

## Contribution to the knowledge of subfamily Ptininae Latreille, 1802 (Coleoptera: Ptinidae) in the South of USA

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### Summary

The Ptininae collected in several excursions by Dr. William B. Warner in the southwestern United States were examined, identified and assigned to the regarding localities. Photos of the species are provided.

### Zusammenfassung

Das Sammelergebnis mehrerer Exkursionen von William B. Warner im Südwesten der USA wurde untersucht, die gesammelten Arten bestimmt und den Fundorten zugeordnet.

Die Käfer-Familie *Ptinidae* ist seit Jahrzehnten wenig bearbeitet worden. Immer wieder gibt es Ergebnisse von Exkursionen, die mühsam und lückenhaft bearbeitet werden oder unbearbeitet in den Archiven verschwinden. Die sichere Artdiagnose ist zusätzlich immer wieder problematisch, weil es wenige zusammenfassende Bearbeitungen gibt. Bis heute fehlt ein übersichtlicher Unterfamilien- und Gattungsschlüssel. Jeder Beitrag zur Kenntnis dieser interessanten Käfer-Gruppe ist deshalb ein weiterer Baustein zur Durchdringung des Themas.

### Key words

Coleoptera, Ptinidae, Ptininae, Niptus, Ptinus, Arizona, Texas, Utah, New Mexico

### Introduction

The subfamily *Ptininae* has been neglected in taxonomical respect seriously since several decades. Quite often the concerning specimens disappear in the archives without a closer examination respectively with wrong identification. This is caused by the fact that the identification down to species level is problematical and mostly doubtful since a general revision is still needed badly. This concerns even the higher systematic ranking; a relevant and actual key of the genera is not available at all.

### Material and methods

Somewhat 760 specimens were received and examined by me, all of them glued to the tip of triangular cardboard plates as being the usual way of preparation in North America. By the way, the big advantage of this method is given by the fact that it is quite easy to have a partial look also at the

underside of the beetle without disconnecting it from the plate. On the other hand there are two advantages when using the European method instead, that means to glue the specimen completely onto the surface of a rectangular plate, all its legs and antennae outstretched: in this way it is better protected against damages, and additionally a direct comparison of two examples with each other in dorsal view becomes much easier.

Already at the first glance the beetles belong to a very few species only. My identification has mainly been based on the works of HATCH (1962) and PAPP (1962). Following their keys the material consists of two species belonging to the genus *Niptus* Boieldieu, 1856 as well as a third one belonging to ensure species-relatedness. The results have provisionally confirmed the presence of two the genus *Ptinus* Linnaeus, 1767.

Consulting Dr. Keith Phillips he suggested them to be *Niptus giulianii* Aalbu & Andrews, 1962 and *Niptus ventriculus* LeConte, 1859. Subsequently he kindly provided me with a copy of AALBU & ANDREWS (1992) for further processing.

The subfamily *Ptininae* is known for the variability in the external habitus of the different species, and also in a conspicuous sexual dimorphism. Therefore the most effective way for a reliable identification is given by an examination of the male genitalia, whereas the female sternites could be helpful too if dependable material for comparison is available. Unfortunately in the genus *Niptus* the elytrae are connected very firmly with the sternites, so mostly a dissection is quite difficult.

The *Ptinus* species was assigned to *Ptinus eximius* Fall, 1905. Since the type entitlement of that taxon and the regarding synonymy are not finally resolved (Keith Phillips), the final assignment must remain open.

### Discussion

The beetles collected by Dr. William B. Warner represent a typical example of the difficulties in the identification of *Ptininae*. So in the genus *Niptus* the species key in AALBU & ANDREWS (1992) includes several indistinct criteria, e.g. "Eyes bigger" alternatively to "Eyes smaller". How to decide about this if only a single specimen is available? Some features such as bristle length or point-line description are hardly traceable described



Fig. 1: *Niptus guilianii* Aalbu & Andrews, 1962, habitus, genital, abdomen.



Fig. 2: *Niptus ventriculus* LeConte, 1859, habitus, genital, abdomen.



Fig. 3: *Ptinus eximius* Fall, 1905, habitus, genital, abdomen.

Table 1: Site and circumstances of discovery.

date	state	location	method	male	female	not sexed
<b><i>Niptus giulianii</i> Aalbu &amp; Andrews, 1992</b>						
5.V.- 13.VI.2011	Arizona	Yuma Co. Dateland, on dunes	ex barrier pitfalls, W. B. Warner		1	
30.VI.- 9.VII.2011	Nevada	Nye Co. 12 mi. NW Tonopah, Crescent Dune	barrier pitfalls w. fish bait, W. B. Warner	5	3	14
01.- 08.VII.2011	Nevada	Churchill Co. Sand Mountain, SE Fallon el. 3940'	human dung pitfall/dune, W. B. Warner		6	
29.VII.- 14.VIII.2011	Arizona	Cochise Co. Bagby Rd. 0,2 m W Central Hwy.	black pitfalls, W. B. Warner		1	
30.III.- 31.V.2013	Texas	El Paso Co. Dune, 0,4 mi. S Horizon Blvd.	barrier ptfs. Blk cup, W. B. Warner		1	
4.-5.IV.2013	Arizona	Coconino Co. dune, 1,5 mi. WSW of Moenkopi	ex sand dune night, W. B. Warner	2	4	
28.VI.- 30.VIII.2014	Arizona	Coconino Co. dune, 1,5 mi. WSW of Moenkopi	barrier PF blk.cups, W. B. Warner	20	23	264
<b><i>Niptus ventriculus</i> LeConte, 1859</b>						
5.V.- 13.VI.2011	Arizona	Yuma Co. Dateland, on dunes	ex barrier pitfalls, W. B. Warner	5	5	2
17.- 29.VII.2011	Arizona	Cochise Co. Hwy. 186 at Blue sky Rd.	human dung baited pitfalls, W. B. Warner	1	1	
29.VII.- 14.VIII.2011	Arizona	Cochise Co. Bagby Rd. 0,2 m W Central Hwy.	blk cup pitfalls, W. B. Warner	3	1	27
29.VII.- 14.VIII.2011	Arizona	Cochise Co. Bagby Rd. 1,5 mi. jct. Hwys. 191/181	human dung barrier pitfalls, W. B. Warner	8	5	
14.- 28.VIII.2011	Arizona	Cochise Co. Bagby Rd. 1,5 mi. jct. Hwys. 191 and 181	black cup barrier pitfalls, W. B. Warner			6
9.X.- 19.XI.2011	Arizona	Cochise Co. Bagby Rd. 1,5 mi. jct. Hwys. 191 and 181	black cup barrier pitfalls, W. B. Warner			10
19.XI.2011- 1.I.2012	Arizona	Cochise Co. Bagby Rd. 0,2 mi. W Central Hwy.	black pitfalls, W. B. Warner	1		13
11.II.- 3.III.2012	Arizona	Maricopa Co. Nr. Agua Caliente, dunes	black cup barrier pitfalls, W. B. Warner	1	2	4
11.II.- 3.III.2012	Arizona	Yuma Co. E 13th at Fortuna Rd.	black cup barrier pitfalls, W. B. Warner	1	4	6
4.-25.III.2012	Arizona	Yuma Co. 6 mi. N Gila R. Hwy. 95	barrier PF blk.cups, W. B. Warner	1	1	
25.III.- 26.V.2012	Arizona	Maricopa Co. Nr. Agua Caliente, dunes	black cup barrier pitfalls, W. B. Warner	3	4	18
3.IV.- 19.V.2012	Utah	Washington Co, Sand Hollow Rd. E entr. State park	barrier pitfalls, W. B. Warner	2		
8.IV.- 23.V.2012	New Mexico	Luna Co. 4,1 mi. E Akela Hwy 549 m. p. 22	barrier PF blk.cups, W. B. Warner	2	2	33
5.IX.- 6.X.2012	Arizona	Cochise Co. Bagby Rd. 0,2 m W Central Hwy.	blk. cup pitfalls, W. B. Warner	1	2	31
30.III.- 31.V.2013	Texas	El Paso Co. Dune, 0,4 mi. S Horizon Blvd,	barrier ptfs. blk. cup, W. B. Warner	8	4	73
4.-5.IV.2013	Arizona	Coconino Co. dune, 1,5 mi. WSW of Moenkopi	ex sand dune night, W. B. Warner	2	2	
28.VI.- 25.VII.2014	Arizona	Coconino Co. Hwy 89A, 24,4 mi. W of Col. River	barrier ptfs. blk. cup, W. B. Warner	2		14

date	state	location	method	male	female	not sexed
28.VI.- 25.VII.2014	Arizona	Coconino Co. dune, 1,5 mi. WSW of Moenkopi	barrier PF blk.cups, W. B. Warner	6	5	32
23.IV.- 25.V.2014	Arizona	Mohave Co, 1,8 miles W jct. Hwys, 389 & 89A	barrier, pitfall traps blk. cups on dunes	1		
25.VII.- 30.VIII.2014	Arizona	Coconino Co. dune, 1,5 mi. WSW of Moenkopi	barrier PF blk. cups, W. B. Warner	7	7	30
<b><i>Ptinus eximius</i> Fall, 1905</b>						
12.II.- 4.III.2012	Arizona	Yuma Co. Confluence of Gila & Colorado river	barrier PF blk. cups, W. B. Warner			4
4.-25.III.2012	Arizona	Yuma Co. Confluence of Gila & Colorado river	barrier PF blk.cups, W. B. Warner			4

and also to recognize. *Niptus ventriculus* LeConte, 1859 (Fig. 2) has in part a very prominent seam tape of short adjacent bristles on the elytra. However, there are many transitions from "distinctive" to "barely recognizable". Some specimens have a dull surface, which probably was caused by postmortem influences or otherwise show a species characteristic. *Niptus guilianii* Aalbu & Andrews, 1962 (Fig. 1) should have long protruding bristles at the anterior edge of the pronotum. If there are any, they are fitting and hardly recognizable, whereas *N. ventriculus* very often has such conspicuous erected hairs. These relationships have led me to make a number of genital preparations (Fig. 1, 2 and 3) to species. It should be noted, however, that even the genitalia are varying. Some have e.g. dorsally bended parameres, a character which certainly will not justify to split off a different species. The attached table shows the distribution of the species in connection with the collection sites (Tab. 1). On a random basis some specimens were dissected in aim to examine their genitalia, those examples are listed in the last two columns.

In the present paper the taxon *Ptinus eximius* Fall, 1905 (Fig. 3) is used only as a working name. The illustrations in the literature show similar looking *Ptinus* most likely belonging to several different species. According to Keith Phillips *Ptinus eximius* is a member of a species complex which synonymy still needs to be clarified. As in the present case an examination of the genitalia is necessary for the clarification of the relationships.

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and Dr. Marcin Kadej (Wroclaw, Poland) for a critical review of the manuscript.

#### Results

From the available data of the Ptinidae collected by William B. Warner follow, that the species *N. guilianii* and *N. ventriculus* are widespread in the southeastern United States. The finds are mainly from desert-like locations. The at least partially baited traps show solid populations. The review of both species delimitation and wider distribution seems necessary. As mentioned, the species marks in AALBU & ANDREWS (1992) are certainly in need of discussion, so that detailed research on site can provide additional information.

A compelling necessity seems to me to be the general examination of the male genitalia for the purpose of species clarification. In addition, biotope binding should be ensured by further cross-regional investigations, possibly there are existing data stocks.

*Ptinus eximius* was found only in eight specimens and only in one location. The reason will be on the completely different biotope with increased soil moisture in the environment of two rivers.

#### Literature

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