

## SHORT COMMUNICATION

### A Contribution to the Inventory of Coleoptera of Missouri: New Records from Benton County

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#### Introduction

Benton County is located in southwest-central Missouri, lying at the intersection of four of the eleven recognized natural divisions within the state: the Osage Plains, the Ozark border, the Springfield Plateau, and the Upper Ozarks (Nelson, 1985) (Fig. 1). This unique intersection has resulted in significant overlap between 5 classes and 19 distinct subclasses of natural communities with the primary canopy made up of mixed hardwoods, cedar and pine (Pinaceae), and cypress (Cupressaceae), the understory comprised mainly of mixed woody and herbaceous shrubs, and a groundcover of mid- to tallgrasses (White and Madany, 1978; Nelson, 1985).

The potential for interaction between these natural communities to form many different niches for insect exploitation makes Benton County well suited to support a diverse beetle fauna. However, a scarcity of entomological collecting efforts in this region have resulted in Benton County being poorly represented in state and regional collections and an overall underestimation of state diversity. Our objective was to conduct a preliminary survey of the beetles of Benton County as a contribution to the state's inventory of Coleoptera.

#### Materials and Methods

Field collecting was conducted during late spring and summer between 1998 and 2002. All specimens were collected in one location; however, there were a variety of habitats and sampling was planned to represent each of these unique habitats. Beetles were sampled using a variety of techniques including: mercury vapor and black light traps, sweeping, beating vegetation, brown sugar and carrion traps, and hand collecting. Samples from light traps, sweeping, beating vegetation and hand collection were collected into kill jars utilizing ethyl acetate as the killing agent and then transferred to 6.5 × 6.5 × 6.5 cm plastic containers (Item GA 7, Magenta Corp, Chicago, IL) for cold storage until processing. Samples from brown sugar and carrion traps were collected and stored in 70% ethanol until processing. For all collecting techniques, only adults were collected and identified. Voucher specimens have been deposited in the Louisiana State Arthropod Museum (LSAM), the Enns Entomology Museum at the University of Missouri (UMRM), and the remainder are housed in the Shockley Research Collection (FSPC) at the University of Georgia.

#### Results

The following list presents the findings of this survey. Families are arranged according to Lawrence and Newton (1995) and genera and species have been arranged alphabetically within family. We identified a total of 238 species in 54 families from the samples collected. Of those species, 182 represented the first reported collection of that species in Benton County, and 33 represented new state records (denoted by a “\*”). Species identified that were previously known from Benton County have been omitted.

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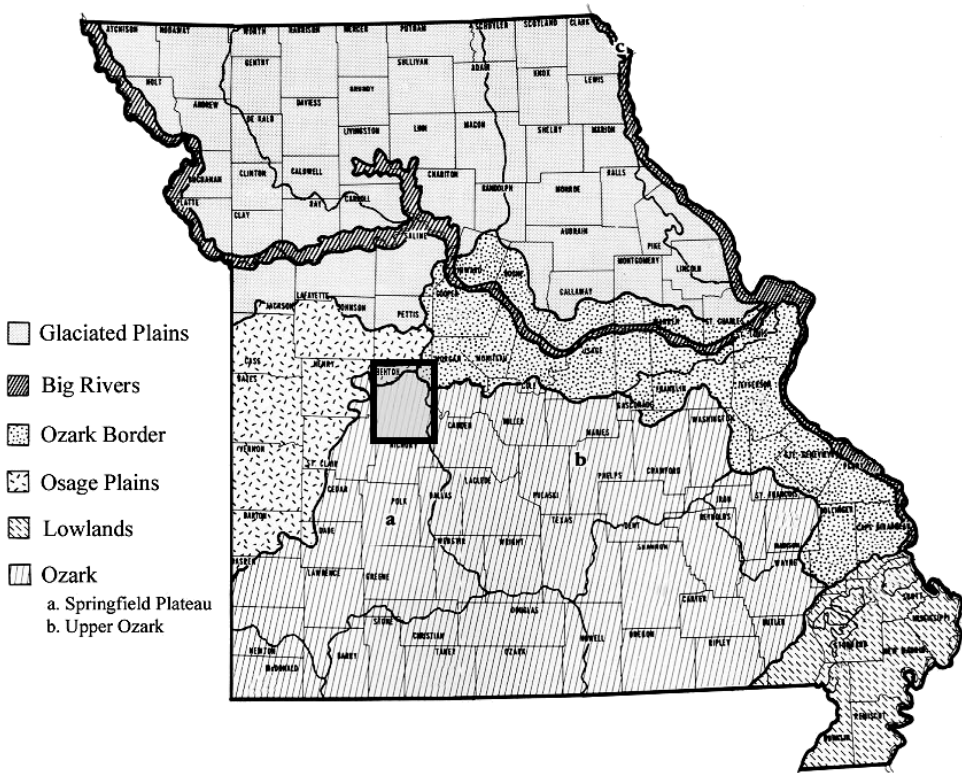


Fig. 1. The natural divisions of Missouri and their sections. Benton County has been highlighted. Map taken and modified from Nelson 1985.

**Cupedidae**

- \* *Cupes capitatus* F.

**Gyrinidae**

- Dineutus hornii* Roberts

**Dytiscidae**

- Copelatus glypticus* (Say)

**Carabidae**

- Calosoma scrutator* F.
- Chlaenius tricolor* Dejean
- Cicindela sexguttata* F.
- Galerita janus* (F.)
- Harpalus caliginosus* (F.)
- Harpalus pennsylvanicus* DeGeer
- Helluomorphoides praeustus bicolor* (Harris)
- Lebia analis* Dejean
- Lebia fuscata* Dejean
- Lebia ornata* Say
- Lebia viridipennis* Dejean
- Lebia viridis* Say
- Lebia vittata* (F.)
- \* *Morion monilicornis* (Latrielle)

- \* *Notiobia purpurascens* (Bates)
- Oodes amaroides* Dejean
- Pasimachus depressus* (F.)
- Selenophorus opalinus* (LeConte)
- Stenolophus ochropezus* (Say)

**Hydrophilidae**

- \* *Hydrochara obtusata* (Say)
- Phaenonotum exstriatum* (Say)

**Silphidae**

- Necrodes surinamensis* (F.)
- Nicrophorus pustulatus* Herschel

**Staphylinidae**

- Brathinus nitidus* LeConte
- Platydracus maculosus* (Gravenhorst)
- Sepedophilus* spp. (2 specimens)

**Lucanidae**

- Lucanus elaphus* (F.)
- Lucanus capreolus* (L.)

**Passalidae**

- Odontotaenius disjunctus* (Illiger)

**Trogidae***Omorgus asper* (LeConte)**Geotrupidae***Geotrupes splendidus* (F.)**Ochodaeidae***Ochodaeus musculus* (Say)**Ceratocanthidae***Germarostes aphodioides* (Illiger)*Germarostes globosus* (Say)**Scarabaeidae***Anomala innuba* (F.)*Anomala marginata* (F.)*Aphodius rusicola* Melsheimer*Aphodius stercorosus* Melsheimer*Ataenius strigatus* (Say)*Ateuchus histeroides* (Weber)*Ateuchus probus* (Germar)*Copris fricator* (F.)*Copris minutus* (Drury)\* *Cyclocephala borealis* Arrow*Dyscinetus morator* (F.)*Phileurus valgus* (L.)*Phyllophaga crenulata* (Froelich)*Phyllophaga gracilis* (Burmeister)*Phyllophaga ilicis* (Knoch)*Phyllophaga rubiginosa* (LeConte)*Phyllophaga submucida* (LeConte)*Serica campestris* Dawson*Serica intermixta* Blatchley*Serica mystaca* Dawson*Serica sericea* (Illiger)**Scirtidae***Cyphon variabilis* (Thunberg)*Elodes pulchella* Guerin-Meneville**Buprestidae***Agrillus* spp. (3 species)\* *Anthaxia cyanella* Gory*Anthaxia viridicornis* Gory*Brachys ovatus* (Weber)*Chrysobothris sexsignata* (Say)**Ptilodactylidae***Ptilodactyla serricollis* (Say)**Callirhipidae***Zenoa picea* (Beauvois)**Elateridae**\* *Ampedus discoideus* (F.)*Elater dorsalis* (Say)*Elater fissilis* (Say)*Elater marmorata* F.*Hemirhipus fascicularis* (F.)*Lacon discoidea* (Weber)*Melanectes piceus* (DeGeer)\* *Melanotus castanipes* (Paykull)*Melanotus communis* (Gyllenhal)*Orthostethus infuscatus* (Germar)**Lycidae***Plateros* spp.**Phengodidae**\* *Phengodes plumosa* (Olivier)**Lampyridae***Lucidota atra* (Olivier)*Photinus pyralis* (L.)\* *Photuris pennsylvanicus* (DeGeer)*Pyropyga decipiens* (Harris)**Cantharidae***Ancistronycha dentiger* (LeConte)\* *Cantharis impressus* (LeConte)*Podabrus modestus* (Say)*Rhagonycha lineola* (F.)*Rhaxonycha carolinus* (F.)**Dermestidae***Anthrenus verbasci* (L.)\* *Cryptorhopalum haemorrhoidalis* (LeConte)**Bostrichidae**\* *Amphicerus hamatus* (F.)*Lichenophanes bicornis* (Weber)**Anobiidae**\* *Hadrobregmus carinatus* (White)*Lasioderma serricornis* (F.)\* *Ptilinus rufticornis* Say*Ptinus villiger* (Reitter)**Lymexylonidae***Melittoma sericeum* (Harris)**Trogossitidae***Airora cylindrica* (Serville)*Tenebroides americanus* (Kirby)\* *Tenebroides laticollis* (Horn)**Cleridae***Cymatodera bicolor* (Say)*Enoclerus ichneumoneus* (F.)*Enoclerus quadrisignatus* (Say)*Neorthopteura damicornis* (Say)**Melyridae***Attalus scincetus* (Say)\* *Hypebaeus oblitus* (LeConte)*Collops quadrimaculatus* (F.)**Sphindidae***Sphindus americanus* LeConte**Nitidulidae***Amphicrossus ciliatus* (Olivier)*Carpophilus hemipterus* (L.)*Carpophilus lugubris* Murray*Carpophilus melanopterus* Erichson*Carpophilus sayi* Parsons

*Carpophilus* spp. (3 species)

*Colopterus maculatus* (Erichson)

*Colopterus truncatus* (Randall)

*Cryptarcha ampla* Erichson

*Cryptarcha strigatula* Parsons

*Eपुरaea corticina* Erichson

*Eपुरaea erichsoni* Reitter

*Eपुरaea helvola* Erichson

*Eपुरaea obtusicollis* Reitter

*Glischrochilus fasciatus* (Olivier)

*Glischrochilus obtusus* (Say)

*Glischrochilus quadrisignatus* (Say)

*Glischrochilus vittata* (Say)

\* *Lobiopa insularis* (Laporte)

\* *Lobiopa setosa* Harold

*Lobiopa undulata* (Say)

*Pallodes pallidus* (Beauvois)

*Phenolia grossa* (F.)

*Prometopia sexmaculata* (Say)

*Stelidota geminata* (Say)

*Stelidota octomaculata* (Say)

#### Monotomidae

*Monotoma picipes* Herbst

\* *Rhizophagus brunneus* Horn

\* *Rhizophagus dimidiatus* Mannerheim

#### Silvanidae

*Nausibius major* Zimmerman

*Silvanus muticus* Sharp

#### Passandridae

*Catogenus rufus* (F.)

*Taphrosclidia linearis* (LeConte)

#### Phalacridae

*Phalacrus politus* Melsheimer

#### Cryptophagidae

*Atomaria* spp.

#### Erotylidae

*Ischyryus quadripunctatus* (Olivier)

*Triplax frontalis* Horn

#### Cerylonidae

*Hypodacne punctata* LeConte

#### Coccinellidae

*Chilocorus stigma* (Say)

*Hippodamia convergens* Guérin-Meneville

*Psyllobora vigintimaculata* (Say)

*Scymnus americanus* Mulsant

#### Mycetophagidae

\* *Litargus nebulosus* LeConte

*Litargus sexpunctatus* (Say)

*Litargus tetraspilotus* LeConte

*Mycetophagus punctatus* Say

#### Tetratomidae

*Penthe pimelia* (F.)

*Penthe obliquata* (F.)

#### Melandryidae

*Dircaea liturata* LeConte

#### Mordellidae

*Mordellistena* spp. (3 species)

*Mordellaria* spp.

#### Colydiidae

*Aulonium parallelopedum* (Say)

*Colydium lineola* Say

#### Tenebrionidae

*Alobates pennsylvanica* (DeGeer)

*Diaperis maculata* Olivier

\* *Hymenorus pilosa* Casey

\* *Isomira quadristriata* (Couper)

\* *Lobopoda punctulata* (Melsheimer)

*Neomida bicornis* (F.)

*Opatrinus minimus* (Beauvois)

*Paratenetus punctatus* Spinola

*Platydema ellipticus* (F.)

\* *Platydema nigrata* (Motschulsky)

*Platydema ruficornis* (Sturm)

*Platydema subcostata* Laporte and Brulle

*Centronopus calcaratus* (F.)

*Tarpela micans* (F.)

*Tenebrio molitor* L.

*Tenebrio obscurum* F.

\* *Tenebrio picipes* Herbst

*Uloma imberbis* LeConte

*Uloma impressa* Melsheimer

*Xylopinus saperdoides* (Olivier)

#### Synchroidae

*Synchroa punctata* Newman

#### Oedomeridae

*Oxacis trimaculata* Champion

#### Meloidae

*Meloe angusticollis* Say

#### Pyrochroidae

*Neopyrochroa femoralis* (LeConte)

#### Cerambycidae

*Distenia undata* (F.)

*Goes pulcher* (Haldeman)

\* *Goes tumifrons* Linsley & Chemsak

\* *Hebestola nebulosa* Haldeman

\* *Hesperophanes pubescens* (Haldeman)

*Heterachthes quadrimaculatum* Haldeman

\* *Knulliana cincta spinifera* (F.)

*Megacyllene decorum* (Olivier)

*Nealosterna capitata* (Newman)

*Neoclytus a. acuminatum* (F.)

*Obrium maculata* (Olivier)

*Saperda candida* F.

#### Chrysomelidae

*Altica litigata* (Fall)

*Amblycerus robiniae* (F.)

*Babia q. quadriguttata* (Olivier)

*Baliosus nervosa* (Panzer)  
*Capraita sexmaculata* (Illiger)  
*Capraita thymoides* (Crotch)  
*Cryptocephalus quadruplex* Newman  
*Paria fragariae* Wilcox  
*Paria quadrinotata* (Say)

#### **Brentidae**

*Arrhenodes minuta* (Drury)

#### **Curculionidae**

\* *Gnathotrichus materiarius* (Fitch)  
 \* *Xyleborus pubescens* Zimmermann

#### Discussion

Although simple in design, this study nonetheless yielded 33 new state records and expanded the within-state ranges of an additional 182 species of beetles. However, this list is not intended to represent a complete inventory of Benton Co. beetles. Noticeably lacking are thorough records of Staphylinidae, Curculionidae, and some of the Cucujoidea because the survey methods employed in this study were not very effective for these groups resulting in very few specimens collected. Nonetheless, those that were collected were included in the list. Additional surveys using more effective techniques targeted for collection of these beetle groups are needed. Given the results of this survey, it is likely that Benton County will continue to be a source of new state records for Missouri, and that the complex community structure within the county may also yield new and/or endemic beetle species.

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