

A CHECKLIST OF THE ROVE BEETLES (COLEOPTERA: STAPHYLINIDAE) OF SOUTH CAROLINA, BASED ON PUBLISHED RECORDS

MICHAEL S. CATERINO AND MICHAEL L. FERRO
Clemson University Arthropod Collection
Department of Plant and Environmental Sciences
277 Poole Agricultural Center, Clemson University
Clemson, SC 29634-0310, USA
mcateri@clemson.edu, spongymesophyll@gmail.com

ABSTRACT

A review of the literature revealed 17 subfamilies and 355 species of rove beetles (Staphylinidae) reported from South Carolina. Updated nomenclature and references are provided for all species. The goal of this list is to set a baseline for improvement of our knowledge of the state's staphylinid fauna, as well as to goad ourselves and others into creating new, or updating existing, regional faunal lists of the world's most speciose beetle family.

Key Words: checklist, regional fauna, biodiversity, Nearctic

DOI.org/10.1649/0010-065X-71.3.513

Staphylinidae, the rove beetles, are a megadiverse family of beetles containing more than 62,000 described species worldwide. The family is found in virtually all terrestrial habitats except in the extreme polar regions. It is the most diverse family across all animal groups. Within the Nearctic region (non-tropical North America), about 4,500 species are known (Newton *et al.* 2000). While some subgroups are reasonably well known in North America (*e.g.*, subtribe Philonthina; Smetana 1995), the Staphylinidae, even within this area, suffer from the full spectrum of taxonomic inadequacies: poorly defined taxonomic boundaries at numerous levels from subfamily to species; undescribed species; inadequately described species; nomenclatural issues; lack of any or updated keys; poor distributional knowledge; unknown/poorly known immature stages; and poor knowledge of natural history even at the generic level. New species are regularly described in revisions of some of the smaller-bodied, litter-inhabiting groups like Pselaphinae, Scydmaeninae, and Aleocharinae. For example, pulling only from unidentified material in one supertribe in one museum, Owens and Carlton (2016b) discovered nine undescribed species of eastern USA Euplectitae (Pselaphinae).

At a regional level, rove beetle diversity is poorly documented due to a combination of insufficient survey work and difficulty of identification. Only a handful of checklists exists at the state or other substantial regional levels (see Discussion for details). As part of a larger goal to improve the status of beetle faunistics in the southeastern USA, we are compiling available literature to establish baselines on which to build. Here we present an initial checklist based on published literature for Staphylinidae in South Carolina.

South Carolina is a rather small, yet diverse state, ranging from low-lying coastal habitats through a variety of mid-elevation communities to montane areas encompassing some of the diversity of higher Appalachia. The easternmost portion of the state is within the Atlantic Coastal Plain, a recently recognized biodiversity hotspot (Noss 2016) that includes coastal strand, sandhills, cypress swamps, and carnivorous plant bogs. The center of the state consists of the rolling hills of the Southern Piedmont with a long history of intensive agricultural use. The Blue Ridge Mountain region in the westernmost portion of the state also hosts high diversity and endemism (Morse *et al.* 1997; Jackson *et al.* 2009).

The state has a reasonably strong history of study on its beetle fauna, thanks initially to Vernon Kirk's (1969, 1970) South Carolina checklists, and a strong foundation of collections to support continuing work. This foundation has grown considerably through several recent contributions in the 'Biota of South Carolina' series, in which the ground beetles (Ciegler 2000), scarab beetles (Harpootlian 2001), aquatic beetles (Ciegler 2003), leaf beetles (Ciegler 2007), weevils (Ciegler 2010), jewel beetles (Harpootlian and Bellamy 2014), and tenebrionoid beetles (Ciegler 2014) have all been thoroughly treated. At the same time, the state is woefully under-collected, as revealed by the large numbers of species reported from immediately across the borders of neighboring states, yet undocumented for South Carolina.

We hope that the work presented here will spur further survey work on the South Carolina beetle fauna, particularly the staphylinids and other more cryptic groups, and on the southeastern insect fauna in general. The Atlantic Coastal Plain's recent

recognition as a biodiversity hotspot lends further urgency to better documenting the regional insect fauna, if entomological data are to play any significant role in regional conservation work.

MATERIAL AND METHODS

The core of this work is based on the staphylinid records reported in Kirk's two South Carolina checklists. Together, the northern coastal plain (Kirk 1969) and upstate and southern coastal plain (Kirk 1970) checklists reported 240 species of Staphylinidae from the state (including what were then the families Pselaphidae, Scydmaenidae, and Scaphidiidae, now all subfamilies within Staphylinidae; Grebennikov and Newton 2009). Kirk's works included species known personally to occur in the state, species found within regional collections (mainly, but not exclusively, the Clemson University Arthropod Collection), and some additional species reported to occur in South Carolina in literature published up to that time. To bring his checklist up to date, we scoured all more recent revisionary literature for additional reports of species from South Carolina (adding about 120 species), updated Kirk's nomenclature, and assessed the likelihood of reports for some species whose initial reports had been questionable.

The checklist is presented with little further elaboration. The reference or references citing the species from South Carolina are indicated. Where groups have been revised subsequent to Kirk's works, we have added recent confirming records, to ensure that changing species concepts have not voided earlier records. In a few cases, the only known records remain questionable or require some further interpretation. Such notes are indented following a species name.

CHECKLIST OF THE STAPHYLINIDAE OF SOUTH CAROLINA

OMALIINAE MacLeay

Omaliini MacLeay

- Omalius caesum* Gravenhorst; Kirk 1970.
Omalius foraminosum Maklin; Kirk 1970.
Omalius fractum Fauvel; Kirk 1969.
Omalius quadripenne Casey; Kirk 1970.
Omalius repandum Erichson; Kirk 1970.
Omalius rivulare (Paykull); Kirk 1970.

Eusphalerini Hatch

- Eusphalerum horni* (Fauvel); Kirk 1969;
 Zanetti 2014.

Anthophagini Thomson

- Acidota crenata* (Fabricius); Kirk 1969.

- Anthobium sordidum* (Erichson); Kirk 1970.
Arpedium schwarzi Fauvel; Kirk 1970; Campbell 1984.

- Geodromicus brunneus* (Say); Kirk 1970.
Geodromicus strictus Fauvel; Kirk 1970.

Coryphiini Jacobson

- Ephelinus guttatus* (LeConte); Campbell 1978.
Ephelinus notatus (LeConte); Herman 2001.

PROTEININAE Erichson

Proteinini Erichson

- Megarthus americanus* Sachse; Kirk 1969,
 1970; Cuccodoro and Löbl 1996.

MICROPEPLINAE Leach

- Micropeplus sculptus* LeConte; Campbell 1968.

DASYCERINAE Reitter

- Dasycerus carolinensis* Horn; Löbl and Calame 1996.

PSELAPHINAE Latreille

Faronitae Reitter

- Sonoma tischeckini* Ferro and Carlton; Ferro and Carlton 2010.

Euplectitae LeConte

Trogastrini Jeannel

- Conoplectus canaliculatus* (LeConte); Kirk 1969,
 1970.
 - Reported as *Rhexidius canaliculatus* in Kirk (1969, 1970).
Euboarhexius perscitus (Fletcher); Chandler 1997.

Euplectini LeConte

- Euplectus confluens* LeConte; Chandler 1997.
Euplectus longicollis Casey; Kirk 1969;
 Chandler 1997.
Leptoplectus pertenuis (Casey); Chandler 1997.
Pycnoplectus difficilis (LeConte); Kirk 1970.
 - Reported as *Euplectus difficilis* in Kirk (1969,
 1970).
Pycnoplectus sexualis (Casey); Kirk 1970.
 - Reported as *Euplectus sexualis* in Kirk (1969,
 1970).

Mayetiini Winkler

- Mayetia pearsei* Schuster, Marsh, and Park;
 Carlton and Robison 1996.

Metopiasini Raffray

- Rhinosceps bistriatus* LeConte; Chandler 1997.

Trichonychini Reitter

- Actiastes globifer* (LeConte); Kirk 1970; Chandler 1997.
 - Reported as *Actium globifer* in Kirk (1969,
 1970).
Biblopectus leviceps (Casey); Chandler 1997.
Biblopectus ruficeps (Motschulsky); Chandler 1997.

Dalmosanus mollyae (Park); Chandler 1997.
 - Reported as *Pygmactium mollyae* in Chandler (1997).
Dalmosanus steevesi (Schuster and Grigarick); Chandler 1997.
 - Reported as *Pygmactium steevesi* in Chandler (1997).
Eutyphlus prominens Casey; Chandler 1997; Owens and Carlton 2016a.
Eutyphlus similis LeConte; Owens and Carlton 2016a.
Eutyphlus thoracicus Park; Chandler 1997; Owens and Carlton 2016a.
Melba parvula (LeConte); Chandler 1997.
Melba thoracica (Brendel); Chandler 1997.
Pseudactium arcuatum (LeConte); Carlton and Chandler 1994.
Thesiastes atratus Casey; Chandler 1997.
Thesiastes pumilis (LeConte); Kirk 1970; Chandler 1989.
Thesium cavifrons (LeConte); Kirk 1969.
Trimiomelba dubia (LeConte); Kirk 1969; Chandler 1997.

Batrisitae Reitter

Batrisini Reitter

Arthmius involutus? Casey; Kirk 1969; Chandler 1997.
 - Kirk's (1969) identification of this species was uncertain.
Arthmius globicollis LeConte; Kirk 1969.
Arthmius gracilior? Casey; Kirk 1969.
 - Kirk's (1969) identification of this species was uncertain.
Batriasymmodes armiger (LeConte); Kirk 1970; Chandler 1997.
Batriasymmodes confinis (LeConte); Kirk 1969, 1970; Chandler 1997.
Batriasymmodes cavicrus (Casey); Kirk 1970; Chandler 1997.
Batriasymmodes monstrosus (LeConte); Kirk 1970.
Batrisodes cartwrighti Sanderson; Kirk 1970; Chandler 1997.
Batrisodes denticollis (Casey); Chandler 1997.
Batrisodes dorotheae Ferro and Carlton; Ferro and Carlton 2014.
Batrisodes lineaticollis (Aubé); Kirk 1969.
 - Reported as *Batrisodes globosus* in Kirk (1969), which was synonymized by Chandler (1999).
Batrisodes clypeonotus (Brendel); Kirk 1970.
 - Reported as *Batrisodes kahli* in Kirk (1970), which was synonymized by Chandler (1999).
Batrisodes nigricans (LeConte); Kirk 1970; Chandler 1997.
Batrisodes schaumii (Aubé); Chandler 1997.

Batrisodes schaefferi Park; Chandler 1997.
Batrisodes schmitti (Casey); Chandler 1997.
Batrisodes unicoloris (Casey); Kirk 1969.
Batrisodes virginiae (Casey); Kirk 1970.

Amauropini Jennel

Arianops carteri Carlton; Carlton 2008.

Goniaceritae Reitter

Brachyglutini Raffray

Anchylarthron cornutum (Brendel); Chandler 1997.
Anchylarthron inornatum (Brendel); Chandler 1997.
Brachygluta corniventris (Motschulsky); Chandler *et al.* 2015.
Brachygluta dentata (Say); Chandler *et al.* 2015.
Brachygluta floridana (Brendel); Chandler *et al.* 2015.
Brachygluta lareau Chandler; Chandler *et al.* 2015.
Brachygluta luniger (LeConte); Chandler *et al.* 2015.
Brachygluta ulkei (Brendel); Chandler *et al.* 2015.
Decarthron inusitatum Park; Chandler 1997.
Decarthron reciprocum Park; Chandler 1997.
Eupsenius glaber LeConte; Kirk 1970.
Eutrichites zonatus (Brendel); Chandler 1997.
Reichenbachia atlantica (Brendel); Chandler 1989.
Reichenbachia chandleri Carlton; Carlton 2003.
Reichenbachia congener? (Brendel); Kirk 1969.
 - Kirk's (1969) identification of this species was uncertain.
Reichenbachia facilis Casey; Carlton 2003.
Reichenbachia hardyi Park; Chandler 1989; Carlton 2003.
Reichenbachia louisiana Carlton; Carlton 2003.
Reichenbachia peregrinator Casey; Chandler 1989; Carlton 2003.
Reichenbachia puncticollis (LeConte); Chandler 1997; Carlton 2003.
Reichenbachia sandersoni Carlton; Carlton 2003.
Reichenbachia sodalis Casey; Chandler 1989.

Tychini Raffray

Custotychus carloritaorum Chandler and Geromini; Chandler and Geromini 2016.
Custotychus daggyi (Park); Chandler and Geromini 2016.
Custotychus pocahontas (Casey); Chandler and Geromini 2016.
Cylindrarctus ludovicianus (Brendel); Kirk 1969.
 - Reported as *Cylindrarctus comes* in Kirk (1969), which was synonymized by Chandler (1999).

Cylindrarctus longipalpis (LeConte); Chandler 1997.

Nearctitychus sternalis (Raffray); Chandler 1997.

Speleobamini

Prespelea divergens Caterino and Vásquez-Vélez; Caterino and Vásquez-Vélez 2017.

Prespelea myersae Caterino and Vásquez-Vélez; Caterino and Vásquez-Vélez 2017.

Pselaphitae Latreille

Tyrini Reitter

Cedius spinosus LeConte; Kirk 1970.

Upoluna batrisioides Motschulsky; Kirk 1969.
- Reported as *Circocerus batrisioides* Motschulsky in Kirk (1969).

Hamotus opimus? Fletcher; Kirk 1969.

- Kirk's (1969) identification of this species was uncertain.

Tyrus humeralis (Aubé); Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Tyrus compar* LeConte and as *Tyrus consimilis* Casey, now both junior synonyms of *T. humeralis* (Chandler 1997, 1999).

Tmesiphorini Jeannel

Tmesiphorus carinatus (Say); Kirk 1969, 1970; Chandler 1997.

Tmesiphorus costalis LeConte; Kirk 1969, 1970; Chandler 1997.

Clavigeritae Leach

Clavigerini Leach

Adranes coecus LeConte; Kirk 1969, 1970.

TACHYPORINAE MacLeay

Tachyporini MacLeay

Coproporus laevis LeConte; Kirk 1969; Campbell 1975.

Coproporus ventriculus (Say); Kirk 1969; Campbell 1975.

Sepedophilus basalis (Erichson); Campbell 1976.

Sepedophilus brachypterus Campbell; Campbell 1976.

Sepedophilus cinctulus (Erichson); Campbell 1976.

Sepedophilus crassus (Gravenhorst); Kirk 1969.
- Reported in Kirk (1969) as *Tachinus crassus*.

Sepedophilus ctenidialis Campbell; Campbell 1976.

Sepedophilus frosti Campbell; Campbell 1976.

Sepedophilus kiteleyi Campbell; Campbell 1976.

Sepedophilus macer (Casey); Kirk 1970; Campbell 1976.

- Reported in Kirk (1970) as *Tachinus macer*.

Sepedophilus opicus (Say); Kirk 1969.

- Reported in Kirk (1969) as *Tachinus opicus*.

Sepedophilus parvulus (Horn); Kirk 1969; Campbell 1976.

- Reported in Kirk (1969) as *Tachinus parvulus*.

Sepedophilus scriptus (Horn); Kirk 1969.

- Reported in Kirk (1969) as *Tachinus scriptus*.

Sepedophilus versicolor (Casey); Campbell 1976.

Tachinus axillaris Erichson; Campbell 1973.

Tachinus basalis Erichson; Kirk 1969.

- The species is valid, but it is not the one recorded near South Carolina by Campbell (1973). The record may refer to *Tachinus luridus* Erichson, a similar species known from western North Carolina, or to *S. basalis*, which is known from South Carolina and listed separately (several other species belonging to *Sepedophilus* Gistel were listed in *Tachinus* Gravenhorst by Kirk (1969)).

Tachinus fimbriatus Gravenhorst; Kirk 1969, 1970; Campbell 1973.

Tachinus fumipennis (Say); Kirk 1970.

- Kirk's (1970) record may refer to *T. axillaris*, a common misidentification, but *T. fumipennis* plausibly occurs in South Carolina.

Tachinus limbatus Melsheimer; Campbell 1973.

- Campbell (1973) does not explicitly list a South Carolina record for this species, but a dot on his distribution map for the species seems to support its occurrence in the state.

Tachinus memnonius Gravenhorst; Kirk 1970.

Tachinus pubescens Paykull; Kirk 1969, 1970.

- This species reported by Kirk (1969, 1970) is ambiguous. No citation of a 'pubescens' in *Tachinus* could be found. It may refer to *Sepedophilus pubescens* (Paykull), now a synonym of *Sepedophilus littoreus* (Linnaeus), which is not reported from South Carolina, but its presence in the state is plausible.

Tachyporus jocosus Say; Kirk 1969, 1970; Campbell 1979.

Tachyporus nitidulus (Fabricius); Kirk 1969.

Mycetoporini Thomson

Bryoporus rufescens LeConte; Kirk 1969, 1970; Campbell 1993.

Bryoporus testaceus LeConte; Campbell 1993.

Carphacis dimidiatus (Erichson); Kirk 1969.

- Reported in Kirk (1969) as *Lordithon dimidiatus*.

Ischnosoma flavicolle (LeConte); Kirk 1969; Campbell 1991.

- Reported in Kirk (1969) as *Mycetoporus flavicolle*.

Ischnosoma lecontei Campbell; Campbell 1991.

Ischnosoma splendidum (Gravenhorst); Kirk 1970.

- Reported in Kirk (1970) as *Mycetoporus splendidum*.

Lordithon appalachianus Campbell; Campbell 1982.

Lordithon axillaris (Gravenhorst); Kirk 1970.

Lordithon cinctus (Gravenhorst); Kirk 1969, 1970; Campbell 1982.

- Reported in Kirk (1969, 1970) as *Bolitobius cinctus*.

Lordithon facilis (Casey); Campbell 1982.

Lordithon obsoletus (Say); Campbell 1982.

Lordithon thoracicus (Fabricius); Kirk 1969; Campbell 1982.

- Reported in Kirk (1969) as *Lordithon cincticollis* (Say), which was synonymized by Campbell (1982).

Mycetoporus consors LeConte; Kirk 1969; Campbell 1991.

Mycetoporus floridensis Campbell; Campbell 1991.

ALEOCHARINAE Fleming

Deinopsini Sharp

Deinopsis rapida Casey; Klimaszewski 1982.

Aleocharini Fleming

Aleochara bimaculata Gravenhorst; Klimaszewski 1984.

Aleochara bipustulata (Linnaeus); Kirk 1970.

Aleochara lustrica Say; Kirk 1970; Klimaszewski 1984.

Aleochara lata Gravenhorst; Kirk 1970; Klimaszewski 1984.

Aleochara notula Erichson; Kirk 1970; Klimaszewski 1984.

- Reported in Kirk (1970) as *A. nitidicollis* Casey, now a synonym (Klimaszewski 1984).

Aleochara sculptiventris Casey; Klimaszewski 1984.

Aleochara verna Say; Klimaszewski 1984.

Oxydopini Thomson

Crataraea suturalis (Mannerheim); Kirk 1970; Brunke *et al.* 2012.

Oxydopa opaca (Gravenhorst); Klimaszewski *et al.* 2006.

Homalotini Heer

Gyrophaena affinis Mannerheim; Kirk 1970.

Gyrophaena coniciventris Casey; Seevers 1951.

Eumicrota corruscula (Erichson); Seevers 1951.

- Reported by Seevers (1951) as *Gyrophaena corruscula*; new combination by Ashe (1984).

Eumicrota socia (Erichson); Seevers 1951.

- Reported by Seevers (1951) as *Gyrophaena socia*; new combination by Ashe (1984).

Phanerota fasciata (Say); Kirk 1969, 1970.

Placusini Mulsant and Rey

Placusa despecta Erichson; Kirk 1970.

Philotermitini Seevers

Philotermites werneri Seevers; Seevers 1957.

Athetini Casey

Philhygra palustris (Kiesenwetter); Kirk 1970.

- Reported as *Atheta palustris* by Kirk (1970).

Sableta infulata Casey; Ashe and Gusarov 2004.

Stethusa dichroa (Gravenhorst); Gusarov 2003.

Falagriini Mulsant and Rey

Aleodorus bilobatus (Say); Kirk 1969, 1970.

- Reported in Kirk as *Aleochara bilobatus*.

Aleodorus partitus (LeConte); Hoebeke 1985.

Boroboroporus quadriceps (LeConte); Hoebeke 1985.

Falagria dissecta Erichson; Kirk 1970; Hoebeke 1985.

Lomechusini Fleming

Xenodusa reflexa (Walker); Hoebeke 1976.

- Kirk (1969, 1970) reported *Xenodusa cava* (LeConte) from South Carolina, but Hoebeke (1976) corrected Kirk's identification and reports only *X. reflexa* from South Carolina.

SCAPHIDIINAE Latreille

Scaphidiini Latreille

Scaphidium quadrigruttatum Say; Kirk 1969, 1970.

Cypariini Achard

Cyparium concolor (Fabricius); Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Cyparium flavipes* LeConte.

Scaphisomatini Casey

Baeocera congener Casey; Kirk 1969; Löbl and Stephan 1993.

- Reported in Kirk (1969) as *Eubaeocera congener*.

Baeocera deflexa Casey; Löbl and Stephan 1993.

Baeocera falsata Achard; Löbl and Stephan 1993.

Baeocera laevis (Reitter); Kirk 1969; Löbl and Stephan 1993.

- Reported in Kirk (1969) as *Eubaeocera mitchelli* Cornell, which was synonymized by Löbl and Stephan (1993).

Baeocera nana Casey; Kirk 1969; Löbl and Stephan 1993.

- Reported in Kirk (1969) as *Eubaeocera nana*.

Baeocera picea Casey; Cornell 1967; Kirk 1969.

- Reported in Kirk (1969) as *Eubaeocera picea*.

Baeocera securiforma (Cornell); Kirk 1969.

- Reported in Kirk (1969) as *Eubaeocera securiforma*.

Baeocera speculifer Casey; Kirk 1969.

Baeocera youngi (Cornell); Cornell 1967; Kirk 1969.

- Reported in Kirk (1969) as *Eubaeocera youngi*.

Scaphisoma pusillum LeConte; Leschen *et al.* 1990.

Toxidium compressum Zimmerman; Kirk 1969.
Toxidium gammaroides LeConte; Kirk 1969.

OSORIINAE Erichson

Thoracophorini Reitter

Clavilispinus exiguus (Erichson); Kirk 1969, 1970; Peck and Thomas 1998.

- Reported in Kirk (1969, 1970) as *Paralispinus exiguus*.

Nacaues tenuis (LeConte); Navarrete-Heredia *et al.* 2002.

Thoracophorus costalis (Erichson); Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Thoracophorus fletcheri* Wendeler, which was synonymized by Ferro (2015).

Osoriini Erichson

Holotrochus brachypterus Fauvel; Kirk 1969.

- Reported in Kirk (1969) as *Neotrochus brachypterus*.

Molosoma latipes (Gravenhorst); Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Osoarius latipes*.

Osoarius planifrons LeConte; Kirk 1969.

OXYTELINAE Fleming

Oxytelini Fleming

Anotylus insignitus (Gravenhorst); Kirk 1969, 1970.

Anotylus tetracarinatus (Block); Kirk 1970.

Apocellus sphaericollis (Say); Kirk 1969.

Oxytelus pensylvanicus Erichson; Kirk 1969, 1970.

Blediini Ádám

Bledius basalis LeConte; Kirk 1969.

Bledius cognatus LeConte; Kirk 1970.

Bledius cordatus (Say); Herman 1976.

Bledius emarginatus Say; Herman 1983.

Bledius politus Erichson; Kirk 1970; Herman 1976.

Bledius punctatissimus LeConte; Herman 1972.

- Reported by Herman (1972) as *Psamathobledius punctatissimus*.

Bledius rubiginosus Erichson; Herman 1983.

Bledius semiferrugineus LeConte; Herman 1983.

Bledius wudus Herman; Herman 1983.

Thinobiini Sahlberg

Carpelimus bilineatus Stephens; Kirk 1969.

Carpelimus gracilis (Mannerheim); Kirk 1970.

Carpelimus quadripunctatus (Say); Herman 2001 (citing LeConte 1877).

OXYPORINAE Fleming

Oxyporus femoralis Gravenhorst; Kirk 1969, 1970.

Oxyporus lateralis Gravenhorst; Kirk 1970.

Oxyporus occipitalis Fauvel; Kirk 1970.

Oxyporus vittatus Gravenhorst; Campbell 1969; Kirk 1970.

- *Oxyporus bicolor* Fauvel, reported separately by Kirk (1970), is a junior synonym of this species (Hanley and Goodrich 1994).

MEGALOPSIDIINAE Leng

Megalopinus caelatus (Gravenhorst); Kirk 1969; Puthz 2012.

Megalopinus rufipes (LeConte); Puthz 2012.

STENINAE MacLeay

Stenus alacer Casey; Kirk 1969, 1970.

Stenus carolinae Casey; Kirk 1969, 1970; Puthz 1971.

Stenus colon Say; Kirk 1969.

Stenus femoratus Say; Kirk 1969.

Stenus punctatus Erichson; Kirk 1970; Puthz 1974a.

Stenus reconditus Casey; Herman 2001.

Stenus stygicus Say; Kirk 1970.

EUAESTHETINAE Thomson

Edaphus americanus Puthz; Puthz 1974b.

Edaphus nitidus Motschulsky; Puthz 1974b.

Euaesthetus albertae Puthz; Puthz 2014.

Euaesthetus mundulus Casey; Puthz 2014.

Euaesthetus pugetensis Hatch; Puthz 2014.

Stictocranium puncticeps LeConte; Puthz 1989.

PAEDERINAE Fleming

Lathrobiini Laporte

Achenomorphus corticinus (Gravenhorst); Kirk 1969, 1970.

Astenus binotatus (Say); Kirk 1969, 1970.

Astenus discopunctatus (Say); Kirk 1969.

Astenus linearis (Erichson); Kirk 1969.

Astenus prolixus (Erichson); Kirk 1969.

Dacnochilus laetus LeConte; Moore and Legner 1975.

Echiaster brevicornis Casey; Kirk 1970.

Eustilicus tristis (Melsheimer); Herman 1970; Kirk 1970.

- Reported in Kirk (1970) as *Stilicolina tristis*.

Lathrobium armatum Say; Kirk 1969.

Lithocharis nigriceps Kraatz; Kirk 1970.

- Reported in Kirk (1970) as *Lithocharis ardenus* [sic] Sanderson.

Lithocharis ochracea (Gravenhorst); Kirk 1969.

Lobrathium collare (Erichson); Kirk 1969.

Lobrathium grande LeConte; Kirk 1969.

Lobrathium longiusculum Gravenhorst; Kirk 1969.

Myrmecosaurus ferrugineus Bruch; Bugguide. net (86902) January 2012.

Pseudolathra dimidiatum (Say); Kirk 1969.

- Reported in Kirk (1969) as *Lobrathium dimidiatum*.

Rugilus angularis Erichson; Kirk 1969, 1970.
Rugilus biarmatus LeConte; Kirk 1970.

Rugilus dentatus Say; Kirk 1969.

Stillicopsis paradoxa Sachse; Kirk 1969.

Sunius confluentus Say; Kirk 1969, 1970.

Sunius debilicornis (Wollaston); Kirk 1970.

- Misspelled in Kirk (1970) as *Sunius debilis*.

Tetartopeus angularis (LeConte); Kirk 1969.

- Reported in Kirk (1969) as *Lathrobium angularis*.

Paederini Fleming

Homaeotarsus badius (Gravenhorst); Kirk 1969, 1970.

Homaeotarsus bicolor (Gravenhorst); Kirk 1969.

Homaeotarsus carolinus (Erichson); Kirk 1970.

Homaeotarsus cinctus (Say); Kirk 1969, 1970.

Homaeotarsus flavicornis (LeConte); Kirk 1970.

Homaeotarsus pallipes (Gravenhorst); Kirk 1969, 1970.

Lissobiops serpentinus (LeConte); Kirk 1970.

Paederus littorarius Gravenhorst; Kirk 1969.

Paederus obliteratus LeConte; Kirk 1969.

Pinophilini Nordmann

Palaminus luteus Casey; Kirk 1969.

Palaminus normalis LeConte; Kirk 1970.

Palaminus testaceus Erichson; Kirk 1969.

Pinophilus latipes Gravenhorst; Kirk 1969, 1970; Abarbanell and Ashe 1989.

Pinophilus opacus LeConte; Kirk 1969, 1970; Abarbanell and Ashe 1989.

Pinophilus parvus LeConte; Abarbanell and Ashe 1989.

STAPHYLININAE Latreille

Diochini Casey

Diochus schaumii Kraatz; Kirk 1969, 1970; Smetana 1982.

- Reported in Kirk (1969, 1970) as *Diochus nanus* Erichson.

Xantholinini Erichson

Gyrophypnus fracticornis (Müller); Kirk 1969.

- Reported in Kirk (1969) as *Gyrophypnus obsidianus* Melsheimer.

Leptacinus pusillus (Stephens); Smetana 1982.

Lithocharodes longicollis (LeConte); Kirk 1970.
- Reported in Kirk (1970) as *Nematolinus longicollis*.

Lithocharodes nigripennis (LeConte); Smetana 1982.

Microlinus pusio (LeConte); Kirk 1970; Smetana 1982.

Neohypnus emmesus (Gravenhorst); Kirk 1969; Smetana 1982.

- Reported in Kirk (1969) as *Gyrophypnus emmesus*.

Neohypnus fuscipes? (LeConte); Kirk 1969.

- Reported in Kirk (1969) as *Gyrophypnus fuscipes*, but the identification of this species was uncertain.

Neohypnus obscurus (Erichson); Kirk 1969.

- Reported in Kirk (1969) as *Gyrophypnus hamatus* (Say). Smetana (1982) separated *N. obscurus* from *N. hamatus*, and although he reported neither from South Carolina, *N. obscurus* has a broader distribution and would appear far more likely to occur in the state.

Neohypnus pusillus (Sachse); Kirk 1969, 1970; Smetana 1982.

- Reported as *Gyrophypnus pusillus* in Kirk (1969, 1970); also reported as "*Hypongrus*" (misspelling of *Hyponygrus*) *pusillus* in Kirk (1970).

Nudobius cephalus (Say); Kirk 1969.

Nudobius luridipennis Casey; Smetana 1982.

Phacophallus parumpunctatus (Gyllenhal); Kirk 1970; Smetana 1982.

- Reported in Kirk (1970) as *Leptacinus cephalicus* LeConte.

Stenistoderus rubripennis (LeConte); Smetana 1982.

Staphylinini Latreille

Acylophorina Outerelo and Gamarra

Acylophorus lecontei Duvivier; Smetana 1971.

Amblyopinina Seevers

Heterothops fumigatus LeConte; Kirk 1969.

Cyrtoquediina Brunke and Solodovnikov

Cyrtoquedius verres (Smetana); Smetana 1971.

- Reported as *Quedius verres* by Smetana (1971).

Erichsoniina Brunke and Solodovnikov

Erichsonius parvus (Horn); Kirk 1969; Frank 1975.

Erichsonius patella (Horn); Kirk 1969; Frank 1975.

- Reported in Kirk (1969) as *Erichsonius loxatus* (Horn), which was synonymized by Frank (1975).

Erichsonius rusticus Frank; Frank 1975.

Philonthina Kirby

Belonuchus rufipennis (Fabricius); Kirk 1969, 1970; Smetana 1995.

Bisnius blandus (Gravenhorst); Smetana 1995.

Bisnius inquietus (Erichson); Kirk 1970; Smetana 1995.

- Reported in Kirk (1970) as *Philonthus inquietus*.

***Bisnius sordidus* (Gravenhorst);** Kirk 1969.
 - Reported in Kirk (1969) as *Philonthus sordidus*.

***Hesperus apicalis* (Say);** Kirk 1969.
 - Reported in Kirk (1969) as *Philonthus apicalis* [sic].

***Hesperus baltimorensis* (Gravenhorst);** Kirk 1969, 1970; Smetana 1995.

***Hesperus serpentinus* (Horn);** Kirk 1970.
 - Reported in Kirk (1970) as *Philonthus serpentinus*.

***Laetulonthus laetulus* (Say);** Smetana 1995.

***Neobisnius jocosus* (Horn);** Frank 1981.

***Neobisnius jucundus* (Horn);** Kirk 1970.

***Neobisnius ludicrus* (Erichson);** Frank 1981.

***Neobisnius paderoides* (LeConte);** Kirk 1969; Frank 1981.

***Neobisnius sobrinus* (Erichson);** Frank 1981.

***Philonthus asper* Horn;** Kirk 1970; Smetana 1995.

***Philonthus caeruleipennis* (Mannerheim);** Herman 2001.
 - Reported as *Philonthus cyanipennis* (Fabricius) by Kirk (1969). According to Herman (2001), all New World records attributed to this Old World species should refer to *P. caeruleipennis*.

***Philonthus cautus* Erichson;** Smetana 1995.

***Philonthus cruentatus* (Gmelin);** Smetana 1995.

***Philonthus cunctans* Horn;** Kirk 1970.
 - Reported in Kirk (1970) as *P. cinctans* [sic].

***Philonthus flavolimbatus* Erichson;** Smetana 1995.

***Philonthus hepaticus* Erichson;** Kirk 1969; Smetana 1995.

***Philonthus lomatus* Erichson;** Kirk 1969.

***Philonthus longicornis* Stephens;** Smetana 1995.

***Philonthus merorientis* Smetana;** Smetana 1995.

***Philonthus politus* (Linnaeus);** Kirk 1969, 1970; Smetana 1995.

***Philonthus quadricollis* Horn;** Kirk 1969.

***Philonthus rectangulus* Sharp;** Kirk 1970; Smetana 1995.

***Philonthus rufulus* Horn;** Kirk 1969, 1970; Smetana 1995.
 - Reported in Kirk (1969, 1970) as *Philonthus alumnus* Erichson, which was based on an earlier misidentification of that species (Smetana 1995).

***Philonthus sericans* (Gravenhorst);** Kirk 1970; Smetana 1995.
 - Reported in Kirk (1970) as *P. brunneus* Gravenhorst, which was synonymized by Muona (1977).

***Philonthus umbrinus* (Gravenhorst);** Kirk 1970; Smetana 1995.

***Philonthus validus* Casey;** Kirk 1970; Smetana 1995.

***Philonthus varians* (Paykull);** Kirk 1970.

***Philonthus ventralis* (Gravenhorst);** Kirk 1970; Smetana 1995.

Staphylinina Latreille

***Creophilus maxillosus* (Linnaeus);** Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Staphylinus maxillosus*.

***Ontholestes cingulatus* Gravenhorst;** Kirk 1970.

***Platydracus cinnamopterus* (Gravenhorst);** Kirk 1969, 1970; Brunke *et al.* 2011.

- Reported in Kirk (1969, 1970) as *Staphylinus cinnamopterus*.

***Platydracus comes* (LeConte);** Kirk 1969.

- Reported in Kirk (1969) as *Staphylinus comes*.

***Platydracus exulans* (Erichson);** Kirk 1970.

- Reported in Kirk (1970) as *Staphylinus exulans*.

***Platydracus femoratus* (Fabricius);** Kirk 1970.

- Reported in Kirk (1970) as *Staphylinus femoratus*.

***Platydracus fossator* (Gravenhorst);** Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Staphylinus fossator*.

***Platydracus immaculatus* (Mannerheim);** Kirk 1970.

- Reported in Kirk (1970) as *Staphylinus vulpinus*.

***Platydracus maculosus* (Gravenhorst);** Kirk 1970.

- Reported in Kirk (1970) as *Staphylinus maculosus*.

***Platydracus pinorum* (Casey);** Kirk 1970.

- Reported in Kirk (1970) as *Staphylinus pinorum*.

***Platydracus praetermissus* Newton;** Brunke *et al.* 2011.

***Platydracus tomentosus* (Gravenhorst);** Kirk 1969, 1970.

- Reported in Kirk (1969, 1970) as *Staphylinus tomentosus*.

***Platydracus violaceus* (Gravenhorst);** Kirk 1969.

- Reported in Kirk (1969) as *Staphylinus violaceus*.

***Platydracus zonatus* (Gravenhorst);** Brunke *et al.* 2011.

Quediina Kraatz

***Quedius capucinus* (Gravenhorst);** Kirk 1970; Smetana 1971.

***Quedius laticollis* (Gravenhorst);** Kirk 1969; Smetana 1971.

- Reported in Kirk (1969) as *Quedius molochinus* (Gravenhorst). *Quedius laticollis* was reported by Smetana (1971) as *Quedius neomolochinus* Korge because he indicated that most New World records of the European *Q. molochinus* were in error. However, Smetana (1973) subsequently synonymized *Q. neomolochinus* with *Q. laticollis*, whose identity had previously been uncertain.

Quedius mesomelinus (Marshall); Kirk 1969.

SCYDMAENINAE Leach

Scydmaenini Leach

Scydmaenus grossus (LeConte); Kirk 1969, 1970.

Scydmaenus motschulskii (LeConte); Casey 1897; Kirk 1969, 1970.

Scydmaenus occipitalis (Casey); Kirk 1969, 1970.

Scydmaenus retrusus (Casey); Kirk 1969.

- Reported in Kirk (1969) as *Acholerops retusa* [sic].

Chevolatiini Reitter

Chevolatia amoena LeConte; Kirk 1969; O'Keefe 1997.

Glandulariini Schaufuss

Euconnus affinis Casey; Kirk 1969, 1970.

Euconnus analis (LeConte); Kirk 1969.

Euconnus angusticollis? (Casey); Kirk 1969.

- Kirk's (1969) identification of this species was uncertain.

Euconnus basalis (LeConte); Kirk 1969.

Euconnus biceps (Casey); Kirk 1969.

Euconnus caviceps (Casey); Kirk 1969.

Euconnus clavatus (LeConte); Kirk 1969.

Euconnus decipiens? (Casey); Kirk 1969.

- Kirk's (1969) identification of this species was uncertain.

Euconnus dentiger? (Casey); Kirk 1969, 1970.

- Kirk's (1969, 1970) identification of this species was uncertain.

Euconnus extricatus (Casey); Kirk 1969.

Euconnus flavitarsis? (LeConte); Kirk 1970.

- Kirk's (1970) identification of this species was uncertain.

Euconnus frustus? (Casey); Kirk 1970.

- Kirk's (1970) identification of this species was uncertain.

Euconnus fulvus (LeConte); Kirk 1969.

Euconnus gratus Casey; Kirk 1969.

Euconnus innocuus (Casey); Kirk 1969.

Euconnus lacunosus? (Casey); Kirk 1969.

- Kirk's (1969) identification of this species was uncertain.

Euconnus lynceus (Casey); Kirk 1969, 1970.

Euconnus magister? (LeConte); Kirk 1969.

- Kirk (1969) reported this (uncertainly) as *Napochus schaumii* Casey, a homonym now replaced by *E. magister*. *Napochus* Thomson is now treated as a subgenus of *Euconnus* Thomson.

Euconnus nigrescens? Casey; Kirk 1969.

- Kirk's (1969) identification of this species was uncertain.

Euconnus novellus (Casey); Kirk 1969.

Euconnus oreophilus? (Casey); Kirk 1969.

- Kirk's (1969) identification of this species was uncertain.

Euconnus polius? (Say); Kirk 1969, 1970.

- Kirk's (1969, 1970) identification of this species was uncertain.

Euconnus procerus (Casey); Kirk 1969.

Euconnus pumilus (Casey); Kirk 1970.

Euconnus schmitti (Casey); Kirk 1969.

Euconnus trinifer (Casey); Kirk 1969.

Microscydmus misellus (LeConte); Kirk 1969.

- Reported as *Euconnus misellus* in Kirk (1969).

Stenichnus badius (Casey); Kirk 1969.

Stenichnus cribrarius (LeConte); Kirk 1969.

Stenichnus perforatus (Schaum); Kirk 1969, 1970.

REMARKS ON SOME SPECIES PREVIOUSLY REPORTED

Omaliniinae

Omalium caesum Gravenhorst; Kirk 1970. This species was probably misidentified, as it is now considered to be strictly Palearctic (Löbl and Löbl 2015). We cannot speculate what Kirk may have actually seen.

Proteininae

Megarathrus angulicollis Maklin; Kirk 1970. This species was listed as *Megarathrus sinuaticollis* [sic] Fauvel, an Old World species that in the past has been considered synonymous with *M. angulicollis*. *Megarathrus angulicollis* does not occur in the Southeast according to Cuccodoro and Löbl (1996), so this was probably a misidentification of *M. americanus*.

Tachyporinae:

Mycetoporus americanus Erichson; Kirk 1969, 1970. This is probably a misidentification (based on Campbell 1991). It could be *Mycetoporus lucidulus* LeConte, which would be new to South Carolina. Or, it could refer to *Ischnosoma splendidum* (Gravenhorst), which is known from South Carolina.

Mycetoporus humidus (Say); Kirk 1969, 1970. This name is a *nomen dubium* according to Campbell (1991).

Tachinus pallipes (Gravenhorst); Kirk 1969, 1970. This is probably a misidentification of this

strictly Palearctic species. Herman (2001) tentatively suggests many New World records of *T. pallipes* refer to *Tachinus frigidus* Erichson, though this species' southern limit appears to be well north of South Carolina (Campbell 1973).

Aleocharinae

Acrotona parvula (Mannerheim); Kirk 1970. This species is probably a misidentification, as it is strictly Palearctic.

Sipalia haemorrhoidalis Heer; Kirk 1970. This name is now synonymous with the Palearctic *Leptusa fumica* (Erichson). It is unclear what Kirk's record may refer to.

Osoriinae

Lispinus tenellus (Erichson); Kirk 1970. This species, now in the genus *Tannea* Blackwelder (Irmeler 2003), is limited to the Neotropics, though earlier (mis)conceptions included it within what is now *N. tenuis*, which is validly recorded in South Carolina.

Staphylininae

Acylophorus pronus Erichson; Kirk 1969. This species does occur in the southeastern USA according to Smetana (1971); it may be a misidentification.

Bisnius filicornis (Horn) [as *Philonthus*]; Kirk 1970. This species only occurs in Arizona and California (Smetana 1995).

Philonthus chalceus Stephens; Kirk 1970. This European species is not known to occur in the New World. Some reports of *P. chalceus* in the New World (e.g., Leng 1920) refer to *P. succicola* Thomson, which is not believed to be currently

Table 1. Number of species of Staphylinidae within each subfamily reported from South Carolina.

Subfamily	# species
Omallinae	14
Proteininae	1
Micropeplinae	1
Dasycerinae	1
Pselaphinae	79
Tachyporinae	37
Aleocharinae	25
Scaphidiinae	14
Osoriinae	6
Oxytelinae	16
Oxyporinae	4
Megalopsidiinae	2
Steninae	7
Euaesthetinae	6
Paederinae	38
Staphylininae	69
Scydmaeninae	35
Total	355

established (Smetana 1995). Kirk's identification most likely refers to *P. validus*, for which there are valid South Carolina records.

Philonthus fusiformis Melsheimer; Kirk 1970. This species' occurrence in South Carolina is unlikely, as the nearest Smetana (1995) record is northern Virginia.

Philonthus gopheri Hubbard; Kirk 1970. Smetana (1995) reported this species from Florida only; Kirk's record probably refers to another gopher tortoise inquiline, *Philonthus testudo* Smetana, but this should be confirmed.

Philonthus micans (Gravenhorst); Kirk 1969. This species is Old World only (Smetana 1995); the record may refer to *Philonthus opacipennis* Notman, though this would represent a perhaps surprising southward range extension from West Virginia (Smetana 1995).

Quedius molochinus (Gravenhorst); Kirk 1969. Smetana (1971) rejected records of this Old World species from the southeastern USA. This record probably refers to *Q. laticollis*, which is known from South Carolina (see further details above).

RESULTS AND DISCUSSION

The current checklist of Staphylinidae known from South Carolina includes 355 species within 17 subfamilies (Table 1). Revisionary work over the past 40 years has added a little over 120 species since Kirk's (1969, 1970) checklists. While a number of other state or regional level checklists can help put this list into perspective (Fig. 1), most or all suffer from similar deficiencies (lack of dedicated effort, difficulty of identifying many species). Many are also due for updates. Nonetheless, we offer some comparisons from other regions around North America. Perhaps most relevant would be the fauna

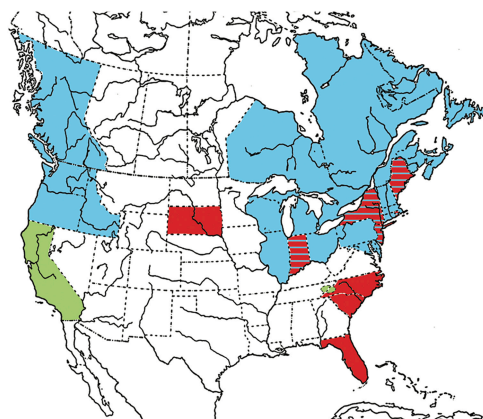


Fig. 1. States and regions with lists of species of Staphylinidae. Red = state list; blue = regional list; green = unpublished list. See text for details.

of North Carolina, with a reported 286 staphylinid species as of 1970 (Brimley 1938; Wray 1967). Straddling the North Carolina/Tennessee border, Great Smoky Mountains National Park hosts 376 staphylinid species (C. Carlton, personal communication). To the south, Florida's staphylinid fauna stands at 429 species (Peck and Thomas 1998). Elsewhere in the eastern USA, New Jersey is reported to have 368 species (Smith 1900, 1910), Indiana 379 species (Blatchley 1910), New York 793 species (Leonard 1926), Rhode Island 290 species (Sikes 2004), and Maine 358 species (Majka *et al.* 2011). To the west, South Dakota has 79 species (Kirk and Balsbaugh 1975), and California has 1,485 species (M. Caterino, unpublished data). On a regional scale, Downie and Arnett (1996) listed 2,425 species of staphylinids in "north eastern North America", and the "Pacific Northwest" region hosts 1,050 species (Hatch 1957; Park and Wagner 1962). The whole of Canada hosts over 1,400 species (Brunke *et al.* 2011). At this point, the significance of any of these differences is difficult to evaluate, but the presence of such lists, however old or incomplete, provides a starting point for a more comprehensive and synthetic inventory.

Biogeographic patterns relevant to regional conservation planning should become clearer once we have a more complete picture of species distributions. It is anticipated that broad-scale digitization projects will accelerate this effort, but there will still be major holes in collections that can only be filled by intensive field and identification work. Dedicated efforts to address such shortfalls in our knowledge of the North American insect fauna will be critical to adequately conserving our entomological heritage, as well as to resolving the Nearctic biogeographic history and anticipating its future.

Lastly, we recognize and reflect on the limitations of a static and admittedly incomplete checklist. With continued work in collections and in the field, this list will grow substantially and may relatively quickly come to be viewed as obsolete (a view which we would dispute). A first justification is based on the great benefits of peer attention to a properly published version. The careful review of an earlier version resulted in numerous improvements (though even that underscored the dynamic nature of taxonomy, with several relevant recommendations dating only to 2016 literature). As importantly, we emphasize the necessity of advancing knowledge through a progression of fixed points. While we can and have established a more dynamic web-based version of this checklist, which we can continually update (sites.google.com/site/clemsonarthropodcollection/research/SC_Staphylinidae), it is important for future workers to be able to refer back to solid, verified, and unaltered foundational documentation. Reliability

of a continually evolving and dynamic online resource will be uneven without comprehensive metadata to document its complete history. While we do not dispute that the technology exists to provide this, such a system remains to be fully embraced by the taxonomic community.

ACKNOWLEDGMENTS

We thank Chris Carlton and Laura Vásquez-Vélez for help with locating some literature, and Stylianos Chatzimanolis and an anonymous reviewer for suggestions that greatly improved the manuscript. This project was partly supported by USDA/NIFA projects SC-1700527 & SC-1700434. This is Technical Contribution No. [6523] of the Clemson University Experiment Station.

REFERENCES CITED

- Abarbanell, N. R., and J. S. Ashe. 1989.** Revision of the species of *Pinophilus* Gravenhorst (Coleoptera: Staphylinidae) of America north of Mexico. *Fieldiana: Zoology* (N.S.) 54: 1–32.
- Ashe, J. S. 1984.** Generic revision of the subtribe Gyrophaenina (Coleoptera: Staphylinidae: Aleocharinae) with a review of the described subgenera and major features of evolution. *Quaestiones Entomologicae* 20: 129–349.
- Ashe, J. S., and V. I. Gusarov. 2004.** Review of the genus *Sableta* Casey, 1910 (Coleoptera: Staphylinidae: Aleocharinae: Athetini). *Zootaxa* 745: 1–15.
- Blatchley, W. S. 1910.** An Illustrated Descriptive Catalogue of the Coleoptera or Beetles (Exclusive of the Rhynchophora) Known to Occur in Indiana, with Bibliography and Descriptions of New Species. Nature Publishing Company, Indianapolis, IN.
- Brimley, C. S. 1938.** The Insects of North Carolina. Being a List of the Insects of North Carolina and their Close Relatives. North Carolina Department of Agriculture, Division of Entomology, Raleigh, NC.
- Brunke, A. J., J. Klimaszewski, J.-A. Dorval, C. Bourdon, S. M. Paiero, and S. A. Marshall. 2012.** New species and distributional records of Aleocharinae (Coleoptera, Staphylinidae) from Ontario, Canada, with a checklist of recorded species. *ZooKeys* 186: 119–206.
- Brunke, A., A. Newton, J. Klimaszewski, C. Majka, and S. Marshall. 2011.** Staphylinidae of eastern Canada and adjacent United States. Key to subfamilies; Staphylininae: tribes and subtribes, and species of Staphylinina. *Canadian Journal of Arthropod Identification* 12: 1–110.
- Campbell, J. M. 1968.** A revision of the New World Micropeplinae (Coleoptera: Staphylinidae) with a rearrangement of the world species. *The Canadian Entomologist* 100: 225–267.

- Campbell, J. M. 1969.** A revision of the New World Oxyporinae (Coleoptera: Staphylinidae). The Canadian Entomologist 101: 225–268.
- Campbell, J. M. 1973.** A revision of the genus *Tachinus* (Coleoptera: Staphylinidae) of North and Central America. Memoirs of the Entomological Society of Canada 90: 1–137.
- Campbell, J. M. 1975.** A revision of the genera *Coproporus* and *Cilea* (Coleoptera: Staphylinidae) of America north of Mexico. The Canadian Entomologist 107: 175–216.
- Campbell, J. M. 1976.** A revision of the genus *Sepedophilus* (Coleoptera: Staphylinidae) of America north of Mexico. Memoirs of the Entomological Society of Canada 99: 1–89.
- Campbell, J. M. 1978.** A revision of the North American Omaliinae (Coleoptera: Staphylinidae) 1. The genera *Haida* Keen, *Pseudohaida* Hatch, and *Eudectoides* new genus. Memoirs of the Entomological Society of Canada, 110(S106): 1–20.
- Campbell, J. M. 1979.** A revision of the genus *Tachyporus* Gravenhorst (Coleoptera: Staphylinidae) of North and Central America. Memoirs of the Entomological Society of Canada 109: 1–195.
- Campbell, J. M. 1982.** A revision of the genus *Lordithon* Thomson of North and Central America (Coleoptera: Staphylinidae). Memoirs of the Entomological Society of Canada 114(S119): 5–116.
- Campbell, J. M. 1984.** A revision of the North American Omaliinae (Coleoptera: Staphylinidae): the genera *Arpedium* Erichson and *Eucnecosum* Reitter. The Canadian Entomologist 116(4): 487–527.
- Campbell, J. M. 1991.** A revision of the genera *Mycetoporus* Mannerheim and *Ischnosoma* Stephens (Coleoptera: Staphylinidae: Tachyporinae) of North and Central America. Memoirs of the Entomological Society of Canada 156: 1–169.
- Campbell, J. M. 1993.** A revision of the genera *Bryoporus* Kraatz and *Bryophacis* Reitter and two new related genera from America north of Mexico (Coleoptera: Staphylinidae: Tachyporinae). Memoirs of the Entomological Society of Canada 166: 1–85.
- Carlton, C. E. 2003.** Revision of *Reichenbachia* of eastern North America (Coleoptera, Staphylinidae, Pselaphinae). In: Systematics of Coleoptera: Papers Celebrating the Retirement of Ivan Löbl (G. Cuccodoro and R. A. B. Leschen, editors). Memoirs on Entomology, International 17: 483–563.
- Carlton, C. E. 2008.** Eight new species of *Arianops* Brendel from southeastern United States with an updated key and notes on additional species (Coleoptera: Staphylinidae: Pselaphinae). The Coleopterists Bulletin 62: 297–323.
- Carlton, C. E., and D. S. Chandler. 1994.** Revision of the Nearctic genus *Pseudactium* (Coleoptera: Pselaphidae: Euplectinae). The Coleopterists Bulletin 48: 171–190.
- Carlton, C. E., and H. W. Robison. 1996.** Notes on *Mayetia pearsei* Schuster, Marsh and Park with a revised key to eastern *Mayetia* species (Staphylinidae: Pselaphinae). The Coleopterists Bulletin 50: 244–250.
- Casey, T. L. 1897.** Coleopterological Notices. VII. Annals of the New York Academy of Sciences 9: 285–684.
- Caterino, M. S., and L. M. Vásquez-Vélez. 2017.** A revision of the species of *Prespelea* Park (Staphylinidae: Pselaphinae). Zookeys 685: 105–130.
- Chandler, D. S. 1989.** The Pselaphidae (Coleoptera) of Latimer County, Oklahoma, with revisions of four genera from eastern North America. Part 1. Faroninae and Euplectinae. Transactions of the American Entomological Society 115(4): 503–529.
- Chandler, D. S. 1997.** A catalog of the Coleoptera of America north of Mexico. Family: Pselaphidae. USDA, Agriculture Handbook Number 529–31: 1–118.
- Chandler, D. S. 1999.** New synonymies and combinations for New World Pselaphinae (Coleoptera: Staphylinidae). Transactions of the American Entomological Society 125: 163–183.
- Chandler, D. S. 2013.** Further notes on the New World Pselaphinae (Coleoptera: Staphylinidae) described by Victor Motschulsky. The Coleopterists Bulletin 67(3): 321–327.
- Chandler, D. S., and S. D. Geromini. 2016.** A revision of the eastern Nearctic genus *Custotychnus* Park and Wagner, 1962 (Coleoptera: Staphylinidae: Pselaphinae). The Coleopterists Bulletin 70: 217–242.
- Chandler, D. S., G. Sabella, and C. Buckle. 2015.** A revision of the Nearctic species of *Brachygluta* Thomson, 1859 (Coleoptera: Staphylinidae: Pselaphinae). Zootaxa 3928: 1–91.
- Ciegler, J. C. 2000.** Ground Beetles and Wrinkled Bark Beetles of South Carolina (Coleoptera: Geodephaga: Carabidae and Rhysodidae). Biota of South Carolina. Volume 1. Clemson University, Clemson, SC.
- Ciegler, J. C. 2003.** Water Beetles of South Carolina: (Coleoptera: Gyrinidae, Haliplidae, Noteridae, Dytiscidae, Hydrophilidae, Hydraenidae, Scirtidae, Elmidae, Dryopidae, Limnichidae, Heteroceridae, Psephenidae, Ptilodactylidae, and Chelonariidae). Volume 3. Clemson University, Clemson, SC.
- Ciegler, J. C. 2007.** Leaf and Seed Beetles of South Carolina (Coleoptera: Chrysomelidae and Orsodacnidae). Volume 4. Clemson University, Clemson, SC.
- Ciegler, J. C. 2010.** Weevils of South Carolina (Coleoptera: Nemonychidae, Attelabidae, Brentidae, Ithyceridae, Curculionidae). Volume 6. Clemson University, Clemson, SC.
- Ciegler, J. C. 2014.** Tenebrionoidea of South Carolina. Biota of South Carolina. Volume 8. Clemson University, Clemson, SC.
- Cornell, J. F., Jr. 1967.** A taxonomic study of *Eubaeocera* new genus (Coleoptera: Scaphidiidae) in North America north of Mexico. The Coleopterists' Bulletin 21(1): 1–17.
- Cuccodoro, G., and I. Löbl. 1996.** Revision of the rove-beetles of the genus *Megarthus* of America north of Mexico (Coleoptera, Staphylinidae, Proteiniinae). Mitteilungen der Münchner Entomologischen Gesellschaft 86: 145–188.

- Downie, N. M., and R. H. Arnett, Jr. 1996.** The Beetles of Northeastern North America, 2 volumes. The Sandhill Crane Press, Gainesville, FL.
- Ferro, M. L. 2015.** Review of the genus *Thoracophorus* (Coleoptera: Staphylinidae: Osoriinae) in North America north of Mexico, with a key to species. The Coleopterists Bulletin 69(1): 1–10.
- Ferro, M. L., and C. E. Carlton. 2010.** Fifteen new species of *Sonoma* Casey from the eastern United States and a description of the male of *Sonoma tohulae* (LeConte) (Coleoptera: Staphylinidae: Pselaphinae). Insecta Mundi 137: 1–44.
- Ferro, M. L., and C. E. Carlton. 2014.** Two new species of *Batrisodes* Reitter (Coleoptera: Staphylinidae: Pselaphinae) from eastern North America. Insecta Mundi 0380: 1–21.
- Frank, J. H. 1975.** A revision of the New World species of the genus *Erichsonius* Fauvel (Coleoptera: Staphylinidae). The Coleopterists Bulletin 29: 177–203.
- Frank, J. H. 1981.** A revision of the New World species of the genus *Neobisnius* Ganglbauer (Coleoptera: Staphylinidae: Staphylininae). Occasional Papers of the Florida State Collection of Arthropods 1: 1–60.
- Grebennikov, V. V., and A. F. Newton. 2009.** Good-bye Scydmaenidae, or why the ant-like stone beetles should become megadiverse Staphylinidae *sensu latissimo* (Coleoptera). European Journal of Entomology 106: 275–301.
- Gusarov, V. I. 2003.** A revision of the Nearctic species of the genus *Stethusa* Casey, 1910 (Coleoptera: Staphylinidae: Aleocharinae). Zootaxa 239: 1–43.
- Hanley, R. S., and M. A. Goodrich. 1994.** The Oxyporinae (Coleoptera: Staphylinidae) of Illinois. Journal of the Kansas Entomological Society 67: 394–414.
- Harpootlian, P. J. 2001.** Scarab Beetles (Coleoptera: Scarabaeidae) of South Carolina. Volume 2. Clemson University, Clemson, SC.
- Harpootlian, P. J., and C. L. Bellamy. 2014.** Jewel beetles (Buprestidae) of South Carolina. Volume 7. Clemson University, Clemson, SC.
- Hatch, M. H. 1953–1971.** The Beetles of the Pacific Northwest, 5 volumes. University of Washington Press, Seattle, WA.
- Herman, L. H. 1970.** The ecology, phylogeny, and taxonomy of *Stilicolina* (Coleoptera, Staphylinidae, Paederinae). American Museum Novitates 2412: 1–26.
- Herman, L. H. 1972.** Revision of *Bledius* and related genera. Part 1. The *aequatorialis*, *mandibularis*, and *semiferrugineus* groups and two new genera (Coleoptera, Staphylinidae, Oxytelinae). Bulletin of the American Museum of Natural History 149(2): 113–254.
- Herman, L. H. 1976.** Revision of *Bledius* and related genera. Part 2. The *armatus*, *basalis*, and *melanocephalus* groups (Coleoptera, Staphylinidae, Oxytelinae). Bulletin of the American Museum of Natural History 157(2): 73–172.
- Herman, L. H. 1983.** Revision of *Bledius*. Part 3. The *annularis* and *emarginatus* groups (Coleoptera, Staphylinidae, Oxytelinae). Bulletin of the American Museum of Natural History 175(1): 1–145.
- Herman, L. H. 2001.** Catalog of the Staphylinidae (Insecta, Coleoptera): 1758 to the end of the second millennium. Bulletin of the American Museum of Natural History 265: 1–4218.
- Hoebcke, E. R. 1976.** A revision of the genus *Xenodusa* (Staphylinidae: Aleocharinae) for North America. Sociobiology 2(2): 109–143.
- Hoebcke, E. R. 1985.** A revision of the rove beetle tribe *Falagriini* of America north of Mexico (Coleoptera: Staphylinidae: Aleocharinae). Journal of the New York Entomological Society 93: 913–1018.
- Irmiler, U. 2003.** Taxonomy and distribution of the Neotropical species of the genera *Tannea* Blackwelder, 1952 and *Nacaeus* Blackwelder, 1942 with remarks on the genus *Lispinus* (Coleoptera: Staphylinidae). Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Entomologie 73: 85–134.
- Jackson, B. C., J. D. Pittillo, H. L. Allen, T. R. Wentworth, B. P. Bullock, and D. L. Loftis. 2009.** Species diversity and composition in old growth and second growth rich coves of the southern Appalachian Mountains. Castanea 74: 27–38.
- Kirk, V. M. 1969.** A list of beetles of South Carolina. Part I – Northern Coastal Plain. South Carolina Agricultural Experiment Station, Clemson University, Technical Bulletin 1033: 1–124.
- Kirk, V. M. 1970.** A list of beetles of South Carolina. Part II – Mountain, Piedmont, and Southern Coastal Plain. South Carolina Agricultural Experiment Station, Clemson University, Technical Bulletin 1038: 1–117.
- Kirk, V. M., and E. U. Balsbaugh. 1975.** A list of the beetles of South Dakota. South Dakota State University Agricultural Experiment Station Technical Bulletin 42: 1–139.
- Klimaszewski, J. 1982.** A revision of the Gymnusini and Deinopsini of the World. Supplementum 2. The Canadian Entomologist 114(4): 317–335.
- Klimaszewski, J. 1984.** A revision of the genus *Aleochara* Gravenhorst of America north of Mexico (Coleoptera: Staphylinidae, Aleocharinae). Memoirs of the Entomological Society of Canada 129: 1–211.
- Klimaszewski, J., G. Pelletier, C. Germain, T. Work, and C. Hébert. 2006.** Review of *Oxytoda* species in Canada and Alaska (Coleoptera, Staphylinidae, Aleocharinae): systematics, bionomics and distribution. The Canadian Entomologist 138: 737–852.
- LeConte, J. L. 1877.** On certain genera of Staphylinidae Oxytelini, Piestidae, and Micropeplidae, as represented in the fauna of the United States. Transactions of the American Entomological Society (1867) 6: 213–252.
- Leng, C. W. 1920.** Catalogue of the Coleoptera of America, North of Mexico. John D. Sherman, Jr., Mount Vernon, NY.
- Leonard, M. D., editor. 1926.** A list of the insects of New York. With a list of all the spiders and certain other allied groups. Cornell University Agricultural Experiment Station, Memoir 101: 1–1121.

- Leschen, R. A. B., I. Löbl, and K. Stephan. 1990.** Review of the Ozark Highland *Scaphisoma* (Coleoptera: Scaphidiidae). *The Coleopterists Bulletin* 44: 274–294.
- Löbl, I., and F. G. Calame. 1996.** Taxonomy and phylogeny of the Dasycerinae (Coleoptera: Staphylinidae). *Journal of Natural History* 30: 247–291.
- Löbl, I., and K. H. Stephan. 1993.** A review of the species of *Baeocera* Erichson (Coleoptera, Staphylinidae, Scaphidiinae) of America north of Mexico. *Revue Suisse de Zoologie* 100: 675–733.
- Majka, C. G., D. S. Chandler, and C. P. Donahue. 2011.** Checklist of the Beetles of Maine, USA. Empty Mirrors Press, Nova Scotia, Canada.
- Moore, I., and E. F. Legner. 1975.** A catalogue of the Staphylinidae of America north of Mexico (Coleoptera). University of California Division of Agricultural Sciences Special Publication 3015: 1–514.
- Morse, J. C., B. P. Stark, P. McCafferty, and K. J. Tennesen. 1997.** Southern Appalachian and other southeastern streams at risk: implications for mayflies, dragonflies and damselflies, stoneflies, and caddisflies [pp. 17–39]. *In: Aquatic Fauna in Peril: The Southeastern Perspective* (G. W. Benz and D. E. Collins, editors). Southeast Aquatic Research Institute, Chattanooga, TN.
- Muona, J. 1977.** Nomenclatoric notes on Staphylinidae. *Notulae Entomologicae* 57: 15–16.
- Navarrete-Heredia, J. L., A. F. Newton, M. K. Thayer, J. S. Ashe, and D. S. Chandler. 2002.** Guía Ilustrada para los Géneros de Staphylinidae (Coleoptera) de México/Illustrated Guide to the Genera of Staphylinidae (Coleoptera) of Mexico. Universidad de Guadalajara y CONABIO, México, DF, Mexico.
- Newton, A. F., Jr., M. K. Thayer, J. S. Ashe, and D. S. Chandler. 2000.** 22. Staphylinidae Latreille, 1802 [pp. 272–418]. *In: American Beetles, Volume 1*. (R. H. Arnett, Jr. and M. C. Thomas, editors). CRC Press, Boca Raton, FL.
- Noss, R. 2016.** Announcing the world's 36th biodiversity hotspot: The North American Coastal Plain. www.cepf.net/news/top_stories/Pages/Announcing-the-Worlds-36th-Biodiversity-Hotspot.aspx (accessed 1 June 2016).
- O'Keefe, S. T. 1997.** Revision of the genus *Chevrolatia* Jacquelin du Val (Coleoptera: Scydmaenidae) for North America. *Transactions of the American Entomological Society* 123: 163–185.
- Owens, B. E., and C. E. Carlton. 2016a.** Revision of *Eutyphlus* LeConte (Coleoptera: Staphylinidae: Pselaphinae), with description of a new species and phylogenetic placement within the tribe Trichonychini. *The Coleopterists Bulletin* 70: 1–29.
- Owens, B. E., and C. E. Carlton. 2016b.** Collecting in the museum: new species, taxonomic changes, and range extensions of Euplectite Pselaphinae (Coleoptera: Staphylinidae) of the Southeastern United States. *The Coleopterists Bulletin* 70: 611–633.
- Park, O., and J. A. Wagner. 1962 [1961].** Family Pselaphidae [pp. 4–31, plates 1–10]. *In: The Beetles of the Pacific Northwest. Part III. Pselaphidae and Diversicornia I* (M. H. Hatch, editor). University of Washington Publications in Biology 16: 1–503.
- Peck, S. B., and M. C. Thomas. 1998.** A distributional checklist of the beetles (Coleoptera) of Florida. *Arthropods of Florida and Neighboring Land Areas* 16: 1–180.
- Puthz, V. 1971.** Über die Gruppe des *Stenus cautus* Erichson (Coleoptera, Staphylinidae). 103. Beitrag zur Kenntnis der Steninen. *Entomologisk Tidskrift* 92(3/4): 242–254.
- Puthz, V. 1974a.** Revision der nearktischen Steninenfauna (2). Taxonomische revision der von fruheren Autoren beschriebenen Taxa. 141. Beitrag zur Kenntnis der Steninen. *Entomologische Blätter* 70: 155–170.
- Puthz, V. 1974b.** A new revision of the Nearctic *Edaphus*-species and remarks on other North American Euaesthetinae (Coleoptera, Staphylinidae). *Revue suisse de zoologie* 81(4): 911–932.
- Puthz, V. 1989.** The male of *Stictocranium mariae* (Hatch) (Coleoptera, Staphylinidae). *Entomologische Blätter für Biologie und Systematik der Käfer* 85(3): 165–166.
- Puthz, V. 2012.** Über die neuweltlichen *Megalopinus*-Arten (Coleoptera, Staphylinidae) (24. Beitrag zur Kenntnis der Megalopsidiinen). *Linzer Biologische Beiträge* 44: 613–834.
- Puthz, V. 2014.** Nordamerikanische Arten der Gattung *Euaesthetus* Gravenhorsts (Coleoptera, Staphylinidae) 115. Beitrag zur Kenntnis der Euaesthetinen. *Linzer Biologische Beiträge* 46(1): 845–876.
- Seevers, C. H. 1951.** A revision of the North American and European staphylinid beetles of the subtribe Gyrophaenae (Aleocharinae, Bolitocharini). *Fieldiana: Zoology* 32: 659–762.
- Seevers, C. H. 1957.** A monograph on the termitophilous Staphylinidae (Coleoptera). *Fieldiana: Zoology* 40: 1–334.
- Sikes, D. S. 2004.** The Beetle Fauna of Rhode Island: An Annotated Checklist. *Rhode Island Natural History Survey, Volume 3*. Kingston, RI.
- Smetana, A. 1971.** Revision of the tribe Quediini of America north of Mexico (Coleoptera: Staphylinidae). *Memoirs of the Entomological Society of Canada* 79: 1–303.
- Smetana, A. 1973.** Revision of the tribe Quediini of America north of Mexico (Coleoptera: Staphylinidae). *Supplementum 2. Canadian Entomologist* 105: 1421–1434.
- Smetana, A. 1982.** Revision of the subfamily Xantholininae of America north of Mexico (Coleoptera: Staphylinidae). *Memoirs of the Entomological Society of Canada* 120: 1–389.
- Smetana, A. 1995.** Rove beetles of the subtribe Philonthina of America north of Mexico (Coleoptera: Staphylinidae). *Classification, phylogeny and taxonomic revision. Memoirs on Entomology, International* 3: 1–946.

- Smith, J. B. 1900.** Insects of New Jersey. A List of Species Occurring in New Jersey, with Notes on those of Economic Importance. MacCrellish and Quigley, Trenton, NJ.
- Smith, J. B. 1910.** Insects of New Jersey [pp. 15–888]. *In*: Annual Report of the New Jersey State Museum, Including a Report of the Insects of New Jersey. 1909. New Jersey State Museum; MacCrellish and Quigley, State printers, Trenton, NJ.
- Wray, D. L. 1967.** Insects of North Carolina. Third Supplement. North Carolina Department of Agriculture, Division of Entomology, Raleigh, NC.
- Zanetti, A. 2014.** Taxonomic revision of North American *Eusphalerum* Kraatz, 1857 (Coleoptera, Staphylinidae, Omaliinae). *Insecta Mundi* 0379: 1–80.

(Received 17 January 2017; accepted 12 July 2017.
Publication date 18 September 2017.)