fk and Little Paint Cr ACE–HD (Project PIV); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW).
*Helisoma sp	Lawrence Co, Blaine Cr below Little Blaine, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Staffordsville, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk).
*Gyraulus sp	Morgan Co, Paint Cr below confluence of Open Fk and Little Paint Cr ACE–HD (Project PIV).
Lymnaeidae	
*Lymnaea sp	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV). Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Pelecypoda (=Bivalvia)	
Heterodonta	
Corbiculidae	
*Corbicula sp	Floyd Co, Johns Cr outflow ACE–HD (Project DEW); Pike Co, Levisa Fk outflow ACE–HD (Project FRL).
*Corbicula leana	Johnson Co, Levisa Fk below Toms Cr KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Sphaeriidae	Burch (1972) provides annotations for species of Sphaeriidae. Several species of Sphaerium and Pisidium occur within the range of Levisa Fk.
*Sphaerium sp	Lawrence Co, Upper Laurel Cr, Lower Laurel Cr, Hood Cr, Little Blaine Cr ACE–HD (Yatesville Lk), Blaine Cr below Backbone Br ACE–HD (Project YBC); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Letcher Co, Colliers Br of Poor Fk of Cumberland River KNPC (1979); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF).
*Sphaerium simile	Lawrence Co, Little Blaine Cr KNPC (1979).
*Sphaerium striatinum	Lawrence Co, Little Blaine Cr, Blaine Cr, KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Schizodonta	
Unionidae	Burch (1973) provides annotations for species of Unionidae and other Unionaceans. Several species, other than these listed below, are within range of Levisa Fk but it is doubtful that they presently occur within the basin due to the degraded conditions throughout much of the Basin.
*Actinonaias carinta	Johnson Co, Levisa Fk below Toms Cr KNPC (1979).
*Lampsilis radiata	Lawrence Co, Blaine Cr below Little Blaine Cr, Little Blaine Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk).

Table 1 Continued

Taxa	Sources and Distributions
Lampsilis radiata luteola	Lawrence Co, Blaine Cr KNPC (1979).
*Lampsilis radiata siliquoidea	Johnson Co, Levisa Fk below Toms Cr KNPC (9179).
*Lampsilis ventricosa	Floyd Co, Right Fk Beaver Cr KNPC (1979).
Fusconaia sp	Martin Co, Highly eroded shell from Rockcastles Cr KNPC (1979).
Arthropoda	
Arachnoidea	
*Acari (Hydracarina)	Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchana Co, Russell Fk ACE–HD (Project LFR); Dickenson Co, outflow at Pound River ACE–HD (Project JWF).
Crustacea	
Isopoda	
Asellidae	
*Asellus sp	Lawrence Co, Blaine Cr at Mouth of Cherokee Cr, Blaine Cr below Long Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Morgan Co, Lost Cr of Little Paint Cr ACE–HD (Project PIV); Dickenson Co, outflow of Pound River, inflow at Cranesnest River ACE–HD (Project JWF). Asellus sp is also reported from Boyd Co, East Fk of Little Sandy River KNPC (1979).
Asellus brevicauda	Williams (1972) provides a checklist of the species of Asellus and these forms are considered as common and widely distributed throughout the east-central states. All three species are known from Kentucky and/or Virginia.
Asellus forbesi	
Asellus intermedius	
Asellus recurvatus	Steeves (1969) reports this troglobitic isopod from Wise Co, Virginia Apparently from the Powell River Drainage Basin. Other troglobitic Asellids having ranges that include Levisa Fk Basin are A. pricei, A. holsinger, and A. richardsonae.
*Lirceus sp	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
Lirceus fontinalis	Morgan Co, Caney Cr of Licking River Drainage KNPC (1979). Williams (1972) describes this as a typical form from springs and streams throughout the east-central states.
Lirceus lineatus	Pennak (1978) describes this species as the most common and widely distributed species of Lirceus in the eastern states. Williams (1972) includes Kentucky and Virginia in the range of L. lineatus.
Amphipoda	
Gammaridae	
*Gammarus minus	Holsinger (1972) reports this species to be extremely common from cave streams, springs, and spring runs throughout the Appalachians. He includes collection data from Boyd, Lawrence, Morgan, Magoffin, Wise, Dickenson, and Buchanan Counties. Specific locations of collections were not available but no doubt G. minus should be included as a member of the Levisa Fork fauna.
Crangonyx sp	Pennak (1978) describes these forms as having an epigean habitat. Lawrence Co, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD)Project YBC).
Crangonyx antennatus	Holsinger (1972) reports this species from Wise Co, Virginia. C. antennatus is a common troglobitic species that is normally associated with the isopod Asellus recurvatus (see above).
Crangonyx obliguus-richmondensis	Pennak (1978) describes this species as widely distributed in the eastern half of the U.S. in all types of water.

Table 1 Continued

Taxa	Sources and Distributions
Stygonectes sp	This genus of typically hypogean forms ranges throughout the east-central states and collected specimens from Virginia and West Virginia border the Levisa Fk Basin. Holsinger (1972) reports an unidentified specimen from eastern Ky. Morgan Co, Patoker Br of Open Fk ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP). Hobbs (1972) provides a complete account of freshwater decapods and their general ranges. Included here are those forms that occur within Levisa Fk or border its drainage basin.
*Decapoda	
*Astacidae	Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint Cr, Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Levisa Fk outflow ACE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, outflow at Pound River, Pound River inflow at Norland, inflow at Cranesnest River ACE–HD (Project JWF).
*Cambarus sp	Lawrence Co, Blaine Co near Crubb Hollow, Blaine Cr at Mouth Cherokee Cr ACE–HD (Project YBC); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Johns Cr outflow ACE–HD (Project DEW), Spurlock Cr KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Cambarus robustus	Hobbs (1969) suggests C. robustus ranges throughout the lower portion of Levisa Fk. Lawrence Co, Little Blaine Cr KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Knott Co, Laurel Fk of Cumberland KNPC (1979); Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979); Colliers Cr, Bad Br of Cumberland KNPC (1980); C. robustus has also been taken in Boyd Co, East Fk Little Sandy KNPC (1979) and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Cambarus bartonii bartonii	Hobbs (1969) suggests that C. b. bartonii ranges throughout Levisa Fk Basin. Pennak (1978) describes C. b. bartonii as being generally distributed throughout the central and northern states east of the Mississippi River. Rhoades (1944) sites records of C. b. bartonii from Boyd, Lawrence, Johnson, Morgan, and Martin Counties.
Cambarus distans	This species has not been collected within the Levisa Fk Basin, but Hobbs (1969) suggests its range to include the upper extremes of the basin throughout Wise, Buchanan, Dickenson, and Pike Counties. C. distans has been taken in Letcher Co from the Cumberland Basin. These collections include data from Colliers Br of Poor Fk KNPC (1979); Colliers Cr and Bad Br KNPC (1980); and Cumberland River Rhoades (1944).
Cambarus diogenes	This burrowing crayfish has been reported from Boyd Co, Big Sandy River Basin by Rhoades (1944). Hobbs (1969) indicates that the range of this species includes a large portion of the eastern U. S., but only peripherally borders the Appalachians.
*Cambarus venteranus	This species has been taken in Pike Co from Russell Fk at Elkhorn City by Batch (1981) and ranges throughout the lower portion of the Levisa Fk, according to Hobbs (1969).

Table 1 Continued

Taxa		Sources and Distributions
	Cambarus striatus Cambarus carolinus Cambarus longirostris Cambarus sciotensis	These species of Cambarus either border the Levisa Fk Basin or may occur in the uppermost reaches of its tributaries Hobbs (1969 and 1972).
	*Orconectes sp	Lawrence Co, Blaine Cr at Mouth of Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Mouth of Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Mouth of Little Blaine, Upper Laurel Cr, Lower Laurel Cr, Hood Cr, Little Blaine Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Paint Cr at Staffordsville, Open Fk at Little Paint, Mine Fk, Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Lost Cr of Little Paint Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk at Little Paint Cr ACE–HD (Paintsville Lk); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Levisa Fk outflow ACE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF).
	*Orconectes putnami	Rhoades (1944) collected this species throughout the Big Sandy Drainage but mistakenly described the form as O. juvenilis. Bouchard (1974) believes these forms described by Rhodes to be O. putnami and they are so treated in this paper. Batch (1981) has records of O. juvenilis from Pike Co, but believes they are O. putnami also. Lawrence Co Rhoades (1944) , Little Blaine Cr, Blaine Cr KNPC (1979); Johnson Co Rhoades (1944), Levisa Fk, Jenny Cr KNPC (1979); Moragn Co Rhoades (1944), Caney Cr of Licking River KNPC (1979); Magoffin Co Rhoades (1944), Licking River KNPC (1979); Floyd Co Rhoades (1944), Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Pike Co Rhoades (1944), Russell Fk at Elkhorn City Batch (1981), Elkhorn Cr KNPC (1979); Knott Co Rhoades (1944), Laurel Fk of Ky River, Carr Fk of Ky River KNPC (1979); Letcher Co Rhoades (1944), Colliers Fk of Poor Fk of Cumberland KNPC (1979); putnami has also been taken from the East Fk Little Sandy; Boyd Co KNPC (1979) and Rockcastle Cr of Tug Fk; Martin Co KNPC (1979).
	*Orconectes rusticus	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
	Orconectes immunis Orconectes obscurus Orconectes virilis	According to their distributions, as presented by Hobbs (1972), these crayfish may occur within the Big Sandy Drainage.
Insecta		
Collembola		
Isotomidae		
	*Isotoma sp	Johnson Co, Levisa Fk KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979); Rockcastle Cr of Tug Fk KNPC (1979).
Emphemeroptera		
Siphlonuridae		Edmunds (1978) reports 81 North American species within this family. Some representatives are common forms, having wide ranges and preferring lotic habitats. Records from Levisa Fk are scarce expect for the genus Isonychia.

Table 1 Continued

Taxa	Sources and Distributions
*Ameletus sp	This is the largest genus within Siphlonuridae and it ranges throughout the mountains of the eastern U. S. Collections reported for Levisa Fk have not been identified below the level of the genus but A. lineatus and A. ludens have ranges that include the Levisa Fk Basin Burks (1953). Lawrence Co, Blaine Cr at Mouth of Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV); Knott Co, Defected Cr of Ky River (MSU Entomological Collection).
*Isonychia sp	Edmunds (1978) describes this genus as widespread and collections have been made throughout the Levisa Fk Basin. Lawrence Co, Blaine Cr below Little Blaine, Upper Laurel, Lower Laurel, Hood Cr, Little Blaine Cr ACE–HD (Yatesville Lk), Little Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk), Paint Cr at Staffordsville, Open Fk at Little Paint Cr, Little Paint Cr ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint Cr, Open Fk, Little Paint Cr below Lost Cr, Lost Cr of Little Paint Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR), Johns Cr inflow ACE–HD (Project DEW), Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk of Ky River, Carr Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Buchanan Co, Dismal Cr at Grundy, Russell Fk ACE–HD (Project LFR); Dickenson Co, McClure River at Haysi, Russell Fk at Haysi ACE–HD (Project LFR), Pound River inflow at Norland, inflow at Cranesnest River ACE–HD (Project JWF). Collections from counties within the Big Sandy Drainage but not within Levisa Fk include Boyd Co, East Fk Little Sandy River KNPC (1979) and Martin Co, Rockcastle Cr KNPC (1979).
Siphlonurus sp	Edmunds (1978) describes this genus as widespread but no collections have been made for the Levisa Fk. Burks (1953) suggests that eastern Kentucky, including Levisa Fk, lies within the range of S. guebecensis.
*Baetidae	Edmunds (1978) reports 128 species of North American baetids and generally describes the group as preferring lotic habitats. Several genera of Baetidae extend their ranges into eastern Kentucky and southwestern Virginia Burke (1953) Edmunds et. al. 1976. Tarter (1976) collected baetids from the Big Sandy River (Boyd Co) and from the Tug Fk below Litwan, at Matewan and below Kermit. Lawrence Co, Rich Cr Samsel et al., (1973); Morgan Co, Patoker Br of Open Fk, Open Fk ACE–HD (Project PIV); Pike Co, Levisa Fk outflow ACE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).

Table 1 Continued

Taxa	Sources and Distributions
*Baetis sp	The numerous collections for Baetis no doubt represent more than one species, but are herein lumped together until such determinations are made. Burks (1953) provides the range for B. pygmaeus which indicates this species may occur in eastern Ky. Lawrence Co, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk). Paint Cr at Staffordsville, Open Fk at Little Paint Cr, Little Paint Cr ACE–HD(Paintsville Lk), Levisa Fk, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Levisa Fk outflow ACE–HD (Project FRL), Elkhorn Cr, Bear Fk KNPC (1979); Knott Co, Defeated Cr, Little Carr Fk, Wolf Pen Cr of Licking River (MSU Entomological Collection), Carr Fk, Laurel Fk KNPC (1979); Letcher Co, Colliers Cr, Bad Br of Cumberland KNPC (1980), Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL), Levisa Fk below Grundy, Slate Cr at Grundy ACE–HD (Project LFR), Dickenson Co. McClure River at Haysi ACE–HD (Project LFR), Pound River outflow, Pound River inflow at Norland, Cranesnest River inflow ACE–HD (Project JWF). The genus has been taken from Boyd Co, East Fk Little Sandy KNPC (1979) and Martin Co, Rockcastle Cr KNPC (1979).
*Baetis tricaudatus	Pike Co, Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR); Buchanan Co, Dismal Cr at Grundy, Russell Fk ACE–HD (Project LFR); Dickenson Co, Russell Fk at Haysi, Russell Fk at Dam Site ACE–HD (Project LFR).
Baetis vagans	Tarter (1976) reports this species from Elkhorn Cr of Tug Fk.
Callibaetis sp	No recorded collections of Callibaetis have been made for Levisa Fk, but species of Callibaetis are widespresd and possibly range into the basin Burks (1953), Edmunds et al. (1976).
*Centroptilum sp	Collections from counties within the Big Sandy Draniage, but not within Levisa Fk include Boyd Co, East Fk Little Sandy; Knott Co, Laurel Fk and Carr Fk, and Martin Co, Rockcastle Cr KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Cranesnest River inflow ACE–HD (Project JWF).
*Cloeon sp	Collections from counties within the Big Sandy Drainage, but not within Levisa Fk include Morgan Co, Caney Cr of Licking River, and Knott Co, Laurel Fk of Ky River KNPC (1979). Morgan Co, Open Fk, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).

Table 1 Continued

Taxa	Sources and Distributions
*Pseudocloeon sp	Collections from counties within the Big Sandy Drainage, but not within Levisa Fk include Boyd Co, East Fk Little Sandy, and Martin Co, Rockcastle Cr KNPC (1979). Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Little Blaine Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr of Little Paint, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Levisa Fk outflow ACE–HD (Project FRL); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project JWF); Dickinson Co, Pound River outflow ACE–HD (Project JWF).
*Heptageniidae	Edmunds (1978) reports 152 species of mayflies within Heptageniidae. Species of this family are very common, wide ranging forms that are found in both lotic and lentic habitats. Several researchers provide keys and ranges for representative of this family Burks (1953); Day (1956); Pennak (1978); Tarter (1976) collected Heptageniids from the Tug Fk of the Big Sandy at Matewan, below Kermit, above Welch, below Litwan, and at Dry Fk at laeger. Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC), Rich Cr Samsel et al., (1973); Morgan Co, Open Fk, Paint Cr above Osborne Cr ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Stenonema sp	The numerous collections for Stenonema no doubt represent more than one species, but are herein lumped together until such determinations are made. Lawrence Co, Blaine Cr at Sparks Cem ACE–HD (Yatesville Lk), Little Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Levisa Fk KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR), Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Defeated Cr and Little Carr Cr of Ky River (MSU Entomological Collection); Letcher Co, Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL); Russell Fk ACE–HD (Project LFR); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR), Pound River inflow at Norland, Cranesnest River inflow ACE–HD (Project JWF). Genus is reported for Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Stenonema tripunctatum	Lewis (1974) provides a distributional map for this wide ranging, common species. Tater (1976) reports S. Tripunctatum from Laurel Fk of Tug Fk Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Lower Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint Cr, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW). This species has also been taken in Boyd Co, East Fk Little Sandy KNPC (1979).
*Stenonema vicarium	Lewis (1974) provided a distributional map for this wide ranging, common species. Tarter (1976) reports S. vicarium from Laurel Fk of Tug Fk, Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr above Sparks Br ACE–HD (Project YBC), Little Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr, inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Shelby Cr nearElkhorn Cr at Elkhorn City ACE–HD (Project LFR), Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979); Colliers Cr KNPC (1980; identification questionable); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Russell Fk ACE–HD Project LFR); Dickenson Co, McClure River at Haysi, Russell Fk at Haysi, Russell Fk at Dam Site ACE–HD (Project LFR), Pound River inflow at Norland ACE–HD (Project JWF). S. vicarium has been reported from Boyd Co, East Fk Little Sandy KNPC (1979) and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Stenonema femoratum	Lewis (1974) provides a distributional map for this wide ranging, common species. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr above Sparks Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Ósborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979).
*Stenonema terminatum	According to the distributional map provided by Lewis (1974), S. terminatum occurs throughout the lower portion of Levisa Fk Basin. Johnson Co, Levisa Fk KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979). This species has been taken in Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Stenonema near terminatum	Johnson Co, Levisa Fk KNPC (1979). This form has also been taken in Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Stenonema integrum	According to the distributional map provided by Lewis (1974), S. integrum is a wide ranging species in the southeastern states. Johnson Cr, Levisa Fk KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979). This form has also been taken in Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Stenonema near integrum	Floyd Co, Right Fk Beaver Cr KNPC (1979).
Stenonema ithaca	This species is recorded from Letcher Co, Colliers Cr KNPC (1980), but has to be questioned since this greatly extends the range for the species Lewis (1974).
Stenonema rubrum	This species is recorded from Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979), but has to be questioned since this extends the range for the species Lewis (1974).
*Stenonema mediopunctatum	This species is recorded from Pike Co, Elkhorn Cr KNPC (1979), but has to be questioned since this greatly extends the range for the species Lewis (1974).
*Stenonema meririvavalarum	Reported from Floyd Co, Right Fk Beaver Cr KNPC (1979).
Stenonema carlsoni Stenonema minnetonka Stenonema nepotellum Stenonema pulchellum	According to distributional maps persented by Lewis (1974), these species have ranges that include the Levisa Fk Basin.
*Stenacron sp	According to Edmunds et al. (1976), Stenacron is restricted to the eastern and central U.S. Lawrence Co, Little Blaine Cr KNPC (1979); Johnson Co, Levisa Fk KNPC (1979); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint Cr below confluence of Open Fk and Little Paint, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Elkhorn Cr at Elkhorn City ACE–HD (Project LFR), Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL), Slate Cr at Grundy ACE–HD (Project LFR); Dickenson Co, Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF). This genus has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979), and Boyd Co, East Fk Little Sandy KNPC (1979).
*Stenacron interpunctatum	According to Lewis (1974) this species ranges through the east central U.S. Lawrence Co, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Heptagenia sp	Edmunds et al. (1976) describes this genus as common and widespread in the Nearctic region. Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Lost Cr of Little Paint Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Little Sandy KNPC (1979); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Carr Fk of Ky River KNPC (1979), Defeated Cr (MSU Entomological Collection); Letcher Co, Bad Br and Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Russell Fk ACE–HD (Project LFR). The genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Epeorus sp	Edmunds et al. (1976) describes this genus as common and widespread. Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk); Knott Co, Defeated Cr (MSU Entomological Collection); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Russell Fk ACE–HD (Project LFR); Dickenson Co, McClure River at Haysi, Russell Fk at Haysi, Russell Fk at Dam Site, Indian Cr ACE–HD (Project LFR).
Leucrocuta sp	Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC).
Ephemerellidae	Edmunds (1978) reports 85 species of mayflies within the family Ephemerellidae. The genus Ephemerella is the only genus within the family and representative are described as common and widespread in both lotic and lentic habitats.
*Ephemerella sp	Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR); Dickenson Co, McClure River at Haysi, Russell Fk at Haysi, Russell Fk at Dam Site ACE–HD (Project LFR).
*Ephemerella (Attenella) sp	Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
Ephemerella (Drunella) sp	This subgenus has been collected outside the Levisa Fk in Knott Co, Laurel Fk of Ky River, and Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979).
*Ephemerella (Drunella) cornuta	Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).
*Ephemerella (Ephemerella) dorothea	Lawrence Co, Blaine Cr above Sparks Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Lost Cr of Little Paint, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Spurlock Cr KNPC (1979).
Ephemerella (Ephemerella) hispida	Reported from Letcher Co, Bad Br of Cumberland KNPC (1980).
Ephemerella (Ephemerella) argo	Tarter (1976) reports this species from Laurel Fk of Tug Fk.
*Ephemerella (Eurylophella) sp	Lawrence Co, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Lost Cr of Little Paint, Paint Cr above Osborne Br ACE–HD (Project PIV); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979). This subgenus has been taken outside Levisa Fk in Boyd Co, East Fk Little Sandy KNPC (1979).
Ephemerella (Eurylophella) funeralis	Tarter (1976) reports this species from Laurel Fk of Tug Fk.
*Ephemerella (Eurylophella) temporalis group	Lawrence Co, Little Blaine Cr KNPC (1979); Floyd Co, Spurlock Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979).
Ephemerella (Serratella) sp	Morgan Co, Patoker Br of Open Fk, Open Fk ACE–HD (Project PIV); Dickenson Co, Pound River outflow ACE–HD (Project JWF).

Table 1 Continued

Taxa	Sources and Distributions
Tricorythidae	
*Tricorythodes sp	Edmunds (1978) reports 21 species for this family of mayflies and describes the genus Tricorythodes as widespread in both lotic and lentic habitats. Collected data for Levisa Fk suggests Tricorythodes are restricted to the lower portions of the basin. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Levisa Fk KNPC (1979); Floyd Co, Johns Cr outflow ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW). This genus has been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Caenidae	
*Caenis sp	Edmunds (1978) reports 18 species for this family of mayflies and describes the genus Caenis as widespread in both lotic and lentic habitats. Specimens reported herein have not been identified below the level of the genus, but Burks (1953) indicates that C. diminuta, simulans, and C. hilaris range throughout much of the U.S. C. simulans is reported as pollution tolerant Burks (1953). Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co,, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk). Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint Cr ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Lost Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, inflow at Cranesnest River ACE–HD (Project JWF). This genus has been taken from Boyd Co, East Fk Little Sandy, and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Baetiscidae	
*Baetisca sp	Edmunds (1978) reports 12 species for this family of mayflies and describes the genus Baetisca as widespread in lotic habitats within the southeastern U.S, Morgan Co, Caney Cr of Licking River KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1980); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF). This genus has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Baetisca bajkovi	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV).
*Baetisca berneri	Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
Baetisca callosa	Lawrence Co, Little Blaine Cr, Blaine Cr KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
Baetisca carolina	Letcher Co, Bad Br of Cumberland KNPC (1980).
Baetisca lacustris	Lawrence Co, Blaine Cr below Little Blaine, Blaine Cr below Brushy Cr, Hood Cr, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk).
Leptophlebiidae	Edmunds (1978) reports 70 species for this family of mayflies and describes representatives as extremely widespread Edmunds et al. (1976).
Choroterpes sp	No representatives of this genus have been taken from Levisa Fk, but Burks (1953) and Edmunds et al. (1976) describe this group as widespread in North America.
Leptophledbis sp	Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC).
*Habrophlebiodes sp	Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Paraleptophlebia sp	Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Br North Fk Pound Lk ACE–HD (Project NFP). Tarter (1976) reports P. adoptiva for the Laurel Fk of Tug Fk.
*Ephemeridae	Edmunds (1978) reports 13 species for this family of mayflies and describes representatives as widespread in both lotic and lentic habitats. McCafferty (1975) describes representatives of Ephemeridae as being large conspicuous mayflies, but cites very few records of specimens from Kentucky. Lawrence Co, Rich Cr of Big Sandy Samsel et al, (1973); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).
*Ephemera sp	Lawrence Co, Blaine Cr below Long Br ACE–HD (Project YBC), Upper Laurel, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk, Little Paint Cr below Lost Cr ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville LK); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Buchanan Co, Russell Fk ACE–HD (Project LFR).
*Ephemera varia	McCafferty (1975) cites this species as common and widespread, but does not have records for Ky. Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
Ephemera simulans	McCafferty (1975) reports this species as present in large streams, rivers, and lakes throughout the eastern U.S. and cites Ky records. E. simulans has not been taken from the Big Sandy Drainage. Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
Hexagenia atrocaudata	Representatives of Hexagenia burrow in fine silt and marl substrates of streams and rivers McCafferty (1975). No representatives of this genus have been taken

Table 1 Continued

Taxa	Sources and Distributions
Hexagenia atrocaudata Continued	from the Levisa Fk, but H. atrocaudata has been taken from Boyd Co, East Fk Little Sandy KNPC (1979). McCafferty (1975) describes this species as widespread, but does not cite Ky records. McCafferty (1975) suggests that these wide ranging species could be included in the fauna of eastern Kentucky and southwestern Virginia.
Hexagenia bilineata Hexagenia limbata Hesagenia munda Hexagenia rigida	
Polymitarcidae	Edmunds (1978) reports 6 species for this family of mayflies and describes some representatives as being widespread in both lotic and lentic habitats. Johnson Co, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk). McCafferty (1975) suggests that these wide ranging species could be included in the fauna of eastern Ky and southwestern Virginia. E. album is a northern species and probably does not extend into the Levisa Fk Basin.
*Ephoron sp	
Ephoron album Ephoron leukon	
Potamanthidae	Edmunds (1978) reports 8 species of this family of mayflies and describes representatives as preferring lotic habitats. McCafferty (1975) describes several species as being widespread and common in the eastern U.S. Species whose range might include Levisa Fk Basin are P. distinctus, P. myops, P, rufous, and P. verticis.
Potamanthus sp	
Odonata	Odonates are predaceous insects having aquatic nymphs and terrestrial adults. Needham and Westfall (1955), Smith and Pritchard (1963), Westfall (1978), and Pennak (1978) provide excellent descriptions of odonate habitats, feeding habits, distributions, and taxonomy. Most representatives are excellent fliers and many enjoy wide ranges in North America. Resner (1970) provides an annotated checklist of the odonates of Ky.
Petaluridae	Westfall (1978) describes this family and genus as preferring lotic and lentic habitats in the mountains of the eastern U.S. There are 2 species within the family Petaluridae and a single species, T. thoreyi, within the genus Tachopteryx. No representatives have been taken from Levisa Fk Basin.
Tachopteryx sp	
Cordulegastridae	Westfall (1978) reports 7 species of dragonflies for this family and includes the single genus Cordulegaster. Representatives of Cordulegaster are burrowers that prefer lotic habitats. Lawrence Co, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co, Little Paint Cr, ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Right Fk Beaver Cr KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Bad Br of Cumberland KNPC (1980). Floyd Co, Left Fk Beaver Cook (1951); Letcher Co Resner (1970);
*Cordulegaster sp	
*Cordulegaster maculatus	
*Gomphidae	Westfall (1978) reports 86 species of dragonflies for this family and describes most representatives as burrowers in lotic and lentic habitats. Representatives of several genera are considered as common, widespread forms in the eastern. U.S. Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, inflow at Cranesnest River ACE–HD (Project JWF).

Table 1 Continued

Taxa	Sources and Distributions
*Arigomphus sp	Arigomphus is considered to be a subgenus by some authorities and representatives occur in both lotic and lentic habitats. Dickenson Co, inflow at Cranenest River ACE–HD (Project JWF).
*Arigomphus villosipes	Floyd Co, Levisa Fk Resner (1970).
*Dromogomphus sp	Westfall (1978) describes nymphs of this genus as preferring lotic habitats in the eastern U.S. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint Cr, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk), Jenny Cr, Levisa Fk KNPC (1979); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Dromogomphus spoliatus	Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Dromogomphus spinosus	Resner (1970) reports this species from Pike Co and Letcher Co, but stream localities are not given.
*Gomphurus fraternus	Gomphurus may be considered as a subgenus and representatives are described and occurring in both lotic and lentic habitats. This species was reported by Resner (1970) from Pike and Letcher Counties, Levisa Fk.
*Gomphus sp	Representatives of this genus are widespread in both lotic and lentic habitats. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Carr Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP). The genus is also reported from Boyd Co, East Fk Little Sandy KNPC (1979).
Gomphus descriptus	Letcher Co, Rockhouse Cr Cook (1951), no location Resner (1970). These data are probably not Levisa Fk records.
Gomphus exilis	Letcher Co, no location Macklin and Cook (1967); Resner, (1970). Probably not Levisa Fk records.
*Gomphus lividus	Floyd Co, Levisa Fk River Cook (1951); Letcher Co, Rockhouse Cr Cook (1951).
Hagenius brevistylus	Westfall (1978) reports a single species for this genus and describes it as occuring in both lotic and lentic habitats in the southeastern U.S. Letcher Co Resner (1970). Probably not a Levisa Fk record.
*Lanthus sp	Representatives of this genus occur in lotic habitats in the southeastern U.S. Needham and Westfall (1955) report two species within the genus. Lawrence Co, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk and Little Paint, Little Paint below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Lanthus albistylus	Lawrence Co, Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Letcher Co, no location Resner (1970).

Table 1 Continued

Taxa	Sources and Distributions
Tricorythidae	
*Tricorythodes sp	Edmunds (1978) reports 21 species for this family of mayflies and describes the genus Tricorythodes as widespread in both lotic and lentic habitats. Collected data for Levisa Fk suggests Tricorythodes are restricted to the lower portions of the basin. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Levisa Fk KNPC (1979); Floyd Co, Johns Cr outflow ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW). This genus has been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Caenidae	
*Caenis sp	Edmunds (1978) reports 18 species for this family of mayflies and describes the genus Caenis as widespread in both lotic and lentic habitats. Specimens reported herein have not been identified below the level of the genus, but Burks (1953) indicates that C. diminuta, simulans, and C. hilaris range throughout much of the U.S. C. simulans is reported as pollution tolerant Burks (1953). Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co,, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk). Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint Cr ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Lost Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, inflow at Cranesnest River ACE–HD (Project JWF). This genus has been taken from Boyd Co, East Fk Little Sandy, and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Baetiscidae	
*Baetisca sp	Edmunds (1978) reports 12 species for this family of mayflies and describes the genus Baetisca as widespread in lotic habitats within the southeastern U.S, Morgan Co, Caney Cr of Licking River KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1980); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF). This genus has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Baetisca bajkovi	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV).
*Baetisca berneri	Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
Baetisca callosa	Lawrence Co, Little Blaine Cr, Blaine Cr KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
Baetisca carolina	Letcher Co, Bad Br of Cumberland KNPC (1980).
Baetisca lacustris	Lawrence Co, Blaine Cr below Little Blaine, Blaine Cr below Brushy Cr, Hood Cr, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk).
Leptophlebiidae	Edmunds (1978) reports 70 species for this family of mayflies and describes representatives as extremely widespread Edmunds et al. (1976).
Choroterpes sp	No representatives of this genus have been taken from Levisa Fk, but Burks (1953) and Edmunds et al. (1976) describe this group as widespread in North America.
Leptophledbis sp	Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC).
*Habrophlebiodes sp	Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Paraleptophlebia sp	Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Br North Fk Pound Lk ACE–HD (Project NFP). Tarter (1976) reports P. adoptiva for the Laurel Fk of Tug Fk.
*Ephemeridae	Edmunds (1978) reports 13 species for this family of mayflies and describes representatives as widespread in both lotic and lentic habitats. McCafferty (1975) describes representatives of Ephemeridae as being large conspicuous mayflies, but cites very few records of specimens from Kentucky. Lawrence Co, Rich Cr of Big Sandy Samsel et al, (1973); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).
*Ephemera sp	Lawrence Co, Blaine Cr below Long Br ACE–HD (Project YBC), Upper Laurel, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk, Little Paint Cr below Lost Cr ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville LK); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Buchanan Co, Russell Fk ACE–HD (Project LFR).
*Ephemera varia	McCafferty (1975) cites this species as common and widespread, but does not have records for Ky. Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
Ephemera simulans	McCafferty (1975) reports this species as present in large streams, rivers, and lakes throughout the eastern U.S. and cites Ky records. E. simulans has not been taken from the Big Sandy Drainage. Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
Hexagenia atrocaudata	Representatives of Hexagenia burrow in fine silt and marl substrates of streams and rivers McCafferty (1975). No representatives of this genus have been taken

Table 1 Continued

Taxa	Sources and Distributions
Hexagenia atrocaudata Continued	from the Levisa Fk, but H. atrocaudata has been taken from Boyd Co, East Fk Little Sandy KNPC (1979). McCafferty (1975) describes this species as widespread, but does not cite Ky records.
Hexagenia bilineata Hexagenia limbata Hesagenia munda Hexagenia rigida	McCafferty (1975) suggests that these wide ranging species could be included in the fauna of eastern Kentucky and southwestern Virginia.
Polymitarcidae	Edmunds (1978) reports 6 species for this family of mayflies and describes some representatives as being widespread in both lotic and lentic habitats.
*Ephoron sp	Johnson Co, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
Ephoron album Ephoron leukon	McCafferty (1975) suggests that these wide ranging species could be included in the fauna of eastern Ky and southwestern Virginia. E. album is a northern species and probably does not extend into the Levisa Fk Basin.
Potamanthidae	Edmunds (1978) reports 8 species of this family of mayflies and describes representatives as preferring lotic habitats. McCafferty (1975) describes several species as being widespread and common in the eastern U.S. Species whose range might include Levisa Fk Basin are P. distinctus, P. myops, P, rufous, and P. verticis.
Potamanthus sp	
Odonata	Odonates are predaceous insects having aquatic nymphs and terrestrial adults. Needham and Westfall (1955), Smith and Pritchard (1963), Westfall (1978), and Pennak (1978) provide excellent descriptions of odonate habitats, feeding habits, distributions, and taxonomy. Most representatives are excellent fliers and many enjoy wide ranges in North America. Resner (1970) provides an annotated checklist of the odonates of Ky.
Petaluridae	Westfall (1978) describes this family and genus as preferring lotic and lentic habitats in the mountains of the eastern U.S. There are 2 species within the family Petaluridae and a single species, T. thoreyi, within the genus Tachopteryx. No representatives have been taken from Levisa Fk Basin.
Tachopteryx sp	
Cordulegastridae	Westfall (1978) reports 7 species of dragonflies for this family and includes the single genus Cordulegaster. Representatives of Cordulegaster are burrowers that prefer lotic habitats.
*Cordulegaster sp	Lawrence Co, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co, Little Paint Cr, ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Right Fk Beaver Cr KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Bad Br of Cumberland KNPC (1980). Floyd Co, Left Fk Beaver Cook (1951); Letcher Co Resner (1970);
*Cordulegaster maculatus	
*Gomphidae	Westfall (1978) reports 86 species of dragonflies for this family and describes most representatives as burrowers in lotic and lentic habitats. Representatives of several genera are considered as common, widespread forms in the eastern. U.S. Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, inflow at Cranesnest River ACE–HD (Project JWF).

Table 1 Continued

Taxa	Sources and Distributions
*Arigomphus sp	Arigomphus is considered to be a subgenus by some authorities and representatives occur in both lotic and lentic habitats. Dickenson Co, inflow at Cranenest River ACE–HD (Project JWF).
*Arigomphus villosipes	Floyd Co, Levisa Fk Resner (1970).
*Dromogomphus sp	Westfall (1978) describes nymphs of this genus as preferring lotic habitats in the eastern U.S. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint Cr, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk), Jenny Cr, Levisa Fk KNPC (1979); Morgan Co, Open Fk above Relief ACE–HD (Paintsville Lk); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Dromogomphus spoliatus	Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Dromogomphus spinosus	Resner (1970) reports this species from Pike Co and Letcher Co, but stream localities are not given.
*Gomphurus fraternus	Gomphurus may be considered as a subgenus and representatives are described and occurring in both lotic and lentic habitats. This species was reported by Resner (1970) from Pike and Letcher Counties, Levisa Fk.
*Gomphus sp	Representatives of this genus are widespread in both lotic and lentic habitats. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Carr Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP). The genus is also reported from Boyd Co, East Fk Little Sandy KNPC (1979).
Gomphus descriptus	Letcher Co, Rockhouse Cr Cook (1951), no location Resner (1970). These data are probably not Levisa Fk records.
Gomphus exilis	Letcher Co, no location Macklin and Cook (1967); Resner, (1970). Probably not Levisa Fk records.
*Gomphus lividus	Floyd Co, Levisa Fk River Cook (1951); Letcher Co, Rockhouse Cr Cook (1951).
Hagenius brevistylus	Westfall (1978) reports a single species for this genus and describes it as occuring in both lotic and lentic habitats in the southeastern U.S. Letcher Co Resner (1970). Probably not a Levisa Fk record.
*Lanthus sp	Representatives of this genus occur in lotic habitats in the southeastern U.S. Needham and Westfall (1955) report two species within the genus. Lawrence Co, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk and Little Paint, Little Paint below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Lanthus albistylus	Lawrence Co, Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Letcher Co, no location Resner (1970).

Table 1 Continued

Taxa	Sources and Distributions
Ophiogomphus sp	Representatives of this genus are widespread and reported as preferring lotic habitats. This genus has not been reported from Levisa Fk, but it has been taken from Knott Co, Laurel Fk of Ky River KNPC (1979).
*Progomphus sp	Nymphs of this genus are widespread in both lotic and lentic habitats. Lawrence Co, Blaine Cr at Carter Br ACE–HD (Project YBC), Little Blaine, Blaine Cr KNPC (1979). Blaine Cr below Brushy Br, Blaine Cr at Sparks Cem, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Mine Fk, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Right Fk Beaver Cr KNPC (1979). This genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Stylogomphus albistylus	Westfall (1978) reports a single species for this genus and describes it as occurring in lotic habitats in the eastern U.S. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br ACE–HD (Project YBC).
Stylurus notatus	Stylurus may be considered as a subgenus and representatives are described as widespread in both lotic and lentic habitats. Letcher Co,no location Resner (1970). It is probably not found in the Levisa Fk Basin.
Aeshnidae	Westfall (1978) reports 37 species of dragonflies for this family and describes most representatives as climbers in lentic habitats. Their preference for lentic habitats helps to explain their sparse incidence in Levisa Fk Basin.
Aeshna sp	This is the largest genus within Aeshnidae, but representatives prefer lentic habitats and are associated with aquatic vegetation. Members of Aeshna are widespread but have not been taken from Levisa Fk Basin. The genus has been taken from Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979).
Basiaeschna janata	Westfall (1978) reports a single species for this genus. Basiaeschna is one of the few genera preferring lotic habitats. This species has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Boyeria sp	Representatives of this genus are described as preferring lotic habitats in the eastern U.S. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Mine Fk, Little Blaine, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979): Letcher Co, Colliers Br of Poor Fk of Cumberland KNPC (1979). This genus has been taken from Boyd Co, East Fk Little Sandy, and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Boyeria vinosa	Lawrence Co, Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Levisa Fk, Jenny Cr KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr and Right Fk Beaver Cr KNPC (1979); Pike Co. Brushy Fk of Johns Cr ACE–HD (Project DEW), Elkhorn Cr KNPC (1979); Knott Co, Wolf Pen Cr of Ky River (MSU Entomological Collection); Letcher Co, Bad Br of Cumberland KNPC (1980); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF).

Table 1 Continued

Taxa	Sources and Distributions
*Boyeria grafiana	Lawrence Co, Little Blaine KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Macromiidae	Westfall (1978) reports 11 species of dragonflies for this family and describes most representatives as sprawlers in lotic and lentic habitats.
Didymops sp	Dragonflies of this genus are generally described as ranging throughout the southeastern U.S. This genus is not reported for Levisa Fk Morgan Co, Caney Cr of Licking River KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979).
Didmops transversa	Lawrence Co, Little Blaine, Blaine Cr KNPC (1979). This species has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Macromia sp	Nymphs of this genus are described as sprawlers and generally range throughout the eastern U.S. Lawrence Co, Blaine Cr below Little Blaine, Upper Laurel ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Macromia illinoiensis	Lawrence Co, Little Blaine KNPC (1979); Letcher Co, no location Resner (1970).
Corduliidae	Westfall (1978) reports 49 species of dragonflies for this family and describes the nymphs as sprawlers and climbers in both lotic and lentic habitats.
*Epicordulia princeps	Westfall (1978) reports a single species for this genus in the eastern U.S. Resner (1970) reports this species for Pike Co and Letcher Co, but no stream data are provided.
*Helocordulia sp	Westfall (1978) reports 2 species for this genus in the eastern U.S. Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Helocordulia uhleri	Floyd Co, Left Fk Beaver Cr Cook (1951); Letcher Co, no location Resner (1970).
*Somatochlora tenebrosa	Representatives of this genus are generally distributed in the northern U.S. Floyd Co, at Prestonsburg Cook (1947); Letcher Co, at Jenkins Cook (1947).
Tetragoneuria cynosura	Nymphs of this genus are described as widespread. Floyd Co, Left Fk Beaver Cr at Melvin Cook (1951); Pike Co, no location Resner (1970); Letcher Co, no location Resner (1970).
Libellulidae	Westfall (1978) reports 91 species of dragonflies for this family and describes nymphs as mostly sprawlers in lentic habitats. This preference for lentic habitats helps to explain their sparse incidence in Levisa Fk Basin. Lawrence Co, Rich Cr of Big Sandy Samsel et al. (1973).
Celithemis eponina	Nymphs of this genus are described as preferring lentic habitats in the eastern U.S. Resner (1970) reports this species from Letcher Co, but does not provide other collection data. It is doubtful that this is a Levisa Fk record.
*Erythemis simplicicollis	Representatives of this genus are described as preferring lentic habitats and are widespread. Resner (1970) reports this species from Floyd Co, but does not provide other collection data.
*Libellula cyanea	Westfall (1978) describes nymphs for this genus as being widespread in both lentic and lotic habitats. Resner (1970) reports this species from Pike Co, but does not provide other collection data.
*Libellula luctuosa	Resner (1970) reports this species from Floyd, Pike, and Letcher Counties, but does not provide other collection data.

Table 1 Continued

Taxa	Sources and Distributions
*Libellula pulchella	Resner (1970) reports this species from Floyd, Pike and Letcher Counties, but does not provide other collection data.
*Pachydiplax longipennis	Westfall (1978) reports a single species for this genus and describes nymphs as being widespread in both lotic and lentic habitats. Resner (1970) reports this species from Floyd and Letcher Counties, but does not provide other collection data.
*Pantala flavescens	Representatives of this genus are described as being widespread in lentic habitats. Resner (1970) reports this species from Pike Co, but does not provide other collection data.
*Perithemis tenera	Nymphs of Perithemis are described as being widespread in lotic habitats. Resner (1970) reports this species from Floyd, Pike, and Letcher Counties but does not provide other collection data.
*Plathemis lydia	Nymphs of Plathemis are described as being widespread in lentic habitats. Resner (1970) reports this species from Floyd, Pike, and Letcher Counties, but does not provide other collection data.
*Trapezostigma (=Tramea) carolina	Westfall (1978) describes nymphs of this genus as being widespread in lentic habitats. Cook (1951) reports this species from Letcher Co, at Jenkins.
*Trapezostigma (=Tramea) lacerata	Resner (1970) reports this species from Floyd Co, Levisa Fk.
Calopterygidae (=Agrionidae)	Westfall (1978) reports 8 species of damselflies for this family and describes most representatives as climbers in both lotic and lentic habitats. Tarter (1976) reports Calopterygidae for Dry Fk of Tug Fk at Iager.
*Calopteryx (=Agrion) sp	Damselflies of this genus are described as being widespread in lotic habitats. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel ACE–HD (Yatesville Lk); Blaine Cr at Carter Br ACE–HD (Project YBC), Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Paint Cr at Staffordsville, Open Fk at Little Paint, Mine Fk ACE–HD (Paintsville Lk), Levisa Fk, Jenny Fk KNPC (1979); Morgan Co, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
*Calopteryx (=Agrion) maculata	Pike Co, no location Resner (1970); Knott Co, no location Resner (1970); Dickenson Co, Laurel Lk vicinity Voshell (1981).
*Calopteryx (=Agrion) dimidiata	Resner (1970) suggests that the range of this species could include portions of Ky.
*Hetaerina sp	Representatives of this genus are described as being widespread in lotic habitats. Johnson Co, Levisa Fk KNPC (1979); Pike Co, Levisa Fk outflow ACE–HD (Project FRL).
*Hetaerina americana	Pike Co, Levisa Fk Resner (1970).
Lestidae	Westfall (1978) reports 18 species of damselflies for this family and describes most representatives as climbers in both lotic and lentic habitats.
*Lestes vigilax	Nymphs of Lestes are described as being widespread. Pike Co, Levisa Fk Resner (1970).

Table 1 Continued

Taxa	Sources and Distributions
*Coenagrionidae	Westfall (1978) reports 93 species of damselflies for this family and describes most representatives as climbers in both lotic and lentic habitats. Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC), Rich Cr of Big Sandy Samsel et. al. (1973); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Johns Cr outflow ACE–HD (Project DEW); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
*Anomalagrion hastatum	Westfall (1978) reports a single species for this genus and describes it as preferring lentic habitats in the eastern U.S. Floyd Co, Right Fk Beaver Cr KNPC (1979).
*Agria sp	Agria is a large genus having 27 species of damselflies Westfall (1978), and nymphs are described as being widespread in both lotic and lentic habitats. Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC), Blaine Cr at Sparks Cem, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk), Blaine Cr, Little Blaine Cr KNPC (1979); Johnson Co, Jenny Fk, Levisa Fk KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979); Buchanan Co, Russell Fk ACE–HD (Project LFR). This genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Argia fumipennis	Resner (1970) suggests that this species may extend its range into Ky. It has not been reported for the portions of Levisa Fk that lie in Ky.
*Argia fumipennis violacea	Dickenson Co, Laurel Lk vicinity Voshell (1981).
*Argia tibialis	Pike Co, Levisa Fk Resner (1970).
*Argia violacea	Pike Co, Levisa Fk Resner (1970).
*Chromagrion conditum	Westfall (1978) reports a single species for this genus and describes it as preferring lotic habitats in the eastern U.S. Dickenson Co, Laurel Lk vicinity Voshell (1981).
*Enallagma sp	Enallagma is a large genus, having 34 species Westfall (1978) and nymphs are described as being widespread in both lotic and lentic habitats. Lawrence Co, Blaine Cr KNPC (1979); Johnson Co, Jenny Cr, Levisa Fk KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979), Licking River (MSU Entomological Collection); Floyd Co, Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979). This genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Enallagma exsulans	Pike Co, Levisa Fk Resner (1970).
*Enallagma signatum	Dickenson Co, Laurel Lk vicinity Voshell (1981).
*Enallagma traviatum	Dickenson Co, Laurel Lk vicintiy Voshell (1981).
*Ischnura sp	Westfall (1978) reports 13 species for this genus and describes the nymphs as being widespread in both lotic and lentic habitats. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Lower Laurel ACE–HD (Yatesville Lk); Johnson Co, Little Paint Cr, Mine Fk ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Ischnura verticalis	Dickenson Co, Laurel Lk vicinity Voshell (1981).

Table 1 Continued

Taxa	Sources and Distributions
*Plecoptera	Stoneflies have aquatic nymphs and terrestirial adults and are generally associated with lotic habitats. The feeding habits of nymphs vary according to individual species, some forms being classified as detritivores, some as herbivores, and some as carnivores. For general descriptions of plecopteran distributions, feeding habits, habitats, and taxonomy see Frison (1935), Jewett (1956), Hynes (1976), Surdick and Kim 1976), Harper (1978) and Pennak (1978). Tarter and Kirchner (1980) provide a list of the stoneflies of West Virginia. White (1974) did a distributional study of the plecopterans of the Salt River, Ky. Tarter (personal communication) is working on a checklist and distributional study of the stoneflies of Ky. Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
Pteronarcidae	Harper (1978) reports 10 species of stoneflies for this family and describes nymphs as clingers-sprawlers in lotic habitats. Tarter et al. (1975) provides a list of the pteronarcids of West Virginia.
*Allonarcys proteus	Nymphs of Allonarcys are described as preferring lotic habitats in the eastern U.S. Tarter (1976) reports this species for Laurel Fk of Tug Fk. Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr KNPC (1980); Wise Cr, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Pteronarcys sp	Representatives of this genus are discribed as being widespread in lotic habitats. Pteronarcys has not been taken from Levisa Fk Basin, but was collected from Magoffin Co, Licking River (MSU Entomological Collection).
Peltoperlidae	Harper (1978) reports 13 species of stoneflies for this family and describes nymphs as clingers-sprawlers in lotic habitats. Lawrence Co, Rich Cr of Big Sandy Samsel et al. (1973).
*Peltoperla sp	Peltoperla is commonly considered as the only genus of Peltoperlidae in North America Pennak (1978). Tarter (1976) reports this genus from Laurel Fk of Tug Fk Knott Co, Defeated Cr of Ky River (MSU Entomological Collection); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Peltoperla arcuata	Dickenson Co, Laurel Br at Breaks Interstate Pk Voshell (1981).
Taeniopterygidae	Harper (1978) reports 30 species of stoneflies for this family and describes the nymphs as generally being sprawlers in lotic habitats.
*Taeniopteryx sp	Lawrence Co, Blaine Cr at Sparks Cem, Upper Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk), Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Knott Co, Defeated Cr of Ky. River (MSU Entomological Collection); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF).
Taeniopteryx burksi	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC).

Table 1 Continued

Taxa	Sources and Distributions
Taeniopteryx metequi	Ricker and Ross (1968) reports this species from Boyd Co, East Fk Little Sandy.
Brachyptera sp	Nymphs for this genus of stoneflies range throughout the eastern U.S,
Strophopteryx fasciata	Brachyptera has not been reported from Levis Fk Basin, but has been taken from Knott Co, Defeated Cr of Ky River (MSU Entomological Collection). Strophopteryx has commonly been treated as a subgenus of Brachyptera. Harper (1978) reports 7 species for this genus (subgenus) and indicated that the current trend is to elevate the group to the generic level Harper (1978); Pennak (1978). Frison (1935) reports this species from neighboring states, but does not include data for Ky. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Taenionema atlanticus	Taenionema is also treated as a subgenus of Brachyptera (see Strophopteryx). Harper (1978) reports 8 species for this genus (subgenus), only one of which occurs in the eastern U.S. Dickenson Co, Russell Fk at Dam Site, Indian Cr, Russell Fk at Haysi, Russell Fk ACE–HD (Project LFR).
Nemouridae	Harper (1978) reports 61 species of stoneflies for this family and describes the nymphs as preferring lotic habitats but suggests that some occur in lentic habitats. Samsel et al. (1973) reports this family from Lawrence Co, Rich Cr of Big Sandy.
Nemoura delosa	Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
Nemoura valliculoria	Knott Co, Defeated Cr of Ky River (MSU Entomological Collection).
*Prostoia sp	Prostoia has been generally considered as a subgenus of Nemoura, but has been elevated to the generic level Harper (1978); Pennak (1978). Floyd Co, Buffalo Cr, Russell Fk at Elkhorn City ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR); Dickenson Co, McClure River at Haysi, Russell Fk Haysi, Russell Fk at Dam Site, Indian Cr ACE–HD (Project LFR).
*Prostoia similis	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Open Fk, Little Paint below Lost Cr, ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Amphinemura sp	Amphinemura has been generally considered as a subgenus of Nemoura, but has been elevated to the genric level Harper (1978); Pennak (1978). Lawrence Co, Blaine Cr near Martha, Blaine Cr above Sparks Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Leuctridae	Harper (1978) reports 45 species of stoneflies for this family and describes the nymphs as preferring lotic habitats.
*Leuctra sp	Leuctra is a large genus of 38 species of stoneflies and are generally distributed in North America. Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW);

Table 1 Continued

Taxa	Sources and Distributions
*Leuctra sp Continued	Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Laurel Fk of Ky River KNPC (1979), Defeated Cr of Ky River (MSU Entomological Collection; Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Laurel Br Breaks Interstate Pk Voshell (1981).
Leuctra truncata	Letcher Co, Colliers Cr of Cumberland KNPC (1980).
Leuctra ferruginea	Letcher Co, Bad Br of Cumberland KNPC (1980).
*Paraleuctra sara	Paraleuctra has been considered as a subgenus of Leuctra, but has been elevated to the generic level Harper (1978); Pennak (1978). Pike Co, Lick Cr, Levisa Fk near Pikeville Tarter (1981); Col Freytag Univ of Ky.
Capniidae	Harper (1978) reports 129 species of stoneflies for this family and describes the nymphs as sprawlers-clingers in lotic habitats. Frison (1935) describes Ky and its bordering states as the probable center of Capniidae dispersal. The limited number of Capniid collections is probably a reflection of the station locations of time of collections. This group should be more common in Levisa Fk Basin.
*Allocapnia sp	Nymphs of Allocapnia are generally distributed throughout the eastern U.S. Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR).
Allocapnia curiosa Allocapnia frisoni Allocapnia loshade Allocapnia nivicola Allocapnia vivipara	Tarter (1976) reports these species of winter stoneflies from Horse Cr of Tug Fk near Iaeger.
*Paracapnia sp	Paracapnia has been considered as a subgenus of Capnia, but has been elevated to the generic level Harper (1978); Pennak (1978). Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Perlidae	Harper (1978) reprots 36 species of perlid stoneflies and describes the nymphs as perferring lotic habitats, but occurring in some lentic conditions. Perlid nymphs are generally distributed across North America and are describes as being clingers. Steele and Tarter (1977) provide a checklist of the perlids of West Virginia and include distributions for the group. Tarter (1976) reports perlids from the Tug Fk of the Big Sandy at Welch. Lawrence Co, Rich Cr of Big Sandy Samsel et al. (1973); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Acroneuria sp	This is the largest and most common group of perlids. Nympsh of Acroneuria are found in both lotic and lentic habitats throughout the eastern U.S. Collections reported here no doubt represent more than one species. Lawrence Co, Blaine Cr below Brushy Cr, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint Cr ACE–HD)Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Magoffin

Table 1 Continued

Taxa	Sources and Distributions
*Acroneuria sp Continued	Co, Licking River (MSU Entomological Collection); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Cr ACE–HD (Project NFP). Acroneuria has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Acroneuria abnormis	Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound near Cane Patch Church ACE–HD (Project NFP).
*Acroneuria carolinensis	Tarter (1976) reports this species from Laurel Fk of Tug Fk of the Big Sandy. Knott Co, Laurel Fk of Ky. River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Bad Br and Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Acroneuria filicis	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr above Sparks Br ACE–HD (Project YBC).
*Acroneuria lycorias	Floyd Co, Right Fk Beaver Cr KNPC (1979).
Acroneuria near mela	Lawrence Co, Blaine Cr KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979).
Acroneuria perplexa	Lawrence Co, Blaine Cr KNPC (1979).
*Eccoptura xanthenes	Eccoptura has been considered as a subgenus of Acroneuria, but has been elevated to generic status Harper (1979); Pennak (1978). Tarter (1976) reports this species from Laurel Fk of Tug Fk of the Big Sandy. Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).
Neoperla clymene	This species has not been taken from Levisa Fk, but it is widely distributed over the eastern U.S. and should extend into the Levisa Fk Basin.
Perlinella ephyre	Pennak (1978) reports this species as Atoperla ephyre, but Surdick and Kim (1976) report A. ephyre as a synonym for P. ephyre. Frison (1935) indicates that this species is widespread in North America and that it should be in most of the eastern states.
Perlinella drymo	Frison (1935) describes the range of this species as being common throughout the eastern portion of the Mississippi Drainage.
*Perlesta sp	Representatives of this genus are common forms from lotic habitats in the central and eastern U.S. Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Dickenson Co, Pound River outflow ACE–HD (Project JWF).
Perlesta placida	Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk); Little Blaine, Blaine Cr KNPC (1979). This species has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Perlodidae	Harper (1978) reports 97+ species of stoneflies for this family and describes the nymphs as clingers in both lotic and lentic habitats. Hissom and Tarter (1976) reports the taxonomy and distribution of nymphal perlodids for West Virginia. Morgan Co, Open Fk of Paint Cr ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR).

Table 1 Continued

Taxa	Sources and Distributions
*Isogenus sp	Representatives of Isogenus prefer lotic habitats and are widespread forms. Due to recent changes in the status of this genus, these data may belong to other genera. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr at Little Blaine, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Diploperla robusta	Diploperla has been considered as a subgenus of Isogenus and has been elevated to generic status Harper (1978); Pennak (1978). Hissom and Tarter (1976) reports this species from Laurel Fk of Tug Fk of the Big Sandy. Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV).
Malirekus hastatus	Malirekus has been considered as a subgenus of Isogenus and has been elevated to generic status Harper (1978); Pennak (1978). Hissom and Tarter (1976) and Tarter (1976) report this species from Elkhorn Cr and Pigeon Cr of the Tug Fk of the Big Sandy. M. hastatus is described as being tolerant of mine pollution, but has not been collected from Levisa Fk.
Remenus bilobatus	Remenus has been considered as a subgenus of Isogenus and has been elevated to generic status Harper (1978); Pennak (1978). Hissom and Tarter (1976) report this spicies for Laurel Fk of Tug Fk of the Big Sandy.
Yugus bulbosus	Yugus has been considered as a subgenus of Isogenus and has been elevated to generic status Harper (1978); Pennak (1978). Hinssom and Tarter (1976) report this species for Laurel Fk of Tug Fk of the Big Sandy.
*Isoperla sp	Harper (1978) reports 50+ species for this genus and desbribes the nymphs as being widespread in lotic habitats. Lawrence Co, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Spurlock Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW). Isoperla has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Isoperla clio	Hissom and Tarter (1976) report this species from the North Br of Tug Fk of the Big Sandy. Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV).
*Isoperla namata	Hissom and Tarter (1976) report this species from Laurel Fk of Tug Fk of the Big Sandy. Lawrence Co, Blaine Dr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
Isoperla cotta Isoperla helochlora Isoperla richardsoni Isoperla similis Isoperla transmarina	These species of Isoperla have not been reported from the Levisa Fk Basin, but Tarter (1976) and Hissom and Tarter (1976) report them from Laurel Fk and/or Elkhorn Cr of Tug Fk of the Big Sandy. No doubt some or all of these could occur in the Levisa Fk Basin.
Chloroperlidae	Harper (1978) reports 59 species of stoneflies for this family and describbes nymphs as clingers in lotic habitats.

Table 1 Continued

Taxa	Sources and Distributions
*Sweltsa sp	Sweltsa has been considered as a subgenus of Alloperla and has been elevated to generic status Harper (1978); Pennak (1978). Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR).
*Sweltsa mediana	Knott Co, Defeated Cr of Ky River (MSU Entomological Collection); Dickinson Co, Laurel Br Breaks Interstate Pk Voshell (1981).
*Hastaperla brevis	Representatives of this genus prefer lotic habitats and are generally distributed in the eastern U.S. Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Open Fk, Lost Cr of Little Paint, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).
*Hemiptera	Aquatic and semi-aquatic representatives of Hemiptera are generally classified as predators and many representatives are widewpread and common forms in North America. For descriptions of hemipteran habitats, distributions, feeding habits, and taxonomy see Usinger (1956), Bobb (1974), Polhemus (1978), and Pennak (1978). Bobb (1974) provides an excellent regional study of the aquatic and semi-aquatic hemipterans. Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
Hydrometridae	Polhemus reports 9 species for this family of surface feeding hemipterans. Hydrometrids prefer lentic habitats, but occur marginally in lotic situations.
*Hydrometra sp	This is the only genus of water measurers in North America. Johnson Co, Jenny Cr KNPC (1979); Magoffin Co, Licking River KNPC (1979).
Hydrometra martini	Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk); Morgan Co, Caney Cr of Licking River KNPC (1979). Bobb (1974) suggests that these species are within the range of Levisa Basin. H. australis is the widest ranging hydrometrid.
Hydrometra kungerfordi Hydrometra australis	
Veliidae	Polhemus (1978) reports 35 species of surface feeding hemipterans for this family and describes them as skaters in both lotic and lentic habitats.
*Microvelia sp	Representatives of this genus are widespread in lotic and lentic habitats. Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk); Johnson Co, Open Fk at Little Paint, Mine Fk, Little Paint ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr, Lost Cr of Little Paint ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
*Microvelia americana	Bobb (1974) reports that this species occurs throughout most of Virginia. Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Caney Cr of Licking River KNPC (1979); Floyd Co, Spurlock Cr KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNCP (1979).
Microvelia buenia	Knott Co, Carr Fk of Ky River KNPC (1979).
Microvelia hinei Microvelia pulchella	Bobb (1974) describes these species as widwspread in Virginia and suggests M. pulchella to be "statewide."
*Rhagovelia sp	Representatives of this genus are widespread in lotic habitats. Lawrence Co, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).

Table 1 Continued

Taxa	Sources and Distributions
*Rhagovelia obesa	Bobb (1974) describes this species as being widespread in Virginia. Lawrence Co, Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Jenny Cr KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Elkhorn Cr KNPC (1979); Knott Cr, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr and Bad Br of Cumberland KNPC (1980). R. obesa has been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Rhagovelia flavicinta	Lawrence Co, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Open Fk at Little Paint ACE–HD (Paintsville Lk).
*Gerridae	Polhemus (1978) reports 45 species for this family of skating hemipterans and describes them generally as widespread in both lotic and lentic habitats. Pike Co, Levisa Fk outflow ACE–HD (Project FRL); Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, inflow at Cranenest River ACE–HD (Project JWF).
*Gerris sp	Representatives of Gerris are common and widespread water striders. Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Knott Co, Carr Fk of Ky. River KNPC (1979). Gerris sp has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Gerris argenticollis	Wise Co Bobb (1974).
*Gerris conformis	Bobb (1974) reports that this species occurs throughout Virginia. Lawrence Co, Little Blaine KNPC (1979); Floyd Co, Spurlock Cr KNPC (1979); Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979). This species has been taken from Martin Co, Rockcastle Cr KNPC (1979).
Gerris nebularis	Bobb (1974) reports that this species occurs throughout Virginia. G. nebularis has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Gerris remigis	Bobb (1974) reports this species as widespread in Virginia. Lawrence Co, Blaine Cr below Little Blaine, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Pike Co, Bear Fk KNPC (1979); Knott Co, Trace Fk of Ky River (MSU Entomological Collection); Letcher Co, Colliers Cr and Bad Br of Cumberland KNPC (1980),Colliers Br Poor Fk of Cumberland KNPC (1979). G. remigis has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Gerris canaliculatus Gerris insperatus Gerris marginatus	Bobb (1974) reports these species are occuring thourghout Virginia, but there are no records to support Levisa Fk occurance.
*Limnogonus hesione	Polhemus (1978) reports a single species for this genus and describes it as southern ("primarily tropical"), but Bobb (1974) reports this species from Wise Co, a pond at Rim Rock.
*Metrobates hesperius	Representatives of Metrobates are described as widespread on lotic habitats throughout the eastern U.S. Johnson Co, Levisa Fk KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Dickenson Co Bobb (1974). This species has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Rhematobates sp	These striders are described as common on both lotic and lentic habitats in central and eastern states. Knott Co, Carr Fk of Ky River KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Rhematobates rileyi	Bobb (1974) reports this species as widespread in Virginia. Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk), Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk). Jenny Cr KNPC (1979). R. rileyi has been collected from Boyd Co, East Fk Little Sandy KNPC (1979).
*Trepobates sp	Representatives of this genus occur on both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Mine Fk, Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Trepobates inermis	Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Buchanan Co Bobb (1974).
*Trepobates pictus	Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co Bobb (1974); Dickenson Co Bobb (1974).
Belostomatidae	Polhemus (1978) reports 19 species of hemipterans for this family and describes representatives as climbers-swimmers in both lotic and lentic habitats.
*Belostoma fluminea	Representatives of Belostoma are widespread forms in both lotic and lentic habitats. Bobb (1974) describes this species as widespread in Virginia. Lawrence Co, Blaine Cr at Sparks Cem ACE–HD (Yatesville Lk); Johnson Co, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk).
Belostoma lutarium	Bobb (1974) describes this species as widespread in Virginia, but there are no Levisa Fk records.
Lethocerus americanus Lethocerus uhleri	Bobb (1974) describes these as wide ranging species and they probably occur within the range of the Levisa Fk.
Nepidae	Representatives of this family occur in both lotic and lentic habitats in North America. Polhemus (1978) reports 13 species for this family and describes them generally as climbers.
Ranatra sp	Representatives of this genus are widespread in North America. Lawrence Co, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk).
*Ranatra fusca	Wise Cr, a pond at Rim Rock Bobb (1974).
Ranatra buenoi Ranatra kirkaldyi Ranatra nigra	These species have wide ranges in the eastern U.S. Bobb (1974).
Naucoridae	Polhemus (1978) reports 19 species of hemipterans for this family but only the genus Pelocoris occurs in the eastern U.S. Bobb (1974) describes P. femoratus as being widespread in Virginia and the author has taken this species from eastern Ky but there are no records of collections from Levisa Fk.
Pelocoris femoratus	
Corixidae	Corixids are the only major group of aquatic hemipterans to have feeding habits other than predation. Polhemus (1978) describes most of the genera as being "ooze feeders." Polhemus (1978) reports 121 species of bugs for this family and some forms are considered to be widespread in both lotic and lentic habitats. None of the representatives of this family have been collected from Levisa Fk Basin.
Hesperocorixa sp	Bobb (1974) describes several species of this genus that are widespread in Virginia and Polhemus (1978) reports that representatives of this genus prefer lotic habitats throughout North America. Hesperocorixa has been taken from Boyd Co, East Fk Little Sandy KNPC (1979). There are no reports of collections from Levisa Fk Basin but representatives of this genus should be present in the Levisa Fk Basin.

Table 1 Continued

Taxa	Sources and Distributions
Palmacorixa buenoi Sigara modesta Trichocorixa calva	Bobb (1974) reports these species as being widespread and common in Virginia. Polhemus (1978) suggests that representatives of these genera are widespread in North America and no doubt some species, if not these, occur in Levisa Fk Basin.
Notonectidae	Polhemus (1978) reports 30 species of aquatic bugs for this family and describes the entire group as being widespread in North America. There are no reports of collections from Levisa Fk Basin, but representatives of this family should be present in the Levisa Fk Basin.
Notonecta undulata Notonecta indica Notonecta uhleri Notonecta irrorata	Bobb (1974) reports these species as common and widespread in Virginia. N. indica is known from Ky and N. undulata has been taken from 34 states, in-including Ky.
Mesoviliidae	Polhemus (1978) reports 3 species of hemipterans for this family and describes representatives as being widespread in lentic habitats.
*Mesovilia sp	Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paints-ville Lk).
*Mesovilia mulsanti	Johnson Co, Levisa Fk KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Wise Co Bobb (1974); Dickenson Co Bobb (1974). This species has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
Hebridae	There are no records of collections for this family from Levisa Fk Basin, but representatives of the two genera, Hebrus and Merragata, are widespread in North America and should occur within the Levisa Fk Basin. These forms pre-fer lentic habitats which helps to account for their absence in faunal collections to date.
Saldidae	This large family of semi-aquatic bugs has 71 species and representatives occur throughout North America Polhemus (1978). Data from Levisa Fk are sparse, probably reflecting the types of collecting techniques when sampling.
*Saldula pallipes	Representatives of this genus are widespread along shorelines in lotic and lentic habitats. Dickenson Co, below Flannagan Dam Bobb (1974).
*Saldula c-album Pentacora ligata Pentacora sphacelata Saldula major Micracanthia humilis	Dickenson Co, at Haysi Bobb (1974). Bobb (1974) reports these species as being widespread in Virginia and their ranges could extend into Levisa Fk Basin.
Gelastocoridae	Polhemus (1978) reports 7 species of semi-aquatic hemipterans for this family and describes them as preferring lentic habitats, but representatives are fairly common along the beaches of lotic habitats. The few reports of collections for Levisa Fk do not reflect the actual incidence of this family for the basin. Toad bugs are common forms in eastern Ky.
*Gelastocoris oculatus	Representatives of this genus are common and widespread forms. Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Open Fk at Little Paint ACE–HD (Paintsvlle Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).

Table 1 Continued

Taxa	Sources and Distributions
Ochteridae	There are no records of collections for this family from Levisa Fk Basin, but representatives of the genus Ochterus are widespread in North America and should occur within the Levisa Fk Basin.
Megaloptera	Representatives of Megaloptera are aquatic as immatures (larvae) and terrestrial forms as adults. Megalopterans are predaceous insects that are commonly described as being widespread in North America. For descriptions of megalopteran habitats, distributions, feeding habitats, and taxonomy see Chandler (1956), Watkins et al. (1973), Tarter et al. (1976), Tarter et al. (1977), Pennak (1978), and Evans (1978).
Sialidae	Evans (1978) reports 23 species of megalopterans for this family and describes representatives as being widespread in both lotic and lentic habitats. Sialis is the only genus within the family and larvae are commonly considered as burrowers.
*Sialis sp	Lawrence Co, Blaine Cr above Sparks Br ACE–HD (Project YBC), Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Levisa Fk, Jenny Cr KNPC (1979); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickinson Co, inflow at Cranesnest River ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL). Sialis has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Corydalidae	Evans (1978) reports 20 species of megalopterans for this family and describes representatives as being widespread in lotic habitats. Dickenson Co, Pound River outflow ACE–HD (Project JWF).
*Corydalus cornutus	This species is extremely common in eastern Ky and has been taken throughout the Levisa Fk Basin. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk), Paint Cr at Staffordsville, Open Fk at Little Paint, Little Paint ACE–HD (Paintsville Lk), Levisa Fk KNPC (1979); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Russell Fk at Elkhorn City ACE–HD (Project LFR), Levisa Fk outflow ACE–HD (Project FRL), Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979), Defeated Cr of Ky River (MSU Entomological Collection); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Pound River inflow at Norland, inflow at Cranesnest River ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL), Russell Fk ACE–HD (Project LFR). C. cornutus has been reported from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
* Corydalus cornutus	

Table 1 Continued

Taxa	Sources and Distributions
*Nigronia sp	Representatives of this genus prefer lotic habitats in the central and eastern U.S. Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Letcher Co, Colliers Cr of Cumberland KNPC (1980).
*Nigronia fasciatus	Tarter (1976) reports this species from Laurel Fk of Tug Fk of the Big Sandy. Pike Co, Johns Cr inflow ACE–HD (Project DEW).
*Nigronia serricornis	Letcher Co, Collier Br Poor Fk of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Pound River inflow at Norland ACE–HD (Porject JWF).
Neohermes concolor	This species has not been reported from Levisa Fk, but Tarter et al. (1976) reports the species from Boyd Co, Big Sandy at Ashland Oil Refinery.
Chauliodes pectinicornis	This species has not been reported from Levisa Fk, but Tarter et al. (1976) report the species from Boyd Co, Big Sandy at Ashland Oil Refinery.
Neuroptera	Acquatic representatives of this order are associated with freshwater sponges and the lack of collections of sponges accounts for the absence of this group in the Levisa Fk fauna.
*Trichoptera	Trichoptera is one of the largest orders of aquatic insects and representatives are very successful in most lotic habitats and to varying degrees in lentic habitats. Caddisflies are aquatic as immatures and typically construct nets, retreats, or portable cases which vary considerably with respect to design and construction materials. For general information concerning caddisfly taxonomy, habitats, feeding habits, and distributions, see Ross (1944), Denning (1956), Wiggins (1978), and Pennak (1978). Resh (1975) provides an annotated list of the caddisflies of Ky. Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
Philopotamidae	Wiggins (1978) reports 38 species of caddisflies for this family and describes larvae as being widespread in lotic habitates. Philopotamids produce sack-like silk nets as retreats and for food capture.
Chimarra sp	Larvae of Chimarra prefer warm water rivers and representatives are widespread. Tarter (1976) collected this genus from Laurel Fk of Tug Fk of the Big Sandy. Morgan Co, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
*Chimarra aterrima	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fish-trap Church ACE–HD (Paintsville Lk); Resh (1975); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV).
*Chimarra obscura	
Dolophilodes sp	Caddisflies of this genus prefer headwater streams and representatives are widespread. Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Collers Cr and Bad Br of Cumberland KNPC (1980).
*Dolophilodes distinctus	Wise Co, outflow North Fk Pound Fk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Wormaldia moesta	Representatives of Wormaldia are widespread in North America and prefer lotic habitats. Dickenson Co, Laurel Br Breaks Interstste Pk Voshell (1981).

Table 1 Continued

Taxa	Sources and Distributions
Psychomyiidae	Wiggins (1978) reports 15 species of trichopterans for this family and describes representatives as being generally distributed in lotic habitats across North America. Psychomyiids construct silk tube retreats.
*Lype diversa	Larvae of Lype prefer lotic habitats and occur thourghout the eastern and north central portion of North America. Wiggins (1978) reports a single species for this genus. Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Laurel Br Breaks Interstate Pk Voshell (1981).
*Psychomyia flavida	Larvae of Psychomia are widespread in lotic habitats. Dickenson Co, Laurel Br Breaks Interstate Pk Voshell (1981).
Polycentropodidae	Wiggins (1978) reports 78 species of caddisflies for this family and describes representatives as preferring lotic habitats, but some species occur in lentic conditions; throughout North America. Representatives of this family construct silk net or tube retreats.
*Cyrnellus fraternus	Representatives of Cyrnellus occur in both lotic and lentic habitats in the eastern U.S. Wiggins (1978). Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Neureclipsis sp	Representatives of this genus occur in lotic habitats in the eastern and central portion of North America Wiggins (1978). Johnson Co, Levisa Fk KNPC (1979).
Nyctiophylas sp	Representatives of Nyctiophylas occur in both lotic and lentic habitats in the eastern and central portiosns of North America, but no collections have been made for Levisa Fk Basin. Morse (1972) describes three species, N. nephrophilus, N. uncus, and N. celta, as occuring in western Virginia or southeastern Ky. Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
*Polycentropus sp	Representatives of this genus occur in both lotic and lentic habitats and are described as being widespread in North America Wiggins (1978). Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979). Colliers Cr and Bad Br of Cumberland KNPC (1980); Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Polycentropus lucidus	Dickenson Co, Cold Spring Voshell (1981).
*Hydropsychidae	Wiggins (1978) reports 142 species of caddisflies for this family and describes the larvae as preferring lotic habitats, but some representatives occur in lentic conditions. Schuster and Etnier (1978) provide distributions for two genera of hydropsychids from eastern and central North America. Hydropsychids are "net spinning fixed retreat makers" Wiggins (1978). Tarter (1976) reports this family from Knox Cr of Tug Fk, Tug Fk above laeger, Tug Fk below Litwan, and from the Big Sandy. Lawrence Co, Rich Cr of Big Sandy Samsel et al. (1973); Wise Cr, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Aphropsyche doringa	Representatives of Aphropsyche prefer headwater streams in eastern North America Wiggins (1978). Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsivlle Lk); Resh (1975).
*Diplectrona sp	Representatives of this genus prefer headwater streams in the eastern and western U.S. Wiggins (1978). Tarter (1976) reports this genus from Laurel Fk of Tug Fk of the Big Sandy. Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF).

Table 1

Taxa	Sources and Distributions
*Diplectrona modesta	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975); Morgan Co, Dyer Br of Open Fk, Lost Cr ACE–HD (Project PIV); Floyd Co, Spurlock Cr KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1980); Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Proect NFP).
*Cheumatopsyche sp	Representatives of this genus prefer warmer streams and rivers and are common and widespread forms in North America Wiggins (1978). Tarter (1976) reports this genus from Clear Fk of Tug Fk at Coalwood of the Big Sandy. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Little Blaine Cr ACE–HD (Yatesville Lk), Blaine Cr, Little Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Cr ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Russell Fk at Elkhorn City ACE–HD (Project LFR), Levisa Fk outflow ACE–HD (Project FLR), Bear Fk, Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979), Defeated Cr and Little Carr Fk of Ky River (MSU Entomological Collection); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr and Bad Br of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, McClure River at Haysi, Russell Fk at Dam Site, Indian Cr ACE–HD (Project LFR), Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project LFR). Cheumatopsyche sp have also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Cheumatopsyche analis	Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Mine Fk, Little Paint Cr ACE–HD (Paintsville Lk); Resh (1975); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Cheumatopsyche oxa	Johnson Co, Paint Cr at Fishtrap Church Resh (1975).
*Hydropsyche sp	Representatives of this genus are common forms in lotic habitats, and occasionally in lentic conditions, throughout North America. Tarter (1976) reports this genus from Clear Fk of Tug Fk at Coalwood. Lawrence Co, Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Open Fk at Little Paint, Paint Cr at Fishtrap, Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Levisa Fk outflow ACE–HD (Project FRL),

Table 1 Continued

Taxa	Sources and Distributions
*Hydropsyche sp Continued	Elkhorn Cr near Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF), McClure River at Haysi, Russell Fk at Haysi, Russell Fk at Dam Site ACE-HD (Project LFR); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL), Dismal Cr at Grundy, Russell Fk ACE–HD (Project LFR).
*Hydropsyche betteni	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville); Resh (1975); Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Hydropsyche depravata group	Lawrence Co, Blaine Cr KNPC (1979); Floyd Co, Spurlock Cr, Right Fk Beaver Cr KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1979). This form was also reported from Boyd Co, East Fk Little Sandy KNPC (1979).
*Hydropsyche simulans	Lawrence Co, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Staffordsville, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk), Levisa Fk KNPC (1979); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Symphitopsyche sp	Representatives of this genus are common forms in lotic habitats throughout the eastern and central portions of North America. Symphitopsyche was until recently considered as part of Hydropsyche (Schuster and Etnier, 1978) and no doubt some of the references of Hydropsyche (above) probably belong here. Lawrence Co, Blaine Cr KNPC (1979); Pike Co, Levisa Fk outflow ACE–HD (Project FRL), Shelby Cr near Shelbiana, Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR); Knott Co, Carr Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Dickenson Co, Pound River inflow at Norland ACE–HD (Project JWF), McClure River at Haysi, Russell Fk at Haysi, Russell Fk at Dam Site, Indian Cr ACE–HD (Project LFR); Buchanan Co, Slate Cr at Grundy, Russell Fk ACE–HD (Project LFR), Levisa Fk inflow ACE–HD (Project FRL).
*Symphitopsyche cheilonis group	Pike Co, Elkhorn Cr KNPC (1979).
Symphitopsyche slossonae	Letcher Co, Colliers Cr and Bad Br of Cumberland KNPC (1980).
Symphitopsyche sparna	Letcher Co, Colliers Cr and Bad Br of Cumberland KNPC (1980).
Rhyacophilidae	Wiggins (1978) reports 104+ species of caddisflies for this family and describes the larvae as widespread in lotic habitats throughout most of North America. Larvae of Rhyacophilidae do not construct retreats.
Rhyacophila sp	Representatives of this genus are common in lotic habitats. Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr and Bad Br of Cumberland KNPC (1980).
*Rhyacophila carolina	Dickenson Co, Laurel Br Breaks Interstate Pk Voshell (1981).
*Rhyacoplila fuscula	Lawrence Co, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).

Table 1 Continued

Taxa	Sources and Distributions
*Rhyacophila glaberrima	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Rhyacophila invaria	Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV).
*Rhyacophila lobifera	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Chruch ACE–HD (Project PIV); Morgan Co, Lost Cr of Little Paint ACE–HD (Project PIV).
Glossosomatidae	Wiggins (1978) reports 79 species of caddisflies for this family and describes the larvae as preferring lotic habitats throughout North America. Larvae of this family construct saddle or turtle shell cases.
*Glossosoma sp	Representatives of this genus construct turtle shell retreats and are widespread in North America. Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Dickenson Co, Russell Fk Dam Site ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR).
Hydroptilidae	Wiggins (1978) reports this large family of caddisflies to have 170 species and describes the group as occurring in both lotic and lentic habitats. Hydroptilids are widespread in North America and construct purse or barrel cases.
*Dibusa angata	Representatives of Dibusa prefer lotic habitats and occur throughout eastern North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Hydroptila sp	Representatives of this genus prefer lotic habitats and are widespread in North America. Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Hydroptila near ajax	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Hydroptila grandiosa	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Hydroptila hamata	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Hydroptila perdita	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Oxyethira pallida	Representatives of Oxyethira occur in both lotic and lentic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Stactobiella palmata	Represnetatives of Stactobiella prefer lotic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church, Little Paint Cr ACE–HD (Paintsville Lk); Resh (1975).
*Orthotricha sp	Representatives of this genus prefer lentic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk). Johnson Co, Paint Cr Resh (1975).
*Orthotricha aegerfasciella	The specimen listed as O. aegerfasciella (above) and this specimen are probably one and the same. O. americana was probably a misidentification in the Paintsville Lake Assessment Project and Resh made the correction before his publication in 1975. This is speculation on the part of the author and so the two citations must be included until a correction can be made. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Orthotricha americana	

Table 1 Continued

Taxa	Sources and Distributions
*Neotrichia sp	Representatives of this genus prefer lotic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Neotrichia riegeli	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
Phryganeidae	Wiggins (1978) reports 27 species of caddisflies for this family and describes the group as generally preferring lentic habitats throughout North America. Their preference for lentic habitats helps to account for the reduced incidence of this group in the Big Sandy Drainage. Phryganeids construct tube cases.
*Ptilostomis sp	Representatives of this genus prefer lotic habitats and are widespread in North America. Lawrence Co, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
Lepidostomatidae	Wiggins (1978) reports 70 species of caddisflies for this family and describes the group as generally preferring lotic habitats throughout North America. Lepidostomatids construct tube cases.
*Lepidostoma sp	Representatives of this genus prefer headwater streams and spring habitats and are widespread in North America. Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Limnephilidae	Wiggins (1978) reports 308-313 species of caddisflies for this family and describes representatives as occurring in all types of lotic and lentic habitats throughout North America. Limnephilids construct tube cases. Lawrence Co, Rich Cr of Big Sandy Samsel et al. (1973).
*Neophylax sp	Representatives of this genus prefer lotic habitats in the eastern and western U.S. Tarter (1976) reports this genus for Laurel Fk of Tug Fk of the Big Sandy. Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV); Knott Co, Laurel Fk of Ky. River KNPC (1979).
*Neophylax consimilis	Pike Co, at Fishtarp Lk Resh (1975).
*Pseudostenophylax uniformis	Representatives of Pseudostenophylax prefer lotic habitats and occur in the eastern U.S. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
Hydatophylax sp	Representatives of this genus prefer lotic habitats and occur in the eastern and southeastern U.S. Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC).
*Platycentropus radiatus	Representatives of Platycentropus prefer lentic habitats in the eastern U.S. Pike Co, at Fishtrap Lk Resh (1975).
*Pycnopsyche sp	Representatives of this genus prefer lotic habitats and occur throughout the eastern U.S. Lawrence Co, Upper Laurel, Little Blaine ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Staffordsville, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Project PIV); Letcher Co, Bad Br of Cumberland KNPC (1980). Pycnopsyche has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Odontoceridae	Wiggins (1978) reports 14 species for this family of caddisflies and describes representatives as generally preferring lotic habitats throughout North America.
*Psilotreta sp	Representatives of this genus occur in lotic habitats in the eastern U.S. Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
Leptoceridae	Wiggins (1978) reports 101 species of caddisflies for this family and describes representatives as occurring in all types of lotic and lentic habitats throughout North America.

Table 1 Continued

Taxa	Sources and Distributions
*Ceraclea (=Athripsodes) cancellata	Representatives of Ceraclea occur in both lotic and lentic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Ceraclea (=Athripsodes) tarsipunctatus	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Nectopsyche exquistia	Representatives of Nectopsyche generally prefer lentic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Oecetis cinerascens	Representatives of Oecetis prefer lotic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Oecetis ditissa	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Oecetis nocturna	Johnson Cr, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Oecetis persimilis	Johnson Cr, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Triaenodes tardus	Representatives of Triaenodes prefer lentic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Resh (1975).
*Lepidoptera	Pennak (1978) reports that few genera of lepidopterans from the family Pyralidae have immatures that are truly aquatics. Lange (1978) provides a list of families and genera of both aquatic and semi-aquatic lepidopterans. Aquatic lepidopterans have been reported from the Levisa Fk and adjacent basins, but records are sparse. Knott Co, Carr Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Coleptera	The order Coleoptera is represented primarily by terrestrial forms, but this is such a large taxa that aquatic larvae and adults comprise one of the largest groupings of aquatic invertebrates in North America. Pennak (1978) provides the listing of families with aquatic representatives and describes their habitats, taxonomy, and feeding habits. Doyen and Ulrich (1978) report approximately 5,000 species, provide similar data and include distributions for individual genera. Leech and Chandler (1956) provide keys to the aquatic beetles with general distributions included.
Gyrinidae	Doyen and Ulrich (1978) report 53 species of beetles for this aquatic family and describe representatives as being widespread in both lotic and lentic habitats in North America. Data from Levisa Fk do not reflect the distribution of whirligig beetles within the basin. Gyrinids are extremely common forms in eastern Ky.
*Dineutus sp	Representatives of this genus are common and widespread in North America. Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979). Dineutus has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979), and Boyb Co, East Fk Little Sandy KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Gyrinus sp	Representatives of this gneus are common and widespread in North America. Lawrence Co, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Levisa Fk KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979).
*Carabidae	Doyen and Ulrich (1978) report 2 species of aquatic beetles for this large family of terrestrial forms and descirbe them as occurring along the Pacific Coast. The record listed below for Levisa Fk Basin must be a reporting of a terrestrial form accidently included in a sample. Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
Haliplidae	Doyen and Ulrich (1978) report 62 species of bettles for this aquatic family and describe representatives as preferring lentic habitats in North America. Their preference for lentic habitats is probably the reason for their absence in Levisa Fk Basin. Tarter (1976) reports the family from Tug Fk below Litwan.
Peltodytes sp	This genus has been taken from the Boyd Co, East Fk Little Sandy KNPC (1979).
Dytiscidae	Doyen and Ulrich (1978) report 428 species of bettles for this aquatic family and describe most of the genera as being widespread in North America. Most dytiscids prefer lentic habitats and this helps to account for their sparse distribution in Levisa Fk Basin.
Agabus sp	Represnetatives of this genus are widespread in lotic habitats in North America. Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
*Hydroporous sp	Representatives of this genus occur in both lotic and lentic habitats and are wide spread in North America. Morgan Co, Caney Cr of Licking River KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979). The genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Laccophilus sp	Representatives of Laccophilus occur in both lotic and lentic habitats and are widespread in North America. Morgan Co, Caney Cr of Licking River KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979). Laccophilus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Laccophilus fasciatus	Floyd Co, Spurlock Cr KNPC (1979). This species has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Laccophilus maculosus	Reported from Boyd Co, East Fk Little Sandy KNPC (1979).
*Hydrophilidae	Doyen and Ulrich (1978) report 174 species of bettles for this aquatic family and describe representatives as occuring in both lotic and lentic habitats throughout North America. Sample techniques are probably the reason for the sparse data for this family. Morgan Co, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
Anacaena limbata	Representatives of Anacaena occur in both lotic and lentic habitats and are primarily coastal in their distribution. Knott Co, Carr Fk of Ky River KNPC (1979).
Cymbiodyta vindicata	Representatives of Cymbiodyta occur in both lotic and lentic habitats and are widespread in North America. Knott Co, Laurel Fk of Ky River KNPC (1979).
*Enochrus sp	Representatives of this genus prefer lentic habitats and are widespread in North America. Lawrence Co, Blaine Cr below Brushy Cr, Lower Laurel ACE–HD (Yatesville Lk); Morgan Co, Little Paint Cr below Lost Cr ACE–HD (Project PIV). Enochrus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Hydrophilus sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
Paracymus sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in the southern U.S. Lawrence Co, Blaine Cr KNPC (1979); Morgan Co, Caney Cr of Licking River KNPC (1979).
Tropisternus sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Lawrence Co, Blaine Cr below Brushy Cr, Little Blaine ACE–HD (Yatesville Lk); Morgan Co, Caney Cr of Licking River KNPC (1979). Tropisternus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Tropisternus lateralis	Johnson Co, Levisa Fk KNPC (1979).
*Tropisternus natator	Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk).
*Staphylinidae	Doyen and Ulrich (1978) report 22 species of aquatic beetles for this typically terrestrial family and describe them as occurring along beaches, primarily in marine situations. These records for Levisa Fk and adjacent basins are probably not aquatics, but forms that occur along the margins of streams. Lawrence Co, Little Blaine KNPC (1979); Morgan Co, Caney Cr KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Pike Co, Bear Cr KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979).
Psephenidae	Doyen and Ulrich (1978) report 9 species of beetles for this aquatic family and describe representatives as occurring in both lotic and lentic habitats in portions of North America.
*Ectopria nervosa	This is the only species for this genus and it occurs in the eastern U.S. in both lotic and lentic habitats. Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk ACE–HD (Project PIV); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr and Bad Br of Cumberland KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Psephenus herricki	This is the only species of Psephenus in the eastern U.S. and it occurs in lotic habitats. Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr and Bad Br of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Chruch ACE–HD (Project NFP); Dickenson Co, Russell Fk at Dam Site, Indian Cr ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR).
Dryopidae	Doyen and Ulrich (1978) report 13 species of beetles for this aquatic family and describe the representatives of one genus as widespread in North America. Brown (1972) provides a checklist of North American species.
*Helichus sp	This is the only genus of Dryopidae to be described as widespread and representatives prefer lotic habitats in eastern North America. Lawrence Co, Blaine Cr, Little Blaine Cr KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr, Spurlock Cr KNPC (1979).

Table 1 Continued

Taxa	Sources and Distributions
*Helichus basalis	Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Pound River inflow at Norland ACE–HD (Projecr JWF). This species has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Helichus lithophilus	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr at Cherokee Cr, Blaine Cr at Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Lower Laurel, Little Blaine, Hood Cr ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint Cr, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979): Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Dickenson Co, Pound River inflow at Norland ACE–HD Project JWF). This species has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Elmidae	Doyen and Ulrich (1978) report 87 species of beetles for this aquatic family and describe representatives as occurring in both lotic and lentic habitats throughout North America. Sanderson (1953 and 1954) provides distributions for elmid species. Brown (1972) provides a species checklist and distributions for North America. Tarter (1976) reports this family for Tug Fk of Big Sandy below Litwan. Morgan Co, Little Paint below Lost Cr ACE–HD (Project PIV).
*Ancyronyx variegata	This is the only species for Ancyronyx and representatives prefer lotic habitats in the eastern U.S. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Lower Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Right Fk Beaver KNPC (1979).
*Dubiraphia sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Dickenson Co, Cranesnest River inflow ACE–HD (Project JWF).
*Dubiraphia bivittata	Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Caney Cr of Licking River KNPC (1979).
Dubiraphia quadrinottata	Lawrence Co, Blaine Cr below Little Paint ACE–HD (Yatesville Lk). This species has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Dubiraphia vittata	Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV).

Table 1 Continued

Taxa	Sources and Distributions
*Macronychus glabratus	This is the only species of Macronychus and representatives prefer lotic habitats in the eastern U. S. Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC), Lower Laurel ACE–HD (Yatesville Lk), Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV)., Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR). This species has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Microcylloepus pusillus	Representatives of Microcylloepus prefer lotic habitats and are widespread in North America. Buchanan Co, Slate Cr at Grundy ACE–HD (Project LFR).
*Optioservus sp	Representatives of this genus prefer lotic habitats and are widespread in the eastern U.S. Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr, Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint Cr below Lost Cr ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR). This genus has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Optioservus ovalis	Magoffin Co, Licking River KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Optioservus trivittatus	Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC); Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Paint Cr below confluence Open Fk and Little Paint ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Oulimnius latiusculus	This is the only species for Oulimnius and representatives prefer lotic habitats in the southeastern U.S. Lawrence Co, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
Promoresia elegans	Representatives of Promeresia prefer lotic habitats in the southeastern U.S. Lawrence Co, Blaine Cr KNPC (1979).
*Promoresia tardella	Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Stenelmis sp	Representatives of this genus prefer lotic habitates and are widespread in North America. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr,

Table 1 Continued

Taxa	Sources and Distributions
*Stenelmis sp Continued	Blaine Cr below Little Blaine, Hood Cr ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint,Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR); Knott Co, Carr Fk of Ky River KNPC (1979); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Pound River outflow ACE–HD (Project JWF). Stenelmis has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Stenelmis crenata	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Stenelmis sexlineata	Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
Ptilodactylidae	Doyen and Ulrich (1978) report 3 species for this family and describe representatives as preferring lotic habitats. This family has not been taken from Levisa Fk, but Tarter (1976) reports the family from Knox Cr of Tug Fk.
Chrysomelidae	Doyen and Ulrich (1978) report 48 species of aquatic beetles for this typically terrestrial family and describe them as occurring in lentic habitats throughout North America.
*Galerucella sp	Representatives of this genus prefer lentic habitats and are widespread in North America. Floyd Co, Right Fk Beaver Cr KNPC (1979).
Curculionidae	Doyen and Ulrich (1978) report 67 species of aquatic beetles for this typically terrestrial family and descirbes them as preferring lentic habitats.
Listronotus sp	Representatives of this genus prefer lentic habitats in the eastern U.S. Lawrence Co, Blaine Cr KNPC (1979).
Diptera	The order Diptera is an extremely large and diverse group of insects and representatives are primarily terrestrial forms with holometabolous development. Dipteran larvae and pupae may be aquatic but adult dipterans are terrestrial forms Pennak (1978). There are approximately 2,000 species of dipterans associated with aquatic habitats in North America and most available habitats are readily occupied by members of this taxa. Dipterans are characteristically among the most common and most numerous invertebrates in benthic samples, and their presence or absence commonly affects the economics of the aquatic habitat. For general information on dipteran habitats, feeding habits, distribution, and taxonomy see Johannsen (1934, 1935), Wirth and Stone (1956), Pennak (1978), Teskey (1978), and Merritt and Schlinger (1978).

Table 1 Continued

Taxa	Sources and Distributions
*Tipulidae	Byers (1978) reports 573+ species of craneflies for North America. Tipulids are extremely common forms in shallow lotic and lentic habitats and are generally considered as burrowers in the substrate along shorelines. Most tipulid larvae respire atmospheric oxygen and therefore are not commonly deep-water forms. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Russell Fk at Elkhorn City ACE–HD (Project LFR); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR), Pound River inflow at Norland ACE–HD (Project JWF).
*Tipula sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Larvae of Tipula sp are burrowers in detritus and are classified as shredders (Byers, 1978). The numerous reports of this genus no doubt represent several species. Lawrence Co, Little Baline Cr KNPC (1979); Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Spurlock Cr KNPC (1979); Pike Co, Bear Fk KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979), Defeated Cr of Ky River (MSU Entomological Collection); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi, Indian Cr ACE–HD (Project LFR); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL). This genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Tipula abdominalis	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr Below Backbone Br ACE–HD (Project YBC), Blaine Cr below Brushy Cr, Blaine Cr below Little Baline, Upper Laurel, Lower Lauel, Hood Cr, Baline Cr at Sparks Cem, Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint Cr, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk, Lost Cr of Little Paint, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Tipula caloptera	Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
Tipula furca	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr near Martha, Blaine Cr below Backbone Br ACE–HD (Project YBC).

Table 1 Continued

Taxa	Sources and Distributions
Limoniinae	Representatives of this subfamily prefer lotic habitats and are widespread in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC).
*Antocha sp	Representatives of this genus prefer lotic habitats and are widespread in North America. Morgan Co, Open Fk of Paint Cr ACE–HD (Project PIV); Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR); Knott Co, Carr Fk of Ky River KNPC (1979); Dickenson Co, McClure River at Haysi ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR).
*Antocha saxicola	Morgan Co, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
*Dicranota sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr and Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Gonomyia sp	Representatives of this genus occur along the margins of both lotic and lentic habitats and are widespread in North America. Morgan Co, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
*Hexatoma sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Ericocera is included as a subgenus of Hexatoma. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Mine Fk, Little Paint Cr, Open Fk at Little Paint ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Cranesnest River inflow ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL). Hexatoma has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Hexatoma cinerea	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC).
*Hexatoma fultonensis	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).

Table 1 Continued

Taxa	Sources and Distributions
*Macronychus glabratus	This is the only species of Macronychus and representatives prefer lotic habitats in the eastern U. S. Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC), Lower Laurel ACE–HD (Yatesville Lk), Little Blaine, Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV)., Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR). This species has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Microcylloepus pusillus	Representatives of Microcylloepus prefer lotic habitats and are widespread in North America. Buchanan Co, Slate Cr at Grundy ACE–HD (Project LFR).
*Optioservus sp	Representatives of this genus prefer lotic habitats and are widespread in the eastern U.S. Lawrence Co, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr, Little Blaine KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint Cr below Lost Cr ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR). This genus has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Optioservus ovalis	Magoffin Co, Licking River KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Optioservus trivittatus	Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC); Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Paint Cr below confluence Open Fk and Little Paint ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Oulimnius latiusculus	This is the only species for Oulimnius and representatives prefer lotic habitats in the southeastern U.S. Lawrence Co, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
Promoresia elegans	Representatives of Promeresia prefer lotic habitats in the southeastern U.S. Lawrence Co, Blaine Cr KNPC (1979).
*Promoresia tardella	Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Stenelmis sp	Representatives of this genus prefer lotic habitates and are widespread in North America. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr,

Table 1 Continued

Taxa	Sources and Distributions
*Stenelmis sp Continued	Blaine Cr below Little Blaine, Hood Cr ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint,Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV), Caney Cr of Licking River KNPC (1979); Magoffin Co, Licking River KNPC (1979); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW), Right Fk Beaver Cr KNPC (1979); Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR); Knott Co, Carr Fk of Ky River KNPC (1979); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Pound River outflow ACE–HD (Project JWF). Stenelmis has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
*Stenelmis crenata	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Stenelmis sexlineata	Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
Ptilodactylidae	Doyen and Ulrich (1978) report 3 species for this family and describe representatives as preferring lotic habitats. This family has not been taken from Levisa Fk, but Tarter (1976) reports the family from Knox Cr of Tug Fk.
Chrysomelidae	Doyen and Ulrich (1978) report 48 species of aquatic beetles for this typically terrestrial family and describe them as occurring in lentic habitats throughout North America.
*Galerucella sp	Representatives of this genus prefer lentic habitats and are widespread in North America. Floyd Co, Right Fk Beaver Cr KNPC (1979).
Curculionidae	Doyen and Ulrich (1978) report 67 species of aquatic beetles for this typically terrestrial family and descirbes them as preferring lentic habitats.
Listronotus sp	Representatives of this genus prefer lentic habitats in the eastern U.S. Lawrence Co, Blaine Cr KNPC (1979).
Diptera	The order Diptera is an extremely large and diverse group of insects and representatives are primarily terrestrial forms with holometabolous development. Dipteran larvae and pupae may be aquatic but adult dipterans are terrestrial forms Pennak (1978). There are approximately 2,000 species of dipterans associated with aquatic habitats in North America and most available habitats are readily occupied by members of this taxa. Dipterans are characteristically among the most common and most numerous invertebrates in benthic samples, and their presence or absence commonly affects the economics of the aquatic habitat. For general information on dipteran habitats, feeding habits, distribution, and taxonomy see Johannsen (1934, 1935), Wirth and Stone (1956), Pennak (1978), Teskey (1978), and Merritt and Schlinger (1978).

Table 1 Continued

Taxa	Sources and Distributions
*Tipulidae	Byers (1978) reports 573+ species of craneflies for North America. Tipulids are extremely common forms in shallow lotic and lentic habitats and are generally considered as burrowers in the substrate along shorelines. Most tipulid larvae respire atmospheric oxygen and therefore are not commonly deep-water forms. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Russell Fk at Elkhorn City ACE–HD (Project LFR); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi ACE–HD (Project LFR), Pound River inflow at Norland ACE–HD (Project JWF).
*Tipula sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Larvae of Tipula sp are burrowers in detritus and are classified as shredders (Byers, 1978). The numerous reports of this genus no doubt represent several species. Lawrence Co, Little Baline Cr KNPC (1979); Johnson Co, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Spurlock Cr KNPC (1979); Pike Co, Bear Fk KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979), Defeated Cr of Ky River (MSU Entomological Collection); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979), Colliers Cr of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Russell Fk at Haysi, Indian Cr ACE–HD (Project LFR); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL). This genus has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Tipula abdominalis	Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr Below Backbone Br ACE–HD (Project YBC), Blaine Cr below Brushy Cr, Blaine Cr below Little Baline, Upper Laurel, Lower Lauel, Hood Cr, Baline Cr at Sparks Cem, Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Little Paint Cr, Open Fk at Little Paint Cr ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk, Lost Cr of Little Paint, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Tipula caloptera	Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
Tipula furca	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr near Martha, Blaine Cr below Backbone Br ACE–HD (Project YBC).

Table 1 Continued

Taxa	Sources and Distributions
Limoniinae	Representatives of this subfamily prefer lotic habitats and are widespread in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC).
*Antocha sp	Representatives of this genus prefer lotic habitats and are widespread in North America. Morgan Co, Open Fk of Paint Cr ACE–HD (Project PIV); Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR); Knott Co, Carr Fk of Ky River KNPC (1979); Dickenson Co, McClure River at Haysi ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR).
*Antocha saxicola	Morgan Co, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
*Dicranota sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr and Bad Br of Cumberland KNPC (1980); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Gonomyia sp	Representatives of this genus occur along the margins of both lotic and lentic habitats and are widespread in North America. Morgan Co, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
*Hexatoma sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Ericocera is included as a subgenus of Hexatoma. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Mine Fk, Little Paint Cr, Open Fk at Little Paint ACE–HD (Paintsville Lk), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Magoffin Co, Licking River KNPC (1979); Floyd Co, Right Fk Beaver Cr KNPC (1979); Letcher Co, Bad Br of Cumberland KNPC (1980); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Cranesnest River inflow ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL). Hexatoma has also been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Hexatoma cinerea	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC).
*Hexatoma fultonensis	Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).

Table 1 Continued

Taxa	Sources and Distributions
Limonia sp	Representatives of this genus occur along the margins of both lotic and lentic habitats and are widespread in North America. This genus has not been taken in Levisa Fk Basin, but has been collected from Boyd Co, East Fk Little Sandy KNPC (1979).
*Paradelphomyia sp	Representatives of this genus occur along the margins of both lotic and lentic habitats and are widespread in North America. Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Pseudolimnophila sp	Representatives of this genus occur along the margins of both lotic and lentic habitats and are widespread in North America. Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV).
Culicidae	Newsom (1978) reports 124 species of mosquitoes for North America and describes representatives as occurring in both lotic and lentic habitats. Most representatives of Culicidae prefer lentic habitats and are classified as swimmers. Quinby et al. (1944) provide data on the distribution of culicids in Ky., but do not report any collections from Big Sandy Drainage. Gladney and Turner (1969) report on the mosquitoes of Virginia, but do not include any records for the counties of Virginia within Levisa Fk Basin. Obviously, the culicids of the Big Sandy have been overlooked and the few records cited here do not represent the total culicid fauna of the drainage system.
*Anopheles sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979).
Chaoboridae	Merritt and Schlinger (1978) report 15 species of dipterans for this family and describe representatives as preferring lentic habitats throughout North America.
*Chaoborus sp	Representatives of this genus occur in lentic habitats and are widespread in North America. Floyd Co, Johns Cr outflow ACE–HD (Project DEW). This genus has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Psychodidae	Merritt and Schlinger (1978) report 63 species of dipterans for this family and describe most representatives as preferring lotic habitats thoroughout North America. Tarter (1976) reports this family from Knox Cr of Tug Fk of the Big Sandy.
*Psychoda sp	Representatives of this genus prefer lentic habitats and are widespread in North America. Pike Co, Shelby Cr near Shelbiana ACE–HD (Project LFR).
*Ceratopogonidae	Merritt and Schlinger (1978) report 338 species of dipterans for this family and describe the group as being widespread in North America. Ceratopogonids generally prefer lentic habitats, but some forms are common in lotic situations. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow ACE–HD (Project DEW); Wise Co, North Fk Pound River at Cane Patch Church ACE-HD (Project NFP); Dickenson Co, Cranesnest River inflow ACE–HD (Project JWF).

Table 1 Continued

Taxa	Sources and Distributions
*Dasyhelea sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Lost Cr of Little Paint ACE–HD (Project PIV); Knott Co, Laurel Fk of Ky River KNPC (1979).
*Bezzia sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br ACE–HD (Project YBC), Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk).
*Culicoides sp	Representatives of this genus occur primarily in lentic habitats and along lotic margins Merritt and Schlinger (1978). Battle and Turner (1971) provide a checklist of the Culicoides of Virginia and include records for other eastern states. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr near Martha, Blaine Cr above Sparks Br ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk ACE–HD (Project PIV).
*Culicoides crepuscularis	Buchanan Co, Battle and Turner (1971).
*Culicoides haematopotus	Battle and Turner (1971) report this species for Wise, Dickenson, and Buchanan Counties.
*Atrichopogon sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Dickenson Co, Pound River outflow ACE–HD (Project JWF).
*Palpomyia sp	Representatives of this genus occur in both lotic and lentic habitats and are widespread in North America. Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Stilobezzia sp	Representatives of this genus occur in lentic habitats and are widespread in North America. Morgan Co, Little Paint Cr below Lost Cr ACE–HD (Project NFP).
Simuliidae	Peterson (1978) reports approximately 147 species of dipterans for this family and describes the group as being widespread in lotic habitats in North America. Lawrence Co, Blaine Cr KNPC (1979); Johnson Co, Levisa Fk KNPC (1979); Morgan Co, Open Fk of Paint Cr ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979); Wise Co, outflow North Fk Pound Lk ACE–HD (Project JWF). This family has been taken from Boyd Cr, East Fk Little Sandy KNPC (1979).
*Simulium sp	Representatives of Simulium occur in both lotic and lentic habitats and are widespread in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Baline Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr below Brushy Cr, Upper Laurel, Hood Cr, Little Blaine Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Pike Co, Johns Cr inflow ACE–HD (Project DEW), Levisa Fk outflow ACE–HD (Project

Table 1 Continued

Taxa	Sources and Distributions
*Simulium sp Continued	FRL); Wise Co, outflow North Fk Pound Lk (ACE–HD (Project NFP); Dickenson Co, Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
*Simulium fibrinflatum Simulium vittatum	Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk). Lawrence Co, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Chironomidae (=Tendipedidae)	Coffman (1978) estimates that there may be as many as 2,500 species of chironomids in North America. Pennak (1978) provides a general explanation of chironomid taxonomy and discusses the difficulties encountered when working with this taxon. Chironomids are among the most abundant of aquatic invertebrates in freshwater habitats and are extremely important to the economics of our lakes and streams. Representatives of this family occur in all types of aquatic habitats and are worldwide in their distribution. Tarter (1978) reports the family as present from numerous locations along the Tug Fk Basin. Lawrence Co, Little Blaine Cr, Blaine Cr KNPC (1979), Rich Cr of Big Sandy Samsel et al, (1973); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Levisa Fk, Jenny Cr KNPC (1979); Morgan Co, Patoker Br of Open Fk, Paint Cr bwlow confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Magoffin Co, Licking River KNPC (1979); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project ject DEW), Spurlock, Cr, Right Fk Beaver Cr KNPC (1979); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Levisa Fk outflow ACE–HD (Project FRL), Shelby Cr near Shelbiana, Elkhorn Cr at Elkhorn City, Russell Fk at Elkhorn City ACE–HD (Project LFR), Elkhorn Cr, Bear Cr KNPC (1979); Knott Co, Laurel Fk and Carr Fk of Ky River KNPC (1979), Defeated Cr of Ky River (MSU Entomological Collection); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, McClure River at Haysi, Russell Fk at Haysi, Russell Fk at Dam Site, Indian Cr ACE–HD (Project LFR), Pound River outflow, Pound River inflow at Norland, Cranesnest River inflow ACE–HD (Project JWF); Buchanan Co, Levisa Fk below Grundy, Slate Cr at Grundy, Russell Fk ACE–HD (Project LFR), Levisa Fk inflow ACE–HD (Project FRL). Chironomids have also been taken from Boyd Co, East Fk Little Sandy KNPC (1979), and Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Tanypus sp	Widespread in lentic habitats in North America. Morgan Co, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV).
*Procladius sp	Widespread in both lotic and lentic habitats in North America. Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Pentaneurini	Widespread in lotic habitats in North America. Morgan Co, Paint Cr below confluence of Open Fk and Little Paint Cr ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW).
Nilotanypus fimbriatus	Widespread in lotic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).

Table 1 Continued

Taxa	Sources and Distributions
*Pentaneura sp	Widespresd in the southeastern U.S. in both lotic and lentic habitats. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Upper Laurel, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV and Paintsville Lk), Paint Cr at Staffordsville, Mine Fk, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
Pentaneura mallochi	Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk).
Thienemannimyia sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Diamesa sp	Widespread in lotic, mountain habitats in North America, Morgan Co, Patoker Br of Open Fk ACE–HD (Project PIV); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Corynoneura sp	Widespread in both lotic and lentic habitats. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Dyer Br of Open Fk, Little Paint below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
Thienemanniella sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Orthocladiini (at least two sp)	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr near Crubb Hollow ACE–HD (Project YBC); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV).
Brillia sp	Widespread in lotic habitats in North America. Lawrence Co, Hood Cr ACE–HD (Yatesville Lk).
Brillia par var Johannsen	Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC).
*Cardiocladius sp	Widespread in lotic habitats in North America. Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Cricotopus sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr near Martha, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Upper Laurel ACE–HD (Yatesville Lk); Morgan Co, Little Paint Cr below Lost Cr ACE–HD (Project

Table 1 Continued

Taxa	Sources and Distributions
*Cricotopus sp continued	PIV); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW), Levisa Fk outflow ACE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Dickenson Co, Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
Diplocladius sp	Widespread in lotic habitats in North America. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Eukiefferiella sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Morgan Co, Patoker Br of Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV).
*Metriocnemus sp	Widespread in both lotic and lentic habitats in North America. Morgan Co, Patoker Br of Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr above Osborne Br ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Orthocladius sp	Widespread in lentic habitats in North America. Lawrence Co, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk).
*Psectrocladius sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk).
Rheocricotopus sp	Widespread in lotic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Trichocladius sp	Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint ACE–HD (Paintsville Lk).
*Trissocladius sp	Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk).
*Chironomini	Widespread in both lotic and lentic habitats in North America. Morgan Co, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Little Paint Cr below Lost Cr ACE–HD (Project PIV).
*Chironomus sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Paint Cr above Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Levisa Fk outflow ACE–HD (Project NFP); Dickenson Co, Pound River outflow ACE–HD (Project JWF).
*Chironomus attenuatus	Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Cryptochironomus sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).

Table 1 Continued

Taxa	Sources and Distributions
Endochironomus sp	Widespread in lentic habitats in North America. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr below Long Br, Blaine Cr below Backbone Br ACE–HD (Project YBC).
Glyptotendipes sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC).
Goeldichironomus holoprasinus	Widespread in lentic habitats (stagnant ponds) in North America. Lawrence Co, Blaine Cr above Sparks Br ACE–HD (Project YBC).
Limnochironomus sp (=Dicrotendipes)	Widespread in lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow ACE–HD (Project YBC).
Limnochironomus modestus	Lawrence Co, Blaine Cr below Brushy Cr ACE–HD (Yatesville Lk).
*Microtendipes sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV).
Microtendipes pedellus	Lawrence Co, Lower Laurel ACE–HD (Yatesville Lk).
*Paratendipes sp	Widespread in both lotic and lentic habitats in North America. Morgan Co, Little Paint Cr below Lost Cr ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
Phaenopsectra sp	Widespread in lentic habitats in North America. Lawrence Co, Blaine Cr at Cherokee Cr ACE–HD (Project YBC).
*Polypedilum sp	Widespread in lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Upper Laurel ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Little Paint ACE–HD (Paintsville Lk); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Little Paint below Lost Cr, Lost Cr ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Porject NFP); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
*Polypedilum obtusus	Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Cr below Little Blaine, Lower Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Stenochironomus sp	Widespread in lentic habitats in North America. Lawrence Co, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr ACE–HD (Project YBC); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Levisa Fk outflow ACE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Strictochironomus sp	Widespread in lotic habitats in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk).
*Tanytarsini	Widespread in both lotic and lentic habitats in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint below Lost Cr, Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV); Floyd Co, Johns Cr outflow, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Johns Cr inflow Brushy Fk of Johns Cr ACE–HD (Project DEW), Levisa Fk ACE–HD (Project FRL); Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD

Table 1 Continued

Taxa	Sources and Distriburions
*Tanytarsini continued	(Project NFP); Dickenson Co, Pound River outflow, Pound River inflow, at Norland, Cranesnest River inflow ACE–HD (Project JWF); Buchanan Co, Levisa Fk inflow ACE–HD (Project FRL).
Cladotanytarsus sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr below Backbone Br ACE–HD (Project YBC).
*Micropsectra sp	Widespread in both lotic and lentic habitats in North America. Morgan Co, Patoker Br of Open Fk, Dyer Br of Open Fk, Paint Cr above Osborne Br ACE–HD (Project PIV); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP).
*Rheotanytarsus sp	Widespread in lotic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Backbone Br ACE–HD (Project YBC); Morgan Co, Paint Cr below Osborne Br ACE–HD (Project PIV); Pike Co, Johns Cr inflow, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk ACE–HD (Project NFP).
*Stempellina sp	Widespread in both lotic and lentic habitats in North America. Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
*Tanytarsus sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Upper Laurel, Hood Cr ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Mine Fk, Little Paint, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Dyer Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint, Open Fk, Little Paint Cr below Lost Cr, Lost Cr, Paint Cr below Osbonre Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Pike Co, Brushy Fk of Johns Cr ACE–HD (Project DEW); Wise Co, outflow North Fk Pound Lk, North Fk Pound River at Cranesnest Church ACE–HD (Project JWF).
*Tanytarsus confusus	Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk).
*Tanytarsus deflectus	Johnson Co, Open Fk at Little Paint ACE–HD (Paintsville Lk).
Dixidae	Merritt and Schlinger (1978) report 41 species of dipterans for this family and included all representatives in the genus Dixa. Pennak (1978) divides the group into genera, Dixa and Dixella. The representatives of this family prefer lotic habitats and are widespread in North America. Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Cr of Cumberland KNPC (1980).
Stratiomyidae	Merritt and Schlinger (1978); report 137 species of aquatic dipterans for this family and suggest that the representatives of the family are widespread in lentic habitats in North America. Knott Co, spring near Carr Fk (MSU Entomological Collection).
*Straitomys sp (=Stratiomyia)	Widespread in lotic habitats in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Paintsville Lk); Morgan Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk). Patoker Br of Open Fk ACE–HD (Project PIV).
Hermetia illuscens	Representatives of this genus are not aquatic and this report must be questioned. Lawrence Co, Lower Laurel ACE–HD (Yatesville Lk).

Table 1 Continued

Taxa	Sources and Distributions
*Tabanidae	Merritt and Schlinger (1978) report 292 species of tabanids for North America and describe the group as being widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr below Long Br, Blaine Cr near Martha, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC); Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV); Floyd Co, Buffalo Cr inflow near Endicott ACE–HD (Project DEW); Dickenson Co, Cranesnest River inflow ACE–HD (Project JWF).
*Chrysops sp	Widespread in both lotic and lentic habitats in North America. Johnson Co, Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
*Tabanus sp	Widespread in both lotic and lentic habitats in North America. Lawrence Co, Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Upper Laurel, Hood Cr, Little Blaine ACE–HD (Yatesville Lk), Blaine Cr KNPC (1979); Johnson Co, Paint Cr at Fishtrap Church, Paint Cr at Staffordsville, Open Fk at Little Paint, Mine Fk, Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Open Fk and Little Paint ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Wise Co, outflow North Fk Pound Lk ACE–HD (Project NFP).
Rhagionidae	Merritt and Schlinger (1978) report 2 species of aquatic dipterans for this family and describe representatives as being widespread in lotic habitats in North America.
*Atherix lantha	Pike Co, Elkhorn Cr at Elkhorn City ACE–HD (Project LFR); Dickenson Co, Russell Fk at Haysi, Indian Cr ACE–HD (Project LFR); Buchanan Co, Russell Fk ACE–HD (Project LFR), Levisa Fk inflow ACE–HD (Project FRL).
*Atherix variegata	Pike Co, Elkhorn Cr KNPC (1979); Knott Co, Laurel Fk of Ky River KNPC (1979); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979). Colliers Cr KNPC (1980). This species has also been taken from Martin Co, Rockcastle Cr of Tug Fk KNPC (1979).
*Dolichopodidae	Merritt and Schlinger (1978) report 554 species of aquatic dipterans for this family and describe most representatives as being widespread in North America. Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV); Morgan Co, Open Fk ACE–HD (Project PIV).
*Hydrophorus sp	Widespread in lentic habitats in North America. Morgan Co, Dyer Br of Open Fk ACE–HD (Project PIV).
*Empididae	Merritt and Schlinger (1978) report 240 species of dipterans and describe most representatives as being widespread in lotic habitats in North America. Lawrence Co, Blaine Cr KNPC (1979); Morgan Co, paint Cr below Osborne Br ACE–HD (Project PIF); Floyd Co, Right Fk Beaver Cr KNPC (1979); Pike Co, Russell Fk at Elkhorn City ACE–HD (Project LFR), Elkhorn Cr KNPC (1979); Knott Co, Carr Fk of Ky River KNPC (1979), Defeated Cr of Ky River (MSU Entomological Collection); Wise Co, Bad Cr North Fk Pound Lk ACE–HD (Project NFP); Buchanan Co, Russell Fk ACE–HD (Project LFR).
*Chelifera sp	Widespread in lotic habitats in North America. Dickenson Co, Pound River outflow ACE–HD (Project JWF).

Table 1 Continued

Taxa	Sources and Distributions
*Hemerodromia sp	Widespread in lotic habitats in North America. Lawrence Co, Blaine Cr at Carter Br, Blaine Cr near Crubb Hollow, Blaine Cr at Cherokee Cr, Blaine Cr below Long Br, Blaine Cr above Sparks Br, Blaine Cr below Backbone Br ACE–HD (Project YBC), Blaine Cr at Sparks Cem, Blaine Cr below Brushy Cr, Blaine Blaine Cr below Little Blaine ACE–HD (Yatesville Lk); Johnson Co, Paint Cr at Fishtrap Church ACE–HD (Project PIV), Paint Cr at Staffordsville, Little Paint, Open Fk at Little Paint ACE–HD (Paintsville Lk); Morgan Co, Patoker Br of Open Fk, Paint Cr below confluence of Little Paint and Open Fk, Open Fk, Little Paint below Lost Cr, Paint Cr above Osborne Br, Paint Cr below Osborne Br ACE–HD (Project PIV), Open Fk of Paint Cr above Relief ACE–HD (Paintsville Lk); Pike Co, Johns Cr inflow ACE–HD (Project DEW). Elkhorn Cr at Elkhorn City ACE–HD (Project LFR); Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979); Wise Co, outflow North Fk Pound Lk, Bad Cr North Fk Pound Lk, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP); Dickenson Co, Indian Cr ACE–HD (Project LFR), Pound River outflow, Pound River inflow at Norland ACE–HD (Project JWF); Buchanan Co, Dismal Cr at Grundy ACE–HD (Project LFR), Levisa Fk inflow ACE–HD (Project FRL).
Rhamphomyia sp	Widespread in lentic habitats in North America. Lawrence Co, Blaine Cr below Long Br ACE–HD (Project YBC).
Ephydridae	Merritt and Schlinger (1978) report 368 species of dipterans for this family and describe the representatives as preferring lentic habitats throughout North America. This family has not been collected within the Levisa Fk Basin, but has been taken from Boyd Co, East Fk Little Sandy KNPC (1979).
Anthomyiidae	Merritt and Schlinger (1978) include this taxon as part of the family Muscidae but Pennak (1978) points out that many authorities have elevated the anthomyiids to family status. The representatives of Anthomyiidae are widespread in lotic habitats in North America.
*Limnophora sp	Dickenson Co, Pound River outflow ACE–HD (Project JWF).
Limnophora aequifrons	Letcher Co, Colliers Br Poor Fk of Cumberland KNPC (1979).
*Muscidae	Merritt and Schlinger (1978) report 195 species of dipterans for this family and describes represnetatives as being widespread in both lotic and lentic habitats in North America. Wise Co, North Fk Pound River at Cane Patch Church ACE–HD (Project NFP). This record is probably for Anthomyiidae, but that determination could not be made.

TABLE II
Distribution by County of the Macroinvertebrates of the Levisa Fork Drainage*

Key to Abbreviations

ABBREVIATION	MEANING	ABBREVIATION	MEANING
BSB	Big Sandy Basin	Law	Lawrence County, Ky.
Buc	Buchanon County, Va.	Let	Letcher County, Ky.
Dic	Dickinson County, Va.	Mag	Magoffin County, Ky.
Flo	Floyd County, Ky.	Mor	Morgan County, Ky.
Joh	Johnson County, Ky.	Pik	Pike County, Ky.
Kno	Knott County, Ky.	Wis	Wise County, Va..

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Coelenterata (Cnidaria)												
Hydrozoa												
Hydroida												
Hydridae												
Hydra sp										X		
Hydra americana			X									
Platyhelminthes												
Turbellaria (Planarians)					X	X			X			
Nemertea (=Rhynchocoela)												
Enopla												
Prostoma rubrum (=P. graecense)	O		X			X			X			
Nematoda (Roundworms)		X	X			X			X	X	X	
Nematomorpha												
Gordioidea												
Gordiidae												
Gordius sp		X										
Annelida												
Oligochaeta (Freshwater earthworms)	O	X	X	O	X	X			X	X	X	I
Haplotaxida			X						X			
Tubificidae												
Branchiura sowerbyi					X							

"X" denotes occurance within Levisa Fork or its tributaries;
"O" denotes county occurance outside Levisa Fork or its triburaries:
"I" denotes occurance within the Big Sandy Basin, not in Levisa Fork counties;
"?" denotes occurance within Levisa Fork or its tributaries, not sure about stream locality.

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Naididae		X	X									
Naidium sp			X									
Nais sp			X									
Lumbriculida												
Lumbriculidae			X									
Branchiobdellida												
Branchiobdellidae			X		X							
Hirudinea	O	X			X	X	O					
Mollusca												
Gastropoda										X		
Mesogastropoda						X						
Pleuroceridae												
Goniobasis costifera	O											I
Goniobasis semicarinata			O									
Lithasia plicata			O	O								
Lithasia obovata								O				
Nitocris trilineata	O											I
Basommatophora												
Ancylidae		X										
Laevapex sp		X			X							
Ferrissia sp		X	X							X	X	
Physidae												I
Physa sp	O	X	X,O		X	X		O			X	
Planorbidae			X			X						
Helisoma sp	O	X	X									
Gyraulus sp			X									
Lymnaeidae												
Lymnaea sp		X										
Pelecypoda (Bivalvia)									X			
Heterodonta												
Corbiculidae												
Corbicula sp					X	X						
Corbicula leana		X			X							
Sphaeriidae												
Sphaerium sp	O	X	X					O		X		
Sphaerium simile	O											
Sphaerium striatinum	O				X							
Schizodonta												
Unionidae												
Actinonaias carinta		X										
Lampsilis radiata	O	X	X									
Lampsilis radiata luteola	O											
Lampsilis radiata siliquoidea		X										
Lampsilis ventricosa					X							
Fusconaia sp												I

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Arthropoda												
Arachnoidea												
Acari (Hydracarina)	O	X	X						X	X	X	
Crustacea												
Isopoda												
Asellidae												
Asellus sp	O	X	X							X		I
Asellus recurvatus									O			
Lirceus sp		X										
Lirceus fontinalis			O									
Amphipoda												
Gammaridae												
Gammarus minus	?		?	?					?	?	?	I
Crangonyx sp	O											
Cragonyx antennatus									?			
Decapoda			X						X			
Astacidae			X		X	X			X	X		
Cambarus sp	O		X		X	X			X			
Cambarus robustus	O				X		O	O				I
Cambarus bartonii bartonii	O	X	X									I
Cambarus distans								O				
Cambarus diogenes												I
Cambarus veteranus						X						
Orconectes sp	O	X	X		X	X			X	X	X	
Orconectes putnami	O	X	O	O	X	X	O	O				I
Orconectes rusticus		X										
Insecta												
Collembola												
Isotomidae												
Isotoma sp		X					O					I
Ephemeroptera												
Siphlonuridae												
Ameletus sp	O		X				O					
Isonvchia sp	O	X	X,O	O	X	X	O		X	X	X	I
Baetidae	O		X			X			X			I
Baetis sp	O	X	X,O	O	X	X	O	O	X	X	X	I
Baetis tricaudatus						X				X	X	
Baetis vagans												I
Centroptilum sp					X	X	O		X	X		I
Cloeon sp			X		X		O		X			I
Pseudocloeon sp	O		X	O	X	X	O		X	X	X	I
Heptageniidae	O		X						X			I
Stenonema sp	O	X	X,O		X	X	O	O	X	X	X	I
Stenonema tripunctatum	O	X	X		X							I
Stenonema vicarium	O	X	X,O	O	X	X	O	O	X	X	X	I
Stenonema femoratum	O		X		X							
Stenonema terminatum		X			X							I
Stenonema near terminatum		X										I

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Stenonema integrum		X	O	O								I
Stenonema near integrum					X							
Stenonema ithaca								O				
Stenonema rubrum								O				
Stenonema mediopunctatum						X						
Stenonema meririvalarum					X							
Stenacron sp	O	X	X,O	O	X	X	O		X	X	X	I
Stenacron interpunctatum	O		X		X			O	X			
Heptagenia sp			X	O	X	X	O	O	X		X	I
Epeorus sp			X				O	O	X	X	X	
Leucrocuta sp	O											
Ephemerellidae												
Ephemerella sp	O	X	X		X	X				X	X	
Ephemerella (Attanella) sp									X		X	
Ephemerella (Drunella) sp							O	O				
Ephemerella (Drunella) cornuta					X							
Ephemerella (Ephemerella) dorothea	O		X		X							
Ephemerella (Ephemerella) hispida								O				
Ephemerella (Ephemerella) argo												I
Ephemerella (Eurylophella) sp	O		X				O	O				I
Ephemerella (Eurylophella) funeralis												I
Ephemerella (Eurylophella) temporalis group	O				X	X						
Ephemerella (Serratella) sp			X							X		
Tricorythidae												
Tricorythodes sp	O	X			X	X						I
Caenidae												
Caenis sp	O	X	X,O	O	X	X	O		X	X		I
Baetiscidae												
Baetisca sp			O				O	O		X		I
Baetisca bajkovi	O	X	X									
Baetisca berneri									X			
Baetisca callosa	O											
Baetisca carolina								O				
Baetisca lacustris	O	X	X									
Leptophlebiidae												
Leptophlebia sp	O											
Habrophlebiodes sp									X			
Paraleptophlebia spp	O	X	X,O		X	X	O	O	X			I
Ephemeridae	O				X							
Ephemera sp	O	X	X			X	O	O	X		X	
Ephemera varia					X			O				
Ephemera simulans							O	O				I
Hexagenia atrocaudata												I
Polymitarcidae												
Ephoron sp		X	X									
Odonata												
Cordulegastridae												

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Cordulegaster sp	O	X	X		X			O				
Cordulegaster maculatus					X			O				
Gomphidae			X		X				X	X		
Arigomphus sp										X		
Arigomphus villosipes					X							
Dromogomphus sp	O	X	X		X							
Dromogomphus spoliatus	O											
Dromogomphus spinosus						X		O				
Gomphurus fraternus						X		X				
Gomphus sp		X		O	X	X	O		X			I
Gomphus descriptus								O				
Gomphus exilis								O				
Gomphus lividus					X			O				
Hagenius brevistylus								O				
Lanthus sp	O	X	X,O	O	X		O		X			
Lanthus albistylus	O	X	X					O				
Ophiogomphus sp							O					
Progomphus sp	O	X	X		X							I
Stylogomphus albistylus	O											
Stylurus notatus								O				
Aeshnidae												
Aeshna sp								O				
Basiaeschna janata												I
Boyeria sp	O	X	X,O	O				O				I
Boyeria vinosa	O	X			X	X	O	O		X		
Boyeria grafiana	O				X							
Macromiidae												
Didymops sp			O				O					
Didymops transversa	O											I
Macromia sp	O	X			X							
Macromia illinoiensis	O							O				
Corduliidae												
Epicordulia princeps						X						
Helocordulia sp			X									
Helocordulia uhleri					X			O				
Somatochlora tenebrosa					X			X				
Tetragoneuria cynosura					X	X		O				
Libellulidae	O											
Celithemis eponina								O				
Erythemis simplicicollis					X							
Libellula cyanea						X						
Libellula luctuosa					X	X		?				
Libellula pulchella					X	X		?				
Pachydiplax longipennis					X			?				
Pantala flavescens						X						
Perithemis tenera					X	X		?				

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Plathemis lydia					X	X		?				
Trapezostigma cardina								X				
Trapezostigma lacerata					X							
Calopterygidae												I
Calopteryx sp	O	X	X	O	X	X	O	O				
Calopteryx maculata						X	O			X		
Hetaerina sp		X				X						
Hetaerina americana						X						
Lestidae												
Lestes vigilax						X						
Coenagrionidae	O		X		X						X	
Anomalagrion hastatum					X							
Agria sp	O	X	O	O	X	X	O				X	I
Agria fumipennis violacea										X		
Agria tibialis						X						
Agria violacea						X						
Chromagrion conditum										X		
Enallagma sp	O	X	O	O	X	X	O					I
Enallagma exsulans						X						
Enallagma signatum										X		
Enallagma traviatum										X		
Ischnura sp	O	X	X									
Ischnura verticalis										X		
Plecoptera			X						X			
Pteronarcidae												
Allonarcys proteus								O	X			I
Pteronarcys sp				O								
Peltoperlidae	O											
Peltoperla sp							O	O	X			I
Peltoperla arcuata										X		
Taeniopterygidae												
Taeniopteryx sp	O	X	X		X		O			X		
Taeniopteryx burksi	O											
Taeniopteryx metequi												I
Brachyptera sp							O					
Strophopteryx fasciata	O											
Taenionema atlanticus										X		
Nemouridae	O											
Nemoura delosa								O				
Nemoura valliculoria							O					
Prostoia sp					X	X				X	X	
Prostoia similis	O	X	X									
Amphinemura sp	O		X		X	X			X			
Leuctridae												
Leuctra sp			X		X	X	O	O	X	X		
Leuctra truncata								O				

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Leuctra ferruginea								O				
Paraleuctra sara							X					
Capniidae												
Allocapnia sp	O		X						X	X		
Allocapnia curiosa												I
Allocapnia frisoni												I
Allocapnia loshada												I
Allocapnia nivicola												I
Allocapnia vivipara												I
Paracapnia sp									X			
Perlidae	O		X						X			I
Acroneuria sp	O	X	X,O				O		X			I
Acroneuria abnormis								O	X			
Acroneuria carolinensis							O	O	X			I
Acroneuria filicis	O											
Acroneuria lycorias					X							
Acroneuria near mela	O				X							
Acroneuria perplexa	O											
Eccoptura xanthenes					X							I
Perlesta sp	O		X		X					X		
Perlesta placida	O											I
Perlodidae			X		X				X	X		
Isogenus sp	O	X	X									
Diploperla robusta			X									I
Malirekus hastatus												I
Remenus bilobatus												I
Vugus bulbosus												I
Isoperla sp	O	X	X		X	X						I
Isoperla clio			X									I
Isoperla namata	O	X	X									I
Isoperla cotta												I
Isoperla helochlora												I
Isoperla richardsoni												I
Isoperla similis												I
Isoperla transmarina												I
Chloroperlidae												
Sweltsa sp						X				X		
Sweltsa mediana							O			X		
Hestaperla brevis			X		X							
Hemiptera									X			
Hydrometridae												
Hydrometra sp		X		O								
Hydrometra martini	O		O									
Veliidae												
Microvelia sp	O	X	X	O		X			X		X	
Microvelia americana		X	O		X		O	O				

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Microvelia buenia							O					
Rhagovelia sp	O	X			X				X			
Rhagovelia obesa	O	X	O		X	X	O	O				I
Rhagovelia flavicinta	O	X										
Gerridae						X			X	X		
Gerris sp		X	O	O			O					I
Gerris argenticollis										X		
Gerris conformis	O				X	X	O					I
Gerris nebularis												I
Gerris remigis	O	X	X			X	O	O				I
Limnogonus hesione									X			
Metrobates hesperius		X			X					X		I
Rheumatobates sp							O					
Rheumatobates rileyi	O	X										I
Trepobates sp	O	X	X									
Trepobates inermis					X					X		
Trepobates pictus							O		X	X		
Belostomatidae												
Belostoma fluminea	O	X										
Nepidae												
Ranatra sp	O											
Ranatra fusca									?			
Corixidae												
Hesperocorixa sp												I
Mesoveliidae												
Mesovelia sp	O	X										
Mesovelia mulsanti		X	O		X				X	X		I
Saldidae												
Saldula pallipes										X		
Saldula c-album										X		
Gelastocoridae												
Gelastocoris oculatus	O	X	X									
Megaloptera												
Sialidae												
Sialis sp	O	X	X	O	X		O		X	X	X	I
Corydalidae										X		
Corydalus cornutus	O	X	X	O	X	X	O		X	X	X	I
Nigronia sp					X			O				
Nigronia fascuatus						X						I
Nigronia serricornis								O	X	X		
Neohermes concolor												I
Chauliodes pectinicornis												I
Trichoptera			X						X			
Philopotamidae												
Chimarra sp												I
Chimarra aterrima			X									

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Chimarra obscura	o	x	x									
Dolophilodes sp							o	o				
Dolophilodes distinctus									x			
Wormaldia moesta										x		
Psychomyiidae												
Lype diversa									x	x		
Psychomyia flavida										x		
Polycentropodidae												
Cyrnellus fraternus		x										
Neureclipsis sp		x										
Nyctiophylas sp								o				
Polycentropus sp		x						o	x			
Polycentropus lucidus										x		
Hydropsychidae	o								x			
Aphropsyche doringa		x										
Diplectrona sp									x	x		I
Diplectrona modesta		x	x		x			o	x			
Cheumatopsyche sp	o	x	x	o	x	x	o	o	x	x	x	I
Hydropsyche anallis	o	x	x									
Hydropsyche oxa		x										
Hydropsyche sp	o	x	x	o	x	x	o	o	x	x	x	I
Hydropsyche betteni	o	x							x			
Hydropsyche depravata group	o				x			o				I
Hydropsyche dicantha						x					x	
Hydropsyche simulans	o	x	x									
Symphitopsyche sp	o					x	o	o		x	x	
Symphitopsyche cheilonis group						x						
Symphitopsyche slossonae								o				
Symphitopsyche sparna								o				
Rhyacophilidae												
Rhyacophila sp								o				
Rhyacophila carolina										x		
Rhyacophila fuscula	o	x							x			
Rhyacophila glaberrima		x										
Rhyacophila invaria			x									
Rhyacophila lobifera	o	x	x									
Glossosomatidae												
Glossosoma sp								o		x	x	
Rydoptilidae												
Dibusa angata		x										
Hydroptila sp	o	x										
Hydroptila near ajax		x										
Hydroptila grandiosa		x										
Hydroptila hamata		x										
Hydroptila perdita		x										
Oxyethira pallida		x										

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Stactobiella palmata		X										
Orthotricha sp		X										
Orthotricha aegerfasciella		X										
Orthotricha americana		X										
Neotrichia sp		X										
Neotrichia riegeli		X										
Phryganeidae												
Ptilostomis sp	O	X										
Lepidostomatidae												
Lepidostoma sp									X			
Limnephilidae	O											
Neophylax sp			X				O					I
Neophylax consimilis						X						
Pseudostenophylax uniformis		X										
Hydatophylax sp	O											
Platycentropus radiatus						X						
Pycnopsyche sp	O	X	X					O				I
Odontoceridae												
Psilotreta sp									X			
Leptoceridae												
Ceraclea cancellata		X										
Ceraclea tarsipunctatus		X										
Nectopsyche exquisita		X										
Oecetis cinerascens		X										
Oecetis ditissa		X										
Oecetis inconspicua		X										
Oecetis nocturna		X										
Oecetis persimilis		X										
Triaenodes tardus		X										
Lepidoptera							O		X			
Coleoptera												
Gyrinidae												
Dineutus sp		X	X,O		X							I
Gyrinus sp	O	X	O	O								
Carabidae									X			
Haliplidae												I
Peltodytes sp												I
Dytiscidae												
Agabus sp								O				
Hydroporous sp			O		X							I
Laccophilus sp			O				O					I
Laccophilus fasciatus					X							I
Laccophilus maculosus												I
Hydrophilidae			X									
Anacaena limbata							O					
Cymbiodyta vindicata							O					

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Enochrus sp	O		X									I
Hydrophilus sp		X	X									
Paracymus sp	O		O									
Tropisternus sp	O		O									I
Tropisternus lateralis		X										
Tropisternus natator		X										
Staphylinidae	O		O		X	X	O					
Psephenidae												
Ectopria nervosa			X				O	O	X			
Psephenus herricki			X,O		X	X	O	O	X	X	X	
Dryopidae												
Helichus sp	O				X							
Helichus basalis			X,O	O	X		O	O	X	X		I
Helichus lithophilus	O	X	X,O	O	X	X	O		X			I
Elmidae			X									I
Ancyronyx variegata	O	X	X		X							
Dubiraphia sp			X		X					X		
Dubiraphia bivittata		X	O									
Dubiraphia quadrinottata	O											I
Dubiraphia vittata	O		X									
Macronychus glabratus	O	X	X,O	O	X	X				X		I
Microcylloepus pusillus											X	
Optioservus sp	O	X	X		X		O	O	X	X	X	I
Optioservus ovalis				O			O		X			
Optioservus trivittatus	O	X	X	O			O		X			
Oulimnius latiusculus	O	X	X			X			X			
Promeresia elegans	O											
Promoresia tardella								O	X			
Stenelmis sp	O	X	X,O	O	X	X	O	O	X	X		I
Stenelmis crenata	O	X	X		X	X			X			
Stenelmis sexlineata			X									
Ptilodactylidae												I
Chrysomelidae												
Galerucella sp					X							
Curculionidae												
Listronotus sp	O											
Diptera												
Tipulidae		X	X		X	X			X	X		
Tipula sp	O	X	X	O	X	X	O	O	X	X	X	I
Tipula abdominalis	O	X	X		X				X			
Tipula caloptera	O	X	X									
Tipula furca	O											
Antocha sp			X			X	O			X	X	
Antocha saxicola			X									
Dicranota sp							O	O	X			
Gonomyia sp			X									
Hexatoma sp	O	X	X	O	X		O	O	X	X	X	I

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Hexatoma cinerea	O											
Hexatoma fultonensis	O	X	X		X	X			X			
Limonia sp												I
Paradaiphomyia sp									X			
Pseudolimnophila sp			X									
Culicidae												
Anopheles sp	O		X			X	O					
Chaoboridae												
Chaoborus sp					X							
Phychadidae												I
Psychoda sp						X						
Ceratopogonidae		X	X		X	X			X	X		
Dasyhelea sp			X				O					
Bezzia sp	O	X	X									
Culicoides sp	O		X									
Culicoides crepuscularis											X	
Culicoides haematopotus									X	X	X	
Atrichopogon sp										X		
Palpomyia sp									X			
Stilobezzia sp			X									
Simuliidae	O	X	X	O			O		X	X		I
Simulium sp	O	X	X			X			X	X	X	
Simulium fibrinflatum		X										
Simulium vittatum	O											
Chironomidae	O	X	X	O	X	X	O	O	O	O	O	I
Ganypodini												
Tanypus sp			X									
Macropelopiini												
Procladius sp									X			
Pentaneurini			X		X							
Nilotanypus fimbriatus	O											
Pentaneura sp	O	X	X		X				X	X	X	
Pentaneura mallochi	O											
Thienemannimyia sp	O											
Diamesini												
Diamesa sp			X						X			
Corynoneurini												
Corynoneura sp	O	X	X			X			X			
Thienemanniella sp	O											
Orthocladiini		O	X	X								
Brillia sp	O											
Brillia par var Johannsen	O											
Cardiocladius sp									X			
Cricotopus sp	O		X		X	X			X	X	X	
Diplocladius sp	O											
Eukiefferiella sp	O		X									
Metriocnemus sp			X		X				X			

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Orthocladius sp	O	X										
Psectrocladius sp	O	X										
Rheocricotopus sp	O											
Trichocladius sp		X										
Trissocladius sp		X										
Chironomini			X									
Chironomus sp	O		X		X	X			X	X		
Chironomus attenuatus	O	X										
Cryptochironomus sp	O				X						X	
Endochironomus sp	O											
Glyptotendipes sp	O											
Goeldichironomus holoprasinus	O											
Limnochironomus sp	O											
Limnochironomus modestus	O											
Microtendipes sp	O		X									
Microtendipes pedellus	O											
Paratendipes sp			X						X			
Phaenopsectra sp	O											
Polypedilum sp	O	X	X		X				X		X	
Polypedilum obtusus	O	X										
Stenochironomus sp	O				X	X			X			
Strictochironomus sp		X										
Tanytarsini		X	X		X	X			X	X	X	
Cladotanytarsus sp	O											
Micropsectra sp			X						X			
Rheotanytarsus sp	O		X			X			X			
Stempellina sp									X			
Tanytarsus sp	O	X	X		X	X			X	X		
Tanytarsus confusus		X										
Tanytarsus deflectus		X										
Dixidae							O	O				
Stratiomyidae							O					
Stratiomys sp		X	X									
Hermetia illuscens	O											
Tabanidae	O		X		X					X		
Chrysops sp		X	X					O				
Tabanus sp	O	X	X						X			
Rhagionidae												
Atherix lantha						X				X	X	
Atherix variegata						X	O	O				I
Dolichopodidae		X	X									
Hydrophorus sp			X									
Empididae	O		X		X	X	O		X		X	
Chelifera sp										X		
Hemerodromia sp	O	X	X			X		O	X	X	X	
Rhamphomyia sp	O											

Table II Continued

Taxa	Law	Joh	Mor	Mag	Flo	Pik	Kno	Let	Wis	Dic	Buc	BSB
Ephydridae												I
Anthomyiidae												
Limnophora sp										X		
Limnophora aequifrons								O				
Muscidae									X			

Literature Cited

Aliff, J.V. 1977. "Digenetic Trematodes From Kentucky Fishes." *Transcript of Kentucky Academy of Sciences*, XXXVIII, (1-2), 1-14.

Batch, D.L. March 1975. Telephone interview concerning macroinvertebrates of Levisa Fork - Big Sandy Drainage housed at Eastern Kentucky University.

Battle, F.V. and E. C. Turner. 1971. *A Systematic Review of the Genus Culicoides* (Diptera: Ceratopogonidae) *in Virginia with a Geographic Catalog of the Species Occurring in the Eastern United States North of Florida.* The Insects of Virginia, No. 3. Blacksburg, Virginia: Bulletin of the Research Division, Virginia Polytechnic Institute and State University, XLIV.

Bobb, M.L. 1974. *The Aquatic and Semiaquatic Hemiptera of Virginia.* The Insects of Virginia: No. 7, Blacksburg, Virginia: Bulletin of the Research Division, Virginia Polytechnic Institute and State University, LXXXVII.

Bouchard, R.W. 1974. "Geography and Ecology of Crayfishes of the Cumberland Mountains, Kentucky, Virginia, Tennessee, Georgia and Alabama." Part I. "The Genera Procambarus and Orconectes." *Proceedings of the Second International Crayfish Symposium,* pp. 563-585.

Branson, B.A. 1970. *Checklist and Distribution of Kentucky Aquatic Gastropods.* Kentucky Fisheries Bulletin, LIV, 1-20.

Brown, H.P. 1972. *Aquatic Dryopid Beetles (Coleoptera) of the United States.* Biota of Freshwater Ecosystems, EPA Identification Manual, VI, 1-83.

Burch, J.B. 1972. *Freshwater Sphaeriacean Clams (Mollusca: Pelecypoda) of North America.* Biota of Freshwater Ecosystems, EPA Identification Manual, III, 1-31.

Burch, J.B. 1973. *Freshwater Unionacean Clams (Mollusca: Pelecypoda) of North America.* Biota of Freshwater Ecosystems, EPA Identification Manual, XI, 1-176.

Burks, B.D. 1953. *The Mayflies, or Ephemeroptera of Illinois.* Bulletin of the Illinois Natural History Survey, XXVI, 1-216.

Byers, G.W. 1978. "Tipulidae." *Aquatic Insects of North America*. Edited by R.W. Merritt and K.W. Cummins. (Dubuque, IA: Kendall/Hunt Publishing Company).

Chandler, H.P. 1956. "Megaloptera." *Aquatic Insects of California.* Edited by R.L. Usinger. (Berkeley, CA: University of California Press).

Clifford, H.F. 1966. "The Ecology of Invertebrates in an Intermittent Stream." *Investigations of Independent Lakes and Streams,* VII, 57-98.

Coffman, W.P. 1978. "Chironomidae." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. (Dubuque, IA: Kendall/Hunt Publishing Company).

Cook, C. 1974. "Notes on the Genus Somatochlora Collected in Kentucky and Tennessee." *Entomological News,* LXIX, (5), 127-131.

Crisp, C.B. and N.H. Crisp. 1974. "Substrate Preference of Benthic Macroinvertebrates in Silver Creek, Madison County, Kentucky.: *Transcript of Kentucky Academy of Sciences,* XXXV, (3–4), 61-66.

Cummins, K.W. 1973. "Trophic Relations of Aquatic Insects." *Annual Review of Entomology,* XIIX, 183-206.

Curtis, W.R. 1972. "Chemical Changes in Stream Flow Following Surface Mining in Eastern Kentucky." Paper presented at the Fourth Symposium on Coal Mine Drainage Research, Monroeville, PA.

Day, W.C. 1956. "Ephemeroptera." *Aquatic Insects of California.* Edited by R.L. Usinger. (Berkeley, CA: University of California Press).

Denning, D.G. 1956. "Trichoptera." *Aquatic Insects of California.* Edited by R.L. Usinger. (Berkeley, CA: University of California Press).

Doyen J.T. and G. Ulrich. 1978. "Aquatic Coleoptera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. (Dubuque, IA: Kendall/Hunt Publishing Company).

Edmunds, G.F. Jr. 1978. "Ephemeroptera." *Aquatic Insects of North America.* Edited by R. W. Merritt and K.W. Cummins. (Dubuque, IA: Kendall/Hunt Publishing Company).

Edmunds, G.F., Jr., S.L. Jensen, and L. Berner. 1976. *The Mayflies of North and Central America.* (Minneapolis, MN: University of Minnesota Press).

Evans, E.D. 1978. "Megaloptera and Aquatic Neuroptera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. (Dubuque, IA: Kendall/Hunt Publishing Company).

Evenhuis, B.L. 1973. "Inventory and Classification of Streams in the Big Sandy River Drainage." *Kentucky Fisheries Resource Project F-35.* Kentucky Fisheries Bulletin, LVII, 1-42.

Ferris, V.R., J.M. Ferris, and J.P. Tjepkema. 1973. *Genera of Freshwater Nematodes (Nematoda) of Eastern North America.* Biota of Freshwater Ecosystems, EPA Identification Manual, X, 1-38.

Frison, T.H. 1935. "The Stoneflies or Plecoptera of Illinois." *Illinois Natural History Survey Bulletin,* XX, 281-471.

Gammon, J.R. 1970. *The Effect of Inorganic Sediment on Stream Biota.* (Washington, D.C. Water Quality Office, EPA).

Gladney, W.J. and E.C. Turner, Jr. 1969. *The Mosquitoes of Virginia.* The Insects of Virginia: No. 2. Blacksburg, Virginia: Bulletin of the Research Division, Virginia Polytechnic Institute and State University, IL, 1-24.

Harker, D.F., Jr., S.M. Call, M.L. Warren, Jr., K.E. Camburn, and P. Wigley. 1979. *Aquatic Biota and Water Quality Survey of the Appalachian Province.* Technical Report, 3 Volumes, Kentucky Natural Preserves Commission. Also comprises Volume IV of Kentucky Water Quality Management Plan. (Frankfort, KY: Division of Water Quality, Kentucky Department of Natural Resources and Environmental Protection).

Harker, D.F., Jr., M.L. Warren, Jr., K.E. Camburn, S.M. Call, G.J. Fallo, and P. Wigley. 1980. *Aquatic Biota and Water Quality Survey of the Upper Cumberland River Basin.* Technical Report, 2 Volumes, Kentucky Natural Preserves Commission. (Frankfort, KY: Kentucky Natural Preserves Commission).

Harper, P.P. 1978. "Plecoptera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. (Dubuque, IA: Kendall/Hunt Publishing Company).

Herrel, R.C. and T.C. Dorris. 1968. "Stream Order, Morphometry, Physico-Chemical Conditions, and Community Structure of Benthic Macroinvertebrates in an Intermittent Stream System." *American Midlife National*, LXXX, (1), 220-251.

Henley, J.P. 1970. "Stream Bottom Fauna." *Influences of Strip Mining on the Hydrologic Environment of Parts of Beaver Creek Basin, KY. 1955-66.* Edited by C.R. Collier, R. J. Pickering, and J.J. Musser. (Washington, D.C: U.S. Government Printing Office).

Herricks, E.E. 1977. "Recovery of Streams From Chronic Pollutional Stress-Acid Mine Drainage." *Recovery and Restoration of Damaged Ecosystems.* Edited by J. Cairns, Jr., K.L. Dickson, and E.E. Herricks. (Charlottesville, VA: University of Virginia Press).

Hilsenhoff, W.C. 1971. "Changes in the Downstream Insect and Amphipod Fauna Caused by an Impoundment with a Hypolimnion Drain." *Annals of the Entomological Society in America,* LXIV, (3), 743-746.

Hiltunen, J.K. and D.J. Klemm. 1980. *A Guide to the Naididae (Annelida: Chitellata: Oligochaeta) of North America.* (Cincinnati, OH: Environmental Monitoring and Support Lab, EPA.

Hisson, F.K. and D.C. Tarter. 1976. "Taxonomy and Distribution of Nymphal Perlodidae of West Virginia (Insecta: Plecoptera)." *Journal of the Georgia Entomological Society,* XI, (4), 317-323.

Hobbs, H.H., Jr. 1969. "On the Distribution and Phylogeny of the Crayfish Genus Cambarus." *The Distributional History of the Biota of the Southern Appalachians.* Part I: Invertebrates. Research Monograph 1. (Blacksburg, VA: Virginia Polytechnic Institute and State University).

Hobbs, H.H. Jr. 1972. *Crayfishes (Astacidae) of North and Middle America.* Biota of Freshwater Ecosystems, EPA Identification Manual IX, 1-173.

Halsinger, J.R. 1972. *The Freshwater Amphipod Crustaceans (Gammaridae) of North America.* Biota of Freshwater Ecosystems, EPA Identification Manual, V, 1-89.

Holt, P.C. 1969. "The Relationships of the Branchiobdellid Fauna of the Southern Appalachians." *The Distributional History of the Biota of the Southern Appalachians.* Part I: Invertebrates. Research Monograph 1. (Blacksburg, VA: Virginia Polytechnic Institute and State University).

Howell, J.R., Jr. 1981. *The Ichthyofauna of the Big Sandy River Basin with Special Emphasis on the Levisa Fork Drainage.* Research Report No. 2. (Morehead, KY: Appalachian Development Center, Morehead State University).

Hynes, H.B.N. 1976. "The Biology of Plecoptera." *Annual Review of Entomology,* XXI, 135-153.

Jewett, S.G., Jr. 1956. "Plecoptera." *Aquatic Insects of California.* Edited by R.L. Usinger. (Berkeley, CA: Univeristy of California Press).

Johannsen, O.A. 1934, 1935. "Aquatic Diptera. Part I. Nematocera, Exclusive of Chironomidae and Ceratopogonidae. Part II. Orthorrhapha-Brachycera." Memorandum of Cornell University Agricultural Experiment Station, CLXIV, 1-71; CLXXI, 1-62.

Jordan, S.J. 1980. "Macroinvertebrates and Reservoir Discharge: Effects of Cave Run Lake on Tailwater Communities." Unpublished Masters Thesis, Morehead State University, Morehead, Kentucky.

Kenk, R. 1972. *Freshwater Planarians (Turbellaria) of North America.* Biota of Freshwater Ecosystems, EPA Identification Manual I, 1-81.

Kentucky Department for Natural Resources and Environmental Protection. *The River Basin Water Quality Management Plan for Kentucky: Big Sandy River.* (Frankfort, KY: Division of Water Quality, Department for Natural Resources and Environmental Protection).

Kirkwood, J.B. 1957. *A Brief Study of the Levisa Fork and Russell Fork of the Big Sandy River.* Kentucky Department of Fish and Wildlife Resources Fisheries Bulletin, XXI, 1-15.

Klemm, D.J. 1972. *Freshwater Leeches (Ammelida: Hirudinca) of North America.* Biota of Freshwater Ecosystems, EPA Identification Manual, VIII, 1-53.

Lange, W.H. Jr. 1956. "Aquatic Lepidoptera." *Aquatic Insects of California.* Edited by R.L. Usinger. (Berkeley, CA: University of California Press).

Leech, H.B. and H.P. Chandler. 1956. "Aquatic Coleoptera." *Aquatic Insects of California.* Edited by R.L. Usinger. (Berkeley, CA: University of California Press).

Lewis, P.A. 1974. *Taxonomy and Ecology of Stenonema Mayflies (Heptageniidae: Ephemeroptera).* EPA, Environmental Monitoring Service Report.

McCafferty, W.P. 1975. "The Burrowing Mayflies (Ephemeroptera: Ephemeridae) of the United States." *Transcript of the American Entomological Society,* CI, 447-504.

Macklin, J.W. and C. Cook. 1967. "New Records of Kentucky Odonata." *Proceedings of the North Central Branch of the Emtomological Society of America,* XXII, 120-121.

Matter, W.J., J.J. Ney, and O.E.. Maughan. 1978. "Sustained Impact of Abandoned Surface Mines on Fish and Benthic Invertebrate Populations in Headwater Streams of Southwestern Virginia." *Surface Mining and Fish/Wildlife Needs in the Eastern United States.* Edited by D.E. Samuel, J.R. Stauffer, C.H. Hocutt, W.T. Mason, Jr. Proceedings of a Symposium Biological Service Program, U.S. Fish and Wildlife Service, Washington, D.C.

Merritt, R.W. and E.I. Schlinger. 1978. "Adults of Aquatic Diptera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Co.

Minshall, G.W. 1968. "Community Dynamics of the Benthic Fauna in a Woodland Spring Brook." *Hydrobiologica.* XXXII: 305-399.

Morse, J.C. 1972. "The Genus Nyctiophylax in North America." *Journal of the Kansas Emtomological Society,* XLV, 172-181.

Needham, J.G. and M.J. Westfall, Jr. 1955. *A Manual of the Dragonflies of North America (Amisoptera).* Berkeley, CA: University of California Press.

Newsome, H.D. 1978. "Culicidae." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Company.

Pennak, R.W. 1978. *Freshwater Invertebrates of the United States,* 2nd edition. N.Y., N.Y.: John Wiley and Sons, Inc.

Peterson, B.V. 1978. "Simuliidae." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Company.

Polhemus, J.T. 1978. "Aquatic and Semiaquatic Hemitera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Company.

Preston, H.R. and J.H. Green. 1978. "Effects of Acid Mine Drainage on Aquatic Macroinvertabrates in the Monogahela River Basin." *Surface Mining and Fish/Wildlife Needs in the Eastern United States.* Edited by D.E. Samuel, J.R. Stauffer, C.H. Hocutt, W.T. Mason, Jr. Proceedings of a Symposium, Biological Services Program, U.S. Fish and Wildlife Service, Washington, D.C.

Quinby, B.E., R.E. Serfling, and J.K. Neel. 1944. "Distribution and Prevalence of the Mosquitoes of Kentucky." *Journal of Economic Entomology,* XXXVII, 547-550.

Resh, V.H. 1975. "A Distributional Study of the Caddisflie of Kentucky." *Transcript of the Kentucky Academy of Sciences.* XXXVI, 6–16.

Resner, P.L. 1979. "An Annotated Checklist of the Dragonflies and Damselflies (Odonata) of Kentucky." *Transcript of the Kentucky Academy of Sciences,* XXXI (1-2), 32-44.

Rhoades, R. 1944. "The Crayfishes of Kentucky, With Notes on Variation, Distribution, and Descriptions of New Species and Subspecies." *American Midlife National,* XXXI, 111-149.

Ricker, W.E. and H.H. Ross. "North American Species of Taeniopteryx (Plecoptera, Insecta)." *Journal of Fisheries Resources Board of Canada,* XXV, 1423-1439.

Ross, H.H. 1944. "The Caddisflies, or Trichoptera, of Illinois." *Bulletin of the Illinois Natural History Survey,* XXIII, 1-326.

Samsel, G.L., Jr., J.R. Reed, and R.R. Daub. 1973. "Preliminary Investigations of a Headwater Creek in Eastern Kentucky." *Transcript of the Kentucky Academy of Sciences,* XXXIV (1-2). 13-21.

Sanderson, M.W. 1953. "A Revision of the Nearctic Genera of Elmidae (Coleoptera). "A Revision of the Nearctic Genera of Elmidae (Coleoptera)." *Journal of the Kansas Entomological Society.* XXVI (4): 148-163.

Sanderson, M.W. 1954. "A Revision of the Nearctic Genera of Elmidae (Coleoptera)." *Journal of the Kansas Entomological Society,* XXVII (1), 1-13.

Schuster, G.A. and D.A. Etnier. 1978. *A Manual for the Identification of the Larvae of the Caddisfly Genera Hydropsyche Pictet and Symphitopsyche Ulmer in Eastern and Central North America.* EPA, Environmental Monitoring Service Report.

Smith, R.F. and A.E. Pritchard. 1963. "Odonata." *Aquatic Insects of California.* Edited by R.L. Usinger. Berkeley, CA: University of California Press.

Steele, B.D. and D.C. Tarter. 1977. "Distribution of the Family Perlidae in West Virginia (Plecoptera)." *Entomological News,* LXXXVIII, 18-22.

Steenes, H.R., III. 1969. "The Origin and Affinities of the Troglobitic Ascllids of the Southern Appalachians." *The Distributional History of the Biota of the Southern Appalachians. Part I: Invertebrates.* Edited by R.C. Holt, Blackburg, VA: Research Division Monograph 1, Virginia Polytechnic Institute and State University.

Surdick, R.F. and K.C. Kim. 1976. *Stoneflies (Plecoptera) of Pennsylvania.* State College, PA: Pennsylvania State University, College of Agriculture Bulletin 808: 1-73.

Tarter, D.C. 1976. *West Virginia Benthological Survey.* Huntington, WV: U.S. Army Corps of Engineers. Huntington District and Marshall University.

Tarter, D.C. 1981. Personal communication: Aquatic Macroinvertebrates of Levisa Fork-Big Sandy Drainage. Data for stonefly collection from the University of Kentucky collected by P.H. Freytag.

Tarter, D.C, and R.F. Kirchner. 1980. "List of the Stoneflies (Plecoptera) of West Virginia." *Entomological News,* XCL (2), 49-53.

Tarter, D.C., M.L. Little, R.F. Kirchner, W.D. Watkins, R.G. Farmer, and D. Steele, 1975. "The Occurrence and Distribution of Pteronarcid Stoneflies in West Virginia (Insecta: Plecoptera)."

Tarter, D.C., W.D. Watkins, and M.L. Little. 1976. "Distribution, Including New State Records, of Fishflies in Kentucky (Megaloptera: Corydalidae)." *Transcripts of the Kentucky Academy of Sciences,* XXXVII, 26-28.

Tarter, D.C., W.D. Watkins, M.L. Little, and D.C. Ashley. 1977. "Seasonal Emergence Patterns of Fishflies East of the Rocky Mountains (Megaloptera: Corydalidae)." *Entomological News,* LXXXVIII, 69-76.

Teskey, H.J. 1978. "Larvae of Aquatic Diptera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Company.

United States Department of the Army, Huntington District Corps of Engineers. 1975. *Environmental Assessment-Paintsville Lake, Big Sandy River Basin, Kentucky.* Philadelphia, PA: Rahenkamp, Sachs, Wells and Assocaites.

United States Department of the Army, Huntington District Corps of Engineers. 1975. *Environmental Assessment-Yatesville Lake, Big Sandy River Basin, Kentucky.* Philadelphia, PA: Rahenkamp, Sachs, Wells and Associates.

Usinger, R.L. 1956. "Aquatic Hemiptera." *Aquatic Insects of California.* Berkeley, CA: University of California Press.

Voshell, J.R., Jr. 1981. Personal communication; Aquatic Macroinvertebrates of Levisa Fork-Big Sandy Drainage. Extant specimens housed at Virginia Polytechnic Institute and State University.

Watkins, W.D., D.C. Tarter, M.L. Little, and S.D. Hopkins. 1975. "New Records on Fishflies for West Virginia (Megaloptera): Corydalidae." *Proceedings of the West Virginia Academy of Sciences,* XLVII, 1-5.

Westfall, M.J., Jr. 1978. "Odonata." *Aquatic Insects of North America.* Edited by R. W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Company.

White, D.S. 1974. The Distribution of Stoneflies (Insecta: Plecoptera) of the Salt River, Kentucky. *Transcripts of the Kentucky Academy of Sciences.* XXXV (1-2), 17-23.

Wiggins, G.B. 1978. "Trichoptera." *Aquatic Insects of North America.* Edited by R.W. Merritt and K.W. Cummins. Dubuque, IA: Kendall/Hunt Publishing Company.

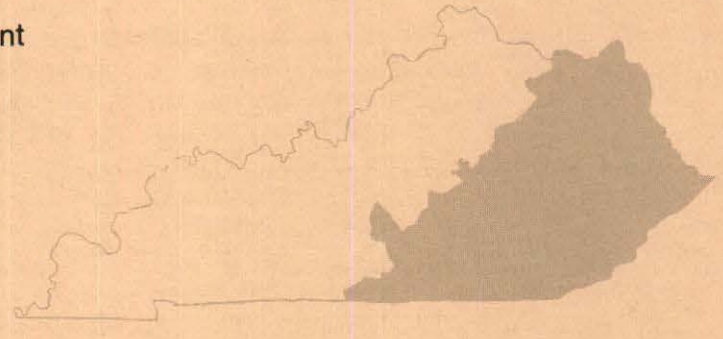
Williams, W.D. 1972. *Freshwater Isopods (Asellidae) of North America.* Biota of Freshwater Ecosystems, EPA Identification Manual, VII, 1-45.

Winger, P.V. 1978. "Fish and Benthic Populations of the New River, Tennessee." *Surface Mining and Fish/Wildlife Needs in the Eastern United States.* Edited by D.E. Samuel, J.R. Stauffer, C.H. Hocutt, W.T. Mason, Jr., Washington, D.C.: Proceedings of a Symposium, Biological Services Program, U.S. Fish and Wildlife Service.

Wirth, W.W. and A. Stone, 1956. "Aquatic Diptera." *Aquatic Insects of California.* Edited by R.L. Usinger. Berkeley, CA: University of California Press.

The Appalachian Development Center was established in 1978 as Morehead State University's regional service arm. Committed to economic, social, and educational development in partnership with the people and institutions of Appalachian Kentucky, the center's major program areas are:

Business Development
Regional Research
Community Services
Appalachian Studies



About the Author

Gerald L. DeMoss was born and reared in Kentucky. He earned a B.S. in science from Morehead State University in 1966; an M.S. in science from Morehead State University in 1968; and a Ph.D. from the University of Tennessee in 1973. He has been with Morehead State University's Department of Biological and Environmental Sciences since 1968 and is currently a professor of biology.

DeMoss is actively involved in environmental education on a variety of levels. He is a member of Phi Kappa Phi, the Entomological Society of America, the Kentucky Academy of Sciences, the Kentucky Natural History Society, and the Kentucky Association for Environmental Education. He is the program coordinator and advisor for Morehead State University's Environmental Science Program and a member of the Kentucky Advisory Council for Environmental Education.


MOREHEAD
STATE UNIVERSITY