

THE CAVE-INHABITING ROVE BEETLES OF THE UNITED STATES (COLEOPTERA; STAPHYLINIDAE; EXCLUDING ALEOCHARINAE AND PSELAPHINAE): DIVERSITY AND DISTRIBUTIONS

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A taxonomic listing is given for new records of 66 species of staphylinid beetles (excluding Aleocharinae and Pselaphinae) collected in caves in the contiguous United States. Most species are judged to be either accidentals or infrequent trogliphilic inhabitants of caves. Nine species are classed as frequent trogliphiles. When added to the 6 frequent trogliphile species of aleocharine staphylinids, this yields a total of 15 species of staphylinid beetles (excluding Pselaphinae) frequently found in US cave ecosystems. No trogliphilic species are known from US caves. Trogliphilic staphylinids (excluding Pselaphinae) elsewhere in the world are few (some 30 species). They are briefly considered and discussed. Worldwide, trogliphilic staphylinids are taxonomically, geographically, and geologically concentrated in the Canary Islands (in volcanic lava tube caves) and in nearby Spain and northwestern Africa.

Worldwide, caves are most frequently and abundantly occupied by beetles in the families Carabidae, Leiodidae, and Staphylinidae. The first two of these families contain a great many cave-specialized and cave-restricted (trogliphilic) genera and species in many parts of the world, mostly in Europe (Casale *et al.* 1998; Giachino *et al.* 1998). In contrast, very few cave-specialized or cave-restricted (trogliphilic) staphylinid beetles are known. Jeannel and Jarrige (1949) summarized data on about 150 species of Staphylinidae from over 1000 caves worldwide and considered very few of these species to be trogliphiles. Recent reviews by Bordoni and Oromi (1998) and Outerelo *et al.* (1998) list only 30 trogliphilic species worldwide, and most of these are from Europe and North Africa. None are from the USA.

Most staphylinid beetles are distinctive in their appearance, with an exceptionally elongate and flexible body form and very short elytra (front wing covers) over their hind wings (Figs. 1–6). Their English common name, “rove beetle,” comes from their behavior of rapidly running about in many directions. Some species in the family are eyeless and without flight wings, but other than the few cave species, these are mostly small to minute litter- or soil-inhabiting species. This beetle family is one of the world’s largest, with some 4100 species recorded in the USA and Canada, and over 47,000 species known to science worldwide (Newton *et al.* 2000). Recently, the traditional beetle families Scaphidiidae and Pselaphidae have been combined with the family Staphylinidae, and each is now treated as a subfamily (Kasule 1966; Newton & Thayer 1995). These two groups are not included in the following discussions, which are restricted to the subfamilies traditionally placed in the Staphylinidae. Pselaphines are known from many caves, especially in the USA (Chandler 1992; Chandler & Reddell 2001) and Europe

(Poggi *et al.* 1998). Some 53 species of them in 8 genera are considered to be trogliphiles in the USA (Peck 1998; Chandler & Reddell 2001). We are not aware of any cave records for scaphidiines, which are strictly mycophagous as far as known (Leschen & Löbl 1995), and they seem unlikely to be cave-associated.

Staphylinid beetles occur frequently and commonly in caves in the United States. The published records of staphylinids from US caves are many and scattered in numerous regional and state cave faunal reports. These have been summarized by Roth (2001). After many years of faunal surveys of many caves by many people, no trogliphilic species (outside Pselaphinae) have been found in the USA. It now seems most likely that none will be found in the future.

Identification of species in this very large beetle family is difficult and time consuming, even for the specialist, and since trogliphilic species are not known from the US, staphylinid beetles have often received little or no specific attention in surveys of cave insect diversity. For these reasons, we have a very scattered and incomplete knowledge of which species of staphylinid beetles are frequent inhabitants of US caves and components of cave ecosystems.

Klimaszewski and Peck (1986) presented a comprehensive systematic report on the cave-inhabiting aleocharine staphylinids of the USA. The aim of this paper is to complement that report and the literature summary of Roth (2001). We present a systematic summary of new records of authoritatively identified species of Staphylinidae (excluding Aleocharinae and Pselaphinae) from cave localities throughout the USA. This documentation of the species diversity and distribution of these staphylinid beetles helps to complete an understanding of this previously poorly known part of the fauna of US caves.

Figure 1.
Brathinus nitidus.

Figure 2.
Geodromicus brunneus.

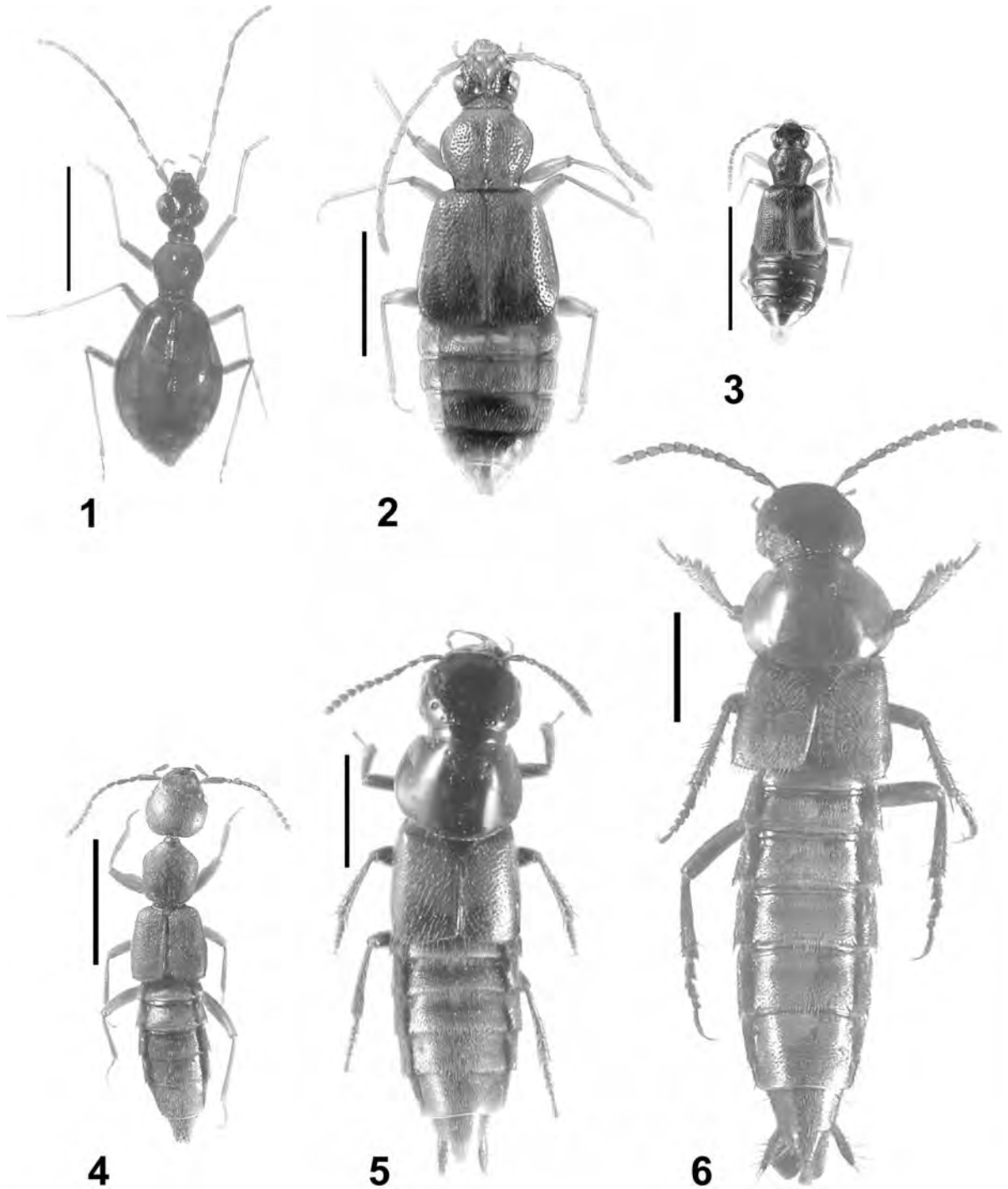
Figure 3.
Lesteva pallipes.

Figure 4.
Eustilicus condei.

Figure 5.
Quedius erythrogastrus.

Figure 6.
Quedius spelaeus.

All scale lines are 2.0 mm.



MATERIALS AND METHODS

Staphylinid beetles are usually collected in caves by general searching and hand collecting, or by setting bait stations and baited pitfall traps. The beetles usually feed as generalized predators on small terrestrial invertebrates and are most frequently found at or near decaying organic matter, which attracts their prey items. Most of the records reported here have been collected by the first author over many years of field work in US caves. Many additional records are included which

were made by many other collectors, and these people are thanked in the acknowledgments. This paper reports on 611 collections and 2185 specimens. All specimens reported here have been seen by one of the authors and most specimens are in the collections of the Field Museum of Natural History, Chicago, IL, USA; the American Museum of Natural History, New York, NY, USA; or the Canadian National Collection of Insects, Agriculture Canada, Ottawa, Ontario, Canada.

Identifications were made by the authors, J.M. Campbell, A. Smetana, A. Davies, and A.F. Newton. The species records

are arranged in putative phylogenetic sequence by subfamily, tribe, and subtribe following Newton *et al.* (2000, which also provides authorities for generic and family group names) and alphabetically by genus and species. Only records that have been determined to species by a staphylinid taxonomist are given, with names updated where needed, following Herman (2001; all except Paederinae) and an unpublished database maintained by A.F. Newton. There are additional unidentified specimens in the above and other collections, especially the Illinois Natural History Survey, but it is unlikely that they contain any additional species of frequently occurring troglaphiles not listed here. Full label data such as date of collection, name of collector and other label information are available as Access or other digital files from the authors. Frequently, a species has been taken many times in a cave and by the same or other collectors on many separate occasions. Such duplicate records are not indicated.

Frequency of association of the species with cave habitats is given as (1) "accidental" (for which there about 5 records or fewer and there is no apparent or regular association with cave habitats) or (2) as "troglaphile" (having an apparently regular association with dark-zone cave habitats, and for which there are usually more than 5 records). The troglaphiles are further divided into the subcategories of (2A) "infrequent troglaphiles" (with ~5-10 cave records) and (2B) "frequent troglaphiles" (for which there are generally many >10 cave records). These categorizations are subjective, and may be modified by the accumulation of additional data; in particular, more records may elevate some infrequent troglaphile species into the category of frequent troglaphiles. Supplementary data available at <http://www.caves.org/pub/journal/Peck-Thayer Appendix.rtf> include a brief summary of the general distribution of the species, microhabitat associations of the species in caves when known or suspected, and, for species previously reported from caves, a list of state abbreviations as a summary of previous records (see Roth 2001).

RESULTS

No cave-limited or cave-evolved species (troglaphites) have been found in caves in the contiguous USA. In a world list of troglaphilic Staphylinidae, Bordoni and Oromi (1998) list 44 species, 8 of which are from the USA. From the data reported here, 9 species of staphylinids (excluding Aleocharinae and Pselaphinae) are considered to be regularly occurring or frequent troglaphiles in US caves. Adding these to the data on the 6 frequently occurring troglaphilic species of Aleocharinae (from Klimaszewski & Peck 1986) and that presented in Roth (2001), 15 species of frequently occurring troglaphile staphylinids are now known from US caves. Their names and general geographical distributions in caves are in Table 1. Species judged to be infrequent troglaphiles or accidentals in US caves are listed in Table 2. Full data on cave names for all specimen records are at <http://www.caves.org/pub/journal/Peck-Thayer Appendix.rtf>

It is interesting to note that of the species in Table 1, *Quedius fulgidus* and *Quedius mesomelinus* were probably accidentally introduced into North America (Smetana 1971). They are, thus, historically recent additions to the fauna of US caves. At present, they seem to be geographically and ecologically peripheral in US cave ecosystems, although at least the last species is also troglaphilic in Europe (Outerelo *et al.* 1998), with some populations possibly being subtroglobitic (Hennicke & Eckert 2001). The total taxonomic and numerical abundance of terrestrial predators in US cave ecosystems would have been less before the accidental introduction of these species into North America. It is evident that these species have found niche space in US cave habitats, but there is no present evidence that they displaced other terrestrial predators from US caves. Rather, they have slightly enriched the diversity of terrestrial insect predators in US cave ecosystems.

DISCUSSION

Staphylinids in caves. Staphylinids are an ecologically very diverse group of beetles.

Nevertheless, most occupy habitats that are moist and have very low light levels. This general preference would seemingly preadapt them for life in caves. However, in view of the great number of species known from the USA, comparatively few have actually been found to establish populations in caves. This may be because they are somehow restricted by microhabitat requirements, by food types, by competition with already-established species, or perhaps by a need for environmental temperature fluctuations. Alternatively, those that do occur regularly in caves might do so because (1) they are more omnivorous or tolerant of the limited foods available in caves, or (2) caves present suitable extensions of the microhabitats they favor in non-cave environments, or (3) they are tolerant of the dark, humidity, and relatively constant temperatures of caves.

Distributional patterns. A few of the records represent new state records for the species, which is not unexpected in a group of beetles that has not been well studied. Some troglaphiles appear to be more prevalent in caves in the southern part of their ranges than in the northern parts. It is assumed that this is because more southerly caves offer cooler and moister habitats than are generally found outside of caves, and the troglaphiles use caves more frequently in the south as environmental refuges. This pattern is present in at least *Brathinus nitidus*, *Lesteva pallipes*, *Quedius erythrogaster* and *Q. fulgidus* and may occur in other troglaphilic staphylinids, but distributional data are not adequate to demonstrate its generality.

The problem of defining a troglaphitic staphylinid. In a world list of 29 species of troglaphitic Staphylinidae, Bordoni and Oromi (1998) note that categorizing a staphylinid as a troglaphite is not as easy or clear-cut as for some other groups of cave insects. Outerelo *et al.* (1998) add one additional

Table 1. Staphylinidae frequently occurring as troglolithes in US caves. Additional supportive data are at <http://www.caves.org/pub/journal/Peck-ThayerAppendix.rtf> and also available from the NSS library and NSS archives (see masthead for NSS address).

Omaliniinae: Anthophagini	<i>Geodromicus brunneus</i> (Say, 1823): eastern-central USA; from VA and IL south to OK and GA. Fig. 2.
	<i>Lesteva pallipes</i> LeConte, 1863: eastern-central USA; from IA and MD south to AR and GA. Fig. 3
Aleocharinae	
Aleocharini	<i>Aleochara (Echiochara) lucifuga</i> (Casey, 1893): eastern-central USA; PA and IA to VA and AL.
Athetini	<i>Aloconota laurentiana</i> Blatchley, 1910, (reported as <i>Aloconota insecta</i> (Thomson, 1856) in Klimaszewski and Peck (1986), by Gusarov 2001): eastern-central USA; NY and IL to MO, VA, and AL.
	<i>Atheta</i> (subgenus undetermined) <i>annexa</i> Casey, 1910: eastern-central USA; IA and VA to MO, GA, and FL.
	<i>Atheta (Dimetrota?</i> subgenus uncertain) <i>lucifuga</i> Klimaszewski and Peck, 1986: eastern-central USA; MO and KY to GA and FL.
	<i>Atheta (Dimetrota) troglolitha</i> Klimaszewski and Peck, 1986: eastern-central USA; PA and IA to AR, GA, and FL.
Oxyopodini	<i>Blepharrhymenus illectus</i> (Casey, 1911): central to south eastern USA; MO to TN and AL.
Paederinae: Paederini: Stilicini	<i>Eustilicus condei</i> (Jarrige, 1960): southwestern USA; TX and NM. Fig. 4.
Staphylininae: Staphylinini	
Quediina	<i>Quedius erythrogaster</i> Mannerheim, 1852: OR, CA, and eastern states; IL to NY and south to TN and AL. Fig. 5.
	<i>Quedius fulgidus</i> (Fabricius, 1792): eastern USA; IL to PA and south to AL and AR.
	<i>Quedius mesomelinus</i> (Marsham, 1802): northcentral-north eastern USA; MN to PA south to IA and VA
	<i>Quedius spelaeus</i> Horn, 1878: widespread eastern-central and western USA; MN to NY and south to MO and VA; also WA to WY and south to CA and UT. Fig. 6.
Philonthina	<i>Belonuchus aphaobius</i> Smetana, 1995: southwestern USA; central TX.
	<i>Belonuchus troglolithus</i> Smetana, 1995: southwestern USA; AZ, OK, TX.

species (*Anotylus subanophthalmicus*) to bring the total to 30 species. Some of these species may actually be endogeans (species whose primary habitat is in either soil or deep rock cracks and crevices or the superficial subterranean zone). For such species, caves are only secondary habitats. Many eyeless and wingless endogean species are known worldwide. They frequently occur in regions with Mediterranean-type climates and are most often collected by soil-washing techniques (Campbell & Peck 1990). Because of their limited dispersal abilities, many endogean species may be useful indicators of past regional biogeographic history. For example, Campbell and Peck (1990) suggest that the eyeless and flightless endogean species *Omalonomus relictus* is evidence that the Cypress

Hills of southern Alberta and Saskatchewan, Canada, were not ice-covered during times of Pleistocene glaciations.

Where do troglolithic staphylinids occur? The distributions of the 30 species of supposed troglolithes listed by Bordoni and Oromi (1998) and Outerelo *et al.* (1998) are as follows: Canary Islands and Madeira Island, 12; Morocco, 7; Spain, 4; Algeria, 2; Italy, 1; Romania, 1; Galapagos Islands, 1; Mexico, 1; and India, 1. There are 3 notable patterns of species concentration in this list. The first is the *taxonomic* concentration of 15 species in the genera *Domene* and *Apteranopsis* in the Canary Islands and nearby Spain and northwestern Africa (see below). The second is the *geographic* concentration of 25 species in the Canary Islands and the western Mediterranean region of Spain and North Africa. The third is the *geologic* concentration of 13 species in lava tube caves on oceanic volcanic islands of the Canaries, Madeira, and the Galapagos. Statistically, there is a much higher frequency of troglolithes in volcanic cave habitats than would be normally expected, since volcanic caves on islands are certainly much rarer habitats than are solution caves in limestone on continents. Additionally, volcanic (lava tube) caves are thought to be much younger than limestone solution caves. While this may be true on a cave by cave basis, we would argue that volcanic landscapes themselves may generally be as old as limestone karst landscapes as sites for origins of troglolithic species.

What is the evolutionary origin of troglolithic staphylinids? About half of the troglolithic staphylinids are scattered in various genera. Thus, these troglolithes have evolved independently from several ancestral stocks in several different regions, and probably at different times. But there may have been some general or common adaptive theme in their cave specialization. The species in the western Mediterranean region may represent subterranean occupation by diverse ancestors in response to regional Pleistocene interglacial climatic change and increasing aridity, as is widely thought for so many troglolithic arthropods. This explains multiple adaptations to subterranean habitats in many different ancestral lines. However, 2 taxonomic patterns are also present. The paederine genus *Domene* is represented by 9 troglolithic species in Spain, the Canary Islands, and Morocco, and the aleocharine genus *Apteranopsis* by 6 species in the Canary Islands. These 2 genera have been the most successful in penetrating and speciating in cave habitats. Secondly, a total of 11 of these species are in the Canary Islands. This concentration must be meaningful. Seemingly these isolated, oceanic, and volcanic islands have a different ecological structure or history in their subterranean habitats that collectively allowed more formation of troglolithic species of staphylinids than any other region in the world.

Perhaps the abundance of carabid beetle predators elsewhere in the world has suppressed the evolution of troglolithic staphylinids; that is, the niche of troglolithic predatory beetles may be filled by carabids nearly worldwide. But at least 4 species of troglolithic trechine carabids are known from the Canary Islands (Casale *et al.* 1998), so this cannot be the full answer. Additionally, the relative proximity of these islands to

Table 2. Staphylinidae judged to be infrequent troglaphiles or accidentals in US caves. Additional supportive data are at <http://www.caves.org/pub/journal/Peck-ThayerAppendix.rtf> and also available from the NSS library and NSS archives (see masthead for NSS address).

Subfamily Omaliinae
 Tribe Omaliini
Omalium rivulare (Paykull, 1789), accidental.
 Tribe Anthophagini
Brathinus nitidus LeConte, 1852, infrequent troglaphile. Fig. 1.
Lesteva cribratula (Casey, 1894), infrequent troglaphile.
Olophrum obiectum Erichson, 1840, accidental.
Orobanus ?simulator LeConte, 1878, accidental.

Subfamily Proteininae
Megarthus americanus Sachse, 1852, accidental.

Subfamily Tachyporinae
 Tribe Deropini
Derops divalis (Sanderson, 1947), infrequent troglaphile.
 Tribe Tachyporini
Coproporus laevis LeConte, 1863, accidental.
Nitidotachinus horni (Campbell, 1973), accidental.
Nitidotachinus scrutator (Geminger & Harold, 1868), accidental.
Sepedophilus crassus (Gravenhorst, 1802), accidental.
Sepedophilus littoreus (Linnaeus, 1758), accidental.
Sepedophilus opicus (Say, 1832), accidental.
Tachinus canadensis Horn, 1877, accidental.
Tachinus fimbriatus Gravenhorst, 1802, accidental.
Tachinus frigidus Erichson, 1839, accidental.
Tachinus fumipennis Say, 1832, accidental.
Tachyporus jocosus Say, 1832, accidental.
 Tribe Mycetoporini
Lordithon obsoletus (Say, 1832), accidental.

Subfamily Trichophyinae
Trichophya pilicornis (Gyllenhal, 1810), accidental.

Subfamily Oxytelinae
 Tribe Deleasterini
Deleaster trimaculatus Fall, 1910, accidental.
 Tribe Oxytelini
Anotylus exiguus (Erichson, 1840), accidental.
Anotylus insignitus (Gravenhorst, 1806), accidental.
Anotylus tetracarinatus (Block, 1799), accidental.
Oxytelus nimius Casey, 1894, accidental.

Subfamily Steninae
Dianous chalybeus LeConte, 1863, accidental.
Stenus (Stenus) alacer Casey, 1884, accidental.
Stenus (Stenus) bilentigatus Casey, 1884, accidental.
Stenus (Stenus) renifer LeConte, 1963, accidental.

Subfamily Paederinae
 Tribe Paederini
 Subtribe Lathrobiina
Lathrobium (Tetartopeus) angulare LeConte, 1863, accidental.
Lathrobium (Apteralium) brevipenne LeConte, 1863, accidental.
Lobrathium gnoma (Casey, 1905), accidental.
 Subtribe Scopaeina
Orus (Leucorus) rubens (Casey, 1905), accidental.
 Subtribe Stilicina
Eustilicus tristis (Melsheimer, 1844), infrequent troglaphile.
Rugilus dentatus Say, 1831, accidental.
Rugilus opaculus (LeConte, 1880), accidental.
 Subtribe Cryptobiina
Homaeotarsus badius (Gravenhorst, 1802), accidental.
Homaeotarsus bicolor (Gravenhorst, 1802), accidental.
Homaeotarsus capito (Casey, 1884), accidental.
Homaeotarsus carolinus (Erichson, 1840), accidental.
Homaeotarsus cinctus (Say, 1830), accidental.
Homaeotarsus pimerianus (LeConte, 1863), accidental.
 Subtribe Paederina
Paederus littorarius Gravenhorst, 1806, accidental.

Subfamily Staphylininae
 Tribe Xantholinini
Neohypnus obscurus (Erichson, 1839), accidental.
Stenistoderus rubripennis (LeConte, 1880), accidental.

Tribe Staphylinini
 Subtribe Quediina
Heterothops campbelli Smetana, 1971, accidental.
Quedius capucinus (Gravenhorst, 1806), accidental.
Quedius laticollis (Gravenhorst, 1802), accidental.
Quedius montanicus (Casey, 1915), accidental.
 Subtribe Philonthina
Erichsonius nanus (Horn, 1884), accidental.
Erichsonius patella (Horn, 1884), accidental.
Erichsonius pusio (Horn, 1884), accidental.
Gabrius microphthalmus (Horn, 1884), accidental.
Hesperus baltimorensis (Gravenhorst, 1802), accidental.
Neobisnius paederoides (LeConte, 1863), accidental.
Neobisnius sobrinus (Erichson, 1840), infrequent troglaphile.
Philonthus caeruleipennis (Mannerheim, 1830), accidental.
Philonthus thoracicus (Gravenhorst, 1802), accidental.

continental sources of colonist species also seems important—e.g., no troglotic staphylinids are found in the Hawaiian Islands. Another potentially important factor is the availability of suitable habitats outside of caves. If the habitats are highly suitable for staphylinids, there would be less selective pressure for staphylinids to occupy and become isolated in cave envi-

ronments. This might well be important because of the general aridity of the islands and areas which do possess troglotic staphylinids. Increasing regional aridity would tend to make caves distinctly more “attractive” to moisture-loving insects such as staphylinid beetles.

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The Cave-inhabiting Rove Beetles of the United States (Coleoptera; Staphylinidae; excluding Aleocharinae and Pselaphinae): Diversity and Distributions

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To be posted at web site as supplemental data.

Appendix 1. Annotated systematic listing of new records of species of cave collected Staphylinidae of the United States. This summarizes: the relative frequency with which the species has been found in cave habitats (as accidental, infrequent troglophile, or frequent troglophile), its general total distribution, a summary of microhabitat preferences, and previous and new cave records. The higher taxonomic categories and sequence follow Newton *et al.* (2000), and records are listed alphabetically by state (using US Postal Service abbreviations), county, and cave names.

Subfamily Omaliinae

Tribe Omaliini

Omalius rivulare (Paykull, 1789). Accidental. Holarctic (also regarded as accidental in caves in Europe, e.g., Outerelo *et al.* 1998, Hennicke and Eckert 2001). Common in litter, carrion, compost, decaying fungi. **Records. AL.** Jackson Co. Cox Cave.

Tribe Anthophagini

Brathinus nitidus LeConte, 1852. Figure 1. Infrequent troglophile. Distributed from Newfoundland west to Lake Superior and south through the Appalachians. Known from caves, especially along cave streams, in AL, KY, NS, NY, TN, VA (Peck 1975; Frank *et al.* 1987). **Records. AL.** Morgan Co. Inge Cave.

Geodromicus brunneus (Say, 1823). Figure 2. Frequent troglophile. Widespread in eastern USA and Canada. Previously reported from caves in GA, IL, KY, MO, OK. Frequently in wet areas, especially along cave streams. **Records. AL.** Jackson Co.: Beanfield Cave. **AR.** Boone Co.: Brewer Cave. Stone Co.: Blanchard Springs Cave. **GA.** Walker Co.: Bible Spring Cave. Mt. Cove Farm Cave. **IL.** Hardin Co.: Layoff Cave. **IN.** Jefferson Co.: Fosters Cave. **KY.** Garrard Co.: Robinson Cave. Hart Co.: Burd Sink Cave. Cave Spring Cave. Metcalfe Co.: Cormon Cave. Scott Co.: Church Cave. Warren Co.: Garman Cave. **MO.** Crawford Co.: Bear Cave. Nameless Cave. Perry Co.: Mystery Cave. **OH.** Adams Co.: Freeland Cave. **TN.** Cannon Co.: Henpeck Mill Cave. **VA.** Smyth Co.: Atwells Tunnel Cave. Stones Cave. Tazewell Co.: Fallen Rock Cave. **WV.** Greenbrier Co.: Benedicts Cave. Buckeye Creek Cave. Monroe Co.: Laurel Creek Cave. Pocahontas Co.: Clyde Cochrane Sinks Cave.

Lesteva cribratula (Casey, 1894). Infrequent troglophile. Eastern USA, mostly Appalachian. In debris near cave entrances. There are no previous cave records. **Records. AL.**

Jackson Co.: Grahams Pit. St. Clair Co.: McGlendon Cave. **KY.** Carter Co.: Carter Bat Cave. Estill Co.: Townsend Cave. Hart Co.: Horse Cave. Menifee Co.: Haunted Cave. **NC.** Transylvania Co.: Stiller's Cave.

Lesteva pallipes LeConte, 1863. Figure 3. Frequent troglophile. Widespread eastern Canada and eastern and central USA. Previously reported from caves in AL, GA, IA, IL, IN, KY MO, TN. Frequent at dung or carrion baits in caves, especially along cave streams. **Records.** **AL.** DeKalb Co.: Ft. Payne (=Manitou) Cave. Franklin Co.: Belgreen Cave. Jackson Co.: Devil Stair Steps Cave. Saltpeter Cave. Tumbling Rock Cave. Madison Co.: Barclay Cave. Walnut Bottom Cave. Marshall Co.: Cave Mt. Cave. Keller Cave. Kirkland Cave. River Cave at Grants. **AR.** Boone Co.: Brewer Cave. **GA.** Chattooga Co.: Blowing Spring Cave. Walker Co.: Bible Spring Cave. Mt. Cove Farm Cave. **IA.** Winneshiek Co.: Coldwater Cave. **IL.** Hardin Co.: Brown's Hole Cave. Cave In Rock Cave. Johnson Co.: Belknap Cave. Jug Spring Cave. Pope Co.: Frieze Cave. **IN.** Decatur Co.: Westport Faulty Cave. Harrison Co.: Bradford Cave. Lawrence Co.: Donnehues Cave. Lower Twin Cave. Monroe Co.: Mayfields Cave. Washington Co.: Armstrong Cave. Clifty Dey Cave. Fosters Caves. Smedleys Cave. **KY.** Barren Co. Ganter Cave. Boyle Co.: Lawrence Cave. Edmonson Co.: Small cave at head of Big Hollow, Mammoth Cave N.P. Estill Co.: Baker Cave. California Cave. Townsend Cave. Garrard Co.: Arnolds Cave. Hart Co.: Copelin Cave. Jackson Co.: John Rogers Cave. Larue Co.: Reed Cave (Hodgonville). Meade Co.: Scots Cave. Metcalfe Co.: Cormon Cave. Tunnel Cave. Rockcastle Co.: Green Hill Cave. Taylor Co.: Hardens Cave Springs. Phillips Cave. Woodford Co.: Nonesuch Cave. Weber's Cave. **MD.** Allegany Co.: Mullendose Cave. **MO.** Barry Co.: Lohmer Cave. Boone Co.: Hog Lot Cave. Camden Co.: Camp Hawthorn Cave. Carter Co.: Four Hole Cave. Stone Co.: Marvel Cave. **OH.** Adams Co.: Freeland Cave. **TN.** Cannon Co.: Davenport Cave. Hill Creek Cave. Fisher Cave. Davidson Co.: Crocker Springs Cave. DeKalb Co.: Cave Spring Cave. Franklin Co.: Caroline Cove Cave. Cedar Hollow Cave. Giles Co.: Searles Cave. Rutherford Co.: Burk Hollow Cave. Burk Spring Cave. **VA.** Montgomery Co.: Old Mill Cave. Roanoke Co.: Wiley Drive Cave #1. Smyth Co.: Stone's Cave #1.

Olophrum obtectum Erichson, 1840. Accidental. Eastern Canada and northeastern USA, south to KS, TN and NC. (Campbell 1983). There are no previous cave records. **Records.** **TN.** Anderson Co.: Reeders Cave.

Orobanus ?simulator LeConte, 1878. Accidental. Western USA and Canada. There are no previous cave records. **Records.** **CA.** Tulare Co.: Palmer Cave.

Subfamily Proteininae

Megarthus americanus Sachse, 1852. Accidental. Eastern Canada and USA; NY south to FL and TX (Cuccodoro and Löbl 1996). Usually on mushrooms and decaying plant material. There are no previous cave records. **Records.** **MO.** Barry Co.: Radium Cave.

Subfamily Tachyporinae

Tribe Deropini

Derops divalis (Sanderson, 1947). Infrequent troglophile. Originally reported as *Rimulincola divalis* Sanderson (synonymized by Smetana 1983). Ozarks region into far southern Illinois. Frequently in very deep litter in rock cracks. **Records. IL.** Monroe Co.: Horsethief Cave. Pike Co.: Lost Creek Cave. **MO.** Barry Co.: Moonshiner Cave. Radium Cave. Crawford Co.: Onondaga Cave. Phelps Co.: Apple Dumpling Cave.

Tribe Tachyporini

Coproporus laevis LeConte, 1863. Accidental. Eastern USA; from NY west to AR and south to TX and FL (Campbell 1975). There are no previous cave records. **Records. KY.** Boyle Co.: Lawrence Cave.

Nitidotachinus horni (Campbell, 1973). Accidental. Southeastern Canada and northeastern USA, south to NC (Campbell 1973, 1988). There are no previous cave records. The following are new state records. **Records. IN.** Harrison Co.: Klinestiver Spring Cave. Washington Co.: Owsley Cave. **TN.** Cannon Co.: Highway Spring Cave. Sullivan Co.: Bristol Caverns.

Nitidotachinus scrutator (Gemminger and Harold, 1868). Accidental. South-central and eastern Canada and northeastern USA, south to AR and TN (Campbell 1973, 1988). There are no previous cave records. **Records. MO.** Carter Co.: Four Hole Cave. Crawford Co.: Nameless Cave. Phelps Co.: Natural Tunnel Cave.

Sepedophilus crassus (Gravenhorst, 1802). Accidental. Eastern Canada and USA. There are no previous cave records. **Records. IA.** Jackson Co.: Hunters Cave.

Sepedophilus littoreus (Linnaeus, 1758). Accidental. Southern Canada and most of eastern USA, south to NC (Campbell 1976). There are no previous cave records. The following is a new state record. **Records. MO.** Phelps Co.: Yancy Mills #1 Cave.

Sepedophilus opicus (Say, 1832). Accidental. Widespread eastern USA (Campbell 1976). There are no previous cave records. **Records. MO.** Wright Co.: Bill Dyar Lead Mine Pits.

Tachinus canadensis Horn, 1877. Accidental. Southeastern Canada and northeastern USA, south to NC (Campbell 1973). There are no previous cave records. **Records. MO.** Boone Co.: Little Dame Caves.

Tachinus fimbriatus Gravenhorst, 1802. Accidental. Southeastern Canada, and eastern USA south to AR and GA (Campbell 1973). There are no previous cave records. **Records. GA.** Walker Co.: Pettijohn Cave. **MO.** Carter Co.: Mitchell Hollow Cave.

Tachinus frigidus Erichson, 1839. Accidental. Across northern North America and south in USA to CO (Campbell 1973, 1988). There are no previous cave records. The following is a new state record. **Records. IA.** Jackson Co.: Hunters Cave.

Tachinus fumipennis Say, 1832. Accidental. Across southern Canada, and throughout

eastern USA, south to TX and FL (Campbell 1973). There are no previous cave records.

Records. IA. Jackson Co.: Hunters Cave. **MO.** Barry Co.: Last Cave.

Tachyporus jocosus Say, 1832. Accidental. Southern eastern Canada and eastern USA; from MB to ND and NY south to TX and FL (Campbell 1979). There are no previous cave records. **Records. IL.** Hardin Co.: Cave-In-Rock Cave. **KY.** Woodford Co.: Swope Cave. Weber's Cave.

Tribe Mycetoporini

Lordithon obsoletus (Say, 1832). Accidental. Eastern Canada and USA; from NS to NY to KS and south to TX and FL (Campbell 1982). There are no previous cave records. **Records. GA.** Chattooga Co.: Parker Cave.

Subfamily Trichophyinae

Trichophya pilicornis (Gyllenhal, 1810) Accidental. Native to Europe, accidentally introduced into eastern and western USA, now transcontinental, usually in forest leaf litter or ground squirrel middens (Newton *et al.* 2000). Previously recorded from caves in VA. **Records. MN.** Fillmore Co.: Niagara Cave. **MO.** Camden Co.: River Cave **VA.** Frederick Co.: Crystal Cave.

Subfamily Oxytelinae

Tribe Deleasterini

Deleaster trimaculatus Fall, 1910. Accidental. Southwestern USA. There are no previous cave records. **Records. AZ.** Gila Co.: Barber Pole Cave

Tribe Oxytelini

Anotylus exiguus (Erichson, 1840). Infrequent troglophile. Widespread eastern Canada and USA. Usually in humus or leaf litter near cave entrances. There are no previous cave records. **Records. AL.** DeKalb Co.: Lykes Cave. Marshall Co.: Gamble Cave. **IA.** Clayton Co.: Bixby Cave. Jackson Co.: Hunters Cave. **IL.** Monroe Co.: Illinois Mammoth Cave. **TN.** Cannon Co.: Tenpenney Cave. Grundy Co.: Trussell Cave.

Anotylus insignitus (Gravenhorst, 1806). Accidental. Widespread eastern Canada and USA and throughout much of the warmer parts of the New World (Hammond 1976). Most frequently taken on dung and other rotting materials. There are no previous cave records. **Records. TN.** Marion Co.: Nickajack Cave.

Anotylus tetracarınatus (Block, 1799). Accidental. A Palearctic species now widespread in eastern Canada and eastern and northern USA. There are no previous cave

records. **Records. AL.** Jackson Co.: Hall Cave.

Oxytelus nimius Casey, 1894. Accidental. Eastern Canada and USA. There are no previous cave records. **Records. TN.** Franklin Co.: Dry Cave.

Subfamily Steninae

Dianous chalybaeus LeConte, 1863. Accidental. Northeastern USA. There are no previous cave records. **Records. NY.** Warren Co.: Crane Mt. Cave.

Stenus (Tenus) alacer Casey, 1884. Accidental. Eastern USA. There are no previous cave records. **Records. MO.** Perry Co.: Clump Cave.

Stenus (s.str.) bilentigatus Casey, 1884. Accidental. Eastern USA. All members of this genus occur in wet habitats. There are no previous cave records. **Records. MO.** Washington Co.: Blacksnake Hole Cave

Stenus (s.str.) renifer LeConte, 1863. Accidental. Southeastern USA. There are no previous cave records. **Records. KY.** Barren Co.: Hansons Cave.

Subfamily Paederinae

Tribe Paederini

Subtribe Lathrobiina

Lathrobium (Tetartopeus) angulare LeConte, 1863. Accidental. Southeastern Canada and eastern USA; from ME to AR and NC (Watrous 1980). There are no previous cave records. The following is a southward range extension. **Records. FL.** Alachua Co.: Warrens Cave.

Lathrobium (Apteralium) brevipenne LeConte, 1863. Accidental. Eastern USA. There are no previous cave records. **Records. MO.** Boone Co.: Hog Lot Cave. Oregon Co.: Surprise Sinkhole Cave. **NC.** Jackson Co. ?: "Balsam Cave".

Lobrathium gnoma (Casey, 1905). Accidental. Western USA; California. There are no previous cave records. **Records. CA.** Mariposa Co.: Bull Creek Cave. Tuolumne Co.: Crystal Palace Cave.

Subtribe Scopaeina

Orus (Leucorus) rubens (Casey, 1905). Infrequent troglophile. Midwestern and southwestern USA (Herman 1964). Previously reported from caves in NM and **TX. Records. TX.** Collingsworth Co.: Lost Creek Cave. Travis Co.: Kretschmarr Fluted Sink. Val Verde Co.: Ladder Cave. Williamson Co.: Beck Sewer Cave.

Subtribe Stilicina

Eustilicus condei (Jarrige, 1960). Figure 4. Frequent troglophile. SW USA. Previously reported as *Stilicolina condei* from many caves in NM, TX, and Mexico (Frانيا 1986, Herman 1970; Frانيا 1990, however, found that the Mexican specimens cited by Herman as *S. condei* actually belong to a new species). **Records. TX.** Burnet Co.: Snellings Cave. Comal Co.: Heidrich Cave. Kendall Co.: Cascade Cave. Century Caverns. Kerr Co.: Stowers Cave. Travis Co.: Jack's Joint Cave.

Eustilicus tristis (Melsheimer, 1844). Infrequent troglophile. Northeastern through central to southwestern USA (Herman 1970). Previously reported from caves in CA, AL, KY. **Records. MO.** Howell Co.: Mud Spring Cave.

Rugilus dentatus Say, 1831. Accidental. Eastern USA. There are no previous cave records. **Records. KY.** Marion Co.: Tatum Cave. Woodford Co.: Swope Cave. **MO.** Perry Co.: Mystery Cave.

Rugilus opaculus (LeConte, 1880). Accidental. Eastern USA. There are no previous cave records. **Records. VA.** Montgomery Co.: Old Mill Cave.

Subtribe Cryptobiina

Homaetarsus badius (Gravenhorst, 1802). Accidental. Eastern USA. There are no previous cave records. **Records. MO.** Franklin Co.: Mack Cave.

Homaetarsus bicolor (Gravenhorst, 1802). Accidental. Widespread eastern USA and Canada, Mexico. There are no previous cave records. **Records. IL.** Hardin Co.: Cave-In-Rock Cave.

Homaetarsus capito (Casey, 1884). Accidental. Eastern to central USA. There are no previous cave records. **TN.** Overton Co.: Mill Cave.

Homaetarsus carolinus (Erichson, 1840). Accidental. Eastern to central USA. There are no previous cave records. **Records. AL.** Jackson Co.: Iron Hoop Cave. Rousseau Cave. **KY.** Barren Co.: Hansons Cave. **TN.** Grundy Co.: Crystal Cave.

Homaetarsus cinctus (Say, 1830). Accidental. Eastern USA. There are no previous cave records. **Records. VA.** Washington Co.: Hall Bottom Cave.

Homaetarsus pimerianus (LeConte, 1863). Accidental. Central to southwestern USA. There are no previous cave records. **Records. AZ.** Gila Co., Barber Pole Cave. **NM.** Chaves Co.: Gypsum Cave. Lincoln Co.: Richards Cave.

Subtribe Paederina

Paederus littorarius Gravenhorst, 1806. Accidental. Across Canada and northern USA. There are no previous cave records. **Records. KY.** Boyle Co.: Lawrence Cave.

Subfamily Staphylininae

Tribe Xantholinini

Neohypnus obscurus (Erichson, 1839). Accidental. Across southern Canada and most of USA except the southeastern states (Smetana 1982). There are no previous cave records. The following is a new state record. **Records. VA.** Alleghany Co.: Wares Cave.

Stenistoderus rubripennis (LeConte, 1880). Accidental. Southeastern Canada, through the midwestern USA to TX and AL (Smetana 1982) There are no previous cave records. **Records. IA.** Jackson Co.: Hunters Cave.

Tribe Staphylinini

Subtribe Quediina

Heterothops campbelli Smetana, 1971. Accidental. Eastern USA from MI and TX to FL (Smetana 1981). There are no previous cave records. **Records. KY.** Edmonson Co.: Co.: Great Onyx Cave.

Quedius capucinus (Gravenhorst, 1806). Accidental. Southeastern Canada, and throughout most of eastern USA (Smetana 1971). There are no previous cave records. **Records. MO.** Boone Co.: Little Dome Cave.

Quedius erythrogaster Mannerheim, 1852. Figure 5. Frequent troglophile. Across southern Canada, and mostly in eastern and Pacific coastal states in USA (Smetana 1971). Previously reported from caves in AL, AR, CA, GA, IL, KY, MO, NY, OK, TN, VA, WV. **Records. AL.** Colbert Co.: Wolf Den Cave. Jackson Co.: Hall Cave. House of Happiness Cave. Moody Cave. Putman Cave. Sheldons Cave, Two Way Cave. Madison Co.: Barclay Cave. Burwell Cave. Cold Spring Cave. Ellis Cave. Hering Spring Cave. Marshall Co.: Merrill Cave. Painted Bluff Cave. Steeves Cave. **AR.** Independence Co.: Foushee Cave. Newton Co.: Corkscrew Cave. Washington Co.: Devils Den Cave. **CA.** Amador County. Fern Frond Cave. Violin Cave. Calaveras Co.: Wood Hollow Cave. Mariposa Co.: Bull Creek Cave. **GA.** Dade Co.: Morrison Cave. **ID.** Blaine Co: Chalk Cave. Lincoln Co.: Gypsum Cave. **IL.** Jersey Co.: Grafton Cave. Johnson Co.: Vienna City Dump Cave. Teal Cave. Will Thomas Spring Cave. Monroe Co.: Horsethief Cave. **KY.** Barren Co.: Hansons Cave. Edmonson Co.: Buzzard Cave. Great Onyx Cave. Running Branch Cave. Whites Cave. Fayette Co.: Cave near Lexington. Hart Co.: Webb Cave. **MO.** Barry Co.: Chimney Rock Cave. Moonshine Hole Cave. Boone Co.: Little Dome Cave. Calaway Co.: Spaghetti Cave. Camden Co.: Island Pit Cave. My Cave. Carter Co.: Erandle Hollow Cave. Mitchel Hollow Cave. Crawford Co.: Onondaga Cave. Scotia Cave. Franklin Co.: Hidden Room Cave. Hickory Co.: Stovepipe Cave. Howell Co.: Tabor Cave. Iron Co.: Boulder Cave. Lincoln Co.: Creech Cave. Madison Co.: Marsh Creek Cave. McDonald Co.: Long Cave. Miller Co.: DaGraffenreid Spring Cave. McDowell Cave. Oregon. Co.: Bat Cave. Surprise Sinkhole Cave. Willow Tree Cave. Phelps Co.: Carco Cave. Coon Cave. Gable Spring Cave. Phelps Cave. Rogers Cave. Pike Co.: Ducheim Cave. Pulaski Co.: Kerr Cave. Little Cave. Shannon Co.: Bald Eagle Cave. Bootlegger Cave. Cave Hollow Cave. Hermit Cave. Taney Co.:

Hercules Lookout Cave. Marholtz Cave. Texas Co.: Barn Hollow Cave. Hilltop Cave. Unnamed Cave. Washington Co.: Chara Cave. Coral Cave. Rattlesnake Pit Cave. **OK.** Adair Co.: Christian School Study Cave. Seminole Co.: Whiskey Cave. **OR.** Harney Co.: Malheur Cave. **PA.** Berks Co.; Dragon Cave, Shofer Cave. **TN.** Cannon Co.: Davenport Cave. Fisher Cave. Henpeck Mill Cave. Highway Spring Cave. Jacks Cave. Reed Cave. Tenpenney Cave. DeKalb Co.: Cripps Mill Cave. Fox Cave. Frazier Hollow Cave. Overall Cave. Snow Hill Cave. Franklin Co.: Dry Cave. Grundy Co.: Crystal Cave. Marion Co.: Lost Pig Cave. Perry Co.: Inman Cave. Rutherford Co.: Burk Hollow Cave. Smith Co.: New Piper Cave. Warren Co.: Cumberland Caverns. **VA.** Bath Co.: Lyles Cave. Porters Cave. Giles Co.: Harris Cave. Highland Co.: Marshalls Cave. Lee Co.: Indian Cave. Sweet Potato Cave. Young-Fugate Cave. Pulaski Co.: Fifty-foot Hell Cave. Rockbridge Co.: Doll House Cave. Rockingham Co.: Melrose Cave. Scott Co.: Sounding Cave. Shenandoah Co.: Hensleys Cave. Shenandoah Wild Cave. Smyth Co.: Buchanan Saltpeter Cave. Tazewell Co.: Cassel Farm Cave. Washington Co.: Shiloh School Cave. **WV.** Greenbrier Co.: Higgenbotham Cave. Monroe Co.: Fletchers Cave. Steeles Cave.

Quedius fulgidus (Fabricius, 1792). Frequent troglophile. Extreme southern Canada, and across most of USA (Smetana 1971). Native to Europe (where it is also a troglophile) and accidentally introduced into North America. Previously recorded from caves in GA, IN, KY. Frequently associated with bat guano and pack rat nests and droppings. **Records.** **AL.** Calhoun Co.: Weaver Cave. Jackson Co.: Cornelison Cave #2. Happy Hollow Cave. Horseshoe Cave. Indian Rocks Cave. Nat Cave. Rainbow Cave. Sheldon Cave. Swaim Cave. Madison Co.: Burwell Cave. Cave Spring Cave #60. Hurricane Cave. Marshall Co.: Bishop Cave. Dunham Cave. Merrill Cave. Painted Bluff Cave. Walnut Cave. **AR.** Washington Co.: Corkscrew Cave. Fincher Cave. **GA.** Dade Co.: Morrison Cave. Walker Co.: Harrisburg Cave. Hickman Gulf Cave. Pettijohn Cave. **IL.** Adams Co.: Burton Cave. Calhoun Co.: McNabb Hollow Cave. Hardin Co.: Cave in Rock Cave. Jersey Co.: Grafton Cave. Monroe Co.: Camp Vandeventer Cave. Fogelpole Cave. Illinois Mammoth Cave. Saltpeter Cave. Pike Co.: "Cave at Pearl." Union Co.: Cricket Cave. Sensemeyer Cave. **KY.** Adair Co.: Yaberry Cave. Barren Co.: Hanson Cave. Edmonson Co.: Collins Crystal Cave. Whites Cave. Fayette Co.: Phelps Cave. Hart Co.: Barnes Smith Cave. Warren Co.: Danger Cave. Hansons Cave. Thomas Cave. Wayne Co.: Hog Cave. **MO.** Lawrence Co.: Turnback Cave. **NY.** Schoharie Co.: Onesquethaw Cave. **PA.** Berks CO.; Hobo Cave. **TN.** Cannon Co. Cave 3.5 mi SW Bradyville. Davenport Cave. Espey Cave. Henpeck Mill Cave. Reed Cave. Tenpenny Cave. Coffee Co.: Burke Cave. DeKalb Co.: Indian Grave Point Cave. Franklin Co.: Mill Hollow Head Cave. Round Mt. Cave. Marion Co.: Little Cedar Mt. Quarry Cave. Wilson Co.: Hayes Cave. **WV.** Greenbrier Co.: Arbuckle Cave. Monroe Co.: Fletchers Cave. Steeles Cave.

Quedius laticollis (Gravenhorst, 1802). Accidental. Distributed over much of eastern USA and southern Ontario (under the name *Q. neomolochinus* Korge in Smetana 1971). Previously known from one cave in TN. **Records.** **KY.** Boyle Co.: Lawrence Cave. Woodford Co.: Refrigerator Cave. **TN.** Overton Co.: Mill Cave.

Quedius mesomelinus (Marsham, 1802). Frequent troglophile. Across southern Canada and most of northwestern and northeastern states south to FL (Smetana 1971). Native to Europe (where it is also a troglophile) and accidentally introduced into North America. Previously recorded in caves in IA, MN, PA, VA. **Records.** **IA.** Dubuque Co.: Webers Cave. Jackson Co.: Hunters Cave. **MN.** Wabasha Co.: Mystery Cave. **PA.** Berks Co.: Aaronsburg Cave. Dragon Cave. Hobo Cave. Merkle Cave. Shofers Cave. South Temple Cave. Dauphin Co.: Brownstone

Cave. Mifflin Co.: Rupert Cave. **VA.** Pulaski Co.: Sam Bells Cave. **WI.** Richland Co.: John Gray Cave. **WV.** Greenbrier Co.: Arbuckle Cave.

Quedius montanicus (Casey, 1915). Accidental. Western USA, Colorado to Washington and Oregon (Smetana 1971). There are no previous cave records. **Records. ID.** Lincoln Co.: Tee Cave.

Quedius spelaeus Horn, 1878. Figure 6. Frequent troglophile. Transcontinental, southwestern Canada and western USA through central and eastern states (Smetana 1971). Previously reported from caves in CA, ID, IA, IL, IN, KY, NY, OR, UT, WV, VA, WA. **Records. CA.** Siskiyou Co.: Planetary Dairy Cave. Skunk Hollow Cave. Slip Stream Cave. **IA.** Jackson Co.: Barred Cave. Hunter's Cave. Wye Cave. **ID.** Blaine Co.: Chalk Cave. Gooding Co.: Spider Cave. Lincoln Co.: Little Arch Cave. **IL.** Carroll Co.: Bat Cave. Jo Daviess Co.: Hutchings Mine Cave. Monroe Co.: Illinois Mammoth Cave. Pike Co.: Lost Creek Cave. **IN.** Lawrence Co.: Shiloh Church Cave. Monroe Co.: Buckners Cave. Washington Co.: Endless Caverns. **KY.** Hardin Co.: Belt Cave. **MD.** Garrett Co.: John Friends Cave. **MN.** Wabasha Co.: Mystery Cave. **MO.** Boone Co.: Connors Cave. Lewis and Clark Cave. **NY.** Schoharie Co.: Knox Cave. Sullivan Co.: Surprise Cave. **PA.** Berks Co.: Merkle Cave. Hobo Cave. South Temple Cave. Fayette Co.: Barton Cave. Rhodes Cave. Lancaster Co.: Refton Cave. Mifflin Co.: Rubert Cave. York Co.: Lisburn Cave. **UT.** Uinta Co.: Dry Forks Cave. **VA.** Bath Co.: Cave Run Pit Cave. Crossroads Cave. Frederick Co.: Ogdens Cave. Giles Co.: Torries Cave. Rockingham Co.: 3-D Maze Cave. **WI.** Dane Co.: Richardson Cave. Pierce Co.: Katy Creek Cave. **WV.** Berkeley Co.: Silers Cave. Greenbrier Co.: Marthas Upper Cave. Tucker Co.: Cave Hollow Cave. **WY.** Teton Co.: Fossil Mt. Ice Cave.

Subtribe Philonthina

Belonuchus aphaobius Smetana, 1995. Frequent troglophile. Southwestern USA; central TX (Smetana 1995). There are previous cave records from TX under the name of *B. rufipennis* (Fabricius), but they are probably misidentifications of this species or *B. troglophilus* Smetana (1995). All previous *Belonuchus* spp. cave records except those of Smetana (1995) are suspect until the material is reexamined.

Belonuchus troglophilus Smetana, 1995. This species can presently be regarded as a frequent troglophile and is reported from caves in AZ, OK, and TX. All previous *Belonuchus* spp. cave records except those of Smetana (1995) are suspect until the material is reexamined. **Records. TX.** Edwards Co.: Devils Sinkhole. Hughs Cave. Hays Co.: Ezell Cave. Lampasas Co.: Battery Cave. Travis Co.: Jacks Joint Cave. Mold Hole. Weldon Cave. Val Verde Co.: Cave Hollow Cave. Williamson Co.: Bat Cave. Beck Sewer Cave. Core Hole Cave. Elm Cave. Elm Water Cave.

Erichsonius nanus (Horn, 1884). Accidental. Across most of Canada and northern USA, from WA to NJ (Frank 1975). There are no previous cave records. **Records. IL.** Hardin Co.: Brown's Hole Cave.

Erichsonius patella (Horn, 1884). Accidental. Quebec, Canada, through north central and northeastern USA, south to LA (Frank 1975). There are no previous cave records. Usually in debris near cave entrances. **Records. AL.** St. Claire Co.: McGlendon Cave. **GA.** Chattooga Co.:

Parker Cave. **KY.** Hart Co.: Copelin Cave. **MO.** Howell Co.: Ralph Ridge Pit Cave. **TN.** Claiborne Co.: Coonsies Creek Cave. **VA.** Montgomery Co.: Old Hill Cave.

Erichsonius pusio (Horn, 1884). Accidental. Southern Canada, and northern USA, from UT to NC (Frank 1975). There are no previous cave records. **Records.** **KY.** Hart Co.: Three Springs Cave.

Gabrius microphthalmus (Horn, 1884). Accidental. Across southern Canada and eastern USA from SD to NC (Smetana 1995). There are no previous cave records. **Records.** **IL.** Hardin Co Brown's Hole Cave.

Hesperus baltimorensis (Gravenhorst, 1802). Accidental. Most of eastern USA (Smetana 1995). There are no previous cave records. **Records.** **MO.** Crawford Co.: Moonshiner Cave.

Neobisnius paederoides (LeConte, 1863). Accidental. Eastern and southern USA (Frank 1981) There are no previous cave records. **Records.** **IL.** Hardin Co.: Unamed Cave 0.5 mi N Cave In Rock.

Neobisnius sobrinus (Erichson, 1840). Infrequent troglophile. Southeastern Canada, Most of USA (except AK and south FL, Mexico south to northern South America (Frank 1981). There are no previous cave records. **Records.** **KY.** Adair Co.: Helms Cave. Green Co.: Greasy Creek Cave. Meade Co.: Sig Shacklets Cave. Metcalfe Co.: Gassaway Caves. Pendleton Cave. Woodford Co.: Webers Cave. **MO.** Crawford Co.: Bear Cave. **TN.** Rutherford Co.: Broyles Cave.

Philonthus caeruleipennis (Mannerheim, 1830). Accidental. Southern Canada, and eastern USA (Smetana 1995, as *P. cyanipennis*, with discussion of proper application of the names). Frequently found in decaying mushrooms. There are no previous cave records. **Records.** **GA.** Walker Co.: Pettijohn Cave.

Philonthus thoracicus (Gravenhorst, 1802). Accidental. Southern Canada and most of USA (Smetana 1995). There are no previous cave records. **Records.** **MO.** Crawford Co.: Bear Cave.

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