

## Originalarbeiten

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**Hymenoptera-type material of  
Philipp Adolph SCHENCK  
in the Natural History Collection  
of the Museum Wiesbaden (MWNH)  
(Insecta: Hymenoptera: Apidae, Sphecidae s. l., Pompilidae)**

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### Abstract

The Hymenoptera type material of Philipp Adolph SCHENCK (1803-1878) in the Natural History Collection of the Museum Wiesbaden, Germany, is presented. Information about the condition of each specimen is given. The holotypes of *Biastes emarginatus* SCHENCK, 1853, *Pompilus basalis* SCHENCK, 1857, *Psen fulvicornis* SCHENCK, 1857 and *Tachytes obscuripennis* SCHENCK, 1857 are recorded.

**Key words:** Hymenoptera; Apidae, Sphecidae s. l., Pompilidae; type material, catalogue, Natural History Collection Museum Wiesbaden, MWNH, Germany, KIRSCHBAUM, SCHENCK, BLÜTHGEN

### Zusammenfassung

Das Typenmaterial der Ordnung Hautflügler (Hymenoptera) von Phillip Adolph SCHENCK (1803 - 1878) in der Naturhistorischen Sammlung des Museums Wiesbaden wird vorgestellt. Aufgezeigt wird der Erhaltungszustand der Einzelexemplare. Zudem konnten die Holotypen von *Biastes emarginatus* SCHENCK, 1853, *Pompilus basalis* SCHENCK, 1857, *Psen fulvicornis* SCHENCK, 1857 und *Tachytes obscuripennis* SCHENCK, 1857 ausfindig gemacht werden.

### Introduction

The Aculeata of Central Europe are mostly well revised in taxonomy and systematics since the early years of the 20th century (such as SCHMIEDEKNECHT 1909). As a scientist in bee research Phillip Adolph SCHENCK (1803-1878) started to lay the foundations in this division for the duchy of Nassau. Most of the taxa described by him are still valid. In the 19th century SCHENCK collected regional specimens from Nassau and worked on the collection of Dr. Carl Ludwig KIRSCHBAUM in Wiesbaden in the 19<sup>th</sup> century. Through the times the main collection of SCHENCK was splitted. One part was situated in the collection of the University of Marburg (today in the collection of the Senckenberg-Museum Frankfurt/Main), the other material seems to

be destroyed. The only results of his work on the collection of Carl Ludwig KIRSCHBAUM (1812-1880) are placed in the collection of the MWNH. Because of this fact it is necessary to know the placement of the type material.

Philipp Adolph SCHENCK was born in Dillenburg in 1803 as a child of a councillor of justice. Since an accident at the age of 9 he was handicapped resulting in being paralysed in one leg. In 1821 SCHENCK was matriculated in science, the study of language and literature and educational theory. As a secondary school teacher in Willenburg he started an amateur career of bee research possessing an own private Botanical Garden. In this time he published more than 30 reports. Being friends with Prof. Carl Ludwig KIRSCHBAUM (Wiesbaden) he felt hostile towards A. GERSTÄCKER (1828-1895). Adolph SCHENCK exchanged insects with German and Non-German entomologists (for example FÖRSTER, NYLANDER and SMITH) founding a big and extensive collection. According to WOLF (1968), the types of these collection are lacking. He tells us about 10% of all known bees from Germany still have the original names given by SCHENCK. Because of his entomological importance *Andrena schencki* MORAWITZ, 1866, *Sphecodes schenckii* HAGENS, 1882, *Psenulus schencki* (TOURNIER, 1889), *Myrmica schencki* EMERY, 1894 and *Chrysis schencki* LINSENMAIER, 1968 were named after him. In 1878 he died by an apoplexy.

Two years later his long-standing friend Carl Ludwig KIRSCHBAUM died, too. Like SCHENCK he was a teacher and worked as director of the Natural History Museum in Wiesbaden as an entomologist. Working at subjects in Botany and Zoology (KOCH 1879) he founded an entomological collection of Nassau and revised the Auchenorrhyncha of Central Europe. He published his mainwork about regional cicadas in 1868 (see KIRSCHBAUM 1868), describing 172 of 371 German-known species (KOCH 1879). In addition he collected many Hymenoptera. Till the death of his friend SCHENCK this part was reviewed by him.

About 50 years later Paul BLÜTHGEN (1880-1967) started a revision of the SCHENCK types in the collection of KIRSCHBAUM. Although BLÜTHGEN complained about SCHENCK's way of working, the order of labels shows that BLÜTHGEN did it in an untidy way as well. SCHENCK numbered all specimens in an alphabetical order according to the names of each genus. So BLÜTHGEN exchanged these labels of the showcases by SCHENCK (marked by black, handwritten numbers) for his own ones, taking away the originals. BLÜTHGEN determined some specimens and arranged them after a systematical index you can not trace back today. It is not done in an alphabetical way. So the order and following, a big part of SCHENCK's work, was totally destroyed (some old labels made by him are still under the specimens, but most of them are not found!). So it was very difficult to find the types mentioned by SCHENCK. The specimens were split in the collection of KIRSCHBAUM. But the types

are separated by the whole collection in the way of this publication in the MWNH now.

In this paper the types are categorized in alphabetical order. The designation of types is taken by SCHENCK's publications. Results are shown in the following way:

- At first the name of specimen by SCHENCK is listed (pay attention: in the 19<sup>th</sup> century *Halictus* and *Lasioglossum* are summed as *Hylaeus!*); additionally the original quotation and the condition of each specimen are mentioned.

- In closing each label is edited in the right order and separated to the following ones by a semicolon. Unreadable labels are shown as a question mark. They are originally written in Suetterlin.

See also SCHMIDT (1971) and SCHMID-EGGER (2002).

### Abbreviations

-	=	missing
?	=	unreadable label
C.	=	condition
f	=	female (original as the symbol of sex)
[h]	=	handwritten
m	=	male (original as the symbol of sex)
ok	=	specimen is totally complete (A1)
[p]	=	printed

### Results

***Andrena canescens*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 140  
Collektion Kirschbaum [p]; v.S. [h]; m [gedr.]; convatiuscula var. m [h]; *Andrena canescens*  
Sch m [h]  
C.: first left tarsus missing

***Andrena chrysopyga*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 139  
Collektion Kirschbaum [p]; v.S. [h]; f [p]; *Andrena chrysopyga* Sch f [h]  
C.: ok

***Andrena flavescens*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 138  
1. Collektion Kirschbaum [p]; f [p]; *Andrena flavescens* Sch f [h];  
2. Collektion Kirschbaum [p]; f [p]  
3. Collektion Kirschbaum [p]; f [p]  
C.: ok

***Andrena fulvida*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 132  
1. Kollektion Kirschbaum [p]; f [p]  
2. Kollektion Kirschbaum [p]; f [p]  
C.: left antenna missing; first left tarsus missing

***Andrena gibba*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 139

1. Kollektion Kirschbaum [p]; m [p]; *Andrena ovata* Sch m [h]
  2. Kollektion Kirschbaum [p]; f [p]; *Andrena gibba* Sch f [h];
  3. Kollektion Kirschbaum [p]; v.S. [h]; *Andrena gibba* Sch m [h]
- C.: first left tarsus missing; third left tarsus and right tarsus missing; ok

***Andrena parumpunctata*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 236

- Kollektion Kirschbaum [p]; m [p]; *Andrena parumpunctata* Schenck f [h]
- C.: left antenna missing

***Andrena picicrus*** SCHENCK, 1859; Jb. Ver. Naturk. Nassau 14: 250

- Kollektion Kirschbaum [p]; 620 [h]; f [p]; *Andrena picicrus* Schenck f [h]
- C.: right antenna missing

***Andrena rectangula*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 228

- Kollektion Kirschbaum [p]; m [p]; *Andrena reclangula* Schenck m [h];
- C.: head missing

***Biastes emarginatus*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 205

1. Kollektion Kirschbaum [p]; ? [h]; f [p]; Type [p]; *Biastes emarginatus* f Schck. det. Boes [h; p]; *Phiteremus kirbyanus* Latr. f [h]
  2. Kollektion Kirschbaum [p]; f [p]; Type [p]; *Biastes emarginatus* f Schck. det. Boes [h; p]
  3. Kollektion Kirschbaum [p]; m [p]; Type [p]; *Biastes emarginatus* f Schck. det. Boes [h; p.]
- C.: ok (Fig. 1).



Fig. 1: Female of *Biastes emarginatus* SCHENCK, 1853 (Photo: © H. ANDERT).

**Bombus confusus** SCHENCK, 1859; Jb. Ver. Naturk. Nassau 14: 151-152

1. Kollektion Kirschbaum [p]; m [p]

2. Kollektion Kirschbaum [p]; f [p]

C.: ok

**Dufourea vulgaris** SCHENCK, 1859; Jb. Ver. Naturk. Nassau 14: 206-207

1. Kollektion Kirschbaum [p]; f [p]; Dufourea minuta Lep f [h]

2. Kollektion Kirschbaum [p]; m [p]; Dufourea minuta Lep f [h]

3. Kollektion Kirschbaum [p]; f [p]; Kollektion Kirschbaum [p]; m [p]

C.: first left tarsus, second left tarsus and right left tarsus missing; ok

**Hylaeus albitarsis** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 148

v.S. [h]; Hal. fulvicornis K. m det. Blüthgen [h]; Hylaeus albitarsis Sch m [h]; Lecto-Typus [h]; p]; det. Andert Lasioglossum fulvicorne 2008 [p; h]

C.: right antenna missing

**Hylaeus apicalis** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 161

1. v.S. [h]; G. 5./9. [h]; Hal. malachurus m det. Blüthgen; Hylaeus apicalis Sch m [h]; Type [p.]

2. var. m [h]; Hal. longulur Sm m det. Blüthgen [h]

C.: ok

**Hylaeus bifasciatus** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 160

v.S. [h]; Hal. rufocinctus Nyl. m det. Blüthgen [h]; Hylaeus bifasciatus Schenck m [h]; Type [p]

C.: first right tarsus missing

**Hylaeus bisbistrigatus** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 162

1. Hal. lativentris Sch. f (bisbistrigatus Sch., decipiens Terkins) det. Bl. [h]; Hylaeus bisbistrigatus Sch f [h]; Type [p]

2. L. 4/6 [h]; v.S. [h]; Hal. lativentris Sch. (decipiens Perkins) f det. Blüthgen [h]; Hylaeus 4notatus K f [h]

C.: one broken; second left tarsus and second right tarsus missing

**Hylaeus clypearis** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 162

1. v.S. [h];? [h]; 646 [h]; Hylaeus clypearis Sch f [h]; Type [p]

2. 951 [h]; Hal. clypearis m det. Blüthgen[h]; clypearis n. sp. m [h]

3. v.S. [h]; 649 [h]; Hal. laevis K. m det. Blüthgen [h]; laevis K m [h]

C.: left and right antenna missing; ok

**Hylaeus convexiusculus** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 166

v.S. [h]; 16/9 [h]; 650 [h]; convexiusculus m Schck (wohl villosulus var) [h]; Hylaeus convexiusculus Sch m [h]; Neo-Typus [h; p]; LASIOGLOSSUM Evylaeus (SCHCK.) m

convexiusculum det. A.W.Ebmer 1975 [p; h]; Hylaeus ♂ convexiusculus SCH. Neotypus [h]

C.: ok

**Hylaeus flavitarsis** SCHENCK, 1859; Jb. Ver. Naturk. Nassau 14: 291

v.S. [h]; H 17/8 [h]; Hal. punctatissimus Sch. m det. Blüthgen [h]; Hylaeus flavitarsis Sch m [h]; Hololecto-Typus [h; p]; LASIOGLOSSUM m Evylaeus (SCHCK.) punctatissimum det.

A.W.Ebmer 1975 [p; h]; Hylaeus m flavitarsis SCH. Lectotypus [h]

C.: ok

**Hylaeus haemorrhoidalis** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 159

1. v.S. [h];C 7/9 [h]; Hylaeus hämorrhoidalis Sch. m [h]; Hal. pratinus SM. [h]; Rasse haemorrhoidales Sch. m det. Blüthgen [h]; Type [p]

2. Hal. pratinus Sm. Rasse haemorrhoidalis Sch. m det. Bl. [h]

C.: ok

***Hylaeus immarginatus*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 148  
v.S. [h]; Fgl 19/8 [h]; Hal. immarginatus Sch. det. Blüthgen [h]; *Hylaeus immarginatus* Sch m [h]; Lecto-Typus [h; p]; LASIOGLOSSUM *Evylaeus* ♂ *pauillum* (SCHCK.) det. A.W.Ebmer 1975 [p; h] *Hylaeus immarginatus* SCH. Lectotypus [h]

C.: left and right antenna missing

***Hylaeus laeviusculus*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 146  
v.S. [h]; Hal. fulvicornis K. m det. Blüthgen [h]; *Hylaeus laeviusculus* Sch f [h]; Lecto-Typus [h; p]; LASIOGLOSSUM *Evylaeus* f *fulvicorne* (K.) det. A.W.Ebmer 1975 [p; h]; *Hylaeus laeviusculus* SCH. Lectotypus [h]

C.: ok

***Hylaeus lucidulus*** SCHENCK, 1859; Jb. Ver. Naturk. Nassau 14: 292  
1. 295 [h]; Hal. lucidulus Sch. f (*tenellus* Sch. , *gracilis* Mar.) det. Blüthgen [h]; *nitidulus* f n.sp. [h]; *Hololectotypus* [h; p]; LASIOGLOSSUM *Evylaeus* f *lucidulus* det. A.W. Ebmer 1975 [p; h] backsite: *Hololectotyp* [h]  
2. 147 [h]; Hal. lucidulus Sch. f det. Blüthgen [h]  
3. 279 [h]; Hal. lucidulus Sch. f det. Blüthgen [h]  
4. 286 [h]; Hal. lucidulus Sch. (*tenellus* Sch. , *gracilis* Mar.) m det. Bl. [h]; *Hololecto-Typus* [h; p]; *tenellus* m n.sp. (vielleicht zu *lucidulus*) [h]; LASIGLOSSUM m *Evylaeus tenellus*; syn. zu *meidulum* (SCHCK.) det. A.W.Ebmer 1975 [p; h] backsite: *Hololectotyp* [h]  
C.: ok

***Hylaeus nanulus*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 164  
1. 268 [h]; 12/8 [h]; Hal. politus Sch.m det. Blüthgen; *Hylaeus nanulus* Sch. m [h]; Type [p]; No. 51 [h]  
2. v.S. [h]; 12/8 [h]; 597 [h]; Hal. politus Sch. m [h]; *nanulus* m Schck (wahrscheinlich m y *politus*) [h]; Type [p]; No. 51. [h]  
C.: second and third left tarsus missing; left and right antenna missing

***Hylaeus nigricornis*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 148  
v.S. [h]; Hal. mendax Alfk. (*affinis* Sch.) m var. det. Blüthgen [h]; *Hylaeus nigricornis* Sch m [h]; Lecto-Typus [h; p]; *Lasioglossum Evylaeus laticeps* (SCHCK.) det. A.W.Ebmer 1975 [p; h]; *Hylaeus* m *nigricornis* SCH. Lectotypus [h]  
C.: ok

***Hylaeus politus*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 163  
1. v.S. [h]; Hal. politus Sch. m det. Blüthgen [h]; *Hylaeus politus* Sch m [h]  
2. v.S. [h]; n. Wiesb 19/8 [h]; Hal. politus Sch. f det. Blüthgen [h]  
3. 166 [h]; Hal. politus Sch. f det. Blüthgen [h]  
4. 2 [h]; Hal. politus Sch. m det. Blüthgen [h]; *Hyl. etilis* n.sp. m (*an minutissimus* m) [h]  
5. 178[h]; Hal. politus Sch. m det. Blüthgen [h]  
6. 270[h]; Hal. politus Sch. m det. Blüthgen [h]  
7. 817[h]; Hal. politus Sch. m det. Blüthgen [h]  
8. 241[h]; Hal. politus Sch. m det. Blüthgen [h]  
9. 300[h]; Hal. politus Sch. m det. Blüthgen [h]  
C.: left antenna missing; left antenna missing; left antennna missing; right antenna missing; right antenna missing; ok

***Hylaeus punctatissimus*** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 147  
1. / 63 [h]; Hal. punctatissimus Sch. m det. Blüthgen [h]; *flavitaris* m Schck. [h]  
2. v.S. [h]; Hal. punctatissimus Sch. m det. Blüthgen [h], *Hylaeus minutulus* Schenck m [h]  
C.: ok

**Hylaeus pygmaeus** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 165  
v.S. [h]; Hal. pygmaeus Sch. (1853, nitidus Sch.) m det. Blüthgen [h]; Hylaeus pygmaeus  
Sch m [h]; Type [p]  
C.: caput, third left and third right tarsus missing, matted

**Hylaeus pygmaeus** SCHENCK, 1859; Jb. Ver. Naturk. Nassau 14: 293  
No. 8 [h]; No. 53 II. Stück [h]; Hal. semiluculus Alf. (pygmaeus Sch. 1895) det. Blüthgen [h];  
Hololecto-Typus [h; p]; Hylaeus m pygmaeus SCHCK. 1861 (1859) nec. Schck. 1853  
Hololectotypus [h]; LASIOGLOSSUM Evylaeus semiluceus (ALFK.) det. A.W.Ebmer 1975 [p;  
h]  
C.: ok

**Hylaeus quadrisignatus** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 150  
v.S. [h]; Hylaeus 4signatus Sch f [h]; Type [p]  
C.: caput missing

**Hylaeus rufipes** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 164  
1. v.S. [h]; H.17./8 [h]; 647 [h]; Hal. quadrisignatus Sch. m det. Blüthgen [h]; Hylaeus rufipes  
Sch m; Type [p]  
2. v.S. [h]; H. 17./8. [h]; 647 [h]; Hal. quadrisignatus m det. Blüthgen [h]; Hylaeus rufipes Sch  
m [h]; Type [p]  
C.: caput and first left tarsus missing; ok

**Hylaeus tomentosus** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 295  
v.S. [h]; Cap 18/6 [h]; 643 [h]; Sphecodes incanus n.sp. (früher tomentosus) [h]; Hylaeus  
formentosus Schenck f [h]; Hal. patinus Sm. f Rasse haemorrhoidalis Sch. det. Blüthgen [h];  
Type [p]  
C.: ok

**Stelis nana** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 204  
Kollektion Kirschbaum [p]; m [p]; v.S. [h]; Stelis nana Schenck m [h]  
C.: ok

**Stelis pygmaea** SCHENCK, 1853; Jb. Ver. Naturk. Nassau 9: 204  
1. Kollektion Kirschbaum [p]; f [p]; v.S. [h]; Stelis pygmaea Schenck f [h];  
2. Kollektion Kirschbaum [p]; f [p]; Stelis pygmaea f Schenck ? non Heriades truncorum [h];  
3. Kollektion Kirschbaum [p]; m [h]; Stelis pygmaeus [h];  
4. Kollektion Kirschbaum [p] m [h]; Stelis pygmaea m Schenck [h]  
C.: ok

**Crabro argenteus** SCHENCK, 1857; Jb. Ver. Naturk. Nassau 12: 62  
Kollektion Kirschbaum [p]; f [gedr.]; cephalotes Variatät mit ? clypearis [h]; Solenius  
argenteus Sch. f [h]; Belegexemplar Beitr. Ent. 21, 1/2: 61 ff 1971 [p; h]; ECTEMNIUS  
lituratus K.Schmidt f 12.67 PANZ [h; p]  
C.: right antenna missing

**Pompilus basalis** SCHENCK, 1857; Jb. Ver. Naturk. Nassau 12: 240  
Kollektion Kirschbaum [p]; m [p]; Pompilus basalis Sch f [h]; Originalexemplar I.N.V.N. XII.  
1857 fig. 240 [p; h.]  
C.: ok

**Psen fulvicornis** SCHENCK, 1857; Jb. Ver. Naturk. Nassau 12: 216  
Kollektion Kirschbaum [p]; f [p]; Psen fulvicornis Sch. f [h.]; HOLOTYPUS 1970 K.Schmidt [p;  
h.]; Type [p]; Belegexemplar Beitr. Ent. 21, 1/2: 61 ff. 1971 [p; h]; Psenulus fulvicornis  
Schenck f det. Schmid-Egger 2002 Holotypus [p]; Holotypus [p]

C.: ok



Fig. 2: Female of *Tachytes obscuripennis* SCHENCK, 1857 (Photo: © H. ANDERT).

***Tachytes obscuripennis*** SCHENCK, 1857; Jb. Ver. Naturk. Nassau 12: 190  
Kollektion Kirschbaum [p]; m [p]; *Tachytes obscuripennis* Sch. m [h]; Type [p];  
Belegexemplar Beitr. Ent. 21, 1/2 61ff. 1971 [p; h]; 1970 Belegexemplar M2. Naturio Arch. 9:  
15ff [h; p]; HOLOTYPUS 1970 K.Schmidt [h;p];  
C.: ok (Fig. 2).

***Nysson linealotus*** SCHENCK, 1857; Jb. Ver. Naturk. Nassau 12: 161  
Kollektion Kirschbaum [p]; f [p]; *Nysson lineolatus* Sch. f; NYSSON maculatus K. Schmidt f  
[p; h]; Belegexemplar Beitr. Ent. 21, 1/2: 61 ff. 1971 [p; h]; Type [p];  
C.: ok

Following types are mentioned in Jb. Ver. Naturk. Nassau no. 9, 12, or 14, but cannot be found in the collection of MWNH:

*Andrena albipes* SCHENCK, 1853, *Andrena fasciatella* SCHENCK, 1853, *Andrena fuscohirta* SCHENCK, 1853, *Andrena griseola* SCHENCK, 1859, *Andrena laeviuscula* SCHENCK, 1853, *Andrena lepida* SCHENCK, 1859, *Andrena lutescens* SCHENCK, 1853, *Andrena plantaris* SCHENCK, 1853, *Andrena subfasciata* SCHENCK, 1853, *Coelioxys distincta* SCHENCK, 1859, *Coelioxys gracilis* SCHENCK, 1859, *Coelioxys longiuscula* SCHENCK, 1859, *Coelioxys parvula* SCHENCK, 1859, *Coelioxys tridenticulata* SCHENCK, 1859, *Colletes similis* SCHENCK, 1859,



*Hylaeus affinis* SCHENCK, 1853, *Hylaeus albidus* SCHENCK, 1859, *Hylaeus atratulus* SCHENCK, 1853, *Hylaeus convexus* SCHENCK, 1853, *Hylaeus coriarius* SCHENCK, 1853, *Hylaeus exilis* SCHENCK, 1859, *Hylaeus longicornis* SCHENCK, 1853, *Hylaeus marginellus* SCHENCK, 1853, *Hylaeus minutulus* SCHENCK, 1853, *Hylaeus obscurata* SCHENCK, 1853, *Hylaeus parvulus* SCHENCK, 1853, *Hylaeus pauxillum* SCHENCK, 1853, *Hylaeus pusillus* SCHENCK, 1853, *Hylaeus quadrimaculatus* SCHENCK, 1853, *Hylaeus sexmaculatus* SCHENCK, 1853, *Hylaeus similis* SCHENCK, 1853, *Hylaeus sinuata* SCHENCK, 1853, *Hylaeus sublaevis* SCHENCK, 1859, *Hylaeus tenellus* SCHENCK, 1859, *Hylaeus trifasciatus* SCHENCK, 1853, *Megachile atriventris* SCHENCK, 1853, *Megachile villosa* SCHENCK, 1859, *Nomada nigrita* SCHENCK, 1859, *Sphecodes subovalis* SCHENCK, 1853, *Stelis minima* SCHENCK, 1859,

*Crabro pictus* SCHENCK, 1857, *Pompilus intermedius* SCHENCK, 1857, *Priocnemis maculipennis* SCHENCK, 1857, *Vespa rufoscutellata* SCHENCK, 1853, *Vespa tridens* SCHENCK, 1853.

### Discussion

These results show a typical situation of old collections. In comparison with intact individuals the number of broken and well reserved ones is mostly balanced. Something special is the history of working on this material. The opinion of BLÜTHGEN that the collection would be in an unacceptable condition seems to be wrong now. How the author could see BLÜTHGEN himself was the person destroying order and systematics in the collection of KIRSCHBAUM (see Introduction). The whole collection has to be revised for future studies. Just one specimen of *Hylaeus bisbistrigatus* is totally broken so it will be difficult to check it. Damage by insects could not be found. But for the action of revising we have to get an impression of the collection's part situated in the Senckenbergmuseum Frankfurt/Main. For the author it was not possible to get an access (logical reasons were not given!).

There were some other difficulties in preparation of this paper. Because of the handwritten labels in the collection of Kirschbaum some information are missed. We cannot really determine which label was written by who. The yearbooks no. 9, 12, 14 and 71 of the association of Nassau give just an insight which labels could be written by KIRSCHBAUM and BLÜTHGEN themselves. The printed ones "Holotypus" in all probability are from the middle of the 20th century. So we cannot be of the opinion, that SCHENCK declared his determinations for new such like BLÜTHGEN. In addition SCHENCK could not discern some of his own described species in later years. Some really new species get a new name though having given one by himself (BLÜTHGEN 1919) some years before. As we can see SCHENCK saw that some of his "new species" were not really new in systematics. He recognized that new species were just males of other species. In the 19th century it had to be a real problem (BLÜTHGEN 1919). SCHENCK described them as new species. Determined individuals got a synonym by

their own author. For example he described the queen of *Bombus confusus* as a male because of no information about genitalic preparation in his time.

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