



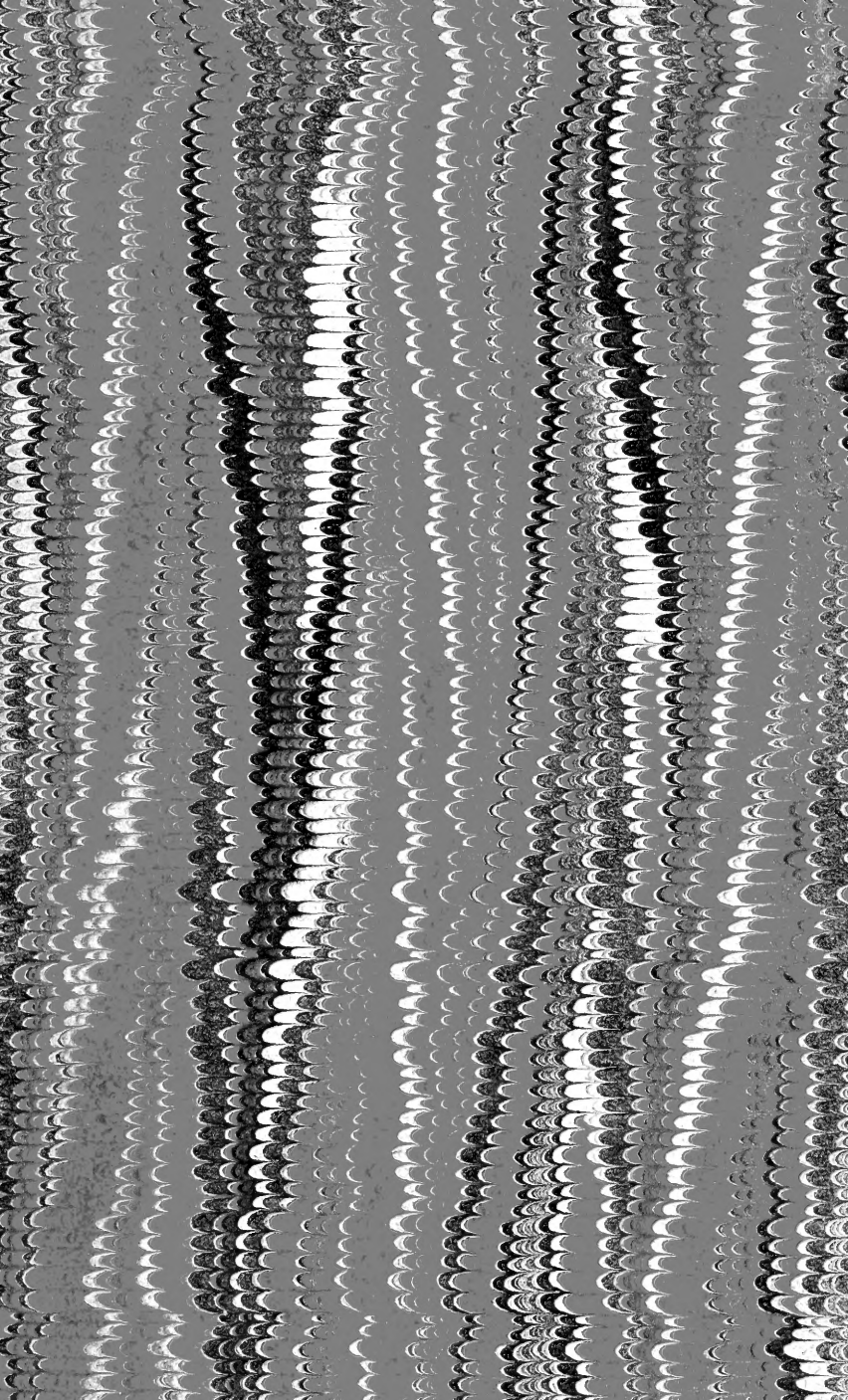


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*Ent Medd vol 4*

# ENTOMOLOGISKE MEDDELELSER

UDGIVNE AF

ENTOMOLOGISK FORENING

VED

FR. MEINERT.

*vol 4*

FJERDE BIND.

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MED 5 TAVLER.

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KJØBENHAVN.

H. HAGERUPS BOGHANDEL.

TRIERS BOGTRYKKERI (H. J. SCHOU).

1893 - 1894.

QL461  
E92

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Fortegnelse  
over  
**Zoologisk Museums Billelarver.**

*Larvæ Coleopterorum Musci Hauniensis.*

Af

**Fr. Meinert.**

(Fortsat fra 3. B. p. 205).

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Scydmænidæ.

85. *Eumicrus.*

149. *Tarsatus* Müll. u. Kunz.

Randers (O. Jacobsen).

Museet eier en Larve, taget selv fjerde i en Kompostdyng i Randers. To af de fire Larver klækkedes og gave *Eumicrus tarsatus*, 24. 8. 84; jfr. iøvrigt Meinert, Scydmænus-Larven, dette Tidsskr. 1. B. p. 144. t. I. f. 1—7.

Silphidæ.

86. *Necrophorus.*

150. *Humator* F.

Kjøbenhavn.

En enkelt Larve findes med denne Betegnelse og etiketteret med Schiødtes egen Haand.

151. Investigator Zett. — Nat. Tidsskr. 3. R. 1. B. p. 226.  
Sjælland (Drewsen).

2 voxne og 3 unge Larver haves.

152. Mortuorum F. — Nat. Tidsskr. 3. R. 1. B. p. 226.  
t. VIII. f. 11—18.

Nord Sjælland (Drewsen).

Nogle faa Larver og temmelig mange Pupper ere  
givne Museet af Hr. Chr. Drewsen.

(Ruspator Er. see Investigator).

153. Vespillo L. — Nat. Tidsskr. 3. R. 1. B. p. 225. t.  
VIII. f. 1—10.

Kjobenhavns Omegn (Drewsen).

Der haves 3 voxne Larver.

#### 87. *Necrodes*.

154. Littoralis L.

Soro (Schlick).

Museet har modtaget adskillige Larver af Hr. Schlick,  
som har taget dem i stort Antal under Hundeaadsel i  
Mai 1868 paa den angivne Localitet sammen med  
Imagines.

#### 88. *Silpha*.

155. Atrata L.

Sjælland.

Der haves paa Museet adskillige Larver uden yder-  
ligere Angivelse af nærmere Localitet eller Oplysning  
om Giveren, men desuden har Samme modtaget af  
Hr. Joh. Boye et Par Larver og nogle Pupper med  
Larvehude samt en ganske frisk Imago af denne Art,  
tagne alle tilsammen.

156. Carinata Ill.

Falster.

Der haves kun en frisk Imago med Larvehud.

157. Inæqualis F.

Missouri (C. V. Riley).

Museet har faaet 2 Larver og en Puppe af Prof. Riley.

158. Japonica Motsch.

Nangasaki.

Museet har gjennem Generalconsul Pallisen i Petersborg faaet en sex Larver sammen med et Par Stykker af Imago.

159. Obscura L. — Nat. Tidsskr. 3. R. 1. B. p. 227. t. IX. f. 15—19.

Nykjobing p. Falster; Thisted.

Foruden mange Larver uden nærmere Localitets Angivelse haves der paa Museet en frisk Imago med Larvehud samt tre smaa Larver med Imago, tagne ved Thisted paa tør Kalkbund (Meinert). Iovrigt ere de Larver, som have tjent Schiodte til Beskrivelse og Afbildning, forsvundne fra Museet.

160. Opaca L.

Kjøbenhavns Omegn; Falster.

Der haves en stor Mængde Larver deels fra Falster (Meinert) deels fra Kjøbenhavns Omegn, hvor den for nogle Aar siden gjorde endeel Skade paa Runkelroer og kunde tages i stort Antal sammen med Imago.

161. Quadripunctata L.

Danmark.

En lille Række Larver ere fundne i Museets Magasiner af danske Billelarver og bestemt efter Reiters Bestemmelsestabel, Erichson Ins. Deutschl. I. 3. B. 2. Abtheil. p. 284. Artsbestemmelsen volder her ingen Vanskelighed.

162. Reticulata F.

Danmark.

Nogle faa Larver, fundne i Magasinerne; dog er Bestemmelsen sikker nok.

163. Rugosa L. — Nat. Tidsskr. 3. R. 1. B. p. 227. t. IX. f. 1—14.

Kjøbenhavns Omegn.

Der haves en stor Mængde Larver, Pupper og ganske friske Imagines med Larvehude, tagne alle tilsammen.

164. Thoracica L.

Vemmetofte (Meinert).

Endeel Larver, tagne sammen med Imagines paa gamle mosgroede Bøgestubbe i Strandskoven ved Vemmetofte, 26. 6. 84. Bestemmelsen stemmer ogsaa godt med Reitters Tabel.

165. Tristis Ill.

Danmark.

En Række Larver af Museets Magasiner, bestemte efter Reitters Tabel.

### 89. *Leptinus*.

166. Testaceus Müll.?

Sjælland (Løvendal).

Der haves fire smaa, silpheagtige Larver med Etikette: »Med *Leptinus testaceus* i et huult Træ«.

### 90. *Adelops*.

167. Hirtus. Tellk.

Mammouth Cave, Kentucky (C. V. Riley).

### 91. *Choleva*.

168. Fumata Spence. — ? Nat. Tidsskr. 3. R. 1. B. p. 228. t. X. f. 1—6.

Kjøbenhavn.

En enkelt Larve findes opstillet under dette Navn og etiketteret af Schiodte; men da Larven mangler Hoved, og saaledes antages at være brugt af Schiodte til hans Fremstilling, og da *Ch. fusca* Panz., som Schiodte, l. c., angiver at have fremstillet, ikke mere findes paa Museet, er det rimeligst, at Schiodte har ombestemt den af ham under Navn af *Ch. fusca* fremstillede Larve, saa at det i Virkeligheden er *Ch. fumata* Spence og ikke *Ch.*

fusca Panz., som Schiodte her har givet en Afbildning og Fremstilling af.

(Fusca Panz).

Henved en Snes Larver og en Puppe ere tagne af Hr. Schlick paa Aadsel i Kjældere i Kjøbenhavn, paa hvilken Localitet kun denne Art findes; sammen med Larver og Pupper toges mange Imagines. Angaaende Schiodtes Ch. fusca see Fumata.

### 92. *Liodes.*

169. Glaber Kug. — Nat. Tidsskr. 3. R. 1. B. p. 229. t. X. f. 7—16.

Falster (Schiodte).

Der haves endeel Larver, tagne af Schiodte i Stovsvampe paa Fyrrestubbe i Hannenov Skov sammen med Imagines.

170. Humeralis Kug.?

Falster (Meinert).

En større Række Larver ere tagne sammen med Imagines i Hannenov Skov nær Nykjøbing p. F., i Svamp paa Fyrrestubbe. Ogsaa Hr. Koch har taget over en Snees af samme Larve sammen med Imagines i Dyrehaven i Bovister paa El (de ere nu i Hr. Schlicks Samling). — Larverne ere meget forskellige fra Schiodtes *L. glabra*.

### 93. *Agathidium.*

171. Mandibulare Sturm. — Nat. Tidsskr. 3. 1. B. p. 229. t. X. f. 17—20 og 3. B. t. III. f. 1 (Puppen).

Lolland (Schlick).

De af Schiodte fremstillede Stykker findes ikke mere paa Museet, men Hr. Schlick har taget over en halv Snees Larver sammen med Imagines i Stovsvampe i Bangs Have nær Maribo; et Par Stykker af Larverne har han skjænket Museet.

## Scaphidiidæ.

94. *Scaphisoma*.172. *Agaricinum* L.?

Nord Sjælland.

Der haves et stort Antal Larver, tagne sammen med Imagines paa Boge i Svampe under Bark; dog er Bestemmelsen noget tvivlsom.

## Histeridæ.

95. *Platysoma*.173. *Depressum* F. — Nat. Tidsskr. 3. R. 3. B. p. 153. t. II. f. 2—5.

Nord Sjælland.

Museet eier en større Række Larver, tagne sammen med Imagines under Bark paa Bogestubbe paa forskellige Steder i Nord Sjælland.

96. *Hister*.174. *Cadaverinus* Ent. H.

Amager; Sæby.

En halv Snes Larver ere tagne sammen med Imagines i Sandgrave nær Sæby i Vendsyssel (Meinert, 9—11. 7. 87), og en Imago med bagved liggende Larvehud er taget paa Amagerfælled (Meinert).

175. *Unicolor* L. — Nat. Tidsskr. 3. R. 3. B. p. 152. t. I. f. 1—26.

Amagerfælled.

Der haves mange Larver, tagne i tør Kogjødning, og en ganske lyserød Imago med Larvehud; Imago er klækket af en hjembragt Larve (Meinert). Larverne lave til Puppeleie en løs Cocon af Græsrodde, Jord og tør Gjødning.

97. *Carcinops*.176. *Quattuordecimstriata* Steph. (*pumilio* Er.).



Kjøbenhavn (Løvendal).

Museet har modtaget af Hr. Løvendal over en Snees af disse Larver, tagne i et Bageri her i Staden sammen med mange Imagines; de leve i Affald af Meel og Brød.

98. *Saprinus*.

177. *Nitidulus* Payk.

Sæby (Meinert).

Der haves kun en enkelt voksen Larve, tagen sammen med Imagines i en Sandgrav nær Sæby i Vendsyssel. I samme Sandgrav fandtes vel ogsaa mange Larver af *Hister cadaverinus*; men *Saprinus*-Larven er let kjendelig ved sine meget lange, trinde Cerci, og nogen anden Art end *S. nitidulus*, som ogsaa var den eneste *Histeride*, som foruden *H. cadaverinus* fandtes der, kan det alene paa Grund af Larvens Størrelse ikke være.

99. *Murmidius*.

178. *Ovalis* Beck.

Washington D. C. (C. V. Riley).

Museet skylder Prof. Riley en halv Snees Larver og nogle Pupper, som med deres Spind vare fæstede til Riis-Korn.

Phalacridæ.

100. *Olibrus*.

179. *Ergoti* (Walsh) Casey.

Indiana (C. V. Riley).

Prof. Riley har sendt Museet en Imago og to Larver under dette Navn.

Nitidulidæ.

101. *Brachypterus*.

180. *Gravidus* Ill.

Nord Sjælland (Schlick).

Syv Larver ere tagne sammen med Imagines i Blomsten af *Linaria* af Hr. Schliek, som har skjænket Museet et Par Stykker af dem.

102. *Carpophilus*.

181. *Dimidiatus* F.

South Carolina (C. V. Riley).

182. *Hemipterus* L.

Californien (C. V. Riley).

103. *Epuræa*.

183. *Æstiva* L.

Kjøbenhavn.

Der havés over en halv Snees Larver og nogle Pupper samt Imagines, tagne sammen i en skimlet Humlerede i Kjøbenhavns Omegn.

184. *Obsoleta* F.?

Rude Hegn.

En syv Larver findes paa Museet med denne Bestemmelse og angives som tagne under Granbark i Rude Hegn. Nogen nærmere Begrundelse til Bestemmelse af denne Art ligesom ogsaa af den følgende findes iøvrigt ikke mere.

185. *Variiegata* Herbst.?

Dyrehaven.

Der havés en otte Larver af denne Art.

(*Nitidula quadripustulata* F.).

Hr. Schliek eier fem Larver, tagne sammen med Imago paa gamle Been paa Flaaddet ved Tranekjær.

104. *Soronia*.

186. *Grisea* L.

Kjøbenhavn.

Tre Larver findes paa Museet uden nærmere Betegnelse end det anførte Navn og Localiteten. Heller ikke findes der længere Imago, dog maa Artsbestemmelsen indenfor Slægten have været let.

187. Punctatissima Ill.

Sjælland.

Der haves fire voxne, kraftige Larver, men uden nærmere Betegnelse, ligesom den foregaaende Art.

105. *Phenolia*.

188. Grossa L.

Missouri (C. V. Riley).

106. *Stelidota*.

189. Geminata Say.

Missouri (C. V. Riley).

107. *Pocadius*.

190. Ferrugineus F.

Kjøbenhavn; Dyrehaven.

Fra Kjøbenhavns Omegn haves en halv Snees voxne, kraftige Larver, tagne i Stovsvampe, og nogle flere, men yngre Larver haves uden nærmere Angivelse end Dyrehaven.

108. *Ips*.

191. Ferrugineus L.

Stendalsgaards Plantage (Sporon).

Museet har modtaget af Hr. Skovrider Sporon en Mængde Larver fra den angivne Naaletræsplantage sammen med Imago.

192. Quadriguttatus F.

Sorø (Meinert).

Der haves en meget stor Mængde Larver, tagne sammen med Imagines under Bøgebark ved Sorø i Juni 1854.

193. Quadripustulatus L.

Rude Hegn.

Museet eier en Snees Larver fra den angivne Localitet, vistnok tagne under Granbark.

109. *Rhizophagus*.

194. Depressus F.

Rude Hegn.

Der haves kun en enkelt Larve fra den angivne Localitet, uden nærmere Betegnelse.

195. Grandis Gyll.

Gjelte Skov (Løvendal).

Museet har modtaget fire Larver af Hr. Løvendal, tagne i Gran 6. 4. 90.

#### Trogositidæ.

##### 110. *Nemosoma*.

196. Parallelum Melsh.

Washington D. C. (C. V. Riley).

##### 111. *Temnochila*.

197. Virescens F.

Californien (C. V. Riley).

##### 112. *Trogosita*.

198. Mauritanica L.

Kjøbenhavn.

Der haves mange Larver, navnlig fra Bagerier her i Staden (Løvendal).

##### 113. *Peltis*.

199. Ferruginea L.

Dyrehaven (Meinert).

Museet eier et Par smaa, halvvoxne Larver, tagne sammen med Imago i en ormstukken Hvidtjørnstanme paa Eremitagesletten i Dyrehaven.

##### 114. *Thymalus*.

200. Limbatus F.

Sjælland; Algérien.

Foruden et Par voxne Larver fra Sjælland uden nærmere Betegnelse haves herved en Snees Larver, tagne ved Mokta el Hadia, nær Bône, i Korkege sammen med Imago (Meinert).

## Colydiidæ.

115. *Ditoma*.201. *Crenata* Herbst.

Nord Sjælland.

Almindelig under tør Bøgebark. Paa Museet haves henimod en Snees Larver med Imagines, tagne sammen med Larverne.

## Cucujidæ.

116. *Cucujus*.202. *Hæmatodes* Er.

Schlesien (Hagen).

Museet eier en Larve og en Puppe fra det angivne Land, modtagne af Prof. H. Hagen.

117. *Hemipeplus*.203. *Marginipennis* Lec.

Florida (C. V. Riley).

118. *Brontes*.204. *Planatus* L.

Mellem Italien (Bergsøe).

Dr. Vilh. Bergsøe har skjænket Museet en halv Snees Larver og nogle Imagines, som han har taget sammen under Egebark ved Arizzia, nær Rom.

119. *Læmophloeus*.205. *Ferrugineus* Steph.

Kjøbenhavns Rhed (Løvendal).

Museet har erholdt en stor Mængde Larver med mange Pupper og Imagines af Hr. Lovendal, som har taget dem sammen i et Skib, der var kommet med en Ladning Riis fra Rangoon i Bagindien. Samme Gang toges ogsaa Imagines af *Læm. pusillus*, men alle de Imagines, som bragtes Museet, tilhøre udelukkende forstnævnte Art, og Pupperne og Larverne ere vel ogsaa for store til at kunne henfores til den anden, mindre Art.

120. *Pediacus*

206. *Depressus* Herbst.

Kjøbenhavn (Løvendal).

Der haves henimod en Snees Larver, tagne under Bark paa gammelt Egetømmer paa Tommerpladse ved Kjøbenhavn.

121. *Silvanus*.

207. *Cassiæ* Reiche.

Alabama (C. V. Riley).

Prof. Riley har sendt Museet saavel Larve som Puppe og Imago.

208. *Surinamensis* L.

Kjøbenhavn (Løvendal).

Hr. Løvendal har skjænket Museet en Række Larver samt nogle Pupper og Imagines, tagne sammen i Bagerier her i Staden.

(*Nausibius dentatus* Marsh).

I Hr. Schlicks Samling findes tre Stykker af Larven, tagne indtørrede i Puddersukker.

## Cryptophagidæ.

122. *Antherophagus*.

209. *Silaceus* Herbst.

Nord Sjælland (Løvendal).

Museet eier en otte store *Cryptophag*-agtige Larver, tagne af Hr. Løvendal sammen med Imagines i en Humle-rede fra Kjøbenhavns Omegn. Ogsaa Hr. Schlick har taget samme Art i Humlereder.

123. *Cryptophagus*.

210. *Lycoperdi* Herbst.

Knudshoved (Boye).

Museet har modtaget af Hr. Joh. Boye mange Larver, tagne i Støvsvampe paa Knudshoved, nær Vordingborg.

211. *Pilosus* Gyll.

Schlesien (Hagen).

Der haves en fem Larver og en Puppe, givne Museet af Prof. H. Hagen.

## Latridiidæ.

(Monotoma rufa Redt.)

Fire Larver, tagne sammen med Imagines i et Bageri i Kjøbenhavn, findes i Hr. Schlicks Samling.

124. *Latridius*.212. *Minutus* L.

Kjøbenhavn (Schlick).

Hr. Schlick har klækket Arten og skjænket Museet fire Larver og en Puppe.

213. *Rugosus* Herbst.

Dyrehaven.

En lille Række Larver findes sammen med Imagines opstillede paa Museet.

## Mycetophagidæ.

125. *Mycetophagus*.214. *Atomarius* F.

Dyrehaven; Sorø.

Foruden nogle faa Larver, som Museet har fra Dyrehaven, haves ogsaa et større Antal Larver, Pupper og Imagines, tagne i Træsved nær Sorø; iøvrigt klækkede Hr. Schlick Imagines af hjembragte Larver.

215. *Multipunctatus* Hellw.

Sjælland.

Museet eier et stort Antal Larver og en enkelt Puppe, tagne forskellige Gange i Bog i Nord Sjælland, og henved en Snees Larver tagne sammen med Imagines i Eg (Meinert); der findes ogsaa Prover af Larvens Gnav i tort Elleved fra Kjøbenhavns Omegn. Hr. Schlick har



klækket Larven og skjænket Museet et Par Imagines med Larvehude.

216. *Obsoletus* Marsh.

Washington D. C. (C. V. Riley).

Museet skylder Prof. Riley en Larve og to Pupper.

217. *Quadripustulatus* L.

Dyrehaven; Falster; Midt Jylland (Schjødte).

Paa Museet findes mange Larver, tagne paa de angivne Localiteter af Prof. Schjødte; navnlig er den engang taget i Antal med Pupper og Imagines i Bogesvamp paa Falster.

218. *Variabilis* Hellw. (*piceus* F.).

Charlottenlund.

Der haves en Mængde Larver samt faa Pupper og Imagines, tagne sammen i Egeved. Hr. Koch har klækket Larven.

*126. Litargus.*

219. *Tetraspilotus* Lec.

West Virginia (C. V. Riley).

*127. Mycetæa.*

220. *Hirta* Marsh.

Kjøbenhavn; Nord Sjælland.

Museet eier et meget stort Antal Larver, tagne med Imagines, som tildeels endnu vare ganske blege, i Gulvsvamp i et Pakhuus her i Staden (Meinert); et ringere Antal Larver ere tagne i en Humlerede i Nord Sjælland (Lovendal).

*Dermestidæ.*

*128. Byturus.*

221. *Tomentosus* F.

Kjøbenhavn.

Der haves en stor Mængde Larver, tagne i Hindbær fra Kjøbenhavns Omegn.

129. *Dermestes.*222. *Atomarius* Er.

Faxe Strand; Bøtø. .

Museet har modtaget en Mængde Larver og nogle Pupper samt endeel tomme Larvehude af Hr. Schlick, som har taget dem ved Faxe Strand og tildeels klækket dem. Ogsaa fra Falster haves en Mængde Larver samt enkelte Pupper og Imagines, tagne sammen paa Sandet ved Bøtø.

223. *Frischii* Kug.

Kjøbenhavn.

Denne Klanner er gjentagne Gange tagen i Mængde, Larver og Imagines sammen, i Hvidgarverier ved Kjøbenhavn; i størst Antal er den dog tagen, sammen med Imagines og en Puppe, i Kranier hjembragte af Hr. Oluf Lange fra Caucasus, 23. 7. 90.

224. *Laniarius* Ill.

Falster; Midt Jylland.

Fra Falster haves to voxne Larver og en Imago, tagne ved smaa Aadsler i en Grusgrav, og fra Ry i Midt Jylland en ganske lys Imago og en Puppe, tagne i Bøgeved.

225. *Lardarius* L.

Kjøbenhavn.

Der haves nogle store Larver og endeel mindre tomme Larvehude samt en Imago uden nærmere Betegnelse end den angivne Localitet.

226. *Murinus* L.

Danmark.

Fire Larver findes opstillede under dette Navn, blot med Localitetsangivelsen »Dania«.

227. *Undulatus* Brahm.

Tübingen (Meinert 1868).

En Larve, en tom Larvehud og den klækkede Imago haves.

228. *Vulpinus* F.

Kjøbenhavn (Tauber).

Nogle Pupper, endeel tomme Larvehude samt mange Imagines ere skjænkede Museet af Hr. Tauber. Larverne havde før Forpupningen gnavet sig ind i Siderne af Insektkasser fra China og forpuppet og forvandlet sig her.

130. *Attagenus*.

229. *Pellio* L.

Kjøbenhavn.

Der haves nogle Larver og Larvehude samt en Imago, tagne for mange Aar siden i det militære Klædeoplag i Kjøbenhavn.

131. *Megatoma*.

230. *Undulata* L.

Dyrehaven (Meinert).

Der haves en enkelt voxen Larve, tagen sammen med Imago i Egestolperne til Dyrehusene i Jægersborg Dyrehave; den levede i *Callidium variabiles* Larvegange.

132. *Tiresias*.

231. *Serra* F.

Sjælland; Algérien.

Museet har modtaget et Par voxne Larver af Hr. Schlick, som har klækket Arten. Mange Larver og et Par Pupper fandtes ogsaa sammen med den foregaaende *Megatoma*-Art i Dyrehusene i Dyrehaven men uden tilsvarende Imago (Meinert). Ogsaa fra Mokta el Hadia, nær Bône i Algérien, haves et Par Larver, tagne i gamle Korkege (Meinert).

133. *Anthrenus*.

232. *Claviger* Er. (*fuscus* Latr.).

Kjøbenhavn.

En meget betydelig Mængde af *Anthrenus*-Larver og Pupper ere i Aarenes Lob tagne i Insektkasser her paa

Museet. Alle eller ialtfald største Delen af dem maa henfores til ovennævnte Art, som sandsynligviis er indkommen fra Museets Samlinger af Pattedyr og Skind.

233. Varius F.

Kjøbenhavn.

Et Par tomme Larvehude, som have tjent Imago til Puppeleie, ere fundne paa Museet.

134. *Trinodes*.

234. Hirtus F.

Sjælland; Lolland.

Museet har modtaget et Par Larver af Hr. Schlick, som har fundet dem ved Maribo, i Antal sammen med Imago; et tredie Stykke fra Sjælland er givet af Joh. Boye.

Byrrhidæ.

135. *Nosodendron*.

235. Fasciculare Oliv.

Fyen (Schiodte).

Der haves mange Larver, tagne i udsvedende Saft af Elme.

136. *Byrrhus*.

236. Fasciatus Oliv.

Nord Sjælland; Grønland.

Der haves en Mængde Larver, tagne paa forskjellige Steder i Nord Sjælland (navnlig er den fundet i Antal i Charlottenlund under Mos (Meinert, Juli 1860); fra Grønland, hvor ingen anden ægte Byrrhus findes, sendes den jævnlgt herved, saaledes sidst af Hr. Lundbeck. Der findes ogsaa en Imago med Puppe og Larvehud, fra Sjælland (Meinert).

237. Pilula L.

Nord Sjælland.

Museet eier et Par halvvoxne Larver samt Imago med Larvehud.

137. *Cytilus*.

238. Varius F.

Lolland; Færøerne.

Nogle voxne Larver samt Pupper og Imagines med Larvehud ere tagne under Steen i en Leergrav ved Sundby, ligeoverfor Nykjøbing p. F. (Meinert). Fra Færøerne ere et Par Larver hjembragte af Districtslæge Ad. Bergh.

138. *Pedilophorus*.

239. Æneus F.

Nord Sjælland.

Et Par Larver ere skjænkede Museet af Hr. Schlick, som har taget dem paa Ørholm Fællede, 27. 4. 90, og klækket hjembragte Larver.

## Georyssidæ.

139. *Georyssus*.

240. Pygmæus F.

Falster (Meinert).

Desværre haves der kun en Larvehud, en Puppe og en frisk udkroben Imago af den hidtil ukjendte Udvikling af denne Familieform; de fandtes i en Gruusgrav nær Nykjøbing p. F.

## Parnidæ.

140. *Psephenus*.

241. Lecontei Lec.

New York; Venezuela.

Af Prof. Riley har Museet modtaget tre meget store Larver fra New York, medens et meget betydeligt Antal senere er hjembragt fra Venezuela (Meinert). I Venezuela fandtes den i de fleste større Vandløb med rivende Strøm, siddende pres op til Undersiden af Smaasten; paa Grund af sin Form, Farve og Fastklamren kunde

navnlig de yngre Individer let oversees, naar Stenene bleve tagne op til Undersøgelse.

141. *Parnus*.

242. *Prolifericornis* F.?

Syd Sjælland (Meinert).

Et større Antal Larver toges kravlende paa Undersiden af Stene i en Bæk ved Vemmetofte Strand, Juni og Juli 1884. Larven ligner meest den af Léon Dufour, Ann. sc. nat. sér, 4. tom. XVII. p. 226. pl. 1. f. 10, beskrevne og afbildede Larve af *Macronychus*, men deels er Léon Dufours Bestemmelse, efter hans eget Udsagn, usikker, ligesom den heller ikke stemmer med den Larve, som Prof. Riley har sendt Museet af denne Slags, deels bave vi slet ikke Slægten hos os. At dømme efter Størrelsen og efter de andre Slægtsformer her fra Landet, som ere kjendte, kan det ikke være andet end en ægte *Parnus* og uden Tvivl *P. prolifericornis*, der uden Sammenligning er vor almindeligste, meest udbredte Art. Ved Kroppens trinde Form stemmer vor Larve med den af Beling, Beitr. z. Biol. einig. Käf, aus d. Fam. Dasyllidæ u. Parnidæ, Verh. zool. bot. Ges. z. Wien XXXII. p. 437, beskrevne *P. auriculatus*, men Sculpturen er snarere knopret end naaleridset o. s. v.

142. *Elmis*.

243. *Æneus* Müll.

Nord Sjælland.

Der haves en halv Snees Larver.

143. *Limnius*.

244. *Dargelasi* Latr. (*tuberculatus* Müll).

Fure Sø.

Museet eier en halv Snees Larver, tagne med Imago paa Undersiden af Smaasteen paa Bredderne af Fure Sø.

144. *Macronychus*.

245. *Glabratus* Say.  
Michigan (C. V. Riley).

## Heteroceridæ.

145. *Heterocerus*.

246. *Flexuosus* Steph. (*femoralis* Kiesenw.).

Amager; Mellem Italien.

Museet eier sex Larver med denne Bestemmelse og Angivelse af Amager som Findested, men desforuden haves der fra Rom (Meinert 1868) endeel Larver og end flere Pupper med vedhængende Larvehude samt nogle Imagines, som, omend ikke med fuld Sikkerhed, ere bestemte som *Het. flexuosus*.

247. *Hispidulus* Kiesenw.

Vendsyssel (Schjødte).

Der haves fem Larver med denne Bestemmelse og Angivelse af Localitet.

248. *Lævigatus* Panz.

Fyen (Meinert).

Femten Larver og en Imago haves; de ere tagne sammen i det østlige Fyen paa Bredderne af en Mergelgrav.

249. *Obsoletus* Curt.

Nykjøbing p. F.

En halv Snees Larver samt en Imago haves fra den angivne Localitet; ogsaa fra Amager haves en voxen Larve og sex Pupper med Larvehude, som sandsynligviis høre til samme Art.

## Lucanidæ.

146. *Lucanus*.

250. *Cervus* L.

Æbleø (Thomsen).

Et Par halvvoxne Larver ere skjænkede Museet for



et Par Aar siden af Hr. Fyrmester S. Thomsen paa Æbleø ved Bogense.

251. *Tetraodon Thuub.*? — Nat. Tidsskr. 3. R. 9. B. p. 342 t. XV. f. 12—15.

Mellem Italien (Bergsøe).

Tre temmelig smaa Larver, tagne i en Stub ved Gennazano i Mellem Italien, ere skjænkede Museet af Dr. Vilh. Bergsøe. Ved det aftagne Hoved og de af dette deelvis udtagne Munddele viser det ene Stykke sig at være brugt til Schiodtes Fremstilling af *Lucanus Cervus*, men Larven er saa forskjellig fra de to ovenfor omtalte, danske Stykker af *Lucanus-Larver*, at den unulig kan være samme Art; men nogen anden europæisk og italiensk Art end *Luc tetraodon* kan der saa ikke tænkes paa.

#### 147. *Dorcus.*

252. *Musimon Géné.*

Algérien (Meinert).

En halv Snees Larver og et Par Imagines haves; de ere tagne sammen i gamle Kørkege ved Mokta el Hadia, nær Bône i Algérien.

253. *Parallelopipedus L.* — Nat. Tidsskr. 3. R. 9. B. p. 345. t. XVII. f. 1—10 og t. XIX. f. 14—15.

Nord Sjælland.

Der haves mange Larver og Pupper. Arten lever i gamle, forraadnende Bogestubbe, og hele Udviklingsrækken tages ofte sammen i stort Antal.

#### 148. *Platycerus.*

254. *Caraboides L.* — Nat. Tidsskr. 3. R. 9. B. p. 349. t. XVII. f. 11—21.

Fyen; Falster.

Et større Antal Larver og et Par Pupper ere tagne i Fyen af Hr. L. Lund, i August 1864, og skjænkede Museet; en Imago med Larvehud og fem Pupper haves fra Falster, hvor de ere tagne i en Bogestub.

149. *Sinodendron*.

255. *Cylindricum* L. — Nat. Tidsskr. 3. R. 9. B. p. 353.  
t. XVIII. f. 1—10 og t. XIX. f. 16.

Nord Sjælland.

Museet eier et Antal Larver og Pupper af denne  
let kjendelige Art.

150. *Leptaulax*.

256. *Bicolor* F.?

Kar Nicobar (*Galathea-Exp.*).

Sammen med en ganske frisk, uudhærdet Imago  
findes en lille Larve fra den angivne Localitet.

151. *Passalus*.

257. *Cornutus* F.

New York (L. Lund).

Der haves kun tre Pupper, som i Juli 1880 ere  
tagne sammen med en frisk, blod Imago i Nærheden af  
New York. Angaaende Schiodtes Fremstilling see den  
næste Art.

152. *Paxillus*.

258. *Pentaphyllus* Beauv.? — Nat. Tidsskr. 3. R. 9. B.  
p. 356. t. XVIII. f. 12—19 og t. XIX. f. 17.

Louisiana (Kroyer).

Syv meget smaa Larver og en' meget lille Puppe  
skjænkede Museet af Prof. Kroyer, som har taget dem  
ved Beloxi i Louisiana. Puppen kan nu umuligt være  
*Passalus cornutus* F., saaledes som Schiodte har bestemt  
den af ham, i. e., fremstillede *Passalide* (p. 366—67 be-  
skrives Puppen), og Larven er der ingen Grund til at  
skille fra Puppen, hvad Schiodte da heller ikke har  
gjort. Min Bestemmelse anseer jeg for den rimeligste,  
omend ikke ganske sikker. — Jeg maa maaskee her  
udtale mig lidt om den store Vanskelighed med at hen-  
føre navnlig *Passalidernes* Larver til bestemte Arter.

Som bekjendt leve Passaliderne i gamle, forraadnende Stammer og store Grene eller tildeels i Jorden under dem, men ofte leve flere Arter ikke blot paa samme Localitet, men ogsaa i samme Træ eller Green. Her at holde Arterne ude fra hverandre er ofte meget vanskeligt eller næsten umuligt, og jeg har derfor brugt som Regel slet ikke at tage Passalide-Larver, naar jeg har truffet to Arter sammen. Jeg antager derfor, at de tre følgende Arter, som jeg nu skal opføre, ere »rene«, men svare derfor kan jeg ikke ganske, da to Arter af Larver vel kunne have levet sammen, uden at begge Imagines have været tilstede, eller ogsaa kunde jo den ene Art af Imago være overseet af mig. Er ingen Imago bleven truffen, har jeg naturligviis slet ikke taget Larverne.

### 153. *Neleus*.

259. *Interruptus* Say.

Venezuela (Meinert).

Der haves endeel Larver og fire Pupper fra de varmere Egne af Venezuela, saasom La Moka, St. Estéban og Las Trincheras. I December bleve Pupper, Larvehud, spæde Larver, Æg og Imagines tagne sammen i St. Estéban.

260. *Punctatissimus* Eschsch.

Venezuela (Meinert).

Der haves endeel Larver og fem Pupper fra La Moka og St. Estéban.

261. *Punctiger* Serv.

Venezuela (Meinert).

Endeel Larver haves men ingen Pupper. Foruden de sikre Larver, tagne med Imago af Arten alene, haves ogsaa endeel Passalide-Larver, tagne sammen med Imagines af *Neleus punctiger* og af *Passalus cephalotes*, af hvilke de fleste vistnok hore til den forstnævnte Art,

men en enkelt idetmindste er forskjellig fra Hovedmassen og vistnok horer til *Passalus cephalotes*.

Scarabæidæ.

154. *Scarabæus (Ateuchus)*.

262. *Semipunctatus* F.? — Nat. Tidsskr. 3. R. 9. B. p. 321. t. XV. f. 1—4.

Mellem Italien (Bergsøe).

Paa Museet findes ikkun et større Kuld spæde Larver, tagne af Bergsøe ud af en Gjødningspille. Af disse Larver mangler den ene Hovedet, medens de samlede Kjæber og Underløbe endnu ligge i Glasset. Sandsynligviis er det den saaledes behandlede spæde Larve, som har tjent Schiødte til Gjenstand for hans Undersøgelser. Med Hensyn til Artsbestemmelsen kan jeg kun meddele, at Bergsøe angiver at have taget Larverne paa Monte Casino, og at der i den opstillede Hovedsamling paa Museet findes fra Bergsøe saavel *Sc. semipunctatus* F. som *Sc. laticollis* L. (den sidste Art i størst Antal).

155. *Canthon*.

263. *Lævis* Drury.

Missouri (C. V. Riley).

156. *Copris*.

264. *Lunaris* L.

Slesvig (Joh. Boye).

Der haves ikkun en Cocon med en indtørret Puppe og Rester af en Larvehud, men dog altid nok til at sikre Bestemmelsen, hvis Museet engang skulde overkomme Larven.

157. *Aphodius*.

265. *Fossor* L. — Nat. Tidsskr. 3. R. 9. B. p. 328.

Tyrol (Meinert, 1868).

Fem Larver og fire Pupper forefindes med Rudimenterne af en Imago, tagne sammen ved Razzes i Syd Tyrol.

266. Granarius L. — Nat. Tidsskr. 3. R. 9, B. p. 327.

Amager (Meinert).

Der haves over en halv Snees Larver, nogle Pupper og en frisk, lys Imago, tagne sammen i fed Jord.

267. Rufipes L. — Nat. Tidsskr. 3. R. 9. B. p. 324. t. XIV. f. 10—16 og t. XIX. f. 10.

Nord Sjælland.

Museet eier en halv Snees Larver og tre Pupper, men nærmere Oplysninger til Artsbestemmelse findes nu ikke.

158. *Ammoecius*.

268. Brevis Er. — Nat. Tidsskr. 3. R. 9. B. p. 328. t. XV. f. 1—4 og t. XIX. f. 11.

Rorvig (Joh. Boye).

Museet har modtaget af Hr. Boye tre Larver, som tilligemed Imago ere tagne i Sandet ved Rorvig i Ods herred i August 1862.

159. *Heptaulacus*.

269. Villosus Gyll.?

Aalborg.

Museet eier fem Larver, som angives at være tagne sammen med Imago i forraadnende Planter under Sand paa Hvorup Bakker N. f. Aalborg. Dog allerede den opgivne Localitet gjør mig Bestemmelsen mistænkelig.

160. *Euparia*.

270. Castanea Serv.

Alabama (C. V. Riley).

161. *Geotrupes*.

271. Stercorarius L. — Nat. Tidsskr. 3. R. 9. B. p. 336. t. XVI. f. 1—18 og t. XIX. f. 13.

Amagerfælled; Nordsjælland; Veile.

Der haves endeel Larver, men ingen Pupper, og heller ikke ligger der nogen Imago ved til Bestemmelse af Arten, om saadanne end i sin Tid have foreligget. Larven kan graves op paa Fælleder (Amager, Meinert) under tør Kogjødning eller ved Plojning om Foraaret i Brakmarken (Engelholm ved Veile, Bergsøe).

272. *Mesoleius* Thoms. (spiniger Marsh.)?

Hellebæk (Meinert).

Der haves Æg, en halv Snees Larver, en Puppe med Larvehud og en Imago, som af Schiodte er bestemt som *G. spiniger* Marsh. (*mesoleius* Thoms.), men i sin Bearbejdelse af *Scarabæ*-Larverne har han ikke taget Hensyn til disse Dyr eller til denne Bestemmelse.

#### 162. *Trox*.

273. *Fabricii* Reiche? — Nat. Tidsskr. 3. R. 9. B. p. 332. t. XV. f. 5—11 og t. XIX. f. 12.

Algérien (Meinert).

En enkelt, knap halvvoxen Larve er taget sammen med en Imago af den angivne Art under Steen ved Sétif i Algérien. Imago er sikkert *Tr. Fabricii* og ikke *Tr. sabulosus*, som Schiodte har bestemt den; men Henførelse af Larven til Imago er langt fra sikker.

(*Sabulosus* L. see *Fabricii*).

#### 163. *Serica*.

274. *Brunnea* L. — Nat. Tidsskr. 3. R. 9. B. p. 317. t. X. f. 10—13.

Vest Jylland (Meinert).

Museet eier et Par mutilerede Larver, mange Pupper og en frisk Imago, tagne sammen paa en højere, tør Plet i Engene til Nørre Vosborg, nær Holstebro.

#### 164. *Rhizotrogus*.

(*Fallenii* Gyll. see *Ochraceus*).

275. *Insularis* Reiche.

Algérie (Meinert).

Der haves fire Larver, tagne sammen med et Par Imagines, nær Bône i Algérie.

276. *Ochraceus* Knoch — Nat. Tidsskr. 3. R. 9. B. p. 313. t. XII. f. 6—12 og t. XIX. f. 9.

Midt Jylland.

Museet eier fire Larver og en Puppe af en *Rhizophagus*, tagne i Juni 1856 nær Viborg (Schiodte?).

277. *Solstitialis* L.

Fyen; Thy.

Der haves en stor Mængde *Rhizophagus*-Larver, tagne nær Svendborg i Oktober 1887 (Bergsøe), som paa Grund af Localiteten maae være denne Art. I Thy er der taget en Imago med Larvehud (Meinert). Flere af Larverne fra Svendborg fandtes angrebne af den udvendigt snyltende Larve til *Tiphia femoralis*, jfr. en Afhandling i dette Tidsskrift betitlet: »St. Hans Oldenborren, *Rhizophagus solstitialis* og dens snyltende Hvepselarve (*Tiphia femoralis*?) af Dr. phil. Vilh. Bergsøe og Udgiveren, 1. B. p. 125.

### 165. *Polyphylla*.

278. *Occidentalis* L.

New Hampshire (C. V. Riley).

### 166. *Melolontha*.

279. *Hippocastani* F. — Nat. Tidsskr. 3. R. 9. B. p. 313.

Nørre Jylland.

Fra Vendsyssel (Lovendal) haves to fuldvoxne Larver, som efter Localiteten maae være denne Art; derimod ere de fjorten Stykker, som haves fra Engelholm ved

Veile (Bergsoe) ikke saa sikkert; thi omend Mel. Hippocastani her findes aldeles overveiende mod Mel. vulgaris, forekommer dog ogsaa sidstnævnte Art her, og Schiodtes Artsdiagnose for Mel. Hipp. er ikke tilstrækkelig til med Sikkerhed at afgjøre Henforelsen af Veile-Larverne til Art.

280. Vulgaris F. — Nat. Tidsskr. 3. R. 9. B. p. 310. t. XIII. f. 1—5, og t. XIX. f. 8—9.

Nord og Syd Sjælland; Falster.

Der haves en stor Mængde Larver og Pupper fra forskellige Egne paa Sjælland og Falster, hvor denne Art er eneraadende.

### 167. *Phyllopertha*.

281. Horticola L. — Nat. Tidsskr. 3. R. 9. B. p. 307. t. XII. f. 8—15 og t. XIX. f. 6—7.

Sjælland; Jylland.

Museet eier en meget stor Deel Larver og Pupper, navnlig fra Jylland, saaledes Norupgaard, opbloiede paa en Sandmark, 12. 5. 87 (Bergsoe), og Vendsyssel, i Dec. 1876 (Past. Deichmann-Brandt). Fra Nord Sjælland (Meinert) haves ogsaa endeel Larver og Pupper; fra Sorø (Meinert) haves der et Par Larver og en Imago med Larve- og Puppehud; Arten klækkedes.

### 168. *Anomala (Euchlora)*.

282. Ænea De G. — Nat. Tidsskr. 3. R. 9. B. p. 304. t. XII. f. 1—7 og t. XIX. f. 5.

Sjælland; Nørre Jylland.

Der havdes kun et gammelt, maadeligt Stykke af Larven fra Sjælland (Joh. Boye) og en Puppe taget sammen med en Imago ved Roden af Mareholm ved Klitmøller i Thy (Meinert). Senere har Museet faaet en voksen Larve, taget i Sand paa Ørholm Fæled.

(Frischii F. see Ænea).



169. *Antichira*.283. *Lucida* Oliv.?

Venezuela (Meinert).

Museet eier ni voxne Larver, tagne sammen med Imago i en Stub ved Las Trinchéras, 14. 11. 91.

170. *Parastasia*.284. *Confluens* Westw. — Nat. Tidsskr. 3. R. 9. B. p. 294. t. X. f. 1—10 og t. XIX. f. 3.

Nicobar Øerne (Galathea-Exped.).

Syv Larver, voxne og meget unge, samt sex Pupper og Imagines, tagne sammen i Januar 1846 paa Nangkovi, ere hjembragte af Galathea (Kjellerup).

171. *Pelidnota*.285. *Lucida* Burm.?

Venezuela (Meinert).

Museet eier fem Larver, tagne sammen med Imago i en Stub ved Las Trinchéras, 9. 11. 91; men da der foruden disse fem Larver ogsaa fandtes andre Scarabæ-Larver i samme Stub, er Bestemmelsen ikke saa sikker, som ønskeligt var.

172. *Ligyris*.286. *Fossor* Latr.?

Venezuela (Meinert).

Endeel Larver, navnlig halvvoxne (forudsat at de hore til denne Art), toges sammen med flere Imagines i tor Kogjødning paa de tørre Bakker ovenover Mayaquite, nær La Guayra, 17. 1. 92.

173. *Oryctes*.287. *Nasicornis* L. — Nat. Tidsskr. 3. R. 9. B. p. 290. t. IX. f. 1—8 og t. XIX. f. 1—2.

Nord Sjælland.

Endeel Larver og Pupper haves med denne Loca-

litetsangivelse; sandsynligviis ere de alle tagne i Gjødningsatsen om Mistbænke og i Garverier i eller ved Kjøbenhavn.

174. *Strategus*.

288. *Aloeus* L.?

Venezuela (Meinert).

En Dynastide-Larve blev taget i stort Antal i en Stub ved Las Trinchéras, 20. 12. 91, sammen med Resterne af en Imago af *Str. Aloeus*; Larverne vare dog alle temmelig smaa i Forhold til Imagos Storrelse. — Paa St. Jean toges, 1. 2. 92, endeel store Dynastide-Larver, som alene efter Storrelsen ikke godt kunde være andet end en af de paa Jomfru-Øerne forekommende *Strategus*'er; men hvilken Art kan ikke afgjores med Sikkerhed.

175. *Dynastes*.

289. *Neptunus* Quens.?

Venezuela (Meinert og Levinsen).

Sex meget store Dynastide-Larver toges ved Las Trinchéras i gamle, paa Jorden liggende, forraadnede Stammer. Af egentlige Dynastider kan der efter den givne Localitet ikke godt tænkes paa nogen anden Art end *Dyn. Neptunus*, men muligt kunde det ogsaa være en *Golofa* og da rimeligviis *Gol. Porteri* Hope.

176. *Xylotrupes*.

290. *Gideon* L. — *Nat. Tidsskr.* 3. R. 9 B. p. 287. t. VIII. f. 1—7.

Java.

Der findes to Larver fra denne Ø. Arten er jo længst bekjendt og den almindeligste Dynastide-Art i hele det indiske Archipelag, hvorfra ogsaa Museet har modtaget Imago i stor Mængde, saa Bestemmelsen kan være sandsynlig nok.

177. *Megasoma*.

291. *Elephas* F.?

Surinam (*Mus. Zool. hafn.*).

Museet har af »Studiesamlingen« (Prof. Lütken) modtaget en colossal Dynastide-Larve med meget lille Hoved, som jeg efter dens Storrelse har henført til denne Slægt; derimod er det meget usikkrere om det er Arten Elephas.

178. *Phileurus*.

292. Sp.

St. Jean (Meinert).

I en Stub paa nævnte Ø toges, 31. 1. 92, en Imago af en særdeles lille Phileurus-Art med bagved liggende Larve- og Puppehud. Arten har jeg ikke kunnet bestemme, men den er langt mindre end nogen anden Art, som Museet eier.

179. *Cotinis (Allorhina)*.

293. Nitida L.

New Jersey (C. V. Riley).

180. *Euphoria*.

294. Inda L.

Washington D. C. (C. V. Riley).

181. *Tropinota*.

295. Squalida L.?

Algérie (Meinert).

Der haves en enkelt Larve, taget sammen med Imago ved Mokta el Hadia, nær Bône i Algérie.

182. *Cetonia*.

(Ænea And. see Floricola).

296. Aurata L.?

Nord Sjælland.

Af denne vor almindeligste Art findes tre Larver fra Dyrehaven samt i to Coconer en indtorret Puppe med Larvehud og en anden Larvehud. Puppen og Larvehudene høre vistnok til denne Art, da den af den

ene Cocon udkrøbne Imago maa have være let at bestemme i sin Tid.

297. Floricola Herbst. — Nat. Tidsskr. 3. R. 9 B. p. 300. t. XI. f. 13—20 og t. XIX. f. 4.

Rude Hegn.

Museet eier endeel Larver, baade voxne og halvvoxne, tagne i Reder af Form. rufa, hvor man hyppigt finder denne Art.

298. Marmorata F.?

Herlufsholm (Davidsen).

En i Forhold lille Cocon er skjænket Museet af daværende Adjunct Davidsen. Ved Aabningen af Coconen fandtes en indtørret Larve.

183. *Osmoderma*.

299. Eremita L. — Nat. Tidsskr. 3. R. 9. B. p. 297. t. XI. f. 1—12.

Sjælland.

Fra gammel Tid haves en voxen Larve og Puppe fra Herlufsholm (Adj. Davidsen); senere hen er der taget to voxne Larver og fire Pupper i en Eg i Bognæs Skov ved Roskilde (Lovendal.)

184. *Gnorimus*.

300. Variabilis L.

Midt Sjælland; Lolland.

En halv Snees voxne Larver ere skænkede Museet af Hr. Lovendal, som har taget dem sammen med Pupper og Imagines i Eg og El paa Vindstrup Overdrev, V. f. Tjustrup So. Fra Christianssæde Skove paa Lolland haves syv andre Larver, tagne i Eg (Lovendal).

Büpreprestidæ.

185. *Euchroma*.

(Columbicum Mann. see Goliath).

301. Goliath Cast. et Gory. — Nat. Tidsskr. 3. R. 6. B. p. 369. t. I. f. 1—15.

Venezuela (Schibbye).

Der haves kun det af Schiødte fremstillede, nu mutilerede Stykke af en Larve, som efter Størrelse og Findested (Valencia i Venezuela) ikke godt kan være andet end den angivne Slægt og Art.

186. *Dicerca*.

302. Obscura F.

New York (C. V. Riley).

Museet har modtaget fem Larver af Prof. Riley.

187. *Buprestis (Ancylochira)*.

303. Rufipes Oliv.

Florida (C. V. Riley).

304. Rustica L. — Nat. Tidsskr. 3. R. 6. B. p. 371.

Razzes (Meinert).

Museet eier fem Larver, tagne sammen med flere Imagines i Fyrrestammer ved det angivne Badested i Syd Tyrol.

188. *Eurythyrea*.

305. Micans F. — Nat. Tidsskr. 3. R. 6. B. p. 370.

Algérien (Meinert).

Der haves en halv Snees Larver, tagne sammen med Imago i Poppelstammer nær Bône i Algérien.

189. *Anthaxia*.

306. Candens (F.) Panz. — Nat. Tidsskr. 3. R. 6. B. p. 373. t. II. f. 9—12.

Mellem Italien (Bergsøe).

Museet eier sex Larver, tagne sammen med en død Imago i Egebark ved Gennazano, i April 1863.

190. *Chrysobothris*.

307. Affinis F. — Nat. Tidsskr. 3. R. 6. B. p. 372. t. II. f. 1—8.

Sjælland; Mellem Italien.

Larven lever i tyk Bark paa Bogestubbe og Eg, og Museet

eier en betydelig Deel Larver og Pupper, dels fra Grib Skov i Nord Sjælland (Meinert) dels fra Gennazano i Mellem Italien (Bergsøe), begge Steder tagne sammen med Imagines.

308. Femorata Oliv. (F.).

Missouri (C. V. Riley).

Et Par Larver og en Puppe ere sendte af Prof. Riley.

191. *Agrilus*.

309. Biguttatus F. — Nat. Tidsskr. 3. R. 6. B. p. 374. t. II. f. 13—17.

Tübingen (Meinert, 1868).

Der haves henved en Snees Larver og endnu flere Pupper og Imagines, tagne sammen i Egestubbe.

192. *Trachys*.

310. Minuta L. — Nat. Tidsskr. 3. R. 6. B. p. 375. t. II. f. 18—22.

Falster (Meinert).

Museet eier over en Snees Larver, tagne i Redsle Skov paa Nord Falster, hvor de minerede i Hassellov; Imagines toges sammesteds ved Nedbankning.

Eucnemidæ.

193. *Melasis*.

311. Buprestoides L. — Nat. Tidsskr. 3. R. 6. B. p. 490. t. III. f. 1—12.

Midt Jylland (Meinert).

Der haves en fem til sex Larver og tre Pupper, tagne sammen med Brudstykker af Imagines i en uddod Bogestamme ved Rye; Larverne laae alle sammenbukkede i deres Gange.

Elateridæ.

194. *Agrypnus*.

312. Fuscipes F.?

Nangkovri (Galathea-Exped.).

Der haves en enkelt Larve hjembragt af Galathea. Larven ligner særdeles meget en *Adelocera*-Larve, men denne Slægt findes ikke paa Nicobarerne, hvor derimod *Agrypnus*-Slægten med dens to store Arter, *fuscipes* F. og *luridus* F., er almindelig; til en af disse to Arter maa Larven antages at høre.

195. *Adelocera (Agrypnus)*.

313. *Punctata* Herbst. — Nat. Tidsskr. 3. R. 6. B. p. 504 t. V. f. 8.

Mellem Italien (Bergsøe).

Museet har modtaget en halv Snees Larver, tagne i Kastanie- og Egestubbe ved Gennazano.

(*Atomaria* F. see *Punctata*).

196. *Lacon*.

314. *Murinus* L. — Nat. Tidsskr. 3. R. 6. B. p. 507. t. VI. f. 2—8.

Danmark.

Der haves over en halv Snees Larver, store og smaa, tagne rundt om i Landet; i storst Antal er den funden i Dyrehaven paa Eremitage Sletten under Steen og tor Kogjødning.

197. *Alaus*.

315. *Myops* F.? — Nat. Tidsskr. 3. R. 6. B. p. 500. t. V. f. 5—7.

Louisiana (Krøyer).

Der haves en enkelt Larve, hjembragt af Prof. Krøyer fra Beloxi, hvorfra han ogsaa bragte endeel *Imagines* hjem med sig. Dog en *Alaus* er Larven neppe; at domme efter de ydre Characterer og da navnlig *Spiraklerne*, skulde jeg ansee den for en *Chalcolepidius*, men Arten er naturligviis ubestemmelig.

316. *Oculatus* L.?

Florida og Missouri (C. V. Riley).

Museet har modtaget af Prof. Riley en Larve fra Florida og en Puppe fra Missouri. Om Puppen nærer

jeg ingen begrundet Tvivl, men med Hensyn til Larven maa jeg bemærke følgende. Den stemmer godt med Beskrivelsen af denne Larve i Chapuis og Candèzes Catalogue des Larves des Coleoptères, p. 142 (hvor dog Fabricius angives som Artens Opstiller), mindre godt med Afbildningen, Pl. V. f. 3. At det er samme Larve, som Harris korteligt skal have beskrevet er vel en Mulighed, men heller ikke mere. Jeg anseer nu den af Riley sendte Larve for en Chalcolepidius, muligt samme Art, som jeg har taget i Mængde i Venezuela, nemlig *Ch. porcatus* L.; jfr. det Følgende.

198. *Hemirhipus*.

317. *Fascicularis* F.

Missouri (C. V. Riley).

199. *Chalcolepidius*.

318. *Erythroloma* Cand.?

Oahu (Galathea-Exped.).

Galathea hjembragte foruden Larven tre Imagines af denne Chalcolepidius, efter Opgivelse ligeledes fra Oahu; men der kjendes ingen Art af Slægten udenfor Amerika, medens *Chalc. erythroloma* er vel kjendt fra Chile, hvilket Land Galathea ogsaa anløb paa Hjemrejsen. Jeg antager da, at Imagines ere fra Chile, men Larverne rigtigt fra Oahu, og heri bestyrkes jeg ogsaa ved, at vi fra Nicobarerne (Kar Nicobar) have fra samme Expedition tre andre Larver, hørende om ikke til samme Art saa dog til samme Slægt, som den af Schiødte beskrevne og afbildede Larve. Overhovedet anseer jeg de fire her omtalte Larver for slet ikke at høre til Chalcolepidius, men vel til en anden nærstaaende Slægt, hvilken kan jeg ikke afgjøre, men skal kun bemærke, at der fra Kar Nicobar ogsaa hjembragtes to Stykker af en Elater-Slægt, staaende nær ved *Melanactes*, som det efter



Størrelse og systematisk Stilling vel var muligt, at de kunde høre til.

319. *Herbstii* Er.?

St. Thomas (Meinert).

En enkelt Larve arbejdedes ud af en død Træstamme, 8. 2. 92; men Henforelsen til Art beroer kun paa, at denne Art vides at forekomme paa denne lille Ø.

320. *Porcatus* L. var. *Virens* F.

Venezuela (Meinert).

Der haves et større Antal Larver samt en Larvehud og en Puppehud, tagne bag en Imago, som jeg arbejdede ud af en Stub ved Las Trinchéras, 19. 12. 91. Under mit Ophold i Venezuela traf jeg ved min ihærdige Arbejden i Træstammer og Stubbe ofte paa meget store Elater-Larver, men af større Imagines fandt jeg kun *Chalc. porcatus* L. var. *Virens* F., i Alt en fem til sex Stykker. Ved nærmere Eftersyn og Sortering viste det sig, at det var to helt forskellige Larver, skarpest adskilte ved Bygningen af Spiraklerne særligt de thoracale. I Midten af December var jeg nu saa heldig at hugge en frisk, vel udhærdet, men endnu ikke udkroben *Chalc. virens* ud, og bag den laa naturligviis Larve- og Puppehud. Herved blev den ene Deel af Larverne sikkert bestemt. Den anden Deel betragter jeg som slægtsforskjellig, og der kan da efter Bygning og Størrelse samt mit Kjendskab til nærstaaende Slægter ikke godt være Tale om andet end *Alaus* og nærmere om den største Art af disse, *Al. oculatus*; dog er Bestemmelsen naturligviis usikker.

Dugès har, *Métamorphoses du Chalcolepidius zonatus* Eschsch., Ann. Soc. Entom. Belge. XXIX. p. 32. Pl. 2. f. 16—35, beskrevet og afbildet Udviklingshistorien af den her nævnte Elater. Larven lykkedes det ham at klække, men Beskrivelsen (og Afbildningen?) er væsent-

ligt gjort efter en Larve, som først senere hen fandtes, omend »dans les mêmes conditions d'habitat«, hvorfor den ikke har kunnet sammenlignes med den klækkede Larve. Beskrivelsen er bred nok, men de fleste Angivelser uden Betydning, og Afbildningerne er heller ikke til at bestemme Art efter, dog er det vel muligt eller rimeligt, at den horer til den angivne Slægt og Art.

### 200. *Semiotus*.

321. Sp?

Venezuela (Meinert).

Under den lose Bark paa gamle Træstammer, St. Estéban 4. 1. 92, fandtes et større Antal store, flade Elater-Larver, forskellige i Slægt fra de øvrige af mig kjendte Elater-Slægter. Efter Storrelse og Bygning ligger det nærmest at henføre dem til den Chalcolepidius nærstaaende Slægt *Semiotus*, som er meget udbredt i Venezuela; men nogen Imago af denne Slægt fandtes ikke sammen med Larverne, ligesaa lidt som nogen anden Elater, saa at Henførelsen er meget usikker.

### 201. *Campsosternus*.

322. Spp?

Nicobar-Øerne; Borneo; Nagasaki.

Fire Larver, hvoraf den ene er meget stor, haves fra de angivne Localiteter. Larverne ligne Chalcolepidius- og Alaus-Larverne, og Storrelsen, navnlig af det ene Stykke fra Nicobarerne, gjør, at de maae henføres til en nærstaaende Slægt med meget store Artsformer, altsaa rimeligviis til *Campsosternus*. Candéze har i Histoire des métamorphoses de quelques Coleoptères exotiques (VII), Ann. d. Soc. Entom. Belge 1889. p. 349. Pl. II. f. 5, beskrevet og afbildet en »*Campsosternus*«-Larve, som han selv erklærer for extrêment curieuse« og som fjernende sig langt fra andre kjendte Elater-Larver. Dette er rimeligt nok; thi Larven horer slet ikke til Elaterne, men til en

anden Familie, nemlig Rhipidoceridæ, jfr. Schiodtes Fremstilling af *Callirhipis Dejeanii*, Nat. Tidsskr. 3. R. 13. B. p. 419. t. XVIII. f. 1—16. Candèze vil have gjenfundet hos denne Larve flere Træk, som minde om den af Perris fremstillede, formodede *Cryptohypnus*-Larve, og mener, at de fra de to her nævnte Larver hentede Characterer væsentligt ville forandre *Elater*-Larvernes Characteristik: »la connaissance des premiers états des *Cryptohypnus* et des *Campsosternus* est venue apporter de notables modifications à leur [ø: *Élatérides*] formule caractéristique, telle qu'elle avait été posée antérieurement par Erichson et plus tard par Perris«, l. c. p. 353. Dette vilde være fuldkomment rigtigt, hvis den her fremstillede Larve horte til *Elateriderne*, eller hvis Perris' *Cryptohypnus*-Larve horte herhen, men heller ikke den sidste er nogen *Elateride*, saavidt jeg kan domme; i hvert Tilfælde er den ikke Larven til *Cryptohypnus riparius*; jfr. det Følgende, under denne Art. Iøvrigt er det Nietner, som har vildledet Candèze ved at opgive ham urigtigt Familie- og Slægtsnavn for den sendte Larve.

### 202. *Tetralobus*.

323. *Flabellicornis* L.?

Vest Afrika.

Der haves en enkelt Larve, kjøbt hos Naturaliehandler Umlauff i Hamborg, 1890. Larven er af en colossal Storrelse, noget længere og dobbelt saa bred, som de største *Chalcolepidius*-Larver, og maa altsaa have en colossal Imago, men af afrikanske og navnlig vestafrikanske Former kan da ikke godt tænkes paa andre end *Tetralobus*. Arten er sandsynligviis flabellicornis, som er en gammel, vel kjendt og udbredt Form fra Guinea Kysten.

### 203. *Anoplischius*.

324. *Laticollis* Eschsch.

Venezuela (Meinert).

Museet eier kun en Puppe med Larvehud. Puppen er saa kjendelig, at den med Sikkerhed kan bestemmes, og en Imago blev ogsaa taget lige i Nærheden. Nærmere Findested var den gamle Landevei fra Caracas til La Guayra, 17. 6. 91.

204. *Aeolus (Drasterius)*.

325. *Dorsalis* Say.

Indiana (C. V. Riley).

205. *Elater*.

326. *Balteatus* L.

Nord Sjælland (Meinert, 1864).

Der haves kun en Imago med Larvehud, gravet ud af et Jorddige.

(*Crocatus* Casteln. see *Ferrugatus*).

327. *Dibaphus* Schiø. — Nat. Tidsskr. 3. R. 6. B. p. 513. t. VIII. f. 5—6.

Lolland (E. Benzon og Meinert).

Museet eier syv Larver, tagne sammen med Imagines i Poppelstubbe i Nærheden af Sundby paa Lolland.

328. *Elongatulus* F. — Nat. Tidsskr. 3. R. 6. B. p. 514.

Nord Sjælland; Falster.

Der haves et Par Imagines med Larvehude, tagne i Ellestød.

(*Ephippium* F. see *Sanguinolentus*).

329. *Ferrugatus* Lacord. — Nat. Tidsskr. 3. R. 6. B. p. 514.

Nord Sjælland (Meinert).

Museet eier fem Larver, tagne sammen med Imago i en gammel huul Æblestamme i Bellevues Have, 4. 11. 65.

330. *Sanguineus* L.? — Nat. Tidsskr. 3. R. 6. B. p. 514.

Stockholm (Meinert, Juli 1863).

Der haves en Puppe med Larvehud, taget i en Fyrrestub nær Stockholm. Larvehuden tilhører uden Tvivl en Art af Slægten *Elater*, og efter Hudens og

Puppens Størrelse og efter Findestedet (Fyr) kan det ikke godt være andet end *El. sanguineus*. Perris har allerede, *Ann. Soc. Linn. Lyon XXII. p. 168*, gjort opmærksom paa Schiodtes Feilbestemmelse af denne Larve som *Elater (Ludius) ferrugineus* og meent, at det maatte være en ægte *Elater*. Schiodte havde ikke den ægte Larve til *El. ferrugineus*, da han behandlede *Elater-Larverne*, men Museet erhvervede sig denne kort efter; jfr. iøvrigt det Følgende.

331. *Sanguinolentus* Schrank.

Falster (Meinert).

Fem Larver haves, tagne sammen med Imago i El ved Nykjøbing p. F.

206. *Megapenthes*.

332. *Tibialis* Lacord.

Nord Sjælland (Løvendal).

Der haves fire Larver, tagne i Bog i Sælsolund.

207. *Ischnodes*.

333. *Sanguinicollis* Panz.

Der haves to Larver, kun betegrede med »*Dania*«.

208. *Cryptohypnus*.

334. *Riparius* F. — *Nat. Tidsskr. 3. R. 6. B. p. 517. t. IX. f. 8—9.*

Midt Jylland; Færøerne; Island.

Der haves mange Larver dels fra Viborg i Midt Jylland, hvor den er taget sammen med Imagines i Sandet paa Bredderne af Soen (Meinert), dels fra Færøerne (hvor der ikke findes nogen anden *Elateride*), hjembragt med Imagines saavel af Distriktslæge Ad. Bergh som fornyligt af Cand. Lundbeck, som ogsaa har taget endeel Larver ved Skutulsfjord paa Island. — Perris giver en Fremstilling og Afbildning af en Larve i *Historie des métamorphoses de divers Insectes, Mém. Soc. Roy. Sc. Liege 1856. tom. 10. p. 236. Pl. V. f.*

9—19, som han betegner som vor Art her. Som sædvanligt ere baade Fremstilling og Afbildning maadelige, men Fig. 17 paa Pl. V. er dog tilstrækkelig til at vise, at Perris' og Schiodtes Arter ere forskellige. Dog i dette Tilfælde holder jeg ubetinget paa Schiodtes Artsbestemmelse, og det saameget mere som det forekommer mig tvivlsomt, om Perris overhovedet her har havt en Elateride-Larve for sig; jfr. iovrigt Perris i Larves de Coléoptères (suite), Ann. Soc. Linn. Lyon. XXIII. p. 6—7, hvor han forkaster Schiodtes Bestemmelse. Hvad det er for en Larve, som Perris har havt for sig, er vanskeligt at sige; en Heteromer?

### 209. *Cardiophorus*.

335. Asellus. — Nat. Tidsskr. 3. R. 6. B. p. 494. t. IV. f. 1—11.

Nord Sjælland.

Der haves et Par Larver fra Myretuer saavel af Form. rufa (Rude Hegn?) som af Form. sanguinea (Teglstrup Hegn, Meinert).

336. Ruficollis L. — Nat. Tidsskr. 3. R. 6. B. p. 496.

Nord Sjælland; Midt Jylland.

Museet eier et større Antal Larver, tildeels tagne med Imagines, fra forskellige Steder i Nord Sjælland og et enkelt Stykke, taget i en Jordbunke ved Hald (Meinert).

### 210. *Melanotus*.

337. Castanipes Payk. — Nat. Tidsskr. 3. R. 6. B. p. 513. t. VII. f. 1—12.

Nord Sjælland.

Der haves en stor Mængde Larver fra Bogestubbe og en betydelig Deel Pupper, tagne sammen med mange Larver i trasket Lind; en Imago med Larvehud er taget i botanisk Have i Kjøbenhavn i Torvesmuld.

338. *Communis* Gyll.

Indiana (C. V. Riley).

Museet har modtaget Larve, Puppe og Imago af Prof. Riley.

211. *Limonius*.

339. *Æneoniger* De G. — Nat. Tidsskr. 3. R. 6. B. p. 517. t. IX. f. 6—7 og X. f. 1.

Syd Tyskland (Meinert 1868).

Museet eier en halv Snees Larver og ligesaa mange Pupper, tagne sammen med Imagines.  
(*Bructeri* Panz. se *Æneoniger*).

212. *Athous*.

340. *Hæmorrhoidalis* F. — Nat. Tidsskr. 3. R. 6. B. p. 525. t. VIII. f. 11.

Danmark.

Der haves henved en Snees Larver fra forskellige Egne af Landet og en Imago med Rester af Larve- og Puppehud fra Kjobenhavns Omegn i Torvesmuld (Meinert, October 1863).

341. *Niger* L. — Nat. Tidsskr. 3. R. 6. B. p. 525 t. VIII. f. 11.

Danmark.

Der haves henved en Snees Larver, men nærmere Oplysninger kunne ikke gives.

342. *Rhombeus* Oliv. — Nat. Tidsskr. 3. R. 6. B. p. 523. t. IX. f. 12 og t. X. f. 6.

Midt Jylland (Schiodte).

Sex Larver ere tagne ved Rye i Bøg; der angives om den, at den jager Larven til *Leptura scutellata*.  
(*Ruficaudis* Gyll. see *Hæmorrhoidalis*).

343. *Rufus* De G. — Nat. Tidsskr. 3. R. 6. B. p. 522. t. X. f. 5.

Stockholm (Meinert).

Der haves kun en enkelt stor og kraftig Larve, taget i en Fyrrestub ved Stockholm, i Juli 1863; nærmere Oplysninger til Bestemmelsen findes ikke.

344. *Subfuscus* Müll. (Gyll.). — Nat. Tidsskr. 3. R. 6. B. p. 526. t. IX. f. 13—14.

Nord Sjælland.

Museet eier over en Snees Larver fra forskellige Steder i Nord Sjælland, sex Pupper (tildeels med Larvehude) fra Rude Hegn, tagne i Jordtuer (Meinert), og en Imago med Larve- og Puppehud fra Kjobenhavns Omegn (Meinert, Oktober 1863).

### 213. *Corymbites (Diacanthus)*.

345. *Æneus* L. — Nat. Tidsskr. 3. R. 6. B. p. 519. t. VIII. f. 8 og X. f. 3.

Danmark.

Der haves et større Antal Larver samt nogle Imagines med Larvehude fra forskellige Egne af Landet; den tages navnlig paa Fællede under Steen.

346. *Bipustulatus* L.?

Syd Sjælland (Joh. Boye).

Tre Larver, tagne under Mos paa Elletræ, ere skjænkede Museet af Hr. Joh. Boye. Dog har Schiodte sat Spørgsmaalstegn ved Artsbestemmelsen og heller ikke brugt Larverne ved sin Bearbejdelse af denne Familie.

347. *Castaneus* L. — Nat. Tidsskr. 3. R. 6. B. p. 521. t. VIII. f. 10 og t. X. f. 4.

Nord Sjælland (Meinert).

Museet eier fem Larver og nogle Larvehude, tagne bag Imagines, som udgravedes af Jordvolde tidligt om Foraaret, April 1863.

348. *Cinctus* Payk. — Nat. Tidsskr. 3. R. 6. B. p. 519. t. VIII. f. 7 og t. X. f. 2.

Nord Sjælland.

Der haves en stor Mængde Larver fra Elle og Boge-



stød og navnlig fra Egestolperne i Dyrehaven, i hvis ydre forraadnende Skæl den i sin Tid toges i Mængde sammen med Imagines (Meinert).

349. *Pectinicornis* L. — Nat. Tidsskr. 3. R. 6. B. p. 520. t. VIII. f. 9.

Nord Sjælland (Meinert).

Museet eier en stor Larve og en Imago med Larvehud, tagne i Jord i Begyndelsen af Mai.

350. *Sjælandicus* Müll. — Nat. Tidsskr. 3. R. 3. B. p. 521. Nord Sjælland (Meinert).

Der haves fem Larver og en afskudt Larve- og Puppehud, de sidste tagne med Imago i Tørvesmuld, October 1863.

351. *Tessellatus* L. — Nat. Tidsskr. 3. R. 6. B. p. 518. t. IX. f. 10—11.

Tübingen (Meinert 1868).

Otte Larver og en Imago med Rester af Larvehuden ere tagne i Omegnen af Tübingen.

#### 214. *Ludius*.

352. *Ferrugineus* L.

Bognæs (Løvendal).

Museet har modtaget af Hr. Løvendal otte voxne og adskillige unge Larver samt Pupper med Larvehude, tagne i Bognæs Skov, nær Roskilde, i Ege, Juni 1876; Imago klækkedes af de hjembragte Larver og Pupper. Den af Schiødte som *Ludius ferrugineus* beskrevne og afbildede Elater er vistnok *El. sanguineus*; see denne Art.

353. *Hepaticus* Germ.

Florida (C. V. Riley).

#### 215. *Agriotes*.

354. *Aterrimus* L. — Nat. Tidsskr. 3. R. 6. B. p. 515. t. VIII. f. 1.

Nord Sjælland (Meinert).

Der haves en fire til fem afskudte Larvehude, tagne i Jordtuer under Mos bag Imagines eller Pupper, som ere klækkede til Imagines.

355. *Lineatus* L. — Nat. Tidsskr. 3. R. 6. B. p. 516. t. VIII. f. 2—4.

Jylland; Tyskland.

Museet har engang faaet Larven i Mængde fra Jylland, hvor den ligesom i den øvrige Deel af Landet ofte fremtræder meget skadelig for Culturen; ogsaa fra Tyskland haves et Stykke, givet af Prof. H. Hagen.

356. *Mancus* Say.

Indiana (C. V. Riley).

357. *Obscurus* L.

Kjøbenhavn; Falster.

Der haves ikkun tre Imagines med afskudte Larve- og Puppehude, tagne dels i Nærheden af Kjøbenhavn i Tørvesmuld (Meinert, October 1863), dels paa Falster (Meinert).

### 216. *Sericus (Dolopius)*.

358. *Marginatus* L.

Nord Sjælland (Meinert).

Museet eier fire voxne Larver og over en halv Snees Pupper foruden mange Imagines med Larvehude, tagne i Jordtuer under Mos i Gjelle Skov, August 1863.

### 217. *Lepturoides (Campylus)*.

359. *Linearis* L. — Nat. Tidsskr. 3. R. 6. B. p. 526. t. IX. f. 15—16.

Danmark.

Der haves mange Larver fra forskellige Egne af Landet, dog navnlig fra Nordsjælland, hvorfra der ogsaa haves sex Pupper og Imagines med Larvehude, tagne under Bøgebark (Meinert).

## Cebrioidæ.

218. *Cebrio*.

360. Gigas L. — Nat. Tidsskr. 3. R. 6. B. p. 527. t. X. f. 7—12.

Algérien (Meinert).

Museet eier mange voxne Larver, udgravede i stort Antal af Jordbrinker i Omegnen af Bône, December 1868.

## Rhipidoceridæ.

219. *Callirhipis*.

361. Dejeanii Latr. — Nat. Tidsskr. 3. R. 13. B. p. 417. t. XVIII. f. 1—21.

Andaman- og Nicobar-Øerne (Roepstorff).

Museet har efterhaanden faaet henvend en Snees Larver og flere Pupper samt Imagines sendt fra de nævnte Øer. Artsbestemmelsen er dog, som Schiodte selv bemærker, noget usikker. Den af Candèze, som Campsosternus Templetonii beskrevne Larve, er vistnok en *Callirhipis*, jfr. det Foregaaende.

## Dascillidæ.

220. *Helodes (Cyphon)*.

362. Minutus L.

Nord Sjælland; Færøerne.)

Museet eier en halv Snees Larver og sex Pupper, tagne sammen med Imagines ved Kokkedal af Hr. Joh. Boye; ogsaa fra Færøerne, hvorfra kun denne Dascillide kjendes, haves tre Larver (Districtslæge Ad. Bergh).

363. Pallidulus Bohem. (ochraceus Steph.).

Lolland (Meinert).

Et stort Antal Larver, tre Pupper og Imago, tagne under gammelt Lov ved Maribo.

364. Testaceus L.

Nord Sjælland; Lolland.

Der haves mange Larver og Pupper med Larvehude samt Imagines baade fra Nord Sjælland og fra Maribo (Meinert), tagne sammen under gammelt Lov.

365. Variabilis L.

Falster (Meinert).

En Imago med Larvehud er taget ved en Vanding under Steen.

#### Malacodermidæ.

##### 221. *Lycus*.

366. Spp.?

Fra Museet i Buda-Pest har vort Museum modtaget tre Stykker af en Lycide-Larve, som stærkt ligner Pertys »Larva singularis« og vistnok horer til *Lycus melanurus* Blanch. eller en nærstaaende Art, jfr. Kolbe: Ueber einige exotische Lepidopteren- und Coleopteren-Larven«, Entom. Nachr. XIII. p. 37 (sep. p. 5). Fra Pulo-Penang (Aschlund) haves en heel og Brudstykker af en søndret Larve af en anden meget nærstaaende Art; og endelig haves der fra Borneo (Museet i Buda-Pest) to noget mindre Larver med lange Processer, hos den ene blot paa Siderne af Rygskinnerne, hos den anden saavel paa Rygskinnernes Overside og paa selve Siderne som paa Pleuralskjolde og Bugskinner.

##### 222. *Calopteron*.

367. Spp.

Venezuela (Meinert).

Museet eier forskjellige Larver af denne Slægt, tagne deels ved Sigten, deels under Bark, men det har været umuligt at henføre dem til nogen bestemt Art.

##### 223. *Eros*.

368. Affinis Payk.

Harzen (Beling).

Sex Larver, tagne i Fyrrestubbe paa Harzen, skyldes Forstm. Beling.

224. *Photinus*.369. *Pyralis* L.

Missouri (C. V. Riley).

225. *Lamprophorus*.

370. Spp.?

Museet eier fire Larver, sandsynligviis hørende til to Arter af denne Slægt, af hvilke den ene, den største, er fra Bagindien (Westermann, Studiesamlingen), de tre andre fra Forindien, nemlig to fra Vellore (Madras, Miss. Løventhal) og en med tilhørende (?) uvinget Imago-Hun fra Shevaroy hills, Yercaud, Salem District, Madras Presid. (Miss. Kofoed, Sept. 1883).

226. *Lampyris*.371. *Noctiluca* L.

Nord Sjælland.

Der haves et Antal Larver og Pupper med Larvehude, de sidste fra Hr. Schlick.

227. *Phosphænus*.372. *Hemipterus* Geoffr.

Sjælland.

Der haves et større Antal Larver, nogle Pupper med Larvehude saavel af Hanner som af Hunner; Pupperne med Larvehudene ere skjænkede Museet af Hr. Schlick.

228. *Photuris*.373. *Deleta* Motsch.

Venezuela (Meinert og Levinsen).

En stor Del Larver ere tagne sammen med Imagines om Aftenen ved Bredden af den Bæk, som løber forbi Las Trinchéras, 15. 12. 91.

374. *Pagana* Dej.

Venezuela (Meinert).

Der haves et Par Larver, tagne sammen med Imago ved Kaffe-Haciendaen La Moka, S. O. f. Carácas, 8. 8. 91.  
375. Pennsylvanica De G.

Washington D. C. (C. V. Riley).

229. *Phengodes*.

376. Sp.

Brasilien (Reinhardt).

Museet eier to larveagtige Dyr fra Brasilien, hjembragte af Prof. Reinhardt. Det største Individ er fra Lagoa Santa og er Originalemplaret til Reinhardts Beskrivelse af »En Coleopterlarve«, jfr. hans »Tvende lagttagelser af phosphorisk Lysning hos en Fisk og en Insektlarve«, Vid. Medd. Nat. Foren. f. 1853. p. 60; den er skjænket Museet af Hr. Docent, Dr. Boas, som i sin Tid har faaet den af Reinhardt. Det mindste Stykke, som oprindeligt har været opstukket, er givet Museet af Reinhardt selv, og paa Etiketten hedder det: »Sagdes stærkt lysende, Kroppen blaalig, Øjnene rødlig«. Som det vil sees af en Sammenligning med Beskrivelsen af det store Individets Lysevne, er der nogen Forskjel i denne Henseende paa de to her omtalte Stykker, maaskee begrundet i forskjellig Alder eller Udviklings Stadium (Larve og Imago) eller i Artsforskjel. Dog hore begge Former vistnok til Slægten *Phengodes*, jfr. Erich Haases Beskrivelser og Afbildninger i hans »Zur Kenntniss von *Phengodes*«, Deutsch. Entom. Zeitschr. XXXII. 1888. H. 1. p. 145. Taf. I.—II. Ogsaa Prof. Riley bestemte under sit Ophold i Kjøbenhavn vort mindre Stykke som en *Phengodes*.

230. *Thylocerus*,

377. Sp. ?

Assam (Westermann).

Museet eier en Larve, som meget ligner den foregaaende, men dog er slægtsforskjellig fra den; rimeligviis hører den til den østasiatiske Slægt *Thylocerus* Dalm.

231. *Chauliognathus*.378. *Marginatus* F.

New York (C. V. Riley).

232. *Telephorus*.379. *Assimilis* Payk. (*quadripunctatus* Müll.).

Nord Sjælland (Schlick).

Museet eier en Larve og Puppe med Larvehud, skjænkede det af Hr. Schlick, som har taget Larver og Pupper ved Lyngby Mose under Mos og klækket Imago.

380. *Fuscus* L.

Amager (Meinert).

Der haves en stor Deel Larver samt Imago og Puppe med Larvehud, tagne paa Amagerfælled, hvor Larven er meget almindelig om Efteraaret, Vinteren og det tidlige Foraar.

381. *Lividus* L.

Kjøbenhavns Omegn.

Der haves fire Pupper med et Par Larvehude og et Par klækkede Imagines.

382. *Obscurus* L.

Rude Hegn (Meinert).

Museet eier to Pupper, en Larvehud og en blød Imago af denne Art.

383. *Pallidus* Goeze (*bicolor* Panz.).

Lyngby Mose (Schlick).

Der haves kun to Larvehude efter klækkede Individier.

384. *Pellucidus* F.

Sjælland.

Museet eier sex Larver og ligesaa mange Pupper og Imagines, tagne deels i Nord Sjælland (Meinert) deels ved Sorø.

233. *Malthodes*.385. *Minimus* L. (*sanguinolentus* Fall.).

Kjøbenhavn (Schlick).

Hr. Schlick har skjænket Museet otte Larver og to Pupper samt Imago; Larverne bleve tagne under Pilebark i Kjøbenhavns Omegn og klækkede.

### 234. *Drilus.*

386. Concolor Ahr.

Midt Sjælland (Traustedt).

Adj. Traustedt har skjænket Museet en Larve, taget ved Roeskilde.

387. Mauritanicus Luc.?

Napoli (Collin).

Museet eier en Larve, skjænket det af Etatsr. Collin og bestemt efter Lucas, Explor. scient. de l'Algérie. Findestedet, Napoli, skulde dog snarere lade formode, at det kunde være *Dr. flavescens* Ross. Et Par andre, mindre (yngre?) *Drilus*-Larver, tagne ved Tunis i en Olivenlund (Meinert, Novbr. 1868) ere vistnok forskjellige fra førstnævnte Larve og maaskee snarere den ægte *Dr. mauritanicus*.

### 235. *Silasia.*

388. Sp.?

Vest Afrika.

Af Naturaliehandler Umlauff i Hamborg er kjøbt en meget stor *drilus*agtig Larve, men slægtsforskjellig fra de foregaaende Larver. Den angives at være fra Vest Afrika, men herfra kjendes kun Slægten *Silasia*; dog synes Larven at være for stor til at kunne høre til nogen af de kjendte Arter.

### 236. *Malachus.*

389. *Æneus* L.

Kjøbenhavn (Schlick).

Museet har faaet en Larve af Hr. Schlick, som har taget en sex Larver sammen med en Puppe; at dømme efter Størrelsen maa det vistnok være denne, vor største Art.



390. *Bipustulatus* L.

Kjøbenhavn (Budde-Lund).

Tre Larver og en Puppe samt en frisk Imago ere skjænkede Museet af Hr. Budde-Lund, som har taget dem i Byens Omegn.

237. *Dasytes*.391. *Coeruleus* De G.

Sjælland; Fyen.

Museet eier en betydelig Deel Larver og Pupper, tagne oftest sammen med Imagines i Eg eller Bøg; den er meget hyppig i nedfaldne Grene i vore Bøgeskove.

## Cleridæ.

238. *Tillus*.392. *Elongatus* L.

Danmark.

Museet eier kun en heel og en mutileret Larve, uden nærmere Bestemmelse.

239. *Opilo*.393. *Domesticus* Sturm.

Kjøbenhavn.

Larven lever i Husene i Kjøbenhavn i Klæder, hvor den sandsynligviis gjør Jagt paa Klannerlarver. Efterhaanden har Museet faaet en fire Larver, bragte med Imago fra forskjellige Steder i Byen.

394. *Mollis* L.

Falster.

En Snees Larver, baade store og smaa, ere tagne sammen med Imagines i Consul Edv. Benzons Klækkehuus, Nykjøbing p. F. Larven er let kjendelig fra den foregaaende Larve, om ikke ved andet, saa ved sin Farvetegning. I Gemminger og Harolds Catalog forenes denne Art med den foregaaende, hvad herefter vel neppe er rigtigt.

240. *Thanasimus*.395. *Dubius* F.

Michigan (C. V. Riley).

396. *Formicarius* L.

Nord Sjælland.

Der haves otte Larver og en Puppe med Larvehud fra Rude Hegn. Larven er i levende Live let kjendelig ved sin røde Farve og træffes meget hyppig i vore Naaleskove under Bark paa Granstammer.

241. *Necrobia*.397. *Ruficollis* F.

Kjøbenhavn (Schlick).

Museet eier fem Larver, forærede det af Hr. Schlick, som har taget Larven i stort Antal paa Kreaturbeen i Hvidgarverier ved Kjøbenhavn.

## Lymexylonidæ.

242. *Hylecoetus*.398. *Brasiliensis* Cast.

Venezuela (Meinert).

Lacordaire, Gen. Coleopt. IV. p. 503. Anm. 2, mener med Rette, at denne Art maa udskilles fra Slægten *Hylecoetus*, hvilket end yderligere bekræftes ved Larveformen.

Museet eier to hele Larver og Rudimenter af en tredie samt en Puppe og en klækket Imago med Puppehud, hugne ud af en haard, temmelig frisk Træstamme i Don Elias' Hacienda ved Las Trinchéras, 24. 12. 91.

399. *Dermestoides* L.

Nord Sjælland.

Museet eier mange Larver og adskillige Pupper, tagne i eller huggede ud af temmelig friske Bogestød; ogsaa fra Ellepæle haves Larver og Pupper (Drewsen).

243. *Lymexylon.*

400. Navale L.

Midt Sjælland (Løvendal).

Sex Larver og en Puppe ere skjænkede Museet af Hr. Løvendal, som har taget dem i Egeved ved Svenstrup, nær Borup Station, i Juli 1881.

244. *Hedobia.*

401. Imperialis L.

Nord Sjælland.

Museet eier endeel Larver, Pupper og Coconer, tagne i Nærheden af København, deels i Aske- deels i Elmebark.

245. *Ptinus.*

402. Fur L.

Kjøbenhavn.

Hr. Gartner Hauschild har skjænket Museet endeel Larver og nogle Pupper, tagne sammen med mange Imagines i en Bog med fastsiddende Grunddeel af en Hvepserede, 20. 9. 92; saavel Bogens Blade som Hvepsereden vare stærkt gjenmemminerede af Larverne. Ogsaa fra en hentørret Kartoffel haves en Larve med Imago, ligesom ogsaa fire Larver fra tørre Galler af *Cynips terminalis*.

246. *Niptus.*

403. Hololeucus Falderm.

Kjøbenhavn (Secher).

Dr. Secher har skjænket Museet en otte Larver, tagne i Rigsarkivet, 5. 5. 91.

247. *Priobium.*

404. Castaneum Oliv.

Nord Sjælland.

Der haves endeel Larver, baade større og mindre, tagne sammen med Imagines i tørt Egeved i Jægersborg Dyrehave.

248. *Anobium*.405. *Domesticum* Fourcr. (*striatum* Oliv.).

Kjøbenhavn.

Museet eier over en Snees Larver, tagne med Imagines i gammelt Bygningstømmer (Tagbjælker af Fyr) i Kjøbenhavn og i Hasseltræ.

406. *Nitidum* Herbst.

Kjøbenhavn (Meinert).

Der haves henved en Snees Larver med Puppe og Imago, tagne i et gammelt Valdnøddetræ i en Have paa Christianshavn.

407. *Paniceum* L.

Kjøbenhavn.

Der haves en stor Mængde Larver og en enkelt Puppe, tagne med Imagines deels i Droguerier (Svaneapotheket) deels i Bagerier (Løvendal).

408. *Pertinax* L.

Kjøbenhavn.

Museet eier en Snees Larver og et Par Pupper, tagne med Imagines i gamle Fyrrestolper i og ved Kjøbenhavn (Meinert).

249. *Xestobium*.409. *Rufovillosum* De G. (*tesselatum* Oliv.).

Nord Sjælland.

Museet eier over en Snees Larver og en Puppe, tagne med Imagines i forskjellige Træer, saasom Eg, Elm og Piil i Kjøbenhavns Omegn, navnlig i Dyrehaven.

250. *Ernobius*.410. *Granulatus* Lec.

Florida (C. V. Riley).

411. *Mollis* L.

Nord Sjælland (Meinert).

Der haves endeel Larver, Pupper og Imagines,

tagne deels i Granbark (Teglstrup Hegn) deels i Gran-  
kogler; Arten klækkedes.

251. *Ptilinus*.

412. *Pectinicornis* L.

Nord Sjælland.

Museet eier endeel Larver og en Puppe, tagne  
sammen med Imagines i Bøgeved.

252. *Dorcatoma*.

413. *Chrysomelina* Sturm.

Dyrehaven (Koch).

Hr. Schlick har foræret Museet et Par Larver, tagne  
af Hr. Koch i Eg sammen med Imagines.

253. *Anitya* (*Dorcatoma*).

414. *Rubens* Ent. H.

Nord Sjælland (Meinert).

Museet eier en meget stor Mængde Larver og nogle  
Pupper, tagne sammen med talrige Imagines i en gammel  
raadden Eg i Charlottenlund, Mai 1861.

254. *Hemiptychus*.

415. *Punctatus* Lec.

New Jersey (C. V. Riley).

255. *Vriletta*.

416. *Expansa* Lec.

Californien (C. V. Riley).

Jeg kjender ikke Imago, og Slægtens Stilling er mig  
overhovedet noget usikker.

Bostrychidæ.

256. *Psoa*.

417. *Maculata* Lec.

Californien (C. V. Riley).

257. *Sinoxylon*.418. *Basilare* Say.

Washington D. C. (C. V. Riley).

419. *Declive* Say.

Californien (C. V. Riley).

258. *Bostrychus (Apate)*.420. *Capucinus* L.

Kjøbenhavn (Løvendal).

Hr. Løvendal har skjænket Museet tre til fire Larver, tagne i Laurbærtræ.

421. *Varius* Ill.

Mellem Italien (Bergsøe).

Museet har modtaget af Dr. Bergsøe tre Larver og ligesaa mange Pupper, tagne sammen med Imagines under Egebark ved Gennazano, April 1863.

## Cioidæ.

259. *Lyctus*.422. *Brunneus* Steph.

Kjøbenhavn (Løvendal).

Der haves et Par Larver, tagne sammen med Imagines i Laurbær- og Myrtetræ.

260. *Rhopalodontus*.423. *Perforatus* Gyll.

Nord Sjælland (Meinert).

Museet eier en stor Mængde Larver, tagne sammen med mange Imagines saavel af denne Art som af *Cis Jacquemartii* Mell. i Fyrsvamp paa Bøg.

261. *Cis*.424. *Boleti* Scop.

Nord Sjælland (Meinert).

Museet eier endeel Larver og Pupper, tagne sammen med mange Imagines i Træsvampe.

425. Nitidus Herbst.

Kjøbenhavn.

Der haves endeel Larver, Pupper og Imagines, tagne sammen i Svampe.

Tenebrionidæ.

262. *Acis (Akis)*.

426. Bacarozzo Schrank. — Nat. Tidsskr. 3. R. 11. B. p. 529. t. V. f. 12—21.

Roma (Meinert).

Museet eier fire Larver og to Imagines, tagne sammen i eller udenfor Rom. Den ene af de fire Larver sees at have tjent Schiødte til Gjenstand for Fremstillingen af hans *Acis reflexa*, men Artsbestemmelsen er næppe rigtig, da de to hosliggende Imagines ikke ere denne Art men den nærstaaende *Ac. Bacarozzo*.

427. *Spinosa* L.

Algérien (Meinert).

Der haves fire Larver og to Imagines, tagne i gamle Korkege ved Mokta el Hadia nær Bône i Algérien. Larverne ligne særdeles meget de foregaaende, og deres indbyrdes Lighed styrker Visheden om rigtig Slægtsbestemmelse.

(*Reflexa* F. see Bacarozzo).

263. *Scaurus*.

428. *Atratus* F. — Nat. Tidsskr. 3. R. 11. B. p. 526. t. VI. f. 14—20.

Algérien (Meinert).

Der haves en enkelt Larve, tagen sammen med et Par Imagines ved Bône i Algérien.

264. *Blaps*.

429. *Brachyura* Küst.

Algérien (Meinert).

Museet eier en halv Snees Larver, tagne sammen med Imagines nær Bône i Algérien.

430. *Similis* Latr. — Nat. Tidsskr. 3. R. 11. B. p. 532  
t. VI. f. 1—13.

Roma; Kjøbenhavn.

Fra Rom haves en sex Larver med Imago, men langt flere ere skjænkede Museet af Hr. Løvendal, som har taget dem i Bagerier her i Byen, hvor kun denne ene Art findes.

265. *Pimelia*.

431. *Inflata* Herbst. — Nat. Tidsskr. 3. R. 11. B. p. 523.  
t. V. f. 1—11.

Algérien (Meinert).

Museet eier to Larver, tagne sammen med Bagkroppen af en Imago i gamle Korkege ved Mokta el Hadia, nær Bône.

432. *Sardea* Sol.

Tunis (Meinert, Nov. 1865).

Der haves to Larver, tagne sammen med Imago nær Tunis By. Schiødte har næppe holdt denne og den foregaaende Art ret ude fra hinanden, idetmindste er Hovedet udtaget af et Stykke af hver af de to Arter, uden Tvivl til Undersøgelse og Fremstilling.

266. *Crypticus*.

433. *Quisquilius* L. — Nat. Tidsskr. 3. R. 11. B. p. 535.  
t. VII. f. 1—4.

Amager.

Museet eier fire Larver og en Puppe; nærmere Bestemmelse findes ikke, men allerede Localiteten og Størrelsen sikkre saa nogenlunde Arten.

267. *Heliopathes*.

434. *Gibbus* F. — Nat. Tidsskr. 3. R. 11. B. p. 538.  
t. VII. f. 7—14.

Nord Sjælland (Schlick).

Hr. Schlick har skjænket Museet fem Larver, et Par



Larvehude og en ganske frisk Imago. Larverne toges ved Tidsvilde, og Imago klækkedes.

268. *Hopatrum*.

435. *Sabulosum* L. — Nat. Tidsskr. 3. R. 11. B. p. 541.  
t. VII. f. 15—19.

Fyen (Schlick).

Museet har modtaget af Hr. Schlick en halv Snees Larver og en Puppe, tagne ved Faaborg. Imago klækkedes af der paa Stedet fundne Larver.

269. *Microzoum*.

436. *Tibiale* F.

Falster.

Der haves en voxen Larve og en ganske frisk og og blød Imago, tagne paa Bøtø Sand paa Syd Falster.

270. *Phaleria*.

437. *Cadaverina* F.

Nord Sjælland (Løvendal).

Hr. Løvendal har skjænket Museet en halv Snees Larver, tagne sammen med mange Imagines paa Strandlandet ved Tidsvilde.

271. *Bolitophagus*.

438. *Armatus* Panz. — Nat. Tidsskr. 3. R. 11. B. p. 546.  
t. IX. f. 1—9.

Lolland (Schlick).

Museet har modtaget af Hr. Schlick en heel og en mutileret Larve. Larverne toges i Antal sammen med Imagines i Svamp i en huul Bøg ved Søholt, og nogle af de hjembragte Larver klækkedes til Imago.

439. *Bifurcus* F.

Massachusetts (C. V. Riley).

Prof. Riley har sendt Museet Larven under Navn af *Bolitothereus bifurcus*.

440. Reticulatus L. — Nat. Tidsskr. 3. R. 11. B. p. 544.  
t. VIII. f. 1—11.

Midt Jylland (Schiødte).

Der haves en halv Snees voxne Larver og en fire til fem Pupper, tagne sammen med ganske friske, bløde Imagines i Svampe ved Rye.

272. *Heledona.*

441. Agricola Herbst. — Nat. Tidsskr. 3. R. 11. B. p. 547. t. VIII. f. 12—13.

Nord Sjælland.

Museet eier en halv Snees Larver, flere Pupper og bløde Imagines, tagne i deres Svampkugler ved Strandmøllen.

273. *Diaperis.*

442. Boleti L. — Nat. Tidsskr. 3. R. 11. B. p. 547. t. VIII. f. 14—24.

Midt Jylland (Schiødte).

Der haves over en halv Snees Larver, nogle Pupper og friske Imagines, tagne sammen i en »stor, sneehvid Boletus paa døde Birkestammer ved Rye«.

443. Maculata Oliv.

New Jersey (C. V. Riley).

Prof. Riley har sendt Museet to voxne Larver og en Imago under Navn af Diaperis hydni F.

274. *Scaphidema.*

(Æneum Payk. see Metallicum).

444. Metallicum F. — Nat. Tidsskr. 3. R. 11. B. p. 552. t. IX. f. 10—16.

Nord Sjælland (Schlick).

Hr. Schlick har skjænket Museet syv Larver, tagne i Lyngby Mose i en Ellestub sammen med Imagines.

275. *Platydemia.*

445. Dytiscoideum Rossi. — Nat. Tidsskr. 3. R. 11. B. p. 550. t. VIII. f. 25—29.

Vest Sjælland (Bergsøe).

Dr. Bergsøe har skjænket Museet en halv Snees Larver, tagne under Egebark ved Lerchenborg sammen med Imago. Et tilfoiet Spørgsmaalstegn paa Etiketten tyder paa, at Bestemmelsen dog ikke er ganske sikker.  
446. *Ellipticum* F.

Washington D. C. (C. V. Riley).

Hele Udviklingsrækken, to Larver, en Puppe og en Imago, er sendt Museet af Prof. Riley.

(*Violaceum* F. see *Dytiscoideum*).

276. *Alphitophagus (Phylethus)*.

447. *Quadripustulatus* Steph. — Nat. Tidsskr. 3. R. 11. B. p. 555. t. IX. f. 17—27.

Kjøbenhavn (Løvendal).

Der haves en syv Larver og en Puppe, tagne sammen med talrige Imagines i Bagerier her i Byen.

277. *Pentaphyllus*.

448. *Testaceus* Hellw. — Nat. Tidsskr. 3. R. 11. B. p. 557. t. X. f. 1—7.

Nord Sjælland (Løvendal).

Hr. Løvendal har skjænket Museet over en Snees Larver, et Par Pupper og Imagines.

278. *Gnathocerus*.

449. *Cornutus* F.

Kjøbenhavn (Løvendal).

Museet har modtaget af Hr. Løvendal en Mængde Larver, en halv Snees Pupper og mange Imagines, tagne sammen i Vodroffs Mølle ved Kjøbenhavn, August 1878.

279. *Tribolium*.

450. *Ferrugineum* F. — Nat. Tidsskr. 3. R. II. B. p. 563. t. X. f. 18—22.

Kjøbenhavn (Løvendal).

Museet har modtaget af Hr. Løvendal en meget

stor Mængde Larver, Pupper og Imagines, tagne sammen i Bagerier i Kjøbenhavn.

280. *Alphitobius*.

451. *Diaperinus* Panz. — Nat. Tidsskr. 3. R. 11. B. p. 565. t. XI. f. 1—3.

Kjøbenhavn.

Dr. Sørensen har skjænket Museet en stor Mængde Larver, tagne sammen med talrige Imagines i Fregat-skibet »Havfruen« i en Riisladning fra Rangoon, og Hr. Løvendal har skjænket Museet henved en Snees Pupper fra en Riisladning i Skibet »Albatros«.

452. *Piceus* Oliv. — Nat. Tidsskr. 3. R. II. B. p. 568. t. XI. f. 4—5.

Museet skylder Dr. Sørensen en halv Snees Larver, tagne sammen med foregaaende Art, og Hr. Løvendal en meget stor Mængde Larver, store og smaa, fra Bagerier i Kjøbenhavn.

281. *Hypophloeus*.

453. *Bicolor* Oliv. — Nat. Tidsskr. 3. R. 11. B. p. 559. t. X. f. 8—11.

Roma (Meinert).

Museet eier en halv Snees Larver, tagne sammen med mange Imagines under Bark i Nærheden af Rom.

(*Depressus* F. see *Melinus*).

(*Linearis* F.).

Kjøbenhavn (Schlick).

Hr. Schlick har sammen med *Tomicus bidens* taget en *Hypophloeus* Larve, vistnok af denne Art, i Fyrrebrænde paa en af vore Tømmerpladser.

454. *Melinus* Herbst. — Nat. Tidsskr. 3. R. 11. B. p. 561. t. X. f. 12—17.

Kjøbenhavn.

Under Navn af *Palorus depressus* haves der en sex

Larver og fire Pupper af denne Art; de ere tagne sammen med mange Imagines i Bagerier her i Byen.

455. *Parallelus* Melsh.

Michigan (C. V. Riley).

282. *Centronotus*.

456. *Calcaratus* F.

Washington D. C. (C. V. Riley).

Under Navn af *Scotobates calcaratus* er denne Larve sendt til Museet af Prof. Riley.

283. *Zophobas*.

457. *Morio* F.?

Venezuela (Meinert).

Museet eier en voxen Larve, tagen sammen med Imago ved Las Trinchéras i en stor Træstamme, som under en stærk Styrtereign var skyllet ned med Bækken, 2, 12. 91; foruden denne Larve fandtes i samme Stamme et Par andre Stykker, men disse sonderhuggedes af Øxen i det haarde Træ.

284. *Tenebrio*.

458. *Molitor* L. — Nat. Tidsskr. 3. R. 11. B. p. 568. t. XI. f. 6—14.

Kjøbenhavn.

Museet eier en stor Mængde Larver og nogle Pupper fra Bagerier her i Byen.

459. *Opacus* Duftschm. — Nat. Tidsskr. 3. 11. B. p. 571. Nord Sjælland (Løvendal).

Museet har modtaget af Hr. Lovendal sex Larver, fire Larvehude og en Puppe, tagne i hule Ege ved Jægerspriis; Larvehudene ere fremkomne ved Klækning af Dyrene.

460. *Tenebrioides* Beauv.

Michigan (C. V. Riley).

285. *Phymatodes*.

461. Tuberculatus F. — Nat. Tidsskr. 3. R. 12. B. p. 521. t. XIV. f. 1—11.

Bahia (Galathea-Exped.).

Museet eier to voxne og syv spæde Larver, hjembragte med Galathea; nogen nærmere Oplysning til Bestemmelsens Paalidelighed gives nu ikke.

286. *Paratenetus*.

462. Punctatus Spin.

Washington D. C. (C. V. Riley).

287. *Helops*.

463. Coeruleus L.

Mellem Italien (Bergsoe).

Dr. Bergsoe har skjænket Museet syv til otte Larver, tagne i Kastanieved ved Gennazano, April 1863.

288. *Allecula*.

464. Lovendalii Reitt. — Nat. Tidsskr. 3. R. 11. B. p. 578. t. XII. f. 10—13.

Nord Sjælland (Løvendal).

Hr. Lovendal har skjænket Museet otte Larver og en Puppe af denne den Gang for Videnskaben nye Art; de ere tagne i en stor, fældet Bog i Selsølund.

465. Morio F. — Nat. Tidsskr. 3. R. 11. B. p. 575. t. XII. f. 1—9.

Nord Sjælland.

Museet eier otte Larver og 2 Pupper; Bestemmelsen er uden Tvivl rigtig, uagtet der ikke findes nærmere Oplysninger.

(Rhenana Bach see Løvendalii).

289. *Cistela*.

466. Atra F. — Nat. Tidsskr. 3. R. 11. B. p. 581. t. XII. f. 19—27.

Nord Sjælland.

Der findes mange Larver og en Puppe, tagne i Bog (Dyrehaven, Meinert) og i Eg (Hellebæk).

467. *Ceramboides* L.?

Falster.

Museet eier ikkun en voksen Larve, tagen i en Ellestub; Bestemmelsen er vistnok tvivlsom.

468. *Rufipes* Lec.

Washington D. C. (C. V. Riley).

Under Navn af *Hymenorus rufipes* er Arten sendt Museet af Prof. Riley.

290. *Mycetophila (Mycetocharis)*.

469. *Axillaris* Payk.?

Sjælland.

Museet eier to Larver og en Puppe, bestemte saaledes af Schiødte, som dog ikke har medtaget Arten i sit Larvearbejde.

(*Barbata* Latr. see *Linearis*).

470. *Linearis* Ill. — Nat. Tidsskr. 3. R. 11. B. p. 578. t. XII. f. 14—18.

Nord Sjælland.

Der findes en Snees Larver og halvt saa mange Pupper, tagne sammen med Imagines i en huul Bøg.

Pythidæ.

291. *Pytho*.

471. *Depressus* L.

Nord Sjælland.

Museet har i de seneste Aar faaet en stor Mængde Larver og et Par Pupper, tagne sammen med Imagines under Bark, navnlig af Fyr, i Tidsvilde Hegn (Wesenberg-Lund; Lovendal; Meinert).

292. *Rhinosimus*.

(*Planirostris* F.).

Kjøbenhavn (Schlick).

Hr. Schlick har taget to Larver sammen med Imago under Elmebark paa Glaciet ved Kjøbenhavn.

472. *Ruficollis* L.

Nord Sjælland (Løvendal).

Museet har modtaget en Larve og en Puppe, tagne under Birkebark.

Melandryidæ.

293. *Tetratoma*.

473. *Fungorum* F.

Nord Sjælland (Løvendal).

Hr. Lovendal har skjænket Museet en stor Mængde voxne Larver, en Puppe og en blod Imago, tagne sammen i Svampe.

294. *Orchesia*.

474. *Micans* Panz. — Nat. Tidsskr. 3. R. 12. B. p. 582. og 587. t. XVIII. f. 15—26.

Nord Sjælland (Løvendal).

Museet har modtaget et Par Larver og en halv Snees Pupper, tagne i Svampe paa El i Dyrehaven.

295. *Synchroa*.

475. *Punctata* Newm.

Missouri (C. V. Riley).

296. *Abdera*.

476. *Flexuosa* Payk. — Nat. Tidsskr. 3. R. 12. B. p. 578. og 587. t. XVIII. f. 6—14.

Falster (Meinert).

Museet eier en stor Deel Larver og Pupper, tagne sammen med Imagines i Svampe paa Fyr nær Nykjøbing p. F.

297. *Hypulus*.

477. *Bifasciatus* F. — Nat. Tidsskr. 3. R. 12. B. p. 569. t. XVIII. f. 1—5.

Nord Sjælland.



Museet eier endeel Larver, tagne for en tredive til fyrretyve Aar siden deels i Hasselstød (Dyrehaven, Gericke) deels i Ellestød (Charlottenlund, Meinert, og Tegstrup Hegn).

### 298. *Melandrya.*

478. *Caraboides* L. — Nat. Tidsskr. 3. R. 12. B. p. 565. og 586. t. XVII. f. 1—15.

Nord Sjælland; Lolland.

Der haves en Snees Larver og halvt saa mange Pupper, tagne deels i Bøg i Nord Sjælland (Schlick) deels i Ellestød paa Lolland (Meinert); sidste Sted toges Larver, Pupper og Imagines sammen.

### 299. *Penthe.*

479. *Pimelia* F.

Michigan (C. V. Riley).

### 300. *Conopalpus.*

480. *Testaceus* Oliv. — Nat. Tidsskr. 3. R. 12. B. p. 573. og 587. t. XVII. f. 16—24.

Nord Sjælland (Meinert).

Der haves en fire til fem Larver og ligesaa mange Pupper, tagne i Dyrehaven i gammelt Egerækværk; Imago klækkedes; desuden haves en Larve og to Pupper fra samme Localitet.

Lagriidæ.

### 301. *Lagria.*

481. *Hirta* L. — Nat. Tidsskr. 3. R. 12. B. p. 526. og 531. t. XIV. f. 1—21.

Nord Sjælland.

Museet eier over en halv Snees Larver og ligesaa mange Pupper, nogle Larvehude og bløde Imagines, tagne sammen paa forskjellige Steder i Nord Sjælland (Boye; Løvendal).

## Anthicidæ.

302. *Anthicus*.482. *Bimaculatus* Ill.?

Falster.

Der haves en enkelt Larve fra Boto Sand paa Syd Falster, bestemt saaledes af Schiodte; men Bestemmelsen er vistnok ikke sikker, og Schiodte har heller ikke medtaget den i sit Arbejde.

## Pyrochroidæ.

303. *Pyrochroa*.483. *Coccinea* L. — Nat. Tidsskr. 3. R. 12. B. p. 533 og 538. t. XV. f. 1—10.

Danmark.

Museet eier en stor Mængde Larver, baade store og smaa, og sex Pupper, tagne paa forskjellige Steder her i Landet under Bøgebark; fuldvoxne, halvvoxne og spæde Larver tages ofte sammen (saaledes 25. 8. 89, Meinert).

(Rubens Schall. see *Serraticornis*).484. *Serraticornis* Scop. — Nat. Tidsskr. 3. R. 12. B. p. 538. t. XV. f. 11.

Falster.

Der haves en fem til sex Larver, tagne i sin Tid i Consul Edv. Benzons Klækkehuus i Nykjobing p. F.

## Mordellidæ.

304. *Tomozia*.485. *Biguttata* Cast. — Nat. Tidsskr. 3, R. 12. B. p. 589 og 591. t. XV. f. 12—22.

Nord Sjælland.

Museet eier en Snees Larver og en fem Pupper, tagne med Imagines i Bogestød i Dyrehaven.

(Bucephala Costa see *Biguttata*).

305. *Mordella*.

486. *Octopunctata* F.  
Missouri (C. V. Riley).

306. *Mordellistena*.

487. *Floridensis* Smith.  
Florida (C. V. Riley).

## Rhipidophoridæ.

307. *Metoecus*.

488. *Paradoxus*.  
Dijon (Rouget).  
Museet har modtaget fra Hr. Rouget over en Snees Larver og mange Pupper, tagne ud af Cellerne af en Hvepsereede.

308. *Rhipidius*.

489. *Pectinicornis* Thunb.  
Galathea-Exped.  
Museet eier i Spiritus en sex Larver og en Hun Imago, tagne sammen med et Par (torrede) Hanner ombord i Galathea af Hr. Kjellerup.

## Cantharidæ.

309. *Meloë*.

490. *Proscarabæus* L.?  
Nord Sjælland.  
Hr. Drewsen har i sin Tid skjænket Museet en stor Mængde Larver og et Par Klumper Æg; desuden haves adskillige Larver, ligeledes paa Triungulin Stadiet, tagne dels paa en *Halictus* dels paa en *Phyllopertha horticola*. Larvernes gule Farve og Artens store Udbredelse gjør denne Bestemmelse sandsynlig.
491. *Variegatus* Donovan?  
Nord Sjælland.

Museet eier en *Eucera longicornis* Hun, paa hvis Bagkrop der sidder syv Triungulin Larver, som have trængt sig ud mellem Rygskinnerne paa Biens Bagkrop.

310. *Hornia*.

492. *Minutipennis* Ril.

Washington D. C. (C. V. Riley).

Museet har modtaget af Prof. Riley en halv Snees Larver paa Triungulin Stadiet under dette Navn.

311. *Sitaris*.

493. *Muralis* Forst. (*humeralis* F.).

Strassburg; England.

Museet har kjøbt Udviklingsrækken af denne Art: Æg, Larver i fire Stadier, Puppe og Imago (Friese i Schwerin); ogsaa fra England (Smith) har Museet gjennem Hr. Drewsen modtaget en Larve.

Oedemeridæ.

312. *Oxacis*.

494. *Dorsalis* Melsh.

Florida (C. V. Riley).

313. *Nacerdes*.

495. *Melanura* L. — Nat. Tidsskr. 3. R. 12. B. p. 540 t. XVI. f. 1—10.

Kjøbenhavn (Conradsen).

Conserv. Conradsen skjænkede i sin Tid Museet en halv Snees Larver, tagne i gammelt Huustommer her i Byen.

314. *Ischnomera (Asclera)*.

496. *Coerulea* L. — Nat. Tidsskr. 3. R. 12. B. p. 545 og 547. t. XVI. f. 11—13.

Nord Sjælland; Roma.

Museet eier en halv Snees Larver og en Imago, tagne i trøsket Egeved i Dyrehaven, nær Fileværket

(Meinert), og en Larve, en Puppe og en Imago, tagne sammen ved Rom (Meinert).

315. *Oedemera*.

497. *Virescens* L. — Nat. Tidsskr. 3. R. 12. B. p. 546 og 547. t. XVI. f. 14—17.

Nord Sjælland (Mortensen).

Hr. Cand. theol. Th. Mortensen har skjænket Museet et Par Larver, tagne i Freerslev Hegn i Plantestængler; Arten klækkedes.

Curculionidæ.

316. *Strophosomus*.

498. *Coryli* F.

Nord Sjælland.

Museet eier to Larvehude, fem Pupper og en blod Imago, tagne i Rude Hegn.

317. *Sciaphilus*.

499. *Muricatus* F.

Roeskilde (Gad).

Daværende Reservelæge Gad ved St. Hans Hospital har skjænket Museet tre Larver, sex Pupper og et Par bløde Imagines, tagne i Jordbærbede i hans Have.

318. *Otiorrhynchus*.

500. *Monticola* Germ. (*arcticus* F.).

Grønland (Lundbeck).

Larver ere hjembragte fra forskjellige Steder i Grønland, hvor de fandtes under Steen sammen med Imago.

501. *Septentrionis* Herbst.

Nord Sjælland (Meinert).

Museet eier tre Larvehude, otte Pupper og et Par bløde Imagines, tagne sammen i Gran.

502. *Singularis* L. (*picipes* F.).

Nord Sjælland (Drewsen).

Hr. Drewsen har skjænket Museet fire voxne Larver, tagne i Jorden i hans Have; dog er Bestemmelsen ikke ganske sikker.

503. *Sulcatus* F.?

Kjøbenhavn (Løvendal).

Hr. Løvendal har foræret Museet et Par fuldvoxne Larver, tagne i en Have paa Nørrebro ved Kjøbenhavn; dog er Bestemmelsen ikke ganske sikker.

319. *Trachodes*.

504. *Hispidus* L.

Lolland.

Der haves to Larver, tagne sammen med Imago under Barken af en Lind.

320. *Aramigus*.

505. *Fulleri* Horn.

New Jersey (C. V. Riley).

Prof. Riley har sendt Museet en Larve og Puppe under dette Navn, men dens systematiske Stilling er mig ikke sikker.

321. *Hypera*.

506. *Pollux* F.

Nord Sjælland (Boye).

Hr. Boye har skjænket Museet over en Snees Larver samt et Par Pupper og Imagines; nogle af Larverne og Pupperne ere indesluttede i deres Coconer.

507. *Polygoni* L.

Kjøbenhavn; Sorø.

Af Hr. Schlick har Museet modtaget en Larve, otte Pupper og Imago, tagne ved Sorø; Larven og en Puppe ere i deres Coconer. Ogsaa fra Kjøbenhavns Omegn haves endeel Coconer af denne Art.

508. *Punctata* F.

Mellem Italien (Bergsøe).

Dr. Bergsøe har foræret Museet en Puppe i Cocon og en Imago, tagne under Steen ved Gennazano.

509. *Rumicis* L.

Sjælland.

Museet eier en stor Mængde Larver i alle Storrelser, endeel Pupper og en blod Imago; et Par af Larverne og Pupperne ere indesluttede i deres Coconer.

### 322. *Tyloderma*.

510. *Foveolatum* Say.

Indiana (C. V. Riley).

Fra Prof. Riley har Museet faaet en Larve og to Pupper under dette Navn, men den systematiske Stilling er mig ikke sikker.

### 323. *Bothynoderes (Cleonus)*.

511. *Affinis* Schrank (*albidus* F.).

Lolland.

Der haves en stor og en lille Larve samt en Puppe, tagne i Runkelroer.

### 324. *Lixus*.

512. *Iridis* Oliv. (*turbatus* Zett.).

Nord Sjælland.

Museet eier femten Larver og fire Pupper, tagne i *Phellandria aquatica* i Lyngby Mose, 30. 7. 92 (Lövendal og Gædeken); det lykkedes at klække Imago.

513. *Paraplecticus* L.

Nord Sjælland.

Museet eier en sex Larver og ligesaa mange Pupper, tagne tildeels paa samme Localitet som foregaaende Art (Lövendal).

514. *Umbellatarum* F.

Algérien (Meinert).

Der haves en stor Mængde voxne Larver, tagne i Tidsler og Skjærplanter sammen med Imagines, Vinteren 1868—69.

325. *Curculio (Hylobius)*.515. *Abietis* L.

Sjælland.

Museet eier henved en Snees Larver, tagne deels i Bromme i Fyr, deels i Rude Hegn sammen med nogle Pupper og bløde Imagines.

326. *Hilipus*.516. *Anserino* aff.

Venezuela (Meinert).

Der haves en halv Snees Larver, to Pupper og Imagines, arbeidede ud af en død Træstamme ved Jernbanelinien nær Las Trinchéras, 11. 12. 91.

517. *Trachypterus* Germ.

Venezuela (Meinert).

Der haves sex, syv Larver; to Pupper og flere Imagines, huggede ud af en svær Gren paa et omstyrtet Træ i Don Elias' Hacienda ved Las Trinchéras, 26. 12. 91.

327. *Pissodes*.518. *Pini* L.

Nord Sjælland.

Museet eier kun et Par smaa Larver, tagne i Weymouths Fyr (Drewsen), og tre Pupper fra Rude Hegn.

519. *Strobi* Peck.

Washington D. C. (C. V. Riley).

328. *Endalus*.520. *Simplex* Say.

Georgien (C. V. Riley).

Prof. Riley har sendt Museet fire Larver under Navn af *Lissorhoptus simplex*.

329. *Apion*.521. *Subulatum* Kirby.

Sjælland (Boye).



Museet har modtaget af Hr. Boye fire Larver og fire Imagines, tagne i Skovvikker.

330. *Apoderus*.

522. *Coryli* L.

Nord Sjælland.

Museet eier fire Larver; de to af dem ere tagne ud af Bladruller paa Hassel ved Brede (Meinert, 24. 8. 84).

331. *Magdalis*.

523. *Armicollis* Say.

Michigan (C. V. Riley).

Prof. Riley har sendt Museet hele Udviklingsrækken: tre Larver, to Pupper og en Imago.

332. *Balaninus*.

524. *Cerasorum* F. (*villosus* F.).

Falster.

Der haves to Larver uden Imago, men der er ingen Grund til at tvivle paa Bestemmelsen.

525. *Glandium* Marsh.

Nord Sjælland (Schlick).

Museet skylder Hr. Schlick en Larve, tagen i Agern i Charlottenlund.

526. *Nasicus* Say.

Washington D. C. (C. V. Riley).

527. *Nucum* L.

Falster; Sjælland.

Museet eier en Snees Larver, tagne i Hasselnodder i Septbr. Maaned.

333. *Anthonomus*.

528. *Druparum* L.

Nord Sjælland.

Der haves ikkun en enkelt Puppe.

529. *Grandis* Gyll.?

Mexico (C. V. Riley).

Prof. Riley har sendt Museet Udviklingsrækken: tre Larver, en Puppe og en Imago, men foiet et Spørgsmaalstegn til Bestemmelsen.

### 334. *Orchestes*.

530. *Fagi* L.

Nord Sjælland.

Der haves nogle Pupper og Imagines siddende i de af Larven frembragte Blærer paa Bogeblade, Juni.

531. *Quercus* L.

Nord Sjælland (Meinert).

Museet eier sex Larver og en Puppe, pillede ud af Egeblade.

### 335. *Cionus*.

532. *Fraxini* Deg.

Sorø (Schlick).

Hr. Schlick har foræret Museet mange Larver, Pupper og Imagines, tagne paa Ask.

533. *Scrophulariæ* L.

Nord Sjælland; Falster.

Museet eier mange Larver, Pupper og Imagines, tildeels indesluttede i deres Coconer.

534. *Similis* Müll. (*thapsus* F.).

Falster.

Der haves mange Larver, tagne paa *Verbascum nigrum*.

### 336. *Gymnetron*.

535. *Linariæ* Panz.

Nord Sjælland (S. Hansen).

Fru S. Hansen har foræret Museet en stor Rodknold af *Linaria vulgaris* med Galler, indesluttende Larver.

### 337. *Conotrachelus*.

536. *Nenuphar* Herbst.

Ohio (C. V. Riley).

Prof. Riley har sendt en halv Snees Larver, store og smaa.

338. *Chalcodermus*.

537. *Aeneus* Boh.

Florida (C. V. Riley).

339. *Cryptorrhynchus*.

538. *Lapathi* L.

Nord Sjælland.

Der haves to Larver, en Larvehud og en Puppe.

340. *Ceutorrhynchus*.

539. *Sulcicollis* Payk.

Nord Sjælland (Meinert).

Museet eier en Snees Larver, en Puppe og en Imago, tagne i Raps.

341. *Centrinus*.

540. *Picumnus* Herbst.

Indiana (C. V. Riley).

342. *Rhyncophorus*.

541. *Cruentatus* F.

Florida (C. V. Riley).

542. *Palmarum* L.

Venezuela (Starcke).

Af Hr. Starcke har Museet modtaget en Cocon med Imago og afskudt Larve- og Puppehud; desværre ere begge Hudene stærkt medtagne af Imagos Bevægelser inde i Coconen.

343. *Scyphophorus*.

543. *Yuccæ* Horn.

Californien (C. V. Riley).

344. *Sphenophorus*.

544. *Robustus* Horn.

Californien (C. V. Riley).

345. *Phloeophagus*.545. *Scalptus* Schönh. (*sculptus* Gyll.).

Amager (Meinert).

Museet eier en Snees Larver, tagne sammen med mange Imagines i de Fyrrebjælker, som danne Estakaderne paa Kysten af Amager ved Kikkurven.

346. *Rhyncolus*.546. *Ater* L. (*chloropus* F.).

Nord Sjælland (Meinert).

Der haves otte Larver med Imagines, tagne sammen i Granstød.

547. *Cylindrirostris* Oliv.

Nord Sjælland.

Der haves ligeledes otte Larver, tagne med Imago i Bøgeved i Dyrehaven. De to Arter af *Rhyncolus* kunne vistnok holdes, hvorpaa ogsaa det forskjellige Opholdssted tyder.

548. *Lignarius* Marsh.

Nord Sjælland (Meinert).

Museet eier to Larver, tagne med Imago i Bøgeved i Dyrehaven, Mai 1856.

549. *Truncorum* Germ.

Nord Sjælland (Lövendal).

Museet har modtaget tre Larver fra Selsolund.

## Scolytidæ.

347. *Hylastes*.550. *Ater* Payk.

Nord Sjælland.

Museet eier dels otte Larver, tagne i Rude Hegn i Granstød, dels et Par Larver, mange Pupper og Imagines, tagne i Granstød, men uden nærmere Angivelse af Localitet end Nord Sjælland.

551. Palliatus Gyll.

Nord Sjælland; Jylland.

Der haves mange Larver, nogle Pupper og Imagines, tagne tilsammen i Gran (?) i Rude Hegn og i Steendals Plantage (Sporon).

348. *Hylurgus*.

552. Piniperda L.

Nord Sjælland.

Der haves mange Larver, nogle Pupper og Imagines, saavel friske som udhærdede, tagne sammen i Rude Hegn.

349. *Dendroctonus*.

553. Micans Kug.

Nord Sjælland (Lövendal).

Hr. Lövendal har skjænket Museet en stor Mængde Larver, tagne i Gran i Selsølund og Gjelte Skov, 6. 4. 90.

350. *Phloeosinus*.

554. Liminaris Harr.

New York (C. V. Riley).

351. *Hylesinus*.

555. Crenatus F.

Kjøbenhavn.

Der haves henved en Snees Larver, tagne i Ask.

556. Fraxini Panz.

Nord Sjælland.

Museet eier kun en enkelt Larve.

352. *Polygraphus*.

557. Polygraphus L. (pubescens F.).

Nord Sjælland.

Der haves mange Larver og Pupper, tagne i Gran.

353. *Crypturgus*.

558. Pusillus Gyll.

Nord Sjælland.

Museet eier en halv Snees Larver, tagne i Gran i Rude Hegn.

354. *Xyleborus*.

559. Dispar F.

Syd Sjælland (Meinert).

Der haves mange Larver, Pupper og Imagines, tagne i friske Bogestubbe ved Venmetoftestrand, 9. 7. 84.

355. *Dryocoetes*.

560. Dactyliperda F.

Kjøbenhavn (Meinert).

Der haves henved en Snees Larver, tagne i Daddelkjerter.

561. Villosus F.

Nord Sjælland.

Museet eier syv Larver, tagne i Dyrehaven saavel i Eg som i Bog, sammen med Imagines.

356. *Tomicus*.

562. Bidentatus Herbst. (bidens F.).

Midt Sjælland (Lovendal).

Museet har modtaget af Hr. Lovendal endeel Larver, tagne i ganske tynde Fyrrequiske i Bromme Naaleskov.

563. Laricis F.

Nord Sjælland (Meinert).

Der haves endeel Larver, Pupper og Imagines, tagne sammen i liggende Granstammer.

357. *Scolytus*.

564. Geoffroyi Goeze (destructor Oliv.).

Kjøbenhavn (Lovendal).

Hr. Lovendal har skjænket Museet endeel Larver, Pupper og Imagines, tagne sammen i Elm i Classens Have.

565. Intricatus Ratzeb.

Nord Sjælland.

Der haves syv Larver og syv Pupper, tagne sammen med Imagines i Egebark i Dyrehaven.

566. Pruni Ratzeb.

Vest Sjælland (Bergsøe).

Dr. Bergsøe har skjænket Museet sex Larver, tagne i Skovabild ved Lerchenborg.

567. Quadrispinosus Say

Missouri (C. V. Riley).

568. Ratzeburgii Jans.

Midt Jylland.

Der haves herved en Snees Larver, tagne i gamle Birkestammer ved Silkeborg.

#### Brenthidæ.

##### 358. *Eupsalis*.

569. Minuta Drury.

Missouri (C. V. Riley).

##### 359. *Brenthus*.

570. Anchorago L.

Venezuela (Meinert).

Museet eier herved en Snees temmelig smaa Larver, huggede ud af en stor Træstamme, hvori ogsaa Larven og Puppen til Hylecoetus Brasiliensis fandtes, i Don Elias' Hacienda ved Las Trinchéras, 27. 12. 91. Imago fandtes i Antal under los Bark paa den samme Stamme.

#### Anthotribidæ.

##### 360. *Platyrrhinus*.

571. Latirostris F.

Sjælland.

Museet eier en fjorten Larver og en Puppe, tagne i Bøgestød.

##### 361. *Macrocephalus* (*Anthotribus*).

572. Albinus L.

Falster.

Der haves tretten Larver, en Puppe og en Imago, tagne sammen i Lindestokke i Nykjøbing p. F., medens en anden Imago med Larvehud er taget i Poppel.

Cerambycidæ.

362. *Parandra*.

573. *Brunnea* F.

New York (C. V. Riley).

363. *Prionus*.

574. *Coriarius* L. — Nat. Tidsskr. 3. R. 10. B. p. 396. t. XII. f. 1—12.

Nord Sjælland (Drewsen).

Der haves tre mutilerede Larver, tagne i Egestammer i Dyrehaven.

364. *Mallodon*.

575. *Spinibarbe* L.

St. Jean; Platastaterne.

Museet eier en meget betydelig Mængde Larver, baade store og smaa, fem Pupper og nogle Imagines, bløde saavel som udhærdede, tagne sammen i et dødt, staaende Træ paa St. Jean (Meinert, 2. 1. 92); ligesaa en Larve og en Imago fra Entre Rios, Villa Hernandaria (Will. Sørensen).

365. *Asemum*.

576. *Striatum* L. — Nat. Tidsskr. 3. R. 10. B. p. 401. og 444. t. XIV. f. 1—9.

Nord Sjælland (Meinert).

Der haves syv til otte Larver og ligesaa mange Pupper, tagne sammen med friske Imagines i Naaletræ.

366. *Tetropium*.

577. *Fuscum* F. — Nat. Tidsskr. 3. R. 10. B. p. 400.

Nord Sjælland (Drewsen).



Museet har modtaget af Hr. Drewsen fem Larver, tagne i Gran.

578. *Luridum* L. — Nat. Tidsskr. 3. R. 10. B. p. 398. og 444. t. XIII. f. 1—10.

Nord Sjælland.

Der haves henved en Snees Larver og ligesaa mange Pupper, tagne sammen med Imagines, men uden nærmere Betegnelse, hvorimod to Larver og fire Pupper angives som tagne i Granstød (Meinert).

### 367. *Criocephalus*.

579. *Rusticus* L. — Nat. Tidsskr. 3. R. 10. B. p. 400. og 445. t. XIII. f. 11—19.

Stockholm; Falster.

Museet eier syv Larver, fem Pupper og friske Imagines, tagne sammen i Fyrrestød ved Stockholm (Meinert, Juli 1863), og desuden tre Pupper og friske Imagines, tagne i Fyrrestød i Hannenov Skov paa Falster (E. Benzon og Meinert).

### 368. *Xystrocera*.

580. *Globosa* Oliv. — Nat. Tidsskr. 3. R. 10. B. p. 406. t. XIII. f. 23—24.

Mauritius (Andréa).

Hr. Andréa har skjænket Museet fem Larver, en Puppe og en Imago, tagne i Ved fra ovennævnte Ø, 20. 4. 72.

### 369. *Cerambyx*.

581. *Cerdo* L. — Nat. Tidsskr. 3. R. 10. B. p. 403. t. XV. f. 1—10.

Nord Sjælland.

Museet eier ni Larver, tagne i Bøg i Gjelte Skov (Schiodte), og en Larvehud fra Bogestød (Meinert).

### 370. *Hesperophanus*.

582. *Cinereus* Vill.

Kjøbenhavn (Løvendal).

Museet har modtaget af Hr. Løvendal en Larve, tagen sammen med Imago i Laurbærstokke.

371. *Stromatium*.

583. *Unicolor* Oliv. — Nat. Tidsskr. 3. R. 10. B. p. 407. t. XIV. f. 10—11.

Algérien (Meinert).

Der findes sex, nu tildeels mutilerede Larver og Rester af en Imago, tagne sammen nær Bône i Algérien.

372. *Hypermallus*.

584. *Inermis* Newm.

Florida (C. V. Riley).

Prof. Riley har sendt Museet en Larve under Navn af *Elaphidion inermis* Newm.

373. *Phoracantha*.

585. *Recurva* Newm. — Nat. Tidsskr. 3. R. 10. B. p. 405. t. XVI. f. 1—10.

Ny Holland (Melchior).

Der findes kun en nu mutileret Larve, hjembragt med Imago fra nævnte Localitet.

374. *Cyrtomerus*.

586. *Pilicornis* F. — Nat. Tidsskr. 3. R. 10. B. p. 409. og 445. t. XIII. f. 20—22.

Vestindien.

Museet eier tretten Larver og sex Pupper og friske Imagines, tagne sammen i Træ.

375. *Gracilia*.

587. *Minuta* F. — Nat. Tidsskr. 3. R. 10. B. p. 413. t. XVI. f. 11—12.

Falster (Benzon).

Consul E. Benzon har skjænket Museet syv Larver, tagne i Tøndebaand.

376. *Stenocorus (Rhagium)*.

588. *Bifasciatus* L. — Nat. Tidsskr. 3. R. 10. B. p. 420.  
Midt Sjælland.

Der haves fire Larver, tagne ved Sorø i Egestød.  
(Indagator F. see *Inquisitor*).

589. *Inquisitor* L. — Nat. Tidsskr. 3. R. 10. B. p. 420.  
og 446. t. XVII. f. 8—9.

Nord Sjælland.

Museet eier en halv Snees Larver og et Par Pupper,  
tagne med Imagines under Bark paa liggende Fyrre-  
stammer i Rude Hegn og Tidsvilde Hegn (15. 6. 89).

(*Inquisitor* F. see *Mordax*).

590. *Lineatus* Oliv.

New Jersey (C. V. Riley).

591. *Mordax* De G. — Nat. Tidsskr. 3. R. 10. B. p. 419  
og 445.

Nord Sjælland.

Der haves en halv Snees Larver og fire Pupper,  
tagne deels i Bøgestubbe, deels i Birkestubbe (Alders-  
hvile, Meinert), deels i Birkebrænde i Kjøbenhavn.

(*Mordax* F. see *Sycophanta*).

592. *Sycophanta* Schrank. — Nat. Tidsskr. 3. R. 10. B.  
p. 418 og 445. t. XVII. f. 1—7.

Nord Sjælland (Meinert).

Museet eier en halv Snees Larver og to Pupper,  
tagne i Eg i Charlottenlund.

377. *Toxotus*.

593. *Cursor* L. — Nat. Tidsskr. 3. R. 10. B. p. 420. t.  
XVI. f. 13—19.

Falster (E. Benzon og Meinert).

Museet eier en Snees Larver og et Par Pupper,  
tagne dybt inde i Veddet af Fyrrestød i Hannenov Skov;  
Imago toges dog ikke med det samme.

594. *Meridianus* L. ?

Falster.

Der haves et Par voxne, sammentrukne Larver (i Overgang til Puppeforvandling) og en Puppe, tagne i Ellestød; Bestemmelsen er dog ikke sikker.

### 378. *Leptura*.

595. *Nigra* L.

Nord Sjælland (Meinert).

Der haves ikkun en frisk Imago med Larvehud.

596. *Quadrifasciata* L.

Nord Sjælland; Midt Jylland.

Museet eier fem Larver og en Imago med Larvehud, tagne i Birk, og en halv Snees Larver og to Pupper, tagne i Piil, fra Hellebæk, samt en halv Snees Larver og en Puppe, tagne i Birk, fra Rye (Meinert).

597. *Rubra* L. — Nat. Tidsskr. 3. R. 10. B. p. 423 og 447. t. XVI. f. 20.

Nord Sjælland (Meinert).

Museet eier en halv Snees Larver og halvt saa mange Pupper og en blod Imago, tagne i Fyrrestubbe i Aldershvile.

598. *Sanguinolenta* L.

Nord Sjælland.

Der haves sex Larver, tre Pupper og en Imago, tagne i Granstød i Rude Hegn.

599. *Scutellata* F.

Nord Sjælland; Mellem Italien.

Museet eier fire store Pupper, tagne i Bog i Dyrehaven (Meinert), og en Larve, en Puppe med Larvehud og en Imago, tagne i Eg ved Gennazano (Bergsoe).

(*Testacea* L. see *Rubra*).

### 379. *Molorchus*.

(*Dimidiatus* F. see *Minor*).

600. *Minor* L. — Nat. Tidsskr. 3. R. 10. B. p. 414. t. XV. f. 11—12.

Tübingen (Leydig).

En nu mutileret Larve er modtaget fra daværende Prof. Leydig.

380. *Hylotrypes*.

601. Bajulus L. — Nat. Tidsskr. 3. R. 10. B. p. 417. t. XV. f. 13.

Kjøbenhavn.

Der haves syv til otte Larver, tagne i gammelt Fyrretømmer.

381. *Callidium*.

602. Variabile L. — Nat. Tidsskr. 3. R. 10. B. p. 416 og 445. t. XV. f. 14—21.

Nord Sjælland; Mellem Italien.

Museet eier en stor Mængde Larver, Pupper med Larvehude og Imagines, baade friske og udhærdede, tagne i Eg i Dyrehaven (Meinert), og da navnlig i de tykke Egestolper, som bære Dyrehusene, og hvor de minerede deels under Barken deels inde i Veddet. Dr. Bergsøe har hjembragt fra Gennazano en halv Snees Larver og ligesaa mange Pupper, tagne sammen med Imagines i Eg, i Mai 1863.

382. *Clytus*.

603. Arcuatus L. — Nat. Tidsskr. 3. R. 10. B. p. 413.

Kjøbenhavn (Schlick).

Museet har modtaget af Hr. Schlick to Larvehude, tagne i Bøg; Imago klækkedes.

604. Caprea Say.

Kansas (C. V. Riley).

605. Fulminans F.

Washington D. C. (C. V. Riley).

606. Mysticus L. — Nat. Tidsskr. 3. R. 10. B. p. 411. og 445. t. XIV. f. 22—25.

Nord Sjælland; Falster.

Museet eier fra førstnævnte Localitet en Snees Larver og fire Pupper, tagne i Eg, og fra sidstnævnte en frisk Imago med Larvehud.

607. *Robinia* Först.

Missouri (C. V. Riley).

Prof. Riley har sendt Museet hele Udviklingsrækken under Navn af *Cyllene picta* Drury.

### 383. *Phoenicus*.

608. *Sanguinipennis* Lacord. — Nat. Tidsskr. 3. R. 10. B. p. 410. t. XIV. f. 12—21.

Kjøbenhavn (Kjellerup).

Hr. Kjellerup har skjænket Museet fem, nu tildeels mutilerede Larver, en Puppe og en Imago, tagne i Farvetræ fra Pernambuco.

### 384. *Parmena*.

609. *Pubescens* Dalm. — Nat. Tidsskr. 3. R. 10. B. p. 431. t. XVIII. f. 3—4.

Algérien (Meinert).

Der haves to Larver, tagne sammen med Imago i Plantestængler nær Bône i Algérien. Schiødtes Artsnavn *rubescens* er uden Tvivl en Skrivefejl for *pubescens*.

### 385. *Morimus*.

610. *Asper* Sulz. — Nat. Tidsskr. 3. R. 10. B. p. 429. t. XVII. f. 17—18.

Mellem Italien (Meinert).

Museet eier femten Larver, store og smaa, tagne sammen med Imago i Egestammer ved Arizzia.

(*Lugubris* F. see *Asper*).

### 386. *Monohammus*.

611. *Sartor* L. — Nat. Tidsskr. 3. R. 10. B. p. 434. t. XVIII. f. 9—10.

Kjøbenhavn (Gericke).

Kunstdreier Gericke skjænkede i sin Tid Museet to Larver.

387. *Batocera*.

612. *Armata* Oliv? — Nat. Tidsskr. 3. R. 10. B. p. 432.  
t. XVIII. f. 5—8.

Batavia (Olrík).

Museet eier en enkelt Larve, men Bestemmelsen er meget tvivlsom, saameget mere som Arten, der heller ikke findes paa Museet, angives at stamme fra Ny Guinea.

613. *Rubus* L. — Nat. Tidsskr. 3. R. 10. B. p. 449.

Calcutta (Galathea-Exped.).

Der haves ikkun to Pupper; Bestemmelsen er vel usikker, men Arten horer til de almindeligste af denne Slægt og er ogsaa hjembragt i Imago fra Calcutta sammen med Pupperne.

388. *Mesosa*.

614. *Nubila* Oliv. — Nat. Tidsskr. 3. R. 10. B. p. 436  
og 450. t. XVII. f. 19—20.

Falster; Midt Jylland.

Af denne almindelige, sydlige Art haves en Larve, taget i Lind, og to Larver og en Larvehud, tagne i Poppel, alle fra Falster; en Puppe er etiketteret »Bog, Rye,« hvor Arten vistnok er meget sjælden og knap hidtil truffet som Imago.

389. *Prosopocera*.

615. *Bipunctata* Drury? — Nat. Tidsskr. 3. R. 10. B. p. 449.  
Guinea (Chenon).

Der haves en enkelt Puppe, hvis Bestemmelse dog er meget tvivlsom; thi vel er Arten temmelig almindelig i Guinea og haves ogsaa som Imago fra Chenon, men Puppen, som dog efter Antennernes Længde synes at være en Han, har ingen Proces paa Panden.

(*Fronticornis* F. see *Bipunctatus*).

390. *Pogonochærus*.

616. *Dentatus* Fourer. — Nat. Tidsskr. 3. R. 10. B. p.  
428 og 448. t. XVII. f. 14—16.

Helsingborg (Meinert).

Museet eier en stor Deel Larver, et Par Pupper og flere Imagines, tagne sammen i Æbletræ ved Vestrabygaard, nær Helsingborg.

(Pilosus F. see Dentatus).

391. *Stirastoma*.

617. *Depressum* L.

Grenada; Surinam; Venezuela.

Museet eier otte Larver, store og smaa, og Imago med Larvehud, tagne i Cacaostammer paa Grenada (Mr. Sergeant, 23. 5. 91), dernæst et Par Larver fra Surinam (C. V. Riley) og endelig sex Larver og Imago med Larvehud fra Don Elias' Hacienda, nær Las Trinchéras (Meinert, 24. 12. 91).

392. *Lagochirus*.

618. *Araneiformis* L.

Venezuela (Meinert).

Der haves otte Larver, tre Pupper og Imago med Larvehud, huggede ud af en liggende Træstamme ved St. Estéban, 7. 12. 91.

393. *Liopus*.

619. *Haldermanni* Lec.

Georgien (C. V. Riley).

620. *Nebulosus* L. — Nat. Tidsskr. 3. R. 10. B. p. 426 og 448. t. XVII. f. 12—13.

Nord Sjælland (Meinert).

Museet eier over en halv Snees Larver, fire Pupper og flere Imagines, tagne sammen i og under Bark paa en stor Abild i Charlottenlund.

394. *Oedopeza*.

621. *Ambigua* Dej.

Venezuela (Meinert).

Museet eier over en Snees Larver, sex Pupper og



en Imago, tagne under Bark i Omegnen af Carácas, 27. 6. 91; det lykkedes at klække Imago.

395. *Acanthocinus* (*Astynomus*).

622. *Ædilis* L. — Nat. Tidsskr. 3. R. 10. B. p. 424 og 448. t. XVII. f. 10—11.

Nord Sjælland; Tyrol.

Der haves sex Larver, tagne under Bark paa liggende Fyrrestammer i Tidsvilde Hegn (Meinert, 15. 6. 89.), og tre tildeels mutilerede Larver samt fire Pupper fra Rude Hegn, endeligt fem Pupper og en Imago, tagne under Bark ved Botzen (Meinert, 1868).

396. *Exocentrus*.

623. *Balteus* L. (*Lusitanus* L.?)

Lolland.

Museet eier en mutileret Larve og en Puppe, tagne i *Tilia parvifolia*.

397. *Saperda*.

624. *Calcarata* Say.

Kansas (C. V. Riley).

625. *Carcharias* L. — Nat. Tidsskr. 3. R. 10. B. p. 437 og 450. t. XVIII. f. 11—16.

Midt Jylland; Nord Sjælland.

Der haves henved en Snees Larver, tagne i Popler ved Silkeborg (Drewsen) og i *Populus Ontariensis* ved Hjedsbæk (Hecquet), og en Puppe fra Skodsborg (Drewsen).

626. *Populnea* L. — Nat. Tidsskr. 3. R. 10. B. p. 439.

Nord Sjælland (Meinert).

Museet eier henved en Snees Larver og en Puppe, tagne i Grene af Bæverasp.

627. *Tridentata* Oliv.

Michigan (C. V. Riley).

Prof. Riley har sendt Museet hele Udviklingsrækken: to Larver, to Pupper og en Imago.

628. *Vestita* Say.

Michigan (C. V. Riley).

398. *Stenostola*.

629. *Ferrea* Schrank. — Nat. Tidsskr. 3. R. 10. B. p. 439. t. XVIII. f. 17—18.

Midt Jylland (L. Lund).

Hr. Lund har skjænket Museet otte Larver og to Imagines.

(*Nigripes* F. see *Ferrea*).

399. *Tetraopes*.

630. *Tetraophthalmus* Forst.

New Hampshire (C. V. Riley).

Bruchidæ.

400. *Bruchus*.

631. *Loti* Payk.

Falster (Schiodte).

Museet eier en stor Mængde Larver og nogle Pupper, tagne i *Lathyrus maritimus* ved Solyst paa Falsters Øststrand.

632. *Obsoletus* Say.

Indian Territory (C. V. Riley).

633. *Rufimanus* Bohem.

Lolland (Schade).

Hr. Schade har foræret Museet en fem Pupper og over en Snees Larver, tagne med Imagines i Hestebønner.

Chrysomelidæ.

401. *Donacia*.

634. *Clavipes* F. (*Menyanthidis* Gyll.).

Nord Sjælland (Levinsen).

Museumsinspector Levinsen har foræret Museet nogle Coconer siddende paa Rør og indesluttende to Larver, to Pupper og en Imago; de ere tagne ved Baadebroen i Lyngby Sø, 16. 8. 89.

635. *Crassipes* F.

Nord Sjælland (Meinert).

Der haves en stor Mængde Larver, tagne paa Rodderne af *Nymphæa* i Strandmolledammen, Mai 1856.

636. *Limbata* Panz. (lemnæ F.).

Nord Sjælland (Levinsen).

Hr. Levinsen har foræret Museet en Larve og elleve Pupper, indesluttede i Coconer; de ere tagne paa *Sparanium* ved Fortunen, 10. 8. 89.

637. *Piscatrix* Say.

Michigan (C. V. Riley).

638. *Semicuprea* Panz.

Nord Sjælland; Midt Jylland.

Fra første Sted haves tre Larver, fra det andet, Rye, en halv Snees Larver og to Pupper, tildeels i Coconer (Schiodte).

402. *Hæmonia*.639. *Appendiculata* Panz. (equiseti F.).

Leipzig; Kjøbenhavn.

Schiodte har i sin Tid, Mai 1845, fundet tre tørre Coconer, tildeels med Dyr, i Saltsoerne ved Leipzig, medens en lille Larve, ligeledes taget af Schiodte, skriver sig fra Sortedamssøen ved Kjøbenhavn.

640. *Zosteræ* F. (*Ruppia* Germ.).

Amager (Meinert).

Mange Larver, et Par Pupper og nogle Coconer haves; de ere tagne sammen med talrige Imagines paa *Ruppia maritima* i Kallebodstrand langs Vestkysten af Amager.

403. *Lema*.641. *Melanopa* L.

Nord Sjælland.

Der haves en halv Snees smaa Larver.

404. *Crioceris*.642. *Asparagi* L.

Nord Sjælland (Borries).

Hr. Herm. Borries har skjænket Museet en Snees Larver, tagne paa Asparges ved Søbo, nær Helsingør, 22. 8. 88.

643. *Merdigera* L.

Husum; Kjøbenhavn.

Museet eier mange Larver, dels fra Husum (Hansen), dels fra Kjøbenhavn (Løvendal).

405. *Labidostomis*.644. *Lucida* Germ.

Syd Spanien (Meinert).

Der haves to Coconer med Larver og en Imago.

406. *Clytra*.645. *Quadripunctata* L.

Tübingen; Nord Sjælland.

Museet eier tre Pupper med Coconer, tagne sammen med Imagines ved Tübingen (Meinert 1868), og en Larve og tre lukkede Coconer, tagne i Rude Hegn hos *Formica rufa*, foruden en Larve, to Pupper og en Imago, skjænkede af Hr. Schlick, som har klækket Dyret.

407. *Coscinoptera*.646. *Dominicana* F.

Missouri (C. V. Riley).

Prof. Riley har sendt Museet hele Udviklingsrækken: en Larve, en Puppe og en Imago.

408. *Gastroidea*.647. *Cyanea* Melsh.

Washington D. C. (C. V. Riley).

648. *Polygoni* L.

Sjælland.

Der haves en Snees Larver, tagne sammen med Imagines.

## 649. Raphani F.

Nord Sjælland (Boye).

Museet har modtaget af Hr. Boye en stor Mængde Larver, tagne sammen med Imagines.

409. *Phaedon*.

## 650. Concinnus Steph.

Danmark.

Der haves to Larver uden nærmere Bestemmelse.

## 651. Cochleariæ F.

Nord Sjælland (Boye).

Museet eier syv Larver og en Imago, tagne sammen.

410. *Prasocuris (Helodes)*.

## 652. Aucta F.

Sorø (Schlick).

Hr. Schlick har skjænket Museet sex Larver, syv Pupper og en Imago, tagne paa Ranunkler og klækkede.

## 653. Hannoverana F.

Sorø (Schlick).

Museet skylder Hr. Schlick ti Larver, fire Pupper og en Imago, tagne paa *Caltha palustris* og klækkede.

## 654. Phellandrii L.

Nord Sjælland; Falster.

Der haves over en Snees Larver og halvt saamange Pupper foruden Imagines, tagne deels i Nord Sjælland (Boye) deels i Tvede Sø, nær Stubbekjøbing (Meinert).

411. *Plagiodera*.

## 655. Versicolora Laich. (armoraciæ F.).

Syd Jylland (Schlick).

Hr. Schlick har skjænket Museet nogle Larver og Pupper, tagne i Greisdalen, 17. 7. 74; Hr. Schlick har klækket Dyret.

412. *Melasoma (Lina)*.

## 656. Ænea L.

Sorø (Schlick).

Museet skylder Hr. Schlick mange Larver, tre Pupper med Larvehude og Imagines, tagne paa El og klækkede.  
657. *Collaris* L.

Sjælland; Skagen.

Tolv Larver, to Pupper og tre Imagines haves fra Sjælland (Bergsøe) og elleve Larver fra Skagen, tagne paa *Salix pusilla* (Schiødte).

658. *Lineatopunctata* Forst.

Pennsylvanien (C. V. Riley).

Prof. Riley har sendt Museet tre Larver, en Puppe og en Imago under Navn af *Lina scripta*.

659. *Populi* L.

Danmark.

Museet eier mange Larver og en fem Pupper fra forskellige Steder i Landet og desuden hele Udviklingsrækken: Æg, mange Larver, store og smaa, Puppe og Imago, tagne sammen paa Popler ved Vemmetoftestrand, (Meinert, 10. 7. 85).

660. *Tremulæ* F.

Roeskilde.

Fra Boserup ved Roeskilde haves en femten Larver med Imago.

### 413. *Chrysomela*.

661. *Fastuosa* L.

Nord Sjælland (Boye).

Fire Larver med Imago haves fra Hr. Boye.

662. *Graminis* L.

Lolland (E. Benzon).

Consul E. Benzon har skjænket Museet over en Snees Larver med Imago, som angives at være tagne paa *Scutellaria gallericulata*.

663. *Hæmoptera* L.

Amager (Meinert).

Der haves ikkun en Larve, tagen sammen med Imagines paa Amagerfælled.

664. Polita L.

Syd Sjælland (Meinert).

Museet eier to Larver, tagne sammen med Imagines i en Groft ved Vemmetofte, 9. 7. 84.

665. Varians F.

Nord Sjælland; Midt Jylland.

Museet eier fra første Localitet en Snees Larver, store og smaa, fem Pupper og et Par bløde og friske Imagines (Boye), og fra den anden, Rye, en Snees Larver med et Par Imagines.

#### 414. *Zygogramma*.

666. Disrupta Rog.

Texas (C. V. Riley).

#### 415. *Leptinotarsa*.

667. Decemlineata Say.

New York; Missouri.

Fra første Sted haves mange Larver, store og smaa, skjænkede Museet af Hr. L. Lund, fra andet Sted en syv Larver, sendte af Prof. Riley.

668. Juncta Say.

Maryland (C. V. Riley).

#### 416. *Timarcha*.

669. Rugosa L.

Syd Spanien (Meinert).

Museet eier fire Larver, tagne sammen med Imago.

670. Tenebricosa F.

Syd Tydskland; Italien.

Museet eier en mindre Larve, sendt af Waltl sammen med Imagines fra Passau, og en ni større Larver, tagne ved Roma (Bergsøe og Collin) og paa Sicilien (Schjødte).

417. *Phytodecta* (*Gonioctena*).671. *Olivacea* Forst. (litura F.).

Jylland (Meinert).

Museet eier mange Larver, tagne paa Gyvel sammen med Imagines deels fra Veile deels fra Rye.

672. *Quinquepunctata* L.

Sjælland (Boye).

Museet skylder Hr. Boye mange Larver og Pupper, tagne sammen med Imagines i Nord Sjælland; ogsaa fra Svenstrup i Midt Sjælland har Museet en halv Snees Larver, tagne paa *Sorbus aucuparia* af Hr. Boye.

673. *Rufipes* De G.

Syd Jylland (Schlick).

Hr. Schlick har foræret Museet en sex Larver, tagne paa Bæverasp sammen med mange Imagines i Grundet Skov, Juni 1874.

674. *Viminalis* L.

Jylland.

Museet eier mange Larver, tagne med Imagines paa *Salix caprea*.

418. *Phyllodecta* (*Phratora*).675. *Vitellinæ* L.?

Danmark.

Der haves en Snees Larver sammen med Imagines, men Larverne synes mig altfor store.

419. *Haltica* (*Graptodera*).676. *Chalybea* Ill.

New York (C. V. Riley).

677. *Foliacea* Lec.

Colorado (C. V. Riley).

678. *Jamaicensis* F. (*plebeia* Chevr.).

Venezuela (Meinert).

Der haves en stor Mængde Larver, tagne sammen med Skarer af Imagines paa en *Juessiea* sp., 8. 7. 91.



420. *Disonycha*.

679. Alternat Ill.  
Missouri (C. V. Riley).  
680. Collaris F.  
Michigan (C. V. Riley).

421. *Dibolia*.

681. Borealis Chevr. (ærea Melsh.)  
New York (C. V. Riley).  
Prof. Riley har sendt Museet en Række Larver,  
Pupper og Imagines under Navn af *Dibolia ærea*.

422. *Psylliodes*.

682. Chrysocephala L.?  
Kjøbenhavn.

Der haves otte Larver, tre Pupper og tre tildeels bløde Imagines, tagne i Raps fra Omegnen af Kjøbenhavn, Mai og Juni 1867.

423. *Diabrotica*.

683. Longicornis Say.  
Missouri (C. V. Riley).

424. *Agelastica*.

684. Alni L.  
Nord Sjælland.

Der haves mange Larver, uden nærmere Bestemmelse eller Imago; dog er der ikke Grund til at tvivle paa Artsbestemmelsens Rigtighed.

425. *Trirrhabda (Galeruca)*.

685. Tomentosa L.  
Missouri (C. V. Riley).

686. Viburni L.  
Midt Sjælland; Øst Fyen.

Museet skylder Hr. Schlick en femten Larver, tagne ved Sorø, og fra Flodstrup haves en stor Mængde Larver, ligeledes tagne paa Viburnum (Meinert, 13. 6. 86.)

426. *Galerucella* (*Galeruca*).

687. Capreæ L.

Nord Sjælland (Boye).

Museet skylder Hr. Boye over en Snees Larver og ligesaa mange Pupper.

688. Decora Say.

Washington D. C. (C. V. Riley).

689. Lineola F.

Nord Sjælland (Meinert).

Der haves mange Larver, Pupper og Imagines, tagne sammen paa Rumex.

690. Nymphæa L.

Falster (Schjødte).

Museet eier en Snees Larver og et Par Pupper, tagne paa Aakande i Tvede Sø.

691. Tenella L.

Nord Sjælland (Boye).

Museet skylder Hr. Boye ni Larver, en Puppe og en Imago.

427. *Monocesta*.

692. Coryli Say.

Missouri (C. V. Riley).

428. *Galeruca* (*Adimonia*).

693. Interrupta L.

Nord Sjælland (Wesenberg-Lund).

Hr. Wesenberg-Lund har skjænket Museet en Puppe og en Imago, tagne ved Tidsvilde, 15. 6. 89.

694. Tanaceti L.

Nord Sjælland (Schlick).

Museet skylder en Larve til Hr. Schlick, som har taget nogle faa Larver ved Holte og klækket Dyret, 24. 6. 88.

429. *Agelasa* (*Agelastica*).

695. Halensis L.

Amager.

Museet ejer henved en Snees Larver.

430. *Alurnus*.696. *Marginatus* Guér?

Brasilien.

Daværende Prof. Glaziou har sendt Prof. Warming endeel Stykker, med Angivelse af at de vare tagne nær Novo Friburgo i Rio Bengala; efter Warming lever den i Vandfald sammen med (af?) *Podostomaceer*. Ogsaa fra Rio Janeiro haves et Stykke (*Friis*), ligesom den i sin Tid hjembragtes fra *Continguiba* af Capt. Hygom.

Der haves en halv Snees meget store Larver, som ligne den følgende *Arescus*-Larve saa meget, at den maa hore til en nærstaaende Slægt, men af saadanne Slægter kan kun tænkes paa *Alurnus*, blandt hvis Arter *marginatus* atter er den almindeligste og mest udbredte i Brasilien, at dømme efter de kjøbenhavnske Samlinger.

431. *Arescus*.697. *Monoceros* Oliv.Venezuela (*Meinert*).

Museet eier en tretten Larver, større og mindre, tagne sammen med talrige *Imagines* i *Hjerteskedene* af en *Heliconia*, St. Estéban, 4—7. 12. 91.

432. *Microrrhopala*.698. *Vittata* F.Washington D. C. (*C. V. Riley*).433. *Chalepus*.699. *Klugii* Dej. (in litt.).Venezuela (*Meinert*).

Museet eier tre Larver, tagne sammen med adskillige *Imagines* i *Hjerteskedene* af en *Heliconia* (sammen med *Arescus monoceros*) i St. Estéban, 4. 12. 91. Artsbestemmelsen er efter *Westermanns* Samling.

434. *Poecilaspis*.700. *Bonariensis* Bohem.Paraguay (*Will. Sørensen*).

Museet skylder Dr. Will. Sørensen tre Pupper og to Imagines fra Riacho del Oro.

435. *Chelymorphismus*.

701. Argus Licht.

Jowa (C. V. Riley).

436. *Cassida*.

702. Flaveola Thunb. (obsoleta Ill.).

Nord Sjælland.

Der haves henved en Snees Larver og ligesaa mange Pupper og flere tildeels ganske lyse Imagines, tagne ved Vedbæk paa Helianthus peploides.

703. Murræa L.

Falster (Schjødte).

Der haves en halv Snees Larver og et Par Pupper.

704. Nebulosa L.

Falster.

Museet eier syv Larver, tagne sammen med Imago.

705. Texana Crotch.

Texas (C. V. Riley).

706. Vibex L. (rubiginosa Müll.).

Nord Sjælland (Boye).

Museet skylder Hr. Boye en stor Mængde Larver og Pupper.

707. Viridis L.

Sjælland.

Der haves syv Larver og otte Pupper.

437. *Coptocycla*.

708. Aurichalcea F.

Virginien (C. V. Riley).

Erotylidæ.

438. *Dacne (Engis)*.

709. Bipustulata Thunb. (humeralis F.).

Nord Sjælland (Boye).

Museet skylder Hr. Boye over en halv Snees Larver

og dobbelt saa mange Pupper samt Imagines, saavel blode som udhærdede, tagne i Svamp paa Piil ved Kokkedal.

439. *Triplax*.

710. *Ænea* Schall.

Nord Sjælland (Drewsen).

Museet skylder Hr. Drewsen mange Larver og Pupper, tagne i *Boletus*.

711. *Russica* L.

Nord Sjælland; Midt Jylland.

Museet eier fem Larver og tre Pupper, givne af Hr. Drewsen, og mange Larver, tagne med Imagines under Birkebark ved Rye (Schiødte).

440. *Cyrtotriplax (Tritoma)*.

712. *Bipustulata* F.

Syd Sjælland (Schlick).

Hr. Schlick har foræret Museet fem Larver, to Pupper og to blode Imagines, tagne sammen.

713. *Unicolor* Say.

Missouri (C. V. Riley).

Prof. Riley har sendt Museet to Larver og en Puppe under Navn af *Triplax unicolor*.

441. *Cypherotylus*.

714. *Boisduvalii* Chevr.

New Mexico (C. V. Riley).

Museet har modtaget fem Larver under Navn af *Erotylus Boisduvalii*.

Endomychidæ.

442. *Lycoperdina*.

715. *Bovistæ* F.

Falster (E. Benzon).

Consul E. Benzon har skjænket Museet sex Larver, tagne sammen med Imagines i Svampe.

716. *Succincta* L.

Nord Sjælland (Schlick).

Hr. Schlick har foræret Museet over en Snees Larver, en Puppe og en Imago.

443. *Aphorista*.

717. Vittata F.

Washington D. C. (C. V. Riley).

444. *Stenotarsus*.

718. Hispidus Herbst.

Washington D. C. (C. V. Riley).

Museet har modtaget hele Udviklingsrækken: tre Larver, en Puppe og en Imago.

445. *Endomychus*.

719. Biguttatus Say.

Tennessee (C. V. Riley).

720. Coccineus L.

Nord Sjælland (Schjødte?).

Museet eier en femten Larver og sex Pupper, tagne sammen i Svampe paa Birk ved Tryggerød.

Coccinellidæ.

446. *Megilla*.

721. Maculata De G.

Washington D. C. (C. V. Riley).

447. *Hippodamia*.

722. Convergens Guér.

Missouri (C. V. Riley).

723. Tredecimpunctata L.

Kjøbenhavn (Schlick).

Museet skylder Hr. Schlick en Larve og en Puppe, tagne ved Leer Søen; Dyret klækkedes, 1. 9. 68.

448. *Anisosticta*.

724. Novemdecimpunctata L.

Nord Sjælland (Boye).

Hr. Boye har skjænket Museet tre Larver, to Pupper og to Imagines, tagne sammen paa Lythrum ved Kokkedal.

449. *Adalia*.

725. *Bipunctata* L.

Stockholm (Schiødte):

Museet eier over en halv Snees Larver, ligesaa mange Pupper og Imagines, tagne sammen i Juli 1863.

450. *Coccinella*.

723. *Decempunctata* L. (*variabilis* Ill.).

Falster (Schiødte?).

Museet eier fire Larver, ti Pupper og en Imago, tagne sammen paa Egeløv.

727. *Novemnotata* Herbst.

Indiana (C. V. Riley).

Museet har modtaget hele Udviklingsrækken: to Larver, en Puppe og en Imago.

728. *Septempunctata* L.

Sjælland.

Der haves mange Larver, Pupper og Imagines, tagne sammen paa Ærter.

729. *Transversoguttata* Fald.

Grønland (Lundbeck).

Museet eier sex Larver, tagne enkeltviis paa forskjellige Steder i Grønland, i Juli og Avgust 1889.

730. *Undecimpunctata* L.

Amager (Schiødte?).

Der haves fire Larver med et Par Imagines.

451. *Mysia*.

731. *Oblongoguttata* L.

Nord Sjælland.

Der haves to voxne og en ung Larve fra Gran; Hr. Schlick klækkede Puppen, 25. 6. 89, og har den tilhørende Larvehud.

452. *Halysia*.732. *Ocellata* L.

Nord Sjælland.

Der haves fem Pupper og to Imagines, tagne sammen paa Gran, og desuden tretten Larver og to Imagines, tagne paa Gran ved Fruebjerg (Meinert, 20. 6. 89).

733. *Quindecimpunctata* Oliv.

Washington D. C. (C. V. Riley).

734. *Sedecimguttata* L.

Syd Sjælland (Meinert).

Museet eier en Larvehud, en Puppe og en klækket Imago, fra Ask ved Vordingborg, desuden en større Larve, skjænket af Hr. Schlick, som har klækket Dyret.

735. *Vigintiduopunctata* L.

Nord Sjælland (Boye).

Museet eier tre Larver og en Puppe.

736. *Vigintimaculata* Say.

Michigan (C. V. Riley).

453. *Micraspis*.737. *Sedecimpunctata* L. (*duodecimpunctata* L. var.).

Falster.

Der haves mange Larver, et Par Pupper og Imagines, tagne paa Engbund.

454. *Neda*.738. *Sanguinea* L.

Venezuela (Meinert).

Museet eier tolv Larver med Imago, tagne ved Macarao, 10. 9. 91.

455. *Chilocorus*.739. *Bivulnerus* Muls.

Louisiana (C. V. Riley).

740. *Similis* Rossi (*renipustulatus* Scriba).



Falster (Meinert).

Der haves en Snees Larver og en Imago.

456. *Scymnus*.

741. *Frontalis* F.

Amager (Meinert).

Museet eier to Larver, en Puppe og en Imago, tagne sammen under Stene.

742. Sp.?

Venezuela (Meinert).

Meget stor Art, sort med graa Behaaring, som efterlader et Par store runde nøgne Pletter paa Vingedækkerne.

Der haves endeel Larver, Pupper og Imagines, tagne sammen paa Træstammer i Carácas. Larverne og Pupperne have et meget betydeligt Voxlag til Beklædning; Dyret klækkedes.

457. *Coccidula*.

Rufa Herbst.).

Nord Sjælland (Schlick).

Hr. Schlick eier en Larve, en Puppe og en Imago fra Tidsvilde Strand ved Roden af Marehalm. Dyret klækkedes, idet en Larve forpuppedes 21. 8. 92, og Imago udkrøb af denne Puppe 26. 8. 92.

458. *Epilachna*.

743. *Borealis* F.

Alabama (C. V. Riley).

744. *Corrupta* Muls.

New Mexico (C. V. Riley).

745. *Cruciata* Muls.?

Venezuela (Meinert).

Der haves kun en Larve og en Imago, tagne sammen ved Macarao, 9. 9. 91.

459. *Subcoccinella (Lasia).*746. *Vigintiquatuor-punctata* L. (*globosa* Schneid.).

Nord Sjælland (Boye).

Museet skylder Hr. Boye en Snees Larver, et Par Pupper og Imagines.

460. *Cynegetis.*747. *Impunctata* L.

Sorø (Schlick).

Hr. Schlick har skjænket Museet syv Larver, en Puppe og Imago; Dyret blev klækket.

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I første Stykke af denne Larvefortegnelse, 3. B. p. 194, har jeg under *Acilius sulcatus* bemærket, at ogsaa vor anden Art, *Ac. canaliculatus* Nic. eller *fasciatus* De G. fandtes paa Museet. Bemærkningen var aldeles foreløbig, indsat under Correcturlæsningen, men i Mellemtiden har jeg gjennemstuderet vore Beholdninger af *Acilius* Larver og fundet, at vi foruden henimod hundrede Larver af *Ac. sulcatus* og en tredive Larver af *Ac. fasciatus* have en halv Snees Larver af en mindre, venezulansk Art. En Fremstilling af disse tre Larver, og navnlig af de to danske, med Udsigt over de forskjellige Larvestadier vil med tilhørende Kobbervævsel findes optaget i Overs. ov. Vid. Selsk. Forhandl. f. 1893.

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# Landisopoder fra Venezuela, indsamlede af Dr. Fr. Meinert.

Af

**G. Budde-Lund.**

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Siden jeg i 1885 publicerede mit Arbeide over samtlige Landisopoder (Crustacea Isopoda Terrestria), har jeg fra adskillige offentlige og private Samlinger modtaget Sendinger af disse Dyr til Bestemmelse, og forsaavidt der deri var ny Former, har jeg undersøgt dem og udarbeidet Beskrivelser over dem. Efterhaanden, som de ere fremkomne, at publicere Beskrivelserne over ny ofte nærstaaende Arter, der ikke i hoiere Grad belyse Bygningsforholdene eller Systematiken hos disse Krebsdyr, har jeg anset for at være af underordnet Værd. Naar et større Materiale foreligger, har jeg tænkt mig at foretage en Revision af enkelte Slægter eller Artsgrupper, for derved at oplyse, foruden Affiniteterne, den geografiske Udbredelse af denne af Havdyr saa sent og mærkeligt udviklede Type.

Da Inspector, Dr. phil. Meinert, der fra Juni 1891 til Februar 1892 opholdt sig i Venezuela, ved Siden af sine andre Arthropodindsamlinger har lagt en ikke ringe Vægt paa Indsamlingen af Landisopoder, og der

derved er fremkommet et betydeligt Antal ny Arter, og da han med sædvanlig Velvillie har stillet denne Museet nu tilhørende Samling til min Raadighed til Undersøgelse, har jeg anset det for tidsvarende at beskrive disse Former, da de i alle Tilfælde ikke ville savne Interesse som Bidrag til Oplysning af et lille Stykke tropisk Fauna.

Alle her opførte Arter, paa en nær, ere indsamlede af Dr. Meinert. Der kjendtes tidligere kun to Landisopoder fra Venezuela, begge beskrevne af mig, *Armadillo clausus* og *Armadillo multipunctatus*, tagne i Omegnen af Carácas. Det er ogsaa i den nærmeste Omegn af Carácas (Rio Catuche, Dos Caminos, Calvariebjerg, Macarao, Las Adjuntas, Los Tejes) samt paa de noget fjernere liggende Localiteter, La Moka mod Øst, Las Trinchéras og St. Estéban mod Vest, at Dr. Meinert har foretaget sine Indsamlinger.

Foruden den ene af de nysnævnte to *Armadillo*-arter, *Armadillo multipunctatus*, som ikke er gjenfunden af Dr. Meinert, opføres her 6 Arter af Slægten *Armadillo*, hvoraf 5 ere ny, den ene dog, som funden paa Grenada, ikke tilhørende Venezuelas Fauna, 1 *Porcellio*art, 1 *Metoponorthus*, 2 *Rhyscotus*, begge ny, 3 *Philoscia*, alle ny, 5 *Alloniscus*, alle ny, 1 *Lyprobius*, 1 *Scleropactes*, ny, 2 *Ligia*, hvoraf 1 ny, den anden ikke fra Venezuela. Ialt er saaledes kjendt 21 Arter Landisopoder fra Venezuela, hvoraf 16 hidtil ubeskrevne.

### *Armadillo clausus.*

Budde-Lund, Crustacea Isopoda Terrestria. 23.

Af denne Art, som er repræsenteret saavel i Berliner- som Petersborgermuseet ved Exemplarer betegnede »Carácas«, er hjembragt en lille Suite, sigtet i August Maaned ved La Moka.

*Armadillo rubropunctatus.*

Subovalis, valde convexus; trunci tuberculositates laterales ordinariæ magnæ; caput fortiter rugose tuberculatum; in medio trunci segmentorum ad marginem posteriorem granula plerumque novena in series duas disposita, in segmento primo ante etiam tria granula, duo anteriora juxtaposita majora, omnia subconfluentia; cetera superficies reticulate punctata.

Antennæ tertia corporis parte vix longiores; flagelli articulus prior altero triplo brevior.

Oculi mediocres, a margine laterali capitis satis distantes; ocelli circiter 16.

Clypeus lobis mediocribus, late rotundatis. Epistoma margine superiore curvato, ante leviter transverse sulcato, frontem multum superante.

Trunci segmentum primum epimeris crassis, revolutis, margine laterali ad longitudinem late et satis profunde sulcato, post inæqualiter fisso: lacinia interior major; segmentum secundum epimeris bipartitis: pars interior exteriore multo angustior sed vix brevior, oblique retroducta, subrectangula. Margo posterior segmenti primi subtransversus.

Caudæ segmentum anale duplo fere latius quam longius, in medio leviter coarctatum post subrecte vel levissime curvate truncatum, supra in medio transverse curvate impressum. Epimera segmentorum 3—4—5 infra in basi paulum inflexa. Articulus basalis uropodum oblique subtriangulus, ejusdem fere longitudinis et latitudinis; ramus exterior minutissimus procul ab apice insertus; rami interiores brevissimi.

Color pallide flavus, punctis et maculis fuscis vel rufis creberrimis ornatus.

Long. 15 m. m. Lat. 7,5 m. m.

Kun et Individ af denne smukke Art er funden ved Las Trinchéras i November ved Sigtning.

*Armadillo venustus.*

Oblonge ovalis vel subovalis, valde præsertim postice convexus; trunci tuberculositates ordinariæ parvæ, subdeletæ; tota superficies minutissime reticulate transverse striata.

Antennæ corpore dimidio vix breviores; flagelli articulus prior altero circiter triplo brevior.

Oculi mediocres; ocelli circiter 20, ocelli seriei interioris minores.

Clypeus lobis mediocribus, subrecte triangulis. Epistoma margine superiore frontem paulisper, maxime in lateribus superante, leviter curvato, angulis late rotundatis.

Trunci segmentum primum epimeris crassioribus, ante paulum revolutis, margine laterali ad longitudinem manifesto, ante angustius sulcato, post æqualiter fisso; segmentum secundum epimeris bipartitis: pars interior exteriore multo angustior et paulo brevior, oblique retroducta, ad apicem paulum angustata. Margo posterior segmenti primi utrinque levissime sinuatus.

Caudæ segmentum anale paulo latius quam longius, pone medium leviter coarctatum, apice leviter curvate truncato, angulis posticis obtusis. Articulus basalis uropodum subtrapezoidalis, satis longior quam lator; ramus exterior minutissimus, procul ab apice insertus; rami interiores breves.

Color albidus vel pallide flavus, maculis, præsertim in capite et in cauda et in lateribus trunci creberrimis, fuscis. Pedes et antennarum basis albida, articulus quintus et plerumque articulus quartus et etiam tertius obscuriores, subnigri.

Long. 7—7,5 m. m. Lat. 3,5 m. m.

Denne Art er taget i August ved La Moka, i September ved Las Adjuntas og d.  $\frac{4}{12}$  1891 ved St. Estéban, ialt i 11 Exemplarer.

*Armadillo pumilus.*

Oblonge ovalis, convexus; trunci tuberculositates ordinariæ magnæ, tota superficies dense squamate punctata.

Antennæ tertia corporis parte vix longiores; flagelli articulus prior altero plus duplo brevior.

Oculi minores; ocelli circiter 15, mediocres, nonnulli minores.

Clypeus lobis mediocribus, late rotundatis. Epistoma margine superiore frontem paulum, maxime in lateribus, superante, leviter curvato.

Trunci segmentum primum epimeris crassioribus, paulum revolutis, in margine laterali ad longitudinem levius infra sulcatis, post inæqualiter fissis: lacinia exterior paulo major; segmentum secundum epimeris bipartitis: pars interior parva, oblique retroducta, denticiformis. Margo posterior segmenti primi utrinque leviter sinuatus, angulis posterioribus late rotundatis.

Caudæ segmentum anale paulo latius quam longius, in medio satis coarctatum, post subtransversum. Epimera segmentorum 3—4—5 infra in basi processu minuto, inflexo. Articulus basalis uropodum valde obliquus, longior quam lator; ramus exterior minutissimus, procul ab apice insertus; rami interiores breves.

Subunicolor, e griseo brunneus.

Long. 8 m. m. Lat. 3,5 m. m.

Der foreligger kun 4 Exemplarer af denne Art, de 2 sigtede medio Juli 1891 ved Carácas, de 2 indsamlede i November ved Las Trinchéras.

*Armadillo Grenadensis.*

Subovalis, convexus; trunci tuberculositates subdeletæ; cetera superficies minutissime et densissime reticulate punctata.

Antennæ tertia corporis parte paulo longiores;

flagelli articulus prior altero duplo vel magis brevior.

Oculi mediocres, a margine laterali capitis satis distantes; ocelli circiter 15.

Clypeus lobis majoribus, late rotundatis, subsemicircularibus. Epistoma margine superiore leviter curvato, frontem aliquantum superante, in medio levissime, vix memorabiliter reflexo.

Trunci segmentum primum epimeris crassioribus, ante revolutis, margine laterali per posteriorem partem sulcato et post subæqualiter fisso; segmentum secundum epimeris bipartitis: pars interior exteriore multo minor et brevior et præsertim angustior, oblique retroducta, subdentiformis. Margo posterior segmenti primi utrinque leviter sinuatus, angulis posterioribus late rotundatis.

Caudæ segmentum anale multo latius quam longius, in medio coarctatum, post levissime curvate truncatum, supra ad basin stria media brevi impressum, utrinque leviter excavatum. Articulus basalis uropodum aliquanto longior quam lator; ramus exterior minutissimus, punctiformis, procul ab apice insertus; rami interiores mediocres, duas partes segmenti analis longitudine æquantes.

Color cinereus vel e griseo brunneus subunicolor, tuberculositates trunci pallidiores.

Long. 7—8 m. m. Lat. 3,5—4 m. m.

Under Opholdet paa Øen Grenada i Mai Maaned 1891 har Dr. Meinert taget 2 Exemplarer af denne Art i Omegnen af Georgetown; den tilhører saaledes ikke Venezuelas Fauna.

### *Armadillo truncorum.*

Subovalis, convexus; tuberculositates trunci ordinariæ majores; caput rugose tuberculatum; trunci segmenta in medio ad marginem posteriorem obscure et



deete I granulata, segmentum primum ante tuberculis duobus confluentibus subtumidum; cetera superficies minutissime et densissime squamate punctata.

Antennæ tertia corporis parte paulo longiores; flagelli articulus prior minutus, altero fere quadruplo brevior.

Oculi mediocres, marginem lateralem capitis attingentes; ocelli circiter 16.

Clypeus lobis mediocribus, subacute triangulis. Epistoma margine superiore in medio paulisper, in lateribus aliquantum superante.

Trunci segmentum primum epimeris tenuibus, paulum revolutis, margine laterali non sulcato, post inæqualiter fisso: lacinia interior exteriore satis minor; segmentum secundum epimeris bipartitis: pars interior minuta, dentiformis, acuta, oblique retroducta. Margo posterior utrinque fortius sinuatus.

Caudæ segmentum anale paulo longius quam latius, in medio coarctatum, post recte truncatum, ad basin supra utrinque leviter impressum. Articulus basalis uropodum multo longior quam latior, subtrapezoidalis, ramus exterior minutissimus, punctiformis, procul ab apice insertus; rami interiores mediocres. Epimera segmentorum 3—4—5 subrectangula, basi quam apice paulo angustiore, infra in basi paulisper inflexa.

Color e rufo brunneus, maculis fuscis, creberrimis, præsertim in quattuor series longitudinales condensatis, in capite et media cauda obscurior. Articulus basalis uropodum cum basi segmenti analis semper pallidus, apice segmenti nigro.

Long. 6—7 m. m. Lat. 3—3,5 m. m.

Denne lille Art synes at forekomme temmelig almindeligt i Omegnen af Carácas. Der foreligger omtrent en Snes Exemplarer, mest tagne ved Sigting, d.  $\frac{14}{6}$  91 og  $\frac{12}{1}$  92 ved Dos Caminos, d.  $\frac{1}{7}$  91 ved Las

Adjuntas, d. 22, 7 91 ved La Guayraveien, d. 27/6 91 under Bark paa et Bombaxtræ. Ved St. Estéban 3 Stk. i December.

Alle disse Arter af Slægten Armadillo: *A. clausus*, *A. rubropunctatus*, *A. venustus*, *A. pumilus*, *A. Grenadensis*, *A. truncorum*, tilhøre en Gruppe, der have Epimeren paa det andet Kropsegment dybt delt, et Forhold, jeg vel tidligere har bemærket og beskrevet, men hvis Betydning jeg ikke har paaagtet. Hos *Armadillo officinalis* og mange andre med den beslægtede Arter i Europa og Afrika er Epimeren paa dette Led kun kløvet bagfra, hvorved, under Sammenrulningen af Dyret, 2det Segment griber ind i og fast udfylder Kloften i første Segment. Hos de amerikanske Arter gribe de to Grene af Epimeren paa 2det Segment ind imellem Grenene af 1ste Segment. Det synes, som den første Forbindelsesmaade er den sikreste for Conglobationen, især da 2det Segments Indergren ofte er svagt udviklet hos flere af de amerikanske Arter.

### *Porcellio lævis.*

Latreille, Hist. Crust. Ins. VII. 46.

Budde-Lund, Crust. Isop. Terr. 138.

Dr. Meinert har taget en Del Exemplarer ved Carácas i October Maaned, og har tillige hjembragt en større Suite af denne cosmopolitiske Art, indsamlet ved Hr. Søborg.

### *Metoponorthus pruinosus.*

*Porcellio pruinosus* Br. Consp. 19. 26.

*Metoponorthus pruinosus* Budde-Lund, Crust. Isop. Terr. 169.

Af denne cosmopolitiske Art forefindes 3 Exemplarer fra Carácas og La Moka, endvidere 5 Expl. samlede af Hr. Søborg. — Selv besidder jeg et Par Exemplarer fra

Merida, fremskaffet ved Dr. Staudinger i Dresden. — Paa Gaden i St. Thomas, Vestindien, 1 Exemplar d. 1. Febr. 1892. (Meinert).

*Rhyscotus parallelus.*

Elongatus, angustus, convexiusculus, sparse et minutissime setiger.

Antennæ tertia corporis parte vix longiores; scapi articulus primus brevissimus, secundus tertio paulo longior, quartus secundo satis longior; flagellum scapi articulo quinto subæqualis, articulus prior altero duplo brevior.

Oculi minores, ocelli pauci, circiter 6—8.

Frons ante delete marginata; epistoma valde bulbosum, frontem satis superans, sulco paulum profundo subrecto a fronte discretum.

Caput duplo latius quam longius.

Trunci segmenti primi margo posterior curvatus, segmentorum 2—3—4 subrectus, segmenti quinti utrinque leviter sinuatus, segmentorum 6—7 in medio leviter incurvus. Segmenta 3—4—5 ceteris paulo longiora.

Caudæ segmenta duo priora segmentis sequentibus paulo breviora; epimera segmentorum 3—4—5 brevissima, epimera segmenti quinti tamen præcedentibus paulo majora; segmentum anale breve, late rotundate triangulum, semicirculo brevi haud dissimile, supra convexum, basi media puncta profunde impressa.

Color præsertim in capite et in cauda et in medio trunci nigrofuscus, in trunci lateribus flavus; antennarum articuli 4—5 cum flagello nigrofusci, articuli tres priores pallide flavi; subtus pallidus, rami operculares pleopodum nigrogrisei.

Long. 4—4,5 m. m. Lat. 0,9—1,3 m. m.

I Omegnen af Carácas har Dr. Meinert to Gangesamlet et større Antal Exemplarer, d. 20/7 91 paa Cal-

variebjerger, nedbankede af Buske, og d.  $\frac{30}{10}$  91 ved Macuto.

*Rhyscotus sphærocephalus.*

Oblongus vel elongatus, post paulum angustatus, convexiusculus, sparse et minutissime setiger.

Antennæ ut in Rh. parallelo; flagelli articulus prior altero duplo vel fere triplo brevior.

Oculi majores, ocelli plures.

Frons ante vix marginata; epistoma late bulbosum, frontem non superans, sulco vel linea impressa in medio paulum recurva, in lateribus subrecta a fronte discretum. Caput triplo latius quam longius.

Trunci segmentorum margo posterior ut in Rh. parallelo.

Caudæ segmenta duo priora segmentis sequentibus non breviora; epimera segmentorum 3—4—5 brevissima, segmentum anale perbreve, triplo vel magis latius quam longius, triangulum, lateribus late incurvis, apice obtuso.

Color flavidus, capite crebre fusco punctatus, in media fronte macula parva subtriangula fusca; trunci segmenta in lateribus maculis in lineas irregulares confluentibus, in medio punctis passim dispersis fusca; cauda in epimeris posticis fuscomaculata; subtus omnino pallidus; antennæ griseæ, articulis ad basin pallide annulatis; bulbus epistomatis lineis curvatis minutis, 6—7 concentricis, fuscis.

Long. 4,5—4,7 m. m. Lat. 1,4—1,5 m. m.

Caracas. Et enkelt Stykke d.  $\frac{27}{6}$  91 under Bark af et Bombaxtræ, to Stykker mellem andre Arter, sigtede medio Juli.

*Philoscia diminuta.*

Elongate ovata, convexiuscula, lævis, nitida, in marginibus sparse hirsuta.

Antennæ corpore dimidio aliquanto breviores, hirsutæ; flagellum articulo quinto scapi satis brevius, articulus primus articulo secundo subæqualis, articulo tertio sesqui brevior.

Linea marginalis frontalis subrecta, vel medio levisime procurva; lobi frontales latiores, extrorsi, obliqui, subovales; epistoma linea vel carina transversa, in medio sinuata, infra inter antennulas tumidum.

Trunci segmenta duo vel tria priora margine posteriore curvato, segmenta duo sequentia margine posteriore subrecto, segmenta duo posteriora medio incurvo.

Cauda trunco abrupte angustior; epimera adpressa. Segmentum anale brevissimum, quadruplo latius quam longius, triangulum, apice obtuso.

Color e brunneo fuscus, maculis crebris albidis præsertim in trunci segmentis, capite fusco præter orem albidum, cauda subunicolore, fusca, maculis tribus parvis rotundis flavis in segmento anali; antennæ articulis tribus prioribus albidis, duobus sequentibus cum flagello obscurioribus.

Long. 3,5 m. m. Lat. 1,5 m. m.

Et Par Stykker sigtede i Begyndelsen af August ved La Moka, et enkelt i Juli ved Carácas.

Denne *Philoscia* synes at staa nærmest ved den tidligere i Nordamerika ved Beloxi fundne *Philoscia nigricans*.

### *Philoscia debilis.*

Oblonge ovalis, convexiuscula, glabra, nitida.

Antennæ tres partes corporis æquantes; scapi articulus primus brevissimus, duo sequentes longitudine æquales, secundus tamen tertio robustior, quartus tertio fere duplo longior, quintus quarto tertia parte longior, sed gracilior; flagellum articulo quinto scapi paulo brevius, articulis ad apicem valde decrescentibus, articulo primo duobus sequentibus

unitis vix brevior, articulo secundo tertio fere duplo longiore, articulo tertio in apice seta longa, ipso articulo sublongiore, instructo.

Oculi magni; ocelli numerosi, in series dispositi, subconfluentes.

Frons ante recta, inter oculos non marginata; lobi laterales nulli; epistoma linea transversa, in medio paulisper procurva, infra inter antennulas longitudinaliter bitumidum.

Trunci segmenta tria priora margine posteriore utrinque levissime sinuato, angulis posticis late rotundate obtusis; segmenta sequentia post magis magisque in medio incurva; omnia segmenta lateribus marginatis.

Cauda trunco abrupte angustior; segmenta duo priora brevia, segmenta 3—4—5 epimeris mediocribus, acutis, subadpressis vel paulum distantibus, marginatis. Segmentum anale late triangulum, lateribus vix incurvis, apice paulum obtuso.

Color flavofuscus, creberrime albido irroratus; subtus flavus.

Long. 7,5—8 m.m. Lat. 3,5—4 m.m.

Der foreligger mere end en Snes Individuer, tagne paa forskjellige Tider baade ved Carácas, La Moka og St. Estéban.

Denne Art er nær beslægtet med den i Peru og Guiana forekommende *Philoscia nitida*, men let kjendelig fra den paa den urandede Pande.

### *Philoscia seriepunctata.*

Oblonge ovalis, convexiuscula, nitida, lævis, in margine posteriore trunci segmentorum series transversa punctorum minutissimorum.

Linea frontalis marginalis nulla; epistoma vix transverse lineatum, infra inter antennulas tumidum.

Trunci segmenta tria priora margine posteriore curvato.

Epimera caudæ segmentorum adpressa, segmentum anale triangulum, lateribus subrectis.

Color flavo brunneus.

Long. 3 m.m.

Jeg haaber, denne Art vil kunne gjenkendes; jeg har kun haft et defect og mutileret Exemplar til Undersøgelse; det er taget ved Carácas d. 14/7 91.

### *Alloniscus papillosus.*

Oblonge ovalis, convexiusculus; tota superficies setis clavatis densius oblecta, præsertim in capite et in caudæ segmentis creberrimis; margo posterior omnium segmentorum serie papillarum minutissimarum ornatus.

Antennæ corporis dimidium longitudine subæquantes; scapi articuli tres priores subæquales, articulus quartus tertio satis longior; flagellum biarticulatum, articulus prior minutus, altero fere quadruplo brevior.

Processus frontales laterales parvi vel mediocres, oblique rotundati; epistoma convexum cum fronte leviter tumidum.

Trunci segmenta tria priora margine posteriore curvato. Epimera segmentorum 2—3—4 stria tenuissima, in segmento tertio manifestiore, in segmentis secundo et quarto subdeleta, a medio segmenti discreta.

Caudæ segmentum anale subrecte triangulum, lateribus ad apicem leviter incurvis, apice acuto. Segmenta 3—4—5 epimeris magis acuminatis, segmentum anale epimera segmenti præanalis paulum superans.

Color flavus, capite et medio trunco fuscoirroratus, epimeris segmentorum trunci cum apicibus epimerorum caudalium subniger; antennarum basis pallida, articuli 4—5 cum flagello grisei.

Long. 3,5 m.m. Lat. 1,4 m.m.

Et Exemplar er taget d.  $12/6$  91 ved Los Tejes, 2 Exempl. sigtede sammen med andre Arter af denne Slægt i Juli i Carácas Omegn.

*Alloniscus ambiguus.*

Oblonge ovalis, convexiusculus; statura et habitu speciei præcedenti similis et affinis, tamen plurimis indicibus differt. Tota superficies sparsius setigerà.

Flagellum antennarum biarticulatum, articulus prior altero triplo brevior.

Processus frontales laterales parvi, oblique rotundati; epistoma convexum cum fronte tumidum et subtriangule productum.

Trunci segmentum primum margine posteriore curvato, segmenta 2—3—4 margine posteriore subtransverso, utrinque ad latera puncta impressa, levissime sinuata. Epimera segmentorum 2—3—4 stria tenuissima, maxime ad marginem posteriorem manifestiore, a medio segmenti discreta.

Caudæ segmentum anale triangulum, lateribus subrectis, apice late rotundate subtruncato, supra ad longitudinem paulisper impressum. Segmenta 3—4—5 epimeris latioribus et brevioribus. Segmentum anale epimera segmenti præanalis multum superans.

Color flavus vel brunneus, maculis fuscoviolaceis, præsertim in series quattuor longitudinales condensatis, capite et epimeris obscurior.

Long. 3,2—3,4 m.m. Lat. 1,2—1,3 m.m.

To Exemplarer ere tagne ved La Moka i August, et enkelt Stykke ved Carácas med foregaaende og efterfølgende Art.

*Alloniscus compar.*

Oblonge ovalis vel subovalis, convexiusculus; tota superficies minutissime et densissime punctata, sparse



minute setigera; margo posterior omnium trunci et caudæ segmentorum, segmento anali excepto, serie papillarum minutissimarum ornatus.

Antennæ dimidium corporis longitudine æquantes; scapi articuli tres priores inter se æquales, articulus quartus duobus præcedentibus simul subæqualis; flagellum triarticulatum; articulus primus secundo paulisper longior, tertius longissimus, a secundo obscure discretus.

Processus frontales laterales mediocres, oblique rotundati; epistoma convexum, cum fronte paulum productum.

Trunci segmentum primum margine posteriore curvato, segmenta duo sequentia subtransversa. Stria suturalis epimerorum segmentorum 2—3—4 nulla.

Caudæ segmentum anale triangulum, lateribus late incurvis, apice subobtusum, supra in medio paulisper excavatum, epimera segmenti præanalis tantum paulum superans. Segmenta 3—4—5 epimeris brevioribus.

Color flavus, maculis e brunneo violaceis crebris, maxime in series quattuor longitudinales condensatis.

Long. 4—4,5 (5) m.m. Lat. 2—2,2 m.m.

To Exemplarer sigtede i August ved La Moka med foregaaende Art; enkelte Stykker sammen med begge foregaaende Arter fra Omegnen af Carácas.

### *Alloniscus quisquiliarum.*

Oblonge ovalis, convexiusculus; tota superficies densius setis clavatis oblecta; margo posterior omnium segmentorum serie papillarum minutissimarum ornatus.

Antennæ corporis dimidium longitudine subæquantes; scapi articuli tres priores inter se longitudine subæquales, articulus quartus tertio sesqui longior; flagellum biarticulatum, articulo priore parvo, quam altero duplo vel paulo magis brevior.

Oculi parvi; ocelli pauci, circiter 6.

Processus frontales laterales parvi, obliqui; epistoma convexum cum fronte paulum productum, infra inter antennulas transverse curvate carinatum.

Trunci segmenta duo priora margine posteriore curvata, segmentum tertium subtransversum. Segmenta 2—3—4 sine stria suturali impressa.

Caudæ segmentum anale breve, plus duplo latius quam longius, lateribus late incurvis, apice acutiore. Segmenta 3—4—5 epimeris brevioribus et latioribus, segmentum anale epimera segmenti præanalis paulum vel vix superans.

Unicolor, albus.

Long. 2,8—3 m. m. Lat. 1,2—1,3 m. m.

Denne Art er taget i stort Antal i Træsmuld ved Las Trinchéras, (d.  $\frac{5}{11}$  91); ligeledes er ved La Moka i Begyndelsen af August Maaned sigtet en Del Exemplarer.

### *Alloniscus tomentosus.*

Oblonge ovalis, convexiusculus; tota superficies densissime setigera.

Characteres ex antennis latent.

Oculi minimi, simplices.

Processus frontales laterales parvi, rotundati; frons in medio leviter producta, ab epistomate crista papillarum minutissimarum discreta.

Trunci segmentum primum margine posteriore curvato, segmenta tria sequentia margine posteriore subtransverso vel levissime utrinque sinuato. Segmenta 2—3—4 stria suturali manifesta.

Caudæ segmentum anale subtriangulum, breve, duplo vel magis latius quam longius, epimera segmenti præanalis paulum superans, apice obtuso.

Unicolor, albus.

Long. 3,5 m. m. Lat. 1,5 m. m.

Kun et Exemplar fra Las Trinchéras i December.

Alle her beskrevne Arter af denne Slægt: *Alloniscus papillosus*, *A. ambiguus*, *A. compar*, *A. quisquiliarum* og *A. tomentosus* danne en lille vel sondret Gruppe, der foruden ved deres Lidenhed udmærke sig ved kun at have 2 Led i Antennesvøben, et Forhold, som ikke findes hos nogen forhen bekjendt Art af denne Slægt. Hos *All. compar* er Antennesvøben dog 3-leddet, idet det yderste, altid lange Led, temmelig tydeligt er delt i to Led. Det synes herefter, som Antallet af Led i Antennesvøben ikke har saa indgribende Betydning, som der er tillagt den. Hos næsten alle hernævnte Arter findes en mer eller mindre tydelig Epimersutur paa Kroppens 2—3 og 4 Segment, hvilket Forhold jeg kun har bemærket hos en af de 7 af mig tidligere beskrevne Arter, *All. pallidulus* fra Amboina.

### *Lyprobius cristatus.*

*Porcellio cristatus* A. Dollfus, Sur quelques Isopodes du musée de Leyde (Notes from the Leyden Museum XI. 91. tb. V. 2).

Carácas i Juli og October 3 Exemplarer. Exemplarerne i Leydens Museum ere fra Surinam.

Denne Art staaer nær ved den af mig beskrevne *Lyprobius modestus* fra Corrientes. Det tredie Antenneled i Svøben hos denne Art er saa lille, at det maaske snarest er en stor Papil i Spidsen af 2det Led. *L. cristatus* synes at have Tracheer i Ydergrenen af Pleopodernes 3—4—5 Par, som Dollfus har angivet det; de ere meget rudimentære; ved 1 og 2 Par har jeg ikke kunnet finde dem. *Lyprobius modestus*, som jeg paany har undersøgt for dette Forholds Vedkommende, har muligen ogsaa, men da endnu mere rudimentære Tracheer end den anden Art. Jeg har i sin Tid havt et saa tarveligt Materiale til Undersøgelse af de to andre

Arter, *L. pusillus* og *L. lentus*, at deres Stilling til disse to sydamerikanske Arter ikke er mig ganske klar.

*Scleropactes senex.*

Oblonge ovalis, valde convexus, delete tuberculatus, nitidissimus.

Antennæ corpore dimidio breviores, hirsutæ; flagellum scapi articulo quinto satis brevius; flagelli articuli ad apicem longitudine paulisper crescentes; articulus tertius seta apicali quam ipso articulo paulo brevior.

Oculi magni, ocelli magni, numerosi, circiter triginta.

Epistoma medio convexiusculum, margine superiore frontem superante, in medio transverse fronti adpresso et cum hac concreto, utrinque libero, cavas duas frontales formante.

Trunci segmenta tria priora margine posteriore utrinque leviter sinuato, segmentum quartum margine posteriore subtransverso, segmenta 5—6—7 medio sinuato; segmentum secundum margine exteriori paulisper incurvo; epimera hujus segmenti tertia parte anteriore articulari in lateribus a parte posteriore segmenti incisura discreta; epimera segmenti quarti perparva, subtriangula; anguli posteriores segmentorum 2—3 rotundati, segmenti quinti rotundate, sexti et septimi subacute recti.

Caudæ segmenta mediocria, epimeris segmentorum 3—4—5 latis, oblique tetragonis; segmentum anale breve, triangulum, duplo latius quam longius, epimeris segmenti præanalis subparallelis, apicibus leviter convergentibus multo brevius, apice obtuso, supra planum.

Long. 12—13 m. m. Lat. 5 m. m.

Nogle Exemplarer af denne Art fra Merida i Venezuela ere fremskaffede ved Dr. Staudinger i Dresden.

*Ligiæ filicornis.*

*Ligiæ Olfersii* similis et affinis.

Superficies lævis, nitida.

Antennæ corpore paulisper breviores (9 : 10); flagellum scapo duplo longius, 35 - articulatum.

Linea transversa epistomatis in medio subrecta vel potius levissime recurva (in *Ligia Olfersii* hæc linea subrecta vel levissime procurva, in *Ligia exotica* manifeste in medio procurva).

Tarsi trunci pedum primi paris apud marem simplices.

Long. 10,5 m. m. Lat. 5 m. m.

Et Exemplar d.  $\frac{4}{1}$  1892 ved Puerto Cabellos Fyrtaarn; sammesteds er af Hr. K. Levinsen ogsaa taget et Exemplar.

### *Ligia Olfersii.*

Brandt, Consp. 11. 5.

Budde-Lund, Crust. Isop. Terr. 268.

Af denne i Sct. Thomas Havn almindelige *Ligia* er hjembragt et Stykke fra St. Jean, taget d.  $\frac{1}{2}$  92.



# Om en Fluelarve, der snylter i Oldenborrelarver.

Af

**J. E. V. Boas.**

(Hermed Tavle I.)

Som bekendt er det overordentlig lidt, der vides om Snyltedyret hos Oldenborren (*Melolontha vulgaris*) og dens Larve. Om Insekter, som snylter hos den, foreligger der, saa vidt jeg véd, kun en Angivelse af Ratzeburg (Forstinsecten 1. Th. p. 69), som ganske kort meddeler, at han nogle Gange saa Tøndepupper af en *Leptis* komme frem paa døde Oldenborrer mellem Prothorax og Hovedet. Om snyltende Insekter i Oldenborrens Larve synes slet intet at foreligge.<sup>1)</sup>

Den 1. Juli iaar undersøgte jeg en Del syge<sup>2)</sup>, for største Delen allerede døde Oldenborrelarver, som jeg havde modtaget fra Hr. Forpagter Petersen, Kallehave; efter Larvernes Storrelse sammenlignet med Exemplarer, hvis Alder er mig bekendt, anser jeg dem for 3 Aar gamle, altsaa hørende til et Kuld, som vil »flyve« næste

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<sup>1)</sup> Se dog „Efterskrift.“

<sup>2)</sup> Sygdommen, om hvilken jeg haaber senere at kunne meddele nærmere, skyldes sandsynligvis en Bakterie, der i stor Mængde fandtes i Blodet, ogsaa hos levende Larver.

Aar<sup>1</sup>). Imellem disse Larver var der én, som en hvidlig Diptérlarve var ifærd med at bore sig ud af, og som senere viste sig at indeholde endnu to Exemplarer af samme Snylter. Foruden den nævnte var der mellem de syge Larver endnu én, som husede to Snyltere; den har et Hul paa den ene Side, gennem hvilket sandsynligvis en Snylter er gaaet ud. Bægge de to Oldenborrelarver, som indeholdt Snylterne, var døde, og de indre Dele allerede stærkt henfaldne. Endvidere fandtes løst mellem de modtagne Oldenborrelarver tre Diptérlarver af samme Art som de, der laa i Oldenborrelarverne; de viste kun den Forskel, at Chitinhuden var bleven lidt mere fast. En af disse blev lagt i en Glasæske med lidt Jord, hvori den snart forvandlede sig til en brun Tondepuppe; de andre opbevaredes ligesom de allerede nævnte i Spiritus.

I en anden Sending Larver fra samme Kilde fandt jeg tilfældig endnu et Stykke, som husede et Exemplar af Snylteren. Værten var en død, men fuldstændig ubeskadiget Larve, som jeg havde kogt i Spiritus for at konservere den bedre, og som jeg senere aabnede. Snylteren — der var kun én — laa i den forreste Del af Værtens Bagkrop, som den for en stor Del udfyldte; Indvoldene var skudt ned imod Bugsiden. Værten viste intetsomhelst Hul paa sin Overflade

Under et Besøg hos Skovrider Sp. Ulrich, Tollose, i Juni Maaned saa jeg et Glas med nogle Oldenborrelarver, som var indsamlede nogen Tid iforvejen. Jorden, hvori de laa, var stærkt fortorret, og kun et Par af Larverne endnu i Live, Resten laa i Glasset i en indtorret Tilstand. Men foruden Oldenborrelarverne (som var 2 Aars gamle Larver) laa der i Glasset endnu 9 brune Tondepupper, som efter Forholdene — man havde

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<sup>1</sup>) Senere har jeg af nogle Larver af samme Størrelse og fra samme Sted faaet Pupper, saaledes at Alderen hermed er fastslaaet.

kun indsamlet Oldenborrelarver — næppe kunde være kommet andenstedsfra end fra Oldenborrelarverne.

Tondepuppen fra Kallehave leverede i Slutningen af Juni en Flue, som viste sig at være *Dexia rustica* (Fabr.), og den samme Flueart kom i de samme Dage ud af de 8 Pupper fra Tollose (den niende Puppe var dod.) Exemplaret fra Kallehave er en ♀; af Tollose-Exemplarerne er de fire Hanner, de fire Hunner; Hunnerne kom sidst frem. Formodningen om, at Tollose-Pupperne stammede fra Oldenborrelarverne, blev saaledes fuldkommen bekræftet.<sup>1)</sup>

Dexinerne er en Gruppe af de calyptrate Musciders store Afdeling; ligesom de beslægtede *Tachiner* har de »Machrochæter« paa Bagkroppen, men adskiller sig fra Tachinerne ved, at Antenneborsten er haaret (lige til Spidsen.) Larverne er kun lidet kendte, selve Slægten *Dexia's* endog slet ikke beskrevne, hvorfor jeg i det følgende giver en Beskrivelse af de foreliggende Larver.

Af mine Larver maaler den største — den, der fandtes alene i en Oldenborrelarve — 19 mm; den er dog maaske lidt udspilet. De andre, som alle er lidt sammentrukne, maaler c. 15 mm. Legemet er polseformigt, noget tilspidset henimod Forenden; ogsaa den bageste Ende er noget afsmalnet, den skraat opad vendende Flade, hvorpaa de bageste Spirakler findes, er lille. Legemet bestaar af 12 Led, af hvilke det forste (Hovedet) er meget lille; det bærer et Par ganske smaa Antennevorter, som hver er forsynet med to ganske korte Sanseshaar (hvad Brauer kalder »ocellenartige Chitiringer«). I Munden sidder de to sædvanlige Chitinkroge,

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<sup>1)</sup> For at fuldstændiggøre Listen over mit Materiale vil jeg endnu nævne, at jeg den 7. Juli i en større Glasbeholder, hvori jeg holdt en Del Larver fra Kallehave (og intet andet), traf et Exemplar af *Dexia rustica*, en ♂.



som kun rager lidet frem; deres Form ses af Fig. 3; de er dybt sorte. Bagtil paa andet Led (1. Brystring), i Furen mellem dette og det følgende Led, findes paa hver Side det forreste Spirakel, som staar frem som et kortstillet fingret-fliget Blad, hvis Plade i Midten er forsynet med et dybere Indsnit, medens hver Halvdel atter er mindre dybt indskaaren; paa Enden af Fligene er det, at Aabningerne findes. Af saadanne Smaaflige besidder hvert Spirakel 11 (saaledes ialfald paa bægge Sider af de to Exemplarer, som jeg nærmere undersøgte i dette Punkt). Spiraklet er lysebrunt af Farve. Paa 5—10. Led findes paa Rygsiden en tydelig Tværfure, og den samme Tværfure fremtræder endnu tydeligere paa samme Leds Bugside (medens den paa Siderne er lidet fremtrædende); endvidere ses paa Bugen paa Grænsen af 5—11. Led en tværelliptisk Valk, om hvilket det er vanskeligt at sige, om den horer til den første eller den sidste af de to sammenstødende Led. Bagtil paa Undersiden af 11. Led findes et Par smaa lysebrune Chitinplader, mellem hvilke Gattet aabner sig. Paa Undersiden af 12. Led findes en Tværfure (som ikke genfindes paa Ledets Overside), og bagtil-oventil findes de to sædvanlige bageste Spirakelplader, som her er dybsorte. Hver af dem er forsynet med tre lidt bugtede Aandespalter; bagtil, hvor disse ligger hinanden nærmest, findes en knudeformig Fremstaaenhed (»falsche Stigmenöffnung« Brauer); ogsaa Aandespalterne ligger i aflange Forhojninger.

Betragtet med det blotte Oje gor Larven Indtrykket af at have en glat, tornlos Cuticula; men allerede ved svag Lupeforstørrelse skimtes talrige fine Torne. Disse Torne er udbredte næsten over hele Legemet; dog mangler de i alle Furer. Paa det bageste Led er de overordentlig fine, men sidder regelmæssig ordnede i smaa buede Tværrækker, der begrænser smaa tværaflange Felter af Cuticulaen (Fig. 6). Ogsaa paa mange andre Steder

kan en Ordning i Tværrækker spores, men der er ogsaa Steder, hvor de sidder spredt. Paa Legemet's to forreste Led mangler Tornene.

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Brauer har i 1883<sup>1)</sup> beskrevet og afbildet Larven af en anden Dexin, *Phorostoma latum*, efter et enkelt Exemplar fundet i Larven af *Rhizotrogus solstitialis*. Som det var at vente, ligner denne Larve meget den af mig beskrevne; og de Differenser, som man vil kunne finde mellem Brauers Beskrivelse og min, skyldes muligvis tildels dens Omstændighed, at han kun havde ét, daarlig konserveret, Exemplar til sin Raadighed. Brauer angiver, at hans Larve inde i Værtlarven »ist ganz von einer Haut umschlossen, wie eingekapselt. Diese Kapsel verjüngt sich nach hinten und bildet dort einen etwas gekrümmten, fest chitinösen Trichter (*Sipho*), dessen Ende offen ist und wahrscheinlich mit einer Trachee in Verbindung steht.« Jeg bemærker udtrykkelig — uden dermed at drage Brauers Angivelse i Tvivl — at jeg ikke fandt Spor til noget saadant ved mine Larver, som alle laa lost i Værtens Krophule; og den ene Melolontha-Larve, jeg undersøgte, var saa vel bevaret, at Kapslen, om den havde været tilstede i Dyrets levende Live, sandsynligvis ogsaa maatte have været det ved Undersøgelsen.

I den samme Afhandling af Brauer nævner han ogsaa i Forbigaaende, at han af en *Rhizotrogus-solstitialis*-Larve har faaet udviklet *Dexia rustica*, som altsaa lever baade i Melolontha og *Rhizotrogus*. En anden *Dexia*-Art, *ferina*, har B. klækket af en Skarabæ-Larve, som han fandt i Træstubbe (*Dorcus?*).

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1) Zwei Parasiten d. *Rhizotrogus solstitialis* aus d. Ordn. d. Dipteren. i: Sitzungsber. d. Akad. d. Wiss. Wien 88. Bd. 1. Abth. Jahrg. 1883 p. 875. (Dr. Meinert har været saa god at henlede min Opmærksomhed paa denne Afhandling.)

Andre end disse Dexiner synes ikke kendte fra Skarabæer. De faa andre af Dexinernes Gruppe, hvis Udvikling kendes, lever dels i forskellige andre Billelarver, dels i Sommerfuglelarver<sup>1)</sup>.

Som jeg tidligere<sup>2)</sup> stærkt har fremhævet, maa det anses for overvejende sandsynligt, at det for Oldenborrens som for mange andre skadelige Insekters Vedkommende er Snylttere (af Dyre- eller Planteriget), der er Aarsagen til, at Insektet, efter i nogle Generationer at være optraadt i uhyre Mængde, atter reduceres til et beskednere Antal. Hvorvidt Dexien spiller nogen væsentlig Rolle herved, kan ikke efter mine Fund afgøres; imellem Larverne fra Kallehave var det ganske vist kun enkelte, der var befængte med Snylteren, men derfor kunde denne jo godt til andre Tider optræde i stort, tilintetgørende Antal. Men dette er et Spørgsmaal, som det maa være Fremtiden forbeholdt at afgøre.

<sup>1)</sup> Brauer, Die Zweiflügler d. Kais. Museums zu Wien. III. (Diptérlarver). i: Denkschr. d. Wiener Akad. Math.-naturw. Cl. 47. Bd. (1883) p. 76. — Efter Zool. Record for 1886 (efter Wiener Ent. Zeit. 5. Bd. p. 307) er *Phorostoma parvulum* klækket fra *Saperda populnea*. — Brischke, Meine erzogenen paras. Icbend. Fliegen. i: Schriften d. Naturforsch. Ges. Danzig, Neue Folge, 6. Bd. 2. Heft. p. 15 (*Dexia nigripes* klækket fra Larver af *Sphinx porcellus*). — En Angivelse af Goureau (i: Ann. Soc. Entom. France 2. sér. t. 1, 1843, p. 77) om, at han har klækket en Dexin fra en Snegl (*Helix conspurcata*), beror vel paa en Fejltagelse.

<sup>2)</sup> Iagttagelser og Bemærkninger vedrørende Oldenborrerne. i: Tidsskrift f. Landøkonomi 1892 p. 300 og flg.

**Efterskrift.** Efter at foranstaaende Meddelelse var sat, blev jeg opmærksom paa en Notits af Sven Lampa (En parasit funnen på ollonborrelarver. i: Entom. Tidskr. 1891, p. 62), af hvilken fremgaar, at han har klækket en Muscide, *Cyrtoneura stabulans*, fra to Oldenborrelarver, som ved Indsamlingen, i Juni Maaned, »visade föga tecken till lif,« og som nogle Dage senere fandtes fulde af den nævnte Flues Larver. Larven af *C. stabulans* lever eliers i forskellige Svampe og skal ogsaa snylte i Sommerfugle- og Hymenoptérlarver (se f. Eks. Schiner, Fauna austriaca. Die Fliegen. 1. Thêil p. 597). Om den i nærværende Tilfælde er optraadt som virkelig Snylter, fremgaar næppe med fuld Sikkerhed af Forfatterens Angivelser; og jeg bemærker, at jeg paa Kadavere af Oldenborrelarver flere Gange har fundet smaa Muscide-Larver. Men efter de — noget vel kortfattede — Bemærkninger, som gives, forekommer det mig dog sandsynligst, at Maddikerne allerede har været tilstede i de levende Larver.

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## TAVLEFORKLARING.

### Tab. I

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- Fig. 1. Larven af *Dexia rustica*, set nedenfra og lidt fra venstre Side, 3—4 Gange forst. *a* Gat, *k* Mundkroge, *sp'* forreste Spirakel.
- Fig. 2. Samme fra Rygsiden. *sp* Spirakelplader.
- Fig. 3. En af Mundkrogene.
- Fig. 4. Spirakelpladerne paa Bagenden, *o* »falsche Stigmenöffnung«, *a* Aandespalte
- Fig. 5. Et af de forreste Spirakler.
- Fig. 6. Stykke af Huden fra den bageste Ende af Kroppen (for at vise Tornenes Ordning.)
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# Organs and Characters in different Orders of Arachnids.

By

Dr. **H. J. Hansen.**

(With Tab. II—V).

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## Introductory Remarks.

Several years ago I had already made observations on some new, or little known organs in *Pedipalpi*, but a publication was constantly postponed. In October 1892 I read the voluminous work of Gaubert, quoted in the following; I was struck by a complete want of reference to the Danish literature, and in examining some large specimens of *Phrynidæ* and *Scorpiones* I soon discovered that his statements on the occurrence of the so-called lyriform organs were very deficient. This gave me the wish to spend some time on the study of these and several other organs in the higher orders of Arachnids.

The study of many publications on the anatomy and the embryology of Insects and Arachnids has shown me that but few of the authors of those essays are acquainted with any greater number of genera (and species) of the order in question, that they often do not know the characters that are pointed out as being

essential by the systematic authors, and that they often ignore even systematic papers of the greatest importance. This one-sidedness occasions the imperfectness on often even essential points in the before named works. By studies at an earlier period, the results of which have been published in 1883—84, I was tolerably acquainted with the types of and the literature on *Aranee*, *Chelonethi* (*Pseudoscorpiones*) and *Opiliones*; in order not to be guilty of the same one-sidedness, I have asked permission of the Director of the Entomological department of the Copenhagen Zoological Museum to determine our collections of *Solifugæ*, *Phrynidæ* and *Thelyphonidæ*; the permission was not only granted and the task carried out, but Dr. Meinert left to me a series of very valuable types for dissection, for which I owe him my best thanks. A little more than half of the dissected material belonged to the Museum, the rest is taken from my own private collection of types of Arthropods in spirit.

With regard to system the *Aranee*, *Opiliones* and *Scorpiones* are comparatively well worked out; but the treatment of *Solifugæ*, *Phrynidæ* and *Thelyphonidæ* (*Tartarides* included) is not satisfactory. The Museum possesses but one genus of the last order, for which it has been impossible for me to elicit systematic characters. The material of *Solifugæ* and *Phrynidæ* is too small for undertaking a new revision of the genera, but still sufficient to render it possible to me to point out, especially in the first mentioned order, new structures of systematic value. Supported by new materials, which Dr. Meinert has collected on his journey in Venezuela during the years 1891—92, I have been able to undertake a revision of *Chelonethi* with alterations and additions to my previous paper on this order.

A very large section of Gaubert's voluminous and valuable essay treats the lyriform and other sense-organs, but this section, the one I chiefly have investigated, is rather defective. The sole order in which he has found the most part of the existing lyriform organs is *Aranææ*, and even here his description is not full. He has found but a small portion of the existing organs in *Phrynidæ*, *Thelyphonidæ*, *Opiliones* and *Pseudoscorpiones*, and he is denying their existence in *Solifugæ* and *Scorpiones*, though they are found in both orders and in the last-named attain a great development. This becomes still more disastrous because he makes use of the existence or not existence of the organs etc. to the exhibition of a »tableau«. — The treatment of the characteristic »tactile hairs« is much too short, and he does not appear to know their existence but in *Aranææ* and *Scorpiones*; he has not seen the characteristic sense-organs in *Scorpiones*, *Chelonethi* etc. The other sections of his essay are omitted or but occasionally mentioned here, as they do not touch upon the territory of this paper.

I shall begin by emphasizing, that it has not at all been my intention in this little essay, written down occasionally, to give anything like a complete representation of the sense-organs of *Arachnida*, as the examination of a material many times larger, especially of the order of the *Thelyphonidæ* and *Opiliones*, would be required for such a task; neither I have carefully studied the histological structure of the discovered organs. It has only been my intention to point out a great number of hitherto unnoticed sense-organs and other organs, and I do not doubt that (especially in *Opiliones* and *Acari*) there may be found many hitherto unknown organs. I have taken great pains in searching for the lyriform organs, but I do

not vouch that I have not overlooked any important fissure or a little group of fissures, as is often connected with the greatest difficulty to examine carefully from all sides under the microscope all the different joints of a leg; and a small rotation of a joint is sufficient to render it impossible to see all fissures, as the portion towards the edges cannot be seen distinctly. My searching for the sense-organs led me to the discovery of the remarkable supplementary spiracles on the tibiæ in Phalangioidæ. I have almost entirely omitted the great order of the *Acari*, being in want of material of and sufficient knowledge to the numerous and most different families; I have not seen any specimen of *Palpigradi* (*Koenenia* \*) and also entirely omitted *Linguatulida* and *Tardigrada*.

The succession in which the 8 orders are mentioned is chosen of practical regards. I have quoted a number of works, essentially or exclusively systematical, but as few as possible not to get into prolixity. I mention a smaller number of anatomical papers, partly those which have been omitted by Gaubert or have been published later, partly a few that required a direct reference. Readers wanting a more additional information f. ex. about the history of the sense-organs are referred to the work of Gaubert. Of practical reasons I mention the papers that are quoted by one order, as a rule, in the beginning of its treatment, while the few works

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\*) In June this year I have taken a series of this extremely interesting form in forests in Calabrien, in the neighbourhood of *Palmi* and *Scilla*), but the plates belonging to this paper was then engraved, and the study must be postponed to a subsequent occasion.



which are of any importance to more than one order are mentioned here.

Literature for several or all orders:

Simon, E.: Les Arachnides de France. T. VII (Chernetes, Scorpiones et Opiliones). Paris 1879.

Wagner, W.: Des poils nommés auditifs chez les Araignées (Bull. de la Soc. Impér. des Naturalistes de Moscou, Nouv. sér. Tome II, 1888, p. 119—134).

Gaubert, P.: Recherches sur les organes des sens et sur les systèmes tegumentaire, glandulaire et musculaire des appendices des Arachnides (Ann. des Scienc. Natur. Zool., sér. VII. Tome XIII, 1892, p. 31—185, Pl. 1—4).

Pocock, R. I.: On some Points in the Morphology of the Arachnida (s. s.) with Notes on the Classification of the Group (Ann. and Mag. Nat. Hist., ser. 6, Vol. 11, 1893, p. 1—19, Pl. 1—2).

Bernard, H. M.: On the Terminal Organ of the Pedipalp of Galeodes and the Discovery of a Homologous Organ on the Pedipalp of the Phrynus (Ann. and Mag. Nat. Hist. ser. 6, Vol. 11, 1893, p. 28—30).

## I. Scorpiones.

Thorell, T.: On the Classification of Scorpions (Ann. and Mag. Nat. Hist, ser. 4, Vol. 17, 1876, p. 1—15).

### A. Lyriform Organs.

Gaubert states hereon (op. cit. p. 86) »les Scorpions . . . en sont dépourvus«. P. 119, and 157, he states that he has examined respectively the different organs of the mouth and the limbs of *Buthus australis* L., and then I suppose that he has also searched for lyriform organs in just this species. I chosed a large specimen

of the common large, East-Indian species *Pandinus cyaneus* C. Koch for my study, thinking that a good magnifying-glass would be sufficient at least to a preliminary examination of such a large dark-coloured form, and I succeeded without any great difficulty to find on each leg no less than 9 groups of these organs. Now, *Pandinus* (see Thorell, op. cit. p. 12) is belonging to quite another family than *Androctonus* (*Buthus*); Thorell even places the families concerned in each end of his system; therefore I subsequently undertook an examination just of *Andr. australis* L. with magnifying-glass and microscope. The result is shown in the succeeding; but I feel obliged directly to state, that as I have not found any important differences in the number nor in the quality of the organs on the 4 different pairs of ambulatory limbs, I shall treat them all together.

### 1. *Pandinus cyaneus* C. Koch.

#### Ambulatory limbs.

2d joint. On the anterior side near the upper side a little above the apophysis of the apical margin a group with 3 or 4 fissures, and behind these a longer longitudinal fissure, all slightly apart from each other (Tab. II, fig. 1). On the apical margin of the posterior side above the apophysis 5 or 6 longitudinal fissures a little removed from each other, the uppermost one being the longest, as well as a few (c. 5) very short fissures at the lowest end (Tab. II, fig. 2) of the group.

3d joint. On the posterior side close behind the apex 1 or 2 long and 2 or 3 short fissures in a little group.

4th joint. On the anterior side at the base close outside the basal apophysis a most remarkable, curved

band, the fissures of which, going in the same direction as the band, are almost vertical and situated close together; there are more than 20 fissures, and being much shorter than the band they partially become almost the prolongation of each other. — On the posterior side close behind the apex above the apophysis one single very long and below this one 2 or 3 very short longitudinal fissures.

5th joint. Apically on the upper side a transverse area with numerous, closely placed longitudinal fissures; the front one being the longest. On the posterior side slightly removed from the margin 2 rather short, somewhat oblique fissures rather removed from each other.

6th joint. On the anterior side near the apex close above the apophysis an organ composed of 14 fissures, the lowest of which are long and curved, the upper ones getting little by little short and almost straight (Tab. II, fig. 3). On the posterior side, near the apex, a little above the middle, one single, very long fissure.

#### The maxillary palpi.

2d joint. On the apical margin of the upper side a little behind the apophysis a row with 7 or 8 longitudinal fissures of middle length, partly rather removed from each other.

3d joint. On the apical margin of the outer side 2 groups, the one close below the upper, the other close above the lower apophysis; in the upper group c. 4, in the lower one 5 or 6 longitudinal or oblique fissures, all removed from each other and of very different length.

The whole rest of the animal, that is to say the coxæ and tarsi of the members, the mandibles, the dorsal and the ventral side of the cephalothorax and

the abdomen, as well as the tail, have been examined with the magnifying-glass but without result. The sternite, in which the first pair of spiracles is situated, and considerable parts of the upper side of the 4th and 5th joints of the legs have been cut off and examined with the microscope to find, if possible, similar small fissures, which hereafter are shown in several other orders; not one fissure, however, has been found. No better result was gained from the dissection of the sternites and the mandibles of *Centrurus biaculeatus* Luc.

The expansion of the fissures for the apex of the nerve is always situated at the one end; except in the organ lying at the basis of the 4th joint all the fissures are almost parallel with the longitudinal direction of the joints of the legs, or placed in an oblique direction in proportion to them, and the expansion is always at the proximal end.

## 2. *Androctonus australis* L.

Ambulatory limbs.

2d joint. On the anterior side close above the apophysis one fissure of middle length, and at a small distance from it a small group of 3 tiny fissures. Nothing on the posterior side.

3d joint. On the posterior side close behind the apex above the apophysis 4 fissures, partly of middle length, partly shorter, and more or less removed from each other.

4th joint. Nothing at the basis. On the posterior side close to the apex above the apophysis one single long fissure, and below this one 3 extremely short fissures.

5th joint. Apically on the upper side one very long fissure and semicircularly behind it 4 short longitudinal fissures. On the posterior side near the apical

margin 2 fissures slightly removed from each other, rather short and oblique.

6th joint. On the anterior side near the apex just above the apophysis a lyriform organ consisting of but 6 rather long fissures, less regular, however, and not so beautifully curved as in *Pandinus*, chiefly answering to the lowest and most vigorously developed part of the organ in this genus. — On the posterior side close to the apex a little above the middle 1 single, very long, longitudinal fissure.

Maxillary palpi.

2d joint. On the apical margin of the upper side a little behind the apophysis a row of c. 11 tiny fissures, rather removed from each other.

3d joint. On the outside near the apical margin below the upper apophysis 3 fissures of middle length, and above the lower apophysis 2 similar longitudinal fissures.

This list states, that the chief difference between *Androctonus australis* and *Pandinus cyaneus* is, that the latter form possesses an organ with some fissures on the posterior side of the 2d joint of the legs, besides the remarkable organ at the basis of the 4th joint, while *Androctonus* is devoid of both these organs.

I consider it evident, from the proceeding, that the lyriform organs exist on the legs and probably also on the maxillary palpi of all Scorpions. — It has been, however, no part of my plan to study their occurrence in the numerous genera.

## B. Tactile Hairs.

Gaubert informs us (op. cit. p. 45) that he has found 2 rows of »poils sensitifs« on the last but one joint of the legs of *Buthus australis*; these hairs being

but slightly touched with »un pinceau très fin«, the animal immediately draws back the leg, while it remains imperceptible if you »promène le pinceau sur le reste du corps.« »Du reste, les poils du Scorpion sont presque tous sensitifs, et se trouvent que sur les appendices; le reste du corps en est totalement dépourvu«.

To begin with, this last observation cannot be applied to all Scorpions, for in *Pandinus cyaneus* f. ex. we meet with well developed setiform hairs on the front margin and the anterior part of the lateral margin of cephalothorax, on the sides of the 5 hindmost abdominal segments and on all segments of the tail. His remarks on the occurrence of »les poils du Scorpion« strike me as rather general; he ought to have accented that he was speaking of *B. australis*, and that his observations did not concern the order of the *Scorpiones*, but this is neglected, following the example of so many anatomists. — Secondly, I do not doubt that the mentioned hairs on the last but one joint of the legs are sensitive (they are, however, not ranged in 2 rows, as only one dorsal row is long and regular, while the other setæ are dispersed in several, chiefly ventral, less regular and shorter rows); but it is not possible to me to discover the slightest difference between these setæ and those found on the other joints of the legs, neither in shape nor in insertion: they all appear to me quite simple, rather long setæ. It is very probably that all such setæ are more sensitive to a slight touching than the naked, thick dorsal skin of the animal, as the chitine is perforated at their insertion, but they can hardly be called »tactile hairs«. Thirdly, there is found on the large chelæ and on the 4th joint of the maxillary palpi of *Andr. australis* (the maxilla as usual counted as first joint) quite differently shaped and inserted hairs, most like those, which later on in this treatise are

mentioned as discovered and described by Croneberg on the chelæ of *Chernes*. The real tactile hairs, overlooked by Gaubert, appear in *Andr. australis* less numerous and are less easily found than in *Pand. cyaneus*. In this last species I have found 10 such sense-hairs situated irregularly in a row on the immovable finger in a little distance from the outer margin of the upper side, 2 on the same finger near the inner margin of the upper side and 2 on the lower side near the inner margin; on the outside of the hand near the insertion of the movable finger 2 hairs above, 2 below and further back on the outside 1 hair; on the lower side 1 hair a little out on the basis of the immovable finger, near the basis of the hand on the outside and chiefly on the upper side altogether 6 hairs in an irregular transverse row — in all 26 on this, the 5th, joint of the maxillary palpi. On the movable finger I have found none; on the 4th joint of the palpi, however, all in all 17 hairs on the upper side and on the upper part of the outside and the inside, and finally 3 hairs at the basis of the 3d joint. The single hairs are long, but are easily distinguishable from the surrounding, ordinary setæ, being much finer than these in proportion to their length, and because their real insertion cannot be seen, as they disappear through a comparatively large, circular aperture, which they cannot fill by far. In a transverse section this aperture is seen leading into a cave, much wider than its exterior outlet, and on the bottom of this cave the insertion of the hair is seen. The transverse section shows also other peculiarities in the shape of the surrounding chitine, and reminds much of »poil à chapelets«, exhibited by Wagner (op. cit. p. 125), but still there are several essential differences, of which I shall particularly point out that the exterior wall of the cave does not rise as a semi-globular eminence, but is

almost lying in the same plane as the other chitine, and that the inside of the cave is not smooth (as by those of the hairs of Araneæ described by Wagner), but the bottom and the sides are covered with a thinner, most remarkable stratum of chitine-formations. These appear to be lamellæ, projecting almost vertically and coalesced to form a more or less irregular, sixangular cavity, giving you the impression, that the cave is covered with a stratum of prismatic »cells«, very much reminding of the cells in a honeycomb. I shall, however, leave to others the more minute histological study of these beautiful formations.

### C. Other Sense-Organs.

Nothing but the eyes and crests is known; relative to the latter ones I refer to the work of Gaubert. I shall, however, call attention to a new organ, that undoubtedly must be a sense-organ. An oval, slightly convex spot is seen in *Pandinus cyaneus* C. Koch on the upper side of the last joint of all 4 pairs of legs close to and slightly behind the basis of the median process. If this spot besides some of the surrounding integument is cut off and examined with the light falling through, a shape is seen almost like Tab. II, fig. 4. It is seen that the area of a clear greyish tone, given in the figure, is much richer provided with pore-channels (a) than the surrounding integument, and that these channels, of which but a few are indicated in their whole extension, converge towards the centre of the area. Moreover there are in the area 9 rather large cavities (b), converging likewise towards the centre, shaped like a truncated cone with a large interior aperture and ending externally in a much smaller area, much larger, nevertheless, than an ordinary pore-channel. This small area is covered by a thin membrane, from



the centre of which projects down in the cavity a small hollow (?) chitin-tack, which does not, however, rise above the area and which is, I suppose, connected with the nerve. Thus 9 organs are collocated in one group.

In *Androctonus australis* L. is found not one large area, but 2 small ones, which are situated at intervals rather oblique behind each other; each little area has 2 organs.

Considering their structure, certainly as yet but preliminary and insufficiently studied, I suppose that these organs are a kind of sense-organs, but I can say nothing at all about their functions. I have found quite similar but scattered organs on the large chelæ of *Chelifer* (see *Chelonethi*).

## II. Phrynidæ.

Karsch, F.: Ueber eine neue Eintheilung der Tarantuliden (Phrynidæ autt.). (Arch. f. Naturg. 45. Jahrg. 1. B., 1879, p. 189—197).

Thorell, T.: Arachnidi Arthrogastri Birmani (Annali del Museo Civico di Storia Natur. di Genova, ser. 2, Vol. VII, 1889, p. 521—729, Tav. V).

Simon, E.: Remarques sur la classification des Pédipalpes (Ann. de la Soc. Entom. de France, Vol. LXI, 1892, p. 45—51, Pl. 2, fig. 9—16).

Bruce, A. T.: Observations on the Nervous System of Insects and Spiders and some Preliminary Observations on Phrynus (John Hopkins Univ. Circulars, Vol. VI, Nr. 54, Dec. 1886, p. 47).

### A. Lyriform Organs.

Gaubert has (op. cit. p. 85) only found one single, but highly developed organ lying on the posterior side (ought to be the anterior side) near the apex of the

second joint of the legs. He has examined *Damon Grayi* (a misscript for *Charon Grayi*), a species I am sorry not to know.

I have examined a species of the genus *Phrynichus*, I suppose it is *Ph. nigrimanus* C. Koch, but I must add that, according to my judgment, it is not possible to determine with certainty this and several other species described by C. Koch. My species is common on Vellore (in the neighbourhood of Madras). Next I have examined a specimen of *Damon medius* Hbst. under a good magnifying-glass, and I have been able to find the fissures on the apical margin of the coxæ, on the lower side of trochanter, on the anterior side of metatarsus and on the exterior and interior side of the mandibles. I do not doubt that this species possesses most of, if not all, the organs found in the following. I shall, moreover, point out, that I have taken the third pair of legs as a type for the 3 posterior pairs of legs, these being very much alike and offering no differences worth mentioning in the lyriform organs, while the strongly transformed first pair of legs is treated separately.

3d pair of legs.

1st joint. Near the middle of the apical margin c. 5 (3 longer and 2 shorter) irregular, spread oblique fissures.

2d joint. On the anterior side near the apical margin close above the apophysis the lyriform organ described by Gaubert, having here 16 or 18 closely placed fissures. On the posterior side in a raised place, near the apical margin and a little above the apophysis an organ (Tab. II, fig. 5), consisting of c. 18 longitudinal fissures, lying behind each other in several irregular rows; the fissures in the distal row are very long and partly oblique, in the other rows short or even very short. Next closer to the basis of the joint on the

limit between the anterior and the lower side, a pair of spread transverse fissures.

6th joint. On the anterior side near the apex 3 longitudinal fissures (as shown on Tab. II, fig. 15 in *Admetus marginemaculatus* C. Koch).

1st pair of legs.

1st joint. On the lower side near the apex c. 10 larger and smaller oblique fissures in an irregular group.

2d joint. On the anterior side (upper side) a regular, lyriform organ, and on the posterior side (lower side) a group of fissures, almost like those on the third pair of legs.

3d joint. In a little distance from the basis one single, rather short, a little oblique longitudinal fissure.

5th joint. On the upper side upon the end of the apophysis a small group of 5 longitudinal fissures. (The existence of this group on the 5th joint (tibia) suggests that tibia on the 1st pair of legs answers to tibia plus metatarsus on the 3 other pairs of legs.)

Maxillary palpi.

2d joint. On the upper side behind the apophysis 3 spread, small longitudinal fissures. On the lower side behind the apophysis a group with c. 21 short and long longitudinal fissures.

Mandibles.

On the 1st joint, near the apex on the interior side close behind the apophysis, a curved transversal line with 10 longitudinal fissures, the 5 superior ones double as long as the 5 inferior ones; on the exterior side behind its apophysis a transverse band with 5 longer fissures, at the one end of these 5 fissures more spread and but half as long, and in a little distance from the other end of the band 2 similar small fissures.

The cephalothoracic shield  
with but a small number of short, even very short,  
oblique fissures, especially placed not far from the  
lateral eyes and from the hindmost lateral angles.

Sternum and labium  
without fissures.

The dorsal side of the abdomen

1st and 2d tergite without fissures.

3d tergite on each half with 2 small oblique  
fissures standing apart from each other along the posterior  
margin and a little removed from the median line; to-  
wards the lateral margin, somewhat closer to the posterior  
than to the anterior margin c. 5 oblique fissures, one  
pair of which is longer, the others very short.

4th, 5th and 6th tergite having on each half c. 6  
slighter, oblique fissures, spread along the posterior  
margin, further inwards on the tergite a pair of very  
small fissures, finally in a distance from the lateral  
margin and almost half way between the anterior and  
the posterior margin one single or 2 tiny fissures.

7th, 8th and 9th tergite almost as the precedings,  
but with fewer fissures along the posterior margin, only  
3 or 4 on each half.

10th tergite has in a similar way reduced the  
number to 3 on each side, 2 of which near the posterior  
margin.

11th and 12th tergite with 2 fissures on each  
half.

The ventral side of the abdomen.

1st sternite without fissures. (I have to mention  
that I consider the plate situated close behind the  
sternum (Tab. II, fig. 13, f.) as the 1st sternite, an opi-  
nion I shall prove in the 1st section of *Thelyphonidæ*).

2d sternite with a group of 4 rather oblique  
transverse fissures somewhat removed from each other,

the 3 of which are rather long. The group is placed near the posterior margin, in a little distance from the median line.

3d sternite on each half with a group of 3 comparatively long, slightly oblique longitudinal fissures near the posterior margin in a little distance from the median line.

4th sternite on each side with c. 3 middle-long oblique fissures dispersed between the median line and the lateral margin.

5th sternite on each half with c. 3 fissures along the posterior margin, 3 along the lateral margin and 1 further inwards on the sternite, slightly more removed from the lateral margin than from the anterior and the posterior margin.

6th, 7th, 8th and 9th sternite almost as the 5th, on each half, however, with c. 5 fissures of very different length along the posterior margin, finally with 1 or 2 fissures rather removed from the posterior margin.

10th, 11th and 12th sternite almost as the preceding, the number of the fissures is, however, reduced in the same way as on the corresponding tergite.

The difference between the distribution of the lyriform organs in this order and in the Scorpions is great and most interesting. In *Phrynichus* but few organs are found on the legs, as femur, patella, tibia (3—5th joint) and tarsus are perfectly devoid of organs (the 3d (and 5th) joint of the 1st pair of legs excepted); but in return they are spread as single fissures nearly on the whole body and appear also on the mandibles. The dilatation for the nerve is situated in the not too short

longitudinal fissures on the mandibles and legs near the centre.

I shall, moreover, add that I have found a great number of small, both short and long, transverse bands composed of very small longitudinal fissures, both on the upper and lower side (Tab. II, fig. 6) of the proximal half of tibia; I have not met with any on the other joints; I shall, however, not deny the possibility of their existence, as it may be difficult to catch sight of them. I do not feel competent to express an opinion of their nature; they have most likely nothing to do with lyri-form organs; but still this little remark may perhaps be put in here.

### B. Tactile Hairs.

Such hairs are not known in *Phrynidæ*. I have found 2 very different forms, the one on the tarsus of the 1st pair of legs, the other form on the 3 other pairs of legs.

Tarsus of the 1st pair of legs.

It is notorious that it is prolonged and divided into numerous, small joints. Not quite the outmost third part of tarsus is, besides the ordinary setæ, furnished with very characteristic hairs, that appear very numerous on the last joints (Tab. II, fig. 7, s). These sense-hairs are very small, short, clavated (fig. 7 and fig. 8), they remind very much of the form found by Wagner in *Mygale* sp. which he terms »poil cucurbitiforme« (op. cit. p. 129, fig. 4); the stem is stouter and the distal part but little swollen, while the hair figured by Wagner has a shorter and slender stem and a distal swelling comparatively many times larger. Their insertion is extremely reduced in size, and the most minute examination under high magnifying powers is necessary to notice those slight particularities, which remind of tactile

hairs. This description is founded on *Phryn. nigri-manus*, but I have found simular hairs in *Damon medius* Hbst., *Admetus* and *Charinus*, of which the 2 last genera belong each to their own of the 2 other subfamilies in the new system of Simon. Their existence may surely be considered as a character for this order.

In *Damon medius* Hbst. are found peculiar, considerably long setæ on a long part of tarsus (wanting in both ends), winged on 2 sides (Tab. II, fig. 9), getting thus the shape of a narrow spear-blade. These setæ, of which often 1, sometimes 2 are found on each joint, are quite as long and stouter than the other setæ, being, however, inserted like the latter. Their function is unknown to me.

It might perhaps be put in here, that I have found in *Phrynichus* a characteristic formation, probably transformed claws, on the apex of the last joint of the tarsus of the 1st pair of legs. It consists of a thick, short basal portion and 2 unequally long, gradually acuminate branches (Tab. II, fig. 10), the one of which has a peculiar seta. I have found a similar formation in *Admetus marginemaculatus* C. Koch.

The 3 posterior pairs of legs.

On patella of the 3 posterior legs is found 2 most remarkable tactile hairs, placed a little behind the insertion of tibia and slightly down upon each side of the eminence, caused by this insertion; they are easily seen under a magnifying-glass. Each of these 2 hairs is long, very fine, smooth and goes as usual into a considerable cave, shaped like a jar with a constricted mouth, in comparison to which, however, the hair is very thin (Tab. II, fig. 11); but it is still more striking, nevertheless, that a comparatively large part of the integument, surrounding this mouth, shows a most peculiar structure, as if it were scaled (fig. 11), which seen under

the magnifying-glass has a dim appearance and forms a contrast to the surrounding chitine. These 2 tactile hairs seem also to be characteristic to the order of *Phrynidæ*.

In *Phr. nigrimanus* is seen on the metatarsus of the 3 pairs of legs, on the upper side, close to the basis 4 or 6 dark, small rings (Tab. II, fig. 12, a), towards the distal end similar rings arranged in 2 longitudinal rows (b), in the beginning converging, then close together, subsequently diverging and bending down the sides; close outside and between the distal end of the rows 3 further rings. On the upper side of tibia, in a little distance from the apex is found one single, similar ring. These darker rings surround a comparatively large hole, out from which rises one long, exceedingly thin, often worn sense-hair, the darker colour of the ring is partly owing to the darker tone of the surrounding chitine, partly to the circumstance that the scaly formations on the surface, otherwise spread, become smaller and placed more closely together round the hole. I have found similar tactile hairs in *Admetus* and *Damon*, reminding by their site of similar hairs in *Aranææ*. They are most likely found in all *Phrynidæ*, but I have not examined if in their distribution systematic characters (for the genera or the species) may be found.

### C. Other Sense-Organs.

Of these hitherto but the eyes have been known. In January 1893 Bernard (op. cit. p. 29—30) has published a preliminary note on an organ he has found in the proximal part of the claw of the maxillary palpi. I do not mention this but for the sake of completeness, as Bernard holds out a prospect of further particulars; I shall observe, however, that at all events it is not



homologous with the retractile organ discovered by Dufour, in *Solifugæ*, if an homology is existing it must be with the interior sense-organs discovered by Gaubert and Bertkau; this homology, however, appears as yet very questionable to me, on account of the occurrence of a fine row of hairs in *Phrynus* (see a few more remarks on this subject under *Solifugæ*).

*Bruce* writes 1886 (op. cit. p. 47): »On the coxal joint of the fourth appendage [2d pair of legs] a sense-organ was very conspicuous in the young pedipalp. The hypodermic cells of that joint become columnar, unlike other hypodermic cells, which are of irregular contour. These elongated cells are continued externally to form filaments, several of which enter a single pair, which is the external part of the sense-organ.« — I have not seen nor searched for this organ, but I have thought it convenient to copy the whole description; for the rest the entire note seems to me to be immature.

#### D. Systematic.

The first attempt, worth mentioning, of a classification of *Phrynidæ* in strictly limited genera is owing to F. Karsch (op. cit.) but, strange to say, he has but found and made use of one single character, viz., the numbers of the joints in the hindmost tibia. In the year 1889 Thorell (op. cit.) draws attention to several new characters; I shall point out the division of the claw of the palpi in 2 joints in some of the forms, and above all, the occurrence of arolium on the apex of the tarsus of the 3 posterior pairs of legs in *Charon* and *Catageus* in opposition to its absence in other genera; in the description of the species he mentions that 5 joints are found in the tarsus of *Catageus* and *Charon*, 4 in *Phrynus Goëssii* Thor., but he does not use this excellent feature as a character for genera. —

In the year 1892 Simon gives a revision of the systematic of the order upon his gigantic material, divides the order into 3 sub-families and points out characters for these and for the genera, altogether 8, 2 of which are new. He uses the number of joints in the tarsus together with the occurrence of arolium as the character for the one sub-family (*Charontinæ*) and introduces a new character derived from the structure of the sternum as the chief difference between the 2 other sub-families: *Phryniscinæ* (ought to be written *Phrynichinæ*) and *Tarantulinæ*. The sternum offers, no doubt, so great differences in the 2 last groups, that it is most astonishing they have not been made use of before, but the description and especially the drawings of Simon (Pl, 2, fig. 14 and 15) are not sufficiently correct.

Simon delineates the median plates of the sternum in the *Tarantulinæ* (fig. 15) as lying far apart from each other and the anterior very distant from the labium. In *Admetus* I have found them (Tab. II, fig. 13, a) almost meeting, and the anterior one reaching the basis of the labium; what Simon figures as the whole plate is a darker chitinous centre-part of the same. It will be easy to prove the correctness of my interpretation by examining an adult specimen under a magnifying-glass, and still more to be depended upon, when the sternum is cut off and examined with the light falling through the chitine. The 3 pairs of lateral plates are sharply defined from each other and from the surroundings. It may further be remarked that labium is narrowly triangular, but slightly dilated at the basis, which is a little broader than the median plates. In *Phrynichus* and *Damon*, the median plates (chiefly in *Phrynichus*) are broader than long (Tab. II, fig. 14), the latera plates are narrower, with comparatively thinner chitine and much less sharply limited from the

surroundings; the labium is chiefly in *Phrynichus* strongly dilated at the basis. Unfortunately my material of *Charontinæ* is so limited (only 2 specimens, the one of which is very small, the other with a destroyed sternum) that I cannot undertake an investigation of its structure in this group.

Simon states that *Phrynichinæ* and *Tarantulinæ* have 4 joints in the tarsus of 3 pairs of legs, while 5 joints are found in *Charontinæ*. That is correct. But on closer examination of my 2 specimens of *Charontinæ* (1 *Charon Hoevenii* Karsch, 1 *Charinus Australianus* L. Koch) I have found, that the articulation between the 2d and 3d joint in the tarsus is a little lesser developed than between the 3d and 4th or 4th and 5th joint. Examining a rather large material of several species of the genus *Admetus* I perceived, that the 2d joint always showed on the lateral sides and on the dorsal side a little from the apex a rather narrow, but very distinct, clear, transverse stripe (Tab. II,\* fig. 15, a), in its site answering to the articulation between the 2d and 3d joint in *Charontinæ*, that is to say: a rudimentary articulation, in the last-mentioned group appearing as a developed articulation. I do not know from autopsy the very closely connected genus *Tarantula*, but I do not suppose, that it differs on that point from *Admetus*, and therefore I do not hesitate to admit this commencing articulation as a character for the sub-family. — No trace of a transverse division of the 2d joint of tarsus is found in *Phrynichus nigri-manus* C. Koch and *Damon medius* Hbst.

If we add the new character to several of the older ones, we see that the classification of Simon: *Charontinæ*, *Phrynichinæ*, *Tarantulinæ*, is not natural, as the 1st sub-family is closer connected with the 3d than with the 2d family. I presume undivided hind tibiae,

4-jointed tarsus, and undivided claw on the maxillary palpi to be the original state, and thereupon it is easy to arrange the following series of the genera.

<i>Phrynichus</i> Karsch	1-jointed	hind tibia	4-jointed tarsus	No arolium	The claw of the palpi 1-jointed.
<i>Damon</i> C. Koch	2-	—			
<i>Admetus</i> C. Koch	3-	—	4-jointed tarsus with commencing division of the 2d joint.	The claw of the palpi 2-jointed.	
<i>Tarantula</i> Fabr.					
<i>Charon</i> Karsch	4-	—	5-jointed tarsus Arolium is found.	The claw of the palpi 2-jointed.	
<i>Catageus</i> Thor.	3-	—			
<i>Charinus</i> Sim.	4-	—			
<i>Sarax</i> Sim.					

The sole breach in a plain row according to these characters is made of *Charon* and *Catageus*, the first have 4-jointed tibia and 1-jointed claw on the palpi, the latter having 3-jointed tibia, but 2-jointed claw on the palpi. I have considered the division of the claw of the palpi as a more important character than the number of joints in the hind tibia.

It may as yet be pointed out that in the forms known to me there is found an oblique, clear stripe on each side of the last joint of the tarsi (fig. 15, b), and that a clear, longitudinal furrow (fig. 15, c) on each side of the last joint limits the narrow dorsal part, which as a free process prolongates itself over the insertion of the claws.

### E. Specific Characters.

Most of the species are very badly described, and probably it always will be impossible to recognize several of them. In trying to determine the material of our Zoological Museum, I perceived that no author has undertaken the closer examination of the great variability, which in several external structures and dimensions, according to the size of the animal, asserts itself in the same species; I likewise found on a comparatively good material of several of the species of the genus *Admetus* a couple of specific characters, the one of which appears to be new. In most of the species there is found below the centre of the anterior margin of the cephalothoracic shield a process, which I shall call the frontal process. This process proceeds in *Adm. palmatus* Hbst a little behind the anterior margin of the cephalothoracic shield from its lower side and is chiefly directed forward as a rather small cone. In a not described species of *Admetus* from Venezuela it looks like, as if the frontal margin were flexed down-

wards in a large triangular process, broad at the basis, flat on the anterior side, prolonged below in a small, somewhat forward directed apex and situated between the basis of the mandibles. *Adm. marginemaculatus* is devoid of every trace of frontal process, etc. Together with these changes in the frontal process we find other changes in the formation of an edge along the anterior margin of cephalothorax. These species are, nevertheless, very closely connected f. ex. in the armature with spines on the palpi; it is possible, however, by a more profound study of a rich material to find a few small reliable points in these structures. Thus I arrive to the second character, that is to say, the armature with spines on the upper margin of the 5th (claw-bearing) joint of the palpi, which just shows an important difference in certain species of *Admetus* (f. ex. *A. fuscimanus* C. Koch in opposition to *A. palmatus*).

Concerning the variability according to age I have found but one remark in the literature, viz., by Karsch, who says (op. cit. p. 191—92) that the length of the palpi in proportion to the length of the body changes according to the age of the animal. I have the fortune of possessing a rich material of *Phrynichus nigri-manus* C. Koch in almost all sizes, and I am able perfectly to confirm this declaration. I shall state the following, founded on the measuring of 3 specimens.

	The length of the cephalothoracic shield.	The breadth of the cephalothoracic shield.	The trochanter of the palpi and femur together.	The trochanter of the 2d pair of legs and femur together.
1st spec.	8 mm.	15,3 mm.	28,8 mm.	17 mm.
2d -	5,1 mm.	8,4 mm.	11,2 mm.	10,1 mm.
3d -	3,2 mm.	4,7 mm.	4,4 mm.	6,3 mm.

It is evident from these measurements 1) that the cephalothoracic shield increases considerably more in

breadth than in length at the gradual growth of the animal, 2) the legs increase comparatively but a little more than the length of the cephalothoracic shield (in the largest specimen the trochanter + femur is but a little more than double the length, in the smallest ones almost double the length of the cephalothoracic shield) 3) the palpi are growing quite disproportionately in length in proportion to the body and the legs (in the largest specimen the trochanter + femur together are more than  $3\frac{1}{2}$  times as long, in the smallest specimen not  $1\frac{1}{2}$  times as long as the cephalothoracic shield) which makes an exceedingly great difference in the appearance of large and small specimens.

But I have discovered some, if possible still more bewildering age-differences. In the largest specimen only two spines are to be found on the upper interior margin of the tibia of the palpi, they are very long and placed closely together on the forecorner. In the middlemost specimen a little behind those 2 spines, on the same upper interior margin is a 3d spine, the length of which is about  $\frac{1}{3}$  of the diameter of the tibia at the basis of the spine; in the smallest specimen this last spine is almost as long as the diameter of the tibia, and more removed backwards, and on the same margin is still a couple of small spines a little apart from each other. It is seen from my rich material consisting of c. 25 specimens of all sizes from the same locality that this reduction of spines on the upper interior margin of tibia according to the growth of the animal is a rule in this species. The 3 posterior of the 5 spines found in the small specimens on the interior lower margin of tibia, are lost quite in the same way. On the contrary, on the following joint of the palpi there are in all ages only 2 spines, one above

and one below. On the femur of the palpi is found a similar reduction of spines, but while the proximal ones are lost on tibia, the distal ones are lost on femur; in small specimens the armature with spines goes almost along the upper and the lower margin of the whole anterior side, while in large specimens it hardly occupies the proximal half. — Great changes in colour of the animals take place together with these transformations.

Similar changes in the length of the palpi compared with the cephalothoracic shield seem also to take place in the genus *Damon* and most likely also in several other genera; in *Admetus* the changes are comparatively much slighter, sometimes even rather small.

The observations mentioned about *Phrynichus nigrimanus* prove that great caution must be applied to the determination after most of the hitherto published descriptions and chiefly to descriptions of new species. It would be very desirable if an able Zoologist soon would undertake a thorough monographic revision of this order on a very rich material; the material of one rich museum is by far not sufficient. It will be necessary to prepare a quantity of exactly executed figures of the palpi, partly accompanied by a contour of the cephalothorax and the half of the 2d pair of legs, if the monograph has to be but somewhat easily made use of.

### III. Thelyphonidæ.

*Stoliczka, F.*: Notes on the Indian Species of Thelyphonus (Journ. of the Asiatic Soc. of Bengalen, Vol. XLII, 1873, II, p. 126—43, Pl. XII).

*Marx, G.*: Notes on Thelyphonus Latr. (Entomologia Americana, II, N. 2, 1886, p. 38—40, Pl. I.) — Quoted after Ph. Bertkau's Bericht üb. d. wiss.



Leist. im Gebiete der Entomologie währ. d. Jahr. 1886.

*Thorell, T.*: Pedipalpi e Scorpioni dell' Arcipelago Malese (Annali del Museo Civico di Storia Natur. di Genova, Ser. 2a, Vol. VI, 1888, p. 327—428).

*Tarnani, T.*: Ueber die Thelyphoniden aus den Sammlungen einiger russischen Museen (Horæ Soc. Entom. Ross. T. XXIV, 1890, p. 511—40, Tab. III).

### A. The Segmentation of the Abdomen.

It will be necessary to make a few remarks on the segmentation of the abdomen before going on to the different organs.

In an interesting paper R. I. Pocock states (op. cit. p. 3) about *Thelyphonus* »the obliteration of the sternite and appendages of the second abdominal somite by the enlargement and backward extension of the sternite of the first«. I consider, however, this interpretation to be a mistake. Pocock asserts himself that the 1st and 2d sternite in the *Scorpiones* is lodged far forward, the 2d carries the pectines, »the first in all probability constitute the genital operculum«. The interpretation of the 2d sternite is undoubtedly correct; as to his view on the genital operculum being the 1st sternite, it must remain doubtful, but at all events its place has to be sought far forward between the basal part of the hind coxæ; the 3d sternite has become much longer than the preceding and following ones. In *Thelyphonus*, exactly underneath 1st tergite, a considerably long, transverse, chitinous plate is found, which is seen very plainly, particularly when the abdomen is bent upwards forming an angle with the cephalothorax; the plate is separated from the sternum by a broad, soft integument, furnished with strangely inspissated wrinkles, and to my convic-

tion it is most decidedly the 1st sternite. Thus it must be the 2d sternite that is very long, and then there are 12 abdominal segments, each with a tergite and a sternite of its own. Comparing the *Scorpiones*, having their 2 abdominal sternites situated far forward, with *Thelyphonus* (s. str.) this interpretation appears to me much more natural than the statement of Pocock (I have not seen any specimen of the aberrant family *Schizonotoidea*). Similar features are met with in *Chelonethi* (see later on) where the 1st sternite also formerly has been pointed out by Croneberg and myself.

The structure in *Phrynidæ* has most likely to be explained in the same way. The 1st tergite forms the dorsal side of the peduncle, that connects the thorax and the abdomen, while the 1st sternite, I think, is formed of a chitinous plate bipartite along the middle (Tab. II, fig. 13, f), lying between the basis of the posterior coxæ, fitting itself tightly to the sternum and being connected with the large 2d sternite by a broad membrane. I confess that this question appears to be much more difficult here than in *Thelyphonus*, owing to the fact that the movement of the abdomen in *Phrynidæ* is entirely placed between the 1st and 2d sternite, but it appears to me that a comparison of different orders (*Phrynidæ*, *Thelyphonidæ*, *Scorpiones*, *Chelonethi*, *Araneæ*) prove the correctness of my interpretation, according to which the nomenclature in *Phrynidæ* above is arranged.

## B. Lyriform Organs.

Gaubert states that he has studied *Th. caudatus* Luc. Keeping to this statement, it is, however, impossible to have any certain opinion of which species he has studied, because the excellent arachnologist *T.*

Thorell describes 1888 (op. cit. p. 370—82) a species from Java as *Th. caudatus* Linné («Non dubito, quin sit species . . . . . nomine Linneano *caudati* potissimum vocanda) and makes good this assertion (p. 377—78), but is doubtful if this species is the same as the one described by Lucas; most likely the species of Lucas cannot with certainty be recognized except by means of the original specimens. The next year Tarnani believes that a West-Indian species from Haiti shall answer to the name of *Th. caudatus* L., while he gives the name of *T. Thorelli* to the species described by Thorell. I should not at all have entered into all these synonymical difficulties, if it had not been of the greatest importance to be quite sure of which species Gaubert has examined. The fact is that his statements on the lyriform organs very badly agree with my results from the study of *Th. indicus* Stol., and under a magnifying-glass I have been able to discover the largest of the organs found in *Th. indicus* on the real *Th. caudatus* (L.) Thor. from Java, viz., the fissures on the posterior and dorsal side of the 2d joint of the legs, on the anterior side of the 3d joint and the transverse fissure across the dorsal side of the 4th joint, thence I suppose that *Th. caudatus* (L.) Thor. does not to any considerable extent differ from *Th. indicus*. Considering the 2 preceding and several of the following orders I shall not lay any stress on that Gaubert has not found the numerous fissures on the body, as well as on the mandibles and maxillary palpi, but he has not either found any of the organs at the apex of the joints of the legs, and he expressly remarks (p. 86): »les fentes se trouvent sur les cinq premiers articles des pattes (Pl. IV, fig. 4) . . . elles sont disposées au hasard tout en étant parallèles à l'axe des articles et sans ordre déterminé.« And later

on »Les unes sont grandes, les autres beaucoup plus petites.« Not considering the fissures which are collected in groups at the distal ends of the legs, being without exception overlooked by Gaubert, I have found but very short and, moreover, not very numerous fissures spread on the dorsal side of some of the joints, which do not agree with Gaubert's statement. Such a difference between the species of the same genus strikes me as being very unlikely, and thence it becomes deplorable that we do not know which species he has examined; most of the species are, moreover, so closely connected, that it is difficult to distinguish and describe them well, a fact sufficiently proved in the literature. — We have no right to assert that the long fissures, mentioned by Gaubert, do not exist in any species, but as an object of curiosity I shall still point out that he, in the above quoted lines, refers to Pl. IV, fig. 4, which is a figure of a leg of *Th. caudatus*, but on this figure the above mentioned fissures are marked not »sur les cinq premiers articles des pattes« but only on the 3d and 5th joint, and the relative length of the joints is exceedingly wrong.

The following representation of the lyriform organs is founded on the study of an adult female of *Th. indicus* Stol. Of the same reason as by *Phrynidæ* I have studied the 3d and 1st pair of legs.

3d pair of legs.

1st joint. On the lower side a few spread, short transverse fissures.

2d joint. On the upper side close to the posterior side at the apical margin behind the apophysis numerous longitudinal fissures of very unequal length, the undermost ones collected in a large irregular group (Tab. III, fig. 1), in which the proximal fissures are short, the

distal ones long. On the posterior side above the apophysis a number of shorter longitudinal fissures.

3d joint. On the anterior side on the apical apophysis 3 long, slightly oblique longitudinal fissures. On the apophysis of the posterior side one single longitudinal fissure. Across the dorsal side on the middle of the joint one single transverse fissure.

4th joint. Across the dorsal side, slightly removed from the apical margin, one single, very long transverse fissure.

5th joint. On the anterior side at the lower margin of the apophysis one single, long oblique fissure.

6th joint. On the anterior side at the apical margin below the large, oblique, dorsal apophysis 3 longitudinal fissures lying rather close together. Immediately behind the same apophysis on the limit between the dorsal and the posterior side 4 similar fissures. — Besides on the dorsal side of the anterior basal part of the same apophysis a lyriform organ of c. 10 regular, slightly arched, close longitudinal fissures, some of which are very long and partly quite lying on, partly reaching to the upper side of the apophysis, while the basal parts and the remaining fissures are found on its lower side, vaulting like a roof above the 7th joint.

9th joint (last tarsal joint). On the anterior side at the apical margin 1 rather long and higher upward 1 shorter longitudinal fissure. On the posterior side 2 similar fissures.

On the dorsal side of the distal part of the 3d joint, on the 4th and 5th joint and on the 4 tarsal joints a slighter number of short longitudinal fissures.

1st pair of legs.

1st joint. On the lower side a few short and spread, partly longitudinal, partly transverse fissures.

2d joint. On the upper side behind the apophysis

at the apical margin c. 8 spread longitudinal fissures. — On the posterior side above the apophysis numerous longitudinal fissures of different size; more above towards the dorsal edge one single longitudinal fissure.

3d joint. Near the apical margin on the anterior side close to the upper side a group with 6 longitudinal fissures of very different size.

4th joint. On the posterior side one single, short longitudinal fissure.

5th joint (very short). On the anterior side in a short distance from the apical margin c. 5 spread, short longitudinal fissures. On the posterior side c. 4 small, spread longitudinal fissures.

6th joint. On the anterior side at the apical margin one long longitudinal fissure, higher up towards the upper side and a little removed from the apical margin a couple of spread, short longitudinal fissures. — Not quite at the basis towards the dorsal side a middle-sized, transverse fissure.

At all events there seems to be but very few, spread, dorsal fissures on the different joints; I have only found a few on the distal part of the 3d joint.

The maxillæ and their palpi.

1st joint (maxilla) with a few spread, short fissures; on the foremost, large process 3 transverse fissures on the lower side.

2d joint. On the upper side a little behind the middle 2 long, very oblique fissures removed from each other. Moreover spread over the whole joint and going in different directions some very short fissures.

3d joint. On the upper side close behind the apophysis a group of 5 good-sized longitudinal fissures, visible even under the magnifying-glass; at the apical margin slightly down on the interior side a rather

large transverse fissure; below on the exterior side straight above the lower apophysis 3 longitudinal fissures.

4th joint. On the interior side towards the basis of the large process a rather long transverse fissure.

5th joint. On the upper side a little behind the basis of the large process a rather long transverse fissure; at the corner between the process and the distal margin of the joint 1 slighter longitudinal fissure; towards the middle of the upper side of the process 3 spread, short longitudinal fissures. On the interior side close to the lower side at the apical margin 1 rather long longitudinal fissure; on the limit between the lower and the exterior side at the basis 2 rather long transverse fissures.

6th joint. All around, partly a little removed from the basis, partly towards the apex, some spread, middle-sized transverse fissures; close to the basis on the upper side one shorter and some very short longitudinal fissures not much removed from each other.

Some of the before mentioned very short fissures on the 2d joint, going in all directions, are moreover found spread on all the joints.

Owing to the enormous thickness of the maxillary palpi, and a magnifying-glass not being sufficient, it is most difficult to give a complete list of the more characteristic fissures, as it is not possible to examine the palpus in its entirety with the compound microscope on account of its thickness and shape. It is possible only by dividing every joint into several parts and examining each separately, and this manner of proceeding has been attempted here. The palpus must beforehand have been prepared with caustic potash; I shall come back to this question in the concluding remarks of this treatise.

### The mandibles.

On the exterior side of the 1st joint behind the apophysis an irregular group of c. 17, partly middle-sized, partly very short, rather oblique longitudinal fissures (Tab. III, fig. 2). On the interior side behind the apophysis a similar group with c. 15 fissures. Besides several very short fissures spread about on the surface of the joint.

### The cephalothoracic shield.

A small number of mostly very short fissures, going in different directions, spread round about.

#### Sternum anterius.

With very few spread, very short fissures.

#### Sternum posterius.

With but a couple of short oblique fissures towards the front.

### Abdomen.

All here mentioned fissures are short, having, however, a very great mutual difference according to length. The 12th segment and the telson are to be treated at last.

#### Ventral side.

1st sternite with a small number of very small fissures, going in different directions and spread over the surface.

2d sternite. Some spread transverse fissures, almost all in the proximity of the posterior margin and chiefly out towards the sides; very few, indeed, towards the centre of the plate.

3d and 4th sternite. c. 14 transverse fissures on each half along the posterior margin, a couple along the lateral margin and some spread over the surface of the plate.

5th, 6th, 7th and 8th sternite almost like the 4th, having, however, not more than c. 13 or 11 trans-



verse fissures along the posterior margin, but a number over the surface of the plates.

9th sternite with less fissures than the 8th one, several of which are very oblique.

10th sternite with c. 15 or 20 on each half, mostly longitudinal and oblique fissures, fewer longitudinal fissures.

11th sternite very much like the 10th one, but more of the fissures are comparatively longitudinal or oblique fissures.

The dorsal side of the abdomen.

Fissures are found on all the tergites, but not quite as many as on the sternites; the distribution almost like that on the sternites.

In the membrane between the tergites and the sternites numerous chitinous, small plates, on some of the largest of which I have found one single fissure.

12th abdominal segment. At the posterior margin on the middle of the exterior side a group of 3 or 4 large longitudinal fissures, visible under the magnifying-glass, besides towards the dorsal side one longer fissure; the whole segment, especially towards the posterior margin, is besides furnished with numerous, small fissures, many of which are longitudinal fissures.

The caudal file (telson).

I have found on this some of the common, very short, spread fissures, but very few indeed.

From the above long list it is evident that *Thelyphonus* is exceedingly richly furnished with these sense-organs, having the shape of fissures, that on the legs there is an organ (on the 6th joint) built like the highly developed organs on the members of *Aranææ*, but that on the other hand there are found less regular groups with some, even up to many fissures on several joints

of the legs and the maxillary palpi, as well as on the mandibles and the 12th abdominal segment, that besides the entire body, the mandibles, maxillary palpi and some of the joints of the legs are furnished with spread, mostly very short fissures. These latter fissures appear as pore-channels on the thick integument of the body, the outlets of which have become fissure-shaped, with a slight dilatation in the centre. The dilatation lies, however, in the longer fissures placed in groups a little removed from the proximal end, in the shorter fissures close to or in the centre (Tab. III, fig. 1 and fig. 2), and consequently as in *Phrynidæ*.

### C. The Eyes.

The usual description is that the animals have 2 centre-eyes and 3 eyes in a group on each side. Marx has in the year 1886 pointed out (op. cit.) that in an American species there are found 2 small eyes between the 3 large lateral eyes, and later it is used as a specific character by Tarnani, if »Nebenaugen« are found or not. I believe they are present in all species, they can often with certainty be recognized under a strong magnifying-glass, but even that being impossible, they are easily seen if the lateral eye-protuberance with the surrounding integument is cut off and examined from the interior side with the light falling through. Tab. III, fig. 3 represents the 5 lateral eyes in *Th. indicus* Stol., and I shall but add that in proportion to the other eyes their position differs a little according to the species, but owing to their littleness these differences will, as practical characters, not easily be of any use by the definition of the species.

### D. Tactile Hairs.

On all 4 pairs of legs at the apex of tibia immediately in front of the dorsal edge there is a comparatively rather large and deep depression, out of which mounts a very conspicuous, semiglobular eminence with a hole in the centre. From this projects a long and very fine tactile hair not filling out the aperture by far, and enters into a smooth, jar-like cave with a narrowed outlet. Inside the jar the hair appears to be articulated. It is easy to find these 4 tactile hairs, and I can find none more neither on the limbs nor on the palpi. They are most likely characteristic for *Thelyphonoidæ* Thor. (op. cit. p. 367); I leave it to the future to decide, if they are also found in *Schizonotoidæ* Thor., a family unfortunately completely unknown to me.

### E. Luminous Organs?

Systematic authors, as Stoliczka, Thorell, Tarnani, mention light yellow spots on the exterior side of the last abdominal segment in the family *Thelyphonoidæ* Thor. Most of the species have but 1, some (genus *Tetrabalius* Thor.) have 2 on each side. Thorell, the only author who has given really good descriptions of some species of *Thelyphonus*, uses the number of the spots as a character for the genera, and their shape as characters for the species. Tarnani mentions besides spots on the lower side of the rings of the telson (caudal file). These spots are found, no doubt, in all species, but their development is partly most different on the different joints of the same animal, and partly the shape and size of the spots are different according to species on the corresponding joints. In an adult female of *Th. indicus* Stol. the telson is consisting of 29 joints, the 5

proximal of which are entirely devoid of spots, while, however, a little spot was found on the 6th joint; further out on the telson they become larger by degrees, and the largest ones are found on the 16th—18th joint, whereupon they are redecreeasing little by little in size, but still found on the very last joint. Only one spot is found on each joint, lying close to the basis (Tab. III, fig. 4, m).

I have found nothing in the literature about the structure and significance of the telson-spots; Stoliczka, however, has declared the spots on the 12th abdominal segment to be glands, whereupon Thorell makes the striking remark: »nescio qua ratione« (op. cit. p. 364).

It is a positive fact that the mentioned spots are organs and not common colour-spots. It remains a question, however, if the organs of the 12th abdominal segment and of the telson are of the same or of a different nature; my investigations issued in the result that as to structure no essential difference is existing, and i am thus going to treat it in one. In *Thelyphonus* the chitine is very thick and its 2 layers (see Gauhert op. cit. p. 34—42) very readily observed; cuticula is often even scaling off very easily. The cuticula (Tab. III, fig. 5, c) is several times thinner than hypodermis (fig. 5, h); on the mentioned light spots the cuticula is exceedingly transparent, clear, faint light yellow and without pores, while hypodermis is totally wanting. On segments cleaned in caustic potash the edges of hypodermis are seen to be projecting inside above the thuswise shaped cavity in such a way that the aperture on the interior side (fig. 4 and fig. 5) is smaller than the light spot of the cuticula. The entire cave is replenished with a peculiar mass (fig. 5, m) similar to connective tissue, not showing neither ganglionic nor glandular structure; an excretory duct through the cuticula does not at all exist. Of what nature are

these organs, found only in this group within the Arachnids? I do not suppose that they are neither any kind of sense-organs nor glands; I dare, however, advance the hypothesis that they are able to produce light, and the whole structure, the thin, clear, faint yellow cuticula, looking like a pane of glass, seems most perfectly to agree with this theory. As far as I know, there is no observation present in the literature proving that the animals are able to produce light; some years ago I applied myself to the Danish missionary *E. Loventhal* in Vellore (Madras), who had sent numerous specimens, caught by the wood-cutters, to Copenhagen, and begged him to find out, if the living animals were shining in the dark, but he answered that he had not been able to observe anything of that sort. Notwithstanding I cannot abandon my hypothesis, knowing from own experience that specimens of *Lampyris* are hardly or not at all shining, when shut in a bottle they do not feel well, and it is also possible to collect a multitude of *Lampyris* and their larves in the daytime, not thinking for a moment that they are able to shine with the white-yellow lower side of the last abdominal segments. — On that account I conclude these remarks inviting readers, obtaining an opportunity of seeing living specimens of *Thelyphonus*, to examine more closely this circumstance; but care must be taken that the animals are quite well and live undisturbed in a terrarium or the like.

#### IV. Solifugæ.

Kittary, M.: Anatomische Untersuchung der gemeinen (Galeodes aranoides) und der furchtlosen (Galeodes intrepida) Solpuga (Bull. de la Soc. Impér. des

Naturalistes de Moscou, T. XXI, 2, 1848, p. 307—371, Pl. VI—VIII).

Dufour, L.: Anatomie, physiologie et histoire naturelle des Galéodes (Mém. prés. par divers savants à l'Acad. des Sciences; Sc. Math. et Phys. T. 17, 1862, p. 338—446, 4 Pl.).

Simon, E.: Essai d'une Classification des Galéodes (Ann. de la Soc. Entom. de France, sér. 5; T. IX, 1879, p. 93—154, Pl. 3).

Karsch, F.: Zur Kenntniss der Galeodiden (Arch. f. Naturg. 46 Jahrg. B. I, 1880, p. 228—243, Taf. X, Fig. 1—25).

### A. Lyriform Organs.

Gaubert states (op. cit. p. 86) that *Galeodes* is completely devoid of these organs. I have with the microscope examined limbs and parts of the integument of the body of *Gal. orientalis* Stol. and of a species of the genus *Rhax*, which is either identical with or closely related to *Rh. annulata* Sim., and I shall here, and always in the following, call it *Rh. annulata*? I have, however, in spite of a careful investigation, found such organs only on the mandibles. I discovered them under a very good magnifying-glass on a very large female of *Solpuga fatalis* Licht. which is taken as type and described in the following.

On the lower side of the last joint of the mandibles slightly removed from the basis (the place is shown in some measure by »a« on Tab. III, fig. 8), where the basal, flatter, lower side is changing into a sharper edge, is seen outside a smaller, oblique depression, the bottom of which being rather uneven. By cutting a thick layer of the chitine, being very thick at this place, and by examining it magnified c. 100 times, it will be seen that

the chitine of the depression is perforated by 5 channels rather spread from each other (Tab. III, fig. 6, l), and that they are mutually very different in width, the widest 10 or 15 times larger than the common pore-channels (p). These holes have inside almost a circular section, little by little, however, becoming very flat towards the exterior side, showing themselves on the exterior side of the chitine as the common narrow fissure with a small dilatation in the centre. I have also tried on the figure to reproduce the shape of this channels perforating the chitine, in the way they are seen, with the light falling through. Undoubtedly we here have lyriform organs in a somewhat modified shape.

On the lower side of the 1st joint \*) a little behind the articulation between the 1st and 2d joint (Tab. III, fig. 8, b) a small group of tiny, stripe-like depressions is seen under a magnifying-glass. This portion is drawn in fig. 7 (the enlargement is  $2\frac{1}{2}$  times smaller than by fig. 6). The figure shows 15 fissures (and a couple of common pore-channels) of very different size and very irregular position; the structure is the same as in the above mentioned organs on the 2d joint. The size of the fissures may be estimated by the thickness of a few neighbouring setæ, the basal portions of which are seen in the figure (s).

I have not been able to find more than these 2 remarkable groups. I have also found them in *Galeodes orientalis*, *Rhax annulata*? and *Cleobis Cubæ* Luc.,

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\*) In his endeavour to procure as many common characters as possible for the orders of the Arachnids Pocock (op. cit. p. 10) believes that he has found a basal joint, unknown hitherto, which is said to be fused with »the cephalic shield.« — Not being able neither to sanction nor to deny it, I make use of the old mode of designation.

that is to say on representatives for 3 genera very divergent from each other, and they are, in all probability, found in all forms of the order. The organ on the lower side of the 1st joint appears always to be in the same place; the depression on the lower margin of the 2d joint is, on the contrary, sometimes changing its position to the inner side of the lower edge (*Galeodes*).

### B. Other Sense-Organs.

Gaubert and shortly after Bertkau (see Gaubert op. cit.) have described remarkable sense-organs in the interior of the apical part of the palpus and of the 1st pair of legs. I have not myself examined these organs, but I am mentioning them here, partly for the sake of completeness, partly because Bernard (op. cit. p. 29) mentions the protrusible organ discovered by Dufour on the apex of the palpi, and according to his own statement he wishes to follow C. Koch and believes it to be »a sensory organ, probably olfactory«, without having, however, been acquainted with Gaubert's preliminary communication and later work (see Gaubert p. 151—52) and not in the slightest calling attention to the existence of the organs placed at the side of the protrusible organ. I have examined the protrusible organ more closely, but I have not been able to understand it. Its movements ought to be observed and studied on living animals. It is, undoubtedly, a kind of fixing cup, and, as stated by Gaubert (op. cit. p. 152), »il est incontestable qu'elle ne sert au Galéode que pour s'accrocher ou grimper.« The terminal face of the palpi is showing great difference as to structure f. ex. in *Solpuga* and in *Rhax*, and I look upon it as most likely that beautiful



characters for groups of genera may be found by the study of the apical portion of the palpi on a large material.

Of other sense-organs we only know the eyes and »les raquettes coxales« (see Gaubert op. cit. p. 96—98), 3 pairs of which are found in *Zombis* Sim. and 5 pairs in all the other genera. It may be noticed about the eyes that in animals preserved in spirit the cornea is very often closely studded with small, irregular depressions which probably are owing to contraction and suggest a peculiar structure, differing from that in the other Arachnids.

### C. Respiratory Organs.

L. Dufour states (op. cit. p. 404—7) that *Galeodes* possesses 1 pair of spiracles on the thorax and 2 pairs on the abdomen, respectively at the posterior margin of the 2d and 3d sternite. Subsequently this number, found by Dufour, is always reprinted in the literature, also of Pocock (op. cit. p. 8 and p. 16) in the year 1893. The statement, however, is defective, as a much smaller, unpaired spiracle is found in the median line at the posterior margin of the 4th sternite; that is already discovered by Kittary (op. cit. p. 343 and 345), but Dufour denies its existence. I have examined the spiracles of the abdomen, and the basal portions of its tracheal trunks in *Cleobis Cubæ*, *Galeodes orientalis*, *Solpuga fatalis* and *Rhax annulata*? in the following simple manner. The dorsal half of the abdomen is removed with a pair of scissors, the ventral side put into a strong solution of caustic potash, and 24 hours later all the bowels can be easily removed and nothing is left but the ventral integument and the tracheæ. Thus in all 4 forms I found a rather small

spiracle in the membrane between the 4th and 5th sternite, now quite back at the anterior margin of the 5th sternite (*Galeodes*, *Solpuga*, *Cleobis*), now nearer to the 4th than to the 5th sternite (*Rhax*). From the spiracle issues an unpaired, rather slender tracheal trunk, as a rule splitting itself shortly after into 2 branches, each of which is as wide as the main-trunk. In *Cleobis* only I have found a longer main-trunk, that even was broken off before its division.

The 2 anterior pairs of abdominal spiracles are uniformly constructed in the same animal, but present some differences in the 4 genera.

In *Galeodes orientalis* the 2d and 3d sternite are hardly bipartited along the median line, their posterior margin is slightly projecting at the middle where it is ending in the well known combs. The spiracles are lying like longitudinal fissures, at a very little distance from each other, almost in the middle of the membrane between 2 sternites, they are diverging only a little from in front backwards.

In *Rhax annulata*? the 2d and 3d sternite are very distinctly bipartite in the median line; posteriorly the median, thin integument gets little by little broad and is even folded up under the posteriorly broadly rounded corners of the 2 halves of the sternite, so that 2 oblique folds arise, at the bottom of which the large, oblique spiracles are found. These are thus placed in a considerable distance from each other under the before mentioned submedian corners and are strongly diverging in the direction from in front backwards.

*Solpuga fatalis* is about of the same structure as *Rhax*. The 2 sternites are visibly divided in the median line, and the integument, uniting the 2 halves of the same sternite, is posteriorly widely expanded and makes a smaller, triangular compartment, but the rather oblique

and comparatively small spiracles are placed in the sides of the triangle and are only overlapped so much that the immovable chitine of the sternite projects enough to make their apertures turn towards the median plan of the animal. The structure in *Cleobis Cubæ* is almost similar to that in *Solpuga*, the spiracles, however, diverge respectively much lesser and are relatively much longer, about half the length of the sternite.

#### D. About the Systematism of the Order.

Of older authors, having published systematical contributions of any importance, may be mentioned C. L. Koch and L. Dufour (op. cit.). The above mentioned work of Simon, published in the year 1879, marks a great systematic progress; a large material (with a number of new forms) afforded to him the means of valuing the characters pointed out by older authors, and of finding several new ones, leading him also to establish several new genera. Next year Karsch published his above mentioned paper; he promises (p. 228) »neue Gesichtspunkte« but — besides some synonymic, the establishing of 4 new genera and several new species — it strikes me that there is nothing new but his pointing out the importance of the number of joints in the tarsi of the 2d and 3d pair of legs, which Simon has neglected to state. The author says besides p. 234: »nach dem Ergebnisse der vorausgegangenen Untersuchungen ist die Zeit der Schöpfung einer natürlichen Eintheilung doch lange nicht reif; es ist noch viel zu wenig bekannt, und das Bekannte noch viel zu oberflächlich erforscht«, and in this point he is undoubtedly quite right. After this paper only a few new genera and species have been described, but not one has tried to arrange the now rather numerous genera in groups.

I am not myself in the case to be able to undertake a grouping, not having representatives for more than half of the genera; I mean, however, to be able to point out several new structural features of systematic value. These are: 1) occurrence and structure of the stridulating apparatus, 2) structure of the basis of tarsus of the 3 pairs of ambulatory limbs, 3) shape of the rostrum, 4) size of the anal aperture; in the following they are separately described.

### E. Stridulating Apparatus.

A large portion of the interior side of the mandible is, as well known, taken up by a naked, shining, square plane, being mostly a little shorter, sometimes (*Cleobis*) as long as high, the anterior margin of which is curved a little backwards at the middle. In *Solpuga fatalis* Licht. (Tab. III, fig. 8) sharp keels, about 12 in number and turning backwards, issue from the uppermost  $\frac{2}{3}$  of this anterior margin, the top one but three of which is the longest, and from thence they decrease in length both upwards and downwards; the inferior ones becoming thus very short. Some very short keels are seen in the bottom of the rather deep furrows near the anterior margin. This structure is uniform on both mandibles and in both sexes. — I took a very large specimen of *S. fatalis*, placed my fingers on the centre of the exterior side of the mandibles, pressed them against each other and moved them in this way alternately up and down in the vertical plane, just as the animal must be able to move them; the result was that the 2 furrowed parts of the 2 inner surfaces rubbed against each other and produced a sound that could be heard in a room at a distance of more than 3 metres. Though I do

not know any statement that the animals stridulate, I still look upon it as unquestionable that we here have a stridulating apparatus, built, indeed, very differently from those which, as far as I know, are found in *Insecta*, *Araneæ*, *Sphærotherium* and *Decapoda*; because in *Solpuga* we find 2 similarly rifled planes rubbing against each other, a structure occurring nowhere else. I may still add that the naked plane is slightly arched.

A similar development of the stridulating apparatus is found in the other species of the genus *Solpuga* known to me. In *Galeodes* (*G. orientalis* Stol., *G. araneoides* Pall., *G. græcus* C. Koch, *G. scalaris* C. Koch) it is considerably slighter with shorter keels, occupying but about the half of the anterior margin of the naked plane; in *Datames* (*geniculatus?* C. Koch) and in a species of the genus *Zombis* almost as in *Galeodes*. In *Rhax annulata?* (unfortunately the only species of the genus known to me) the interior side of the mandibles is much flatter than in the former genera, and the naked plane comparatively shorter with uniformly and strongly curved anterior margin, the c. 10 keels are all rather short, but vigorous, the middle ones the longest. In *Cleobis Cubæ* Luc. (the sole species of *Cleobis* known to me) the apparatus attains a very high development (Tab. III, fig. 9). The naked area is almost as long as it is high, the furrowed portion occupies but little more than the upper half, but in contrast to the former genera more than  $\frac{2}{3}$  of its length, owing to the uncommon length of the c. 9 keels. Furthermore the naked area is uncommonly arched thuswise that the top one but three keel becomes the most prominent at the same time as it is the longest and thickest; henceforth the keels decrease slightly in length downwards. In a very

small specimen of *Gluvia dorsalis* Latr. (hardly 11 mm. in length) I have found a stridulating apparatus furnished with very long keels forming an intermediate link between the organs in *Cleobis* and *Solpuga*. Every trace of keels is wanting on the naked area in an animal from Apscheron (Baku), belonging to *Gluvia* according to the definition of Simon; and owing to a supposition based on the locality (it has not been possible for me to procure the treatise of L. Koch) I believe this animal to be *Gl. caucasica* L. Koch; it ought hereafter and especially in regard to the abnormous structure of its rostrum (see later on) to be separated as a particular genus.

It may still be quoted that L. Dufour has mentioned and figured (op. cit. p. 393, Pl. 2, fig. 6 b and fig. 8 a) »six ou sept traits parallèles, stries ou cannelures« in some species, without adding further explanations.

#### F. The Tarsus of the 2d—4th Pair of Legs.

In *Solpuga fatalis* Licht. we find on the basal portion of the tarsus close to the insertion upon the metatarsus a rather small, arched, transverse area, stretching a little down upon the anterior and posterior side of the joint, where it is raising like a lower, blunt protuberance (Tab. III, fig. 10). This area (a) is trimmed with c. 24 sharp furrows and interjacent keels, radiating towards the extreme basis of the tarsus. The portion at the basis between this area and the articular membrane (c) is a smooth plane, being on the 2 anterior pairs of legs stronger arched and raised like a smaller process, on the hindmost pair of legs it is, however, less arched and not raised towards the basis (b). Metatarsus projects on the dorsal side and slightly down upon the sides freely and rather considerably like a

roof above the articulation. The latter is very free, allowing the tarsus to be bend slightly upwards and strongly downwards in the vertical plane and besides considerably forwards and backwards in the horizontal plane, when it is bent so much downwards as not to touch the roof of metatarsus. The importance of the furrowed area and of the roof is quite inconceivable to me. A similar structure is found in the few other species of *Solpuga*, known to me.

In *Galeodes (orientalis* Stol., *araneoides* Pall; *græcus* C. Koch) on the 4th pair of legs the roof of the metatarsus is much shorter, the transverse area of the tarsus rather faintly furrowed, whereas the smooth area between the transverse area and the articular membrane projects like a proximal, rather taplike vault. On the 2d and 3d pair of legs the transverse area is rudimentary and the smooth area projects still more as a large, blunt tap. The movement is on all pairs of legs very well developed in the vertical plane, but horizontally weaker than in *Solpuga*.

The roof of the metatarsus on the 4th pair of legs in *Datames geniculatus* C. Koch? is very short on the dorsal side, while the apophysis on the sides are rather projecting; the transverse area is very narrow and lacking fissures, the smooth area broad and evenly arched; the movement as in *Galeodes*. The apex of metatarsus is filled up on the upper side and a little down the sides with numerous, rather fine longitudinal furrows, which may also be found less developed down towards the apophysis in other genera; I have examined them with the microscope without result. The 2d and 3d pairs of legs are, on the contrary, built almost as in *Galeodes*; the furrows on the transverse area are, however, more distinct.

A specimen of the genus *Zombis* Sim. has shown in all respects great accordance with *Galeodes*.

In *Rhax annulata*? the transverse area on all 3 pairs of legs is very weakly developed, having but on the hindmost pair of legs some irregular furrows, the smooth area at the basis narrow, not much raised, the roof of metatarsus very short. The movement very well developed in the vertical, slightly in the horizontal plane.

In *Gluvia caucasica*? (see above) the articulation is simple, without transverse area and discernible roof, appearing, however, very movable in both planes.

In *Cleobis Cubæ* Luc. the smooth area makes an intermediate link between the form in *Solpuga* and *Galeodes*; the transverse area is exceedingly slightly developed on the 2d and 3d pair of legs, more strongly on the 4th, seeming, however, all over to be lacking furrows; the roof short. The movement is well developed in both planes, the foot remarkably capable of bending upwards.

I have no doubt that the differences stated here must be of some importance to the movement of the foot, and thereby to the nature of the walk of the animals, in that way being of systematic importance. The examination is in the easiest way executed with a strong magnifying-glass on as large specimens as possible.

### G. Rostrum.

This most remarkable organ represents a considerable difference in form in the genera known to me. It is not my intention to give a closer anatomical representation of the structure of the rostrum; it suffices to give names to the parts, necessary to illustrate my object. The rostrum tapers in front into an unpaired, dorsally



placed, at the basis broad, shorter or longer lobe which I will name the dorsal lobe (Tab. III, fig. 11, d); this bears on the lower margin the remarkable formation which repeatedly has been described by anatomists, and which I shall name the setal plate (l). Below on each side issues a lobe turning forwards and downwards, the basis of which almost meets at the top with the lower basis of the dorsal lobe; these 2 ventrally situated lobes I shall call the lateral lobes (v).

Each lateral lobe carries, besides several common hairs, 1 thick, long, plumose seta which I shall name the plumose seta (s).

In *Galeodes (orientalis)* and several other species) the tolerably long dorsal lobe projects somewhat in front of the lateral lobes (fig. 11); the setal plate is very high, the foremost, lowest end projects in a rather long, triangular apex, and its anterior margin is very concave, and very well defined from the upper margin. The plumose setæ extend to the extreme apex of the setal plate.

In *Datames geniculatus?* the rostrum has a similar form, the dorsal lobe is shorter and the lateral lobes longer, the 3 lobes accordingly stretching equally far. The anterior margin of the setal plate is still more concave than in *Galeodes*, but the lower apex is somewhat shorter, and the plumose setæ reach far in front of this apex.

In *Zombis* sp. I have found a rostrum similar to that in *Datames*; the lateral lobes are, however, a little shorter, and the plumose setæ reach but a little outside the apex of the setal plate.

In *Solpuga (fatalis)* and several other species) the dorsal lobe is a little shorter than the lateral lobes, the setal plate rather lower than in *Galeodes*, with a slightly concave anterior margin (almost as in

*Cleobis*) leading smoothly into the short upper margin, the lowest, foremost end rather rounded, somewhat shorter than the plumose setæ.

In *Cleobis Cubæ* (Tab. III, fig. 12) the lateral lobes are broad at the basis and longer than the short, dorsal lobe; the setal plate lower with the anterior margin rather concave below at the triangular apex; the plumose setæ reach far beyond the latter.

In *Rhax annulata?* (Tab. III, fig. 13) the dorsal lobe is rather long, being, however, not as long as the uncommonly long but only middle broad lateral lobes; the setal plate has an equally and slightly concave anterior margin, but hardly any discernible excavation above the short, blunt, lower apex; the plumose setæ reach a little in front of the apex.

In *Gluvia dorsalis* Latr. rostrum is in all main points like rostrum in *Cleobis*, the broad lateral lobes are, however, comparatively a little longer.

In *Gluvia caucasica?* (see above concerning the determination) we find a rostrum of quite a different form. The dorsal lobe is long and stretches far beyond the middle-size lateral lobes; but the most remarkable is the setal plate, being a very long and narrow triangle with the dorsal line straight almost all the way, the apex is narrow and blunt, and far back on the lower side at the basis of the lateral lobes the plate projects in a small, triangular apex turning in an oblique direction both forwards and downwards, stretching a little further than the lateral lobes and morphologically corresponding with the foremost, triangular apex in the other genera. The plumose setæ are but half the size of the interval between the apex of the lateral lobes and the setal plate. (It may once more be

mentioned that this remarkable species is devoid of stridulating apparatus).

### H. Anus.

In *Rhax annulata*? the anus takes up hardly the lowest third of the height of the last segment; in the other, before mentioned forms, known to me, it takes up from at least  $\frac{2}{3}$  till almost the total height of the whole segment.

I suppose that, if the characters pointed out here for some of the genera (respiratory organs, stridulating apparatus, the basis of the tarsus, rostrum and anus, besides the but indicated difference in the structure of the apical part of the maxillary palpi) together with the formerly known characters are going, seconded by a sensible valuation of the characters, to be examined on a large material, a basis may be gained sufficiently extensive to the establishing of an improved system of this interesting order. I find grounds to believe that the shape of rostrum, in particular, will become of the greatest importance to the natural arrangement of the genera, often much more important than the number of joints in the tarsi.

## V. Opiliones.

Sørensen, W.: Opiliones Laniatores Musei Hauniensis (Naturh. Tidsskr. 3. R. B. XIV, 1884, p. 555—646).

### A. Lyriform Organs.

Gaubert (op. cit. p. 82—83) has studied *Phalangium opilio* and has found these organs only on the 1st and 3d

joint of the ambulatory limbs and on the basal joint of the mandibles, but he has in those places found almost all that exist. He denies their occurrence on the palpi, remarking »ce qui distingue les Phalangides des Aranéides«. Now I shall describe what I have found in the female of the same species, which ought rather to be called *Phal. cornutum* L. For the rest it is difficult to examine this animal owing to the nature of the integument; of the same reason I have not tried to go into details in describing the organs of the body; but I have minutely described the organs in *Nemastoma lugubre* O. F. Müller, belonging to a small family, *Nemastomoidæ*, standing between the *Phalangioidæ* and *Troguloidæ* (see W. Sørensen op. cit. p. 577—78), it being much easier to observe them with certainty in this form. *Trogulus* has also been examined by Gaubert, who has found organs on the mandibles and ambulatory limbs, yet the position of the fissures on the ambulatory limbs has not been further described.

1) *Phalangium cornutum* fem.

1st pair of legs.

1st joint. At the basis c. 3 closely placed oblique fissures. At the apex of the apophysis of the posterior side a tolerably long transverse fissure.

2d joint. On the anterior side close to the lower side a group of 6 shorter oblique fissures. Far down on the posterior side close to the apical margin about 9 parallel, slightly oblique, closely lodged longitudinal fissures.

3d joint. On the anterior side near the basis an irregular group of c. 10 short transverse fissures, most of which are strongly curved; on the posterior side a similar group. Besides some long transverse fissures spread over the joint quite to the apex.

### Maxillary palpi.

3d joint. On the interior side of the basal portion a small, irregular group of 4 arched, transverse fissures; on the exterior side a similar group. On the dorsal side and slightly round upon the exterior side a group of 5 oblique longitudinal fissures of most unequal length, one of them very long.

### Mandibles.

On the exterior side (not the interior side, as stated by Gaubert) of the 1st joint, towards its dorsal side slightly outside the middle an irregular group of c. 4 longer and several very short longitudinal and oblique fissures. (On the exterior side of the 2d joint a belt, narrow at the basis and getting by degrees broader towards the apex, of numerous, irregular, very small longitudinal fissures; similar fissures are found also on the whole lower side of the same joint and on the exterior side of the basal portion of the 3d joint. I must leave to future to make out the true nature of these fissures; I am still doubting as to them being in any way connected with the lyriform organs).

### Body.

On the 1st sternite 2 pairs of fissures are found, the foremost pair is situated about where the sternite is tapering to form the median lobe under the ovipositor, and towards the lateral margins the second pair, with about the same mutual distance of the fissures as the 1st pair, is situated a little in front of the posterior margin of the sternite. All 4 fissures are oblique, almost radiating towards a point in the centre.

I have also found solitary fissures on other sternites of the abdomen and on the cephalothorax, and no doubt they are found in a small number spread over the whole body, but, as I said before, they are difficult to point out, whereas *Nemastoma* easier provides a

more complete and correct exhibition of these organs in a type of *Opiliones*.

2) *Nemastoma lugubre*.

1st pair of legs.

1st joint. On the lower side a little removed from the basis a group of 3 long transverse fissures, placed partly behind each other.

2d joint. On the anterior side near the apical margin 1 long and c. 6 shorter transverse fissures; the small ones outside the longer ones. On the limit between the posterior and the lower side a group of 5 long, slightly oblique longitudinal fissures; behind the apophysis 1 long and 1 shorter transverse fissure.

3d joint. On the basal portion of the anterior side c. 11 short transverse fissures; on the basal portion of the posterior side a somewhat lesser number. A little behind the apex 1 dorsal, good-sized transverse fissure and slightly down each side a similar one, 3 in all.

Last joint of tarsus. A little removed from the apex towards the dorsal side 1 single, rather long transverse fissure.

The 3 other pairs of legs essentially as the 1st pair.

Maxillary palpi.

1st joint. On the upper side somewhat behind the apex 1 single transverse fissure, on the lower side at the middle 1 single, short, oblique fissure.

2d joint. On the anterior side close to the apical margin behind each other 2 long and 1 shorter transverse fissure (Tab. III, fig. 14, 1).

3d joint. On the basal portion, partly on the upper, partly on the exterior side and a little down the interior side some more or less arched, often very oblique, transverse fissures. Slightly behind the apex on

the dorsal side a group of 3 middle-size, oblique longitudinal fissures.

6th joint. On the exterior side slightly behind the apex 1 short transverse fissure (Tab. III, fig. 15, 1).

Mandibles (in the male).

1st joint. 2 spread transverse and 3 longitudinal fissures on the distal half of the exterior side, besides an oblique fissure on the exterior side of the distal, dorsal process.

2d joint. On the exterior side at the basis 3 very short, closely placed, oblique fissures, a little outside these 4 spread longitudinal fissures and on the distal half 4 spread transverse fissures.

The ventral side of the abdomen (in the male).

1st sternite. Foremost on the median, narrower portion on each side 2 fissures a little removed from the lateral margin, the one a longitudinal, the other a transverse fissure; a little more backwards and removed from the lateral margin on the one side 2 oblique fissures, on the other 2 transverse fissures; near the posterior margin 3 transverse fissures on the one, 2 on the other half.

2d sternite. On each side 1 longitudinal fissure at the lateral margin, and from thence towards the median line all in all 3 transverse fissures; the inmost one the longest.

3d, 4th and 5th sternite. 1 longitudinal fissure at the lateral margin (and from thence 2 transverse fissures towards the median line).

6th sternite (the foremost anal plate) devoid of fissures.

The lateral anal plates.

Each with 1 fissure.

The 4 movable tergites of the abdomen.

Generally each with 2, partly transverse, partly longitudinal fissures on each side; the hindmost, 4th tergite (hindmost anal plate) altogether with 2 transverse fissures.

Cephalothorax and the foremost coalesced abdominal tergites.

With some spread fissures going in different directions and situated quite forward at the anterior margin, at the posterior margin and at the lateral margins.

The mentioned fissures occurring on the body are all comparatively large.

*Phalangium* and *Nemastoma* are, however, by far not sufficient to give a full idea of the occurrence of these organs in this order, the numerous types of which differ from each other according to manifold structural features. I am, however, bound to leave this rather difficult investigation to others who are disposing of a richer material of different forms (*Sironoidæ*, *Troguloidæ* etc.) I shal merely add that I have found a great number of small longitudinal fissures spread on the upper side of the tibia in *Mastobunus tuberculifer* Luc., and the animal does even belong to the same family as *Phalangium cornutum*. In *Pachyloides uncinatus* W. Sør., belonging to *Opil. Laniatores*, we find other structures differing much from the examined *Opil. Palpatores*; thus very small, spread longitudinal fissures on the metatarsus; but owing to the peculiar, thick integument it is very difficult to examine them.

### B. Other Sense-Organs.

Of such are known but the eyes in this order (not counting the sense-organs on the ovipositor of the female). In two types I have found very remarkable hairs deserving to be treated more closely and of



which at least the one form possibly may be a sense-organ.

### 1) *Nemastoma*.

Systematic authors state that the palpi in a series of species of this genus are furnished with clavated hairs. I have studied them in *Nem. lugubre* O. F. Müller. They are situated between the common setiform hairs and found on the lower side of the 3d, 4th and 5th joint, on the distal half of the whole 5th joint and on the entire 6th joint (Tab. III, fig. 15). They are much shorter than the other hairs, and much more slender, straight and gradually getting finer towards the apex that is ending in a globe, on the upper side of which traces of a continuation of the hair is to be noticed; the globe is largest on the hairs sitting on the upper side of the penultimate joint. The globe is hollow and the exterior wall seems to be pierced with small holes (Tab. IV, fig. 7, b); the hair itself is hollow and lengthens into the globe, where it takes the shape of a bowl (fig. 7, a) the lateral margin of which is in all probability the united with the interior surface of the globe. That is what I mean to have seen with my, not very modern, microscope, but I am quite unable to set forth any reasonable hypothesis about their significance. It is just possible that they are a kind of sense-organs, but in all cases they seem to differ much from those known hitherto.

### 2) *Phalangium parietinum* De Geer.

In my treatises quoted later on under *Chelonethi* I have shortly described and figured some remarkable tufts of hairs, found in the male of this species on the lower side of metatarsus and some of the proximal joints of tarsus of the 3 foremost pairs of legs, but are lacking

on the 4th pair and on all the legs of the female. Seen even under a strong magnifying-glass they appear to be but very small, clavated hairs, but making use of the microscope it is evident that each »hair« consists of fewer or several very fine hairs, collected at the basis in a compact bunch, issuing from a hollow in the centre of a small eminence (Tab. IV, fig. 8 and fig. 9). These bunches are placed in 2 or 3 irregular longitudinal rows. The single hairs are slightly dilated near the tip and they split in several rather short, pointed branches (fig. 9). The integument of the leg is thick, but on a properly cleaned specimen the hairs can be seen passing through it, and exceedingly small, partly clear chitinous formations issue from the basis of the hairs. By dissecting the leg it is evident that from the basis of each bunch there issues a kind of radiation of the surrounding, soft tissue and that this radiation takes up almost  $\frac{1}{3}$  of the diameter of the leg; but I have not entered into the histological study of this tissue. The chances are that the whole formation is a kind of sense-organ; it being striking, however, that these hairs are wanting in both sexes of *Phal. cornutum* L. and in the other *Phalangioïdæ* living in Denmark.

### C. Supplementary Spiracles on the Legs.

In the larger species of the genus *Phalangium* is easily seen a small, dark ring on the posterior side of tibia of all 4 pairs of legs close to the basis (Tab. IV, fig. 1, a), and a smaller ring is found on the upper side of tibia a little in front of the tip (fig. 1, b). It is proved by closer examination that these rings are spiracles. Fig. 4 and the diagrammatic fig. 3 show the structure of the proximal spiracles. The exterior integument (a) is towering slightly up, having in the centre a round

hole (b) and is radiately striped from this hole; the immediate surrounding of the hole is very light, succeeded by a darker, not distinctly limited ring. The hole is leading into a respiratory cave (fig. 3, d), the interior wall of which consists of an integument, fastening itself round along the edge of the elevated portion of the integument of the leg; the exterior wall being thus convex and the interior one concave into the leg, a real cave has arisen. A tracheal trunk is opening itself through the interior wall, the aperture (fig. 4, e) is a little larger than the aperture of the spiracle itself and situated closer up to patella. The distal spiracle is constructed quite in the same way (fig. 6), the outlet of the tracheal trunk (e) is, however, nearer to metatarsus than the aperture of the spiracle. On both spiracles the interior wall of the respiratory cave (fig. 5) is studded with numerous larger and numberless very small spines, all radiating towards the outlet of the tracheal trunk.

I had for some time examined *Phal. cornutum* L., but did not succeed to make out this structure, before I had taken to the study of the spiracles in the large females of *Phal. propinquum* Luc. which I recommend as an excellent object for this examination.

Next arises the question as to the relation of these spiracles to the tracheal system of the animal. In the literature it is stated that *Phalangioidea* have but one single pair of spiracles, lodged almost behind the middle of the coxæ of the hindmost pair of legs, and from each spiracle a very wide tracheal trunk issues forward in the body, dividing itself into several thick branches. 2 tracheal trunks go into each leg and are easily seen especially inside the femur, the one is a little wider than the other; they do not unite towards the basis, but issue each from its own branch of the main trunk

in the body. Towards the end of femur the one trunk is increasing in thickness and is turning to the side at the distal end of patella and goes to the spiracle lying in the basis of tibia (Tab. IV, fig. 2, g). It is considerably narrowed in the last, short piece; a trunk (h) is rising where the narrowing is commencing, being much narrower than the main trunk and running nearly through the whole length of tibia about to the metatarsus where it seems to be dissolved into fine branches. Before the entering of the main trunk into the spiracles is taken place fine, recurrent branches (i) issue from it. I have found them recurrent on preparations cleaned in caustic potash, and in August this year I have examined a fresh specimen of an *Acantholophus* (with the tracheal trunks filled with air) and have also found them to be recurrent. The proximal spiracle appears chiefly to supply fresh air to the main trunk in patella and the distal portion of femur, besides partly to tibia, and only appears as an aperture, establishing a connection by a short lateral tracheal branch with the widest of the 2 normal trunks of the leg which issues from the central tracheal system, while the distal spiracle possesses a special tracheal system which but secondary communicates with the other of the main trunks and which doubtless, to no small extent, provides with air the distal portion of tibia, besides metatarsus and tarsus. Making use of dissection of tibiæ cleaned in caustic potash I have studied the structure as well as possible, but I abstained from giving any figure, as several of the tracheæ were collapsed and I was afraid of not being sufficiently exact in the representation of details. The direction and ramification of the tracheæ I have later (in August) studied on fresh specimens (of *Phal. cornutum*), put into glycerine which does most excellently preserve the

air within them in such a way that they are easily followed. In *Phal. propinquum* I have found that from this distal spiracle proceeds an independent tracheal trunk strongly narrowed at the spiracle and shortly after becoming very wide, running to the apex of the tibia, and not far from the origin it sends forth 2 large branches, the narrower of which is recurrent and dissolving little by little towards the middle of the tibia into finer branches; the other is somewhat wider, at first running laterally, but not far from the spiracle it is (according to the examination of preparations cleaned in caustic potash) connected by a very narrow and exceedingly short lateral branch with the one of the 2 main trunks which (fig. 2, k) is not connected with the proximal spiracle. I have had no difficulty in following the 2 trunks through the tibia, a fact I wish to point out, on account of the remark above.

Of the 2 spiracles the proximal one is almost always found at the same place, while the distal one is a little moved in the different genera of the fam. *Phalangioidæ* W. Sor. It may immediately be stated that the size and structure of the spiracles, besides the distance of the distal spiracles from the apex of tibia, is almost equal on all 4 pairs of legs of the same specimen. Tab. IV, fig. 1 gives an exhibition of their position in *Phal. propinquum* Luc. and the Danish species, *Ph. cornutum* L. and *Ph. parietinum* De Geer. An almost similar position I have found in *Phatybunus corniger* Herm., *Mitopus morio* Fabr., a species of the genus *Egænus*, even by the rather short-legged *Acantholophus ehippiatus* C. Koch. In *Liobunum rotundum* Latr., an East-Indian species of the genus *Gagrella* and in *Pantopsalis Listeri* White the distal spiracle is somewhat longer removed from the apex of tibia.

Simon divides (op. cit.) the European forms of his family *Phalangiidæ* into 2 sub-families: *Sclerosomatinae* and *Phalangiinae*; all the above mentioned genera belong to the lately mentioned group. Of the small group *Sclerosomatinae* which consists of 3 European genera I have examined the 1st and 2d pair of legs of *Mastobunus tuberculifer* Luc. The proximal spiracle is hardly lying so close to patella, the distal one on the tibia of the 2d pair of legs, is placed hardly  $\frac{1}{3}$  of the length of the tibia from the apex close behind the distal of the 2 secondary articulations; the tibia of the 1st pair of legs is not quite half as long as the one of the 2d pair of legs, and the spiracle is even situated a little closer to the basis than to the apex.

While thus the spiracles are pointed out in so many of the most divergent genera of the fam. *Phalangioidæ* W. Sor. (*Phalangiidæ* Sim.), they are completely wanting in *Ischyropsaloidæ*, *Nemastomoidæ*, *Troguloidæ* and *Sironoidæ*, of which I have examined one species of each family, certainly not having dissected any specimen of the first and last one. Next they are wanting in *Opil. Laniatores*, of which I have examined both short and long-legged species of some families. Thus they are solely found in *Phalangioidæ* which typically have the longest and most slender legs of all *Opiliones*, and it is the only family of *Opil. Palpatores*, whose spiracles at the anterior margin of the abdomen are »hiantia« (W. Sor.), while in all other, closely examined forms they are »cancellata« or able to be closed in one way or another. (As to the spiracles in *Opil. Laniatores* I refer the reader to W. Sørensen (op. cit.) The existence of supplementary spiracles becomes thus a family-character which may be added to the characters mentioned by Sørensen (op. cit. p. 578).

I shall not undertake to set forth an hypothesis

about the question how these strange spiracles may have arisen and how their relation to the normal tracheal system is brought about. The appearance of such supplementary respiratory organs on the limbs is quite unique within the Arthropods. Of course they are performing a part of the supply of air of the long, slender legs. Dr. Sorensen has verbally put the question, if their existence might not be brought in connection with the well known and astonishing capacity of the limbs of *Phalangioidæ* to be able to make violent movements a considerable time after they have been pulled off from the animal; this vitality should, in that way, be connected with the excellent renewal of oxygen which these spiracles are able to furnish to the legs. I set forth this idea as a hypothesis to be further proved by experiments on living animals; especially it has to be tried if the limbs of other Opilionids, as *Ischyropsalis*, *Nemastoma*, *Trogulus*, which are devoid of these spiracles, have an equally well developed capacity of making movements in a torn state.

(I cannot quit *Opiliones* without mentioning that Gaubert has neglected to make use of and quote a work by W. Sørensen: Om Bygningen af Gonyleptiderne, en Type af Arachnidernes Classe (Naturh. Tidsskrift, 3. R. B. XII, 1879—80, p. 97—222, pl. II), although this paper is of great importance. *Gonyleptidæ* (*Opiliones Laniatores*) constitute a chief-division of *Opiliones* in opposition to *Op. Palpatores*; the work of Sorensen is the only newer complete anatomical monograph of a form of Opilionids, and it is not possible to give a general representation of a series of structural features in *Opiliones*, as Gaubert has tried, without paying attention to the one of the two sub-orders. Inter alia we find in Sorensen's papers a detailed representation of the structure of the integument, the segments of the body

and the limbs. The negligence becomes still more aggravating, because W. Sorensen in several of his works about *Opiliones* is examining much more carefully than Gaubert, according to the impression I have received of his examination of the existence of the lyri-form organs and others. I shall, however, in the treatment of the next order mention several similar questions).

## VI. Chelonethi (Pseudoscorpiones).

- Stecker, A.: Ueber neue indische Chernetiden (Sitzungsber. d. Kaiserl. Akad. d. Wiss. in Wien, Math.-Naturw. Classe, LXXII. B, I, 1875, p. 512—26, Taf. I—IV).
- Hansen, H. J.: Arthrogastra Danica. En monographisk Fremstilling af de i Danmark levende Meiere og Mosscorpioner, med Bidrag til sidstnævnte Underordens Systematik (Natur. Tidsskrift, 3. R. B. XIV, 1884, p. 491—554). — The paper is not accompanied with figures, but references are made to the contemporary revision of the same author of Arthrogastra Dan. in »Zoologia Danica«, 4de Hefte, Spindeldyr, of which Pl. VII contains numerous original figures of Chelonethi, while the accompanying text is popular.
- Bertkau, Ph.: Ueber den Bau der Chernetiden oder Pseudoscorpione (Sitzungsber. d. Niederrh. Gesellsch. f. Nat. u. Heilkunde, 1887, p. 112—117). — The treatise is quoted after Bertkau's Jahresb. f. 1887, p. 35—36.
- Croneberg, A.: Beitrag zur Kenntniss des Baues der Pseudoscorpione (Bull. de la Soc. Impér. des Naturalistes de Moscou. Nouv. Sér. T. II, 1888, p. 416—61, Taf. X, XI, XI a).
- Balzan, L.: Revisione dei Pseudoscorpioni del Bacino dei Fiumi Paraná e Paraguay nell' America meridionale (Ann. del Museo Civico di Storia natur. di



Genova, Ser. 2a, Vol. IX, 1890, p. 401—54, Tav. XIII—XVII).

— Voyage de M. E. Simon au Venezuela. Arachnides, Chernites (Pseudoscorpiones) (Ann. de la Soc. Entom. de France, Vol. LX, 1891, p. 497—552, Pl. 9—12).

Bernard, H. M.: Additional Notes on the Origin of the Tracheæ from Setiparous Glands (Ann. and Mag. Nat. Hist. 6 ser. Vol. 11, 1893, p. 24—28).

### A. Lyriform Organs.

Bertkau seems to be the first who has found such organs in *Chelonethi*; he writes in the quoted »Jahresbericht«: Von Sinnesorganen sind spaltförmige Hautporen und die Augen zu nennen.« Gaubert has overlooked Bertkau's treatise, he has, however, himself found organs on the legs and palpi, certainly in a very small number, viz., a group of 3 fissures on the upper side of the 4th joint of the palpi and a similar group with 3 or 4 fissures on the 3d joint (surely a misprint for the 2d joint) of the legs. Yet he states also, p. 84, that he has seen them on »le thorax«, but by discussing them further he no more mentions thorax, what there might have been great reason in doing, as he has not found them else on the cephalothorax in any order, except on the sternum in *Aranææ*, but sternum is wanting in most of the *Chelonethi* and is exceedingly small in the others. I shall now fully communicate what I have found in representatives for 2 of the genera which are most divergent from each other, *Chelifer* and *Obisium*.

#### 1) *Chelifer granulatus* C. Koch (male).

1st and 2d pair of legs.

1st joint. On the limit between the lower and posterior side close to the apex 1 single oblique fissure.

2d joint. On the dorsal side a organ with c. 5 longitudinal fissures of very different size.

4th joint (femur). 3 shorter longitudinal fissures lengthwise the dorsal side of the joint.

5th joint (tibia). On the dorsal side 2 longitudinal fissures, the one somewhat removed from the basis, the other from the apex, besides sometimes 2 fissures close to each other at the middle.

6th joint (tarsus). On the dorsal side 2 longitudinal fissures, the one somewhat removed from the basis, the other from the apex.

3d and 4th pair of legs.

1st and 2d joint as on the 2 first pairs of legs.

3d joint (trochantin). On the lower side 1 long, arched transverse fissure.

4th joint. On the dorsal side c. 5 short longitudinal fissures, spread lengthwise on the joint. On the lower side near the apex 1 rather long longitudinal fissure.

5th joint. On the dorsal side 4 short longitudinal fissures spread lengthwise on the joint.

6th joint. On the dorsal side 3 short longitudinal fissures spread lengthwise on the joint.

Maxillæ.

On the exterior side 3 slightly oblique longitudinal fissures.

Maxillary palpi.

2d joint (trochanter, as the maxilla has to be counted as the 1st joint of this appendage). On the exterior side towards the apex 5 longitudinal fissures of most different length, the one very long.

3d joint. On the exterior side c. 8 short longitudinal fissures, spread lengthwise on the joint.

4th joint. On the upper side down on the interior side and slightly removed from the basis 3 rather large

longitudinal fissures; slightly removed from the apex 1 small longitudinal fissure. On the lower side near the apex 1 small longitudinal fissure.

5th joint. On the upper side at the basis 2 well developed longitudinal fissures removed from each other; at the basis of the immovable finger 1 similar longitudinal fissure. On the lower side of the basis of the immovable finger 1 large, arched oblique fissure.

6th joint. On the lower side somewhat removed from the apex 1 middle-long longitudinal fissure.

Mandibles.

On the middle of the lower side of the hand towards the anterior margin 1 single, arched transverse fissure (Tab. IV, fig. 10, 1). On the upper side 1 large longitudinal fissure almost above the fissure of the lower side.

The ventral side of the abdomen.

3d sternite. From the median line to half way towards the lateral margin c. 2 irregular transverse fissures on each side.

4th sternite. On each side towards the posterior margin 2 rather large transverse fissures; the one slightly removed from the median line, the other a little removed from the lateral margin; on the one side 1 small fissure near the lateral margin.

5th sternite. As the 4th, but with 1—3 fissures of different form and length near the lateral margin.

6th, 7th, 8th, 9th and 10th sternite almost as the 5th.

11th sternite. Only c. 2 longer fissures (mostly longitudinal) on each side, but along the whole posterior margin a broad belt with a great number spread, very tiny fissures, only visible being magnified 3 or 400 times.

The dorsal side of the abdomen and the cephalothorax. The cephalothorax all in all with

c. 23 spread fissures; the dorsal side of the abdomen almost like the ventral side, but for the rest the drawing (Tab. IV. fig. 12) gives so full an idea of the distribution of the fissures that most likely a further description would not be necessary.

2) *Obisium muscorum*, Leach.

1st and 2d pair of legs.

1st joint. On the posterior side near the apical margin 1 rather long longitudinal fissure.

2d joint. On the dorsal side 4—6 long longitudinal fissures converging towards the apex and collected into one organ (Tab. V, fig. 1).

3d joint (pars basalis femoris, see later on). On the dorsal side near the apex 1 long longitudinal fissure, at the middle or towards the basis 1 shorter and a little removed from the basis 3 short, spread fissures.

4th joint (pars tibialis femoris). On the dorsal side slightly removed from the apex 3 unequally long longitudinal fissures, situated at a distance from each other.

5th—7th joint. No fissures are found.

3d and 4th pair of legs.

1st and 2d joint with the same fissures as on the 2 foremost pairs of legs.

3d joint (trochantin). On the proximal half of the lower side 2 or 3 shorter longitudinal fissures spread lengthwise on the joint.

4th joint (femur). On the dorsal side somewhat removed from the apex 3 long longitudinal fissures of a similar form and almost relative position as on the pars tibialis femoris of the 2 anterior pairs of legs.

Maxillæ.

On the lower side towards the exterior side

about at the middle 4 large, strongly curved fissures, making together almost a circle. Near the outmost anterior edge 4 long, rather oblique longitudinal fissures.

#### Maxillary palpi.

2d joint (compare *Chelifera*). On the exterior side near the apex 3 long longitudinal fissures placed far from each other; towards the middle in the midst of the exterior side 1 small transverse fissure.

3d joint. On the lower side towards the exterior side c. 4 shorter longitudinal fissures, 2 of which are placed a little apart from each other at the basis, the others spread lengthwise on the joint. On the exterior side near the apex 1 small oblique fissure.

4th joint. On the upper side near the apex of the joint 1 short transverse fissure, towards the basis 1 middle-size longitudinal fissure, closer to the middle and towards the interior side 1 very long, rather oblique longitudinal fissure and in the neighbourhood of this on the interior side still 1 longitudinal fissure. On the lower side towards the exterior side near the apex 1 middle-size transverse fissure.

5th joint. On the upper side near the basis 2 shorter longitudinal fissures far removed from each other; at the basis of the immovable finger close to the articulation of the movable finger 1 longitudinal fissure on the exterior side, a little out on the upper side of the immovable finger 1 middle-size longitudinal fissure.

6th joint. On the exterior side 3 longitudinal fissures spread along the distal half on the joint, the proximal very short, the other 2 longer.

#### Mandibles.

On the lower side near the basis of lamina interior (see later on) 1 single oblique fissure (Tab. V, fig. 9, 1); on the upper side immediately above this fissure 1 longitudinal fissure.

The ventral side of the abdomen.

4th and 5th sternite. 1 short transverse fissure on each side of the median line.

6th, 7th, 8th, 9th and 10th sternite. As a rule 1 short transverse fissure on each side of the median line; at times on the hindmost sternites, none on the one side, 2 on the other. Besides near the lateral margin 1 large, rather oblique transverse fissure (compare Bernard, op. cit.; see later on).

11th sternite and tergite (coalesced to form a ring, see later on). About 8 longitudinal and transverse fissures around on the 12th segment.

The dorsal side of the abdomen.

1st tergite. 1 middle-size transverse fissure almost half way between the median line and the lateral margin on each side.

2d—3d tergite. No fissures found with certainty.

4th—10th tergite. 1 longer and at times besides 1 short fissure near the lateral margin and more or less towards the anterior edge; besides 1 shorter, now oblique, now transverse fissure on each side almost half-way between the median line and the lateral margin (sometimes the one seems to disappear).

Cephalothorax.

Slightly inside the foremost eye 3 or 4 small, irregular oblique fissures, partly removed from each other. Towards the lateral posterior edge 2 or 3 irregularly situated small fissures.

As a rule on specimens treated with caustic potash there is in *Chelonethi* no distinctly limited dilatation for the nerve in most of the fissures, which have the shape of shorter or longer button-holes. The group on the upper side of the trochanter in *Obisium* is the largest and most regular, the fissures of which are showing, in contradistinction to the preceding orders,

the mentioned dilatation more or less close to the distal end of the fissures (Pl. V, fig. 1).

I cannot quit these organs without adding some remarks upon the paper of *Bernard*, quoted above, in order to throw a light upon one of the most remarkable discoveries touching this subject. — Unfortunately I shall be obliged to copy a rather long piece in order to be able to exhibit the therein contained not few theories that must be real tit-bits to the now-a-days so remarkably large public of fantastical speculative phylogeneticians. — He has examined »a small Chernetid, apparently an *Obisium*«, and he says (p. 26). »The stigmata of the tubular tracheæ on the second and third abdominal segments are followed by a complete row of segmental apertures running along each side to the end of the abdomen. Their position corresponds exactly with those of the stigmata, and I think it is impossible to doubt that they are homologous with these latter. In this interesting Arachnid, then, there are nine pairs of apertures on the nine posterior abdominal segments. The two anterior pairs are stigmata. The function of the other seven, for want of sufficient material, I have not yet made out. It is well known that the Chernetidæ spin webs, and there seems to be no very clear idea where the glands are situated. Cronebergs claim [here he quotes the above mentioned work of Cr.] that the spinning-gland opens in the mandibles is probably correct. I find a very distinct aperture on a small prominence behind the point of the movable piece of the mandibles. In that case these »stigmata« may be purely rudimentary and functionless. If, on the other hand, these seven pairs of apertures following on, and evidently homologous with stigmata prove to be the openings of spinning-

glands (a point I hope soon to investigate), we should have a remarkable confirmation of my suggestion that the lung-books or tracheæ and the spinning-glands of the Araneids are homologous structures as common derivatives from setiparous glands. We learn also from these nine pairs of abdominal apertures in *Obisium* that the limitation of the number of stigmata in *Scorpio* is not original, i. e. inherited from a *Limulus* ancestor, but is due to a secondary reduction of what were originally segmental structures along the whole abdomen.«

Nobody will be able to deny that considering the length of the quotation we find in this as many ingenious speculations as may fairly be expected; I am sorry, however, to be obliged to state that they are false one and all.

1) The spiracles in *Chelonethi* are not found on the 2d and 3d, but on the 3d and 4th segment, as stated by Croneberg p. 444 in the treatise quoted by Bernard himself: »jederseits in dem Winkel zwischen 3ter und 4ter resp. 4ter und 5ter Bauchschiene«. Bernard might have avoided this mistake by reading Croneberg properly; Pocock reports (op. cit. p. 6) the correct about at the same time as Bernard, saying: »the stigmata are situated in the third and fourth abdominal somites.« 2) B. says that there are 9 pairs of spiracles on the 9 : posterior segments«; it seems thus evident that he counts but 10 segments in the abdomen, if the 1st segment only is devoid of spiracles, but 11 segments have already long ago been pointed out by several authors. 3) The 7 hindmost pairs of »stigmata« found by B. are the above mentioned lyriform organs (I have found these fissures only on 5 of the sternites, but the number mentioned by B. is perhaps found in some of the specimens or in another species); he has not seen that similar shorter or longer fissures are found towards



the middle of the segments, on the dorsal side of the abdomen, on the cephalothoracic shield and on all the limbs; and the existence of »spaltförmigen Hautporen« has been mentioned by Bertkau several years before in a small treatise about *Obisium* itself and mentioned in »Jahresberichte«. Thus the little observation of some fissures is reduced to be of much less morphological interest, because that a few of the numerous fissures of the lyriform organs just appear at the lateral margin of the sternites is not of as great an importance, as the calling attention to 7 new pairs of »stigmata«. — But the whole proud edifice of theories about these »stigmata« and about *Scorpio* tumbles down hopelessly, at the same time as disappears the possibility of proving that these fissures »evidently homologous with stigmata« should be »the openings of the spinning-glands«. — Bernard needs not trouble himself with the further investigations he announces; it is, moreover, quite inconceivable to me, how threads could be spun through these rather long fissures; to spin tapes would no doubt better agree with their shape! 4) Finally may be remarked that what he is calling »a very distinct aperture« at the apex of the movable finger in *Obisium* does not at all exist; as to the true structure of this place I refer to my communications below, though they are but fragmentary.

I find grounds to add that the remainder of Bernard's treatise is about of the same value as the here criticised piece (compare herewith his above mentioned interpretation in the other, earlier quoted treatise of the protrusible organ at the apex of the palpi in *Solifugæ* as »probably olfactory«). I should not so long have dwelt on a publication such as this, in which the authors examinations of nature, his knowledge of the forms of animals and of the literature is just as miserable, as is unlimited his audacity in setting forth new, wild

speculations; but it appears to me that he is only an uncommonly splendid specimen of a tendency, that threatens to render Zoology a science incumbered with an immense, partly humbug-like literature. It swarms with small (now and then even large) papers and preliminary reports, the authors of which are soon betraying their ignorance of the forms of animals and of the literature and contributing but very few solid observations of true value, but often setting forth one or several dead-born interpretations or theories — and attention has to be paid to this literature quite as well as to comparatively much fewer solid works executed with care and ability!

The excellent author of the monograph on the *Caprellidæ*, Prof. Dr. Paul Mayer at Naples, has lately written to me: »Wie soll man Alles das lesen und verdauen. Es giebt viel zu viele Zoologen!« and this may seem to be quite right, but if all zoological authors would work with conscientious solicitude and feel real interest in the science, the extent of literature would decrease much more than by half, and still the progress of Zoology become much more rapid. It would be easy to point out numerous examples from the literature of different countries.

It would on the whole be fortunate, if a great number of the younger authors, in particular, were not so anxious to publish a preliminary report or a treatise of 1—5 pages, whenever believing that they have found a hitherto overlooked »petitesse«, they ought much rather try to make themselves more familiar with the forms and the systematic of the class or order inside the territory of which their publication is found, before publishing their embryological, anatomical, systematic or faunistical communications. — Theories are necessary in all science, but it ought not to be allowed, what is seen but too

often, to set forth whatsoever fancy as a theory or an interpretation, evincing no doubt a lively imagination, but neither knowledge nor sound thought. A small number only of the theories and interpretations, published during the last 20 year have proved and will prove to be right, and about more than half of them it may be said that they would never have been published, if their authors had been examining less superficially and studying with more forethought.

### B. Tactile Hairs.

Such are found, described and drawn by Croneberg (op. cit. p. 431—32, Taf. X, fig. 11—12) on the fingers of the large chelæ in *Chernes Hahnii* C. Koch. They are found in all genera known to me. They are easily discernible as well by their articulation into large pitchers as by being very much longer and relatively thinner towards the basis (Tab. V, fig. 14, t) than the common setæ.

### C. Other Sense-Organs.

1) Stecker writes (op. cit. p. 514) about a formation on the lower side of the 1st joint of the mandibles in *Ectoceras*: »Die Geruchsorgane kammartig aufgereiht (T. II, Fig. 7 a), von jenen des *Chernes cimicoides* Steck. (T. II, Fig. 3 a. 4) nur durch die äussere gespaltete Form der Riechstäbchen verschieden«. P. 520 is stated: »Die Zahl der Riechstäbchen wechselt bei den *Chthonius*-artigen Scheerenspinnen zwischen vier und sechs.« »Manchmal sind die Riechstäbchen nicht kammartig aufgereiht, sondern bilden (wie bei *Chthonius Rayi* L. Koch (T. II, Fig. 11) einen kleinen Büschel«. Looking at the quoted figures it is evident that the author distinguishes himself in bad examination just as much

as in boldness in setting forth an interpretation. — All over he figures a rather thick, longer or shorter stalk, carrying in *Chthonius* and *Megathis* rather thick, hairy branches on the one side towards the apex, and some of these branches are, f. ex. in *Chthonius Rayi*, branched once more. As seen in my figures of *Chthonius Rayi* (Tab. V, fig. 12), *Obisium muscorum* (Tab. V, fig. 9), *Chelifer granulatus* (Tab. IV, fig. 10) a. s. o. we find but a row or a tuft (that is to say 2 short, close rows) of setæ (on the quoted figures marked f.) which are either rather thin and ciliated (fig. 12) or a little flattened with exceedingly short hairs along the one edge or along both edges at the apex, but a stalk is never existing at all. Stecker's figures are altogether extraordinarily unlike reality, as well as the interpretation »Riechstübchen« appears to me most audacious.

Simon gives (op. cit. p. 4) the name of »flagellum« to these »Riechstübchen« and notes on his drawing of the mandibles of *Chthonius Rayi* (Pl. XVII, fig. 8) the flagellum figured by Stecker (op. cit. Taf. II, fig. 11), while I am unable to find this unlucky loan mentioned in his work, Stecker's figure being so most startlingly false that it would have been impossible for Simon to make his drawing of »flagellum« to be even up to details like the not existing ramification figured by Stecker, if it had not been a copy. I do not understand, however, how Simon has effected flagellum on the mandible of *Garypus litoralis* L. Koch shown on Pl. XVII, fig. 7. In Arthr. Dan. I have criticised (p. 525) Stecker and Simon, I have asserted that Menge in his ancient work »Über Scheerenspinnen«, 1855, has seen and drawn these setæ, that likewise Tömösváry Ödön, 1882, has figured them, and in Zoologia Danica I have given a correct delineation of these setæ in *Chelifer* and *Obisium*. Croneberg has later on (op. cit. p. 432, Taf. X, fig. 7)

fairly correctly shown the »flagellum« in *Chernes Hahnii* C. Koch, but quotes in good faith the strange flagellum of Stecker in *Ch. cimicoides* F., being in reality the same as *Ch. Hahnii* (see Simon op. cit. p. 39, and Arthr. Dan. p. 544), a fact he ought to have been aware of (see later on); Balzan above all has given descriptions and drawings (Rev. dei Pseudosc.) of it in a quantity of forms and has carefully described »flagellum« of most of the species in »Voy. d. M. E. Simon«.

Hereupon it is somewhat startling to see Gaubert in the year 1892 (op. cit. p. 122) writing about »flagellum«: »formé par un tige mince qui se ramifie en plusieurs branches, simples ou ramifiées, recouvertes par des poils disposés régulièrement.« Thus Stecker's fanciful formation is reappearing once more, most likely copied from Simon (op. cit. p. 4) without, however, informing us of it; in any other way it is not possible to agree so fully in so obvious a mistake. An author as Gaubert, the treatise of which pretending all along to be based on own investigations, ought not to do such a thing, and he does, moreover, display his ignorance both of Croneberg quoted by himself (p. 84) and of the representation, right in the main, of the above mentioned systematic authors.

In this treatise I have carefully drawn »flagellum« in 5 main genera (*Chelifer*, *Olpium*, *Idcobisium*, *Obisium* and *Chthonius*); I consider a further description of the different forms to be superfluous.

I take it for more than improbable that »flagellum«, according to its structure, can be an olfactory organ; on the contrary, it is possible that these setæ are a kind of tactile hairs, but the proof must be delivered by exhibiting a nerve to their basis.

2) On the large chelæ of *Chernes cimicoides* F.

I have found hitherto unknown organs (Tab. V, fig. 14, o). Their appearance and structure are exactly answering to the above mentioned organs situated in *Scorpiones* on the upper side of the last tarsal joint, being, however, different in as much as the single organs, in *Scorpiones* collected in 1 or 2 groups, are spread here on both fingers on the proximal half of the side, turning towards the median plane, and slightly backwards on the distal portion of the interior side of the hand.

These organs are probably found in a series of species of the sub-genus *Chernes*. I have also found them in *Chelifer granulatus*, but not more than 2, both on the movable finger. I have, however, sought them in vain in *Chiridium* and *Garypus*, and I do not believe they are having any; *Obisium* is most decidedly devoid of them.

Other sense-organs are unknown, excluding the eyes.

#### D. Remarks on the Systematic.

In Arthrog. Dan. p. (517—29) I have discussed the value of the generic characters hitherto made use of and of some specific characters, besides I have given a detailed representation of some new characters for families, genera and species of this order, and p. 531—34 is found a »Conspectus systematicus« of the then described main genera. Balzan has later on, not being acquainted with my treatise, described in his 2 quoted works highly interesting new genera, necessitating alterations in the system set up by me

In his last work Balzan has divided the orders into 2 sub-orders, solely according to the one sharp character, if »serrula« on the movable finger of the mandibles is coalesced to its complete extent with the finger, or if it is free at the distal end (this division answers fully

to my former division into 2 families); these sub-orders are again divided into families, sub-families, genera and sub-genera. I shall for the rest refer the reader to his system and to his reasons for it (Voy. d. M. E. Simon p. 501—5), adding, however, that I do not agree with him as to his further division, to which I shall come back, and it seems to me that of more essential generic characters, not used by Simon, he has only produced one, viz., the serrula. Croneberg and Bertkau (op. cit.; I have found no reason to quote Croneberg's preliminary paper) have almost simultaneously pointed out large glands situated in front in the cephalothorax, with the ducts opening at the apex of the 2d joint of the mandibles, and they believed them to be most likely spinning-glands. It is certainly correct; it ought to be examined, however, if the animals actually do spin with these organs. In Zoolog. Dan. I have followed Menge and interpreted the remarkable hairs, arranged in a row along the median anterior edge of abdomen in *Chelifer*, as spinning-taps, but a new and more minute investigation has convinced me that my supposition was wrong; concerning the other forms (as *Obisium*) I have contented myself in this popular paper with an indirect quotation of Menge. The matter is mentioned here because the interpretation of the 2 authors is of importance as to the understanding of the practical systematic character, taken from the existence or not-existence of »galea«.

(I may perhaps here put in a remark. I have very carefully examined the supposed place of disemboquement for the spinning-glands in *Obisium muscorum*. the result has, however, not been satisfactory. No single aperture is found on the foremost, exterior portion of the movable finger; on the contrary, I have found 6 very small apertures situated in 2 rows which take an

oblique direction; from each of the apertures issues into the joint a very thin, cylindrical, more firmly chitinised, rather short funnel, and from each funnel goes back into the finger a less chitinised, very thin duct (Tab. V, fig. 11). Outside the apertures is seen a row of small, dark dots, the meaning of which is unknown to me. On preparations cleaned in caustic potash I believe to have seen what is stated above with an enlargement of about 1000 times).

In the following I shall set forth a repetition, supplied with additions and a few alterations, of my earlier statements which appear to have been unnoticed by the later authors, except Thorell. I have a special reason for so doing, as now I accompany the representation with rather numerous new figures. I shall conclude by setting up a system which, I presume, answers better than the earlier systems to our present knowledge, paying attention to all hitherto known more important genera.

### E. The Segmentation of the Body.

In Arthr. Dan. (p. 517) I have shown that the abdomen in *Chiridium* as in the other *Chelonethi* consists of 11 segments; the same statement was almost simultaneously given by W. Sorensen in his treatise (*Opil. Laniat.* p. 562), quoted by *Opiliones*. Menge, Simon and Tömösváry have indicated 10 abdominal segments in *Chiridium*, and after the publication of the 2 above mentioned papers, the error has been repeated by Croneberg (*op. cit.* p. 419) and Balzan (*Rev. dei Pseudosc.* p. 409).

Pocock writes (*op. cit.* p. 6): »Moreover, in such a form as *Garypus litoralis* the same number of somites can be made out in the abdomen as are seen



in this region in the Pedipalpi, namely twelve. Furthermore, there is the same inequality in the number between the tergites and sternites, the former being one in excess of the latter«. — And in an appertinent footnote: »The last somite has not, so far as I am aware, been previously recognized as such. It is, except in distended specimens, almost entirely concealed inside what is apparently the last, namely the eleventh, but which is in reality the last but one.« This representation is, however, not quite correct, and if Pocock had read Arthr. Dan. and the work of Croneberg, which are both known to him, he would hardly have written quite so. I do not indeed know *Garypus litoralis*, but in Arthr. Dan. p. 517—18 I have mentioned a similar large (not described) species of *Garypus* from St. Thomas, and I have stated that I have found the foremost, counted from behind the 11th, sternite by flexing the abdomen into an angle with the cephalothorax, this method being necessary, because the sternite is narrow and almost overlapped by the sternum and the last pair of coxæ. Croneberg states (op. cit. pag. 420) that he has found in *Chernes* »eine leichte quere Chifinverdickung«. — Later I have found on a microscopical preparation of *Obisium muscorum* a distinct 1st sternite between the basal portion of the posterior pair of coxæ. In Arthr. Dan. I remarked (p. 525—26) about the 11th segment<sup>1)</sup>: In *Obisiinæ* the dorsal and ventral sternite are, however, coalesced into a completely undivided ring,

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<sup>1)</sup> As the general representation in Arthr. Dan. is written in Danish, a language which the arachnologists of the great nations seem to regard quite as difficult to read as Japanese and accordingly not pay any attention to, I shall translate this and the following quotations of my work in English, while the other quotations are given in the original language.

on which it is impossible, even after the most careful cleaning in caustic potash, to discern the slightest trace of softer integument at the sides; this ring has posteriorly a circular hole as opening for the intestines, the edge of which forms a rather firmly chitinous ring in the mentioned hole.« It is the last mentioned ring which Pocock regards as the 12th segment, and he is right, no doubt; after a closer examination the wording of the 2 last of my sentences is not quite satisfactory, because the little »ring« consists of a half-moon like tergite and a similar sternite, each furnished with 2 setæ and separated on the sides by a narrow, but very distinct membrane.

Croneberg says (op. cit. p. 442) that anus »bildet eine schmale Querspalte auf einer ovalen Analplatte, deren beide Lippen je ein paar kleine Borsten tragen«, and this is just the 12th segment.

In Arthr. Dan. I have stated (p. 525) about the *Cheliferincæ* that the tergite and the sternite of the 11th segment on the sides are connected with a soft, light articular membrane. This is correct as to the genera *Chiridium*, *Chelifer* and *Garypus*; in *Olpium Hermannii* Sav. the lateral membrane is on each side a short way interrupted by more solid chitine, the whole structure, however, bears but little resemblance to *Obisium*; in *Olpium furciferum* Balz, an animal at that time unknown to me, the tergite and sternite are, on the contrary, coalesced as in *Obisium*, the lateral chitine is, however, a little lighter than the rest of the segment.

It is evident from this representation that the sternite answering to the 1st tergite is mentioned several years before Pocock's paper by me in *Garypus*, by Croneberg in *Chernes*, that the 12th segment is seen by the same authors, but not interpreted as an abdominal segment,

that thus 12 complete segments are found in the abdomen in *Chelonethi*, as the 1st sternite can be proved in several main genera.

### F. Ambulatory Limbs.

Of the ambulatory limbs I have in *Arthr. Dan.* (p. 518—20, with corresponding figures in *Zoolog. Dan.*) given a detailed representation, in a main point differing much from the interpretations set forth both before and after. By renewed study I have found a new striking feature to confirm the correctness of my interpretation. The matter being of importance I shall resume the essential, in referring to my new drawings of the 2d pair of legs in *Chelifer*, *Garypus* and *Obisium* (Tab. IV, fig. 13—15).

The 2 hindmost pairs of legs are in the main uniform in all *Chelonethi*. Each of these legs consists of coxa, trochanter, femur, tibia and tarsus. The basal portion of femur is more or less distinctly cut off by a weak articulation, allowing a slight or no curving in the horizontal plane, and this joint has been called trochantin, a name not well chosen, as it has been formerly used by the Insects indicating a chitinous plate (a joint) between the coxæ and the body. Tarsus is 1-jointed in *Chiridium* and *Chelifer* (*Chernes*), 2-jointed in the other main genera.

The 2 anterior pairs of legs in *Chiridium* and *Chelifer* are almost like the 2 posterior pairs, yet the trochantin is particularly well cut off in *Chelifer* (Tab. IV, fig. 13, c) and completely wanting in *Chiridium*; form et cet. show plainly that femur in *Chiridium* is homologous with the trochantin (c) plus femur (d), together marked f in fig. 13. Tarsus is 1-jointed. In *Garypus latus* H. J. H. femur (fig. 14, f) is almost twice as long as tibia (g), which is comparatively short, close

by the basis it increases in thickness almost out to the apex and is divided into a longer basal joint, pars basalis femoris (d), and a shorter distal joint, pars tibialis femoris (e), being but a little shorter than the tibia; the articulation between the 2 parts of femur is in all essential points of the same structure as between femur and tibia, that is to say, allowing a movement in the vertical plane, but the articular membrane is not  $\frac{1}{3}$  as broad as that between femur and tibia. In *Obisium* (Tab. IV, fig 15) we find a similar structure as in *Garypus*, showing, however, a further development in the tendency that pars tibialis femoris (e) is working as a supplementary tibia, for we find that the articular membrane on the lower side between the 2 parts of femur is broader than in *Garypus*, that according to the shape pars tibialis femoris does not appear to be a part of femur and is not thicker than pars basalis, and tibia is less tapering at the basis. The tarsi are 2-jointed in *Garypus* and *Obisium* (fig. 14 and fig. 15, h). The structure in *Chthonius* is developed in such a way that I deem it impossible to understand it but by means of the preceding genera, of which *Garypus* (*Olpium*) also in other respects makes an excellent intermediate form between *Chelifer* and *Obisium-Chthonius*. Pars basalis femoris is twice as long as and a little thicker than pars tibialis, it is as long as, or but a little shorter than tibia; the articulation between the 2 parts of femur is quite as developed to movement in the vertical plane as the articulation between femur and tibia; tarsus is 1-jointed, much longer than tibia and very slender towards the apex.

This interpretation differs quite from that of other authors. Simon and Balzan take pars tibialis femoris for tibia, and thus tarsus becomes 3-jointed in *Garypus*

and *Obisium*, 2-jointed in *Chthonius*. That femur in *Chiridium* and trochantin plus femur in *Chelifer* are homologous may be considered as doubtless, that femur in *Chiridium* and the whole femur in *Chelifer* are homologous with pars basalis and pars tibialis femoris together shall, I suppose, be proved by the above mentioned facts and by a further examination of my figures, showing: 1) that the articulation between pars tibialis femoris and tibia in *Garypus* is shaped as the articulation between femur and tibia in *Chelifer*, but vastly differing from the articulation between the 2 parts of femur in *Garypus*; 2) that these 2 parts in *Garypus* together have almost the same form as a femur; 3) that tibia in *Chelifer* as to the shape is in accordance with tibia in *Garypus*, not with pars tibialis femoris. I have found a further confirmation of this interpretation by seeing that the 3 characteristic fissures of the lyriform organs, found in *Obisium muscorum* on the dorsal side somewhat before the apex, of the 2 hindmost pairs of legs, are found again on the upper side of the pars tibialis of the 2 foremost pairs of legs, not on the pars basalis. I look upon it as doubtless that the structure in *Obisium* is the most primitive, but from practical reasons I have chosen the used representation.

Gaubert has attempted such a study (op. cit.). He makes use of the names given by Milne-Edwards to the joints in the limbs of the *Decapoda*, excluding, however, »ischiopodite« and adding a »second dactylopodite«. I have not myself inspected if Milne-Edwards has used these names by the Arachnids, which seems most likely from what Gaubert says, but at all events I consider them as being, at least at present, most unappropriated, and besides I do not understand the omission of the ischiopodite. Gaubert says (p. 177): »les membres des

Arachnides, bien que présentant en général le même nombre d'articles, ceux-ci ne sont pas homologues, à l'exception des deux premiers.» I look upon this statement as very meritorious indeed, but I think that thereby the reasonableness for using these names has been strongly reduced. In fact the names are in succession used for the joints in *Aranææ*; but according to Gaubert himself they cannot be used in the same way for most of the joints in *Scorpiones*. We are lacking every evidence of that the joints in *Aranææ* and *Decapoda*, supplied with the same names, are homologous, and it will always be impossible to prove this homology, but why making use of just these names in *Aranææ* and not rather in *Scorpiones*, for if they cannot at the same time be used according to the number of the joints in both these orders and thus mark homologous portions, it appears to me that it would be more correct to use them in the *Scorpiones* which, in consequence of their whole structure and extraordinary early appearance in the development of the earth, are much more primitive than *Aranææ* and must on the whole be looked upon as being closer connected with *Crustacea*. If these names shall mark homologous joints, it would be impossible to use them in *Aranææ* and *Decapoda* after number with an arbitrary omission of ischiopodite, and beginning by this false starting-point we should be forced to mark the 4th joint in the legs of the *Scorpiones* as answering to carpopodite and propodite (patella and tibia) in *Aranææ* (op. cit. p. 148), and then the 3 last joints in the leg of *Scorpio* must answer to the 1st and 2d dactylopodite in *Aranææ*, an interpretation the uncorrectness of which may easily be seen by means of an examination of some of the forms. These names ought to be rejected as being both superfluous and misleading, if they not always shall indicate

homologous joints or portions of the limbs in all *Arthropoda*.

In conclusion let us look upon his interpretation of the legs in *Chelonethi*. He says (op. cit. p. 153) about pars tibialis femoris in *Obisium* that it is »analogue a celui des Scorpions«, which, as just mentioned, should answer to patella and tibia in *Aranæ* as seen by an inspection of his description of this order, but, supported by several reasons, I have above proved that pars tibialis femoris must answer to the distal part of femur (meropodite) on the hindmost pair of legs in *Obisium* and on the legs in *Chelifer*, but when it answers to a portion of meropodite in *Chelifer*, I presume that Gaubert will admit that it also is answering to a portion of the meropodite in the *Aranæ*. Gaubert's morphological study of the limbs of the Arachnids is to a great extent wrong in the statement of the homologies, though the author expresses himself with great assurance and says in the introduction (p. 31) »j'ai pu résoudre cette question«. I shall not here undertake further to discuss this great matter and set forth new interpretations, because, among others, it would render this treatise double as long and require an expanse of time of which I am not able to dispose.

### G. The Mandibles.

The representations of these remarkable organs by Stecker, Simon, Gaubert and others are defective, the only good one I have found in the literature is that of Croneberg (op. cit.). I shall here short exhibit a few main types.

*Chelifer granulatus* C Koch (Tab. IV. fig. 10 and fig. 11). In an adduced position the 2 fingers leave a large space between each other, because the anterior

margin of the hand is broad, and the movable finger is inserted in the one end, while the immovable finger is comparatively narrow at the basis and issues far from this insertion. The movable finger has close to its distal end a »galea« (g), branched at the apex, on the side that is turned towards the median plane of the animal and slightly removed from the interior margin a »serrula« (s), grown fast the whole length and furnished with c. 16 comb-teeth, the hindmost being the longest. The immovable finger carries along almost the whole exterior margin a smaller, thin, half transparent plate, lamina exterior (a), on the interior side a broad, large plate of the same kind, lamina interior (b), being in front peculiarly lobated and dentated.

*Olpium furciferum* Balz. (Tab. V, fig. 2—4). The space between the fingers, when closed, smaller than in *Chelifer*. The movable finger with galea; serrula (fig. 4) grown fast the whole length, with numerous (c. 27) comb-teeth, posteriorly a little broader than anteriorly. The immovable finger with a well developed lamina exterior (fig. 3); lamina interior has become narrower than in *Chelifer*, in the full length with commencing transverse partitions from the free margin towards the basis, so much as to render the margin posteriorly crenated

*Ideobisium crassimanum* Balz. (Tab. V, fig. 5—7). The distance between the closed fingers a little smaller than in *Olpium*, as the immovable finger becomes very broad towards the basis. The movable finger with galea; serrula free in the anterior end, with numerous (c. 23) comb-teeth, being narrower at the basis than outside the middle. The immovable finger (fig. 6) without lamina exterior; lamina interior transformed as a serrula, being free at the distal end and having numerous (c. 21) comb-teeth, which are



narrowly triangular and to a great extent serrated along the posterior margin.

*Obisium muscorum* Leach (Tab. V, fig. 8—11). In a closed position the 2 fingers almost touch each other in the whole length; at the basis the immovable finger is very broad and thereupon it decreases very evenly and rapidly in breadth about the first  $\frac{2}{3}$  of the length. The movable finger without galea; serrula free more than  $\frac{1}{3}$  of its length, with very numerous (c. 30) comb-teeth, posteriorly narrower than a little outside the middle. The immovable finger without lamina exterior, and lamina interior (b) formed as a serrula which is free in more than  $\frac{1}{3}$  of its length and provided with numerous (c. 29) comb-teeth.

*Chthonius Rayi* L. Koch (Tab. V, fig. 12—13). The hand uncommonly large and thick compared with the shorter fingers which, owing to the curving of the movable finger, leave a small space between each other. Serrula small, more than half of its length free, with c. 17 comb-teeth, posteriorly narrower than a little outside the middle. Lamina interior (b) small, formed as a serrula, being free more than half its length, with c. 15 comb-teeth.

In this short description I have only made use of the points that are essentially serving my object; a look at my drawings will show several other interesting differences in »flagellum« (f) et cet.

## H. A System of the Chelonethi.

Balzan has established (Voy. d. M. E. Simon, p. 504—5) a system of all described genera. Based on the above mentioned structural features and on a couple of other characters that do not, I presume, demand any further explanation, I shall try to establish a new arrangement,

setting forth, however, beforehand a few remarks. Balzan's subgenera are entirely omitted, as I believe them to be correctly referred to genus. The differences between *Garypus*, *Minniza* and *Olpium*, being very closely connected in the essential structural features, are not taken into consideration. Of his sub-family *Chthoniidae* I only know *Chthonius*, but *Megathis* Steck. and *Lechytia* Balz. do not appear to present differences of any importance, and I find grounds to believe that the same is the case with the genus *Heterolophus* Tom. which by Balzan is placed between *Megathis* and *Chthonius*. According to the description of Balzan I suppose that his subf. *Microcreagrinae* does not differ in any capital character from *Pseudobisiinae*, and I believe his family *Tridentchthoniidae* to be a *Chthonius* with a most remarkable galea.

I divide the order into 2 sub-orders (I make use of the name introduced by Balzan, though in this case I believe that it says a little too much) answering altogether to those of Balzan, and I use his names, though, indeed, they are rather long.

#### I. **Panctenodactyli.**

The mandibles small, the distance between their exterior hind corner hardly more than half as large as the breadth of the posterior margin of the cephalothorax and mostly much shorter.

Serrula on the movable finger grown fast the whole length and posteriorly broader than anteriorly.

The immovable finger of the mandibles with lamina exterior, lamina interior plate-formed, at most with slight incisions.

The lower side of the maxillæ lying in the same plane as the coxæ of the legs.

Cephalothorax considerably narrowed anteriorly, without median tooth on the anterior margin.

(The 11th abdominal segment mostly plainly divided into tergite and sternite or at least with an indication of such a division).

## II. *Emictenodactyli*.

The mandibles large; the distance between their exterior hind corner at least as long as  $\frac{2}{3}$  of the posterior margin of cephalothorax.

Serrula on the movable finger free at the distal end, posteriorly narrower than outside the middle. The immovable finger of the mandibles without lamina exterior; lamina interior profoundly divided into numerous free comb-teeth, altogether formed as an anteriorly free serrula.

The lower side of the maxillæ situated in a higher plane than the coxæ, so that its hindmost portion, looked at from below, goes so under the coxæ of the first pair of legs.

Cephalothorax slightly or not at all narrower anteriorly than posteriorly; the frontal margin with a median tooth.

(11th abdominal segment forming a ring without any trace of a division into *tergite and sternite*).

*Panctenodactyli* are divided into 2 families, bounded by several very sharp characters, namely

### 1. *Cheliferidæ*.

The femora of the 2 anterior pairs of legs undivided or having but a basal trochantin.

All tarsi 1-jointed.

None or 2 eyes.

### 2. *Garypidæ*.

The femora of the 2 anterior pairs of legs divided into a longer pars basalis and a shorter pars tibialis.

All tarsi 2-jointed.

4 eyes.

The family *Cheliferidæ* is redivided into 2 sharply limited subfamilies, distinguished thus:

- a. Chiridiinæ. Femora of the 2 anterior pairs of legs undivided, without trochantin.
- b. Cheliferinæ. Femora of the 2 anterior pairs of legs with a sharply defined trochantin.

The sub-order *Emictenodactyli* is divided into families and subfamilies in the following way:

The tarsus of 2 fore- most pairs of legs 2-jointed	Fam. <i>Obisiidæ</i>	The mandibles with galea. Subf. <i>Pseudobisiinæ</i> . The mandibles with- out galea. Subf. <i>Obisiinæ</i> .
The tarsus of 2 fore- most pairs of legs 1-jointed	Fam. <i>Chthoniidæ</i>	The mandibles with galea. Subf. <i>Tridenchthoniinæ</i> . The mandibles with- out galea. Subf. <i>Chthoniinæ</i> .

In the Latin »Conspectus« (p. 531—34) in Arthr. Dan. I have made use of several more characters, considering, however, these which are omitted here as being not so important and too uncertain, as the existing descriptions and drawings of *Chelonethi*, as a rule, do not exhibit the concerned features, at least not in such a way that they can be picked out and used as generic characters. Here I shall only refer to, if tibia always is longer than tarsus in *Cheliferidæ*, shorter than tarsus in *Garypidæ*, if the shape of the abdomen can provide a good character between *Chiridiinæ* and *Cheliferinæ*. After the study of some American species I do not approve of the old character, taken from the existence of sternum in *Garypidæ* and its absence in *Cheliferidæ*, as in a large *Chernes* I have found a sternum just as developed as in an *Olpium*. I presume besides that on a large material of *Emictenodactyli* several good characters for its groups may be found in the form of femur on the posterior pair of legs, in tarsus and perhaps above all in serrula, lamina interior and »flagellum«; it is also necessary to settle if these characters coincide with the number of the eyes.

## J. Specific Characters.

In Arthr. Dan. I have called attention to a couple of these characters which have but partly been used by earlier and later authors, and therefore I shall shortly repeat them.

1) Arolium renders in the fam. *Garypidæ* an excellent specific character, being in some species much longer, in others much shorter than the claws. It appears to be shorter than the claws in all the other *Chelonethi*.

2) The large chelæ of the maxillary palpi show a

considerable difference in the dentition on the interior side of the fingers, but of practical reasons they are often not easily employed.

In *Chelifer granulatus* C. Koch both fingers are furnished with a close row of uniform teeth, which are alike on both fingers. In the Danish species of *Chernes* we find on both fingers the close row on the interior margin, and behind this, both on the exterior and on the interior side (not indeed as mentioned in Arthr. Dan. only on the interior side) some large teeth (Tab. V. fig. 14, b), placed far apart the slightly removed from the interior margin; there is, moreover, in certain species (as *Ch. nodosus*) some difference in the teeth on the interior margin of the 2 fingers\*).

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\*) Croneberg has overlooked the secondary teeth (op. cit. p. 428, Taf X, fig. 11.). Judging from the representation of the structure of the skeleton the paper of this author appears to be worked out more carefully and skilfully than most of the anatomical essays about the *Arachnida*, notwithstanding, however, in spite of his numerous, perhaps not even always necessary quotations, it furnishes concerning the literature a proof that in order to be able to undertake the anatomy of a representative of an order, the author must be provided with a much greater knowledge of the literature and of the main forms, than is the case as a rule. Croneberg shows that he is ignorant of 3 works of the greatest importance to him since Menge (1855) in the little literature just about this order, namely Lubbock, J: Notes on the Generative Organs, and of the Formation of Eggs in the Annulosa (Philos. Transact. Vol. 151, 1861, p. 595-627, Pl. XVI, XVII), besides the above mentioned works of Simon and myself. In the work of Lubbock, p. 614-619 and fig. 27-36, the structure (of the eggs and) of the generative organs both in the male and the female of *Chelifer*, *Obisium* and *Chthonius* is treated, and most interesting informations are given. In Simon's paper he

In *Obisium muscorum* Leach there is a great difference between the teeth on the 2 fingers; on the movable finger they are all low, half as long as they are broad and of the same form; on the immovable finger 2 kinds of teeth are found, thuswise that most of them are hardly as broad, but double as high as those on the movable finger, and cut off at the end, while each 4th or 5th tooth is slightly broader at the basis, conical, pointed and almost double as high as its neighbour; finally the teeth on both fingers are largest at the middle, smaller towards both ends (see Zool. Dan., Spindeldyr, Tab. VII, fig. 6. g.). Other features are found in species of *Roncus* and *Blothrus*. The teeth in *Chthoniidæ* are used a little, but by far not exhaustingly, by the systematists; it is comparatively easy to observe them here, and they seem to vary from species to species.

### K. Sexual Characters.

Croneberg has pointed out (op. cit. p. 448, Taf. X, fig. 1—2) essential sexual differences even visible with the magnifying-glass in the surroundings of the genital aperture in *Chernes Hahnii*. Similar differences are also found in *Chelifer*, *Olpium*, *Obisium* and most likely in all *Chelonethi*, but are not equally conspicuous everywhere. Balzan has pointed out sexual

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would have seen that *Chernes Hahnii* C. Koch is identical with *Ch. cimicoides* Fabr., of the „flagellum“ of which Stecker has given his poetical representation. In Arthr. Dan. he would have been aware of that secondary teeth are found on the large chelæ of *Ch. Hahnii*, that *Chiridium* has 11 abdominal segments et cet — If such be the case with an author otherwise very carefull, it is less to be wondered at all the offences of the numerous less carefull authors.

differences in the shape of galea in species of *Chelifer*, *Garypus* and *Olpium*, but he has not always been certain in determining the sex.

In several species of *Chelifer* a very great and obvious sexual difference, known long ago, is found in the tergites of the abdomen, and in all species of *Chelifer* and *Chernes*, examined by me an almost always overlooked difference is seen on the large chelæ. The fingers of the females, when tightly closed, are touching each other the whole length, while the fingers of the males are touching each other only at the basis and in a short extent at the apex, but in the remaining space they are gaping slightly in some species and very much in other species, as *Chelifer depressus* (Arthr. Dan. p. 529). This gaping is slight, but yet visible in the males of the Danish species of *Chernes*; the greatest gaping I have found in a species of *Lamprochernes* which does not appear to be rare in the Brazils, where it is living in small colonies under the elytra of large beetle *Acrocinus longinanus* F. (fam. *Longicornia*). Its occurrence on this animal has already been mentioned by H. Hagen in the year 1859; in Zool. Anzeiger of 30. Jan. 1893, p. 37, again by F. Leydig, who has determined it as *Chelifer americanus* Degeer.

## VII. Araneæ.

Gaubert spends (op. cit.) more than 20 pages on the representation of the lyriform organs in the representatives of the different families of this order. His representation is much more complete here than by the other orders; he has, nevertheless, overlooked a not inconsiderable number of fissures. It is not my intention to follow him in his investigation of a series of



different types, it suffices to take one single form, namely the male of *Epeira diademata* Clerck. Partly this animal has a suitable size, and partly it is exactly the species, on which Gaubert dwells most fully (p. 65—71; a preliminary view p. 64; and the organs on the sternum p. 59). He points out altogether 13 compound organs on each leg and mentions the occurrence of some isolated fissures, next several organs on the palpi, mandibles and sternum, consequently a very considerable number. I have not searched for the compound organs on the legs and palpi exhibited by him, supposing his representation to be correct, but I directed my attention to find organs or fissures, overlooked by him, on the abdomen, cephalothorax, mandibles et cet. Thus I produce but a supplement to his representation, making the remark, however, that of isolated fissures he has found on the legs 1 on the lower side of the 6th joint, and he writes about the 7th joint (p. 64): »Pas organes, cependant on trouve quelquefois des cordes isolées«.

1st pair of legs. On the anterior side towards the dorsal side of the longer distal portion of the 3d joint and on the 4th joint very few, tiny, spread longitudinal fissures. On both sides from the middle and upwards on the dorsal side of the 5th, 6th and 7th joint several, spread, short longitudinal and oblique fissures, having almost the length of the diameter of the insertion of the small setæ; the longest are found on the distal portion of the 7th joint. This joint carries besides on the posterior side and on the lower side, close by the distal end 2 good-sized transverse fissures placed almost in the prolongation of each other.

2d pair of legs as the 1st, but besides on the posterior side of the 3d joint, almost in front of the

apex 1 isolated transverse fissure, being c. 3 times longer than the short, spread longitudinal fissures.

3d pair of legs chiefly as the 1st; the transverse fissures at the apex slightly apart from each other.

4th pair of legs chiefly as the 1st, with fewer fissures, however, on the posterior side and only 1 fissure in front of the apex of the 7th joint.

Palpi. On the interior side, lower side and upper side of the 6th joint (of the hairy plate) a great number of spread, short, partly longitudinal, partly oblique fissures.

Maxillæ. On the lower side several, spread short fissures of somewhat different size and direction.

Mandibles. -On the anterior side of the basal joint in the greater part of its length several, spread, small fissures, going in very different directions, on the posterior side (the side turned towards the body) almost none. On the anterior side towards the exterior margin near the apex the 2 lyriform organs, found by Gaubert (op. cit. p. 70—71), on the posterior side towards the exterior margin 2 organs corresponding to those and of a similar structure.

Cephalothoracic shield. A small number of very short, spread fissures, most of them towards the lateral margins; 1 single, somewhat larger, oblique fissure in the neighbourhood of the posterior lateral eyes.

Labium sternale. On each half 3 small and 1 longer fissure (longitudinal, transverse or oblique fissure) towards the apex and the lateral margins.

The stalk between cephalothorax and abdomen. On each side a compound lyriform organ with numerous fissures and outside of this besides c. 10 irregularly situated fissures.

The lower side of the abdomen. Slightly in

front of the mammillæ, not so far from the median line on each side 1 long and 1 shorter fissure; a little in front of these 2 transverse fissures placed near each other; then spread on the lower side of the abdomen, except on the portion lying in front of and between the lungs, c. 20 very small transverse fissures being partly longer than the diameter of the insertion of the hairs. (I have found nothing on the dorsal side of the abdomen).

The mammillæ. On the anterior (lower) side of the basal joint of the foremost mammilla c. 5 spread, very short longitudinal fissures. on the posterior side at least 1 fissure.

On the anterior side of the hindmost mammilla at least 1 short longitudinal fissure.

This supplement to Gaubert is, as may be seen, rather considerable; the most important point is, however, the discovery of a true compound lyriform organ on the stalk of the abdomen, besides the pointing out of both long and short fissures on the lower side of the abdomen and of short fissures on the mammillæ, the cephalothoracic shield and labium. This supplement is, I think, of great importance for a comparison between *Aranæe* and the above discussed orders.

### VIII. Acari.

Gaubert denies the occurrence of lyriform organs in this order. I have quite in vain searched for them in *Ixodes ricinus* L. and in a large African *Trombidium*. I believe that I have found some spread, very tiny fissures on the shield of an *Oribates* (s. lat.) and a most remarkable transverse fissure on the legs. Thus

I find grounds to believe that they appear as single fissures in this family, at the least; but lacking a particular material and knowledge to the literature, I have not further carried out the examination. An investigation might very likely be worth the trouble to a zoologist who is conversant in this large and difficult order

### Concluding Remarks.

I consider it as being unnecessary to work out a resumé of the very miscellaneous contents of this little treatise. The numerous headings and the table of contents on the last page will prove to be a sufficient guidance to everyone who wishes to find information about a subject discussed here. I shall only set forth some remarks on the lyriform organs.

These organs gain the highest development in *Araneæ* which have real compound organs on the stalk of the abdomen, the mandibles, the maxillary palpi and in greater number on the legs, besides the spread fissures all over the body, except on the upper side of the abdomen (always devoid of organs?). Next to *Araneæ* come *Phrynidæ* and *Thelyphonidæ*, where the fissures are spread partly over the whole body, partly on the limbs, and appear as more irregular groups, but these groups are less numerous than in *Araneæ*, or they are replaced by 1 single or only 2—4 fissures as on several joints in *Thelyphonidæ*, and only 1 compound lyriform organ is found on each ambulatory limb, that is to say, on the 2d joint in *Phrynidæ*, and on the 6th joint of the 3 last pairs of legs in *Thelyphonidæ*. In *Opiliones* and *Chelonethi* they are, as in the 2 preceding orders, spread as single fissures on the whole body, but more spread on the limbs, the groups

are not numerous, and their fissures mostly also few, a compound organ with fissures lying closely and regularly together as in *Aranææ* is to be found only on the 2d joint of the legs in *Chelonethi*, and this organ is even small and the fissures a little removed from each other. In *Scorpiones* the body and the mandibles are quite devoid of fissures; groups of fissures are, however, found on the 2d—6th joint of the legs, besides on a couple of the joints of the palpi, but only one single group, namely the one on the anterior side of the 6th joint, is bearing considerable resemblance to a compound organ. In *Solifugæ* not more than 2 irregular groups seem to exist situated on the lower side of the mandibles. (*Koenenia* is not examined).

Thus there is a great difference as to the occurrence and arrangement of these organs in the 7 orders of Arachnids more closely examined; moreover, I have pointed out but a few leading features, many more peculiar features might be deduced from my special representation, but on the other hand, it must not be forgotten that many more types of the different orders must be thoroughly investigated before trying to give a more special picture of the occurrence and structure of the organs in the single orders in relation to each other.

Almost all searching for the lyriform organs is undertaken on animals treated with cold caustic potash. The generally used method, viz., the boiling in caustic potash, I consider as not at all suitable to the purpose, the influence becoming easily too great, and consequently it becomes difficult to discover the organs. Here, as in all minute examinations of the parts of the chitine in *Arthropoda*, I prefer to clip a hole in the

animal, to put it into a strong, but cold dissolution of caustic potash, leaving it there, according to circumstances, from 10 to 48 hours. The interior organs have, as a rule, to be dissolved to such a degree that they partly or altogether can be washed out by putting the animal into water and treating it with a pincet or the like. All depends on watching the right moment, as the chitine of many forms get a peculiarly loose consistence, becomes decoloured, even shrinks at times et cet., if left too long in the strong dissolution. The examination under the microscope is generally performed in glycerine which, in this case, is preferable to water; of colouring I have made no use at all.

*Copenhagen*, the beginning of March 1893.

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## Explanation of the Tables.

### Tab. II.

- Fig. 1. Lyriform organ on the anterior side of the 2d joint of the 3d leg from the right side of *Pandinus cyaneus* C. Koch ( $^{28}/_1$ ).
- Fig. 2. Lyriform organ on the posterior side of the 2d joint of the 4th leg from the right side of the same species ( $^{28}/_1$ ).
- Fig. 3. Lyriform organ on the 6th joint of the 2d leg from the right side of the same species ( $^{43}/_1$ ).
- Fig. 4. Area with sense-organs on the upper side of the last tarsal joint of the 4th right leg of *Pand. cyaneus* C. Koch ( $^{80}/_1$ ); a. pore-channels, b. single sense-organs.
- Fig. 5. Lyriform organ on the lower side of the 2d joint of the 3d leg from the right side of *Phrynichus nigri-manus* C. Koch ( $^{75}/_1$ ).
- Fig. 6. A piece of the integument on the lower side of the 5th joint (tibia) of the 3d pair of legs of the same species ( $^{190}/_1$ ); a. the peculiar fissures, p. pore-channels.
- Fig. 7. The 3d and 4th outmost joint of the tarsus of the 1st pair of legs of the same species ( $^{66}/_1$ ); s. sense-hairs.

- Fig. 8. Sense-hairs of the joints exhibited in the previous figure (<sup>300</sup>/<sub>1</sub>).
- Fig. 9. Foliaceous seta on the tarsus of the 1st pair of *Damon medius* Hbst (<sup>29</sup>/<sub>1</sub>).
- Fig. 10. Claws on the tarsus of the 1st pair of legs of *Admetus marginemaculatus* C. Koch (<sup>300</sup>/<sub>1</sub>).
- Fig. 11. A piece of integument with the long tactile hair on patella in *Phrynichus nigrimanus* C. Koch (<sup>102</sup>/<sub>1</sub>).
- Fig. 12. Metatarsus of the 4th leg from the left side of *Phryn. nigrimanus*, seen from above (<sup>9</sup>/<sub>1</sub>); a. the proximal group of the insertions of the tactile hairs (the hairs are omitted), b. the distal group of the tactile hairs (some are drawn, of most of them only the insertion is indicated).
- Fig. 13. The lower side of cephalothorax of *Admetus marginemaculatus* C. Koch (<sup>8</sup>/<sub>1</sub>); a. the median sternal plates, b. the lateral sternal plates, c. labium, d. the basal joints of the coxæ, e. the basal part of the maxilla, f. the 1st sternite of the abdomen.
- Fig. 14. The lower side of cephalothorax of *Phrynichus nigrimanus* C. Koch (<sup>8</sup>/<sub>1</sub>).
- Fig. 15. The tarsus of the 2d right leg of *Admetus marginemaculatus* C. Koch, seen from in front (<sup>11</sup>/<sub>1</sub>); a. transverse fissure on the 2d joint, b. oblique fissure on the 4th joint, c. fissure, limiting the dorsal portion that runs out into an apical process, l. lyriform organ at the end of tibia.
- Fig. 16. The tarsus of the 2d right leg of *Phrynichus nigrimanus* C. Koch, seen from in front (<sup>11</sup>/<sub>1</sub>).

### Tab. III.

- Fig. 1. Lyriform organs on the upper side near the posterior edge behind the apophysis of the apical margin,



of the 2d joint of the 3d leg from the right side of *Thelyphonus indicus* Stol., somewhat pressed ( $71/1$ ).

- Fig. 2. The superior, distal portion of the exterior side of the mandible of the same species, showing the apophysis (a) and a lyriform organ ( $68/1$ ).
- Fig. 3. The right lateral eye-group of the same species, showing the 3 large and the 2 small eyes (a) ( $33/1$ ).
- Fig. 4. The 16th—18th joint of the caudal file of the same species, seen from below ( $13/1$ ); m. luminous (?) spots.
- Fig. 5. Diagrammatic longitudinal section of one of the luminous spots on the caudal file; c. cuticula, h. hypodermis, m. the contents of the luminous spot.
- Fig. 6. Lyriform organ on the lower side of the movable finger of the right mandible of *Solpuga fatalis* Licht. ( $81/1$ ); l. the single organs, p. the pore-channels.
- Fig. 7. Lyriform organ on the lower side of the hand of the right mandible of the same species ( $33/1$ ); s. the basal portion of the setæ.
- Fig. 8. The right mandible of a female of *Solpuga fatalis* Licht., seen from the inside ( $11/5$ ); a. the place of the lyriform organ on the movable finger, b. the place of the lyriform organ on the lower side of the hand, s. stridulating apparatus.
- Fig. 9. The right mandible of *Cleobis Cubæ* Luc., seen from the inside ( $17/2$ ).
- Fig. 10. The basal portion of the tarsus of the 3d right leg of *Solpuga fatalis*, ♀, seen from above ( $13/1$ ); a. the furrowed transverse area, b. the smooth area, c. the membrane between tarsus and metatarsus.
- Fig. 11. Rostrum of *Galeodes orientalis* Stol., ♀, seen from

the right side ( $8/1$ ); d. the dorsal lobe, l. the setal plate, s. the plúmose seta, v. the lateral plate.

- Fig. 12. Rostrum of *Cleobis Cubæ* Luc. ♀ ( $12/1$ ).  
 Fig. 13. Rostrum of *Rhax annulata* Sim.? ( $9/1$ ).  
 Fig. 14. The 2d joint of the right maxillary palpus of *Nemastoma lugubre* O. F. Müll., ♀, seen from the outside ( $66/1$ ); l. lyriform fissures.  
 Fig. 15. Last joint of the right maxillary palpus of *Nemastoma lugubre*, ♀, seen from the outside ( $66/1$ ); l. lyriform fissure.

#### Tab. IV.

- Fig. 1. The median portion of the 1st leg from the right side (apex of femur, patella, tibia and the basis of tarsus) of *Phalangium propinquum* Luc., ♀, seen obliquely from above and from behind ( $7/1$ ); a. the proximal spiracle on the tibia, b. the distal spiracle.  
 Fig. 2. The proximal spiracle and the tracheæ in patella and the basal portion of tibia of the 1st right leg of *Phalang. cornutum* L., ♀ ( $138/1$ ); b. the aperture of the spiracle, e. the opening of the trachea in the respiratory cave, f. the interior wall of the respiratory cave, g. the large tracheal trunk going up to the spiracle, h. the narrower continuation in tibia of the same trunk, i. recurrent tracheal branches, k. the 2d tracheal trunk of the leg, standing in secondary connection with the distal spiracle.  
 Fig. 3. Diagrammatic longitudinal section through the proximal spiracle in *Phal. cornutum*; a. the exterior wall of the leg, d. the respiratory cave; the other letters as in fig. 2.  
 Fig. 4. A piece of integument of the tibia with the conical spines and the proximal spiracle in *Phal. propin-*

*quum*, ♀ (<sup>108</sup>/<sub>1</sub>); a. the exterior, radiately striped wall of the spiracle, b. the aperture of the spiracle, c. the opening of the trachea in the respiratory cave shining faintly through.

- Fig. 5. The interior wall of the respiratory cave of the distal spiracle in *Phal. propinquum* (<sup>197</sup>/<sub>1</sub>).
- Fig. 6. A piece of integument of tibia with the conical spines and the distal spiracle (in *Phal. propinquum* ♀) of the same pair of legs as the proximal spiracle exhibited in fig. 5 and drawn with the same enlargement. The conical spines on these two figures may give an idea of the relative size of the different portions of the spiracles, and both figures being drawn with the same enlargement, you get at the same time a correct conception of the relative size of the 2 spiracles on the same leg. c. the opening of the trachea in the respiratory cave.
- Fig. 7. 2 clavated hairs from the last joint of the palpus in *Nemastoma lugubre* O. F. Müller (c. <sup>400</sup>/<sub>1</sub>) exhibited Tab. III, fig. 15; a. hair showing the interior structure, b. hair, showing the surface.
- Fig. 8. A piece of the metatarsus of the 3d right leg of *Phalangium parietinum* Degeer, ♂, seen from in front (<sup>42</sup>/<sub>1</sub>); a. bunches of particular hairs, each of which bunch is like a clavated hair when seen with a slight enlargement.
- Fig. 9. 2 bunches of hairs from the metatarsus of the 1st pair of legs in the male of *Phal. parietinum* (<sup>235</sup>/<sub>1</sub>).
- Fig. 10. The basal joint of the mandible in the male of *Chelifer granulatus* C. Koch, seen from below and from the inside (<sup>142</sup>/<sub>1</sub>); a. lamina interior, f. »flagellum«, b. lyriform fissure.
- Fig. 11. The 2d joint of the same mandible as in the former figure (<sup>142</sup>/<sub>1</sub>); g. galea, s. serrula.

- Fig. 12. Cephalothorax and abdomen in the male of *Chel. granulatus* C. Koch to show the numerous, spread lyriform fissures, which are drawn relatively too large ( $17/1$ ).
- Fig. 13. The 2d right leg of *Chelifer granulatus* C. Koch, seen from above ( $37/1$ ); a. coxa, b. trochanter, f. femur, divided into: c. trochantin and d. the true femur, g. tibia, h. tarsus; hairs and lyriform organs omitted in this and the 2 following figures.
- Fig. 14. The 2d right leg of *Garypus latus* H. J. H., seen from above ( $40/1$ ); a. coxa, b. trochanter, f. femur, divided into: c. pars basalis femoris and d. pars tibialis femoris, g. tibia, h. tarsus.
- Fig. 15. The 2d right leg of *Obisium muscorum* Leach, seen from above ( $37/1$ ); the signification of the letters as in the former figure.

### Tab. V.

- Fig. 1. Portion of the upper side of the 2d joint of the 2d right leg of *Obisium muscorum*, to show the lyriform organ ( $195/1$ ).
- Fig. 2. Right mandible of *Olpium furciferum* Balz., ♀, seen from above and from the outside ( $109/1$ ); l. lyriform fissures.
- Fig. 3. The largest portion of the basal joint of the mandibles from the former figure, seen from below and from the inside ( $146/1$ ); a. lamina exterior, b. lamina interior, f. »flagellum«; lyriform fissures omitted.
- Fig. 4. The 2d joint of the mandible exhibited in fig. 2, seen from below and from the inside ( $146/1$ ).
- Fig. 5. Right mandible of *Ideobisium crassimanum* Balz., seen from the outside and from above ( $103/1$ ).
- Fig. 6. The  $\bar{1}$ immovable finger of the mandible exhibited

in the former figure, seen from below and from the inside ( $^{132}/_1$ ); the signification of the letters as in fig. 3.

- Fig. 7. The movable finger of the mandible exhibited in fig. 5, seen from below and from the inside ( $^{132}/_1$ ).
- Fig. 8. Right mandible of *Obisium muscorum* Leach, seen from above ( $^{48}/_1$ ).
- Fig. 9. The 1st joint of the mandible exhibited in the former fig., seen from below and slightly from the inside ( $^{81}/_1$ ); b. lamina interior, f. »flagellum«, l. lyriform fissure.
- Fig. 10. The 2d joint of the mandible exhibited in fig. 8, seen from below and slightly from the inside ( $^{83}/_1$ ).
- Fig. 11. Apex of the movable finger of *Obisium muscorum* treated with caustic potash and seen from below (see the text p. 219—20).
- Fig. 12. The 1st joint of the right mandible of *Chthonius Rayi* L. Koch, seen from below and from the inside ( $^{63}/_1$ ); the signification of the letters as in fig. 9.
- Fig. 13. The 2d joint of the right mandible of *Chthon. Rayi*, seen from below and from the inside ( $^{63}/_1$ ).
- Fig. 14. The largest portion of the immovable finger of the large chela in the male of *Chernes cimicoides* J. C. Fabr., seen from the inside ( $^{129}/_1$ ); a. the teeth placed in a close row, b. the teeth placed inside the margin, o. particular, spread sense-organs, t. tactile hair, drawn in full, t'. tactile hair, of which only the basal portion is drawn.

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# Vore Gymnetron-Arter paa *Linaria vulgaris*.

Af

L. Andersen.

Som bekjendt leve forskellige af vore mindre Former af Snudebiller i Galler, som de frembringe paa Planter, især urteagtige; men for denne Gang skal jeg noies med at omtale de Arter af Slægten Gymnetron, som jeg her i Landet har fundet ynglende i Galler paa vor almindelig eller hørbladet Torskemund, *Linaria vulgaris*.

Den 6. August 1893 opholdt jeg mig hos Hr. Proprietær Terp i Viuf (mellem Kolding og Veile), og sammen med ham fandt jeg paa hans Mark en lille Haandfuld *Linaria vulgaris*, som paa Stenglerne havde Galler, hvilke dels vare tenformige og dels kugleformige. Ved at aabne en af de tenformige Galler fandt jeg 2 Stykker Gymnetron, som viste sig at være en for vor Fauna ny Art, nemlig *G. netus* Germ. Dagen efter søgte vi paa forskellige Steder der i Nærheden, og jeg fandt nogle faa Galler mere.

Jeg tog alle Planterne med Galler med mig her til Haderslev og lagde de tenformige i et Glas og de kugleformige i et andet. I Lobet af 8 Dage fremkom af de tenformige Galler 14 St. Gymnetron *netus*, 2 St. *G. collinus* Gyll., 1 St. *G. pilosus* Gyll. og 1 St. *G. noctis* Hrbst. Af de kugleformige Galler fremkom 3 St. Gymnetron *pilosus*, men noget senere paa Aaret. I Slutningen af August bragtes mig samme *Linaria* med kugleformige Galler fra Banegaarden her ved Haderslev, og



af den fremkom der den 30. Aug. 3 St. Gymnetron pilosus. Den 30. September samlede jeg i en Grusgrav i Nærheden af Haderslev et stort Antal Rodgaller paa *Linaria vulgaris*. Af disse fremkom i Maanederne October 1893—Januar 1894 en større Række af *Gymnetron linariæ* Pz. og en lille Række af *G. collinus*. Jeg adskilte Gallerne paa Plantens Rodhals fra dem paa Siderødderne, og har derved havt Lejlighed til at iagttage, at af Gallerne paa Rodhalsen fremkom baade *Gymnetron linariæ* og *G. collinus*, medens der af Gallerne paa Siderødderne kun fremkom *G. linariæ*.

Hr. Brygger Johansen i Aalborg har faaet *Gymnetron collinus* af Frøhusene paa *Linaria vulgaris*, medens jeg af Frøhusene kun har faaet *G. noctis*. Naar Hr. Johansens Iagttagelse tages med, faaer man altsaa det Resultat, at *Gymnetron collinus* yngler baade i Frøhusene, Stengelgallerne og Gallerne paa Rodhalsen, men derimod ikke i de smaa Galler, som findes paa Siderødderne.

Efter mine Iagttagelser maae Gallerne med *Gymnetron netus* søges i Slutningen af Juli og i Begyndelsen af August; Gallerne med *G. pilosus* i Slutningen af August, og Rodgallerne i Slutningen af September og Begyndelsen af October.

Man maa søge Planten paa Overdrev eller i Grusgrave; paa Planter, som voxe paa dyrket Mark, har jeg hverken fundet Stengel- eller Rodgaller.

Af de her opførte *Gymnetron*-Arter er *G. netus* først fundet af mig her i Landet, derimod er *G. pilosus*, som heller ikke findes i vore hidtidige Fortegnelser, allerede taget i Efteraaret 1892 af Hr. Terp<sup>1)</sup>.

---

<sup>1)</sup> Begge de her nævnte Arter, *Gymnetron netus* og *G. pilosus*, ere godhedsfuldt skjænkede Museet i et Par Stykker af deres respective Findere, D'Hrr. Lærer L. Andersen og Proprietær Terp. [Red. Anm.]

**Bidrag**  
til  
Fortegnelsen over  
**de i Danmark levende Microlepidoptera<sup>1)</sup>**  
Af  
**W. v. Hedemann.**

Siden Hr. Andr. Bang-Haas 1875—76 i Naturhistorisk Tidsskrift 3. Række, 9. og 10. Bind offentliggjorde sin »Fortegnelse over de i Danmark levende Lepidoptera« og to Aar senere i samme Tidsskrift et Tillæg hertil, er der i Literaturen for Microlepidopternes Vedkommende ikke fremkommet noget til at completeere denne Fortegnelse. Kun Hr. H. P. Duurloo har i »Entomol. Meddelelser, 2. Bind, 6. Hefte, 1890, pag. 285« opført *Tortrix strigana* Hb. som ny for Faunaen.

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1) For Macrolepidopternes Vedkommende er Berigelsen for vor Fauna kun ringe. Siden Haas' Fortegnelse udkom, har Hr. Duurloo i dette Tidsskrifts 2. Bind, pag. 283 (1890) opført 9 for Faunaen nye Arter. Hertil kommer endnu følgende 5 Arter: *Melitaea matura* L., Stgr. Cat. N. 226. To Exempl. ved Vesterborg paa Lolland (K. Skafte); *Lithosia complana* L., Stgr. Cat. N. 695. Et enkelt Exempl. ved Tidsvilde (Strøm); *Ptilophora plumigera* W. V., Stgr. Cat. N. 699. Imago klækket i November af Larver, tagne i Flertal paa *Acer campestre*, Juni 1893, i Vordingborg Kirkeskov (Duurloo); *Hadena pabulatricula* Brahm., Stgr. Cat. 1434. Fire Exempl. paa Sukkerlokning, Juli 1893 (C. Larsen); *Pellonia vibicaria* L., Stgr. Cat. N. 2227. Flere Exempl. ved Refsnæs paa Sjælland og ved Grenaa i Jylland (Strøm).

Da nærværende Bidrag nærmest maa betragtes som en Fortsættelse og Completering af Haas' fortjenstfulde Arbeide, har jeg i Texten strengt bibeholdt hans Anordning. I den til Slutningen vedfoiede Fortegnelse over alle hidtil her i Landet fundne Microlepidoptera har jeg derimod vedtaget de Forandringer, som Systematiken i de senere Aar har været underkastet. Med Undtagelse af Pterophoriderne, hvor jeg har fulgt Dr. Wocke i hans Fortsættelse til Heinemann's Værk, ere de andre Familier næsten helt ordnede efter Hr. Snellen's udmærkede og grundige Arbeider.

En særdeles stor Berigelse har Faunaen faaet ved Hr. Fr. Gudmann's gjentagne Besøg paa Bornholm, der i Lepidopterologisk Henseende meget ligner Ostersøens Sydkyst.

I Alt har man nu i Danmark fundet 774 Arter Microlepidoptera imod 707 Macrolepidoptera. Da Forholdet i Arternes Antal i disse to Grupper rimeligviis er det samme som i Nabolandene, tor man med Sikkerhed gjøre Regning paa, at der for første Gruppes Vedkommende endnu vil findes et betydeligt Antal Arter, saasnt flere Samlere, end hidtil har været Tilfældet, ville beskæftige sig med disse interessante Dyr.

De Værker, som jeg forneden citerer, ere:

- P. C. T. Snellen. De Vlinders van Nederland. Microlepidoptera. Leiden 1892. (Snell.).
- H. T. Stainton. The Natural History of the Tineina. 1855—1873. (Stt.).
- H. v. Heinemann. Die Kleinschmetterlinge Deutschlands u. der Schweiz. (Fortsat af Dr. Wocke) 1863—77. (Hein.).
- L. Sorhagen. Die Kleinschmetterlinge der Mark Brandenburg. Berlin 1886. (De fleste af mig givne Notitser om Larverne ere hentede fra dette Værk).

Dr. Staudinger u. Dr. Wocke. Catalog der Lepidopteren des Europaeischen Faunengebiets. II. Microlepidoptera von Dr. M. Wocke. 1871. (Weke).

Stettiner Entomologische Zeitung.

Berliner Entomologische Zeitschrift.

Verhandlungen der K. K. Zoolog.-Botanischen Gesellschaft in Wien.

A. Bang-Haas. Fortegnelse.

Alle her omhandlede for Faunaen nye Arter have været sendte til Hr. Dr. H. Rebel i Wien, Hr. P. C. T. Snellen i Rotterdam eller Hr. Major Hering i Stettin, som velvilligst have bestemt dem for mig, saa at der med Hensyn til rigtig Bestemmelse neppe kan næres nogen Tvivl.

Til disse tre Herrer og alle dem, som venligst have ydet Bidrag til dette lille Arbeide, udtaler jeg her min hjertelige Tak.

Tallene foran Arterne betegne de siden Haas' Fortegnelse ny tilkomne.

*Kjøbenhavn, Januar 1894.*

## **Pyralidina.**

### Scoparia Hw.

Resinea Stph. Haas 12. Imago hyppig ved Ro paa Bornholm, Juli 1892 (Gudm.).

### Botys Tr.

Aurata Sc. Haas 19 a. Et Exempl. ved Tidsvilde (Duurloo).

Ostrinalis Hb. Haas 21 er Var. til Purpuralis L. Haas 20.

## Nomophila Hb.

Noctuella W. V. Haas 37. En ♀ ved Rø, Juli 1892 (Gudm.).

## Perinephele Hb.

Lancealis W. V. Haas 43. Et Par Exempl. ved Rø, Juli 1892 (Gudm.).

## Acentropus Curt.

Nevae Kol. Haas 49. Masnedsund Strand, Juni 1893 (Duurloo).

Som Resultat af de mange grundige Iagttagelser af denne interessante Slægt, især af engelske og hollandske Entomologer, er det nu blevet godtgjort, at alle hidtil beskrevne Former af dette Genus høre til en og samme Art, nemlig Niveus Oliv. — Hunnen er bimorph, d. e. der findes Hunner med fuldstændig udviklede Vinger, og saadanne der kun have Vinge-Rudimenter. Cfr. Dr. Rebel. Verhandl. der K. K. Zoolog.-botan. Ges. 1889, p. 295.

## Thinasotia Hb.

Alpinella Hb. Haas 54. Hyppig ved Tidsvilde (Duurloo).

## Crambus F.

Fascelinellus Hb. Haas 71. Hyppig Juli 1892 paa en sandet Strandbred ved Rø (Gudm.).

## Dioryctria Z.

Abietella Zk. Haas 78. To Exempl. sidst i Juli 1893 ved Ringedal, Bornholm (Gudm.).

## Salebria Z.

Hostilis Stph. Haas 82. Flere Exempl. klækkede af Salix viminalis, Juni 1884 (Duurloo).

## Pempelia Hb.

Subornatella Dup. Haas 82 b. Enkelt ved Ringedal (Gudm.); almindelig ved Tidsvilde (Duurloo).

## Hypochoalcia Hb.

Ahenella Zk. Haas 84. To Exempl. sidst i Juli 1893 ved Ringedal af Var. Bistrigella Dup. (Gudm.).

## Acrobasis Z.

1. Sodalella Z. Hein. p. 176; Wcke Nr. 526. To Exemp. ved Nymolle nær Brede, først i Juli. Larven siges at leve paa Eg.

Epelydella Z. Haas 86 a. Enkelt August 1892 ved Rø (Gudm.).

## Homoeosoma Curt.

Nimbellum Z. Haas 92. I Tillæget stryges denne Art paa Grund af urigtig Bestemmelse; den toges af Gudm. i fire Exempl. i Juli 1792 ved Rø.

## Ephestia. Gn.

2. Kühniella Z. Stettin. entom. Zeit. 1879 p. 466. Af Hr. Cand. Schlick modtog jeg et Parti Meel med Larver i, hvoraf denne Art fremkom. Den vil vel ogsaa her i Danmark som i Tyskland faae Indfødsret. Man antager, at den med N. Amerikansk Meel er blevet indført til Europa.

Binaevella Hb. Haas 92 a. En ♂ paa Plankeværket i Grønningen, 30. Juni 1890.

**Tortricina.**

## Rhacodia Hb.

De af Haas opførte to Arter Caudana F. med Var. Emargana F. og Effractana Frol. ere ved Klækning beviislig kun en og samme Art, der maa hedde Emargana F. Cfr. Snell. p. 171.

## Teras Tr.

Forskåleana L. Haas 18. hører til Slægten Tortrix Tr.

## Tortrix Tr.

Inopiana Hw. Haas 35 er ingen Tortrix, men en Conchylis Tr.

3. Strigana Hb. Snell. p. 212; Hein. p. 40; Wecke Nr. 714 Flere Exempl. sidst i Juli, først i August ved Tidsvilde (Duurloo). Som Larvens Foderplanter anføres Artemis. campestris, Gnaphalium, Euphorbia, Jurinea cyanoides, Spiraea ulmaria og Lactuca scariola. Jeg har klækket den ved Wien paa Bupleurum falcatum.

Viburniana F. Haas 42. Almindelig ved Tidsvilde (Duurloo).

Gerningana W. V. Haas 50. Et Par Exempl. ved Tidsvilde (Duurloo).

## Conchylis Tr.

4. Rupicola Curt. Snell. p. 247; Hein. p. 84; Wecke Nr. 889. Taget i Flertal i Skovkanten ved Ordrup Mose, først i Juli 1893. Larven angives at leve om Efteraaret og overvintre i Stængelen af Eupator. cannabinum og i Frugtbunden af Chrysocoma linosyris.

Manniana F. R. Haas 72 og Notulana Z. Haas 73 skulle efter Snell. p. 248 være synonym.

## Sericoris Tr.

Rivulana Sc. Haas 104. Hr. Gudmann fandt Var. Stangeana Teich Stettin. entom. Zeit. 1890 p. 49 ved Ringedal, Juli 1893.

## Euchromia Sph.

Rufana Sc. Haas 82. Et Exempl. af Var. Purpurana Hw. ved Ringedal (Gudm.).

## Paedisca Tr.

Grandaevana Z. Haas 122. Nogle Exempl. tagne ved Valby (Duurloo). Larven skal leve tidlig om Foraaret i lodrette, faste Jordhuler ved Roden af Petasites niveus og albus samt Tussilago farfara.

Bilunana Hw. Haas 141. Flere Exempl. paa Birkestammer ved Kjøbenhavn, Juni 1893 (Gudm.).

## Semasia HS.

5. Pupillana Clerk. Snell. p. 305; Hein p. 168; Wecke Nr. 1117. Imago talrig først i Juli 1893 opskræmmet fra Artemis. absynth. ved Ringedal (Gudm.). Larven lever indtil Foraaret i Roden og Stængelen af nævnte Plante.

6. Granitana HS. Snell. p. 305; Hein p. 218; Wecke Nr. 1242. To Exempl. først i Juni i Teglstrup Hegn og Geelskov. Larven af denne overalt sjældne Art kjendes ikke, men formodes at leve paa Gran.

7. Carduana Gn. Snell. 307; Wecke Nr. 1047; Sorhagen Berlin. Entom. Zeit. XXVI p. 138. Medens Snell. l. c. betragter den som synonym med S. Hohenwarthiana WV., anse Andre, især engelske Entomologer, den som god Art. Imagines af disse to og af endnu tre andre Arter, som hidtil ikke ere fundne her i Landet, ere vanskelige at skjelne; Larverne ere dog forskellige. Det er den engelske Entomolog Barrett, der ved Klækning har beviist disse Arters Forskjellighed.

## Grapholitha HS.

Tenebrosana Dup. Haas 153. Enkelt ved Rø, Juli 1892, Imago meget hyppig ved Ringedal, Juli 1893 (Gudm.). Den er kun Var. til Nibritana Tr. Snell. p. 360; Hein p. 180; Wecke Nr. 1128.

Strobilella L. Haas 159 a. Pupperne fundne talrig



i Koglerne af Gran i Geelskov først i April. Imagines fremkom ved Stueklækning i Løbet af Mai.

8. *Discretana* Wecke (Dorsana Hb.) Snell. p. 365; Hein. p. 187; Wecke Nr. 1170 Et Exempl. sidst i Juli 1893 ved Ringedal (Gudm.). Larven kjendes ikke.

#### *Steganoptycha* HS.

9. *Oppressana* Tr. Snell. p. 326; Hein. p. 211; Wecke Nr. 1222. I Geelskov 26. Juli 1892 et Exempl., som er noget lysere end tyske Stykker. Et andet Exempl. toges af Hr. Gudmann August 1893 paa en Poppelstamme ved Kjøbenhavn. Larven lever indtil midt i April i Bladknopperne af forskellige Poppelarter og forpupper sig i Jorden ved Foden af Træet.

#### *Phthoroblastis* Led.

10. *Ochsenheimeriana* Z. Snell. p. 375; Hein. p. 203; Wecke Nr. 1205. Den 8. Juni 1892 udbanket et frisk Exempl af Gran i Geelskov. Larven kjendes ikke.

#### *Dichrorampha* Gn.

11. *Politana* Gn. Snell. p. 403; Hering Stettin. Entomol. Zeit. 1891 p. 158. — Snell. l. c. trækker denne Art med et (?) til *D. Quaestionana* Snell., Wecke Nr. 1274 som synonym til *D. Alpinana* Tr. Selv om det er en Var. til en af disse to Species, saa er det en meget constant og let kjendelig Form, og de danske Exemplarer variere ikke fra de tyske. Man har klækket den i Roden af *Achillea Millefolium*. Jeg har taget den i Juli i Jægersborg Dyrehave, ved Nymolle og Giesegaard; Hr. Gudmann paa Bornholm.

*Simpliciana* Hw. Haas 205 betegner den som sjelden og enkeltviis. Jeg finder den hvert Aar

temmelig hyppig i Ordrup Mose fra midt i Juli til sidst i August.

12. *Agilana* Tgstr. Snell. p. 403; Hein. p. 231; Wecke Nr. 1277. Et Par Exempl. sidst i Juni 1893 paa Jernbanevolden ved Kjøbenhavn (Gudm.). Larven siges at leve paa *Tanacetum*.

13. *Acuminatana* Z. Snell. p. 404; Hein. p. 235; Wecke Nr. 1285. Et Exempl. i Geelskov 17. August 1892; Hr. Gudmann tog et Exempl. ved Rø og fem Exempl. ved Ringedal Juli 1893 paa *Chrysanth. Leucanthemum*. Larven skal leve i Skuddene af denne Plante og Chr. segetum.

### **Tineina.**

#### Choreutis Hb.

*Müllerana* F. Haas 1. Larven talrig ved Ringedal, Juli 1893, paa Steder, hvor *Scutellaria galericulata* voxer. Imago sidst i Juli og først i August (Gudm.).

#### Fumea Hb.

Dette Genus og *Epichnopteryx* Hb., hvilke tidligere regnedes til *Macrolepidoptera* (Fam *Psychidae* Boisd.), henføres nu af Hr. Snellen og Andre til *Tineiderne*, hvor han stiller dem til de meget nær beslægtede Genera *Talaeporia* Hb. og *Solenobia* Z.

14. *Betulina* Z. Snell. p. 443; Stgr. Wecke *Macrolepid.* Nr. 871. En ♂ ved Ringedal, Juli 1893 (Gudm.). Larven lever af Mos paa forskellige Træstammer.

#### Tinea L.

*Cloacella* Hw. Haas 19 er vistnok kun en i raadent Ved og Svampe levende Var. til den i Frø levende *T. Granella* L. (Cfr. Hering Stettin Ent. Zeit. 1891 p. 161).

*Caprimulgella* HS. Haas 19 a. To friske Exempl. paa Ahornstammer i Gronningen sidst i Juni 1890.

*Misella* Z. Haas 21. Flere Exempl. i Juli ved Rø og Ringedal i Udhuse og Lader (Gudm.).

*Lapella* Hb. Haas 24. Enkelt i Juli 1893 paa en Granstamme ved Ringedal (Gudm.).

*Argentimaculella* Stt. Haas 26. Et Exempl. ved Ringedal, Juli 1893 (Gudm.).

#### *Tineola* HS.

*Biselliella* Hum. Haas 27. Larven af dette høist skadelige Dyr er gentagne Gange blevet fodret udelukkende med Salt og gav normale Imagines. Cf. Sorhag. Berlin. Ent. Zeit. XXV (1881) p. 28.

#### *Incurvaria* Hw.

*Capitella* Clerck. Haas 30 a. Ved Valby meget talrig om Ribes den 11. Juni 1887, sværmende ved Solopgang, enkeltviis den paafølgende Morgen (Duurloo).

#### *Nemophora* Hb.

15. *Pilulella* Hb. Snell. p. 486 Anm. 2; Hein. p. 71; Wcke Nr. 1469. Temmelig hyppig i Hornbæks Plantage flyvende imellem Gran, først i Juni 1892. De danske Exemplarer ere gjennemgaaende mørkere end de fra Tyskland. Larven kjendes ikke.

#### *Ochsenheimeria* Hb.

*Taurella* W. V. Haas 45. To Exempl. paa Murene af et Hus ved Ringedal, Juli 1893 (Gudm.).

#### *Swammerdammia* Hb.

*Spiniella* Hb. Haas 49 a. Larven i uhyre Mængde paa *Prunus spinosa* ved Ringedal, Juli 1893. Imago sidst i Juli og først i August (Gudm.).

## Scythropia Hb.

*Crataegella* L. Haas 51 a. Enkelt i Juli 1892 ved Rø (Gudm.).

## Prays Hb.

*Simplicella* HS. Haas 58. Juli 1892 ved Rø, hvor Imago optraadte ligesaa talrig som *P. Curtisella* Don. (Gudm.).

## Argyresthia Hb.

*Glaucinella* Z. Haas 65. Et Exempl. 11 Juli 1891 ved Charlottenlund. Larven angives at leve i Barken af Eg og Kastanietræer.

*Abdominalis* Z. Haas 66. Hyppig om *Juniperus* ved Ringedal i Juli (Gudm.).

*Cornella* F. Haas 67. Flere Exempl. ved Rø og Ringedal, Juli (Gudm.).

16. *Certella* Z. Snell. p. 526 Anm. 2; Hein. p. 658; Weke Nr. 1614. Imago enkelt 4. Juli 1892 paa Ørholm Fælle. Sammesteds fandtes det følgende Foraars Larver og Pupper talrig i Knopper af Gran. Imago fremkom i Juni (Gudm.).

## Cerostoma Latr.

*Vitellum* L. Haas 79. Talrig paa Bornholm (Gudm.).

*Sequellum* Clerck. Haas 80. Enkelt ved Vordingborg 15. Juni 1893 (Duurloo).

17. *Scabrellum* L. Snell. 548; Hein p. 125; Weke Nr. 1648. Juli 1892 to Pupper paa et Plankeværk ved Rø. Den ene leverede Imago 15. August samme Aar (Gudm.). Larven paa *Prun. domestica*, *Pyr. malus* og *communis*, rimeligviis ogsaa paa *Crataegus*.

## Theristis Hb.

Mucronella Scp. Haas 89. Ved Nedergaard paa Langeland et Exempl. sidst i September.

## Psecadia Hb.

Bipunctella F. Haas 95. Et Par Exempl. ved Valby (Duurloo).

## Chimabacche Hb.

Fagella W. V. Haas 93. Den mørke Var. Dormoyella Dup. hyppig samtidig med Stamformen.

## Depressaria Hw.

Liturella Tr. (Flavella Hb.). Haas 98. Larven hyppig i Mai 1893 paa Centaurea-Arter ved Nykjøbing p. S. Imago fremkom allerede sidst i Juni (Gudm.).

Arenella W. V. Haas 100. Larven uhyre talrig ved Ringedal paa Lappa, Centaurea og Cirsium lanceolatum, Juli 1893 (Gudm.).

Propinquella Tr. Haas 101. Flere Exempl. klækkede August 1893 af Larver, fundne i Juli paa Cirsium lanceolatum ved Ringedal (Gudm.). Ikke sjelden ved Tidsvilde først i August (Duurloo).

Purpurea Hw. Haas 105. Om Efteraaret i Flertal i Charlottenlund og Boserup Skov ved Roskilde.

18. Astraintiae Hein. p. 165; Wcke Nr. 1737. Et Exempl. først i August 1893 ved Ringedal (Gudm.). Larven angives at leve paa Astraintia major.

19. Douglasella Stt. Snell. p. 599; Hein p. 181; Wcke Nr. 1772. Et Exempl. sidst i Juli ved Ringedal (Gudm.). Larven lever paa Daucus.

## Gelechia Z.

Peliella Tr. Haas 119 a. Et Par Exempl. ved Rø, Juli 1892 (Gudm.).

20. Stangei Herring Stettin. Entom. Zeit. 1889 p. 299. Et Exempl. Juli 1893 ved Ringedal (Gudm.). Ellers kun funden i Mecklenborg og Thüringen.

*Electella* Z. Haas 126. Et Exempl. 1. Juli 1893 i Geelskov.

#### Bryotropha Hein.

*Decrepidella* HS. Haas 130 a. betragtes kun som Var. til *B. Terrella* Hb. Haas 130. Cfr. Snell. p. 643.

*Obscurella* Hein. Haas 132. er vistnok kun en mørk Var. af ♀ af *Terrella* Hb. Cfr. Snell. p. 645. Flere Exempl. ved Ringedal, Juli 1893 (Gudm.).

21. *Affinis* Dgls. Stt. IX. p. 150 pl. 5 fig. 2. (Imago malet alt for brun); Snell. p. 648; Hein. p. 241; Wcke Nr. 1901. Et Exempl. 7. Juni ved Nymølle. Larven i Mos paa Tage og Planker.

#### Sitotroga Hein.

22. *Cerealella* Oliv. Hein. p. 287; Wcke Nr. 2009. Af Hr. Candidat Schlick modtog jeg et Glas med Mais, stammende fra La Plata Staten, hvori det mylrede af Larver. Der fremkom *Cerealella* Oliv., der i Syd Europa er alt andet end sjelden. Ogsaa ved Rotterdam er den blevet taget i det Frie af Hr. Snellen ved Randen af en Kornmark. Alle her fremkomne Imagines vare kun halvt saa store som Exemplarer fra Syd Frankrig i min Samling, men ellers ganske overensstemmende med disse og Beskrivelserne. Som Larvens Foder angives ellers kun Hvede, Rug og Byg.

#### Parasia Dup.

*Lapella* L. Haas 158. En ♀ sværmende i Skumringen om *Artemis. vulgaris* ved Ro, Juli 1892 (Gudm.).

Slægterne *Ergatis* Hein. og *Argyritis* Hein. har Hr. Snellen p. 681 forenet i et under forstanførte Navn, fordi der ingen egentlig Forskjel er inellem de to, undtagen i Forvingernes Tegning.

*Brizella* Tr. Haas 160. Imago ret hyppig sidst i Juli 1893 ved Ringedal (Gudm.).

#### *Doryphora* Hein.

Heinemann har selv forandret dette Slægtsnavn til *Xystophora*, fordi *Doryphora* allerede var givet til en anden Slægt. Med *Xystophora* Hein har Hr. Snellen p. 684 forenet Heinemann's Genera *Monochroa* og *Lamprotes*.

*Atrella* Hw. Haas 165. Enkelt ved Rø, Juli 1892 (Gudm.).

#### *Anacamptis* Curt.

23. *Anthyllidella* Hb. Snell. p. 676; Hein. p. 315; Stt. X p. 210, pl. 14 fig. 1; Wecke Nr. 2078. Et Exempl. 5. Juni 1892 i Hornbæks Plantage. Larven i Juli og October til April, først minererende, senere i sammenspundne Blade af *Ononis spinosa*, *Medicago sativa*, *Onobrychis sativa*, *Anthyllis* o. s. v.

#### *Acanthophila* Hein.

*Alacella* Dup. Haas 168 a. Enkelt paa Elimestamme ved Rø, Juli 1892 (Gudm.).

#### *Rhinosia* Tr.

24. *Ferrugella* W. V. Hein. p. 329; Stt. IX p. 2 pl. 1 fig. 1; Wecke Nr. 2110. Imago i flere Exempl. ved Rø (Gudm.). Larven minerer som ung i de nederste Blade af *Campanula persicæfolia* og *Columbaria*, lever senere i rørformede sammenspundne Blade.

## Hypercallia Stph.

25. Citrinalis Sc. (Christiernana L.) Snell. p. 427 Ann. 2; Hein p. 360; Wcke Nr. 2216. Fire Exempl., Juli 1892 ved Rø (Gudm.). Larven paa Polygala Chamaebuxus.

## Oecophora Z.

Pseudospretella Stt. Haas 186. I Valby i Kældere; Larven meget talrig i gammelt Uldtøi. Imago sidst i Juli (Duurloo). Ogsaa taget paa Plankeværket i Grønningen.

Luridicomella HS. Haas 187. Imago udbredt og hyppig paa Bornholm paa Mure og i Værelser (Gudm.).

## Hypatima HS.

26. Binotella Thnbg. Snell. p. 737; Hein. p. 386; Wcke Nr. 2299. Den 4. Juli 1893 bankede jeg ved Nymølle et temmelig afslidt Stykke af denne nok overalt sjeldne Art af et enkelt staaende Fyrretræ. Larven skal leve paa Fyr.

## Glyphipteryx Hb.

Equitella Sc. Haas 195 opfører denne Art fra Nordsjælland. I Tillæget stryger han den, som beroende paa usikker Bestemmelse, dog uden Grund; thi den findes ikke sjeldent i første Halvdeel af Juni samtidig med G. Fischeriella Z.

## Gracilaria Z.

Phasianipennella Hb. Haas 202 kjender den kun i Var. Quadruplella Z. fra Horsens Egnen. Stamformen fandt jeg i et Exempl. ved Charlottenlund først i September.



## Ornix Z.

27. *Finitimella* Z. Snell. p. 787; Hein p. 638; Weke Nr. 2369. Klækket i Flertal af Larver fundne i Kjobenhavns Omegn paa *Prunus spinosa*. Larven i Juli og September—October paa denne Plante, *Corylus* og *Cra-tægus*.

28. *Petiolella* Frey. Snell. p. 783 Anm. 1; Hein. p. 636; Stt. VIII p. 234 pl. 1 fig. 2; Weke Nr. 2363. Den 29. Mai 1892 taget et friskt Stykke ved Raavad. Larven lever paa *Pyrus malus*.

## Coleophora Z.

*Limosipennella* Dup. Haas 12. Larvesækkene fastspundne paa Elmestammer omkring Kjobenhavn, September og October.

29. *Vitisella* Gregs. Snell. p. 794 Anm. 4; Hein. p. 543; Stt. V p. 100 pl. 12 fig 3; Weke Nr. 2399. En enkelt Larvesæk i Maj 1892 i Tokkekjob Skov paa *Vaccin. Vitis idaea* (Gudm.).

30. *Fabriciella* Vill. Snell. p. 803; Hein. p. 550; Weke Nr. 2415. Nogle faa Exempl. i Geelskov midt i Juli 1893. Larven om Efteraaret paa Fro af *Trifolium arvense*.

31. *Ditella* Z. Hein. p. 573; Stt. VI p. 126 pl. 13 fig. 3; Weke Nr. 2443. Imago enkelt i Juli 1892 paa Ørholm Fællid; Larvesækken hyppig, Juni 1893 paa *Artemis. campestr.* sammesteds og ved Nykjobing p. S. Imago fremkom sidst i Juli og først i August (Gudm.). Larven skal ogsaa leve paa *Vaccinium*.

32. *Caelebipennella* Z. Hein. p. 575; Stt. V. p. 22 pl. 9 fig. 3; Weke Nr. 2457. Et enkelt Exempl. klækket Juli 1893 af en Larvesæk, funden i Juni s. A. paa *Artem. campestr.* paa Ørholm Fællid (Gudm.). Foruden denne

Plante nævnes endnu som Larvens Foderplanter *Gnaphal. arenarium*, *Helichrys. Stoichas* og *angustifolium*.

*Lixella* Z. Haas 25. Flere Exempl. Juli 1893 ved Ringedal (Gudm.). Ligeledes først i Juli s. A. ved Ny-mølle.

33. *Discordella* Z. Hein. p. 558; Stt. IV p. 178 pl. 5 fig. 1; Wecke Nr. 2482. Imago talrig sidst i Juni 1893, flyvende om Dagen om *Lotus corniculatus* i Geel-skov; ligeledes talrig samme Aar i Juli ved Ringedal (Gudm.). Larven paa *Lotus corniculatus*, *L. major* og *Medicago*.

*Bilineatella* Z. Haas 26. Et Par Exempl. Juli 1892 ved Rø (Gudm.).

34. *Lineolea* Hw. Hein. p. 589; Snell. p. 800; Stt. IV p. 242 pl. 7 fig. 2; Wecke Nr. 2515. Imago enkelt sidst i Juni ved Valby; klækket i Antal af Larver fundne paa *Stachys sylvatica* paa Hammershus Ruiner (Gudm.). Ligeledes fundet Larven paa samme Plante i Mængde paa et enkelt Sted paa Giesegaard midt i September; Imago fremkom sidst i Juni n. Aar.

*Tanaceti* Mühl. Haas 40. Et Par Larvesække paa *Tanacetum vulgare* i September 1893 i Landbohøiskolens Have (Gudm.).

#### Limnaecia Wecke.

35. *Phragmitella* Stt. XI p. 150 pl. 4 fig. 1; Snell. 421 Anm. 1; Hein. p. 421; Wecke Nr. 2588. I December 1892 var Hr. Cand. A. Kløcker saa venlig at indsamle for mig en Deel Kolber af *Typha latifolia* fra Kjøbenhavns nærmeste Omegn, hvori Larven af denne Art fandtes. Ved min Hjemkomst fra en Udenlandsreise i Juli fandt jeg to døde og afslidte Imagines i Klækkeglasset.

## Laverna Curt.

Hellerella Dup. Haas 211. Enkelt Juli 1892 ved Rø (Gudm.).

## Scirtopoda Wecke.

36. Saltatricella F. R. Hein. p. 466; Wecke Nr. 2598. En ♂ den 15. Juni 1892 ved Nymolle. Larven kjendes ikke.

## Elachista Stt.

Triatomea Hw. Haas 52. Nogle Exempl. midt i Juli paa Giesegaard.

37. Atricomella Stt. III p. 34 pl. 1 fig. 1; Snell. p. 890; Hein. p. 496; Wecke Nr. 2740. En ♀ paa Giesegaard den 14. Juli 1891. Larven angives at minere i Bladene af *Dactyl. glomerata* og *Carex fulva*; den borer sig senere ind i Stængelen og ned i Roden.

38. Oppositella Hein. p. 492. En ♂ 11. Juni 1892 ved Raavad. Larven skal minere i Bladene af *Luzula pilosa*.

39. Baltica Hering Stettin. Entom. Zeit. 1891 p. 207. Den 28. Maj 1892 klækket en ♀ af en Larve, fundet i Charlottenlund. Larven minerer i *Koeleria cristata* og *Festuca arenaria*.

40. Lugdunensis Frey. Hein. p. 495; Wecke Nr. 2800. En ♂ ved Raavad 11. Juni 1892. Larven kjendes ikke.

Apicipunctella Stt. Haas 59. Forst i Juni 1892 flere Exempl. i Hornbæks Plantage.

41. Nobilella Z. Snell. p. 893; Hein. p. 501; Wecke Nr. 2732. Et Exempl. den 7. Juni 1892 ved Nymolle. Larven minerer i *Bromus*, *Festuca*, *Agrostis* og *Aira flexuosa*.

## Pancalia Curt.

Leeuwenhoekella L. Haas 220. Et Par Exempl. allerede 24. April 1892 i Tokkekjob Hegn (Gudm.). Larven lever i spundne Rør under *Viola tricolor*. Hr. Snellen.

Hering og Andre ansee — og vistnok med fuld Ret — P. Leeuwenhoekella L., Latreillella Curt. (Haas 220 a) og Nodosella Mn. (denne sidste som Hunnen) for en og samme Art.

#### Batrachedra Stt.

Pinicolella Dup. Haas 226. Imago talrig om Gran, Juli 1893, ved Ringedal (Gudm.). Ogsaa i Charlottenlund ikke sjelden.

#### Lithocolletis Z.

42. Cavella Z. Snell. p. 922; Hein. p. 730; Wecke Nr. 2846. Af denne store Art taget en ♀ i Hornbæks Plantage 5. Juni 1892. Larven lever om Efteraaret i Bladene af Betula alba og Alnus.

#### Cemiostoma Z.

43. Scitella Z. Snell. p. 949; Hein. p. 711; Stt. I p. 323 pl. I fig. 3; Wecke Nr. 2932. Hr. Gudmann tog en Deel Miner paa Berberis i Juli 1893 paa Bornholm Imago fremkom den 4. Januar 1894. Som Larvens Foderplanter nævnes ellers kun Crataegus, Pyrus og Prunus-Arter, Sorbus, Betula og Cotaneaster.

#### Bucculatrix Z.

44. Maritima Stt. VIII p. 88 pl. 3 fig. 1; Snell. p. 955; Hein. 714; Wecke Nr. 2942. Larven minerende i Aster Tripolium ved Vesterfælled Strand; Imago om Foderplanten sidst i Juni (Duurloo).

45. Cristatella Z. Snell. p. 955; Hein. p. 720; Stt. VII p. 138 pl. 4 fig. 3; Wecke Nr. 2927. En enkelt Puppe paa et Blad af Achillea Millefolium (Larvens Foderplante) paa Jernbanevolden ved Kjøbenhavn, Juni 1893 (Gudm.).

## Nepticula Z.

Ruficapitella Hw. Haas 85 skal være ♀ til Atricapitella Hw. ♂ Haas 85. Cfr. Sorhagen p. 302.

46. Samiatella HS. Snell. p. 971; Hein. p. 730; Weke Nr. 2978. Klækket af Larver, minerende i Egeblade fra Svendborg.

47. Aurella F. Stt. I p. 35 pl. 1 fig. 1; Snell. p. 983, Hein. p. 742; Weke Nr. 3008. Paa Turo ved Svendborg fundet flere af Larven allerede forladte Miner paa Brombærblade midt i October 1892.

48. Regiella HS. Snell. p. 972; Hein. p. 738; Weke Nr. 3000. Et Exempl. ved Raavad 29. Maj 1892, et andet 11. Juli 1893 i Ordrup Mose. Larven minerer i Bladene af Crataegus Oxycanthus.

Gratiosella Z. Haas 94. Glitz i Stettin. Entom. Zeit. 1887 p. 277 paastaaer, at den er synonym med Ignobiliella Stt. Snell. p. 983; Weke Nr. 3029 og med Latifasciella HS. Hein. p. 737; Weke Nr. 2999. Tityrella Stt. Haas 99; Snell. p. 993 og 997; Hein. p. 756; Weke Nr. 3042. Haas opførte største Delen af Nepticula Arterne udelukkende efter Minerne, fordi det paa Grund af Bortreise ikke lykkedes ham at udklække Imagines. Han opfører under Nr. 99 med et (?) N. Turicella HS. og siger: »paa lave Bøgebuske har jeg hyppig fundet en Nepticula Larve, der enten horer til denne Art, eller til Hemargyrella Z. eller Tityrella Stt.«

Omendskjønt jeg har min Opmærksomhed særlig henvendt paa denne interessante Slægt, har jeg dog aldrig fundet de to første Arter, derimod overalt i vore Bøgeskove N. Tityrella Stt., der flyver i Maj og Juli, altsaa som de fleste af vore Nepticula Arter i to Generationer. I Zoologisk Museum's danske Samling findes tre Exempl. af N. Tityrella Stt. uden Navn, som stamme fra Haas. Indtil videre troer jeg, at N.

Turicella HS. af ovennævnte Grunde maa stryges af Fortegnelsen og Tityrella Stt. træde i dens Sted.

I Staintons Nat. Hist. of the Tin. I p. 148 pl. III fig. 3, hore sec. Snellen l. c. Beskrivelsen og Afbildningen af Imago til N. Tityrella Stt., af Larven, Minen og Puppen derimod til N. Hemargyrella Z.

Diversa Glitz. Haas 106 skal være = Obliquella Hein. og Vimeniticola Frey; dette sidste Navn som det ældste burde saa antages, dog vel kun som Var. til N. Salicis Stt. Haas 105. Cfr. Hering Stettin. Ent. Zeit. 1893 p. 117.

### **Micropterygina.**

Micropteryx Hb.

49. Unimaculella Zett. Snell p. 1069; Hein. p. 777 Wecke Nr. 3106. Et Par Exempl. flyvende om Birk i Geelskov Maj 1892 (Gudm.). Larven minerer i Birkeblade.

### **Pterophorina.**

Mimaeseoptilus Wallgrn.

50. Plagiodyctylus Stt. Snell. p. 1037; Hein. p. 796; Wecke Nr. 3158; Hering Stettin. Entom. Zeit. 1891 p. 225 og 1893 p. 117. To Exempl. i Geelskov og ved Nymolle sidst i Juli, først i August 1893. Heine-mann opfører denne Art kun fra Alperne; den er dog fundet baade i Holland og Nord Tyskland. Larven skal leve i Blomsterne af Gentiana pneumonanthe.

Der foreligger endnu en Del ubeskrevne Microlepidoptera Arter her fra Landet, baade i Zoologisk Museum's og min Samling, dog hidtil enten kun i enkelte eller mindre rene Exemplarer, saa at Beskrivelsen af

disse maa opsættes, til det lykkes at indsamle et større Antal af disse Arter.

I den her vedfoiede Fortegnelse over alle hidtil i Danmark fundne Microlepidoptera betyder »Hs.« med efterfølgende Tal: Haas og Nummeret, hvor Arten findes hos ham: »Hed.« hvor den opføres i dette Arbeide.

<b>Pyralidina</b> Led.	Threnodes Gn.
A. Pyralidae Hein.	Pollinalis W.V. Hs. 15.
Cledeobia Dup.	
Punctalis F. (Angustalis W.V.)	Eurrhypara Hb.
Hs. 1.	Hortulata L. (Urticata L.) Hs. 16.
Aglossa Latr.	
Pinguinalis L. Hs. 2.	Botys Tr.
Asopia Tr.	Octomaculata L. Hs. 17.
Farinalis L. Hs. 4.	Nigrata Sc. Hs. 18.
Glaucinalis L. Hs. 3	Aurata Sc. Hs. 19 a.
B. Botyidae Hein.	v. Falcatalis Gn. Hs. 19.
Scoparia Hw.	Purpuralis L. Hs. 20.
Ochrealis W.V. Hs. 5.	v. Ostrinalis Hb. Hs. 21.
Zelleri Weke Hs. 5 a.	Sanguinalis L. Hs. 22
Ambigualis Tr. Hs. 6.	Cespitalis W.V. Hs. 23.
Dubitalis Hb. Hs. 7.	Aerealis Hb. Hs. 24.
Sudetica Z. Hs. 8.	Hyalinalis Hb. Hs. 27.
Murana Z. Hs. 9.	Pandalis Hb. Hs. 26.
Truncicolella Stt. Hs. 10.	Fuscalis W.V. Hs. 25.
Crataegella Hb. Hs. 11.	Sambucalis W.V. Hs. 29.
Resinea Hw. Hs. 12.	Stachydalis Germ. Hs. 30.
Pallida Stph. Hs. 13.	Ferrugalis Hb. Hs. 31.
Heliothela Gn.	Elutalis W V. Hs. 34.
Atralis Hb. Hs. 14.	Lutealis Hb. Hs. 34 a.
	Prunalis W.V. Hs. 32
	Olivalis W.V. Hs. 33.
	Ruralis Sc. Hs. 28.

Eurycreon Hein.  
 Sticticalis L. Hs. 36.  
 Verticalis L. Hs. 35.

Nomophila Hb.  
 Noctuella W.V. Hs. 37.

Psamotis Hb.  
 Pulveralis Hb. Hs. 38.

Pionea Gn.  
 Forficalis L. Hs. 39.

Orobena Gn.  
 Extimalis Sc. Hs. 40.  
 Straminalis Hb. Hs. 41.  
 Frumentalis L. Hs. 42.

Perinephele Hb.  
 Lancealis W.V. Hs. 43.

Diasemia.  
 Litterata Sc. Hs. 44.

Hydrocampa Gn.  
 Nymphaeata L. Hs. 46.  
 Stagnata Don. Hs. 45.

Parponyx Hb.  
 Stratiotata L. Hs. 47.

Cataclysta Hb.  
 Lemnata L. Hs. 48.

Acentropus Curt.  
 Niveus Oliv. (Newae Kol.) Hs. 49.

**C. Crambidae Z**

Schoenobius Dup.  
 Forficellus Thnbg. Hs. 50.  
 Mucronellus Sc. Hs. 51.

Chilo Zink.  
 Phragmitellus Hb. Hs. 52.

Calomotropha Z.  
 Paludella Hb. Hs. 53.

Crambus F.  
 Alpinellus Hb. Hs. 54.  
 Pascuellus L. Hs. 57.  
 Uliginosellus Z. Hs. 56.  
 Sylvellus Hb. Hs. 58.  
 Dumetellus Hb. Hs. 59.  
 Pratellus L. Hs. 60.  
 Cerusellus W.V. Hs. 55.  
 Hortuellus Hb. Hs. 61.  
 Chrysonuchellus Sc. Hs. 62.  
 Falsellus W.V. Hs. 65.  
 Verellus Zinck. Hs. 66.  
 Pinellus L. Hs. 67.  
 Myellus Hb. Hs. 69.  
 Margaritellus Hb. Hs. 68.  
 Fulgidellus Hb. Hs. 70.  
 Fascelinellus Hb. Hs. 71.  
 Inquinatellus W.V. Hs. 75.  
 Geniculeus Hw. Hs. 64.  
 Culmellus L. Hs. 63.  
 Contaminellus Hb. Hs. 74.  
 Selasellus Hb. Hs. 72.  
 Tristellus F. Hs. 73.  
 Deliellus Hb. Hs. 77.  
 Perlellus Sc. Hs. 76.  
 Lithargyrellus Hb. 75 a.

**D. Galleridae Z.**

Galleria F.  
 Mellonella Gn. Hs. 96.

Aphomia Hb.  
 Sociella L. Hs. 95.

Achroea Z.  
 Grisella Z. Hs. 94.

**E. Phycidae Z.**

Cryptoblades Z.  
 Bistriga Hw. Hs. 86.



**Nephoteryx** Z.

- Spissicella F. Hs. 79 a.  
 Vacciniella Z. Hs. 79 b.  
 Hostilis Stph. Hs. 82.  
 Palumbella W.V. Hs. 81.  
 Abietella W.V. Hs. 78.  
 Janthinella Hb. Hs. 79.  
 Fusca Hw. Hs. 80.

**Myelois** Z.

- Epelydella Z. Hs. 86 a.  
 Sodalella Z. Hed. 1.  
 Consociella Hb. Hs. 87.  
 Advenella Zinck. Hs. 88.

**Ilythria** Gn.

- Cribrum W.V. Hs. 89.

**Hypochoalcia** Z.

- Ahenella W.V. Hs. 84.

**Eucarphia** Hb.

- Resectella Wern. Hs. 85.

**Euzophera** Z.

- Terebrella Zinck. Hs. 89 a.  
 Pinguis Hw. Hs. 90.

**Pempelia** Hb.

- Subornatella Dup. Hs. 82 b.  
 Adornatella Tr. Hs. 82 a.  
 Ornatella W.V. Hs. 83.

**Homoeosoma** Z.

- Nimbella Z. Hs. 92.  
 Nebulella W.V. Hs. 91.  
 Binaevella Hb. Hs. 92 a.

**Ephestia** Gn.

- Elutella Hb. Hs. 93.  
 Kühniella Z. Hed. 2.

**Plodia** Gn.

- Interpunctella Hb. Hs. 93 a.

**Pterophorina** HS.**Platyptilia** Hb.

- Ochrodactyla Hb. Hs. 1.  
 Bertrami Rössl. Hs. 2.  
 Gonodactyla W. V. Hs. 3.

**Amblyptilia** Hb.

- Acanthodactyla Hb. Hs. 4.  
 Cosmodactyla Hb. Hs. 5.

**Oxyptilus** Z.

- Pilosellae Z. Hs. 6.  
 Hieracii Z. Hs. 7.  
 Ericetorum Z. Hs. 8.  
 Didactylus L. Hs. 10.  
 Parvidactylus Hw. Hs. 9.

**Mimaeseoptilus** Wallgrn.

- Pelidnodactylus Stein. Hs. 11.  
 Serotinus Z. Hs. 12.  
 Plagiodactylus Stt. Hed. 50.  
 Pterodactylus L. Hs. 13.

**Pterophorus** Wallgrn.

- Monodactylus L. Hs. 14.

**Leioptilus** Wallgrn.

- Scarodactylus Hb. Hs. 15.  
 Tephrodactylus Hb. Hs. 16.  
 Microdactylus Hb. Hs. 17.  
 Brachydactylus Tr. Hs. 18.

**Aciptilia** Hb.

- Galactodactyla Hb. Hs. 19.  
 Tetradactyla L. Hs. 20.  
 Pentadactyla L. Hs. 21.

**Alucitina** HS.**Alucita** L., Zell.

- Hexadactyla L. Hs. 1.

**Tortricina** Led**Rhacodia** Hb.

- Emargana F. Hs. 1.

v. Caudana Hb. Hs. 1.  
v. Effractana Hb. Hs. 2.

Teras Tr., Led.

A. Teras Tr.

Variegatum W.V. Hs. 9.  
v. Nyctemerana Hb. Hs. 9.  
Literatum L. v. Squamana Dup.  
Hs. 10.  
Hastianum L. Hs. 3  
Abietanum Hb. Hs. 4.  
Niveanum F. Hs. 11.  
Lipsianum W.V. Hs. 7.  
Maccanum Tr. Hs. 5.  
Holmianum L. Hs. 19.  
Aspersanum Hb. Hs. 15.  
Ferruganum Tr. Hs. 16.  
v. Tripunctana Hb. Hs. 16.  
v. Lithargyrana HS. Hs. 17.  
Mixtanum Hb. Hs. 12.  
Rufanum W.V. Hs. 13.  
Sponsanum F. Hs. 6.  
Schallerianum L. Hs. 8.  
v. Latifasciana Hw. Hs. 8.  
v. Comparana Hb. Hs. 14.

B. Peronea Stph.

Contaminana Hb. Hs. 20.  
v. Ciliana Wood Hs. 20.  
v. Dimidiana Hb. Hs. 20

Tortrix L., Led.

Piceana L. Hs. 21.  
Podana Sc. Hs. 22.  
Crataegana Hb. Hs. 23.  
Xylosteana L. Hs. 24.  
Laevigana W.V. (? Rosana L.)  
Hs. 25.  
Sorbiana L. Hs. 26.  
Corylana F. Hs. 28.  
Ribeana Hb. Hs. 29.  
v. Cerasana Hb. Hs. 30.  
Cinnamomeana Tr. Hs. 31.

Heparana W.V. Hs. 32.  
Paleana Hb. v. Icterana Froel.  
Hs. 41.

Costana F. Hs. 27.  
Viburniana F. Hs. 42.  
Forsterana F. Hs. 33.  
Viridana L. Hs. 40.  
Musculana Hb. Hs. 36.  
Rusticana Hb. Hs. 43.  
Strigana Hb. Hed. 3.  
Loeflingiana L. Hs. 44.  
Forskåleana L. Hs. 18.  
Conwayana F. Hs. 46.  
Bergmanniana L. Hs. 45.  
Cinctana W.V. Hs. 38.  
Politana Hw. Hs. 37.  
Ministrana L. Hs. 39.  
Lecheana L. Hs. 34.  
Reticulana Hb. Hs. 47.  
Grotiana F. Hs. 48.  
Gnomana Clerck Hs. 49.  
Gerningana W.V. Hs. 50.  
Prodromana Hb. Hs. 51.  
Favillaceana Hb. Hs. 52.

Sciaphila Tr., Led.

Osseana Sc. Hs. 53.  
Longana Hw. Hs. 54  
Penziana Hb. Hs. 55.  
Wahlbomiana L. Hs. 56.  
v. Minorana HS. Hs. 56.  
v. Virgaureana Tr. Hs. 56.  
v. Pasivana Hb. Hs. 57.  
Nubilana Hb. Hs. 58.

Olinda Gn., Led.

Ulmiana Hb. Hs. 60.

Exapate Hb.

Congelatella Clerck. Hs. 59 a.

Cheimatophila Stph.

Tortricella Hb. Hs. 59.

## Conchylis Led.

- Hamana L. Hs. 61.  
 Zoëgana L. Hs. 62  
 Hartmanniana Clerck. Hs. 66.  
 Aleella Schulze Hs. 66 a.  
 Ambiguella Hb. Hs. 64.  
 Angustana Hb. (Cruentana Fröl.)  
 Hs. 63.  
 Straminea Hw. Hs. 65.  
 Inopiana Hw. Hs. 35.  
 Rutilana Hb. Hs. 67.  
 Smeathmanniana F. Hs. 68.  
 Kindermanniana Tr. Hs. 69.  
 Badiana Hb. Hs. 70.  
 Ciliella Hb. Hs. 71.  
 Rupicola Curt. Hed. 4.  
 Manniana FR. (= Notulana Z.)  
 Hs. 72, 73.  
 Gilvicomana Z. Hs. 74.  
 Atricapitana Stph. Hs. 75.  
 Dubitana Hb. Hs. 76.

## Phtheochroa Stph.

- Amandana HS. Hs. 77.

## Retinia Gn.

- Duplana Hb. Hs. 78 a.  
 Turionana Hb. Hs. 78.  
 Pinivorana Z. Hs. 78 b  
 Buoliana W.V. Hs. 80.

## Penthina Tr.

- Salicella L. Hs. 86.  
 Semifasciana Hw. Hs. 87.  
 Scriptana Hb. Hs. 88.  
 Corticana Hb. v. Capreana Hb.  
 Hs. 89.  
 Betuletana Hw. Hs. 90.  
 Sororeculana Zett. Hs. 91.  
 Sauciana Hb. Hs. 92.  
 Variegana Hb. Hs. 93.  
 Ochroleucana Hb. Hs. 95.  
 Pruniana Hb. Hs. 94.

- Dimidiana Sod. Hs. 96.  
 Fuligana Hb. v. Nigricostana  
 Hw. Hs. 97.  
 Textana Hb.-G. Hs. 98.  
 Postremana Z. Hs. 99.  
 Profundana W.V. Hs. 85.

## Lobesia Gn.

- Permiltana Hb. Hs. 120.

## Grapholitha Tr.

## A. Chrosis Gn.

- Littoralis Curt. Hs. 119.

## B. Sericoris Tr.

1

- Exartema Clem. (Eccopsis Z.)  
 Latifasciana Hw. Hs. 121.

2.

## Sericoris Tr.

- Palustrana Z. Hs. 102 a  
 Olivana Tr. Hs. 103.  
 Cespitana Hb. Hs. 105.  
 Bifasciana Hw. Hs. 109.  
 Rivulana Sc. Hs. 104.  
 v. Stangeana Teich. Hed.  
 Metallicana Hb. Hs. 101.\*  
 Lacunana W.V. Hs. 108.  
 v. Rooana de Graaf. Hs. 108 a.  
 Urticana Hb. Hs. 107.  
 Umbrosana Z. Hs. 106.  
 Bipunctana F. Hs. 110.  
 Tidemanniana Z. Hs. 111.  
 Hercyniana Tr. Hs. 112.  
 Schulziana F. Hs. 102.  
 Striana W.V. Hs. 83.  
 Rufana Sc. Hs. 82.  
 v. Purpurana Hw. Hs. 82.  
 Mygindana W.V. Hs. 81.  
 Turfosana HS. Hs. 100.  
 Arcuella Clerck. Hs. 113.  
 Trifoliana HS. Hs. 114.

Antiquana Hb. Hs. 115.  
 Branderiana L. Hs. 84.  
 Achatana W.V. Hs. 113 a.

3.

Aspis Tr.

Uddmanniana L. Hs. 116.

C. Aphelia Stph.

Furfurana Hw. Hs. 118.

Lanceolana Hb. Hs. 117.

D. Semasia HS.

Hypericana Hb. Hs. 149.

Citrana Hb. Hs. 145.

Pupillana Clerck. Hed. 5.

Granitana Hs. Hed. 6.

Caecimaculana Hb. Hs. 146.

Hohenwarthiana Tr. Hs. 147.

Carduana Gn. Hed. 7.

Infidana Hb. Hs. 144.

E. Paedisca Tr.

Bilunana Hw. Hs. 141.

Ramella L. Hs. 177.

Penkleriana FR. Hs. 132.

Campoliliana W.V. (Subocellana  
 Don.) Hs. 136.

Nigromaculana Hw. Hs. 176.

Tripunctana W.V. Hs. 137.

Roborana W.V. (Cynosbana F.)  
 Hs. 138.

Suffusana Z. Hs. 139.

v. Rosaecolana Dbld. Hs. 140.

Ocellana W.V. Hs. 174.

Neglectana Dup. Hs. 175 a.

Incarmana Hw. Hs. 175.

Oppressana Tr. Hed. 9.

Foennella L. Hs. 123.

Brünnichiana Fröl. Hs. 129.

Simploniana Dup. (Sublimana  
 HS.) Hs. 131.Scutulana W.V. (Pflugiana Hw.)  
 Hs. 130 a.

v. Cirsiana Z. Hs. 130.

Tetraquetrana Hw. Hs. 133.

Rubiginosana HS. Hs. 188 a.

Trimaculana Dup. Hs. 189.

Nisella L. Hs. 135.

Immundana FR. Hs. 134.

Ustomaculana Curt. Hs. 183.

Corticana Hb. Hs. 179.

Pinicolana Z. Hs. 178.

Ratzeburgiana Saxes. Hs. 181.

Rufimitrana Hw. Hs. 180 a.

Bimaculana Don. (Similana Hb.)  
 Hs. 128.

Grandaevana Z. Hs. 122.

Solandriana L. Hs. 124.

Sordidana Hb. Hs. 126.

Semifuscana Stph. Hs. 125.

Ophthalmicana Hb. Hs. 127.

Pygmaeana Hb. Hs. 187.

Proximana HS. Hs. 143.

Tedella Clerck (Comitana W.V.)  
 Hs. 142.

Nanana Tr. Hs. 182.

Fractifasciana Tr. HS. 185.

Quadrana Hb. Hs. 186.

Ericetana Z. Hs. 185 a.

Vacciniana Z. Hs. 184.

Nemorivaga Tgstr. Hs. 184 a.

Cruciana L. Hs. 188.

Albersana Hb. Hs. 150.

F. Grapholitha Tr.

I.

A.

Grapholitha Hein.

Nebritana Tr. v. Tenebrosana  
 Dup. Hs. 153.

Roseticolana Z. Hs. 151.

Funebrana Tr. Hs. 152 a.

Strobilella L. Hs. 159 a.

Paetolana Z. Hs. 159.

Coniferana Rtzbg. Hs. 158.

Cosmophorana Tr. Hs. 159 b.  
Discretana Weke (Dorsana Hb.)  
Hed. 8.

Dorsana F. Hs. 154.  
Fissana Fröl. Hs. 157.  
Perlepidana Hw. Hs. 155.  
Compositella F. Hs. 156.  
Pallifontana Z. Hs. 156 a.  
Aurana F. Hs. 161.  
Woeberiana W.V. Hs. 160.  
Rufillana Dbld. Hs. 152.  
Janthinana Dup. Hs. 165 a.  
Servillana Dup. Hs. 162.  
Succedana W.V. Hs. 163.  
Grossana Hw. Hs. 164.  
Pomonella L. Hs. 165.

## B.

Phthoroblastis Led.

Ochsenheimeriana Z. Hed. 10.  
Splendidulana Gn. (Plumbatana  
Z.) Hs. 166.  
Populana F. Hs. 170.  
Regiana Z. Hs. 171.  
Fimbriana Hw. Hs. 167.  
Argyrana Hb. Hs. 168.  
Juliana Curt. Hs. 169.  
Rhediella Clerck. Hs. 173.

## II.

Strophedra HS.

Flexana Z. Hs. 172.

Phoxopteryx Tr.

Unguicella L. Hs. 196.  
Uncana Hb. Hs. 195.  
Laetana F. Hs. 191.  
Apicella W.V. (Siculana Hb.)  
Hs. 197.  
Mitterbacheriana W.V. Hs. 190.  
Derasana Hb. Hs. 200.  
Badiana W.V. (Lundana F.  
Hs. 198.

Myrtillana Tr. Hs. 199.  
Tineana Hb. Hs. 192.  
Geminana Don. (Biarcuana Stph.)  
Hs. 193.  
v. Subarcuana Dgls. Hs. 193.  
Diminutana Hw. Hs. 194.

Rhopobota Led.

Naevana Hb. Hs. 201.

Dichrorampha Gn.

Petiverella L. Hs. 202.  
Politana Gn. Hed. 11.  
Alpinana Tr. Hs. 203.  
Agilana Tgstr. Hed. 12.  
Acuminatana Z. Hed. 13.  
Simpliciana Hw. Hs. 205.  
Plumbagana Tr. Hs. 204.  
? Consortana Wck. Hs. 204 a.  
Saturnana Gn. Hs. 205 a.  
Plumbana Sc. Hs. 206.

**Tineina HS.**

Simaethis Leach.

Fabriciana L. (Oxyacanthella L.)  
Hs. 2.

Choreutes Hb.

Müllerana F. Hs. 1.

Fumea Hw.

Intermediella Bruand. Hs.  
Macr. 12.

Betulina Z. Hed. 14.  
Sepium Speyer. Hs. Macr. 12 a.

Solenobia Dup.

Triquetrella FR. Hs. 4.

Talaeoporia Hb.

Pseudobombycella Hb. Hs. 3.

Diplodoma Z.

Marginepunctella Stph. Hs. 6.

- Lypusa* Z.  
*Maurella* W.V. Hs. 5.  
*Xysmatodoma* Z.  
*Melanella* Hw. Hs. 7.  
*Scardia* Tr.  
*Boleti* F. Hs. 8.  
*Blabophanes* Hein.  
 A. *Blabophanes* HS.  
*Ferruginella* Hb. Hs. 9.  
*Imella* Hb. Hs. 9 a.  
 B. *Monapis* HS.  
*Rusticella* Hb. Hs. 10.  
*Tinea* L.  
*Tapetzella* L. Hs. 12.  
*Fulvimitrella* Sod. Hs. 11.  
*Caprimulgella* HS. Hs. 19 a.  
*Arcella* F. Hs. 13.  
*Picarella* Clerck. Hs. 16.  
*Nigralbella* Z. Hs. 17.  
*Parasitella* Hb. Hs. 15.  
*Corticella* Curt. Hs. 14.  
*Granella* L. Hs. 18.  
*v. Cloacella* Hw. Hs. 19.  
*Misella* Z. Hs. 21.  
*Spretella* W.V. (*Fuscipunctella*  
 Hw.) Hs. 22.  
*Pellionella* L. Hs. 23.  
*Lapella* Hb. Hs. 24.  
*Semifulvella* Hw. Hs. 25.  
*Angustipennis* HS. Hs. 20.  
*Falstriella* Haas. Hs. 25 a.  
*Argentimaculella* Stt. Hs. 26.  
*Tineola* HS.  
*Biselliella* Hum. Hs. 27.  
*Myrmecozela* Z.  
*Ochraceella* Tgstrm. Hs. 27 a.
- Incurvaria* Hw.  
*Muscaella* F. Hs. 28.  
*Pectinea* Hw. Hs. 29.  
*Körneriella* Z. Hs. 30.  
*Flavimitrella* Hb. Hs. 32.  
*Luzella* Hb. Hb. 32 a.  
*Capitella* Clerck. Hs. 30 a.  
*Praelatella* W.V. Hs. 33.  
*Oehlmanniella* Tr. Hs. 31.  
*Rubiella* Bjerck. Hs. 34.  
*Nemophora* Hb.  
*Swammerdammella* L. Hs. 35.  
*Schwarziella* Z. Hs. 36.  
*Pilella* F. Hs. 37.  
*Pilulella* Hb. Hed. 15.  
*Metaxella* Hb. Hs. 38.  
*Adela* Latr.  
*Fibulella* F. Hs. 39.  
*Rufimitrella* Sc. Hs. 40.  
*Croesella* Sc. Hs. 42.  
*Degeerella* L. Hs. 41.  
*Viridella* Sc. Hs. 43.  
*Nemotois* Hb.  
*Metallica* Poda. Hs. 44.  
*Ochsenheimeria* Hb.  
*Taurella* W.V. Hs. 45.  
*Hyponomeuta* Sod.  
*Plumbellus* W.V. Hs. 52.  
*Padellus* L. Hs. 53.  
*Malinellus* Z. Hs. 54.  
*Evonymellus* Sc. Hs. 55.  
*Padi* Z. Hs. 56.  
*Swammerdamia* Hb.  
*Combinella* Hb. Hs. 47.  
*Heroldella* Tr. Hs. 48.  
*Spiniella* Z. Hs. 49 a.  
*Oxycanthella* Dup. Hs. 49.

Conspersella Tgstr. Hs. 51.

Pyrella Vill. Hs. 50

Prays Hb.

Curtisellus Don. Hs. 57.

Rusticus Hw. (Simplicellus HS.)

Hs. 58.

Scythropa Hb.

Crataegella L. Hs. 51 a.

Argyresthia Hb.

Semitestacella Curt. Hs. 61.

Albistria Hw. Hs. 62.

Mendica Hw. Hs. 64

Glaucinella Z. Hs. 65.

Conjugella Z. Hs. 63.

Ephippella F. Hs. 59.

Nitidella F. Hs. 60.

Curvella Stph. (Cornella F.)

Hs. 67.

Pygmaeella Hb. Hs. 68.

Goedartella L. Hs. 69.

Brockeella Hb. Hs. 70.

Abdominalis Z. Hs. 66.

Aurulentella Stt. Hs. 73.

Praecocella Z. Hs. 72.

Certella Z. Hed. 16.

Arceuthina Z. Hs. 71.

Cedestis Z.

Gysseleniella FR. Hs. 74.

Farinatella FR. Hs. 75.

Ocnerostoma Z.

Piniariella Z. Hs. 75 a.

Eidophasia Stph.

Messingiella FR. Hs. 76.

Plutella Schrank.

Porrectella L. Hs. 77.

Cruciferarum Z. Hs. 78.

Cerostoma Latr.

Xylostella L. Hs. 88.

Nemorella L. Hs. 87.

Horridella Tr. Hs. 86.

Scabrella L. Hed. 17.

Lucella F. Hs. 85.

Alpella W. V. Hs. 84.

Sylvella L. Hs. 83.

Parenthesella L. Hs. 82.

Radiatella Don. Hs. 81.

Sequella Clerck. Hs. 80.

Vittella L. Hs. 79.

v. Carbonella Hb. Hs. 79.

Theristis Hb.

Mucronella Sc. Hs. 89.

Acrolepia Curt.

Assectella Z. Hs. 46.

Orthotaelia Stph.

Sparganiella Thnbg. Hs. 90.

Dasystema Curt.

Salicellum Hb. Hs. 91.

Chimabache Hb.

Fagella W.V. Hs. 93.

v. Dormoyella Dup. Hed.

Cheimophila Hb.

Phryganella Hb. Hs. 92.

Semioscopis Hb.

Steinkellneriana W.V. Hs. 94.

Depressaria.

Liturella Tr. (Flavella Hb.)

Hs. 98.

Costosa Hw. Hs. 97.

Assimilella Tr. Hs. 99.

Arenella W. V. Hs. 100.

Propinquella Tr. Hs. 101.

- Applana F. Hs. 108.  
 Ocellana F. Hs. 103.  
 Yeatiana F. Hs. 102.  
 Alstroemeriana Clerck Hs. 104.  
 Purpurea Hw. Hs. 105.  
 Hypericella Tr. (Liturella Hb.)  
     Hs. 106.  
 Conterminella Z. Hs. 107.  
 Angelicella Hb. Hs. 109.  
 Astantiae Hein. Hed. 18.  
 Depressella Hb. Hs. 110.  
 Heracliana De Geer. Hs. 111.  
 Weirella Stt. Hs. 112.  
 Douglasella Stt. Hed. 19.  
 Nervosa Hw. Hs. 113.  
     Exaeretia Stt.  
 Allisella Stt. Hs. 96.  
     Pseudadia Hb.  
 Bipunctella F. Hs. 95.  
     Hypercallia Stph.  
 Citrinalis Sc. Hed. 25.  
     Carcina Hb.  
 Quercana F. Hs. 179.  
     Psoricoptera Stph.  
 Gibbosella Z. Hs. 114.  
     Tachyptilia Hein.  
 Populella Clerck. Hs. 169.  
 Temerella Z. Hs. 170.  
     Ceratophora Hein.  
 Cinerella Clerck. Hs. 171.  
 Rufescens Hw. Hs. 172.  
     Gelechia Z.  
     A. Gelechia Hein.  
 Turpella W. V. (Pinguinella Tr.)  
     Hs. 115 a.
- Sororculella Hb. Hs. 118.  
 Velocella Dup. Hs. 119.  
 Fumatella Dgls. (Oppletella HS.)  
     Hs. 117 b.  
 Distinctella Z. Hs. 117.  
 Striolatella Hein. Hs. 117 a.  
 Rhombella W.V. Hs. 116.  
 Conspurcatella Hein. Hs. 117 c.  
 Cuneatella Dgls. Hs. 115.  
 Ericetella Hb. Hs. 120.  
 Mulinella Z. Hs. 121.  
 Stangei Hering. Hed. 20.  
 Peliella Tr. Hs. 119 a.  
 Continuella Z. Hs. 123.  
 Galbanella Z. Hs. 122.  
 Ochrisignella Nolck. Hs. 124 a.  
 Longicornis Curt. Hs. 124.  
 Diffinis Hw. Hs. 125.  
 Electella Z. Hs. 126.  
     B. Bryotropha Hein.  
 Terrella Hb. Hs. 130.  
 v. Decrepidella HS. Hs. 130, a.  
 ? v. Obscurella Hein. Hs. 132.  
 Senectella Z. Hs. 131.  
 Tectella HS. Hs. 133.  
 Cinerosella Tgstr. Hs. 134.  
 Affinis Dgls. Hed. 21.  
 Basaltinella Z. Hs. 135.  
     C. Lita Tr.  
 Scalella Sc. Hs. 127.  
 Atriplicella FR. Hs. 138.  
 Obsoletella FR. Hs. 138 a.  
 Halonella HS. Hs. 139.  
 Acuminatella Sc. Hs. 140.  
 Artemisiella Tr. Hs. 137.  
 Psilella HS. Hs. 136.  
 Marmorea Hw. Hs. 145.  
 Hübneri Hw. Hs. 141.  
 Maculea Hw. Hs. 142.  
 Maculiferella Dgls. Hs. 144.  
 Tricolorella Hw. Hs. 143.



- D. Teleia Hein.  
 Vulgella Hb. Hs. 145 a.  
 Proximella Hb. Hs. 147.  
 Notatella Hb. Hs. 148.  
 Fugitivella Z. Hs. 146.  
 Triparella Z. Hs. 149.  
 Luculella Hb. Hs. 150.  
 Dodecella L. Hs. 150 a.
- Recurvaria Hw.  
 Leucatella Clerck. Hs. 151.
- Brachmia Hb.  
 Mouffetella W.V. Hs. 128.  
 Pruinosella Z. Hs. 129.
- Anacampsis Curt.  
 Vorticella Sc. Hs. 168.  
 Biguttella HS. Hs. 167.  
 Anthyllidella Hb. Hed. 23.
- Acanthophila Hein.  
 Alacella Dup. Hs. 168 a.
- Poecilia Hein.  
 Albiceps Z. Hs. 152.  
 Lepidella Z. (Nivea Hw.) Hs. 153.
- Ptocheuusa Hein.  
 Subocellea Stph. Hs. 157.
- Sitotroga Hein.  
 Cerealella Oliv. Hed. 22.
- Ergatis Hein.  
 Superbella Z. Hs. 154.  
 Ericinella Dup. Hs. 161.  
 Brizella Tr. Hs. 160.
- Xystophora Hein.  
 Lutulentella Z. Hs. 161 a.
- Quaestionella HS. Hs. 162.  
 Acutangulella Hein. Hs. 163.  
 Tenebrella Hb. Hs. 164.  
 Atrella Hw. Hs. 165.  
 Micella W.V. Hs. 166.
- Nannodia Hein.  
 Stipella L. v. Naeriferella Dup. Hs. 155.  
 Hermannella F. Hs. 156.
- Parasia Dup.  
 Lappella L. Hs. 158.
- Chelaria Hw.  
 Hübnerella Don. Hs. 159.
- Nothris Hb.  
 Juniperella L. Hs. 173.  
 Sabinella Z. Hs. 174.
- Rhinosia Tr.  
 Ferrugella W.V. Hed. 24.
- Sophonria Hb.  
 Semicostella Hb. Hs. 175.  
 Humerella W.V. Hs. 176.
- Anarsia Z.  
 Spartiella Schrnk. Hs. 177.
- Aplota Stph.  
 Palpella Hw. Hs. 178 a.
- Pleurota Hb.  
 Bicostella Clerck. Hs. 178.
- Harpella Schrank  
 Forficella Sc. Hs. 180.  
 Bractella L. Hs. 181.

## Lampros Tr.

Sulphurella Hb. (Stipella L.)  
Hs. 188.

Similella Hb. Hs. 189.

Augustella Hb. Hs. 189 a.

Stroemella F. Hs. 190.

Minutella L. Hs. 191.

Tripuncta Hw. Hs. 191 a.

Procerella W.V. Hs. 192.

Unitella Hb. Hs. 183.

Tinctella Hb. Hs. 182.

Luridicomella HS. Hs. 187.

Pseudospirella Stt. Hs. 186.

## Endrosis Hb.

Lactella W.V. Hs. 221.

## Oecophora Latr.

Flavifrontella Hb. Hs. 185.

Panzerella Stph. Hs. 184.

## Hypatima Hb.

Binotella Thnbg. Hed. 26.

## Heydenia Hofm.

Fulvigutella Z. Hs. 215.

## Pancalia Stph.

Leeuwenhoekella L. Hs. 220.

## Butalis Tr.

Potentillae Z. Hs. 217.

Knochella F. Hs. 218.

Chenopodiella Hb. Hs. 219.

## Glyphipteryx Hb.

Thrasonella Sc. Hs. 193.

Haworthana Stph. Hs. 194.

Equitella Sc. Hs. 195.

Forsterella F. Hs. 194 a.

Fischeriella Z. Hs. 196.

## Douglasia Stt.

Ocnerostomella Stt. Hs. 214.

## Scirtopoda Weke.

Saltratricella FR. Hed. 36.

## Heliozela HS.

Sericiella Hw. Hs. 227.

## Gracilaria Z.

Alchimiella Sc. Hs. 197.

Stigmatella F. Hs. 198.

Elongella L. Hs. 199.

Tringipennella Hb. Hs. 200.

Syringella F. Hs. 201.

Phasianipennella Hb. Hs. 202;  
Hed.

v. Quadruplella Z. Hs. 202.

Auroguttella Stph. Hs. 203.

## Coriscium Z.

Sulphurellum Hw. Hs. 205.

Cuculipennellum Hw. Hs. 204.

## Ornix Tr.

Guttea Hw. Hs. 1.

Torquillella Z. Hs. 5.

Scoticella Z. Hs. 6.

Finitimella Z. Hed. 27.

Petiolella Frey. Hed. 28.

Carpinella Frey. Hs. 2.

Avellanella Stt. Hs. 4.

Angelicella Stt. Hs. 3.

Betulae Stt. Hs. 7.

## Coleophora Hb.

Fabriciella Vill. Hed. 30.

Acyonipennella Koll. Hs. 24.

Paripennella Z. Hs. 22.

Albitarsella Z. Hs. 23.

Laricella Hb. Hs. 9.

Juncicolella Stt. Hs. 8.

Vacciniella HS. Hs. 18.

Vitisella Gregs. Hed. 29.

Viminetella Z. Hs. 16.

Idaella Hofm. Hs. 17.

- Gryphipennella Bouché Hs. 15.  
 Solitariella Z. Hs. 13.  
 Olivacella Stt. Hs. 14.  
 Binderella Koll. Hs. 19.  
 Coracipennella Hb. (Nigricella  
   Stph.) Hs. 21.  
 Fuscedinella Z. Hs. 20.  
 Lutipennella Hs. 11.  
 Limosipennella Dup. Hs. 12.  
 Milvipennis Z. Hs. 10.  
 Discordella Z. Hed. 33.  
 Bilineatella Z. Hs. 26.  
 Gallipennella Hb. Hs. 27.  
 Ditella Z. Hed. 31.  
 Pyrrhulipennella Z. Hs. 28  
 Caelebipennella Z. Hed. 32.  
 Lixella Z. Hs. 25.  
 Onosmella Brahm. Hs. 32.  
 Caespititiella Z. Hs. 36.  
 Murinipennella Dup. Hs. 35.  
 Lineolea Hw. Hed. 34.  
 Troglodytella Dup. Hs. 34.  
 Therinella Tgstr. Hs. 33.  
 Gnaphalii Z. Hs. 38.  
 Tanaceti Mühl. Hs. 40.  
 Directella Z. Hs. 37.  
 Virgaureae St. Hs. 42.  
 Artemisiae Mühl. Hs. 43.  
 Artemisicolella Bruand Hs. 41.  
 Argentula Z. Hs. 39.  
 Annulatella Tgstr. (Laripennella  
   Zett.) Hs. 44.  
 Flavaginella Z. Hs. 45.  
 Currucipennella Z. Hs. 29.  
 Ibipennella Z. Hs. 30.  
 Anatiipennella Hb. Hs. 31.  
  
   Asychna Stt.  
 Modestella Dup. Hs. 216.  
  
   Chauliodus Tr.  
 Illigerellus Hb. Hs. 206.
- Schreckensteinia Hb.  
 Festaliella Hb. Hs. 222.  
  
   Limnaecia Wecke.  
 Phragmitella Stt. Hed. 35.  
  
   Anybia Stt.  
 Epilobiella Röm. Hs. 212.  
  
   Laverna Curt.  
 Ochraceella Curt. Hs. 208  
 Fulvescens Hw. Hs. 207.  
 Lacteella Stph. Hs. 207 a.  
 Decorella Stph. Hs. 210.  
 Propinquella Stt. Hs. 207 b.  
 Atra Hw. (Hellerella Dup.) Hs.  
   211.  
  
   Chrysoclista Stt.  
 Linneella Clerck. Hs. 213.  
  
   Psacaphora Hs.  
 Terminella Westw. Hs. 213 a.  
  
   Batrachedra Stt.  
 Praeangusta Hw. Hs. 225.  
 Pinicolella Dup. Hs. 226.  
  
   Stathmopoda Stt  
 Pedella L. Hs. 223.  
  
   Cosmopteryx Hb.  
 Lienigiella Z. Hs. 224 a.  
 Eximia Hw. Hs. 224.  
  
   Elachista Tr.  
 Subalbidella Schläg. Hs. 47.  
 Argentella Clerck. Hs. 48.  
 Anserinella Z. Hs. 50.  
 Cerusella Hb. Hs. 49.  
 Utonella Frey. Hs. 53.  
 Lugdunensis Frey. Hed. 40.  
 Dispilella Z. Hs. 51.

- Triatomea Hw. H. 52.  
 Paludum Frey Hs. 54.  
 Cinctella Z. Hs. 46.  
 Nigrella Tr. (Aridella Hein.)  
     Hs. 61.  
 Bedellella Sirc. Hs. 55.  
 Perplexella Stt. Hs. 56.  
 Baltica Hering. Hed. 39.  
 Oppositella Hein. Hed. 38.  
 Atricomella Stt. Hed. 37.  
 Luticomella Z. Hs. 57.  
 Albifrontella Hb. Hs. 58.  
 Apicipunctella Stt. Hs. 59.  
 Nobilella Z. Hed. 41.  
 Magnificella Tgstr. Hs. 60.  
 Incertella Frey. Hs. 62.  
 Exactella HS. Hs. 63.  
 Montanella Wecke. Hs. 64.  
  
     Tischeria Z.  
 Complanella Hb. Hs. 228.  
  
     Lithocolletis Hb.  
 Cramerella F. Hs. 80.  
 Quercifoliella Z. Hs. 65.  
 Alniella Z. Hs. 77.  
 Ulmifoliella Hb. Hs. 75.  
 Spinolella Hb. Hs. 74.  
 Padella Glitz. Hs. 69.  
 Sorbi Frey. Hs. 68.  
 Oxyacanthae Frey. Hs. 67.  
 Pomifoliella Frey. Hs. 66.  
 Cavella Z. Hed. 42.  
 Faginella Z. Hs. 70.  
 Carpinicolella Stt. Hs. 71.  
 Coryli Nicelli. Hs. 72.  
 Salictella Z. Hs. 73.  
 Strigulatella Z. Hs. 78.  
 Lautella Z. Hs. 76.  
 Stettinensis Nicelli. Hs. 82.  
 Emberizaepennella Bouché. Hs.  
     83.  
 Tristrigella Hw. Hs. 81.  
  
 Sylaela Hw. Hs. 79.  
 Populifoliella Frey. Hs. 84.  
  
     Lyonetia Hb.  
 Clerckella L. Hs. 229.  
 v. Aereella Tr.  
  
     Phyllocnistis Z.  
 Suffusella Z. Hs. 230.  
  
     Cemiostoma Z.  
 Scitella Z. Hed. 43.  
  
     Bucculatrix Z.  
 Nigricomella Z. Hs. 231.  
 Cristatella Z. Hed. 45.  
 Cidarella Z. Hs. 232.  
 Thoracella Thnbg. Hs. 237.  
 Maritima Stt. Hed. 44.  
 Ulmella Z. Hs. 233.  
 Ratisbonensis Stt. Hs. 234.  
 Crataegi Z. Hs. 235.  
 Frangutella Goeze (Frangulella  
     Z) Hs. 236.  
  
     Opostega Z.  
 Salaciella Tr. Hs. 238.  
 Auritella Hb. Hs. 238 a.  
 Crepusculella Z. Hs. 239.  
  
     Nepticula Z.  
 Oxyacanthella Stt. Hs. 90.  
 Pomella Vaugh. Hs. 85.  
 Minusculella HS. Hs. 88.  
 Aucupariae Frey. Hs. 89.  
 Atricapitella Hw. ♂ (Ruficapi-  
     tella Hw. ♀) Hs. 86.  
 Samiatella HS. Hed. 46.  
 Anomalella Goeze. Hs. 87.  
 Aeneofasciella HS. Hs. 91.  
 Aurella F. Hed. 47.  
 Splendidissimella HS. Hs. 92.  
 Marginicolella Stt. Hs. 93.

Regiella HS. Hed. 48.  
 Gratosella Stt. Hs. 94.  
 Alnetella Stt. Hs. 95.  
 Plagicolella Stt. Hs. 98.  
 Betulicola Stt. Hs. 97.  
 Microtheriella Stt. Hs. 96.  
 Argentipedella Z. Hs. 100.  
 Angulifasciella Stt. Hs. 103.  
 Atricollis Stt. Hs. 102.  
 Tityrella Stt. Hs. 99.  
 ? Malella Stt. Hs. 101.  
 ? Mytillella Stt. Hs. 104.  
 Salicis Stt. Hs. 105.  
 v. Vimeniticola Frey (Diversa  
 Glitz) Hs. 106.  
 Floslactella Hw Hs. 107.  
 Argyropeza Z. Hs. 110.

Assimilella Z. Hs. 109.  
 Trimaculella Hw. Hs. 108.

**Micropterygina** HS.

Micropteryx Hb

A. Micropteryx Z.

Calthella L. Hs. 1.

Aruncella Sc. Hs. 2 a.

Thunbergella F. Hs. 3.

Aureatella Sc. Hs. 2.

B. Eriocrania Z.

Fastuosella Z. Hs. 4.

Semipurpurella Stph. Hs. 5.

Unimaculella Zett. Hed. 49.

# Biologiske Bidrag.

Af

**W. Schlick.**

Coleoptera.

Idet jeg nedenfor har samlet en Del Iagttagelser over danske Billelarver, er det ikke derved min Mening at levere en sammenhængende systematisk Fortegnelse over disse, men dels at give et ringe Bidrag til Oplysning om deres Forekomst og Levetid, dels ved en kort Fremstilling af den Fremgangsmaade, jeg har anvendt for at samle dette Materiale, at give Andre Veiledning og Lyst til at fortsætte denne Indsamling af Larver.

Efter i henved 30 Aar at have beskjæftiget mig med Billelarver og ogsaa klækket adskillige, dog nærmest planteædende, som er ulige lettere at forfølge i deres Udvikling, da den Føde, de skulle have, i Reglen følger af sig selv, besluttede jeg iaar især at henvende min Opmærksomhed paa de Larver, der leve af Rov, og forsøge, ved en mere rationel Indsamling af disse at faa saa mange som muligt klækkede af dem. De Larver, jeg tidligere havde fundet, henhørende til denne Gruppe, havde jeg bestemt efter Prof. Schiødtes udmærkede Arbejde over Billelarver, saavidt dette strakte, ligesom jeg

ogsaa havde været saa heldig at kunne levere ham flere gode Bidrag dertil; men der var een Ting, jeg stadig savnede i hans Arbeide. nemlig nærmere Angivelse af den Aarstid, paa hvilken man skulde søge Larverne; og det er dog, efter min Mening, af yderste Vigtighed at kjende denne, for at kunne vente et godt Resultat.

Naar man i nogle Aar har samlet Biller, faar man snart den sorgelige Erfaring, at Sommerferien, den saakaldte »Grønærtetid«, der er sløi paa alle Omraader, ogsaa er det for Billernes Vedkommende. Der er ingen, eller dog kun meget faa, at erholde i Maanederne Juli og August. I September derimod vrimler det igjen af Biller, og dette maa have sin naturlige Aarsag. At Imagines indfinde sig paany, efter at have været saa lang Tid borte, kommer af, at netop paa denne Tid mange Biller tilendebringe deres Udvikling. Jeg vil derfor raade Entomologerne til, naar de holde Ferie, og de mene, der »Intet er at gjøre«, da at lægge sig efter Billelarver — de ville ikke fortryde at have gjort det.

Ganske vist har det, netop paa denne Aarstid, sine Vanskeligheder at komme Larverne paa nært Hold; men de kunne nok ved Udholdenhed overvindes.

Naar Kornet staar paa Markerne, Skovbunden bedækkes af hoit Græs, Enger og Moser ligeledes, eller ere oversvømmede; naar Vandhuller enten er tilgroede eller udtorrede, og man bliver jaget væk allevegne ved opslaaede Plakater med »Adgang forbydes«, saa er det ikke saa lige en Sag at komme til. Dog man skal blot gaa dristigt paa, og selv om de vrede Eiermænd af Plakaterne komme til, kunne de i Reglen stemmes forsonlige, naar man, efter en lille Sladder med dem, overtyder dem om, at man gjør mere Nytte end Skade ved at betræde deres Territorium.

Dog det er ikke alene i Sommerferien, at man kan indsamle Larver, man kan det hele Aaret rundt, naar

blot Frost og Sne ikke lægger uovervindelige Vanskeligheder i Veien. Man har imidlertid ikke lige god Udsigt til Klækning af Larver paa de forskjellige Aars-tider. De Billelarver, man finder sent om Efteraaret eller tidligt om Foraaret, ere altid yngre Individder, der først gennem flere Hudskifter opnaa deres fulde Størrelse. Ja selv om Dyrene overvintre som Pupper, komme Imagines først frem i April eller allertidligst i Slutningen af Marts. Dette retter sig naturligvis for en stor Del, efter som Vinteren har været langvarig eller ej.

Naar først Sneen begynder at smelte, og Solens Straaler gjøre deres Magt gjældende, saa vaagne Insekterne til nyt Liv; Larverne tage »den sidste Bid« for med godt Huld at forvandles til Pupper, og efter kortere eller længere Tid, 1—3 Uger, komme de frem som Imagines.

Jeg skal nu gaa lidt nærmere ind paa at vise, hvorledes jeg har samlet mine Larver, og hvilke Redskaber, jeg har benyttet dertil. Paa mine Ture medfører jeg altid en Vandketser, en lille Spade til at grave efter Larver og Pupper med, et eller to Stykker hvidt Tøi til at ryste ud paa, en Sigte, Stemmejern, Samleglas, nogle Spiritusglas, nogle Poser og Blikæsker samt en Del smaa Reagensglas, for i dem at kunne isolere Larver og Pupper. Med Hensyn til selve Fremgangsmaaden for Indsamlingen har jeg fulgt en noget anden end den, min ærede Forgænger paa dette Omraade, Dr. phil. Fr. Meinert, hvem Professor Schiødte har at takke for Størstedelen af sit Billelarvemateriale, har brugt. Han søgte nemlig især at erholde Pupper med Larvehud eller nyligt udviklede Dyr med deres bag dem liggende Larve- og Puppehude. Jeg er gaaet et Skridt videre og har søgt Dyrene, om end just ikke lige »ab ovo«, hvad jeg da iøvrigt i enkelte Tilfælde ogsaa har



gjort, saa fra smaa Larver, fulgt dem saa vidt muligt i hele deres Opvækst, og naar jeg da ansaa dem for modne til Klækning, forsøgt denne. At denne naturligvis ikke altid lykkes, følger af sig selv. Dog har man alligevel Udbytte deraf, idet man samler Erfaring og lærer Arter at kjende, som man maaske næste Gang med bedre Held kan forsøge det med. Ofte bekvemme de sig dog, naar de mærke, at der ikke længere vanker Føde, efter længe at have været urolige, krøbet frem og tilbage, snoet sig i alle Retninger, til at danne sig en Puppehule i den Jord, hvori de ere anbragte, og er man først kommen saa vidt, gaaer Resten i Reglen temmeligt let, naar man blot sørger for, at Jorden hverken holdes saa tør, at Dyrene dø, eller saa vaad, at den skimler. Dagligt Tilsyn er nødvendigt, dels for at kontrollere Ovennævnte, dels for at kunne notere, naar Forpupningen og Udviklingen til Imago finder Sted. Har Dyret forpuppet sig, bør man med Lempe, uden at forstyrre Puppen, udtage Larvehuden, vadske den godt ren med en Pensel, og komme den for sig selv i et Glas med Spiritus, idet man nøie mærker Glasset som sammenhørende med Puppen, saa at ingen Forveksling senere er mulig. Er Imago kommen frem, skal man ligeledes straks borttage Puppehuden, inden Dyret ødelægges eller æder den, og ligesom ved Larvehuden udvaske den godt, før man kommer den ned til denne. Imago selv bør ikke dræbes, før den er tilstrækkelig udhærdet, saa at Arten med Lethed kan konstateres, og den bør altid dræbes i et særskilt Glas, saa at den først som død samles med sine tidligere Hude; kommer man den som levende sammen med disse, vil den let i sin Dødskamp kunne ødelægge dem begge. Man faaer paa denne Maade ganske udmærkede Larvehude, brugbare til Sammenligning med sit indsamlede Larvemateriale, ligesom man, i det Tilfælde at Larverne have

foreligget i rigeligt Antal, allerede véd bestemt, hvilken Larve man har givet til Klækning.

Naar jeg er kommen hjem fra en Excursion, har jeg altid omhyggeligt sorteret mine Larver, hver Art i sit Glas; jeg har noie studeret dem, saa at jeg paa næste Tour straks kunde kjende dem igjen, hvis jeg atter fandt dem, og jeg er kommen til det Resultat, at det kun daarligt betaler sig at slaa Alt sammen i een Botte, hvad man ikke straks kan bestemme, blot for at spare paa Glas.

Til Klækning har jeg anvendt smaa Reagensglas, fyldte med fin Jord, fri for Sten og lukkede foroven med Bomuld, naar Talen var om en enkelt større Larve eller flere smaa; har jeg derimod havt flere Larver, har jeg brugt Sylteglas eller Blikdaaser, ligeledes fyldte med Jord.

Man kunde maaske indvende, at man ved af et større Parti Larver, som man antager for at være samme Art, at udtage nogle til Klækning, kunde have blandet flere Arter sammen; ganske vist, det kan man komme til at gjøre, men derfor holder jeg ogsaa altid de enkelte klækkede Dyr med deres tilsvarende Hude hver for sig, uden senere at forene dem med Hovedmassen; man er da altid Herre over at kunne berigtige opstaaede Feil, og desuden er man mindre udsat for at begaa disse ved at bruge en paa ovennævnte Maade erhvervet god Larvehud, end naar man skal anvende de indtørrede, mangan Gang i Stumper og Stykker, bag ved de nysudkomne Dyr liggende Hude; thi kun, naar disse ere særlig distinkte, kunne de bruges; ved nærstaaende Arter ville de vist i Reglen vise sig uanvendelige.

Det er ikke noget stort Terrain, hvorover mine Excursioner have strakt sig; det er hovedsagelig Kjobenhavns nærmeste Omegn og den tilstødende Del af det nordostlige Sjælland, der iaar er bleven afsøgt, men til

Gjengjæld er jeg kommen desto oftere paa de enkelte Steder, saa at jeg har kunnet holde Øie med Larvernes Udvikling fra mindre til fuldvoksne; dog led Undersøgelsen en Del Skade, ved at jeg paa Grund af stadigt daarligt Veir i et Par Uger i Midten af Juli Maaned ikke kunde komme ud paa Fangst; det viste sig da, at ikke saa faa Arter trods Veiret vare udviklede til Imagines.

Det meste Udbytte har jeg faaet i Vand, under visent Løv og forraadnede Plantedele, i Svampe, Muldvarpeskud og trødsket Træ, samt under Bark og i Sand ved Søbredder; derimod have de faa Gange, jeg har undersøgt Myretuer og gammelt Halm, intet Resultat givet. Naar jeg har brugt Ketseren eller indsamlet Svampe og trødsket Træ, har jeg altid rystet hele Indholdet ud paa et hvidt Klæde, ligesom jeg i Reglen, naar jeg saa, at der var godt Liv, tog det hjem med i smaa Poser. Man baade sparer Tid og faar ofte hjemme ved nøiere Undersøgelse langt mere, end man vilde have faaet ude, da mange Larver ere smaa og yderst træge i det Frie, især naar Vejret er koldt.

De Larver, som skulle opbevares i Spiritus-samlingen, anbringer jeg altid, saa vidt muligt, med Hovedet nedad i smaa Reagensglas; de ere da mindre udsatte for at ødelægges; især gaa Larvernes Cerci, der ere af stor Betydning for Bestemmelsen, let i Stykker, naar de støde mod Bunden af Glasset, hvorimod Munddelene bedre kunne taale det.

Hovedmassen af de nedenfor beskrevne Arter ere indsamlede iaar og af mig selv; dog har jeg modtaget flere værdifulde Oplysninger af Andre, især af de Herrer stud. mag. S. Jensen og Typograf E. Rosenberg, hvilke jeg herved aflægger min forbindtligste Tak. Ligeledes takker jeg Hr. Museumsinspector, Dr. phil. Fr. Meinert,

for den Velvillie, hvormed han har indrømmet mig Tid til mine Excursioner.

Med Hensyn til Nomenklaturen har jeg benyttet de i Prof. Schiødtes Fortegnelse over danske Biller givne Benævnelser for Arterne, hvorimod jeg har anvendt samme Rækkefølge for Familierne og Slægterne, som Dr. Meinert har brugt i sin Fortegnelse over zool. Museums Billelarver, og til hvilken jeg ogsaa kan hen- vise angaaende en Del tidligere af mig klækkede Larver.

Til Slutning skal jeg til Brug for vordende Bille- larvesamlere nævne en Bog, der er udgivet af M. Ru- pertsberger. Den udkom i 1880 under Tittel: »Biologie der Käfer Europas«, og iaar er der udkommet et et Tillæg dertil: »Die biologische Literatur über die Käfer Europas von 1880 an«. I disse to Skrifter inde- holdes foruden Angivelse af den til Dato bekjendte bio- logiske Litteratur tillige en systematisk Fortegnelse over alle beskrevne Billelarver i Europa. Disses Antal be- løb sig i 1880 til ca. 1300, og er siden den Tid blevet forøget med ca. 400, altsaa ialt ca. 1700; dog er der endnu mange Huller at udfylde, og man vil se, at der i min lille Fortegnelse er opført flere nye Arter, der ikke findes i hans Kataloger, og som jeg har betegnet med en \* ved Artsnavnet.

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### *Cicindelidæ.*

*Cicindela campestris* L. Larverne til denne Art tog jeg 27. 8. 94 i Ruderhegn i større Antal, og senere samme Sted 14. 9. 94, ligeledes i større Antal, ved at grave dem ud af deres Huller; jeg har forsøgt

at klække dem, men det er endnu ikke lykkedes mig at faa dem til at forpuppe sig. Ifølge Kraatz forpuppe Larverne sig enten i August, og Imago kommer da ud efter ca. 4 Ugers Forløb, eller ogsaa sker Forpupningen langt senere, og de overvintre da som Pupper for først at komme frem i April næste Aar.

### *Carabidæ.*

*Omophron limbatum* L. Den 5. og 19. August iaar tog jeg Larver, Pupper og Imagines i Sandet ved Bredden af Fuur Sø. En Larve fra 5. 8. 94 forpuppede sig 14. 8. 94, og Imago kom frem 23. 8. 94. Den 8. October søgte jeg forgjæves Larverne paa samme Sted.

*Notiophilus aquaticus* F. Geelskov, 9. 9. 94, en stor Larve under Løv.

*N. biguttatus* F. Dyrehaven, 19. 9. 94, en Larve i trødsket Træ; forp. 23. 9. 94, udv. 3. 10. 94.

*Elaphrus riparius* L. En Puppe med Larvehud blev tagen af Hr. Typograf Rosenberg ved Fuur Sø 30. 9. 94 i Sand; udv. samme Dag.

*Nebria brevicollis* F. Jeg tog tre større Larver i Dyrehaven 30. 1. 94, og senere samme Sted 28. 4. 94 nogle Larver og Pupper med Larvehud i Jord. En Puppe udv. 4. 5. 94. Larven overvintrer.

*N. livida* L. Paa Vesterfælled fandt jeg 31. 8. 94 Imagines i Mængde, samt en lille Larve, og senere 16. 9. 94 nogle faa smaa Larver sammen med Imagines. Larven overvintrer.

*Leïstus rufescens* F. I Lyngby Mose tog jeg 12. 5. 94 en Del nyligt udkomne Imagines; tidligere har jeg paa samme Sted i Februar sigtet Larven, som havde overvintret, i Mængde, af Løv.

*L. rufomarginatus* Duft. Jeg tog i Dyrehaven 11. 2. 94 en ung overvintret Larve under

Løv, og 19. 5. 94 fandt jeg i Lyngby Mose en Puppe med Larvehud, som udv. 22. 5. 94.

*Carabus*. I Mai Maaned har jeg adskillige Steder (Søllerød Kirkeskov, Ruderhegn, Utterslevmose, Geelskov og Dyrehaven) i Muldvarpeskud fundet Æg, og deraf klækket Larver, hørende til denne Slægt. De laa i Reglen i et Antal af 7—9 sammen, og Larverne, der kom ud deraf, vare ca. 8<sup>'''</sup> lange, lyse og bløde, men bleve i Løbet af een Dag mørke og haarde. Det lykkedes mig nok at faa dem til at skifte Hud en Gang, men saa døde de.

*Cychrus rostratus* L. Jeg tog i Dyrehaven 28. 4. 94 en temmelig stor Larve i Jord, ligesom Hr. A. Ditlevsen har vist mig en lille Larve af denne Art. som han havde taget ved Donse i October under Elleløv, hvilket tyder hen paa, at Larven overvintrer.

*Loricera pilicornis* F. Sammen med flere Imagines blev en Larve med Puppehud tagen paa Vesterfælled 16. 9. 94; ligeledes flere fuldvoksne Larver i Begyndelsen af September samme Sted, samt i Dyrehaven. Imago overvintrer.

*Chlænium nigricornis* F. Fuur Sø, 19. 8. 94, i Sand, en Puppe og en fuldvoksen Larve. (Rosenberg).

*Badister bipustulatus* F. I en Grøft ved Vesterfælled fandt jeg 31. 8. 94 en temmelig stor Larve; den døde under Klækningsforsøget. Imago overvintrer.

*Broscus cephalotes* L. Vesterfælled, 16. 9. 94, flere halvvoxne Larver; jeg har tidligere taget Larven mange Steder, men altid om Efteraaret mindre Larver og voksne i April. Larven overvintrer.

*Bradycellus pubescens* Payk. Vesterfælled, 16. 9. 94, mange Imagines og nogle smaa Larver.

*Pterostichus cupreus* L. Ruderhegn, 12. 8. 94, en Larve, forp. 17. 8. 94, udv. 29. 8. 94. Frederiksdal.

2. 9. 94, 2 Pupper med Larvehud. Begge Steder er den tagen i Ler af Rosenberg.

*P. niger* F.\* Utterslev Mose, 13. 5. 94, i et hult Træ; forp. 7. 6. 94, udv. 18. 6. 94 (2 Larver).

*P. nigrita* F. Fuur Sø, 29. 7. 94, en Larve i Sand, forp. 2. 8. 94, udv. 9. 8. 94. Damhusmosen, 16. 8. 94, en Larve i Jord, forp. 20. 8. 94, udv. 27. 8. 94.

*P. anthracinus* Ill.\* Ved Ladegaardsaaen, 23. 8. 94, fandt jeg under forraadnende Plantedele en Larve, som forp. 2. 9. 94, og udv. 12. 9. 94.

*P. oblongopunctatus* F. Dyrehaven, 24. 8. 94, to Larver under Løv; den ene forp. 24. 8. 94 og udv. 2. 9. 94; den anden forp. 8. 9. 94 og udv. 18. 9. 94.

*Amara convexiuscula* Marsh. Vesterfælle, 8. 3. 94, en Del Larver i fed Jord paa en Grøftkant; 1 Larve forp. 27. 3. 94, udv. 10. 4. 94; 1 Larve forp. 29. 3. 94, udv. 11. 4. 94. Jeg havde samme Sted, 18. 10. 93, ligeledes taget adskillige Larver, men de døde under Forsøget paa at klække dem. Larven overvintret.

*A. patricia* Duft. Geelskov i Jord, 29. 4. 94, to Larver, forp. 1. 5. 94, udv. 18. 5. 94.

*Calathus melanocephalus* L.\* Dyrehaven, 28. 4. 94, i Jord, en Larve, forp. 8. 5. 94, udv. 22. 5. 94.

*Anchomenus parumpunctatus* F.\* En Larve blev funden 19. 7. 94 i en Grøftvold i Seilflod ved Aalborg; den forp. 24. 7. 94, og Imago fremkom 10. 8. 94. (S. Jensen).

*A. viduus* Panz.\* Damhusmosen, 3. 9. 94, en Larve, forp. 11. 9. 94, udv. 19. 9. 94.

*A. pelidnus* Payk.\* Damhusmosen, 3. 9. 94, en Larve, forp. 8. 9. 94, udv. 15. 9. 94.

*Patrobus excavatus* Payk. Dyrehaven, 20. 5. 94, en Puppe med Larvehud; ibid. 28. 4. 94, en Puppe med Larvehud, udv. 8. 5. 94.

*Bembidium femoratum* St. Hr. S. Jensen

har fundet en Puppe i en Grøftevold i Seilflod, 19. 7. 94, og udv. Imago 25. 7. 94.

*B. ustulatum* L. Vesterfælled, 31. 8. 94, en Larve i Ler; forp. 2. 9. 94, udv. 12. 9. 94.

### *Dytiscidæ.*

*Haliphus lineatus* Aub.\* Fuur Sø, 29. 7. 94, fire Pupper uden Larvehud i Sand; udv. 31. 7. 94.

Foruden denne Art har jeg i Ladegaardsaaen, 21. 8. 94, og flere Gange senere taget tre forskellige *Haliphus* larver, derimellem *H. ruficollis* de Geer, den sidste især i stort Antal; men det lykkedes mig ikke at klække dem.

*Hyphydrus ovatus* L. Jeg har taget Larven i større Antal mange forskellige Steder i Juni—Aug; en Larve fra Donse 8. 7. 94, forp. 12. 7. 94 og udv. 18. 7. 94.

*Hydroporus lineatus* F.\* Larven har jeg taget flere Steder, og et Stykke fra Dyrehaven, 17. 8. 94, forp. 24. 8. 94 og udv. 2. 9. 94.

*H. palustris* L.\* Denne almindelige Larve har jeg især fundet i Ruderhegn i Juni, og samme Sted fandt jeg 17. 6. 94 flere Pupper med deres Larvehud liggende i Huler, som de havde dannet i stenhaardt Ler; en Larve fra 10. 6. 94, forp. 21. 6. 94 og udv. 26. 6. 94.

*H. depressus* F. Larver og Pupper har jeg taget ved Fuur Sø i Sand i Juli og August; en Larve fra 5. 8. 94, forp. 6. 8. 94 og udv. 13. 8. 94; ligeledes har jeg fundet Larver i større Antal i August i Ladegaardsaaen, baade ude ved Damhusmosen og her tæt ved Kjøbenhavn.

*H. halensis* F. Donse, 8. 7. 94, flere Larver; en forp. 13. 7. 94, udv. 19. 7. 94. I Ladegaardsaaen, 21. 8. 94, Larver i større Antal.



*H. reticulatus* F.\* Larver af denne Art har jeg taget i større Antal, blandt andet i Ruderhegn, 10. 6. 94, men jeg var uheldig med Klækningen; det er først Hr. S. Jensen, der, ved at klække et Stykke fra Ruderhegn, 22. 8. 94, som forp. 31. 8. 94 og udv. 18. 9. 94, har fastslaaet Arten.

*Laccophilus hyalinus* de Geer.\* Jeg har Larven fra Ladegaardsaaen, hvor jeg i Aug. tog den i stort Antal; en Larve fra 14. 8. 94 forp. 22. 8. 94 og udv. 31. 8. 94.

*L. minutus* F. Larven var almindelig i Dyrehaven og Ruderhegn fra Juni—Aug.; to Larver fra førstnævnte Sted, 29. 6. 94, forp. 12. 7. 94 og udv. 19. 7. 94.

*Agabus bipunctatus* F. Hr. S. Jensen har fundet Pupper i Seilflod 15. 7. 94 i Skrænten af en Lergrav; Imago fremkom 21. 7. 94.

*A. abbreviatus* F.\* Larven til denne Art har jeg kjendt i mange Aar, men ikke vidst, hvortil den hørte; dog havde jeg en Mistanke derom; denne viste sig at være rigtig, idet det lykkedes for Hr. S. Jensen at klække Imago 13. 7. 94 af en Larve fra Dyrehaven, 29. 6. 94, som forp. 1. 7. 94. Jeg har selv taget Larven iaar i Mai og Juni i stort Antal baade i Dyrehaven og Ruderhegn.

*A. fuscipennis* Payk.\* En Del Pupper med Larvehud ved Damhusmosen 29. 5. 71 under Kvas; udv. 1. 6. 71.

*A. bipustulatus* L. I Dyrehaven tog jeg en Larve, som udv. 10. 5. 94. Arten overvintrer som Larve.

*A. Sturmii* Schönh.\* Ruderhegn, 17. 6. 94, en Larve, forp. 27. 6. 94, udv. 2. 7. 94; en anden Larve fra Dyrehaven, 29. 6. 94, forp. 19. 7. 94 og udv. 26. 7. 94.

*Ilybius fenestratus* F. Larverne til denne Art tog jeg den 18. og 24. Oct. ifjor i stor Antal paa for-

skjellige Udviklingstrin i et Vandhul paa Vesterfælled; iaar fandt jeg 13. 4. 94 i Vandhullets lerede Kant nogle faa Larver liggende i deres Puppeleie dybt inde i Leret; de forp. 21. 4. 94 og udv. 7. 5. 94 til Imagines; ligeledes fandt jeg ved at grave i Muldvarpeskud i Utterslevmose 13. 5. 94 mange Pupper med Larvehud, og Dagen efter igjen i Damhusmosen under lignende Forhold et ringere Antal Pupper. De brugte fra 8—12 Dage til deres Udvikling.

*I. subæneus* Er.\* Arten er klækket af Hr. S. Jensen, der i Utterslevmose 12. 4. 94 fandt en Larve. der forp. 13. 4. 94 og udv. 27. 4. 94.

*I. quadriguttatus* Lacord.\* Damhusmosen, 14. 5. 94, en Del Pupper med Larvehud i Jord; udv. efter 9—12 Dages Forløb; en Larve, der var tagen samtidig, forp. 15. 5. 94 og udv. 28. 5. 94.

*I. ater de Geer*.\* I Utterslevmosen og i Damhusmosen tog jeg paa ovennævnte Dage ligeledes Pupper med Larvehud til denne Art, men kun i ringe Antal: de brugte samme Tid til deres Udvikling som de to andre Arter.

Alle 4 *Ilybius*arter overvintre som Larver.

*Colymbetes notatus* F. Hr. S. Jensen fandt Larver og Pupper 15. 7. 94 i Skrænten af en Lergrav i Seilflod, og klækkede en Puppe 20. 7. 94.

*C. collaris* Payk.\* Larven var meget almindelig i Ruderhegn i Juni, og jeg har 2. 7. 94 klækket en Larve derfra, som var tagen 17. 6. 94.

*C. fuscus* L. Paa Amager 25. 2. 94 fandt Hr. Jensen nogle Larver, som forp. 22. 4. 94 og udv. 16. 5. 94.

*Dytiscus marginalis* L. En Larve fra Ruderhegn, 17. 6. 94, forp. 28. 6. 94 og udv. 6. 7. 94; en anden Larve *ibid.*, 27. 7. 94, tagen i Vand, forp. 6. 8. 94 og

udv. 18. 8. 94; en tredje Larve, fra Donse 8. 7. 94, i Vand, forp. 21. 7. 94 og udv. 2. 8. 94.

*D. circumcinctus* Ahr.\* En Larve fra Ruderhegn, 17. 6. 94, forp. 28. 6. 94 og udv. 6. 7. 94; en Puppe med Larvehud *ibid.*, 27. 7. 94, udgravet af Leret, udv. 1. 8. 94.

Desuden har jeg i October iaar taget nyligt udkomne Imagines; Udviklingen maa altsaa enten være sket successive, eller der har i Sommer været 2 Generationer. Larven overvintrer ikke; man finder aldrig om Efteraaret eller tidligt om Foraaret Larver hørende til denne Slægt; det er først i April, at de spæde Larver vise sig.

*Hydaticus bilineatus* de Geer.\* En Puppe uden Larvehud fandt jeg 27. 9. 88 ved Kanten af Hulemose Sø ved Nyraad; den udv. 6. 10. 88.

Af Larver hørende til denne Slægt har jeg i Juni iaar i Ruderhegn fundet mindst to forskjellige Arter i større Antal, ligeledes *ibid.* 1. 7. 94 et Par Pupper, men desværre uden Larvehud. I October fandt jeg igjen bløde Stykker baade af *H. Hybneri* og *H. stagnalis*, som nyligt maatte være udkomne. Larven overvintrer ikke.

*Acilius sulcatus* L. Jeg har fundet fuldvoksne Larver i Ruderhegn i Slutningen af Juni, og den 1. Juli gravet Pupper ud af den lerede Søkant der.

*A. canaliculatus* Nic. Denne Arts Larver har jeg fundet sammen med den foregaaendes, og til samme Tid, ligesom jeg atter i October har fanget nyligt udkomne Imagines. Larverne overvintre ikke.

### *Gyrinidæ.*

*Gyrinus marinus* Gyll. Donse, 8. 7. 94, 4 store Larver.

*Hydrophilidæ.*

*Hydrous aterrimus* Eschsch. En Larve, som jeg fandt i Ruderhegn 1. 7. 94 i Ler, forp. 17. 7. 94 og udv. 30. 7. 94; samme Sted tog jeg 27. 7. 94 baade Larver og Pupper i deres Huler. Ved Donse 8. 7. 94 fandt jeg to Æggesække i Vandet; af den ene af disse fremkom 15. 7. 94 en Mængde ca. 6<sup>'''</sup> lange Larver.

*Hydrophilus caraboides* L. Ruderhegn, 10. 6. 94, fuldvoksne og mindre Larver mellem hinanden i større Antal.

*Berosus luridus* L. Dyrehaven, 23. 7. 94, en voksen Larve.

*Laccobius minutus* L.\* Fuur Sø, 29. 7. 94, flere Pupper i Sand; udv. 30. 7. 94.

*Spercheus emarginatus* Schall. Dyrehaven, 28. 4. 94, 2 ♀ med Æggesække; disse blev kastede 8. 5. 94, og straks myldrede 152 unge Larver frem; en anden ♀ fra samme Lokalitet, 20. 5. 94, mistede Æggesækken næste Dag, og Ungerne kom frem med det Samme. En af de ♀, jeg havde, fik ikke mindre end 4 Gange ny Æggesæk, og det lykkedes mig at faa Larverne store, rigtig nok paa deres Søskenes Bekostning, skjøndt jeg fodrede dem med Lunge, som de graadigt kastede sig over. De store Larver begyndte at spinde sig ind paa en Mursten, jeg havde lagt til dem i Vandet, og med deres Mandibler gnavede de den Jord af, der fandtes paa Stenen, og lavede sig en Hule deraf; men de blev forstyrrede i deres Arbeide af hinanden og blev ikke forpuppede.

*Cercyon unipunctatum* L.\* En Puppe, sigtet i forraadnende Plantedele ved Damhusmosen, 3. 9. 94, udv. 6. 9. 94.

*Staphylinidæ.*

*Quedius fulgidus* Er. Jeg tog flere Larver i Dyre-

haven i gjærende Bøgemuld, og klækkede en af dem, 26. 4. 94.

*Q. fuliginosus* Grav. I Lyngbymose fandt jeg 19. 8. 94 en Larve og 3 Pupper i Jord; Larven forp. 22. 8. 94 og udv. 6. 9. 94.

*Ocybus brunnipes* F.\* Geelskov, 29. 4. 94, en Larve; forp. 8. 5. 94, udv. 25. 5. 94.

*Leïstotrophus murinus* L. Damhusmosen, 20. 8. 94, en Larve under forraadnende Plantedele, forp. 27. 8. 94, udv. 10. 9. 94; senere tog jeg flere Larver samme Sted.

*Philonthus æneus* Rossi. Damhusmosen, 20. 8. 94, flere Larver; en forp. 27. 8. 94, udv. 7. 9. 94; ogsaa denne Larve tog jeg senere ibid. i større Antal.

*P. fulvipes* F.\* Fuur Sø, 5. 8. 94, Larve i Sand; forp. 8. 8. 94, udv. 19. 8. 94.

*P. varians* Payk.\* Dyrehaven, 17. 8. 94, Larve i Kogjødning; forp. 3. 9. 94, udv. 15. 9. 94.

*Othius fulvipennis* F. Dyrehaven, 24. 8. 94, en Puppe i Gjødning; udv. 27. 8. 94.

*Lathrobium brunnipes* F. Dyrehaven, 24. 8. 94, to Larver i en vaad Grøft under Løv; den ene forp. 31. 8. 94, udv. 8. 9. 94.

*Stenus*. Af denne Slægt fandt jeg i Dyrehaven 17. 8. 94 ved at ketse i Vand 6 Larver af forskjellig Størrelse; en af dem spandt sig en aflang Cocon i det Glas, hvori den var anbragt, men ved et Uheld kom den ikke til Udvikling.

*Bledius talpa* Gyll. Ved Fuur Sø 5. 8. 94 fandt jeg ved at grave i Sandet en Del Larver, Pupper og Imagines, men den forsøgte Klækning mislykkedes.

*Oxytelus sculptus* Grav. Dyrehaven, 2. 9. 94, flere Pupper i Gjødning, udv. næste Dag; samme Sted fandt jeg 5. 9. 94 flere Larver, som udv. 20. 9. 94.

*Omalium nigrum* Grav. Nogle Pupper med

Larvehud fra Dyrehaven, tagne i Fyrsvamp, bleve klækede i Marts 94.

### *Silphidæ.*

*Silpha atrata* L. Ruderhegn, 27. 7. 94, en Larve i Jorden ved Foden af et Træ; forp. 30. 7. 94, udv. 7. 8. 94. Imago overvintrer.

*S. tristis* Ill.\* Fuur Sø, 5. 8. 94, en Larve; forp. 21. 8. 94, udv. 31. 8. 94. (Rosenberg).

*Choleva fusca* L. Kjøbenhavn, 6. 2. 94, i et Brændeskur, temmelig store Larver i Mængde, men kun 1 udviklet Dyr.

### *Histeridæ.*

*Hister unicolor* Ent. Hefte. Damhusmosen, 26. 8. 94, en Larve i forraadnende Plantedele; forp. 4. 9. 94, udv. 18. 9. 94.

### *Nitidulidæ.*

*Brachypterus gravidus* Ill. Larven var temmelig almindelig i Ruderhegn 12. 8. 94 i Blomsten af *Linaria*; den gik ned i Jorden i det Glas, hvori jeg havde anbragt den og forpuppede sig kort efter, men da den overvintrer som Puppe, forsøgte jeg ikke at klække den.

*Omosita colon* L.\* Jeg fandt paa Vesterfælled 18. 10. 93 en Larve og en Puppe af denne Art sammen med Imago i uhyre Mængde; den var ikke blandet med andre Arter.

*Pocadius ferrugineus* F. Ruderhegn, 27. 9. 91, Larven almindelig i Bovister; udv. 21. 10. 91.

### *Cryptophagidæ.*

*Atomaria fimetarii* F.\* Nogle Larver og Pupper fandtes af Hr. cand. pharm. A. Klocker sammen med

talrige Imagines paa Jernbanevolden i October iaar i en Svamp (*Coprinus comatus*).

### *Lathridiidæ.*

*Corticaria transversalis* Gyll.\* Imellem Mosset paa nogle store Rosengaller, som jeg havde faaet af Hr. Kløcker, der havde taget dem i en Have i Valby, fandt jeg 3 Pupper af denne Art; en Puppe udv. 1. 10. 93.

### *Mycetophagidæ.*

*Mycetophagus multipunctatus* Hellw. I Dyrehaven fandt jeg 28. 4. 94 i en Svamp paa et Bøgetræ en Del Imagines af denne Art; de ynglede og forp. 15. 6. 94, samt udv. 25. 6. 94.

*Litargus bifasciatus* F. Dyrehaven, 24. 9. 94, under Bøgebark Larver, Pupper og Imagines; en Larve forp. 26. 9. 94, udv. 7. 10. 94.

### *Dermestidæ.*

*Tiresias serra* Steph. Dyrehaven, 19. 9. 94, under Bøgebark 8 Larver, og *ibid.* 7. 10. 94 12 Larver; jeg har tidligere klækket Dyret fra samme Lokalitet, 12. 5. 74.

### *Byrrhidæ.*

*Byrrhus pilula* L. Dyrehaven, 28. 4. 94, en Larve i Jord; forp. 27. 6. 94, udv. 9. 7. 94.

*Cytilus varius* F. I Tidsvilde tog jeg 13. 8. 92 3 Larver i en Sandgrøft; den ene forp. 28. 8. 92 og udv. 7. 9. 92.

### *Parnidæ.*

*Parnus auriculatus* Ill. Arten blev funden som Puppe i Seilflod i en Grøftevold 19. 7. 94 og udv. 21. 7. 94. (S. Jensen).

*P. prolifericornis* F. Jeg tog af denne Art i Dyrehaven 17. 5. 94 i Alt 4 Larver i et lille Vandhul, hvor kun denne Art fandtes.

*Limnius*. Larver hørende til denne Slægt har jeg taget i Fuur Sø 19. 5. 94 i stor Mængde paa Undersiden af Sten, der laa i Vandet; senere tog jeg dem atter samme Sted, 8. 10. 94. Da baade *Limnius troglodytes* og *L. tuberculatus* fandtes sammen med Larverne, vover jeg ikke at afgjøre, om de høre til den ene eller anden af disse Arter.

#### *Heteroceridæ.*

*Heterocerus hispidulus* Kiesw. Fuur Sø, 5. 8. 94, to Larver i Sand; den ene udv. 11. 5. 94.

#### *Elateridæ.*

*Athous niger* L. Damhusmosen, 14. 5. 94, en Larve i Jord; forp. 17. 5. 94, udv. 30. 5. 94. Lyngbymose, 19. 5. 94, en Puppe med Larvehud; udv. 22. 5. 94.

*Agriotes aterrimus* L. Lyngbymose, 12. 5. 94, en Larve; forp. 25. 6. 94. Dyrehaven, 5. 9. 94, en stor Larve.

*A. lineatus* L. Paa en Mark ved Ladegaardsaaen, 15. 4. 94, Larver i større Antal i Jord; en Larve forp. 28. 6. 94 og klækket.

*A. obscurus* L. Københavns Omegn, nogle faa Larver; udv. 23. 7. 94.

#### *Dascillidæ.*

*Microcara testacea* L. I en Grøft med rindende Vand fandt jeg 28. 4. 94 og 17. 5. 94 i Dyrehaven Larven i stor Mængde mellem Løv; den udv. 24. 5. 94.

*Helodes minuta* L. Lyngby Mose, 12. 5. 94, en Puppe med Larvehud; udv. 18. 5. 94.



*Malacodermata.*

*Telephorus fuscus* L. Søllerød Kirkeskov, 3. 5. 94, en Puppe med Larvehud i Mosejord; udv. 12. 5. 94. Larverne til denne Slægt overvintre.

*T. rusticus* Fall. Søllerød Kirkeskov, 3. 5. 94, en Puppe med Larvehud i Mosejord; udv. 10. 5. 94.

*T. obscurus* L. Søllerød Kirkeskov, 3. 5. 94, en Puppe med Larvehud; udv. 5. 5. 94.

*T. pellucidus* F. Larven fandt jeg allerede 30. 1. 94 i Dyrehaven under Løv; senere igjen her, i Geelskov, i Ruderhegn og i Utterslevmose som Pupper; en Larve fra Dyrehaven 28. 4. 94 udv. 11. 5. 94.

*T. lividus* L. Geelskov, 29. 4. 94, en Puppe med Larvehud; udv. 13. 5. 94. Damhusmosen, 14. 5. 94, en Puppe med Larvehud; udv. 22. 5. 94.

*T. quadripunctatus* Müll. Jeg har taget den som Puppe i Dyrehaven, Lyngby Mose og Søllerød Kirkeskov; en Larve fra Ladegaardsaaen, 26. 4. 94. forp. 14. 5. 94 og udv. 22. 5. 94.

*T. paludosus* Fall.\* Lyngby Mose, 12. 5. 94, en Puppe med Larvehud; udv. 14. 5. 94.

*Rhagonycha testacea* L.\* Søllerød Kirkeskov, 3. 5. 94, Pupper med Larvehud i Mosejord; udv. 5. 5. 94.

*Malthinus frontalis* Marsh.\* Dyrehaven, 18. 3. 94, under Bark to Larver; den ene udv. 18. 4. 94.

*Malachius bipustulatus* L. Dyrehaven, 30. 1. 94, to Larver i trødsket Træ; den ene udv. 8. 3. 94.

*Dasytes coeruleus* F. Dyrehaven, 24. 8. 94, Larver i stort Antal i nedfaldne Grene; ibid. 19. 9. 94, mange Pupper, men kun faa Larver. Dyret overvintrer som Puppe.

*Tenebrionidæ.*

*Mycetocharis axillaris* Payk. Dyrehaven, 11. 2. 94, 5 Larver i en hul Bøg, liggende krumme i deres Puppeleie; en af dem forp. 28. 2. 94. og udv. 16. 3. 94.

*Pythidæ.*

*Rhinosimus ruficollis* L. Dyrehaven, 30. 9. 94, nogle faa Larver sammen med mange Imagines under Barken paa et Bøgestød; en Larve forp. 6. 11. 94.

*Melandryidæ.*

*Tetratoma fungorum* F. Dyrehaven, 30. 1. 94, nogle Imagines og en Mængde Larver, lige fra ganske smaa til fuldvoksne, i Svamp paa et Bøgetræ; ligeledes fandt jeg 11. 2. 94 og 28. 4. 94 Larverne igjen i stort Antal i samme Svamp, men det lykkedes ikke at klække dem.

*Orchesia micans* Panz. Dyrehaven, 11. 2. 94, mange Larver i pjaskvaade nedfaldne Fyrsvampe; ligesaa almindelig var den samme Sted 28. 4. 94. Imago blev klækket i Mai. Larverne fandt jeg igjen 7. 10. 94 under samme Forhold som tidligere.

*Conopalpus testaceus* Oliv. Dyrehaven, 1. 4. 94 en Larve i trøsket Træ; forp. 9. 4. 94 og udv. 27. 4. 94.

*Mordellidæ.*

*Anaspis rufilabris* Gyll.\* Jeg tog 24. 9. 94 i Dyrehaven en Imago med Larve- og Puppehud, liggende inden i en nedfalden trøsket Gren.

*Curculionidæ.*

*Hypera arundinis* F. Geelskov, 17. 9. 94, i Stænglen af *Phellandrium*, Larver og Pupper; udv. 27. 7. 94. (Rosenberg).

*Cionus fraxini* de Geer. Sorø, 18. 6. 68, paa Ask; udv. 23. 6. 68.

*C. pulchellus* Herbst. Ordrup, 24. 6. 94, Larver og Pupper paa *Scrophularia*; udv. 8. 7. 94. (Rosenberg).

*Chrysomelidæ.*

*Crioceris brunnea* F. I Freerslev Hegn ved Hillerød fandt jeg 31. 5. 91 Æg af denne Art paa Lilliekonval; de udv, 6. 6. 91 til Larver.

*Clythra quadripunctata* L. Ørholms Fæled, 13. 5. 92, Larver og Pupper hos *Formica rufa*; udv. 21. 5. 92.

*Gastrophysa polygoni* L. Holte, 19. 8. 94, nogle Larver paa *Polygonum aviculare*; forp. 24. 8. 94, udv. 1. 9. 94. (Rosenberg).

*Chrysomela varians* F. Geelskov, 10. 9. 88, Larven paa *Hypericum*; de bleve klækkede i samme Maaned.

*Gonioctena viminalis* L. Ruderhegn, 3. 6. 94, paa Pil; Larverne bleve klækkede i samme Maaned.

*Agelastica alni* L. Ruderhegn, 27. 7. 94, Larver i stort Antal paa El; forp. 6. 8. 94 og udv. i samme Maaned; jeg havde tidligere truffet den i stor Mængde som Imago paa samme Sted 3. 5. 92. Imago overvintrer.

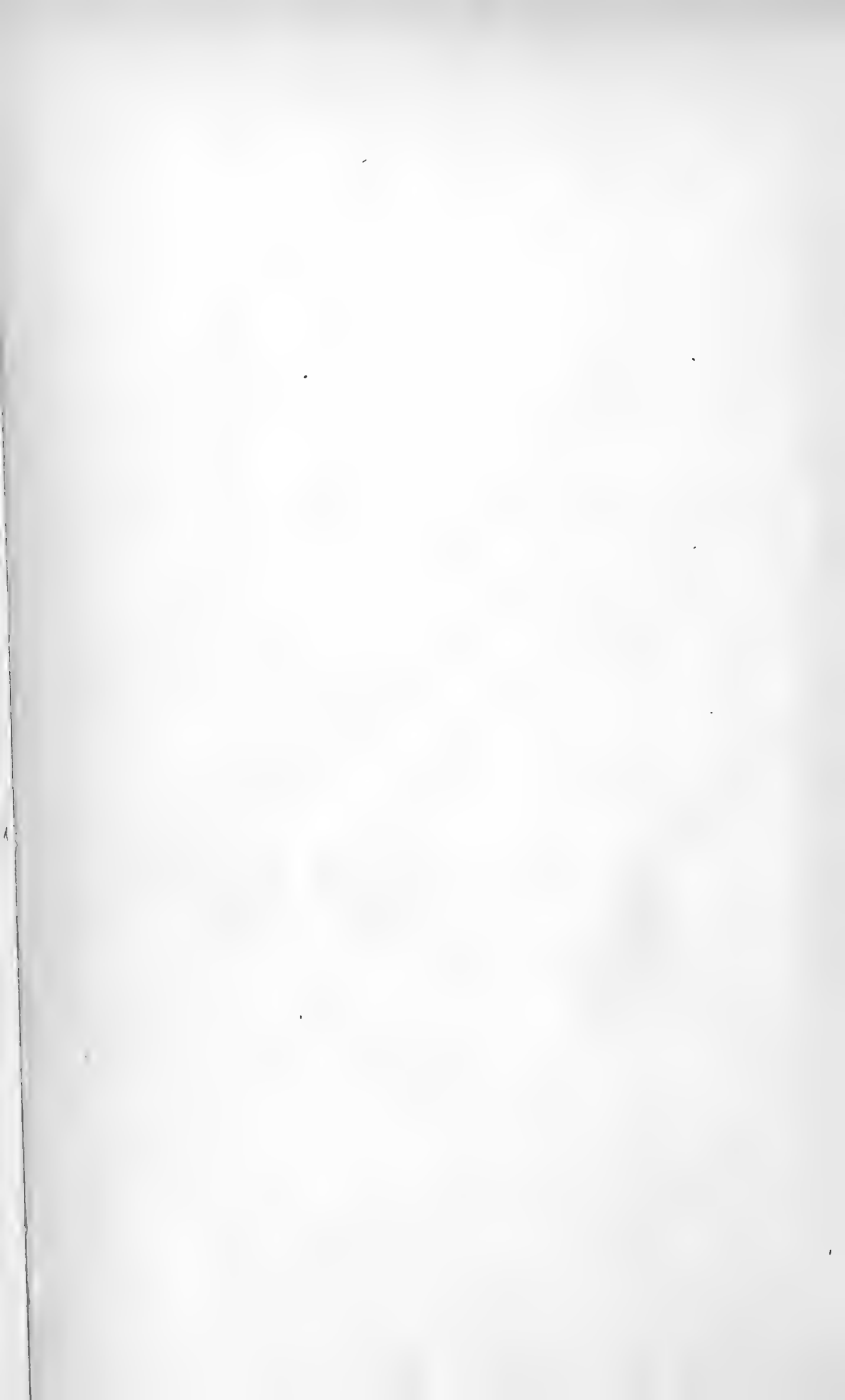
*Galeruca sagittariæ* Gyll.\* Søllerød Sø, 24. 7. 92, paa Vandplanter Larver og Pupper i stort Antal; udv. 26. 7. 92.

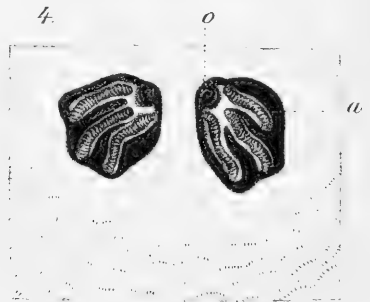
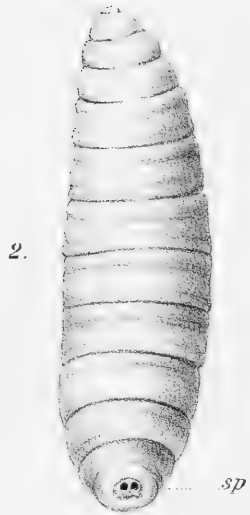
*Erotylidæ.*

*Triplax ænea* Schaller. I Dyrehaven fandt jeg 28. 4. 94 Larverne i stor Mængde i Svamp paa et Bøgetræ; forp. 15. 6. 94 og udv. 25. 6. 94.

*Coccinellidæ.*

*Adonia mutabilis* Schneid.\* Vesterfæled, to Larver paa Sandplanter; forp. 23. 9. 94, udv. 4. 10. 94.







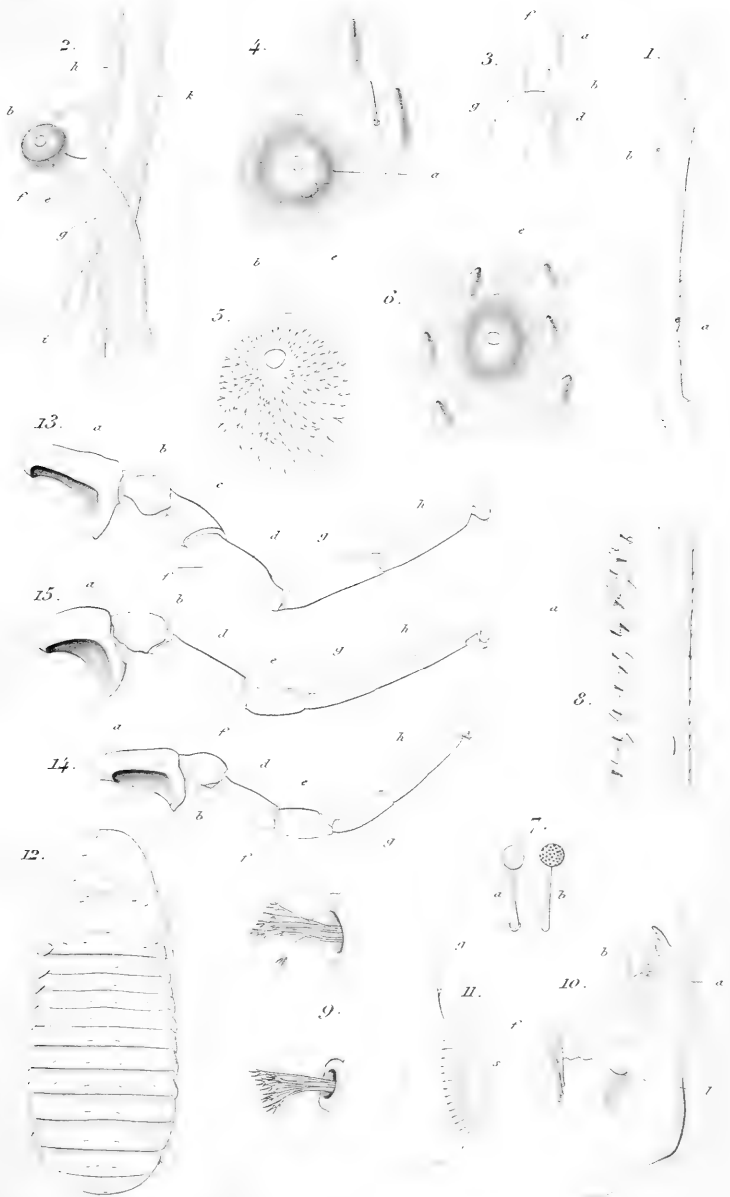


















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KJØBENHAVN.

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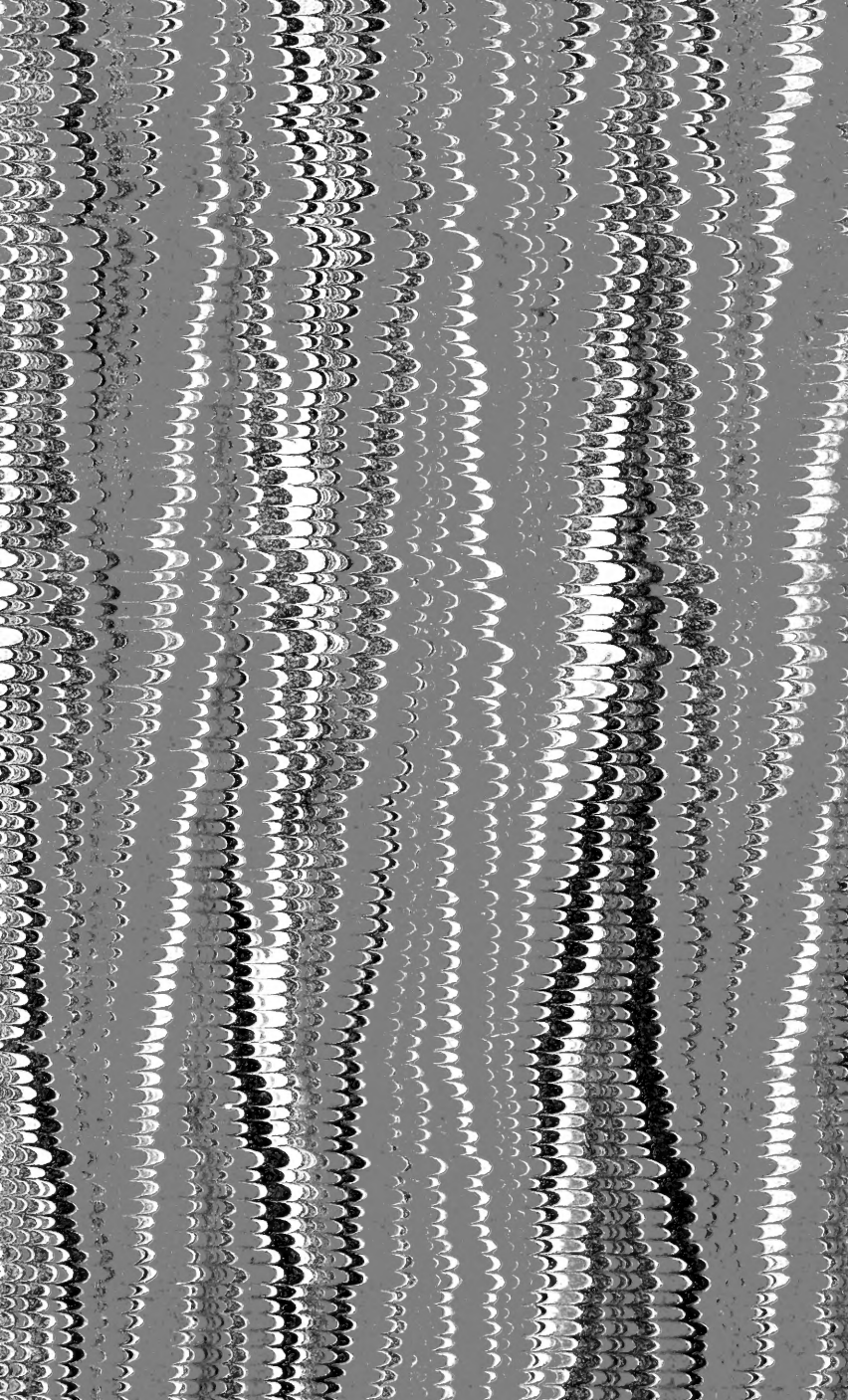












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