



Scarabaeus

A NEWSLETTER FOR THOSE INTERESTED IN SCARABAEIDAE

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NORTH AMERICAN AEGIALIINI

In 1931, W. J. Brown (Canad. Entomol. 63:9-19; 42-49) treated the North American species of Aegialiini in a revision that included 16 species in 2 genera, including virtually no biological data. Subsequent to this time, descriptions of new taxa have increased the North American fauna to 26 species in 3 genera. Much has subsequently been added to the biological knowledge of this group. The purpose of this note is to encourage investigation into the biologies of our species, by summarizing the present knowledge.

At the present time the genera Annegialia Howden, Micraegialia Brown and Aegialia Latreille, the latter with four N. American subgenera, are in our fauna. Some changes in nomenclature different from Brown's were presented in the recent revision by Z. Stebnicka (1977; Acta Zool. Cracoviensia 22(11):397-505, 1 plate). Gordon and Cartwright (1977; J. Wash. Acad. Sci. 67(1):42-48) described additional species. A summation of the present status of the classification follows further below.

The genus Annegialia Howden was described from a single specimen in 1971 (Canad. Entomol. 103:1466), collected near Hanksville, Utah. Howden reports that the specimen was taken at light, where it was removed from the mandibles of a tiger beetle. Since that time, I have examined two additional specimens with the following data: Calif., Inyo co., Deep Springs Valley, Sand Dunes, VIII-17-75, D. Giuliani; Calif., Inyo Co., Saline Valley Salt Marsh, IX-1-1976, D. Giuliani, U.V. (the latter specimen now in USNM). Nothing more is known of this species.

Micraegialia Brown is a monotypic genus and quite rare. Described from Washington Territory, Brown recorded it from Birtle and Aweme, Manitoba and Cawston, B.C. Donald Schwert (in litt.) reports specimens from Aweme, Birtle, Cawston and additionally Helena, Mont. J. Carr (in litt.) cites other localities in Alberta and B.C. (see below).

Donald Schwert writes:

"As you may know, Allan C. Ashworth and I study Late Quaternary beetle fossils of which the scarabs are often a significant component. In response to your request in Scarabaeus no. 2 for information on Micraegialia, we have obtained an elytral fossil of M. pusilla Horn from dated lacustrine sediments at each of the following two sites:

"Norwood (Sibley Co.), Minnesota 12,400 yrs Before Present

"Johns Lake (Sheridan Co.), North Dakota 10,800 yrs B.P.

"Bob Gordon examined each of the fossils and agreed with our diagnoses."

The most complete information to date on this species was compiled by J. Carr, Calgary, who writes:

"My wife and I have been fortunate to collect almost 50 specimens from southwestern Alberta, and one from southeastern British Columbia. Data for these collections are as follows:

- "Calgary, Alberta: 3.V.53;12.IV.56 - under rocks on the prairie
- Calgary, Alberta: 10.V.73 - pitfall trap near prairie slough
- Calgary, Alberta: 30.V.73 - excavation on the prairie, sandy soil
- Calgary, Alberta: 9:VII.53 - sweeping mixed vegetation in a gully on the prairie in the evening
- Ghost Dam, Alberta: 10.VII.73;3.VII.75 "washup" on the reservoir shore, evening
- Ghost Dam, Alberta: 12.VII.53 - "washup"
- Ghost Dam, Alberta: 28.III.53 - under stones, areas of open prairie
- Coleman, Alberta: 13.IV.80 - under stones, grassy margin of road allowance through an area of open prairie
- Rampart, British Columbia: 1.V.77 - Under stone, grassy margin of a road

"Some of the specimens caught before June appear to be teneral.

"These records suggest that this beetle is a soil-dweller in open grasslands of this region. The soil here is usually a dark brown loam, frequently stony or gravelly where the specimens were collected. Elevations range from about 3,400 feet at Calgary to over 4,500 feet at Coleman. Vegetation at Calgary is generally of a prairie type, largely open grasslands with some patches of aspens. Ghost Dam is in the Foothills and Coleman within the Rocky Mountains, but in both cases poplar and evergreen forest is broken by extensive areas of prairie-like grassland in exposed situations. The beetles seem to be close to the soil surface around the perimeters of the rocks under which they occur, and usually are found when they tumble into the pit left by removing the rock.

"The "washup" collections obviously reflect a flight pattern. This is probably also indicated by the "sweeping" capture. A more pedestrian method of dispersal is, likely, reflected by the pitfall trap and excavation captures.

"This beetle is probably abundant within its range. Its size (1.86-2.5 mm), and its presumed habitat in the soil, will combine to leave it a very unobtrusive creature."

The genus Aegialia Latreille was treated in detail by Stebnicka, who recognized six subgenera for the world, four of these occur in North America. Brown (1931) described the subgenus Anomalaegialia for the species described as spissipes by LeConte. Landin (1960, as cited in Howden 1970, Natl. Mus. Canada, Publ. Zool. 4:18) and Howden (loc. cit.) both discuss the possible synonymy of this species with the European A. rufa (Fabr.); Stebnicka creates the synonymy (1977), and considered Anomalaegialia a synonym of Rhysothorax Bedel. Speculation centers on the possible introduction of this species from Europe. Howden considers it native.

Reported in North America (Stebnicka) from Nova Scotia, Colorado, Indiana, Michigan, Massachusetts. In addition, I have a specimen taken in S. Dakota. Considered rare. "This psammobiontic, littoral species occurs on sandy banks of inland waters;...can be found mostly in ex-water plant debris. Dates collected: January to September" (Stebnicka). "July. Found crawling on sand at base of high dunes along beach between 6 and 7 p.m." (Howden 1960 - discussing Sable Island).

The subgenus Leptaegialia Brown includes four species. The biologies of all but one are totally unknown. Aegialia browni Saylor as stated by Van Dyke (in Saylor 1934, Pan-Pac. Entomol. 10(2):75), "were caught at dusk flying near an old decayed log, at 9000 ft. altitude". Saylor further states, "He thought that possibly the beetles bred in the old decayed woody material of the forest." Cornell (1967, Pan-Pacific Entomol. 43(3):189) reported on the larvae of A. browni, which were "...dug from soil at the edge of the summit meadow, at the ecotone between a stand of Noble Fir (Abies procera Rehd.) and the meadow which is primarily grasses and Carex sp.," on Marys Peak, Benton Co., Ore. He reported "...the surmise that they live in decayed wood...is apparently unfounded since all larvae collected...were found at depths of four inches to two feet in soil not adjacent to fallen logs." He reports collecting adults during spring and fall from surface duff under Noble Fir trees, using berlese funnels.

Cartwright (in litt.) reports collecting A. humeralis Brown flying in the Carolina mtns. in April. This is a new range record.

The subgenus Aegialia is the largest, with 17 species recognized for the world, 13 North American. Most, if not all, species are sand associated.

Aegialia arenaria (F.) is an introduced species which probably arrived in ship ballast, as documented by Lindroth (1957, Faunal Connections between Europe and North America, John Wiley, New York). Stebnicka characterizes it as "...psammobiontic, halophilic species, living on the coasts of seas and oceans.... Usually found in the sand dunes, under mouldering wood and plants, in the ex-water debris, and very rarely in cattle faeces (in Poland)." Howden (1970) reports it as common on Sable Island, "Mainly on dune, marram-grass areas; often seen crawling on the surface. A flightless species. Considered a european import, but I have some reservations."

Aegialia blanchardi Horn is characterized as, "Littoral species, inhabiting the coastal sand dune area of the inland waters, frequently taken on the sea beach... January to September." Jerath (1959, Pan-Pacific Entomol. 35(4):169) states, "This species was collected by sifting sand around and beneath the roots of vegetation on the dunes," at Waldport Oregon, and at 5 mi. SE Corvallis, collected larvae "...in sand drifts under willows, by sifting the sand," in company with A. lacustris, A. latispina and A. nigrella (= conferta). I have collected this species or a closely related one commonly in sand under willows in the delta of the Sacramento River in California. East coast records may represent a distinct species. Cartwright (in litt.) reports this species in sand, Aug.-Nov., in the Carolinas.

Nothing is known of the biology of A. cartwrighti Stebnicka.

Aegialia concinna Gordon & Cartwright was described from sand dunes atop Monocline Ridge in Fresno Co., Calif. We have also taken specimens in pit traps in the Panoche Valley, N. of the Monocline Ridge. Most Monocline Ridge specimens have been taken sifting sand under various perennial plants. Adults seem to be active between February and April.

Aegialia conferta Horn is a widespread species which has been described as "...probably littoral, psammophilic, occurring on sandy banks of inland waters: streams, lakes and rivers. Dates collected: February to July; October." (Stebnicka 1977). Van Dyke (1928, Pan-Pacific Entomol. 4(4):151) states it "...is a streamside species widely distributed from Washington to Ensenada, Lower California." Jerath (1959) reports it from under willows in sand (see blanchardi, above). We have collected extensive series of this species by sifting dune sand in desert dunes in Eureka Valley, Panamint Valley, and near Kelso, all in California. Most specimens were taken under sandpaper plant, Petalonyx sp., generally early in the year (Feb.). None of these sites is near running or standing water. Cartwright (in litt.) has collected this species in sand in S. Carolina between August and April, and on the wing in March.

Stebnicka (1977) states that Aegialia convexa Fall "...is most probably littoral and occurs exclusively in sand dunes." I have specimens from Zuma Beach, L.A. Co.; 7 mi. SE Oceano and Pismo Beach, San Luis Obispo Co., and Zumdotski State Beach, Monterey Co., all in California. Notes on specimens indicate the specimens were collected from sand. The species appears to be strictly a Pacific Coastal Dune associate.

Aegialia crescenta Gordon & Cartwright is known only from the Crescent Dunes, which is an inland desert dune near Tonopah, Nevada. The species is common on the dunes and is easily taken during the winter from November to April.

Aegialia crassa LeConte is a coastal dune inhabitant described by Stebnicka (1977) as "...Pacific-littoral, psammophilic, probably halophilic...". Van Dyke (1928) reports it is "...confined to the coast sand dunes and ranges at least from N. Ore. to Carmel Calif." Stebnicka records Brit. Col. S to San Diego. I have collected this species by sifting sand from the roots of Artemisia sp. on beach sand dunes.

At the present time Aegialia hardyi Gordon & Cartwright is known from Sand Mountain. The species has been taken by sifting sand at the bases of desert plants on this Great Basin Desert dune. A paper on the biology of this species by R. Rust and student is in press.

Van Dyke (1928) characterizes Aegialia latispina LeConte as "...found along many stream margins from Siskiyou to Los Angeles Co., and also at Prescott, Ariz." Stebnicka (1977): "This rare (Jerath 1960), littoral species occurs on the banks of inland waters, most probably in the mountains. Dates collected: March to August." Jerath (1959) reports it from beneath willows in streamside sand (see under blanchardi, above). I have a number of specimens taken in pit traps set along streams for carbid beetles.

Aegialia magnifica Gordon & Cartwright is commonly collected in the sand beneath sandpaper plant, Petalonyx, at Big Dune, Nevada. the species is one of the largest Aegialia, and is known only from this desert dune.

Aegialia opifex Horn is described (Stebnicka 1977) as a "...littoral species, probably connected with banks of big reservoirs of inland waters. Dates collected: April to August."

Stebnicka (1977) raised A. punctata Brown to full species status. Jerath (1960) states, "this species was collected in the sand dunes bordering Fossil Lake [Ore.] ... where it was fairly abundant." I have specimens from inland dunes in Idaho, Utah and Nevada. Rolf Aalbu has collected this species on wet sand under a log along the Sacramento River.

Representatives of the subgenus Psammoporus Thomson are found in Eurasia and North America (where there are six of the worlds eleven species). Most species are northern or high altitude, and seldom taken in series.

Aegialia criddlei Brown has been characterized by Stebnicka (1977) as "...frigidophilic and occurs on the banks of inland waters. Dates collected: April to October."

Stebnicka (1977) describes A. cylindrica (Esch.) as "...frigidophilic and littoral. Dates collected: April to August." Van Dyke (1928) states "A. cylindrica (Esch.) is found in Alaska near the sea coast, but further south only along cold-water streams. It extends as far south as San Francisco Bay, and in the Northwest reaches into Idaho and farther east."

Aegialia lacustris LeConte was stated by Jerath (1960) to be "...not very common..." and (1959) was collected under willows in sand drifts (see under blanchardi, above). Stebnicka cites (1977), "Littoral species, inhabiting coastal sandy areas of the inland waters, collected under the willows."

Aegialia nana Brown and A. terminalis Brown are rare species, about which nothing is known except dates of collection (nana, April, May, July; terminalis, April to October (Stebnicka, 1977)).

Aegialia opaca is stated by Stebnicka (1977) to occur "...on the banks of streams, probably exclusively in the mountains. Dates collected: May to September."

It is easy to see from the above summary that there is much to be learned regarding our species of Aegialiini. It is most likely that collectors, looking in sandy habitats or streamside-lakeside areas under debris would be able to add a great deal to the distributional information for many species. There are perhaps additional undescribed species in our fauna. Collectors should make an attempt to record any biological data when labeling specimens. This should prove to be most valuable for ongoing systematic studies by R. Gordon and others.

I would like to thank Mssrs. H. Howden, D. Schwert, J. Carr, O. Cartwright and R. Aalbu for observations cited above.

- A. R. Hardy

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Scholtz, C.H. 1979. The "horridus"-Group of Trox F. species (Coleoptera:Trogidae) in South Africa. J. Entomol. Soc. S. Afr. 42(2):169-180.

Aegialiini

Subtribe Aegialiina

Annegialia Howden 1971:1466

ataeniformis Howden 1971:1468

Utah-Calif.

Micraegialia Brown 1931:10

pusilla (Horn) 1887:99 (Aegialia)

B.C.-Wash.-Manit.

Aegialia Latreille 1807:96

(Rhysothorax) Bedel 1911:93

(Anomalaegialia) Brown 1931:15

rufa (Fabricius) 1792:39 (Scarabaeus)

spissipes LeConte 1878:611

Europe-Colo.-N. Scotia
[introd.]

(Leptaegialia) Brown 1931:12

browni Saylor 1934:74

Ore.-Calif.

humeralis Brown 1931:13

Ont.-Que.-N.J.-S.C.

montana Brown 1931:14

Ore.-Calif.-Colo.-Wyo.

rufescens Horn 1887:99

B.C.-Que.-Wash.

(Aegialia) Latreille

arenaria (Fabricius) 1787:11 (Scarabaeus)

Europe-Japan-Mass.-N.H.-
Nova Scotia [introd.]

globosus (Kugelmann) 1794:514 (Scarabaeus)

B.C.-Calif.; Que.-S.C.

blanchardi Horn 1887:99

S.C.

cartwrighti Stebnicka 1977:454

Calif.

concinna Gordon & Cartwright 1977:42-48

B.C.-Calif.-Ga.-Ont.

conferta Horn 1871:293

nigrella Brown 1931:45

convexa Fall 1932:183

Calif.

crescenta Gordon & Cartwright 1977:42-48

Nev.

crassa LeConte 1857:42

B.C.-Calif.

insularis Brown 1931:45

hardyi Gordon & Cartwright 1977:42-48

Nev.

latispina LeConte 1878:610

Wash.-Calif.-N.M.-Colo.

magnifica Gordon & Cartwright 1977:42-48

Nev.

opifex Horn 1887:104

Ind.-N. Scotia

punctata Brown 1931:45

Wash.-Calif.-Utah

(Psammoporus) Thomson 1863:72

criddlei Brown 1931:42

B.C.-Wash.-Newfl.

cylindrica (Eschscholtz) 1822:11 (Psammodius)

Alaska-Calif.

[exarata Mannerheim 1853:219]?

lacustris LeConte 1850:225

N.W.Terr.-Calif.-Me.-Newfl.

nana Brown 1931:19

Que.-Mass.

opaca Brown 1931:17

B.C.-Calif.-Albta.

terminalis Brown 1931:18

B.C.-Colo.-Newfl.

Just published is:

Howden, H.F. & O.P. Young. 1981. Panamanian Scarabaeinae: Taxonomy, Distribution, and Habits (Coleoptera, Scarabaeidae). Cont. Amer. Entomol. Institute 18(1):1-204.

This work includes 113 species of Scarabaeinae in 21 genera. The keys include all genera of Scarabaeinae from North and Central America except 5 (Sisyphus, Liatongus, Oniticellus, Bdelyroopsis, and Trichillium). A gazateer of localities cited is included. All species treated are illustrated by excellent photographs (261 Figs.). This should be a must in the library of every worker interested in dung beetles. Available from Dr. Henry Howden, Dept. of Biology, Carleton University, Ottawa, Canada K1S 5B6. Cost is \$15.00 U.S.

DONE IN

Well, we have been zapped by the U.S. Postal Service, which revised the rates, making all of those self-addressed, stamped envelopes somewhat out of date. It is evident that we will have to come up with something else, since the Postal Service may do this again. Until we work out a solution, send no more envelopes. We will take care of the increase in postage, and make sure that all those wishing to receive the newsletter will get all numbers.

NOTICES

Want to borrow Phanaeus MacLeay for generic revision; would especially appreciate knowing whereabouts of holdings in private collections which could be loaned or about which owner would be willing to supply information. W.D. Edmonds, Department of Biological Sciences, California State Polytechnic University, Pomona, CA 91768.

Wanted on Loan: Arizona Cremastochilini and all Cremastocheilus, subgenus Macropodina; will identify. Also will exchange for all Cremastocheilus spp. W. B. Warner, Department of Zoology, Arizona State University, Tempe, AZ 85281.

Papp, Dr. Charles L. (California Dept. of Food and Agriculture -340, Plant Industry, 1220 N Street, Sacramento, CA., 95814, USA.) is compiling material for his "Taxonomic Publications in Coleoptera 1901-1980". To make this reference source (which will be published in 1981) as complete as possible, he is asking taxonomists publishing in any family of the Coleoptera (all stages) to please send a list of their publications (no reprints requested). He is asking authors to send him one portrait photograph, which will be preserved in the Photographic Collection of Entomologists now kept in the California Dept. of Food and Agriculture. Your help would be greatly appreciated.

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XYLORYCTES JAMAICENSIS (DRURY) IN NEBRASKA

Xyloryctes jamaicensis (Drury) has not been previously recorded as occurring in Nebraska. Dawson (1922, Synopsis of the Scarabaeidae of Nebraska, Univ. Stud. 22:163-244) did not list this species as inhabiting the state. Additionally, the extensive systematics research collections in entomology of the University of Nebraska State Museum contained no examples, and these collections represent a hundred years of collecting in the state. I have collected rather extensively in Nebraska during the last 15 years, and I have never encountered X. jamaicensis there in spite of using modern light trapping equipment in likely areas. Although forests necessary for these beetles are not extensive in Nebraska, there are hardwood gallery forests along rivers in the southeast and northern portions of the state as well as mixed forests in the Pine Ridge area in the northwest.

In July of 1979, a farmer in Richardson County in the extreme southeast corner of the state reported an "infestation" of beetles to the county extension agent who subsequently forwarded the insects to Lincoln for identification. The beetles were X. jamaicensis. They were emerging en masse from an ash tree and were considered a nuisance by the property owner because the numerous dead or dying beetles attracted skunks which fed on the insects. The number of beetles "emerging" and their circumstances indicates a breeding population and not merely an accidental or transient occurrence. During July of 1981, I will be making investigations at this site in Richardson County as well as conducting additional light trap surveys in the southeast part of the state in the hopes of finding more beetles.

In addition, I have a single record of X. jamaicensis taken at light during the week of 10-16 July 1977 just south of Sparks in Cherry County along the north bank of the Niobrara River. This locale is in extreme north-central Nebraska and is 400 miles to the northwest of the Richardson County record. Smaller patches of mixed forests may be found along the Niobrara, and it appears probable that X. jamaicensis occur in some of these wooded areas.

Species recorded as new to the state will certainly continue to be discovered with the increased sampling of the insect fauna. These forest-dependent (or other) species are relatively rare because of their distribution which is due to the patchiness of suitable habitats. They may, however, be locally abundant as was seen in the first example.

Nebraska is thought of primarily as a prairie state, but it is a region with diverse habitats ranging from riverine forests in the east to tall grass prairie and then short grass prairie as one progresses westward. The sandhills are a unique area in the western portion of the state, the Pine Ridge area is a southward extension of the Black Hills forests of south Dakota, and the southeast corner represents a finger-like northward extension of the Ozarks fauna and flora. The opportunities for beetle workers in Nebraska are varied, and there is much yet to be accomplished. -- Brett C. Ratcliffe, Systematics Research Collections, W436 Nebraska Hall, University of Nebraska, Lincoln, Nebraska 68588.

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