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CONTRIBUTIONS TO OUR KNOWLEDGE OF THE MYLABRIDAE, SEU BRUCHIDAE (COLEOPTERA) WITH ESPECIAL REFERENCE TO THE FAUNA OF NORTHEASTERN AMERICA

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The family name. — I concur with the wish expressed by Bridwell, 1946, that the International Commission may, by suspension of the rules, validate the use of Bruchus and Bruchidae. I am not however aware that they have been requested to do this, and even if they have been — I have quite recently urged Mr. Bridwell to submit the case to them — we can not anticipate a decision prior to its being reached.

Mylabris Geoffroy

Mylabris signaticornis Gyll. in America. — There is a single (previously misdetermined) specimen of this species from the collection of Mr. Charles Liebeck and now contained in the Fall collection in the Museum of Comparative Zoology which bears labels indicating that it was found in lentils in Philadelphia, Pa. This is the fifth species of the genus to be recorded from the United States. It is a species of southern Europe, where it infests lentils and *Vicia monanthos*. One of these five species which has escaped record in the supplements to Leng's Catalogue is *M. lentis* Froelich, recorded in the New York State list of insects as infesting lentils in groceries in Buffalo and Ithaca; this species comes from the Crimea and Caucasus and attacks only lentils. As has been pointed out to me, both of the species are accidental importations of adults that would be unable to establish their progeny in dried lentils, and therefore are under no likelihood of becoming established.

Gibbobruchus Pic

Gibbobruchus mimus (Say) Bridwell, 1946. — Leng's reference of Horn's group II of Bruchus to Pseudopachymerus Pic

is not correct. The type of this genus, and of Caryedes Hummel (*brasiliensis* Thunb. or its synonym *faldermanni* Manh.) is not congeneric with *mimus* Say, although showing certain points of relationship. *Mimus* belongs to Gibbobruchus Pic (as has been pointed out by Bridwell '46, p. 54, after these notes were written and submitted to him), and is quite similar to both *speculifer* Gyll. the type and *polycoccus* Fahr. the other originally included species, with both of which I have compared it. The following characters and distinctions may be noted:

Head not elongate, the antennal sockets practically contiguous to the mandibles; antennae not flabellate; pronotum strongly narrowed anteriorly, immarginate, its sides strongly expanding to the acute hind angles, its hind margin with a pronounced median lobe, its surface with a median longitudinal strongly elevated ridge (less strongly elevated in *mimus* than in the other two species) which bears a weak longitudinal median sulcus, and a somewhat stronger transverse, median depression, the lateral depressions as in Caryedes, but correspondingly more pronounced, the enclosed tubercle weaker; hind femora strongly incrassate, their width equal to ½ their length, the inferior surface finely bicarinate, the inner edge with a spine-like tooth near its apical third, followed by 4 acute teeth about ½ as long, not set in a notch, the outer edge denticulate from about its basal third to the apex; hind tibiae as in Caryedes; pygidium nearly vertical, in the ♂ with a large apical glabrous area, (in *polycoccus* this is bituberculate), in the ♀ densely pubescent throughout. This description applies equally to all three species, except as noted.

Caryedes Hum.

Head elongate, the antennal sockets removed from the base of the mandibles by the length of the first antennal segment; antennae not flabellate; pronotum strongly narrowed anteriorly and produced into a short neck, immarginate, its sides strongly expanding to the acute hind angles, its hind margin with five undulations, its surface with a broad, longitudinal, slightly raised area, of uniformly even surface, bordered on each side by a depression which extends to the side and hind angle, but surrounds a well-marked tubercle; hind femora strongly incrassate, their breadth equal to 0.4 of their length, the inferior surface not bicarinate, its inner margin with a long preapical

spine-like tooth, preceded by a notch and this in turn by 2 or 3 minute, semi-concealed spines, and followed by another notch bearing 2 blunt denticles; hind tibiae arcuate basally, clavate, ending in a spine that is as long as the tooth of the femur; pygidium, in the ♂, vertical, with most of the apical surface smooth and shiny, not strongly pubescent, and bearing a small median triangular elevation bordered by a narrowly V-shaped groove, in the ♀ densely pubescent and without the elevation.

Another species previously included in Pseudopachymerus is *arizonensis* Schaeffer, but this possesses characters so distinctive that it requires generic separation. I had drawn up and submitted to Mr. Bridwell, for his criticism, a description of such a genus, dedicated to him in recognition of the considerable amount of discriminating work that he has done in this family, but he preferred to name it himself, which is of course his privilege. The description that he published is, however, so brief, that it may not be amiss to publish here the description that I had prepared, along with a key to related genera, some of which are purely Neotropical.

Neltumius Bridwell, 1946

Head short, the antennal sockets very close to the base of the mandibles, antennae reaching approximately to the base of the elytra, gradually thickened from the third segment, with symmetrical segments and therefore not serrate, or with segments slightly produced on the outer side so that they are sub-serrate. Pronotum short, gibbous, tapered anteriorly, immarginate laterally and without lateral teeth, the sides (from a dorsal view) diverging strongly posteriorly to the acute hind angles, the posterior margin with a pronounced median lobe and usually weakly indicated lateral undulation; the surface much as in Gibbobruchus, with a median longitudinal swelling, most sharply differentiated in the type, in which it is crossed medially by a strong transverse depression, that in the other species is barely indicated, there is also a weak longitudinal furrow, more or less accentuated by white scales, the depressions to the sides of the median ridge enclose a weak tubercle, more strongly developed in Gibbobruchus; prosternum triangular between the coxae which are contiguous; elytra short, exposing the pygidium; pygidium moderately inclined to nearly vertical, its apex rounded, its surface even, without grooves or tubercles, densely

pubescent in the ♀, but some individuals, evidently males, with an apical thinly pubescent area. Hind femora not incrassate, the width equal to almost 1/3 of the length, the inner surface flat, the under surface somewhat flattened, with a weak carina on the inner margin that bears a single denticle before the apex; hind tibiae carinate externally, the apex with two equal short teeth (one a little longer in *texanus*). Surface of pronotum and elytra densely covered with appressed pubescence, mottled white and brown.

This genus seems to be most nearly related to Gibbobruchus.

Species

Neltumius arizonensis (Schaeffer), genotype.
Neltumius gibbothorax (Schaeffer), new comb.
Neltumius texanus (Schaeffer), new comb.

Key to genera with longitudinal pronotal elevation.

1. Hind femora incrassate, with a strong inferior preapical tooth followed by spines or denticles ..... (2)
   Hind femora slender, simple except for one small inferior tooth or spine (N. Amer.) ..... Neltumius
2. Antennal sockets distant from base of mandibles by the length of the first or second antennal segment ..... (3)
   Antennal sockets practically contiguous to mandibles. (N. and S. Amer.) ..... Gibbobruchus Pic
3. Pronotal ridge strongly elevated; antennae of male pectinate ..... Falsobruchus Pic
   Pronotal ridge broad and barely elevated; antennae not pectinate ..... Caryedes Hummel

Callosobruchus Pic

Recent authors place *chinensis* L. and *maculatus* Fabr. in Callosobruchus (Cf. Bridwell '29, p. 40, '32, p. 104, Baeckmann '29, p. 160, and Herford '35, p. 5) a fact which has escaped the compilers of the third and fourth supplements to Leng's Catalogue, as has also the fact pointed out by Bridwell that the correct name for *quadrimaculatus* F. is *maculatus* F.

Megacerus Fahraeus

The species of this genus of which the habits are known infest the seeds of Convolvulaceae. Bridwell (1929, p. 112) has des-

ignated *Bruchus coryphae* Oliv. genotype of the synonymous or possibly subgeneric group Pachybruchus Pic, and has also transferred to Megacerus *B. discoideus* Say, B. *impiger* Horn, and *B. crenatus* Schf.(nec Thunberg) the name of which he has changed to *schaefferianus* Bridw. Since all of these facts, including the recording of Megacerus as a North American genus have escaped the attention of the compilers of the supplements to Leng's Catalogue, they are here repeated.

Megacerus Fahreus 1839 is not entered either in Neave's Nomenclator zoologicus or in the Nomenclator animalium generum et subgenerum of the Prussian Academy of Sciences in Berlin.

Megacerus arenarius (Wolc.) new comb. — I have seen no specimen of *Bruchus arenarius* Wolcott, but since it was described as a member of Horn's group IV, to which the species of Megacerus belong, it also may be transferred to that genus, pending a fuller knowledge of the species. This action is justified by the fact that it certainly is not a Bruchus, that some disposition should be made of it, and that it in all probability is a Megacerus.

Bruchidius Schilsky

The status of this genus has been discussed by Bridwell, 1899, p 41. Reopening the question in 1946, p. 53, he finds it "advisable" to establish a tribe Bruchidiini for the Old World genera and another, Acanthoscelidini for the Nearctic and Neotropical genera. However he considers it "premature to attempt a diagnosis" of these tribes. He states that aedeagal distinctions exist, but not what they are. The present writer hopes to be pardoned if he finds it a somewhat unscientific procedure to erect taxonomic groups until one is prepared to differentiate them, and present the evidence for believing them distinct, in order that others may examine and evaluate it. To him it is premature to recognize, or for their sponsor to have proposed the tribes.

The matter is not without zoogeographical importance for it our Nearctic Bruchidius (for which at least in part Bridwell has erected the genus Sennius) are not offshoots of the European group, but come from a different stock, then the matter is of considerable interest. Nevertheless it remains to be proven.

An adequate differentiation between Bruchidius and Acan-

thoscelides *s. l.* (probably including all or most of Bridwell's recent segregates of that genus) has been given by Herford, 1935.

Bruchinus Schilsky 1905, cited by Bridwell as a synonym or possible subgenus of Bruchidius, is not recorded either in Neave's Nomenclator or that of the Prussian Academy of Sciences in Berlin.

In erecting the Palearctic genus Sparteus (1946, p. 55) Bridwell has not compared it with Bruchidius, which is the nearest relative of the group to which he intended the name to apply. It does not seem that it can be accorded higher status than that of a subgenus of Bruchidius, at least until adequate reason for so doing is pointed out.

Bridwell designated *villosus* Fabr. type of Sparteus. But Hoffman, 1945, p. 83, indicated that the species which Bridwell really meant, and which has passed as *villosus* Fabr., is *fasciatus* Ol., 1795, Ent., v. 4, p. 20. He pointed out that *villosus* Fabr. is a Spermophagus. Schilsky saw the Fabrician types in Kiel, and found this to be the case. Sparteus Bridwell therefore is a synonym of Spermophagus, unless action is taken by the International Commission on Zoological Nomenclature to change the genotype to the species that Bridwell unquestionably meant.

Dr. W. T. M. Forbes has bred *B. fasciatus* Ol. in numbers from the seeds of Scotch broom (*Cytisus scoparius*) at Woods Hole, Mass. The specimens were determined by Mr. L. J. Bottimer in 1931. This is a common species of southern Europe, not previously recorded from North America, unless record has escaped my attention. Cytisus and Spartium are both cited as hosts, and although these are separate genera, I am unable to state whether or not the terms have been used synonymously in this connection. Four specimens of the same beetle are in the Fall collection, taken on Nantucket Island in 1920, 1926, and 1927, so that the beetle is evidently well established. These specimens are labelled "*cisti* Fabr." but this should be *cisti* Payk., which is a synonym of *fasciatus*.

It is interesting to note that Mr. Bridwell in allocating Sparteus to his tribe Bruchidiini (see above), apparently because it is Palearctic, was obliged to make an exception of it, including it in his key with "Acanthoscelidini."

Stator Bridwell, 1946

Bruchus pruininus Horn has been transferred to Bruchidius by Herford (1935, p. 17) but that fact was overlooked by Blackwelder in compiling the Fourth supplement to Leng's Catalogue. It has now been made type of Stator Bridwell, 1946, p. 55.

Sennius Bridwell, 1946

The following species, described in Bruchus and recorded from the northeastern United States, should be listed in Sennius:

Sennius bivulneratus (Horn) new comb.
Sennius cruentatus (Horn) genotype.
Sennius nigrinus (Horn) new comb.

I have examined the type of each of these species.

Acanthoscelides Schilsky

Bridwell (1929, p. 42) has characterized this genus. One character mentioned by him, namely, the carinate front, is not of generic significance, as already pointed out by Bottimer (1935, p. 129). It had seemed to me that *macrocerus* Horn, and those species related to *flavicornis* Sharp represent two subgeneric segregates, and in the manuscript that I submitted to Mr. Bridwell I had erected such. Mr. Bridwell, perhaps inspired by my attempts to straighten matters out, has gone further, and erected genera not only for these two groups, but for several others that would formerly have fallen under Acanthoscelides. He may be right, but perhaps some of his groups would be more suitable as subgenera, especially Mimosestes, and Algarobius.

The result of this breaking up of Acanthoscelides is to leave our North American fauna disrupted, so far as the generic allocation of species is concerned, and it is necessary to rebuild it.

Bruchus obtectus Say is the genotype of Acanthoscelides (see Bridwell, 1929, p. 42, and 1932, p. 104); this, the economically important beanweevil, originally American, has become cosmopolitan through commerce. Its transfer to Acanthoscelides, and the record of the latter as a valid North American genus escaped the attention of the compilers of the second and third supplements to Leng's Catalogue.

Bottimer has described *A. tenuis* from the eastern United

States (1935, p. 127). This did not escape the attention of the compiler of the fourth supplement, who recorded it as a Bruchus, not an Acanthoscelides. The compiler, as a taxonomist, has a perfect right to consider *tenuis* a Bruchus and Acanthoscelides an invalid genus, but as a cataloguer it seems quite unpardonable for him to record the species in a genus in which it was not described, and to make no mention of the genus in which it was described.

In the same paper, pp. 128 and 129, Bottimer refers the following species to Acanthoscelides, namely: *A. atomus* (Fall), *A. alboscutellatus* (Horn), *A. seminulum* Horn. No record of these transfers appears in the fourth supplement to Leng's Catalogue.

In all probability all species belonging to Horn's groups VI, VII, VIII, and IX, as well as those for which Fall erected the group VIIIA belong to Acanthoscelides, *s. l., i. e.*, as the genus was understood prior to Bridwell's 1946 paper.

List of Species of Acanthoscelides and Segregate Genera Recorded from the Northeastern United States

The numbers preceding the species are those used in Leng's Catalogue, p. 305–306, and indicate the bibliographic references as there given.

Acanthoscelides Schilsky

16203. *A. pectoralis* (Horn) new comb.
16205. *A. floridae* (Horn) new comb. Probably equals 16233, *horni* Pic = *exiguus* Horn
16206. *A. innotatus* (Pic) new comb.
16210. *A. obsoletus* (Say) new comb.
16211. *A. longistilus* (Horn) new comb.
16218. *A. alboscutellatus* (Horn) Bott.
——— *A. tenuis* Bott.
16221. *A. obtectus* (Say).
16227. *A. perforatus* (Horn) new comb.
16231. *A. calvus* (Horn) new comb.
16232. *A. fraterculus* (Horn) new comb.

Althaeus Bridwell, 1946

16222. *A. hibisci* (Oliv.), genotype.

Stylantheus Bridwell, 1946

16240. *S. macrocerus* (Horn), genotype.

Abutiloneus Bridwell, 1946

16243. *A. seminulum* (Horn).
16244. *A. atomus* (Fall).

Abutiloneus Bridwell

The differentiation of Abutiloneus from Sparteus in Bridwell's 1946 key is not entirely satisfactory. *Sparteus villosus* may have a minute angulation on the inner margin of the hind tibiae, as stated by Bridwell but it may also have two denticles, and sometimes apparently none. A specimen in the Fall collection determined as *flavicornis* Sharp from San Diego, Texas, collected by E. A. Schwartz and evidently of the lot referred to by Schaeffer in 1907, has denticles or granulations under the femora, and species that I have considered congeneric have each 2 small equal denticles. Neither does the length of the elytral striae entirely serve, as there is considerable difference among these species in that regard. One can say however of Sparteus that striae 3 and 6 are equally long, approach one another at apex and are much longer than 4 and 5, 6 curving in close to the apex of 5, but than in Abutiloneus this is not the case, though approached in *atomus* Fall.

Merobruchus Bridwell, 1946

Merobruchus major (Fall) new combination. The type of this species shows clearly that it is a Merobruchus.

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In the foregoing paragraphs attention has been drawn to a number of genera and generic transfers that should have been recorded in the supplements to Leng's Catalogue. While the cataloguers cannot be excused for their omission, it is only fair to lay a considerable portion of the blame upon the authors involved, for in many instances the transfers have been made in a way that failed to direct attention to them, or to the fact that North American insects were involved. In one instance generic transfers of North American species were made, and thereby a genus added to the North American fauna in a paper the title of which indicated only that it dealt with the occurrence of a beetle in Hawaii. If authors could train themselves to bear in mind the difficulties encountered by bibliographers and cataloguers, fewer such omissions would occur.

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SOUTHERN PIERIDS IN NEW ENGLAND

It might be worth placing on record, as a feature of the warm autumn of 1946, that not only was *Eurema lisa* Boisd. and Lec. abundant throughout the fall along the railway line near Wellesley, Mass., but that the very rare visitors, *Eurema nicippe* Cramer and *Phœbis sennæ eubule* Poey (one specimen of each), were seen by the author of this note on October 17th in the streets of Cambridge, Mass. — V. NABOKOV