

# Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

---

Band 13 , Heft 1: 1-96

ISSN 0250-4413

Ansfelden, 25. Februar 1992

---

**Revision of European species of the subtribe Endaseina, III**  
**Genus: Endasys Foerster, 1868**  
(Hymenoptera, Ichneumonidae)

**Janusz Sawoniewicz and John C. Luhman**

**Abstract**

Genus *Endasys* FOERSTER is revised for Europe. 41 species in 6 groups of species are described: 21 old, 17 new, 1 new name, and 2 new combinations. 7 new synonymies are determined and 2 forms raised to the species status. One holotype is determined and 9 lectotypes are designated. Keys are given for the Holarctic groups of species, and to the European species. Host data is recorded from both literature and specimens.

**Contents**

1. Introduction, 3
2. Taxonomic characters, 5
3. Genus: *Endasys* FOERSTER, 1868, 7
4. Key to the Holarctic groups of species, 8
5. Key to the European species, 9
  - 5.1. Males, 9
  - 5.2. Females, 12

6. Description of species, 15

- Endasys (eurycerus group)*, 15  
    *Endasys eurycerus* (THOMSON, 1896), 16  
    *Endasys lissorulus* sp. nov., 16  
    *Endasys minutulus* (THOMSON, 1883), 17  
    *Endasys petiolus* sp. nov., 19  
    *Endasys proteuryopsis* sp. nov., 20  
    *Endasys rugifacies* sp. nov., 21  
    *Endasys thunbergi* nom. nov., 21  
    *Endasys transverseareolatus* (STROBL, 1901), 22  
*Endasys (senilis group)*, 23  
    *Endasys magnocellus* sp. nov., 23  
    *Endasys melanopodis* sp. nov., 24  
    *Endasys praegracilis* sp. nov., 25  
    *Endasys senilis* (GMELIN in LINNAEUS, 1790), 26  
    *Endasys talitzkii* (TELENGA, 1961), 27  
*Endasys (cnemargus group)*, 28  
    *Endasys amoenus* (HABERMEHL, 1912), 28  
    *Endasys areolellae* sp. nov., 29  
    *Endasys cnemargus* (GRAVENHORST, 1829), 29  
    *Endasys femoralis* (HABERMEHL, 1912), 31  
    *Endasys parviventris* (GRAVENHORST, 1829), 32  
*Endasys (testaceus group)*, 33  
    *Endasys annulatus* (HABERMEHL, 1912), 33  
    *Endasys euxestus* (SPEISER, 1908), 34  
    *Endasys testaceipes* (BRISCHKE, 1891), 36  
    *Endasys testaceus* (TASCHENBERG, 1865), 37  
*Endasys (rusticus group)* 38  
    *Endasys brunnulus* sp. nov. 38  
    *Endasys erythrogaster* (GRAVENHORST, 1829) 39  
    *Endasys melanistus* sp. nov. 41  
    *Endasys nitidus* (HABERMEHL, 1912) 41  
    *Endasys plagiator* (GRAVENHORST, 1829) 42  
    *Endasys rusticus* (HABERMEHL, 1912) 44  
*Endasys (analis group)* 45  
    *Endasys alutaceus* (HABERMEHL, 1912) 45  
    *Endasys analis* (THOMSON, 1883) 47  
    *Endasys anglianus* sp. nov. 49  
    *Endasys pieninus* sp. nov. 49  
    *Endasys brevis* (GRAVENHORST, 1829) 50  
    *Endasys hungarianus* sp. nov. 52

- Endasys megamelanus* sp. nov. 53  
*Endasys melanurus* (ROMAN, 1913) 54  
*Endasys microcellus* sp. nov. 55  
*Endasys stictogastris* sp. nov. 56  
*Endasys striatus* (KISS, 1924) 57  
*Endasys triannulatus* sp. nov. 58  
*Endasys varipes* (GRAVENHORST, 1829) 59
7. Species with uncertain taxonomic position 60  
8. Species incorrectly referred to *Endasys* FOERSTER 60  
9. Names in error (lapsus calami) 61  
10. Acknowledgments 62  
11. Explanation of Figures, 63  
12. References 84

## 1. Introduction

The ichneumonid genus *Endasys* FOERSTER is revised, sensu TOWNES (1970), SAWONIEWICZ (1985), and LUHMAN (1990). We have treated 41 European species as belonging to the genus. The first European revisions of species were in *Stylocryptus* THOMSON by THOMSON (1883: 869-872), SCHMIEDEKNECHT (1905: 658-667), and MORLEY (1907: 63-71). They dealt with only some species that now belong to 3 genera: *Endasys* FOERSTER, *Glyphicnemis* FOERSTER, and *Amphibulus* KRIECHBAUMER. In the revision and "superrevision" of HABERMEHL (1912: 165-190; 1916: 376-382), *Endasys* was a subgenus of *Stylocryptus* and contained species of *Amphibulus*. The treatments of SCHMIEDEKNECHT (1932: 18-55), MEYER (1933: 151-155), and JONAITIS (1981: 205-207) were based on HABERMEHL'S works. Later works added new species and varieties: KISS (1924: 66), CONSTANTINEANU (1927: 228), HABERMEHL (1929: 263), AERTS (1953: 11), and TELENGA (1961: 163). Recent works tried to explain the status and synonymy of some names: AUBERT (1957: 220, 1980: 539), CAVRO (1954: 48), FITTON (1982: 81-82), FRILLI (1974: 109-119, 1978: 162), HEINRICH (1951: 242), HELLÉN (1956: 137), HORSTMANN (1983: 285, 1986: 101), JONAITIS (1981: 205), LECLERCQ (1949: 82), OEHLKE, TOWNES (1969: 409), and SAWONIEWICZ (1984: 316). Revisions of the European species of *Endasys* published up till now used almost exclusively colour characters and were not illustrated. Thus many "varieties" were described that we treat as valid species. Existing collections of *Endasys* identified to species contain very many errors. This revision is based on all validly described, species-level types, and over a thousand specimens from various regions of Europe. The European species were compared by LUHMAN (1990), with sister species occurring in the Nearctic.

Many collections of Ichneumonidae in Europe and USA were examined. They are denoted by the following symbols as used in this contribution:

- BC - BAUER Collection, Großschwarzenlohe, Germany.  
BM - British Museum (Natural History), London, England.  
FSA - Faculté des Sciences Agronomiques de l'État, Gembloux, Belgium.  
GC - GÓRNÁS Collection, Warszawa, Poland.  
HC - HINZ Collection, Einbeck, Germany.  
HCZI - HORSTMANN Collection, Zoologisches Institut der Universität, Würzburg, Germany.  
IAZ - Institut für Angewandte Zoologie, München, Germany.  
IBL - Instytut Badawczy Leśnictwa, Warszawa, Poland.  
IPSF - Deutsches Entomologisches Institut, Eberswalde-Finow, Germany.  
IZPAN - Instytut Zoologii, PAN, Warszawa, Poland.  
JC - JUSSILA Collection, Paattinen, Finland.  
MN - Museum für Naturkunde der Humboldt-Universität, Berlin, Germany.  
MNM - Museo Nacional de Ciencias Naturales, Madrid, Spain.  
NMS - Forschungsinstitut Senckenberg, Frankfurt/M., Germany.  
NRS - Naturhistoriska Riksmuseet, Stockholm, Sweden.  
SC - STROBL Collection, Admont, Austria.  
SCT - SCARAMOZZINO Collection, Servizio Sperimentazione e Lotta Fitosanitaria, Torino, Italy.  
SCW - SAWONIEWICZ Collection, Katedra Ochrony Lasu i Ekologii, SGGW, Warszawa, Poland.  
SCZ - SCHWARZ Collection, Zwettl/R., Austria.  
SKKI - Stadt Krefeld Kulturamt, Germany.  
SPCZ - ŠEDIVÝ Collection, Výzkumný Ústav Rostlinné Vyroby, Praha, Czechoslovakia.  
SMH - Staatliche Museen Heideckburg, Rudolstadt, Germany.  
TC - TOWNES Collection, American Entomological Institute, Gainesville, Florida, USA.  
TMA - Természettudományi Múzeum Állattára, Budapest, Hungary.  
TUD - Technische Universität Dresden, Tharandt, Germany.  
UH - Helsingin Yliopisto, Finland.  
UHS - Martin-Luther-Universität, Halle, Germany.  
UU - University of Uppsala, Sweden.  
UW - Uniwersytet Wrocławski, Muzeum Przyrodnicze, Poland.  
ZF - Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany.  
ZIL - Department of Zoology, Zoological Museum, Lund, Sweden.  
ZMD - Zoologisk Museum, København, Denmark.

Thorax always black; punctation and strigosity of propleurum and central area of mesopleurum often of diagnostic value in males, seldom in females.

Legs. Colour of legs of diagnostic value, from entirely black to combinations of yellow, orange, and white; hind leg ratio (width over length) from slender (Fig. 157) to swollen (Fig. 176), usually moderately slender to moderately swollen (Figs. 151, 152), females usually more swollen than males of same species.

Propodeum (Figs. 67-82). Areola nearly linear, broadly hexagonal, or a little elongate, usually broadly hexagonal; area dentipara nearly triangular to elongate trapezoidal, usually narrowly trapezoidal; apophysis strong and toothlike to nearly absent, usually more or less distinct; colour always black.

Abdomen.

Males: 1st tergum stout (Fig. 85) to slender (Fig. 90), postpetiole widened (Figs. 85, 92, 96), nearly square (Figs. 87, 94), elongate (Figs. 84, 91), or nearly parallel sided (Figs. 83, 90, 93); 2nd tergum widened (Fig. 96) or narrowed (Fig. 90), usually intermediate (Figs. 91, 94).

Females: 1st tergum moderately slender to stout and wide, postpetiole rectangular (Figs. 98, 116, 124), slightly rounded anteriorly (Figs. 100, 103, 108, 119, 121), or broadly joined to petiole (Figs. 114, 125); 3rd valvula length (=ovipositor length beyond subgenital plate) from about as long as basal 2 hind tarsomeres, to about as long as hind tarsus, usually about as long as basal 4 hind tarsomeres.

Wings. Radial cell elongate (Figs. 234-236) to short (Figs. 221, 225, 227), usually a little elongate - longer than 2nd discoidal cell; radial sector (Rs) slightly bowed and elongate (Fig. 233) to curved and short (Fig. 222, 225), usually more or less straight; sometimes origin of Rs from stigma more basal (Fig. 232), usually more medial (Fig. 227).

Punctation and surface features (after Eady 1968). Punctation density: evaluated for both sexes on frons, face and clypeus (occasionally), mesopleurum (usually males), abdominal terga 1-3 (usually males); punctation described as very dense - pits crowded and much less than 1 diameter apart, dense - pits about 1 diameter apart (Figs. 249-252), moderate - between dense and sparse (Figs. 247, 248), and sparse - pits distinctly more than 1 diameter apart (Figs. 243-246).

Pitting: "punctate" with larger, more or less distinct pits (Figs. 253, 254); "punctulate" with small, more or less distinct pits (Figs. 243-252); "coarse" with large, irregularly shaped pits (Figs. 255, 256).

Surface: smooth and shiny - pits finely punctulate if present; granulate - mat (Figs. 239, 240); strigilose - weak wrinkling, usually between rows of pits (Figs. 251, 252); strigose - strong wrinkling, pits present or absent (Figs. 255-258).

Colour. Described as white, yellow, orange, brown, or black, or combinations of these colours for scape ventrally, flagellum dorsally (females), clypeus, coxae

ZMM - Zoological Museum, Moscow, USSR.

ZSBS - Zoologische Sammlung des Bayerischen Staates, München, Germany.

## 2. Taxonomic characters

The following characters are used to diagnose, describe, and key the species of *Endasyus*. Some characters are applicable to only one sex. Because of sexual dimorphism, males and females are diagnosed, described, and keyed separately. Character states that rarely or only sometimes vary are omitted from descriptions unless they are referred to in diagnoses or keys.

### Flagellum.

Males: slender (Figs. 4-6) to short and stout (Fig. 3), usually moderately slender to moderately stout - the apical flagellomeres being a little longer than wide (Figs. 1, 2); usually 2, 3, or 4 distinct tyloids on flagellomeres 8-12, most often 2 on 9-10 (Fig. 13), or 3 on 9-11 (Figs. 14, 16), tyloid shape from short and toothlike to nearly as long as flagellar segment, usually a little elongate; glumes (placode sensillae) elongate with a silvery sheen, from densely (Figs. 19, 20) to sparsely (Fig. 17) distributed on flagellomere; colour usually black, may be orangish or yellowish ventrally.

Females: shape narrowed apically (Figs. 28, 29, 37) to linear (Figs. 22, 26, 36); length of basal 3 flagellomeres long - about twice as long as wide (Fig. 42), short - less than twice as long as wide (Figs. 41, 43), or moniliform (Fig. 44); colour (viewed dorsally) black with a white band (annulus) usually on flagellomere 4-9 (Figs. 25, 29, 39), tricoloured - orangish/white/black (Figs. 33, 40), bicoloured with basal half pale and apical half black (Figs. 22, 23), or unicoloured; glumes sparse; tyloids lacking.

Scape and pedicel. Colour black, orangish, yellow, or white.

Clypeus. Shape usually broadly oval - a little less than 3 times wider than long, or sometimes widened (Fig. 57) - 3 or more times longer than wide; profile flat or a little swollen; apical margin usually not or only weakly upturned (Fig. 66), or distinctly upturned (Fig. 60).

Face. Usually less than twice as wide as long (Figs. 59, 65), or widened - more than twice as wide as long (Figs. 57, 63), widened face always occurs with widened clypeus.

### Ocellar distance.

Males: ocelli less than or equal to 1 diameter apart, or more than 1 diameter apart.

Females: ocelli always smaller in size than males, always more than 1 diameter apart.

Genal carina. Sometimes genal carina obsolescent near junction with mandible (Fig. 62).

ventrally, trochanters ventrally, femora, tibiae, sometimes tarsi I and II, tarsus III, and abdomen dorsally.

White, including ivory and creamy white, occurring when present on scape ventrally, clypeus, flagellum dorsally (females), coxae, trochanters, and tibiae dorsally.

Yellow and orange sometimes merging into a yellowish orange, usually on basal half of female's flagellum, legs I and II, tibia III, and abdomen apically.

Body length. From 2 mm to nearly 10 mm, most species 5-7 mm long. Overall size more important characterizing several specimens rather than individuals because of variation, even from the same rearing.

Variation. Descriptions of new species include variation of paratypes; important variation of non-type material is noted after the description. Redescriptions of nominal species include variation of secondary types, if any, and specimens selected to show variation. Specimens considered as deformed or exceptional are excluded from descriptions.

Material studied. This section lists information for type and non-type specimens examined. For primary types and short series of secondary types, information is quoted from all labels pinned with each specimen. For long series of secondary types or from non-type specimens, locality and repository information is summarized.

Abridgments: m = male, mm = males, f = female, ff = females.

### 3. Genus: *Endasys* FOERSTER, 1868

*Endasys* FOERSTER, 1868: 184. Type-species: *Stylocryptus analis* THOMSON. Designed by VIERECK (1914: 51) from two species included by ROMAN (1909: 243).

*Scinacopus* FOERSTER, 1868: 185. Type-species: *Cryptus (Phygadeuon) cnemargus* GRAVENHORST (= *Phygadeuon cnemargus* GRAVENHORST). Included by BRISCHKE (1891: 69). Monobasic.

*Bachia* FOERSTER, 1868: 186. Name preoccupied by GRAY, 1845. Type-species: *Phygadeuon (Bachia) testaceipes* BRISCHKE. Included by BRISCHKE (1891: 69). Monobasic.

*Stylocryptus* THOMSON, 1873: 520, 521. Type-species: *Cryptus (Phygadeuon) brevis* GRAVENHORST (= *Phygadeuon brevis* GRAVENHORST). Monobasic.

*Bachiana* STRAND, 1928: 52. New name for *Bachia* FOERSTER.

*Scinascopus* [sic!] TOWNES, MOMOI, TOWNES 1965: 139; TOWNES 1970: 83; CARLSON 1979: 417; LUHMAN 1990: 18; PAGLIANO, SCARAMOZZINO 1990: 180. *Lapsus calami*.

*Endasys*: TOWNES, MOMOI, TOWNES 1965: 562; TOWNES 1970: 78-79, 83 (Figs.); OEHLKE 1965: 847; JONAITIS 1981: 182; SAWONIEWICZ 1985: 131-132; LUHMAN 1990 18-20; key to genera of subtribe Endaseina, description of genus.

This is a Holarctic genus. In the Nearctic there are 77 described species (LUHMAN 1990), including 3 Holarctic ones. This revision treats 41 European species. The larvae are parasitoids of subterranean cocoons of Symphyta. The literature records about the lepidopteran hosts are dubious. Adults occur May through September, with most species appearing June or July through August.

#### 4. Key to the Holarctic groups of species

1. Clypeus and face distinctly widened. . . . . *Endasys (eurycerus group)*, p. 15  
- Clypeus and face at most only slightly widened . . . . . 2
2. Clypeus impressed apically, margin distinctly upturned, areola elongate, propodeal carinae often reduced, apophysis reduced or absent, abdominal tergum 1 of males elongate and slender, dorsomedian carina reduced, anterior terga smooth and shiny. . . . . *Endasys (senilis group)*, p. 23  
- Clypeus not impressed apically, margin upturned or not, propodeum and carinae variable, apophysis variable, tergum 1 usually stouter, dorsomedian carina usually well developed, anterior terga variable . . . . . 3
3. Flagellum of female distinctly narrowed apically, usually with white band, often both sexes with distinct white patches on tibiae I-II dorsally, punctuation of head evenly dense and punctulate, usually a little strigillose, propodeum more or less level seen in side view, carinae coarse and strong in male, apophysis of both sexes strong and toothlike, tergum 1 with distinct dorsomedian carina, sharply so in male . . . . . *Endasys (cnemargus group)*, p. 28  
- Without above combination, punctuation, usually more irregular, and either coarser or less distinct, flagellum of female more often linear, often without white band, tibiae I-II usually without distinct white patches . . . . . 4
4. Clypeal margin not or weakly upturned, males with white on coxae and trochanters, flagellum of female linear, abdomen of female orange. . . . .  
. . . . . *Endasys (testaceus group)*, p. 33  
- Clypeal margin usually more or less upturned, males usually with black or orange coxae and trochanters, flagellum of female variable, abdomen of both sexes often blackish beyond tergum 3. . . . . 5
5. Clypeal margin upturned along most of width, tergum 1 elongate, petiole slender, carinae reduced, apophysis sometimes reduced or nearly absent, or strongly toothlike, anterior terga smooth and shiny. . . . .  
. . . . . *Endasys (rusticus group)*, p. 38  
- Clypeus variable, tergum moderately stout to stout, petiole not elongate, carina distinct, apophysis usually distinct, anterior terga usually granulate or distinctly punctate, or both . . . . . *Endasys (analis group)*, p. 45



## 5. Key to the European species

### 5.1. Males

[Males of *E. anglianus* sp. nov., *E. eurycerus* (THOMS.), *E. melanistus* sp. nov., and *E. petiolus* sp. nov. are unknown; male of *E. talitzkii* (TEL.) not examined]

1. Coxae and trochanters with white . . . . . 2.
- Coxae and trochanters without white . . . . . 10.
2. Abdomen mostly black or blackish . . . . . 3.
- Abdomen mostly orange, black basally or apically. . . . . 4.
3. Clypeus black, tibiae white dorsally . . . . . *E. nitidus* (HAB.).
- Clypeus yellow, tibiae yellow or orange dorsally. . . . . *E. prae-gracilis* sp. nov.
4. Flagellum with 3 tyloids (or more). . . . . 5.
- Flagellum with 2 tyloids. . . . . 7.
5. Abdominal tergum 2 granulate and punctate, blackish at least basally, clypeus regular (cf. Fig. 49). . . . . *E. annulatus* (HAB.).
- Tergum 2 weakly granulate, surface mostly shiny and orange clypeus a little widened (cf. Figs. 45, 46) . . . . . 6.
6. Coxae mostly black. . . . . (part) *E. amoenus* (HAB.).
- Coxae I-II mostly white or yellow, coxa III mostly orange . . . . . (part) *E. testaceus* (TASCHENB.).
7. Tegula black, glumes of flagellum dense (Fig. 18) . . . . . (part) *E. alutaceus* (HAB.).
- Tegula yellowish or whitish, glumes of flagellum sparse (Figs. 17, 19) . . . . . 8.
8. Abdominal tergum 2 granulate and punctate, clypeus yellowish orange to blackish. . . . . *E. euxestus* (SPEIS.).
- Tergum 2 weakly granulate, mostly smooth and shiny, clypeus distinctly yellow. . . . . 9.
9. Leg III black (except white on coxa and trochanters) . . . . . *E. testaceipes* (BRISCHKE).
- Leg III mostly orangish (except as above) . . . . . (part) *E. testaceus* (TASCHENB.).
10. Tibiae I-II white or whitish dorsally . . . . . 11.
- Tibiae I-II not whitish, but yellow, orange, or blackish dorsally . . . . . 17.
11. Abdomen entirely black . . . . . *E. megamelanus* sp. nov.
- Abdomen orange or orange with black apically . . . . . 12.
12. Flagellum with 3 tyloids or more . . . . . 13.
- Flagellum with 2 tyloids . . . . . 14.
13. Tibia III with white patch dorsally. . . . . *E. parviventris* (GRAV.).
- Tibia III yellowish orange with black apically . . . . . (part) *E. brevis* (GRAV.).

14. Abdominal tergum 1 slender, nearly parallel sided (cf. Fig. 90).....  
 ..... (part) *E. senilis* (GMEL.).
- Abdominal tergum 1 stouter, postpetiole distinctly widened (Figs. 92, 94) . . . 15.
15. Apophysis of propodeum distinct, often toothlike (Figs. 67-69, 72) . . . . . 16.
- Apophysis of propodeum reduced and inconspicuous (Fig. 71).....  
 ..... (most) *E. rusticus* (HAB.).
16. Femur III black, genal carina complete to base of mandible (Fig. 62) . . . . .  
 ..... *E. cnemargus* (GRAV.).
- Femur III mostly blackish orange or orange with blackish apically, genal carina  
 weak or absent at mandibular base (Fig. 50) . . . . . *E. femoralis* (HAB.).
17. Abdomen mostly black or blackish. . . . . 18.
- Abdomen mostly orange, or orange with black apically. . . . . 29.
18. Abdominal tergum 1 slender, nearly parallel sided, postpetiole distinctly  
 elongate (Figs. 83, 90, 93) . . . . . 19.
- Tergum 1 abruptly widened at postpetiole which is square or slightly longer than  
 wide (Figs. 84-88, 94) . . . . . 21.
19. Tergum 2 granulate and punctate. . . . . (part) *E. stictogastris* sp. nov.
- Tergum 2 mostly smooth and shiny . . . . . 20.
20. Propodeum strigose between carinae. . . . . (part) *E. senilis* (GMEL.).
- Propodeum mostly smooth and shiny between carinae . . . . . *E. brunulus* sp. nov.
21. Abdominal terga 2-3 mostly or entirely black. . . . . 22.
- Terga 2-3 mostly orange with blackish apically, abdomen more bicoloured . . 27.
22. Femur III and tibia III yellowish, tibia with black apex. . . . .  
 ..... *E. triannulatus* sp. nov.
- Femur III mostly black, tibia III variable . . . . . 23.
23. Flagellum short and stout (Fig. 3), 2nd discoidal cell only a little wider than  
 long (Fig. 220) . . . . . *E. transverseareolatus* (STROBL).
- Flagellomeres on apical half mostly square or a little longer than wide (Figs. 1, 2,  
 12), 2nd discoidal cell distinctly wider than long (Fig. 222) . . . . . 24.
24. Clypeus regular, cheek longer than base of mandible, hairs on cheek dense,  
 long, giving beard-like appearance (Fig. 54) . . . . . (part) *E. melanurus* (ROM.).
- Clypeus a little widened (Fig. 45), cheek less than or equal to base of mandible,  
 hairs on cheek sparser . . . . . 25.
25. Femur III slender, nearly parallel sided (Fig. 149), clypeus yellowish and shiny  
 ..... *E. lissorulus* sp. nov.
- Femur III more swollen (Figs. 150, 153), clypeus black . . . . . 26.
26. Frons mostly sparsely, indistinctly punctulate; body usually under 5 mm long .  
 ..... *E. minutulus* (THOMS.).
- Frons densely punctate; body over 5 mm long . . . . . *E. rugifacies* sp. nov.
27. Flagellum with 3 tyloids, ocellar distance about 1.5 . . . . .  
 ..... (part) *E. microcellus* sp. nov.

- Flagellum with 2 tyloids, ocellar distance about 1 ..... 28.
- 28. Flagellum moderately slender (Fig. 2). ..... (part) *E. proteuryopsis* sp. nov.
- Flagellum stout (Fig. 12). ..... (part) *E. melanurus* (ROM.).
- 29. Flagellum with 3 or more tyloids ..... 30.
- Flagellum with 2 tyloids. .... 38.
- 30. Clypeus yellow or white ..... (part) *E. amoenus* (HAB.).
- Clypeus black ..... 31.
- 31. Femur III orange, with or without black apically ..... 32.
- Femur III black or blackish. .... 35.
- 32. Abdominal terga 4 or 5 to apex black ..... *E. hungarianus* sp. nov.
- Abdomen mostly orange, only apex black ..... 33.
- 33. Femur III and tibia III entirely orange, ocelli large, ocellar distance 0.5 .....  
..... *E. magnocellus* sp. nov.
- Femur III and tibia III orange with black apically, ocellar distance greater than or  
equal to 1 ..... 34.
- 34. Face distinctly swollen centrally (Fig. 56), abdominal terga 1-2 widened (Fig.  
96). ..... (part) *E. analis* (THOMS.).
- Most of face weakly convex (Fig. 55), terga 1-2 of regular proportions (Figs. 91,  
94). ..... (part) *E. brevis* (GRAV.).
- 35. Abdominal terga 4-apex black ..... (part) *E. microcellus* sp. nov.
- Abdomen mostly or entirely orange, only apex black ..... 36.
- 36. Glumes mostly dense (Fig. 20), terga 1-2 granulate and punctulate .....  
..... (part) *E. brevis* (GRAV.).
- Glumes sparse or moderate (cf. Figs. 17, 19), terga 1-2 shiny or weakly granulate  
..... 37.
- 37. Abdomen smooth and shiny, apex yellowish orange, ocellar distance greater  
than 1, temple distinctly swollen (cf. Fig. 46). .... (part) *E. plagiator* (GRAV.).
- Abdominal terga 1-2 weakly granulate, apex black, ocellar distance about 1,  
temple convex but not swollen (cf. Fig. 45). .... *E. thunbergi* nom. nov.
- 38. Femur III black or blackish. .... 39.
- Femur III orange or yellow. .... 48.
- 39. Abdominal terga 4-apex black or blackish ..... 40.
- Abdomen mostly orange, black only on tergum 1 or apex. .... 42.
- 40. Femur III slender, nearly parallel sided (Fig. 184). .... *E. varipes* (GRAV.).
- Femur III moderately swollen (Figs. 151, 179) ..... 41.
- 41. Flagellum moderately slender (Fig. 2), ocellar distance about 1 .....  
..... (part) *E. proteuryopsis* sp. nov.
- Flagellum stout (Fig. 12), ocellar distance greater than 1 .....  
..... (part) *E. melanurus* (ROM.).
- 42. Abdominal tergum 2 mostly smooth and shiny, at most finely punctulate .. 44.
- Tergum 2 punctate or distinctly punctulate, often more or less granulate .... 43.

43. Postpetiole square, abdomen yellowish orange apically, areola widely hexagonal, tergum punctate and sometimes weakly granulate ..... (part) *E. striatus* (KISS).  
 - Postpetiole elongate, abdomen black apically, areola elongate hexagonal, tergum 2 punctate and granulate ..... (part) *E. stictogastri* sp. nov.
44. Apophysis of propodeum more or less distinct (cf. Figs. 67-69, 72), tergum 2 nearly impunctate ..... (part) *E. plagiator* (GRAV.).  
 - Apophysis of propodeum reduced or absent (Figs. 70, 71), or tergum 2 evenly, weakly punctulate. .... 45.
45. Tergum 1 nearly parallel sided (cf. Fig. 90). .... (part) *E. senilis* (GMEL.).  
 - Tergum 1 widened at postpetiole (Figs. 83, 87, 94) ..... 46.
46. Postpetiole distinctly longer than wide, leg III entirely black ..... *E. melanopodis* sp. nov.  
 - Postpetiole mostly square, leg III with orangish yellow on at least trochanters or tibia ..... 47.
47. Palps pale yellow, flagellum slender and elongate. ... (part) *E. rusticus* (HAB.).  
 - Palps black, flagellum moderately stout. .... (part) *E. erythrogaster* (GRAV.).
48. Abdominal terga 4 or 5 to apex black ..... 49.  
 - Abdomen mostly orange, only apex black ..... 50.
49. Tergum 2 mostly shiny, weakly granulate, postpetiole elongate ..... *E. pieninus* sp. nov.  
 - Tergum 2 granulate, postpetiole widened ..... *E. alutaceus* (HAB.).
50. Abdomen distinctly punctate or granulate, or both. .... 51.  
 - Abdomen mostly smooth and shiny, only faintly granulate or punctulate. .... 53.
51. Face distinctly swollen (Fig. 56), terga 1-2 widened ..... (part) *E. analis* (THOMS.).  
 - Face not so swollen (cf. Fig. 55), postpetiole square or narrow ..... 52.
52. Femur III yellow, postpetiole square ..... (part) *E. striatus* (KISS).  
 - Femur III orange, postpetiole narrow ..... *E. areolellae* sp. nov.
53. Temple swollen (cf. Fig. 46), abdomen apex yellowish orange, ocellar distance greater than 1 ..... (part) *E. plagiator* (GRAV.).  
 - Temple normally convex (cf. Fig. 45), abdomen black apically, ocellar distance about 1 ..... (part) *E. erythrogaster* (GRAV.).

## 5.2. Females

[Females of *E. areolellae* sp. nov., *E. magnocellus* sp. nov., *E. megamelanus* sp. nov., *E. pieninus* sp. nov., and *E. transverseareolatus* (STROBL) are unknown]

1. Some flagellomeres white (viewed dorsally - Figs. 24, 25, 33) ..... 2.  
 - Flagellum without white (Figs. 21, 23) ..... 22.

2. At least tibiae I-II white dorsally ..... 3.  
 - Tibiae I-II yellow or pale yellow dorsally ..... 10.
3. Tibia III with white dorsally ... .. 4.  
 - Tibia III not white dorsally ..... 7.
4. Tibia III with white in well-defined patch dorsally (Figs. 199, 219)..... 5.  
 - Most of tibia III whitish (Figs. 202, 206) ..... 6.
5. Femur III black , clypeus widened.....(part) *E. cnemargus* (GRAV.).  
 - Femur III blackish or yellowish, clypeus regular ..... *E. varipes* (GRAV.).
6. Abdomen orange ..... *E. testaceipes* (BRISCHKE).  
 - Abdomen black ..... *E. nitidus* (HAB.).
7. Abdominal tergum 1 elongate (Fig. 115), petiole slender, postpetiole squarish,  
 areola about as long as wide. .... (part) *E. brunulus* sp. nov.  
 - Abdominal tergum 1 stouter, postpetiole distinctly widened (Figs. 109, 123),  
 areola wider than long ..... 8.
8. Tibia III yellowish, often with black apex, genal carina complete to mandibular  
 base (Fig. 62) ..... 9.  
 - Tibia III mostly blackish to orangish, genal carina weak or absent near  
 mandibular base (Fig. 50). .... *E. femoralis* (HAB.).
9. Femur III black or blackish ..... 40.  
 - Femur III orange with black apex ..... (part) *E. brevis* (GRAV.).
10. Areola narrowed, nearly as long as wide, abdomen orange with blackish  
 apically ..... (part) *E. brunulus* sp. nov.  
 - Areola wider than long (Fig. 76). .... 11.
11. Flagellum narrowed apically or distinctly slender (Figs. 29, 34) ..... 12.  
 - Flagellum mostly linear apically (Figs. 22, 35) ..... 18.
12. Basal flagellomeres dorsally black or blackish ..... 13.  
 - Basal flagellomeres dorsally orangish ..... 17.
13. Face and clypeus a little widened (cf. Fig. 63) ..... 14.  
 - Face and clypeus regular (cf. Fig. 58) ..... 15.
14. Femur III and tibia III orange with black apically, frons densely punctulate ...  
 ..... *E. amoenus* (HAB.).  
 - Femur III and tibia III yellowish, frons moderately coarsely punctate .....  
 ..... *E. rugifacies* sp. nov.
15. Abdomen with at least apex black ..... 16.  
 - Abdomen entirely orange apically. .... (part) *E. brevis* (GRAV.).
16. Abdomen mostly orange with blackish apically, frons coarse and strigose .....  
 ..... *E. hungarianus* sp. nov.  
 - Abdomen distinctly black beyond tergum 3, frons sparsely punctulate .....  
 ..... *E. microcellus* sp. nov.
17. Basal 3 flagellomeres elongate (cf. Fig. 42), face distinctly swollen (Fig. 56) ..  
 ..... *E. analis* (THOMS.).

- Basal 3 flagellomeres short (cf. Fig. 41), face weakly convex (cf. Fig. 55) . . . . .  
 . . . . . *E. plagiator* (GRAV.).
- 18. Abdomen entirely orange . . . . . 19.
- Abdomen orange, apically more or less black . . . . . 20.
- 19. Scape and clypeus orange, coxae yellowish apically. . . . . *E. annulatus* (HAB.).
- Scape and clypeus black, coxae entirely black . . . . . *E. thunbergi* nom. nov.
- 20. Femur III yellow, abdomen distinctly black apically. . . . . *E. triannulatus* sp. nov.
- Femur III blackish at least apically, abdomen more orangish black apically . . . 21.
- 21. Femur III entirely black, clypeal margin distinctly upturned (cf. Fig. 51) . . . . .  
 . . . . . *E. proteuryopsis* sp. nov.
- Femur III mostly orange, blackish apically, clypeal margin not or weakly  
 upturned (cf. Fig. 53) . . . . . *E. alutaceus* (HAB.).
- 22. Areola distinctly elongate (Fig. 80), clypeus impressed apically with margin  
 distinctly upturned . . . . . *E. talitzkii* (TEL.).
- Areola wider than long (Figs. 76, 78), clypeus not as above . . . . . 23.
- 23. Flagellum nearly unicoloured . . . . . 24.
- Flagellum bicoloured . . . . . 27.
- 24. Abdomen entirely orange or orange with black on tergum 3 apically and  
 beyond . . . . . 25.
- Abdomen black . . . . . 26.
- 25. Abdomen orange . . . . . *E. testaceus* (TASCHENB.).
- Abdomen orange with black on tergum 3 apically and beyond. . . . .  
 . . . . . (most) *E. melanurus* (ROM.).
- 26. Terga 1-2 granulate, flagellum distinctly swollen medially (Fig. 21) . . . . .  
 . . . . . *E. eurycerus* (THOMS.).
- Terga 1-2 smooth and shiny, flagellum linear (Fig. 32). . . . . *E. melanistus* sp. nov.
- 27. Abdomen blackish, or mostly orange and apically more or less black . . . . . 28.
- Abdomen entirely orange (beyond tergum 1). . . . . 36.
- 28. Basal 3 flagellomeres nearly moniliform (Fig. 44). . . . . 29.
- Basal 3 flagellomeres short, but longer than wide (Fig. 41). . . . . 33.
- 29. Abdomen mostly blackish (sometimes more yellowish basal half) . . . . .  
 . . . . . *E. minutulus* (THOMS.).
- Abdomen mostly orange, blackish apically . . . . . 30.
- 30. Coxa I yellow, clypeus orangish black, tergum 2 with blackish . . . . .  
 . . . . . (part) *E. praegracilis* sp. nov.
- Coxa I mostly black, clypeus black, tergum 2 with or without black. . . . . 31.
- 31. Frons and face more densely, evenly punctate . . . . .  
 . . . . . *E. stictogastri* sp. nov., p. 000.
- Frons and face more sparsely, unevenly punctate. . . . . 32.
- 32. Tergum 3 apically and beyond distinctly black, palps black. . . . .  
 . . . . . (part) *E. melanurus* (ROM.).

- Abdomen usually weakly black apically, palps orangish . . . . . *E. erythrogaster* (GRAV.).
- 33. Abdomen orange, apically more or less blackish . . . . . *E. anglianus* sp. nov.
- Abdomen mostly blackish, or yellowish black anteriorly or entirely blackish orange . . . . . 34.
- 34. Clypeus yellow and shiny, widened . . . . . *E. lissorulus* sp. nov.
- Clypeus black or orangish, regular . . . . . 35.
- 35. Femur III swollen (Fig. 194), clypeus and face not elongate . . . . . (part) *E. senilis* (GMEL.).
- Femur III moderately slender (Fig. 193), clypeus and face a little elongate . . . . . (part) *E. praegracilis* sp. nov.
- 36. Flagellum narrowed apically (Fig. 34). . . . . *E. rusticus* (HAB.).
- Flagellum linear (Figs. 31, 38) . . . . . 37.
- 37. Leg III entirely black except tarsus (orange) . . . . . *E. melanopodis* sp. nov.
- Leg III black, but tibia III more orangish . . . . . 38.
- 38. Clypeal margin not upturned (cf. Fig. 53), radial cell distinctly elongate (cf. Fig. 236) . . . . . *E. euxestus* (SPEIS.).
- Clypeal margin upturned (cf. Fig. 51), radial cell regular shortened (Figs. 221, 232) . . . . . 39.
- 39. Coxae blackish, clypeus a little widened (cf. Fig. 63). . . . . *E. petiolus* sp. nov.
- Coxae yellowish, clypeus regular (cf. Fig. 61) . . . . . *E. striatus* (KISS).
- 40. Coxae black, flagellum distinctly narrowed apically. . . . . (part) *E. cnemargus* (GRAV.).
- Coxae yellow, flagellum mostly linear . . . . . (some) *E. brevis* (GRAV.).

## 6. Description of species\*

### *Endasys* (*eurycerus* group)

This group has a characteristically widened head. Morphologically it is modestly specialized, but retains many plesiomorphs. The following European species are included: *E. eurycerus* (THOMSON), *E. lissorulus* sp. nov., *E. minutulus* (THOMSON), *E. proteuryopsis* sp. nov., *E. rugifacies* sp. nov., *E. thunbergi* nom. nov., and *E. transverseareolatus* (STROBL).

\*Abridgments: male=♂, mm=males, f=female, ff=females.

***Endasys eurycerus* (THOMSON, 1896) (Figs. 21, 57, 148, 185)**

*Stylocryptus eurycerus* THOMSON, 1896: 2386. Holotype (f\*) det. by FITTON (1982: 82): "HLM", "DE V", "Col. HGN.", "*eurycerus* n [sp. nov.]". Loc. typ.: Sweden: Stockholm. Coll. THOMSON, Lund (ZIL).

*Endasys eurycerus*: JONASSIS 1981: 206.

Male. Unknown.

Female diagnosis. Flagellum distinctly swollen (Fig. 21), abdomen brownish black (Fig. 148), terga 1-2 granulate. It differs from all other *Endasys* by the distinctly swollen flagellum. It is placed in the *E. (eurycerus* group) because of the widened face and clypeus (Fig. 57).

Female description. Flagellum: distinctly swollen apical 1/3rd, narrowed apically, basal 3 flagellomeres short, basal half faintly yellowish, apical half blackish. Head: face and clypeus widened, face swollen centrally, clypeus a little impressed and upturned apically, frons more sparsely punctulate. Abdomen: postpetiole broadly rectangular, terga 1-2 granulate and faintly strigillose. Colour: yellow - scape, clypeus (more brownish yellow, central part of face brownish or blackish basally (Fig. 185); black - coxae III blackish, entire abdomen (or more brownish black). Length: 3.5-5 mm.

Hosts. Unknown.

Material studied: 3 ff: Italy, Poland, Sweden (SCW, TC, ZIL).

***Endasys lissorulus* sp. nov. (Figs. 22, 97, 149, 186, 221)**

Male diagnosis. Clypeus mostly smooth and shiny, yellowish or blackish, clypeus and face a little widened (cf. Fig. 45), abdomen black, terga 1-3 granulate,

3rd weakly so, usually under 5 mm long. It is similar to dark forms of *E. alutaceus* (THOMS.) and differs by its entirely black abdomen and smaller size. It is distinguished from similar *E. minutulus* (THOMS.) and *E. transverseareolatus* (STROBL) by its more strongly granulate terga 1-3, shiny face, and smooth, shiny clypeus.

Male description. Flagellum: elongate and slender, glumes dense, tyloids a little elongate, not prominent. Head: face and clypeus a little widened, clypeus mostly smooth and shiny, face shiny, frons moderately to densely punctulate, ocellar distance less than 1. Mesopleurum: usually faintly granulate and punctulate across central area. Hind femur: slender (Fig. 149). Abdomen: terga 1-3 granulate. 3rd weakly so basally. Wing: radial cell a little widened, radial sector a little curved apical fourth (Fig. 221). Colour: yellow - usually scape and most of clypeus, most of legs I-II, except coxae and trochanters usually blackish basally, trochanters at



least apically, sometimes femur III basally, tibia III at least basally; black - sometimes scape and clypeus, coxae except I-II more yellowish apically, usually most of femur III, tibia III at least apically, hind tarsus (basitarsus yellowish basally), abdomen. Length: 4-6 mm.

Female diagnosis. Clypeus mostly smooth and shiny, yellow, face and clypeus a little widened, abdomen mostly blackish or brownish black (darker basally and apically), flagellum and femur III moderately slender (Fig. 22, 186), abdominal terga 1-2 weakly granulate, under 5 mm length. It differs from *E. minutulus* (THOMS.) by the mostly smooth and shiny, yellow clypeus, and the moderately slender femur III. It differs from *E. alutaceus* (THOMS.) by the mostly black abdomen and smaller size.

Female description. Flagellum: mostly linear, moderately slender, basal 3 flagellomeres short, basal half yellowish, apical half black. Head: face and clypeus a little widened, clypeus mostly smooth and shiny, frons mostly sparsely and weakly punctulate, ocellar distance about 1. Femur III: moderately slender. Abdomen: tergum 1 moderately widened (Fig. 97), postpetiole a little angular basally, terga 1-2 faintly granulate, 3rd valvula as long as basal 3 hind tarsomeres. Wing: radial cell a little swollen, Rs curved apically (Fig. 221). Colour: yellowish to yellowish orange - usually scape and clypeus (often face centrally), legs I-II except coxae more blackish, leg III except coxa and femur more blackish, sometimes abdomen except basally and apically; black - sometimes scape and most of clypeus, usually coxae more blackish, sometimes femur III more yellowish black, usually abdomen (darker basally and apically). Length: 4 mm.

Hosts. Unknown.

Material studied: 102 mm, 26 ff. Holotype (m): "Poland, Rogów - Jasień distr. Koluszki 26.5.68 leg. J. SAWON." (SCW). Paratypes (101 mm, 26 ff): (1 f) Denmark, 21 mm, 3 ff Germany, (2 mm, 1 f) Finland, (76 mm, 19 ff) Poland, (1 m, 2 ff) Sweden, (1 m) Switzerland (BC, BM, HC, HCZI, IPSF, IZPAN, SCW, TC, ZMD).

*Endasys minutulus* (THOMSON, 1883) (Figs. 1, 23, 45, 98, 147, 150, 187, 223, 225)

*Stylocryptus* (*Stylocryptus*) *minutulus* THOMSON, 1883: 872. Lectotype (f) here desig. by SAWONIEWICZ (syntypes det. FITTON 1982: 82): small green square. Loc. typ.: Sweden. Coll. THOMSON, Lund (ZIL). Synonymy of HABERMEHL (1912:183, 1916: 21) with *Stylocryptus testaceus* (TASCHENB.) and *S. rubricator* (THUNB.) erroneous. THOMPSON (1950a: 95) synonymized "*Cryptus minutulus*" with *S. minutulus* THOMS.

*Stylocryptus transverse-areolatus* STROBL f. *nigripes* STROBL, 1904: 149. Syn. nov. - Holotype (m) here det. by SAWONIEWICZ: "St. transv.-ar. m Kreuzkoge 19/8". Loc. typ.: Austria: Kreuzkoge near Admont. Coll. STROBL, Admont (SC).

?*Stylocryptus (Endasys) fusciventris* HABERMEHL, 1916: 377, 381. - Lectotype (f): "P.", "*Stylocryptus fusciventris* THOMSON, Lille" label of DE GAULLE, "*Stylocryptus fusciventris* THOMSON f" determination label of HABERMEHL. Loc. typ.: France: Lille. - Paralectotype (1 m): "*Stylocryptus fusciventris* THOMS. f" det. HABERMEHL. Both types by designation of SAWONIEWICZ, Coll. HABERMEHL, Frankfurt (NMS).

*Endasys miratulus*: HELLEN 1957: 137.

Male diagnosis. Mostly black, under 5 mm long, clypeus black and upturned apically, femur III moderately swollen (Fig. 150), glumes sparse. This is a Holarctic species occurring also in Alaska and northern British Columbia. It is similar to *E. lissorulus* sp. nov. from which it differs by the punctate clypeus, body mostly black, and glumes sparse. See additional remarks under *E. transverseareolatus* (STROBL).

Male description. Flagellum: moderately stout (Fig. 1), glumes sparse. Head: face and clypeus widened (Fig. 45), clypeus a little swollen and apically upturned, frons sparsely and indistinctly punctulate, ocellar distance greater than 1. Propodeum: apophysis reduced. Femur III: moderately swollen. Abdomen: terga 1-2 weakly granulate, mostly impunctate. Wing: radial cell a little elongate (Fig. 223). Colour: yellow - usually scape, sometimes clypeus, sometimes coxae at least apically, usually trochanters (sometimes entirely), femora I-II, tibiae (tibia III blackish apically); black - sometimes scape, usually clypeus, usually coxae at least basally, usually trochanters basally, hind femur and tarsus, abdomen (more often brownish on terga 2-4). Length: usually 4-5 mm.

Female diagnosis. Mostly brownish black abdomen (Fig. 147), flagellum stout (Fig. 23), yellowish basal half, black apical half. It differs from *E. lissorulus* sp. nov. by the black, punctate clypeus, mostly brownish black abdomen, and the stout flagellum.

Female description. Flagellum: short and linear, yellowish basal half, black apical half, basal 3 flagellomeres short. Head: face and clypeus wide, clypeus punctate, apical margin upturned, frons sparsely punctulate. Mesopleurum: sparsely punctate, a little strigillose on lower half. Propodeum: apophysis reduced (cf. Fig. 70). Abdomen: tergum 1 moderately slender (Fig. 98), postpetiole nearly square, 3rd valvula as long as basal 3 hind tarsomeres. Wing: radial cell a little elongate, Rs curved apically (Fig. 225). Colour: yellow - scape, coxae apically, trochanters, femora I-II (sometimes more blackish), tibiae, tarsus III; black - clypeus, coxae basally yellowish black, femur III (Fig. 187); brownish - abdomen. Length: 2.5-4 mm.

Hosts. Tortricidae - *Lobesia (=Polychrosis) botrana* (DEN., SCHIFF.), *Eupoecilia (=Clysia) ambiguella* (HÜBN.) (DOBRODĚVA 1915: 19; RÜHL 1913: 106; STELLWAAG 1921: 87; THOMPSON 1945: 139, 1946b: 486, 1957: 548).

Material studied: 195 mm, 44 ff. Austria, Bulgaria, Czechoslovakia, Denmark, Germany, England, Finland, ?France, Hungary, Poland, Sweden (BC, BM, FSA, HCZI, HC, IPSF, IAZ, IZPAN, JC, NMS, SC, SCW, SPCZ, TC, TMA, UH, ZMD, ZIL). Nearctic (LUHMANN 1990:125).

*Endasys petiolus* sp. nov. (Figs. 99, 188)

Male. Unknown.

Female diagnosis. Face and clypeus widened, clypeal margin upturned, flagellum linear (cf. Fig. 27), basal half yellowish, apical half black, basal 3 flagellomeres nearly moniliform, scape orange, abdominal tergum 1 moderately slender (Fig. 99). It is sometimes similar to *E. praegracilis* sp. nov., from which it differs by the entirely orange abdomen, wider face and clypeus, and the upturned clypeal margin.

Female description. Flagellum: linear, basal half yellowish, apical half black, basal 3 flagellomeres nearly moniliform. Head: face and clypeus widened, clypeal margin upturned, frons mostly sparsely punctulate. Mesopleurum: sparsely punctulate and strigillose. Propodeum a little swollen dorsally. Abdomen: tergum 1 moderately slender, postpetiole a little wider than long (Fig. 99), 3rd valvula as long as basal 3 hind tarsomeres. Colour: yellow - coxae apically, trochanters apically, femora I-II (more blackish yellow), tibiae I-II, hind tibia and tarsus; orange - scape, abdomen except most of tergum 1; black - coxae I-II blackish except apically, coxae, trochanters yellowish black basally, most of femur III (Fig. 188) blackish (basally and apically more yellowish). Length: 4-5 mm.

Hosts. Unknown.

Material studied: 8 ff. Holotype (f): "Poland, Rubcowo k. Mikaszówki distr. Augustów 18.VI.1957 leg. T. HUFLEJT" (SCW). Paratypes (7 ff): "Hungaria Újszentmargita védetta erdő", "Malaise-csapda 1976.VI.15 leg. PAPP Jenő" (TMA); "Heltari 22.VI.914" (TMA); "f Bornholm SCHIÖDTE" (ZMD); "Bohemia Czech. Jul. 1956 Jan MACEK" (SCW, TC); "3 IX 99 aldwtón" "British Isles C. MORLEY Coll. B.M. 1952-1959" (BM); "Leipzig-Süd 14.6.1959 K. ERMISCH leg." (IPSF).

***Endasys proteuryopsis* sp. nov.** (Figs. 2, 41, 100, 143, 151, 189)

Male diagnosis. Face and clypeus widened, clypeal margin upturned, 3 tyloids, frons moderately to sparsely punctulate (cf. Figs. 247, 248), abdomen more or less orange on terga 2-3, remaining terga black. See *E. rugifacies* sp. nov. for relationships, and *E. thunbergi* nom. nov. for other similarities.

Male description. Flagellum: moderately slender (Fig. 2), glumes sparse, 3 tyloids on flagellomeres 10-12. Head: face and clypeus widened, clypeal margin upturned, frons moderately to sparsely punctulate. Abdomen: tergum 2 a little widened, granulate and sparsely punctulate. Colour: yellow - trochanters apically, tibia III black apically; orange - variably on terga 2-3; black - scape, clypeus, coxae, trochanters basally, most of femora I-II, femur III (Fig. 151) and tarsus, tergum 1 except apex, variably on terga 2-3, most of tergum 4, remaining terga to apex. Length: 7 mm.

Female diagnosis. Face and clypeus a little widened, flagellum linear, basal 3 flagellomeres short (Fig. 41), flagellomeres 5-8 whitish, abdomen orange on terga 2-3, remaining terga black, tibia III and tarsus III yellowish orange. See *E. rugifacies* sp. nov. for additional remarks.

Female description. Flagellum: linear, basal 3 flagellomeres short, 5-8 whitish, 1-4 brownish. Head: face and clypeus widened a little, clypeus upturned apically, frons sparsely punctate. Abdomen: postpetiole rounded basally (Fig. 100), 3rd valvula as long as basal 4 hind tarsomeres. Colour: yellow - trochanters apically, femora I-II blackish yellow, tibiae I-II; yellowish orange - tibia III and tarsus III (Fig. 189); orange - tergum 1 apically, 2nd entirely, 3rd basally (orangish black apically); orangish black - tergum 1 basally, 3rd apically, terga 4-apex (Fig. 143); black - coxae, trochanters basally, femur III. Length: 5 mm.

Hosts. Unknown.

Material studied: 5 mm, 1 f. Holotype (m): "24.VII.1975 Col-des-Montets/F", "E 06 5500 N 460000", "legit. R. HINZ" (HC). Paratypes (4 mm, 1 f): (1 f) same data as holotype (SCW); (1 m) "10.VII.1978 Col d'Omon/F", "E 05 02 00 H 45 0200", "Coll. R. HINZ" (HC); (1 m) "6.VII.1977 Col de Montgenvre/F", "E 064610 N 44 5580", "Coll. R. HINZ." (SCW); (1 m) "Staunton GW, High Meadows Wds., 9.VI.1936. E.B.B. et J.F.P. B.M. 1936-399" (BM); (1 m) "Durmitor Taravölgy", "1958.VII.4 leg. MIHALYI" (TMA).

***Endasys rugifacies* sp. nov.** (Figs. 25, 102, 153, 191, 255, 256, 259)

**Male diagnosis.** Face and clypeus a little widened, clypeal margin upturned, face coarsely punctate, abdomen mostly black or brownish black. It is closely related to *E. proteuryopsis* sp. nov. and *E. minutulus* (THOMS.). It differs from the former by the coarsely punctate face, and from the latter by its larger size (over 5 mm).

**Male description.** Flagellum: moderately stout (Fig. 25), glumes sparse. Head: face and clypeus widened a little, clypeal margin upturned, face coarsely punctate, frons mostly densely punctate (cf. Figs. 253, 254), ocellar distance less than or equal to 1. Abdomen: terga 1-2 more or less granulate and punctulate. Wing: radial cell elongate. Colour: yellow - sometimes most of scape, trochanters apically, femora I-II apically or basally, tibiae I-II, tibia III basally; black - usually scape, clypeus, coxae, trochanters basally, femora I-II more yellowish black, femur III (Fig. 153), tibia III mostly blackish except basally, most of abdomen except sometimes more brownish black and lighter apically. Length: 5.5-6 mm.

**Female diagnosis.** Face and clypeus a little widened, face coarsely punctate (Figs. 255, 256), flagellomeres 6-9 white (Fig. 25), flagellum narrowed apically, basal 3 flagellomeres a little elongate, femur III distinctly swollen (Fig. 191). It is separated from *E. proteuryopsis* sp. nov. by the slender, narrowed flagellum, and from *E. minutulus* (THOMS.) by the orange on abdominal terga 2-3.

**Female description.** Flagellum: slender and narrowed apically, flagellomeres (5)6-9 white, basal 3 a little elongate. Femur III: distinctly swollen. Propodeum: swollen dorsally (Fig. 259). Abdomen: tergum 1 moderately stout (Fig. 102), postpetiole nearly square, 3rd valvula as long as basal 4 hind tarsomeres. Wing: radial cell elongate. Colour: yellow - scape, trochanters apically, femora I-II (more blackish ventrally), tibiae, tarsi; orange - usually femur III blackish orange, abdominal terga 1-2, 3 basally; black - sometimes scape, clypeus, coxae, trochanters basally, abdomen from tergum 3 apically to apex. Length: 6-6.5 mm.

**Hosts.** Unknown.

**Material studied:** 8 mm, 10 ff. Holotype (m): "21.VII. 1975 Monétier-les-Bains/F", "E 063100 N 450000", "legit. R. HINZ" (HC). Paratypes (7 mm, 10 ff): (1 f) Austria, (2 mm, 8 ff) France, (1 m) Hungary, (2 mm, 1 f) Italy, (2 mm) Germany (HC, IAZ, SCT, SCW, TMA, ZSBS).

***Endasys thunbergi* nom. nov.** (Figs. 24, 101, 152, 190, 230)

*Ichneumon rubricator* THUNBERG, 1822: 256. - Lectotype (f) by designation of SAWONIEWICZ: "*rubricator*. Sv." THUNBERG cabinet label; "*Stylocryptus rubricator* THBG. f" det. A. ROMAN. Loc. typ.: Sweden. Coll. THUNBERG, Uppsala (UU). Junior primary homonym of *Ichneumon rubricator* PANZER, 1801: Heft 84, Tafel 14.

**Male diagnosis.** Face and clypeus a little widened, abdomen mostly orange, flagellum with 3 tyloids (flagellomeres 10-12), glumes sparse, radial cell elongate (Fig. 230). It appears similar to lighter forms of *E. proteuryopsis* sp. nov. from which it is distinguished by the mostly orange abdomen and the flagellum with 3 tyloids.

**Male description.** Flagellum: 3 tyloids on flagellomeres 10-12, glumes sparse. Head: face and clypeus a little widened, clypeus more or less upturned, frons sparsely and weakly punctulate, ocellar distance about 1. Abdomen: terga 1-2 faintly granulate, sparsely and weakly granulate (terga appearing mostly shiny. Wing: radial cell elongate. Colour: yellow - trochanters apically, femora I-II, tibia III blackish yellow basal half; orange - abdomen except most of tergum 1 and apex (cf. Fig. 131); black - scape, clypeus, coxae, trochanters basally, femur III (Fig. 152), tibia III apical half, tarsus III. Length: 6 mm.

**Female diagnosis.** Flagellomeres 5-8 whitish, flagellum short and linear (Fig. 24), face and clypeus a little widened, femur III (Fig. 190) mostly orange with blackish apically and dorsally, propodeum a little swollen dorsally (cf. Fig. 259), area dentipara sloped apically, apophysis prominent. It differs from similar *E. proteuryopsis* sp. nov. and *E. petiolus* sp. nov. by the mostly orange femur III and the sloped area dentipara. Larger forms may resemble *E. brevis* (GRAV.), but differ by these 2 characters as well as by the flagellum linear to apex.

**Female description.** Flagellum: linear, basal 3 flagellomeres short, 5-8 whitish. Head: frons moderately punctulate. Propodeum: a little swollen dorsally, area dentipara strongly sloped apically, apophysis prominent. Abdomen: tergum 1 more abruptly widened beyond petiole (Fig. 101), 3rd valvula as long as basal 4 hind tarsomeres. Colour: yellow - trochanters apically, femora I-II, tibiae I-II; orange - most of femur III (more blackish apically and dorsally), tibia III (blackish apically), abdomen; black - scape, clypeus, coxae, trochanters asbasally, tarsus III, 3rd valvula; variability - sometimes femur III mostly blackish. Length: 5-7 mm.

**Hosts.** Diprionidae - *Diprion pini* (L.) (ŚWIEŻYŃSKA, GŁOWACKA-PILOT 1980: 150). Tenthredinidae - *Pristiphora abietina* (CHRIST) (JONAITIS 1970: 69, 1975: 55, 1981: 206, 1985: 14; *Stauronematus* (= *Lygaeonematus*) *compressicornis* (F.) (CAVALCASELLE 1968: 274; DELUCCHI 1963: 335; PSCHORN-WALCHER 1982: 160).

**Material studied:** 2 mm, 19 ff. Austria, Germany, Denmark, Finland, Italy, Poland, Sweden (BM, SCZ, SCW, UU, TC, ZMD, ZSBS).

***Endasys transverseareolatus* (STROBL 1901) (Figs. 3, 46, 70, 154, 220)**

*Stylocryptus transverse-areolatus* STROBL, 1901: 219. - Lectotype (m) by designation of Oehlke (Aubert 1980: 539): "*Stylocr. n. sp., minutul. tr.-areolat. Admont 10/5 93, m.*"

Loc. typ.: Austria: Admont. Coll. STROBL, Admont (SC).

*Endasys transverseareolatus*: HEINRICH 1951: 242.

Male diagnosis. 2nd discal cell short (Fig. 220), flagellum short and stout (Fig. 3), mostly black, under 5 mm long. It is related to *E. minutulus* (THOMS.) from which it differs by the diagnosis.

Male description. Flagellum: short and stout, glumes sparse 2 tyloids (flagellomeres 10-11). Head: face and clypeus wide (Fig. 46), temple a little swollen, clypeal margin a little upturned, frons moderately to densely punctulate, ocellar distance about 1. Propodeum: short, apophysis reduced (Fig. 70). Femur III: (Fig. 154) moderately swollen. Abdomen: terga 1-2 more or less granulate. Wing: 2nd discal cell shortened. Colour: yellowish - tibiae except tibia III apically, tarsus III especially basally; black - scape, clypeus, legs except tibiae, most of abdomen, sometimes 3rd tergum more brownish. Length: 4 mm.

Female. Unknown.

Hosts. Unknown.

Material studied: 15 mm. Germany, Finland, Hungary, Poland (BC, HC, IPSF, IAZ, JC, SCW, SC, TMA, UH).

### *Endasys (senilis group)*

This group is the most morphologically specialized of the genus. It corresponds to the Nearctic species of mostly southern California, the Southwest, and Mexico. The propodeum is usually more or less elongate and the postpetiole (males) is elongate. European species included are: *E. agnocellus* sp. nov., *E. melanopodis* sp. nov., *E. praegracilis* sp. nov., *E. senilis* (GMELIN), and *E. talitzkii* (TELENGA).

#### *Endasys magnocellus* sp. nov. (Figs. 4, 75, 155)

Male diagnosis. Ocellar distance about 0.5, ocelli large, abdomen smooth, shiny, and orange, flagellum slender and distinctly elongate (Fig. 4), 3 tyloids, femur III and tibia III orange, tarsus III black (Fig. 155).

Male description. Flagellum: distinctly slender and elongate. 3 tyloids on flagellomeres 11-13, glumes sparse. Head: clypeal margin a little impressed and upturned apically frons a little concave, densely punctate, ocell: large, ocellar distance about 0.5. Propodeum: apophysis reduced, areola nearly quadrate, 3rd lateral area defined (Fig. 75). Abdomen: dorsomedian carinae of tergum 1 reduced, tergum 1 faintly granulate and moderately punctulate, tergum 2 sparsely and weakly punctulate. Wing: radial sector a little bowed (cf. Fig. 233). Colour: yellowish orange - femora and tibiae; orange - scape more blackish orange, abdomen except apex; orangish black - coxae and trochanters; black - clypeus, tarsus III. Length: 9 mm.

Female. Unknown

Hosts. Unknown.

Material studied: 1 m. Holotype (m): "Orisare (Barakli) Ost-Bulgarien 10. Juli 1935" (IZPAN).

*Endasys melanopodis* sp. nov. (Figs. 83, 103, 156, 192, 222)

Male diagnosis. Abdominal tergum 1 slender, postpetiole elongate (Fig. 83), abdomen orange except base and apex, legs II-III mostly black (Fig. 156) except tibia II usually yellow, clypeus a little impressed and upturned apically. See remarks under *E. senilis* (GMEL.) for similarities and affinities.

Male description. Flagellum: slender and elongate, glumes sparse. Head: clypeus a little impressed, upturned apically, frons moderately punctulate, ocellar distance greater than 1. Propodeum: dorsal carinae sharply distinct (but not coarse), apophysis reduced, areola nearly hexagonal. Femur III moderately swollen (Fig. 157). Abdomen: tergum 1 slender, postpetiole elongate, tergum 2 mostly smooth and shiny, sparsely and indistinctly punctulate. Colour: yellow - leg I except femur ventrally black, tibia II; orange - abdomen except most of tergum 1 and apex; black - scape, clypeus, legs II-III (tibia II usually yellow), most of tergum 1 and apex. Length: 5-6.5 mm.

Female diagnosis. Legs entirely black (Fig. 192) except tibia I yellow, abdomen orange (most of tergum 1 black), tergum 1 moderately slender (Fig. 103), apophysis reduced, flagellum mostly linear, basal 3 flagellomeres moniliform, flagellum pale orange basal half, black apical half. See additional remarks under *E. senilis* (GMEL.)

Female description. Flagellum: mostly linear, faintly narrowed apically, bicoloured with basal half pale orange, apical half black, basal 3 flagellomeres moniliform. Head: clypeus a little indented and apically upturned, frons densely punctate, temple sparsely punctate. Propodeum: apophysis reduced. Femur III: swollen (Fig. 192). Abdomen: tergum 1 moderately slender, postpetiole moderately widened (Fig. 103), 3rd valvula as long as basal 3 hind tarsomeres. Wing: radial cell a little shortened and swollen medially, radial sector curved apically (Fig. 222), stigma a little swollen. Colour: yellow - tibia I; orange - abdomen except most of tergum 1; black - scape, clypeus, legs except tibia I, tergum 1 except apex, wings distinctly blackish. Length: 6 mm.

Hosts. Unknown.

Material studied: 5 mm, 6 ff. Holotype (f): "Poland, Łomna Stacja at Warszawa, źm, sad, grusza, 20-26.5.86 leg. E.K." (SCW). Paratypes (5 mm, 5 ff): (1 m) Czechoslovakia, (2 ff) Greece, (2 mm, 2 ff) Hungary, (1 m, 1 f) Poland, (1 m) Yugoslavia (IZPAN, SCW, SPCZ, TMA).



*Endasys praegracilis* sp. nov. (Figs. 5, 13, 26, 47, 58, 73, 78, 79, 90, 104, 139, 146, 157, 193, 251, 252)

Male diagnosis. Abdominal tergum 1 nearly parallel sided (Fig. 90), coxae and trochanters white, abdomen mostly blackish, variably orangish on terga 3-5 (Fig. 139). It is related to a Nearctic species in California from which it is distinguished by the slender and elongate flagellum and the mostly densely punctulate frons (Figs. 251, 252).

Male description. Flagellum: slender and elongate (Fig. 5), tyloids elongate (Fig. 13), glumes sparse. Head: clypeal margin upturned (Fig. 47), frons moderately to densely punctulate, ocellar distance about 1. Propodeum: areola elongate hexagonal, area dentipara a little elongate (Fig. 73), apophysis nearly absent, mostly smooth and shiny between carina. Femur III: slender (Fig. 157). Abdomen: tergum 1 elongate and slender, nearly parallel sided, tergum 2 narrowed basally (Fig. 90), mostly smooth and shiny, only weakly punctulate. Colour: white - coxae I-II at least apically (more yellowish basally), trochanters I-II; yellow - scape and clypeus (sometimes pale yellow), femora I-II, tibiae I-II, hind trochanters apically, femur III more yellowish orange ventrally, tibia III more yellowish orange basally; orangish: tergum 2 apically, variably on terga 3-5 (usually suffused with blackish); black - coxa III (more orangish or yellowish apicoventrally), hind trochanters basally, most of femur III, tibia III at least apically, tarsus III, most of tergum 1 (apex yellowish), tergum 2 except apex, variably on terga 3-5, terga 6-apex; variation - smaller frons with abdomen mostly black except apical margin of terga 1-3. Length: 5-6.5 mm.

Female diagnosis. Clypeus and face and little elongate (Fig. 58), abdomen orange suffused with blackish (Fig. 146), especially on terga 2 and 4-apex, tergum 1 moderately slender and widened (Fig. 104), flagellum mostly blackish, basal half slightly paler. It differs from all other European *Endasys* species (except *E. melanurus* ROMAN) by the elongate face and clypeus. It differs from *E. melanurus* (ROMAN) by being only faintly black on terga 4-apex, and with a densely punctulate and strigillose frons (Figs. 251, 252).

Female description. Flagellum: mostly blackish, but basal half paler, apically linear, basal 3 flagellomeres short to moniliform (Fig. 26), scape elongate. Head: clypeus and face a little elongate, frons densely punctulate. Propodeum: areola elongate hexagonal (Fig. 78), apophysis more or less distinct. Abdomen: tergum 1 moderately slender, postpetiole moderately widened, 3rd valvula as long as basal 4 hind tarsomeres. Colour: yellow - legs I-II (femur II usually blackish), coxa III apically, hind trochanters at least apically, sometimes femur III (Fig. 193) more blackish yellow, tibia III, tarsus III (more blackish yellow); orangish - tergum 1 apically, remaining terga appearing orangish but usually more or less suffused with

blackish, especially terga 2 and 4-apex; blackish to brownish - scape, clypeus, coxa III apically, often femur III. Length: 4.5-5.5 mm.

Hosts. Unknown.

Material studied: 4 mm, 7 ff. Holotype (m): "30.7.1960 Brenner" (HC). Paratypes (3 mm, 7 ff): (2 mm) "Unserfrau, Italy July 17'58 1500m David TOWNES" (TC, SCW); (2 ff) "25.August 1977 St. Ulrich" (BC); (3 ff) "26.8.1977 Seiser Alpe" (BC, SCW); (1 m) "9.7.1957 Berchtesgaden", "legit. R. HINZ" (SCW); (2 ff) " 23.VII. (and 24.VII.) 1975 Col-des-Montets/F", "E 06 55 00 N 46 00 00", "legit. R. HINZ" (HC).

*Endasys senilis* (GMELIN in LINNAEUS, 1790) (Figs. 59, 60, 76, 105, 131, 162, 194)

*Ichneumon senilis* GMELIN in LINNAEUS, 1790: 2704. - Syntypes lost, Europe, by description of GRAVENHORST (1829: 718).

*Cryptus (Phygadeuon) senilis*: GRAVENHORST 1829: 718 (redescription). 1 m in Coll. GRAVENHORST, Wrocław (UW).

*Endasys senilis*: AUBERT 1957: 220.

Male diagnosis. Abdominal tergum elongate and slender, nearly parallel sided (cf. Fig. 90), tergum 2 narrowed anteriorly, clypeus impressed and upturned apically (Fig. 60), coxae black, abdomen orangish with blackish suffusion, smaller forms mostly blackish. It is not clearly related to other European species. It is similar to *E. melanopodis* sp. nov. from which it differs by the blackish suffusion of the abdomen (distinctly orange in other), the whitish scape, and the slender femur III.

Male description. Flagellum: slender and elongate, glumes dense. Head: clypeus impressed and upturned apically, frons densely punctulate, ocellar distance less than 1. Mesopleurum: central area often strigose. Propodeum: areola elongate hexagonal, strong and sharp, apophysis reduced. Femur III: slender (Fig. 162). Abdomen: tergum 1 slender and elongate, nearly parallel sided, tergum 2 narrowed anteriorly, mostly smooth and shiny, only faintly punctulate. Wing: radial cell elongate. Colour: pale yellowish to whitish - scape, trochanters apically, tibiae I-II dorsally, tarsi I-II; yellow - femora I-II, tibiae I-II except dorsally; orange - usually abdomen blackish orange except most of tergum 1 and apex black (Fig. 131); black - clypeus, coxae, trochanters basally, leg III except trochanters apically (tibia more orangish black), sometimes abdomen mostly blackish (smaller forms). Length: 6.5-8 mm.

Female diagnosis. Flagellum mostly linear, pale orange basal half, black apical half, clypeus impressed and distinctly upturned apically, 3rd valvula shorter than basal 3 hind tarsomeres, femur III swollen (Fig. 194). It differs from *E. melanopodis* sp. nov. by the elongate radial cell and the short 3rd valvula.

**Female description.** Flagellum: mostly linear, bicoloured as in diagnosis, basal 3 flagellomeres short. Head (Fig. 59): clypeus impressed, distinctly upturned apically (Fig. 60), frons densely punctate. Propodeum: areola a little elongate anteriorly (Fig. 76). Femur III swollen. Abdomen: postpetiole more abruptly widened (Fig. 105), 3rd valvula shorter than basal 3 hind tarsomeres. Wing: radial cell elongate. Colour: yellow - trochanters apically, femora I-II at least apically, tibiae I-II; orange - abdomen except most of tergum 1; black - scape, clypeus, coxae, trochanters basally, most of femora I-II, leg III except trochanters apically (tibia III often more orangish black), most of tergum 1. Length: 5.5-7 mm.

Hosts. Tenthredinidae - *Pteronidea* (= *Nematus*) *melanaspis* (HART.) (ex cocoon - BM).

Material studied: 109 mm, 40 ff. Czechoslovakia, Denmark, Germany, France, Hungary, Italy, Poland, Sweden, USSR (European) (BC, BM, FSA, HC, HCZI, IPSF, IZPAN, SCW, SPCZ, SCT, TC, TMA, UW, ZSBS, ZMD, ZMM).

***Endasys talitzkii* (TELENGA, 1961)** (Figs. 27, 80, 106, 195)

*Phygadeuon talitzkii* TALITZKU, 1961: 139, 140, 143. Nomen nudum.

*Phygadeuon talitzkii* TELENGA, 1961: 163. - Holotype (f) not studied. - Paratype (1 f):

"Kisinev MSSR 20.V.58", Hopl. flava. minuta", "Paratype *Phygadeuon talitzkii*" TOWNES label. Loc. typ.: USSR, Moldavia, Kisinev. Coll. TC, Gainesville.

*Endasys talitzkii*: TALITZKU 1966: 176; SHORT 1978: 47, larva illustration Fig. 189.

Male. Not studied. Description 1 male in TELENGA (1961: 163).

**Female diagnosis.** Differs from all other European species by the distinctly elongate areola (Fig. 80), dorsal propodeal carinae very weak or absent.

**Female description.** Flagellum: linear, short, mostly blackish dorsally, basal 3 flagellomeres nearly moniliform (Fig. 27). Head: face widened, clypeus impressed and upturned apically, frons densely punctate. Propodeum: areola nearly as long or longer than wide, dorsal carinae very weak or absent. Femur III: swollen (Fig. 195). Abdomen: postpetiole broadly rectangular (Fig. 106), 3rd valvula shorter than basal 3 hind tarsomeres. Colour: yellow - scape, legs I-II, coxa III apically, hind trochanters, tibia III; yellowish orange - abdomen except most of tergum 1; blackish - clypeus more orangish black, coxa III except apically, femur III (more yellowish basally and apically), most of tergum 1. Length: 4-6 mm.

Hosts. Tenthredinidae - *Hoplocampa brevis* (KLUG), *H. flava* (L.), *H. minuta* (CHRIST), *H. testudinea* (KLUG) (HERTING 1977: 23; SHORT 1978:47; TALITZKU 1961: 139, 140, 143; 1963: 336; 1965: 449; 1966: 170, 176, 187; TELENGA 1961: 164).

Material studied: 55 ff. Denmark, Germany, Hungary, Poland, USSR (Moldavia) (BM, IPSF, IZPAN, SCW, SCZ, TMA, TC, ZMD).

### *Endasys (cnemargus group)*

This is perhaps the most morphologically generalized group of *Endasys* species. The propodeal apophysis is strong and toothlike, punctation of the head is dense, its surface strigillose, the mesopleurum is usually strigose centrally (Figs. 257, 258), and the flagellum of females is characteristically narrowed apically with flagellomeres 4-9 white. The following species are placed here: *E. amoenus* (HABERMEHL), *E. areolellae* sp. nov., *E. cnemargus* (GRAVENHORST), *E. femoralis* (HABERMEHL), and *E. parviventris* (GRAVENHORST).

***Endasys amoenus* (HABERMEHL, 1912)** (Figs. 29, 67, 85, 107, 165, 196, 233)

*Stylocryptus (Endasys) amoenus* HABERMEHL, 1912: 178. - Lectotype (f) by designation of REPTZ: "2.50", "Worms 9.8.99 HbM.", "*Stylocryptus amoenus* HAB. f". Loc. typ.: Germany, Worms. Coll. HABERMEHL, Frankfurt (NMS). - Syntypes (1 f, 1 m) in Coll. ULBRICHT, Krefeld (SKKI) (SORG, CYMOREK 1986: 198).

*Endasys amoenus*: KOLUBAJIV 1954: 36, 83; BAUER 1958: 448.

Male diagnosis. Clypeus yellow, a little widened, scape usually pale yellow and also trochanters at least apically, femur III and tibia III orange with black apically (Fig. 165). The widened form of the clypeus and colour pattern of the legs are best seen in 2 new Nearctic species.

Male description. Flagellum: 3 tyloids (flagellomeres 10-12, small), glumes sparse. Head: clypeus a little widened, slightly impressed and a little upturned apically, frons densely punctulate, ocellar distance a little less than 1. Mesopleurum usually strigillose across central area. Propodeum: strigillose between distinct carinae, apophysis strong and toothlike (Fig. 67). Abdomen: terga 1-2 more or less granulate and weakly punctulate, sometimes postpetiole a little strigillose, usually square to a little widened (Fig. 85). Wing: radial cell elongate (Fig. 233). Colour: pale yellow - usually scape, clypeus, trochanters apically, tarsi I-II; yellow femora I-II, tibiae I-II (often tibia II blackish apically); orange - femur III (black apically), tibia III (black basally and apically), abdomen (except tergum 1 more basally and 6 or 7 to apex). Variability: sometimes the following white: scape, clypeus, trochanters, coxae I-II apically (coxae I-II orange basally, III entirely); sometimes abdomen black from tergum 4 apically to apex.

Female diagnosis. Widened, mostly black clypeus, a little impressed and upturned apically, femur III and tibia III orange with black apically (Fig. 196), often tibia II blackish apically, flagellum a little narrowed apically (Fig. 29), flagellomeres 5-9 white.

Female description. Flagellum: slender, a little narrowed apically, basal 3 flagellomeres elongate, (4)5-9 white. Head: clypeus distinctly widened, a little impressed and slightly upturned apically, frons very densely punctulate and

strigillose, ocellar distance about 1. Abdomen: postpetiole abruptly widened, rounded basally (Fig. 107), tergum 1 faintly punctulate and strigillose, 3rd valvula about as long as hind tarsus. Colour: yellow - trochanters apically; orange - femora I-II (black apically), tibiae I-II more yellowish orange (II blackish apically), tibia III (black basally and apically), terga 1-5; black - most of scape and clypeus, coxae, trochanters basally, tarsi II-III, terga 6-apex. Length: 7-7.5 mm.

Hosts. Tenthredinidae - *Pikonema* (= *Pachynematus*) *montanum* (ZADD.) (HERTING 1977: 29; KUDELA, KOLOFIK 1955: 220, 223); *P. scutellatum* (HART.) (HERTING 1977: 29; KOLUBAJTV 1952: 32, 1954: 17, 36, 1962: 24; KOLUBAJTV, KALANDRA 1952: 105, 106; MARTINEK 1951: 142; PFEFFER 1954: 368).

Material studied: 17 mm, 14 ff. Czechoslovakia, Denmark, Germany, Hungary, Italy, Poland (HC, TC, IPSF, BC, NMS, SKKI, ZMD, TMA, UW, ZSBS).

***Endasys areolellae* sp. nov.** (Figs. 48, 82, 91, 159)

Male diagnosis. 3rd lateral area of propodeum partially complete, areola small, mostly oval (Fig. 82); abdominal tergum 1 with strong, sharp dorsomedian carinae across most of postpetiole. It is placed in the *E. cnemargus* groups based on propodeal and abdominal features. It differs mainly by the propodeal features.

Male description based on holotype. Flagellum: moderately slender, 2 tyloids (flagellomeres 10-11), glumes mostly sparse. Head: clypeal margin slightly upturned (Fig. 48), frons densely punctate, ocellar distance about 1. Propodeum: areola small and nearly oval, 3rd laterally area partially complete. Abdomen: tergum 1 with dorsomedian carinae strong and sharp across most of postpetiole (Fig. 91), tergum 1 granulate and a little strigillose, tergum 2 faintly granulate, sparsely punctate. Wing: radial cell elongate. Colour: yellow - tibiae I-II; orange - trochanters orangish apically, femora except III with blackish apex (Fig. 159), tibia III except blackish base, terga 2-7; black - scape, clypeus, coxae, trochanters basally, hind tarsus, tergum 1 except apex. Length: about 9 mm.

Female. Unknown.

Hosts. Unknown.

Material studied: 1 m. Holotype (m): "Nagykovácsi Nagyszénás", "1967.V.28 leg. ZOMBORI L." (TMA).

***Endasys cnemargus* (GRAVENHORST, 1829)** (Figs. 49, 61, 62, 92, 108, 142, 161, 203, 253, 254)

*Cryptus* (*Phygadeuon*) *cnemargus* GRAVENHORST, 1829: 734. - Holotype (m) det. by FRILLI (1974: 112): without labels. Loc. typ.: Germany, Trajecti ad Main (=Frankfurt/M.). Coll. GRAVENHORST, Wrocław (UW).

*Stylocryptus* (*Endasys*) *Kriegeri* HABERMEHL, 1912: 175. Syn. nov. - Lectotype (f) by designation of REITZ: "Pitna Gv 3.8.94 KRIEGER L.", "*Stylocryptus Kriegeri* HAB. f". -

Paralectotype (1 m) by designation of SAWONIEWICZ: "Bautzen Sch, 14.8.96 KRIEGER L.", "*Stylocryptus Kriegeri* HAB. m". Loc. typ.: Germany, Pirna near Dresden. Both types in Coll. HABERMEHL, Frankfurt (NRS).

*Endasys parviventris* var. *cnemargus*: PERKINS 1962: 451.

Male diagnosis. Tibiae I-II white dorsally, femur III black, tibia III yellowish basally, blackish apically, genal carina distinct to mandibular base (Fig. 62). It is related to *E. femoralis* (HABERM.) and Nearctic *E. texanus* (CRESS.). It differs from *E. texanus* (CRESS.) by the black scape, coxae, and trochanters (not white).

Male description. Flagellum: 2 tyloids (flagellomeres 10-11), glumes moderately spaced (cf. Fig. 19). Head (Fig. 49): genal carina distinct to mandibular base, frons densely punctate (Figs. 253, 254), ocellar distance less than 1. Mesopleurum often strigose (cf. Figs. 257, 258) across central area. Leg III - Fig. 161. Abdomen: tergum 2 a little widened (Fig. 92), terga 1-2 granulate and sparsely punctate, tergum 3 faintly granulate and punctulate. Colour: white - tibiae I-II dorsally; yellow - trochanters apically, femora I-II (except white dorsally), tibia III basal half; orange - tibia III more yellowish orange except apically, abdomen except most of tergum 1 and apex; black - scape, clypeus, coxae, trochanters basally, femur III, tibia III apically, and tarsus. Length: 6.5-9 mm.

Female diagnosis. Tibiae I-II white dorsally, tibia III yellowish (blackish apically), flagellum narrowed apically (cf. Fig. 28), flagellomeres 4-8(9) white, genal carina distinct to mandibular base (Figs. 61, 62). It differs from *E. femoralis* (HABERM.) by the yellowish tibia III and the complete genal carina, and the distinctly black femur III (Fig. 203). It differs from Nearctic *E. texanus* (CRESS.) by the black scape and femur III.

Female description. Flagellum: narrowed apically, basal 3 flagellomeres elongate (cf. Fig. 42), (3)4-8(9) white. Head: genal carina more or less distinct to mandibular base, frons densely punctate and strigillose. Abdomen: postpetiole broadly widened, rounded basally (Fig. 108), 3rd valvula as long as basal 4 hind tarsomeres. Wing: radial cell elongate. Colour: white - tibiae I-II dorsally, sometimes tibia III a little whitish dorsobasally (usually pale yellow); yellow - trochanters apically, tibiae I-II more apically (except white dorsally), tibia III except apically blackish; orange - sometimes tarsus III more blackish orange, abdomen except terga 6-apex (Fig. 142); black - scape, clypeus, coxae, trochanters basally, most of femora I-II, femur III, usually tarsus III more blackish. Length: 6-8 mm.

Hosts. Diprionidae - *Diprion pini* (L.) (COULON 1933: 93; GAULLE, 1907: 48).

Material studied: 54 mm, 39 ff. Austria, Bulgaria, Germany, Finland, France, Hungary, Italy, Poland, Sweden, Switzerland (BC, BM, FSA, HC, IPSF, IZPAN, NMS, SCT, SCW, SCZ, TC, TMA, TUD, UH, UW, ZMD, ZSBS).

*Endasys femoralis* (HABERMEHL, 1912), stat. nov. (Figs. 6, 50, 109, 158, 205)

*Stylocryptus* (*Endasys*) *KRIEGERI* v. *femoralis* HABERMEHL, 1912:176. - Lectotype (f): "776", "Worms 1.9.97 HBM.", "*Stylocryptus Kriegeri* HAB. v. *femoralis*. f". Loc. typ.: Germany, Worms. - Paralectotypes (3 mm): "2./32.", "Roseng. 22.8.01 HBM."; "2./33.", "Roseng. 22.8.01 HBM."; *Stylocryptus Kriegeri* HAB. v. *femoralis* HAB. m", "Roseng. 24.9.07". All types by designation of SAWONIEWICZ, Coll. HABERMEHL, Frankfurt (NMS).

*Endasys Kriegeri* HAB. var. *femoralis*: CONSTANTINEANU 1962: 178.

Male diagnosis. Tibiae I-II white dorsally, femur III mostly orangish with blackish suffusion and black apically (Fig. 158), genal carina absent or very weak near mandibular base (Fig. 50), apophysis strong and toothlike. See *E. cnemargus* (GRAV.) for relationships.

Male description. Flagellum: elongate and slender (Fig. 6), glumes sparse. Head: genal carina absent near mandibular base, or weak and bent toward oral carina, frons densely punctate, ocellar distance greater than or equal to 1. Propodeum: apophysis strong and toothlike. Abdomen: postpetiole with strong dorsomedian carina over half its length, terga 1-2 granulate and weakly punctate. Colour: white - tibiae I-II dorsally; yellowish - scape, trochanters, femora I-II, tibiae I-II (except dorsally); orangish - femur III more orangish with blackish suffusion, more blackish apically, usually tibia III more blackish orange, black apically, abdomen except most of tergum 1 basally and apex; black - clypeus, coxae, sometimes tibiae III more orangish black, tarsus III. Length: 7.5-8 mm.

Female diagnosis. Tibiae I-II white dorsally, genal carina weak or absent near mandibular base (Fig. 50), flagellum narrowed apically, flagellomeres 4-9 white.

Female description. Flagellum: narrowed apically, basal 2 flagellomeres elongate, 3rd short, 4-9 white. Head: genal carina weak or absent near mandibular base, frons densely punctate and strigillose, ocellar distance greater than 1. Abdomen: postpetiole moderately widened (Fig. 109), tergum 1 faintly granulate and faintly punctulate, 3rd valvula as long as basal 4 hind tarsomeres. Wing: radial cell a little widened. Colour: white - tibiae I-II dorsally; yellowish - usually trochanters more apically, sometimes femora I-II more blackish yellow, tibiae I-II more ventrally (except black apically); orange - sometimes femur III more orangish basally, abdomen except apex and tergum 1 basally; black - scape, clypeus, coxae, usually femora I-II more yellowish black, trochanters basally, usually femur III and tibia III more orangish black (Fig. 205), tarsus III. Length: 7-7.5 mm.

Hosts. Unknown.

Material studied: 18 mm, 17 ff: Bulgaria, Germany, Hungary, Poland, Spain, USSR (European) (BC, BM, HC, IPSF, IZPAN, MNM, NMS, SCW, TC, TMA, HCZI, UW, ZSBS).

***Endasys parviventris* (GRAVENHORST, 1829) (Figs. 28, 86, 110, 163, 199)**

*Cryptus* (*Phygadeuon*) *parviventris* GRAVENHORST, 1829: 746. - Lectotype (f) by designation of FRILLI (1974: 115): "f", "*Stylocryptus parviventris* GRAV. f" HABERMEHL label. Loc. typ.: Germany, Sickershausen. Coll. GRAVENHORST, Wrocław (UW).

*Stylocryptus tyrolensis* SCHMIEDEKNECHT, 1905: 662. Synonymy by HABERMEHL (1912: 175). - Holotype (f) det. OEHLKE (OEHLKE, TOWNES, 1969: 409): small red square; "*Stylocryptus parviventris* Gr. var. *tyrolensis* [sic!] SCHMIEDEKN. f". Loc. typ.: Austria, Innsbruck. Coll. SCHMIEDEKNECHT, Rudolstadt (SMH).

*Endasys parviventris*: HEINRICH 1951: 242.

Male diagnosis. All tibiae with elongate, white patch dorsally, abdomen mostly orange, flagellum with 3 tyloids on flagellomeres 10-12. It is closely related to and European species and to Nearctic *E. maculatus* (PROV.) from which it is distinguished by the orange abdomen and mostly orange femur III.

Male description. Flagellum: 3 tyloids on flagellomeres 10-12, glumes sparse. Head: clypeus slightly widened, frons evenly, densely punctate, ocellar distance near 0.5. Mesopleurum: strigose across central area. Abdomen: dorsomedian carina strong across postpetiole (Fig. 86), terga 1-2 granulate, mostly sparsely punctulate. Wing: radial cell elongate. Colour: white - tibiae dorsally (elongate, well defined patch); yellow - femora I-II (mostly blackish basally), tibiae I-II (blackish apically); orange - flagellum pale orange, trochanters apically more blackish orange, femur III (black apically), abdomen except apex and most of tergum 1; black - scape, clypeus, coxae, trochanters basally, tibia III except white patch dorsally (Fig. 163) tarsus III. Length: 7.5-10 mm.

Female diagnosis. All tibiae with elongate, distinct white patches dorsally (Fig. 199), flagellum narrowed apically (Fig. 28), flagellomeres 4-9 white, abdomen and femur III orange with black apex. It differs from the European species and Nearctic *E. maculatus* (PROV.) by the mostly orange abdomen and femur III. European *E. varipes* (GRAV.) has a small white patch dorsally on (mostly yellowish) tibia III, but differs from *E. parviventris* (GRAV.) especially by the flagellum.

Female description. Flagellum: narrowed apically, basal flagellomeres elongate, 2-3 a little elongate, 4-9 white. Head: face and clypeus a little widened, densely punctate and strigillose. Femur III: a little swollen (Fig. 199). Abdomen: postpetiole moderately widened, basally a little angular (Fig. 110). Wing: radial cell elongate. Colour: white - all tibiae with distinct, elongate patch dorsally; yellowish - sometimes femora I-II more so, tibiae I-II except dorsally and apically (blackish); orange - femur III (apically black), abdomen except apex; black - scape, clypeus, coxae, trochanters, usually femora I-II, tibia III except white patch. Length: 7.5-10 mm.

Hosts. Diprionidae - *Diprion pini* (L.) (BRISCHKE 1881: 343; DALLA TORRE 1902: 711; HABERMEHL 1912: 174; JÄNNER 1937: 39; LAIDLAW 1933: 130;



MEYER 1927: 82, 1936: 304; MORLEY 1907: 68; RÜHL 1914: 16; SCHMIEDEKNECHT 1932: 36; THOMPSON 1950b: 44, 1957: 548); *D. similis* (HART.) (HABERMEHL 1912: 174; JÄNNER 1937: 39; MORLEY 1907: 68; SCHMIEDEKNECHT 1932: 36). Tenthredinidae - *Croesus septentrionalis* (L.) (COMELLINI 1971: 34; JONAITIS 1985: 14).

Material studied: 12 mm, 23 ff: Austria, Bulgaria, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Sweden, Turkey (HC, IPSF, IZPAN, SCW, SCT, SMH, TC, TMA, UH, UW, ZMD, ZSBS).

### *Endasys* (*testaceus* group)

This group is moderately specialized morphologically. The males have white coxae and trochanters. It includes the following European species: *E. annulatus* (HABERMEHL), *E. euxestus* (SPEISER), *E. testaceipes* (BRISCHKE), and *E. testaceus* (TASCHENBERG).

*Endasys annulatus* (HABERMEHL, 1912), comb. nov., stat. nov. (Figs. 14, 42, 111, 132, 164, 200, 229, 235, 249, 250)

*Stylocryptus* (*Endasys*) *erythrogaster* var. *annulata* HABERMEHL, 1912: 182. - Lectotype (f) by designation of SAWONIEWICZ: "Mähren Schlauschinger" Loc. typ.: Germany, Mahren. Coll. HABERMEHL, Frankfurt (NMS). Ertoneous synonymy by HABERMEHL (1916: 380) with *Stylocryptus rubricator* (THUNB).

*Stylocryptus erythrogaster* f. *annulicornis* AERTS, 1953: 11. Syn. nov. - Lectotype (f) by designation of HORSTMANN (1986: 101): "Köln 21.6.49 AERTS". Loc. typ.: Germany, Köln. Coll. AERTS, Bonn (ZF). Other syntypes in Coll. ZF ("Paralectotypes" 2 ff, desig. by HORSTMANN 1986: 101) belong to *Endasys alutaceus* (HABERM.).

Male diagnosis. Coxae I-II and trochanters I-II white, scape and clypeus yellowish white, 3 tyloids (flagellomeres 9-11), femur III orange to blackish orange with blackish apex (Fig. 164), abdominal tergum 2 often variably blackish (Fig. 132). It is closely related to Nearctic *E. subclavatus* (SAY) and also European *E. testaceipes* (BRISCHKE). It is distinguished from the former by the blackish on leg III and tergum 2; from the latter by 3 tyloids and the granulate, punctulate terga 1-2.

Male description. Flagellum: slender (cf. Fig. 11), 3 tyloids on flagellomeres 9-11, short and serrate (Fig. 14), glumes moderate to 3 dense. Head: frons densely punctulate (Figs. 249, 250), ocellar distance less than or equal to 1. Leg III - Fig. 164. Abdomen: tergum 1 with dorsomerdian carina strong across most of postpetiole, terga 1-2 granulate and a little strigilose, weakly punctulate, tergum 3 faintly granulate and weakly punctulate. Wing: radial sector elongate (Fig. 229). Colour: white - scape and clypeus (often more yellowish white), coxae I-II

(blackish basally), coxa III apically, trochanters, tibiae I-II dorsally; yellow - femora I-II, tibiae I-II (except dorsally); orangish - femur III (often blackish orange, apex always black), tibia III more yellowish orange with blackish apically, tergum 2 variably, 1st apically, 3-6 entirely; black - coxa III except apically, tarsus III, most of tergum 1, 2nd variably, apex of abdomen. Length: 6-9 mm.

Female diagnosis. Flagellum: linear to apex, basal 2 flagellomeres elongate (Fig. 42), 5-9 white, radial cell elongate (Fig. 235), coxae blackish with yellowish apically. It differs from *E. subclavatus* (SAY) and *E. testaceipes* (BRISCHKE) by the distinctly elongate radial cell and the blackish coxae. It is also similar to *E. euxestus* (SPEIS.) from which it is told by the white flagellomeres 5-9.

Female description. Flagellum: linear to apex, flagellomeres 5-9 white, basal 2 a little elongate, 3rd short. Head: frons densely punctulate, ocellar distance about 1. Femur III: swollen (Fig. 200). Abdomen: postpetiole widely rectangular (Fig. 111), 3rd valvula as long as tarsus III. Wing: radial cell distinctly elongate. Colour: yellowish - coxae apically, trochanters, femora I-II, tibiae I-II (whitish yellow dorsally); orange - usually scape (often blackish), usually clypeus more blackish orange, femur III more orangish basally, tibia III (apically blackish) and tarsus III yellowish orange, abdomen except most of tergum 1; black - sometimes scape and clypeus, coxae except apically, most femur III orangish black. Length: 6-7 mm.

Hosts. Unknown.

Material studied: 88 mm, 44 ff: Austria, Czechoslovakia, Denmark, Germany, France, Hungary, Poland, Switzerland (BC, BM, HC, IPSF, IZPAN, JC, NMS, SCW, SCZ, SPCZ, TC, TMA, UW, ZF, ZSBS, ZMD, ZSBS).

*Endasys euxestus* (SPEISER, 1908) (Figs. 17, 43, 113, 160, 201, 236, 260)

*Phygadeuon vagabundus*: BRISCHKE 1891: 69. Misidentification.

*Stylocryptus euxestus* SPEISER, 1908: 42. - Syntypes (3 ff) lost. Loc. typ.: Poland, Stegny (Steege) near Gdańsk. According to original description.

*Stylocryptus (Endasys) erythrogaster* GRAV. var. *clipeator* HABERMEHL, 1912: 182. Syn. nov. - Lectotype (m): "*Stylocryptus erythrogaster* v. *clipeator* HAB. m", "Worms (8) HABERMEHL". Loc. typ.: Germany, Worms. - Paralectotypes (2 mm): "3.713", "Thamb. i/Th. Juli 06 HBM."; "Blkbg i/Th. Juli 08 HAB.". Types by designation of SAWONIEWICZ in Coll. HABERMEHL, Frankfurt (NMS). KLOET, HENCKS (1945: 250) erroneously synonymized "*Glyphicnemis clipeator* [sic!] HABERM. 1912" with "*Glyphicnemis erythrogastra* GRAV. 1829".

*Endasys euxestus*: OZOLS 1961: 7; JONAITIS 1981: 206.

Male diagnosis. Coxae white apically, trochanters white, clypeus yellowish orange to blackish, abdominal terga 1-2 granulate and punctate, femur III mostly blackish (Fig. 160). It appears closely related to Nearctic *E. pubescens* (PROV.), and is similar to European *E. testaceipes* (BRISCHKE), *E. annulatus* (HAB.), and *E.*

*testaceus* (TASCHENB.). It differs from them by the strongly punctate tergum 2 and the more orangish to blackish clypeus, distinctly yellow to whitish in the other 4 species.

Male description. Flagellum: glumes sparse (Fig. 17). Head: frons densely punctulate (cf. Figs. 249, 250), ocellar distance less than or equal 1. Abdomen: terga 1-2 granulate and punctate, tergum 3 faintly granulate and punctulate. Wing: radial cell distinctly elongate (Fig. 236). Colour: white - coxae apically, trochanters, tibiae I-II dorsally, most of tarsi I-II; yellow - scape blackish yellow, sometimes clypeus more blackish yellow, femora I-II, tibiae I-II (except dorsally); orange - usually clypeus blackish orange, tibia III yellowish orange with black apex, sometimes femur III ventrally, abdomen except most of tergum 1 and apex; black - sometimes clypeus, coxae blackish basally, femur III mostly (sometimes orangish basally, apically, and ventrally), tarsus III (basitarsus often orange basally). Length: 6-8 mm.

Female diagnosis. Flagellum linear, yellowish basal half, black apical half, clypeal margin usually not upturned, propodeum a little swollen dorsally and laterally (Fig. 260), radial cell distinctly elongate (Fig. 236). Differs from Nearctic *E. pubescens* (PROV.) by the swollen propodeum.

Female description. Flagellum: linear to apex, yellowish basal half, black apical half, basal 3 flagellomeres short (Fig. 43). Head: clypeal margin usually not upturned, frons densely punctulate. Mesopleurum: sparsely punctate and strigillose. Propodeum: a little swollen dorsally and laterally. Femur III: swollen (Fig. 201). Abdomen: tergum 1 moderately stout (Fig. 113), 3rd valvula about as long as basal 4 hind tarsomeres. Wing: radial cell distinctly elongate. Colour: yellow - sometimes scape, coxae apically, trochanters, femora I-II (more blackish yellow), tibiae I-II (pale yellow dorsally), tibia III; orange - sometimes scape more orangish, coxa III partly orangish, tibia III yellowish orange (black apically), abdomen; black - scape usually blackish, clypeus, coxae basally, most of femur III except orangish basally, tarsus III blackish. Length: 5-7 mm.

Hosts. Diprionidae - *Diprion* sp. and *Lophyrus* sp. (HEDWIG 1959: 88; HERTING 1977: 13; OZOLS 1934: 5; 1961: 7). Tenthredinidae - *Pristiphora abietina* (CHRIST) (BM, HC). Pyraustidae - *Ostrinia* (=Pyrausta) *nubilalis* (HÜBN.) (CONSTANTINEANU, PISICĂ 1966: 209).

Material studied: 288 mm, 233 ff: Austria, Bulgaria, Czechoslovakia, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Sweden, Switzerland, USSR (European) (BC, BM, FSA, HCZI, HC, IPSF, IAZ, IZPAN, NMS, SCW, SPCZ, SCZ, TC, TMA, UH, ZMD, ZSBS).

***Endasys testaceipes* (BRISCHKE, 1891) (Figs. 112, 166, 202)**

*Phygadeuon (Bachia) testaceipes* BRISCHKE, 1891: 69. - Syntypes (3) lost. Loc. typ.: Poland, Stegny (=Steeßen) near Gdańsk, according to original description and SPEISER (1908: 43) description.

*Stylocryptus coxalis* SCHMIEDEKNECHT, 1905: 659, 663. Synonym by SPEISER (1908: 43). - Lectotype (f) by designation of HORSTMANN (1990: 52): "Thüringen O. SCHMIEDEKNECHT", "*Stylocryptus coxalis* SCHMIEDEKN. fm". Loc. typ.: Germany, Thüringen. Coll. MN, Berlin.

*Endasys testaceipes*: LECLERCQ 1949: 82.

Male diagnosis. White coxae and trochanters of legs I-II, most of leg III black (except white areas, Fig. 166), most of abdomen orange, terga 1-2 appearing smooth and shiny. It is probably most closely related to *E. annulatus* (HAB.) from which it differs by the distinctly black femur III and the shiny tergum 2 (see additional remarks under *E. annulatus* HAB.). It is similar to lighter forms of *E. euxestus* (SPEIS.) from which it is told by the same characters noted, and by the distinctly yellowish white to whitish clypeus.

Male description. Flagellum: tyloids (2) serrate, glumes sparse to moderate. Head: clypeal margin weakly upturned, frons moderately to densely punctulate, ocellar distance less than 1. Abdomen: terga 1-2 faintly granulate, indistinctly punctulate, appearing mostly smooth and shiny. Wing: radial cell elongate. Colour: white - scape, clypeus (sometimes more pale yellow), coxae I-II (yellowish basally), coxa III apically, most of trochanters, tibiae I-II whitish dorsally; yellow - femora I-II, tibiae I-II (except white dorsally); orange - abdomen except most of tergum 1 and apex; black - most of leg III except tibia often with pale orangish patch dorsally at base (Fig. 166). Length: 5-6 mm.

Female diagnosis. Flagellomeres 5-9 whitish, tibiae I-II dorsally white, tibia III whitish except blackish basally and apically (Fig. 202). It differs from *E. annulatus* (HAB.) by the whitish tibia III and the coxae basally orange.

Female description. Flagellum: linear, basal 3 flagellomeres short, 5-9 white. Head: frons mostly densely punctulate (cf. Fig. 247). Abdomen: postpetiole more abruptly widened (Fig. 112), 3rd valvula as long as basal 3 hind tarsomeres. Colour: whitish - tibiae I-II dorsally, tibia III except basally and apically, and sometimes more ventrally; pale-yellow - coxae apically, trochanters; yellow - femora I-II, tibiae I-II (except dorsally); orange - clypeus usually orangish, coxae except apically, abdomen except most of tergum 1; black - clypeus more orangish black, femur III (Fig. 202) and tarsus III. Length: 5-6 mm.

Hosts. Unknown.

Material studied: 42 mm, 41 ff - England, Germany, Hungary, Poland (BC, HC, IPSF, IZPAN, MN, SCW, TC, TMA, UW, ZSBS).

***Endasys testaceus* (TASCHENBERG, 1865) (Figs. 30, 114, 167, 197, 231)**

*Phygadeuon testaceus* TASCHENBERG, 1865: 35. - Holotype (f) det. by SAWONIEWICZ (1984: 316): "31/5" (ovipositor missing). Loc. typ.: Germany. Coll. TASCHENBERG, Halle (UHS). ROMAN (1912: 277) erroneously synonymized it with *Stylocryptus rubricator* (THUNB.) (vide: SAWONIEWICZ 1984: 316).

*Stylocryptus (Endasys) erythrogaster* GRAV. var. *ruficoxis* HABERMEHL, 1912: 182. Syn. nov. - Syntypes (14 ff) unknown, by original description. Loc. typ.: Germany, Sachsen.

*Endasys testaceus*: HELLEN 1957: 137.

Male diagnosis. White coxae (apically) and trochanters, yellow to pale-yellow scape and clypeus, femur II and tibia III orange with black apically (Fig. 167), clypeus a little impressed with margin upturned. It is related to Nearctic *E. inflatus* (PROV.) from which it is distinguished by the blackish often on abdominal terga 4-6, mostly orangish coxae I-II (white apically), and the central area of the mesopleurum punctate.

Male description. Flagellum: often 3rd tyloid on flagellomere 9, glumes sparse. Head: clypeus a little impressed and upturned apically, frons usually densely punctulate, ocellar distance less than or equal to 1. Mesopleurum: central area usually punctate. Abdomen: terga 1-2 weakly granulate and faintly punctulate. Wing: radial sector with both sections straight (Fig. 231). Colour: white to pale-yellow - sometimes scape and clypeus, coxae I-II (sometimes III) apically, sometimes tibiae I-II dorsally, trochanters; yellow - usually scape and clypeus (sometimes more blackish yellow), sometimes coxae I-II basally, femora I-II, tibiae I-II; orange - sometimes most of coxa III, femur III and tibia III with black apically, abdomen except most of tergum 1 and apex (sometimes blackish on terga 4-6); black - usually coxae blackish except apically, tarsus III, sometimes terga 4-6 blackish. Length: 5-7 mm.

Female diagnosis. Flagellum yellowish orange, mostly linear to apex (Fig. 30), legs I-II yellow, leg III mostly orange (Fig. 197), clypeus orange, impressed and upturned apically. It differs from *E. inflatus* (PROV.) by the unicoloured flagellum and the stout abdominal tergum (Fig. 114).

Female description. Flagellum: mostly yellowish orange, mostly linear to apex, basal 3 flagellomeres short. Head: clypeus impressed and upturned apically, frons densely punctulate. Femur III: swollen (Fig. 197). Abdomen: tergum 1 stout, but moderately widened (Fig. 114), 3rd valvula as long as basal 4 hind tarsomeres. Wing: radial sector short and curved (Fig. 221). Colour: yellow - legs I-II, coxa III (basally more orangish or blackish), hind trochanters; orange - scape, most of clypeus more blackish orange, most of leg III, abdomen. Length: 4-6 mm.

Hosts. Unknown.

Material studied: 21 mm, 8 ff - Denmark, Germany, Hungary, Poland, Sweden (HC, IZPAN, SCW, TMA, UHS, ZMD, ZSBS).

### *Endasys (rusticus group)*

This group is moderately specialized morphologically compared to all but the *Endasys (senilis group)*. Characteristically the petiole is slender and a little elongate, the postpetiole has weak dorsomedian carina, and the clypeus is upturned apically. The following European species are included: *E. brunnulus* sp. nov., *E. erythrogaster* (GRAVENHORST), *E. melanistus* sp. nov., *E. nitidus* (HABERMEHL), *E. plagiator* (GRAVENHORST), and *E. rusticus* (HABERMEHL).

#### *Endasys brunnulus* sp. nov. (Figs. 69, 93, 115, 168)

Male diagnosis. Abdominal tergum 1 slender and elongate (Fig. 93), flagellum slender and elongate, abdomen mostly yellowish to pale-orangish black, distinctly black basally and apically, clypeal margin distinctly upturned, propodeum mostly smooth and shiny between dorsal carinae. It differs from other European species by the combination of the abdominal colour, the slender flagellum, legs, and tergum 1. See *E. triannulatus* sp. nov. for similarities.

Male description. Flagellum: slender and elongate, glumes sparse. Head: clypeal margin upturned, frons mostly sparsely punctulate, ocellar distance a little less than 1. Propodeum: areola elongate hexagonal (cf. Fig. 79), mostly smooth and shiny between carinae dorsally. Abdomen: tergum 1 slender and elongate, tergum 2 mostly smooth and shiny, weakly punctulate. Colour: yellow - trochanters apically, femur I, tibia I, femur II apically, tibia II, base of hind tarsus; yellowish to orangish black (black suffused into basic yellow or orangish) - scape, clypeus, trochanters basally, most of femur II, abdomen except base and apex; black - coxae, leg III (Fig. 168) except trochanters and base of tibia, most of tergum 1 and apex. Length: 6.5-7 mm.

Female diagnosis. Abdominal tergum 1 slender and elongate (Fig. 115), abdomen mostly pale orangish faintly suffused with blackish (tergum 1 mostly black), apophysis sharp and toothlike (Fig. 69), flagellum linear, basal 3 flagellomeres elongate, 5-9 pale-yellowish. It is similar to *E. praegracilis* sp. nov. from which it differs by the colour of the flagellum and the sharp, toothlike apophysis. It does not appear closely related to other European *Endasys* species. It is placed in the *E. (rusticus group)* because of the form of the clypeus, tergum 1, and propodeum.

Female description. Flagellum: weakly tricoloured with blackish, pale-yellowish, and black, linear, basal 3 flagellomeres elongate. Head: clypeal margin distinct but only slightly upturned, frons moderately punctulate. Propodeum: areola elongate hexagonal (cf. Fig. 147), mostly smooth and shiny between dorsal carinae, apophysis sharp and toothlike. Abdomen: tergum 1 elongate and slender, postpetiole nearly square, 3rd valvula as long as hind tarsus. Colour: yellowish -

most of trochanters (more brownish basally), tibia I-II (pale-yellow dorsally), tibia III at base; pale-orangish to yellowish (faintly suffused with black) - abdomen except most of tergum 1, tarsus III; black - scape, clypeus, leg III except trochanters and most of tarsus III. Length: 5-6.5 mm.

Hosts. Unknown.

Material studied: 2 m, 3 ff. Holotype (m): "30.7.1963" Weitenau (Schwarz.)" (BC). Paratypes (1 m, 3ff): (1 m) "Dorking, Surrey VII.11.64 Eng. H. et M. TOWNES" (TC); (1 f) "Bagley Woods Oxford, Eng. Sept. 25 '60 H. K. TOWNES" (SCW); (1 f) "30.7.1963 Weitenau (SCHWARZ.)" (SCW); (1 f) "5.8.1949 Iburg, T. W." (HC).

*Endasy erythrogaster* (GRAVENHORST, 1829) (Figs. 51, 87, 116, 169 204, 227, 241, 242)

*Cryptus* (*Phygadeuon*) *erythrogaster* GRAVENHORST, 1829: 741. - Lectotype (f) by designation of OEHLKE (1966: 847): without labels, abdomen partly damaged. Loc. typ.: Poland, Kudowa (=Cudova). Coll. GRAVENHORST, Wrocław (UW).

*Stylocryptus* (*Endasy*) *erythrogaster* GRAV. var. *nigricoxis* HABERMEHL, 1912: 182. Syn. nov. - Syntypes (8 mm) not examined, by original description. Loc. typ.: "Germany".

*Endasy erythrogaster*: HEINRICH 1949: 10, LECLERCQ 1949: 82.

Male diagnosis. Abdominal terga 1-3 mostly smooth and shiny, sparsely and indistinctly punctulate, apophysis reduced or absent (cf. Fig. 70), flagellum of moderate proportions, femur III and tibia III orange with black apically (Fig. 169), abdomen faintly blackish on terga 3-6, apex black. See remarks under *E. rusticus* (HAB.) for similarities. Some forms are similar to *E. plagiator* (GRAV.) from which it is distinguished by terga 1-2 being more distinctly punctulate, apophysis nearly absent [more or less distinct in *E. plagiator* (GRAV.)], and the longer clypeus not impressed apically.

Male description. Flagellum: moderately stout to moderately slender, glumes sparse to medium. Head (Fig. 51): clypeus a little upturned apically, frons mostly densely punctulate, sparser toward vertex, ocellar distance greater than or equal to 1. Propodeum: apophysis weak or absent. Abdomen: dorsomedian carina reduced, not sharply distinct on postpetiole, tergum 1 moderately slender (Fig. 87), postpetiole a little longer than wide, terga 1-3 sparsely and weakly punctulate, but evenly so, appearing mostly smooth and shiny, sometimes tergum 1 more distinctly punctulate apical half. Colour: yellowish orange - trochanters I-II apically, femora I-II (usually blackish ventrally), tibiae I-II (more yellowish); orange - hind trochanters apically, usually femur III except black apically (sometimes mostly blackish), usually tibia III except base and apex (sometimes mostly black), abdomen except most of tergum 1, faintly blackish on terga 4-6; black - scape, clypeus, coxae, trochanters basally, most of tergum 1 (orange

apically), blackish on terga 4-6 (usually faintly); variation - smaller forms mostly black on legs and abdomen. Length: 5-6 mm.

Female diagnosis. Face and frons shiny, sparsely punctate (Figs. 241, 242), often with coarse pits, abdomen faintly blackish on terga 4-apex. For similarities see *E. rusticus* (HAB.).

Female description. Flagellum: slightly narrowed apically, basal 3 flagellomeres nearly moniliform (Fig. 44), basal half yellowish, apical half black. Head: clypeal margin not upturned, face and frons shiny, mostly moderately densely punctate, pits often coarse. Femur III: swollen (Fig. 204). Abdomen: postpetiole moderately widened (Fig. 116), 3rd valvula as long as basal 3 hind tarsomeres. Wing: radial cell short, radial sector straight apically (Fig. 227). Colour: yellowish orange - trochanters apically, femora I-II (often more blackish at least ventrally), tibiae (III black apically), hind tarsus (often a little blackish); orange - sometimes femur III more blackish orange basally, abdomen mostly orange with blackish on terga 1 and 4 to apex; black - scape, clypeus, trochanters basally, femur III usually more orangish black, terga 1 and 4 to apex more or less blackish (orange colour predominates). Length: 4-6 mm.

Hosts. Diprionidae - *Diprion pini* (L.) (EICHORN 1981: 254; HERTING 1977: 10; KRISTEK, PETRUŠKA 1982: 96, 102; NOVÁK 1957: 358; RYWKIN 1957: 467; SCHIMITSCHK 1941: 270, 1943: 292, 1964: 324); *Diprion* spp. or *Gilpinia* spp. (HSIN 1936: 69; KUCHARCZYK, WIACKOWSKI 1984: 36, 38; JONAITIS 1981: 205, 1985: 14; SAWONIEWICZ 1979: 100; THOMPSON 1950b: 39; 1957: 548); *Gilpinia frutetorum* (F.) (JONAITIS 1985: 14; OEHLKE 1966: 847; URBAN 1966: 711). Tenthredinidae - *Hoplocampa flava* (L.) and *H. minuta* (CHRIST) (HADŽISTEVIĆ 1959: 35; HERTING 1977: 23); *Pristiphora abietina* (CHRIST) (AERTS 1953: 36, 1957: 158; CAVALCASELLE 1968: 274; HERTING 1977: 32; JONAITIS 1970: 69, 1975: 54, 1981: 205, 1985: 14; KOLUBAJIV 1939: 333, 1952: 32, 1962: 26; NIGITZ 1974b: 170; OHNESORGE 1957: 475, 1960: 866; OHNESORGE, THALENHORST 1966: 276, 278; PFEFFER 1954: 368; PSCHORN-WALCHER 1982: 179, 181; RÜHM 1959: 979; SCHEDL 1953: 102; SCHWERDTFEGER 1957: 239, 1970: 251, 1981: 242; THALENHORST 1959: 101); *P. saxeseni* (HART.) (JONAITIS 1975: 54, 1981: 205; KOLUBAJIV 1954: 37; KRISTEK, OBRTEL 1958: 316; THALENHORST 1959: 101; ZAJANŽKAUSKAS, JONAITIS 1979: 43); *Pikonema* (= *Pachynematus*) *montanum* (ZADD.) (HERTING 1977: 29; JONAITIS 1975: 54, 1981: 205, 1985: 14; KOLUBAJIV 1933: 333, 1954: 37; 1958: 144; 1962: 23; THALENHORST 1959: 101); *P. nigriceps* (HART.) (NIGITZ 1974a: 273); *P. pallescens* (HART.) (NIGITZ 1974a: 275, ?THALENHORST 1959: 101); *P. scutellatum* (HART.) (HERTING 1977: 29; JONAITIS 1975: 54, 1981: 205, 1985: 14; JUSSILA 1965: 140; KOLUBAJIV 1958: 143, 1962: 24; KRISTEK 1964: 220; KRISTEK, OBRTEL 1958: 311, 316, 317; NIGITZ 1974a: 277; PFEFFER 1954: 368; PSCHORN-WALCHER 1982: 188; THALENHORST 1959: 101). Adelidae - *Adela oxsenheimerella* (HÜBN.) (HERTING 1975: 19; STARKE



1940: 74). Tortricidae - *Epinotia* (= *Epiblema*) *tedella* (CL.) (FÜHRER 1964: 155; HERTING 1975: 124; JONAITIS 1975: 54; KALANDRA 1941: 21; KOLUBAJTV 1962: 35; SCHEDL, SCHEDL 1951: 97); *Zeiraphera* (= *Semasia*) *diniana* (GUEN.) (= *Z. griseana* HÜBN.) (KOLUBAJTV 1934: 119, 1954: 17; THOMPSON 1947: 602, 1957: 548).

Material studied: 66 mm, 25 ff. Austria, Bulgaria, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Sweden (BC, HC, HCZI, IZPAN, IAZ, JC, SCT, SCW, TMA, UH, UW, ZMD, ZSBS).

*Endasys melanistus* sp. nov. (Figs. 32, 63, 64, 81, 117, 198)

Male. Unknown.

Female diagnosis. Flagellum black, linear, short (Fig. 32), abdomen brownish black, legs mostly black, 3 mm long. It resembles no other European or Nearctic *Endasys* species. It is placed in the *E. (rusticus* group) based on the shape of the clypeus, flagellum, tergum 1, and areola.

Female description. Flagellum: linear, black, short. Head: clypeus and face a little widened (Fig. 63), clypeus a little swollen (Fig. 64), margin upturned, frons appearing impunctate and shiny. Mesopleurum: smooth and shiny, sparsely and weakly punctulate. Propodeum: areola nearly pentagonal (Fig. 81). Abdomen: tergum 1 moderately slender (Fig. 117). Colour: brownish black - most of abdomen; black - scape, clypeus, legs (Fig. 198), tibiae and tarsi more yellowish black. Length: 3 mm.

Hosts. Unknown.

Material studied: 1 f. Holotype (f): "Austria Obergurgl 1800-2100 m", "1970.VIII.27 leg. MAHUNKA" (TMA).

*Endasys nitidus* (HABERMEHL, 1912) (Figs. 7, 31, 74, 118, 170, 206)

*Stylocryptus (Endasys) nitidus* HABERMEHL, 1912: 185. - Lectotype (f) by designation of REITZ: "Leipzig Ro 30.5.90 KRIEGER l.", "*Stylocryptus nitidus* HAB. f". Loc. typ.: Germany, Leipzig. - Paralectotype (m) by designation of SAWONIEWICZ: "Leipzig Ro 13.8.88... KRIEGER l.", "*Stylocryptus nitidus* HAB. m". Both types in Coll. HABERMEHL, Frankfurt (NMS).

*Endasys nitidus*: JONAITIS 1981: 205.

Male diagnosis. Shiny, black abdomen, white on coxae apically, trochanters, and tibiae dorsally (tibia III more pale yellow with black apically), face and clypeus widened (cf. Fig. 63). This species differs from all other European and Nearctic *Endasys* by the black and white legs, and the shiny, black abdomen. It is placed in the *E. (rusticus* group) because of the shape of tergum 1, the flagellum, and the

colour patter. It may have some affinities to Nearctic *E. auriculiferus* (VIER.) which has black forms resembling *E. nitidus* (HAB.).

Male description. Flagellum: basal 3 flagellomeres distinctly elongate (Fig. 7) compared to remaining ones, yellowish ventrally and blackish dorsally, 2 tyloids, short and prominent, glumes sparse. Head: slightly widened, frons moderately punctulate, ocellar distance about 1. Abdomen: mostly smooth and shiny, tergum 2 faintly punctulate. Wing: radial cell elongate. Colour: white or pale-yellow - coxae apical margin, trochanters, tibiae dorsally (III more pale yellow with black apically, Fig. 170); yellow - femora I-II (blackish ventrally), tibiae I-II except dorsally, hind tarsus variably blackish yellow; black - scape (more brownish), clypeus, coxae apically, femur III, tibia III apically, abdomen. Length: 5-8 mm.

Female diagnosis. Abdomen entirely black and shiny, tibiae I-II white dorally, tibia III mostly whitish with blackish apically, trochanters white, flagellum linear, white band on flagellomeres 5-9. It differs from all other European *Endasys* species by the diagnosis.

Female description. Flagellum: linear, basal 2 flagellomeres elongate, 3rd short, flagellomeres (at least) 5-9 white, remaining black (Fig. 31). Head: frons moderately punctulate. Propodeum: areola and area dentipara as figured (Fig. 74). Leg III - Fig. 206. Abdomen: postpetiole roundly and moderately widened (Fig. 118), 3rd valvula shorter than basal 3 hind tarsomeres, a little slender. Colour: white - coxae apically, trochanters (more yellowish black basally), tibiae I-II dorsally, tibia III more pale-yellow with blackish apically; yellow - tibiae I-II except dorsally, tarsi I-II; black - scape (except whitish at apex), clypeus, coxae apically, femora I-II more yellowish black, femur III, tibia III apically, tarsus III more yellowish black, abdomen entirely. Length: 6-8,5 mm.

Hosts. Unknown.

Material studied: 4 mm, 4 ff. Denmark, Germany, Poland, USSR (European) (NMS, SCW, ZMD, ZMM, ZSBS).

***Endasys plagiator* (GRAVENHORST, 1829) (Figs. 8, 33, 52, 119, 133, 171, 207)**

*Cryptus (Phygadeon) plagiator* GRAVENHORST, 1829: 739. - Lectotype (f): by designation of FRILLI (1974: 116): without original labels; "*plagiator* GRAV. f = *erythrogaster* var. *coxis* omnib. feretotus rufis." label of HABERMEHL. Loc. typ.: Europe (town?). Coll. GRAVENHORST, Wrocław (UW).

*Stylocryptus rubricator* THUNBERG f. *laetus* HABERMEHL, 1929: 263. Syn. nov. - Lectotype (f) by designation of SAWONIEWICZ: "Goslar a.H. Lutter a.B. 10.IX.1926 E. BAUER", "*Stylocryptus rubricator* THUNB. f v. *laetus* m. (= *testaceus* TASCHB.) Prof. HABERMEHL det.". Loc. typ.: Germany, Lutter an Barenberge. Coll. HABERMEHL, Frankfurt (NMS). - Syntype (1 f) det. HORSTMANN (1986: 261): "Harz Clausthal 18.VI. 1926 E. BAUER", wings destroyed, species?, Coll. E. BAUER, München (ZSBS).

*Acanthocryptus Braunsi* LANGE, 1911: 541. Syn. nov. - Holotype (m) det. by HORSTMANN (OEHLKE, HORSTMANN, 1987: 151): "Ravni Padež 1488 m., Croatia, MEUSEL 12.6.10" (head missing). Loc. typ.: Yugoslavia, Croatian, Ravni Padež. Coll. LANGE, Eberswalde (IPSF).  
*Endasys plagiator*: FRILLI 1974: 116.

Male diagnosis. Abdominal tergum 2 smooth and shiny, punctation absent or very faint, temple and cheeks a little swollen, clypeal margin distinctly upturned (Fig. 52), clypeus and face a little widened. It appears closely related to *E. rusticus* (HAB.). It differs by the distinct apophysis (reduced or absent in the latter), and tergum 2 at most faintly and sparsely punctulate. See *E. erythrogaster* (GRAV.) for additional remarks.

Male description. Flagellum: moderately slender to moderately stout (Fig. 8), usually 2 tyloids, sometimes 3rd on flagellomere 12 (rarely 4th on 13), glumes sparse. Head: temple and cheek a little swollen, clypeal margin a little impressed and apically upturned, frons moderately to densely punctulate, ocellar distance greater than 1. Mesopleurum: often sparsely punctulate on central area. Propodeum: apophysis more or less distinct (never reduced). Abdomen: tergum 2 smooth and shiny, at most only sparsely and faintly punctulate. Colour: yellowish orange - often trochanters apically, usually femora I-II (sometimes more blackish basally), tibiae I-II; orange - sometimes most of femur III except black apically, sometimes trochanters apically, abdomen except most of tergum 1 and apically more yellowish orange (Fig. 133); black - scape, clypeus, coxae, usually most of trochanters, usually most of femur III (Fig. 171), sometimes tibia III entirely, tarsus III; variability - lighter forms with scape orangish, trochanters yellowish apically, and tibia III yellowish orange with black apically. Length: 5-9 mm.

Female diagnosis. Flagellum distinctly tricoloured, flagellomeres 1-3 or 4 yellowish orange, 4 or 5 to 9 whitish, remaining ones black, scape yellowish orange, femur III distinctly orange basal third to half (Fig. 207), black apically, clypeal margin distinctly upturned. It is distinguished from other similar species by the distinctly orange and black sections of femur III and the characters of the flagellum.

Female description. Flagellum: tricoloured as in diagnosis, slightly narrowed apically (Fig. 33), basal 3 flagellomeres short. Head: clypeus and face a little widened, temple and cheeks a little swollen, clypeal margin distinctly upturned, frons mostly densely punctulate. Abdomen: tergum 1 moderately and gradually widened (Fig. 119), 3rd valvula about as long as basal 4 hind tarsomeres. Wing: radial cell a little shortened, radial sector slightly curved apically (cf. Fig. 225). Colour: yellow to yellowish orange - scape, legs I-II (coxae more orangish basally), coxa III apically, hind trochanters, tibia III (blackish apically); orange - femur III distinctly on basal third to half, most of coxa III, abdomen (sometimes

tergum 1 blackish basally); black - clypeus (sometimes more orangish black), femur III distinctly on apical half to two-thirds. Length: 5-7 mm.

Hosts. Unknown.

Material studied: 496 mm, 115 ff. Austria, England, Czechoslovakia, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Spain, Sweden, Turkey, USSR (European) (BC, BM, FSA, HC, HCZI, IAZ, IPSF, IZPAN, JC, MNM, NMS, SCT, SCW, SCZ, SPCZ, TC, TMA, UH, UW, ZMD, ZSBS).

*Endasys rusticus* (HABERMEHL, 1912) (Figs. 9, 19, 34, 71, 94, 120, 134, 141, 172, 208, 243, 244)

*Stylocryptus (Endasys) rusticus* HABERMEHL, 1912: 179. - Lectotype (f) by designation of SAWONIEWICZ: "959", "Bürst. W. 13.7.95 HBM.", "*Stylocryptus rusticus* HAB. f". Loc. typ.: Germany: Bürstadt. - Paralectotype (m): "942", "Bürst. W. 3. 7.95 HBZ.", "*Stylocryptus rusticus* m HAB.". Both types by designation of SAWONIEWICZ in Coll. HABERMEHL, Frankfurt (NMS).

*Endasys rusticus*: LECLERCQ 1949: 82.

Male diagnosis. Flagellum elongate and slender (Fig. 9), apophysis nearly absent, abdominal terga 1-3 sparsely, evenly punctulate (Fig. 243, 244), tibiae I-II whitish dorsally. It is very similar to *E. erythrogaster* (GRAV.) from which it is distinguished by the distinctly slender flagellum and the whitish on tibiae I-II dorsally. See *E. plagiator* (GRAV.) for relationships.

Male description. Flagellum: slender and elongate, glumes moderately sparse (Fig. 19). Head: clypeal margin upturned, frons densely punctate, ocellar distance greater than or equal to 1. Propodeum: apophysis nearly absent (Fig. 71). Abdomen: tergum 1 slender and elongate, postpetiole more square (Fig. 94), dorsomedian carinae reduced, not sharp and prominent, terga 1-3 sparsely, evenly punctulate. Colour: whitish - tibiae I-II dorsally; yellow - trochanters more blackish yellow, femora I-II (often more blackish), tibiae I-II except dorsally; orange - usually scape blackish orange, abdomen except most of tergum 1; black - sometimes scape, clypeus, coxae, often hind trochanters blackish basally, femur III (Fig. 172), tibia III and tarsus III, tergum 1 except apically orange, sometimes faintly blackish on terga 4 to apex (Fig. 134). Length: 7-8 mm.

Female diagnosis. Flagellum slender, narrowed apically (Fig. 34), pale-orangish basal half, black apical half, clypeal margin upturned, tibiae I-II whitish dorsally. It is distinguished from *E. erythrogaster* (GRAV.) by the narrowed and slender flagellum, and tibiae I-II whitish dorsally.

Female description. Flagellum: slender, narrowed apically, pale-orangish basally, black apically. Head: clypeal margin upturned, frons more densely punctulate and strigose. Femur III: swollen (Fig. 208). Abdomen: postpetiole gradually widened (Fig. 120), 3rd valvula less than or equal to basal 3 hind tarsomeres. Colour:

whitish - tibiae I-II dorsally; yellow - sometimes coxae and trochanters, at least apically, often femora I-II, tibiae I-II except dorsally; orange - usually tibia III and tarsus III, sometimes both more blackish, abdomen (Fig. 141); black - sometimes coxae and trochanters, at least basally, femur III, sometimes tibia III and tarsus III. Length: 6-9 mm.

Hosts. Diprionidae - *Diprion pini* (L.) (HERTING 1977: 10; JONAITIS 1975: 55; KOLUBAJIV 1962: 17); *Diprion* spp. or *Gilpinia* spp. (ex cocoon - GC, IBL, IPSF, SCW) (SAWONIEWICZ 1979: 101); *Gilpinia frutetorum* (F.) (ex cocoon - GC, IBL, IPSF); *Neodiprion sertifer* (GEOFFR.) (HERTING 1977: 17; JONAITIS 1975: 55; KOLUBAJIV 1934: 66, 1962: 20; OZOLS 1959: 67, 1961: 7; THOMPSON 1950b: 71, 1957: 548; ZAJANČKAUSKAS, JONAITIS 1979: 15).

Material studied: 86 mm, 108 ff. Bulgaria, Denmark, Finland, Germany, Poland, Sweden (BC, GC, HC, IBL, IPSF, NMS, SCW, TC, UH, UW, ZMD, ZSBS).

### *Endasys (nalis group)*

This group retain many generalized morphological features. Colouration overall is blacker on the legs and abdomen, the latter often black on the apical terga (bicoloured). A number of species are included here that cannot be placed in the other 5 groups. The following European species are included: *E. alutaceus* (HABERMEHL), *E. nalis* (THOMSON), *E. anglianus* sp. nov., *E. pieninus* sp. nov., *E. brevis* (GRAVENHORST), *E. hungarianus* sp. nov., *E. megamelanus* sp. nov., *E. melanurus* (ROMAN), *E. microcellus* sp. nov., *E. stictogastris* sp. nov., *E. striatus* (KISS), *E. triannulatus* sp. nov., and *E. varipes* (GRAVENHORST).

*Endasys alutaceus* (HABERMEHL, 1912) (Figs. 15, 18, 35, 95, 121, 135, 144, 174, 209, 228, 237-240, 247, 248)

*Stylocryptus (Endasys) alutaceus* HABERMEHL, 1912: 186. - Syntypes (7 mm) not found, Germany (several sites). Synonymy of HABERMEHL (1916: 381) with *E. nalis* (THOMS.) erroneous.

*Stylocryptus erythrogaster* GRAV. f. *nigriventris* AERTS, 1953: 11. Syn. nov. - Lectotype (m) by designation of HORSTMANN (1986: 101): "Köln...*Picea* 15.6.44 AERTS"; - paralectotype (1m): "Köln...*Picea* 11.6.44 AERTS". Loc. typ.: Germany, Köln. Both types by designation of HORSTMANN (1986: 101). Coll. AERTS, Bonn (ZF).

*Endasys alutaceus*: JONAITIS 1981: 205.

Male diagnosis. Tyloids elongate and slender, sharply pointed anteriorly (Fig. 15), trochanters pale-yellow or white apically, sometimes clypeus and scape yellowish, abdominal terga 2-3 orange, 4-6 black, terga 1-2 granulate, femur III orange with black apically (Fig. 174), tibia III yellowish orange with black

apically. See *E. lissorulus* sp. nov. and *E. hungarianus* sp. nov. for additional remarks.

**Male description.** Flagellum: tyloids (2) elongate and thin, acute anteriorly, glumes mostly dense (Fig. 18) (sparser in smaller forms). Head: clypeus slightly widened, margin a little upturned, frons mostly densely punctulate (Fig. 247, 248), ocellar distance a little less than 1. Abdomen: tergum 1 square to a little widened (Fig. 95), dorsomedian carina strong across about 2/3rds of postpetiole, tergum 2 widened, terga 1-2 granulate (Figs. 239, 240) and sometimes a little strigillose, 2nd faintly punctulate, 3rd weakly to faintly granulate (Figs. 237, 238). Wing: radial cell elongate (Fig. 228). Colour: whitish or pale-yellow - sometimes scape apically, sometimes clypeus partly, trochanters apically, tibiae I-II dorsally; yellow - sometimes clypeus and scape, often trochanters more basally, usually coxae I-II blackish yellow apically, femora I-II and tibiae I-II (except both dorsally); orange - femur III with black apically, hind basitarsus yellowish orange basal half, abdominal terga 2-3 (sometimes 3 black apically); black - usually scape and clypeus, coxae I-II sometimes blackish (sometimes entirely), coxa III, sometimes trochanters blackish basally, most of tarsus III, tergum 1 except orange apically, usually terga 4-6 (Fig. 135), sometimes 3rd apically; variation - sometimes 3rd tyloid on 12th flagellomere, sometimes orangish black on terga 2-3 (type specimen and some small forms), sometimes femur III orange only basal half (type and some dark forms). Length: 5-8.5 mm.

**Female diagnosis.** Flagellum tricoloured, linear (Fig. 35), basal 3 flagellomeres short and blackish, 4-9 whitish, 10 to apex black, trochanters yellowish, 3rd valvula about as long as basal 2 hind tarsomeres, legs I-II mostly yellow except coxae more orangish, leg III mostly orange with coxa orangish or blackish, and blackish apically on femur and tibia, postpetiole rectangular (Fig. 121), frons densely punctulate. See *E. lissorulus* sp. nov. for similarities.

**Female description.** Flagellum: linear, tricoloured as in diagnosis, basal 3 flagellomeres short. Head: frons densely punctulate, ocellar distance about 1. Femur III: swollen (Fig. 209). Abdomen: postpetiole abruptly widened (Fig. 121), tergum 1 faintly granulate, 3rd valvula as long as or longer than basal 2 hind tarsomeres. Colour: yellow - coxae I-II often apically, most of trochanters (more orangish basally), femora I-II, tibiae I-II; orange - often coxae except apically, femur III with blackish apically, tibia III yellowish orange with blackish apically, hind basitarsus (blackish apically), most of abdomen except blackish basally on tergum 1 and 4 to apex (Fig. 144); black - scape, clypeus, usually coxae blackish, faintly blackish on most of tergum 1 and 4 to apex. Length: 6-6.5 mm.

**Hosts.** Unknown.

**Material studied:** 201 mm, 34 ff: Austria, BRD, Bulgaria, Czechoslovakia, Denmark, Finland, France, Hungary, Sweden, Switzerland, USSR (European) (BC,

HC, HCZI, IPSF, IZPAN, IAZ, JC, SCW, TMA, SCZ, TC, UH, UW, ZF, ZMD, ZMM, ZSBS).

*Endasys analis* (THOMSON, 1883) (Figs. 56, 96, 122, 173, 210)

*Stylocryptus* (*Stylocryptus*) *analis* THOMSON, 1883: 871. - Lectotype (f) by designation of TOWNES (TOWNES, MOMOI, TOWNES 1965: 139): "Fg.". Loc. typ.: Sweden, Fogelsång. Coll. THOMSON, Lund (ZIL).

*Endasys analis*: HEINRICH 1951: 242.

Male diagnosis. Face distinctly swollen centrally (Fig. 56), abdominal terga 1-2 widened (Fig. 96) and granulate, femur III and tibia III orange with black apically. It is related to a Nearctic species from which it differs by the abdomen only weakly black on terga 6 to apex, moderately slender flagellum, and the tyloids more elongate. See *E. brevis* (GRAV.) for other similarities.

Male description. Flagellum: usually 2 tyloids on flagellomeres 10-11, sometimes 3rd on 12th, and occasionally 4th on 9th flagellomere, glumes dense. Head: face distinctly swollen centrally (best seen in ventral view), frons very densely punctulate and slightly strigillose (cf. Figs. 251, 252), ocellar distance greater than or equal to 1. Mesopleurum: usually with some punctation on central area. Propodeum: areola usually very wide (cf. Fig. 68) except some forms more broadly hexagonal. Femur III: moderately slender (Fig. 173). Abdomen: postpetiole and tergum 2 a little widened, terga 1-2 granulate and sometimes a little strigillose, sometimes 2nd weakly punctulate, 3rd weakly granulate. Wing: radial cell elongate. Colour: yellow - trochanters apically, tibiae I-II; orange - femur III and tibia III except both black apically, usually terga 2-5 (sometimes 6); black - scape, clypeus, coxae, trochanters basally, tarsus III, most of tergum 1 (orange apically), usually terga 6 to apex (cf. Fig. 131); variation - femora mostly black, sometimes most of tibia III. Length: 6-8.5 mm.

Female diagnosis. Face distinctly swollen centrally, areola distinctly widened, area dentipara nearly triangular (Fig. 68), flagellum narrowed apically, basal flagellomeres elongate, 4-9 white. It differs from a similar Nearctic species by the shorter 3rd valvula (about as long as basal 3 hind tarsomeres), the yellow legs I-II with black coxae, and the mostly orange abdomen (only weakly bicoloured).

Female description. Flagellum: narrowed apically, basal 3 flagellomeres elongate, 1-2 (or 3) yellowish, (3) 4-9 white, 10-apex black. Head: face swollen as in diagnosis, frons very densely punctulate. Propodeum: widened and short, areola very wide, area dentipara nearly triangular. Abdomen: tergum 1 stout, postpetiole abruptly widened (Fig. 122). Colour: yellow - legs I-II except coxae and trochanters (basally), hind trochanters apically; orange - femur III more basal half (Fig. 210), tibia III except black apically, abdomen except most of tergum 1 basally; black - scape clypeus, coxae, trochanters basally, femur III more apical

half; variation - dark forms with femora I-II blackish, femur III entirely, terga 3 (apically) to apex black. Length: 6.5-7 mm.

Hosts. Tenthredinidae - *Pristiphora abietina* (CHRIST) (JONAITIS 1970: 69, 1975: 58, 1981: 205, 1985: 14); *Croesus septentrionalis* (L.) (JONAITIS 1985: 14).

Material studied: 31 mm, 12 ff. Bulgaria, Czechoslovakia, Denmark, Germany, Finland, France, Poland, Sweden, USSR (European) (BM, HC, IPSF, IZPAN, JC, SCW, SKKI, SPCZ, TMA, TC, UH, UW, ZIL, ZMD, ZSBS).



*Endasys anglianus* sp. nov. (Figs. 37, 211, 226)

Male. Unknown.

Female diagnosis. Flagellum narrowed apically, yellowish orange basal half, black apical half (Fig. 37), femur III orange (Fig. 211), tibia III yellowish, abdomen black on terga 4 to apex. It differs from all European *Endasys* species [except *E. rusticus* (HAB.)] by the distinctly narrowed and bicoloured (yellowish and black) flagellum. It differs from *E. rusticus* (HAB.) by the black on the abdomen apically and the orange femur III.

Female description. Flagellum: narrowed apically, bicoloured as noted, basal 3 flagellomeres short. Head: clypeal margin not upturned, frons variably, sparsely punctulate. Abdomen: tergum 1 moderately widened, postpetiole rectangular, 3rd valvula as long as basal 3 hind tarsomeres. Wing: radial cell a little shortened, radial sector curved apically (Fig. 226). Colour: yellow - legs I-II (II with coxa more blackish basally), coxa III apically, hind trochanters, tibiae, tarsi (Fig. 211); orange - scape more yellowish orange, femur III (sometimes a little blackish), terga 1-3 (sometimes 3 blackish apically); black - clypeus, coxa III apically, terga 4 to apex. Length: 4-5.5 mm.

Hosts. Tenthredinidae - *Anoplonyx duplex* (LEP.) and *Pristiphora laricis* (HART.) (BM).

Material studied: 5 ff. Holotype (f): "Mortimer 23.7.62 Forest Res. Stn. Farnham, Surrey; on larch foliage", "Pres by Comm Inst Ent BM 1974-1" (BM). Paratypes (4 ff): (1 f) "Radwor EM. 24.4.62 Forest Res. Stn. Farnham, Surrey"; "Ex *Pristiphora laricis* cocoon", "Pres by Comm Inst Ent BM 1974-1" (BM); (1 f) "Mort. 25/HS. em 23/4 62", "Pres by Comm Ins Ent BM 1974-1" (SCW); (1 f) "23 VIII 06 Ringstead" [underside:] "British Isles C. MORLEY Coll. B.M. 1952-159", "*G. erythrogaster* GRAV." (BM); (1 f) "Host *Anoplonyx duplex* DUNKELD...", "Scotland PW. Pres. by Forestry Commission B.M. 1954-116" (BM).

*Endasys pieninus* sp. nov. (Figs. 77, 88, 175)

Male diagnosis. Clypeal margin upturned, black, face and clypeus a little widened, frons densely, weakly punctulate, abdomen black on terga 4-6, orange on terga 2-3, femur III and tibia III orange with black apically (Fig. 175), coxae and trochanters mostly black, postpetiole a little longer than wide (Fig. 88), tergum 2 mostly smooth and shiny, femur III slender (Fig. 175). It is similar to *E. analis* (THOMS.) and *E. alutaceus* (HAB.), as well as *E. microcellus* sp. nov. It differs

from them by tergum 2 being mostly shiny, only faintly punctulate, and the dense, weakly punctulate face and frons.

Male description (based on holotype). Flagellum: elongate and slender, glumes dense. Head: face and clypeus slightly widened, clypeal margin upturned, frons dense, more or less weakly punctulate, ocellar distance greater than 1. Propodeum: areola elongate hexagonal (Fig. 77), apophysis distinct, mostly smooth and shiny between carinae. Femur III: slender (Fig. 175). Abdomen: postpetiole longer than wide, sides slightly diverging, tergum 2 mostly smooth and shiny, faintly punctulate. Colour: yellow - trochanters I-II apically, femora I-II, tibiae I-II; orange - femur III and tibia III except both black apically, terga 2-3. Length: 5 mm.

Female. Unknown.

Hosts. Unknown.

Material studied: 1 m. Holotype (m): "Poland, Pieniny Mts 24.5.74. Niedzica-Czorsztyn, ols leg. J.S." (SCW).

*Endasys brevis* (GRAVENHORST, 1829) (Figs. 10, 16, 20, 55, 68, 123, 176, 212, 232)

*Cryptus* (*Phygadeon*) *brevis* GRAVENHORST, 1829: 743. - Lectotype (f) by designation of TOWNES (TOWNES, MOMOI, TOWNES 1965: 139): without original labels, "*Stylocryptus brevis* GRAV. f" HABERMEHL label. Loc. typ.: Germany or Poland. Coll. GRAVENHORST, Wrocław (UW).

*Endasys brevis*: LECLERCQ 1949: 82.

Male diagnosis. Abdominal terga 1-2 granulate and punctulate, tergum 3 weakly so, 3 serrate-shaped tyloids (sometimes 4 or 5) on flagellomeres 10-12 (sometimes also 13 and 14) (Fig. 16), flagellum elongate, usually pale-yellowish ventrobasally, glumes dense (Fig. 20), tibia I-II pale-yellow dorsally, femur III black or orange with black apically (Fig. 176). It is separated from similar *E. analis* (THOMS.) by the evenly swollen face (Fig. 55), the 3 or more tyloids, and tergum 2 not noticeably widened.

Male description. Flagellum: elongate apically (Fig. 10), 3 tyloids (sometimes 4 or 5) on flagellomeres 10-12 (sometimes also 13 and 14), short and prominent, usually serrate, glumes dense, usually basal flagellomeres more pale-yellowish ventrally. Head: clypeus a little upturned, frons densely punctulate, ocellar distance less than 1. Abdomen: terga 1-2 granulate and punctulate, 3rd weakly so, areola wide, area dentipara nearly triangular (Fig. 68). Wing: radial cell elongate, radial sector very slightly curved apically (Fig. 232). Colour: pale-yellow - trochanters apically, tibiae I-II dorsally; yellow - femora I-II, tibiae I-II; orange - sometimes femur III with black only apically, usually tibia III orangish to yellowish orange suffused with black, (completely black apically, sometimes blackish at base),

abdomen except most of tergum 1 and apex; black - scape, clypeus, coxae, trochanters basally, usually femur III, tarsus III; variability - abdomen sometimes orangish black apically, some forms with a little blackish on terga 2-6. Length: 6.5-8 mm.

Female diagnosis. Flagellum mostly linear (faintly narrowed at apex), basal 3 flagellomeres short, at least 5-9 white, coxae and trochanters (basally) usually black (sometimes entirely yellowish), femur III black (or orange with black apically, Fig. 212), clypeal margin a little upturned. Differs from similar *E. proteuryopsis* sp. nov. by at least 5 white flagellomeres (not 4), and the orange abdomen (not bicoloured). See *E. thunbergi* nom. nov. for other similarities.

Female description. Flagellum: mostly linear, faintly narrowed apically, basal 3 flagellomeres short, (4)5-9 white. Head: clypeal margin usually a little upturned, frons moderately to densely punctate. Abdomen: postpetiole more abruptly widened, sides slightly diverging (Fig. 123), 3rd valvula as long as basal 4 hind tarsomeres. Wing: radial sector arising before middle of stigma (Fig. 232). Colour: white or pale-yellow - tibiae I-II dorsally; yellow - sometimes most of legs I-II, sometimes most of leg III except femur; orange - sometimes scape, sometimes femur III except apically, tibia III yellowish orange with blackish apically (sometimes mostly suffused with blackish), abdomen; black - usually scape, usually clypeus (sometimes orangish), usually coxae, usually trochanters basally, often most of femora I-II, often femur III entirely, hind tarsus more orangish black; variability - light forms (general?) with mostly yellow coxae and trochanters, tibiae I-II more whitish dorsally, femur III orange with black apically (as in some males). Length: 5-6 mm.

Hosts. Diprionidae - *Diprion pini* (L.) (MEYER 1936: 304; PFEFFER 1954: 368). Tenthredinidae - *Pristiphora abietina* (CHRIST) (CAVALCASELLA 1968: 234; ESCHERICH 1942: 158; HARTIG 1958: 29; HERTING 1977: 32; JAHN, SINREICH 1963: 173; JONAITIS 1975: 58, 1981: 206, 1985: 14; KOLUBAJIV 1939: 328, 333, 1952: 32; 1954: 37; NÄGELI 1936: 307; NIGITZ 1974b: 170; ?NIKLAS 1944: 244; PFEFFER 1954: 368; PSCHORN-WALCHER 1982: 179; SCHIMITSCHEK 1964: 336; THOMPSON 1950b: 81, 1957: 548); *P. laricis* (HART.) (BM); *Pikonema* (= *Pachynematus*) *montanum* (ZADD.) (HERTING 1977 29; JONAITIS 1975: 54, 1981: 206, 1985: 14; KOLUBAJIV 1939: 333, 1962: 23); *Nematus* (= *Pteronidea*) *ribesii* (SCOP.) (JONAITIS 1975: 54, 1981: 206, 1985: 14; ZAJANCKAUSKAS, JONAITIS, JAKIMAVIČIUS, STANIONYTĖ 1979: 110); *N. salicis* (L.) (HERTING 1977: 28; NOVÁK 1958: 13-16); *Nematus* sp. (ex cocoon - IPSF). Lasiocampidae - *Malacosoma neustrium* (L.) (JONAITIS 1981: 206, 1985: 14; MEYER 1927: 84; THOMPSON 1946a: 369, 1957: 548). Pyraustidae - *Ostrinia* (= *Pyrausta*) *nubilalis* (HÜBN.) (CONSTANTINEANU, PISICĂ 1966: 209). Tortricidae - *Laspeyresia* (= *Cydia*) *pomonella* (L.) (BŁEDOWSKI, KRAIŃSKA 1926: 42; COULON 1933: 93; DALLA TORRE 1902: 711; GAULLE 1907: 48; JÄNNER 1937: 39; JONAITIS 1975: 54,

1981: 206, 1985: 14; MEYER 1927: 79, 1936: 284; MORLEY 1907: 69; MORLEY, RAIT-SMITH 1933: 170; PFEFFER 1954: 368; RATZEBURG 1844: 145; RÜHL 1923: 28; STELLWAAG 1921: 91; THOMPSON 1944: 114, 1957: 548; WOLFF, KRAUBE 1922: 118).

Material studied: 173 mm, 28 ff. Austria, England, Bulgaria, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Turkey, USSR (European) (BC, BM, FSA, HC, HCZI, IAZ, IPSF, IZPAN, JC, SCT, SCZ, SCW, TC, TMA, UW, ZMD, ZSBS).

*Endasys hungarianus* sp. nov. (Figs. 72, 124, 177, 213)

Male diagnosis. Abdomen orange (terga 2-4) and black (terga 4-apically to apex), terga 1-2 granulate, 3 tyloids (flagellomeres 10-12), flagellum elongate (Fig. 6), femur III orange with black apically (Fig. 177), tibia III yellowish orange with black apically, areola broadly to elongate hexagonal (Fig. 72), carinae sharply distinct, apophysis sharp and toothlike. It appears related to *E. alutaceus* (HAB.) from which it is told by the shorter tyloids, always 3, and the elongate postpetiole.

Male description. Flagellum: elongate, 3 tyloids (flagellomeres 10-12), glumes dense. Head: clypeus a little swollen, frons densely punctulate, ocellar distance less than or equal to 1. Mesopleurum: entire central area sparsely punctate and strigose. Propodeum: areola broadly to elongate hexagonal, carinae sharply distinct, apophysis sharp and toothlike. Femur III: slender (Fig. 177). Abdomen: dorsomedian carina of tergum 1 strong over half or more of postpetiole, latter a little elongate (Fig. 89), terga 1-2 granulate, weakly strigillose, tergum 3 weakly granulate. Wing: radial cell elongate. Colour: whitish - sometimes scape apicomediaally; yellow - sometimes clypeus pale-yellow, trochanters apically, femora I-II, tibiae (III blackish apically); orange - femur III with black apically, tibia III yellowish orange with black apically, abdominal terga 2-3 entirely, 4 basally; black - usually most of scape and clypeus, coxae, trochanters basally, tarsus III, tergum 1 (blackish orange apically), terga 4-apically to apex. Length: 8 mm.

Female diagnosis. Flagellum a little narrowed apically, flagellomeres (at least) 4-9 white, abdomen orange with black at apex, femur III and tibia III orangish with black apically (Fig. 213), postpetiole widely rectangular (Fig. 124). It differs from *E. alutaceus* (HAB.) by the black coxae and trochanters, and the elongate, slightly bowed radial cell (cf. Fig. 233). It is separated from similar *E. cnemargus* (GRAV.) and *E. femoralis* (HAB.) by lacking white on tibiae I-II dorsally.

Female description. Flagellum: a little narrowed apically (Fig. 25), basal flagellomeres elongate, 2-3 short, at least 4-9 white, sometimes also 2 and 3. Head: frons densely punctate, a little strigillose, ocellar distance greater than or equal to 1. Mesopleurum: mostly strigose. Propodeum - dorsally some carinae weak or

obsolescent, apical carinae and apophysis distinct. Abdomen: postpetiole widely rectangular, 3rd valvula longer than basal 3 hind tarsomeres. Wing: radial cell elongate, areolet a little wider than high. Colour: yellow - trochanters apically; yellowish orange - femora I-II, tibiae (III blackish apically), tarsus III; orange - femur III with black apically, abdomen except black apex; black - scape, clypeus, coxae, trochanters. Length: 7-10 mm.

Hosts. Unknown.

Material studied: 4 mm, 4 ff. Holotype (m): "Poland, G. ŚWIETOKRZYSKIE, rz. Pokrzywianka, leg, 25.5.84 J.S." (SCW). Paratypes (3 mm, 4 ff): (2 mm, 1 f) same as holotype; (1 m) Ságváriliget Ördögárok, 1954.V.10.", "leg. BAJÁRI" (TMA); (1 f) "Nagykovácsi 1972.VI.20 leg. PAPP J." (TMA); (1 f) "30.7.1960 Brenner", "legit. R. HINZ" (HC); (1 f) "126" [Poland, Dolny Śląsk], "4.7.09" (UW).

***Endasys megamelanus* sp. nov.** (Figs. 11, 178, 234)

Male diagnosis. Abdomen black, tergum 1 with dorsomedian carina sharp and strong over most of length, distinct to apical margin of postpetiole, terga 1-2 strongly granulate and a little strigillose, tergum 3 weakly granulate basal half, mesopleurum strigose across central area, 3 tyloids. It is nearly identical to *E. triannulatus* sp. nov. from which it differs by its larger size, the 3 tyloids, not 2, mesopleurum strigose centrally, blackish yellow trochanters basally, not black, and the yellowish scape and clypeus. All of these differences could be an artifact of the larger size, 8 mm long. The range of length for *E. triannulatus* sp. nov. is 5-6 mm.

Male description. Flagellum: 3 tyloids on flagellomeres 10-12 (Fig. 11), glumes sparse. Head: frons very densely punctulate, ocellar distance greater than or equal to 1. Mesopleurum: strigose across central area (cf. Figs. 257, 258). Femur III: slender (Fig. 178). Abdomen: dorsomedian carina of tergum 1 sharp and strong, distinct to apical margin of postpetiole, terga 1-2 strongly granulate and a little strigillose, tergum 3 weakly granulate basal half, tergum 2 widened. Wing: radial cell elongate (Fig. 234). Colour: pale-yellow - scape, tibiae I-II dorsally, tarsi I-II, tibia III basally; yellow - clypeus blackish yellow, femora I-II blackish yellow, trochanters except more blackish yellow basally; blackish orange - femur III with black apically (Fig. 178); black - coxae, tibia III apically, tarsus III, abdomen. Length: 8 mm.

Female. Unknown.

Hosts. Unknown.

Material studied: 1 m. Holotype (m): "Radnai hgys. CSIKI", "1943.VII.11", [underside:] "Vöröspatak völgye", "Coll. E. CSIKI" (TMA).

*Endasys melanurus* (ROMAN, 1913) (Figs. 12, 36, 53, 54, 65, 66, 125, 137, 140, 145, 179, 214, 224, 245, 246)

*Stylocryptus melanurus* ROMAN, 1913: 122. - Lectotype (♂) by designation of SAWONIEWICZ (LUHMANN 1990:108): "Sarek" / "Popp.", "25/8" / "1907", "*Stylocryptus bicolor* LDB. v. *melanurus* RN mf. syn. *analis* RN nec THN.". Loc. typ.: Sweden, Sarek. - Paralectotypes (1 m, 2 ff): (1 m) "Lul" / "1904", "17/8" / "ARn"; (2 ff) "Lul" / "1909", "17/8" / "ARn"; and "Lul" / "1904", "21/8" / "ARn". All types by designation of SAWONIEWICZ in Coll. ROMAN, Stockholm (NRS).

*Endasys bicolor* LUNDB. *melanurus*: JUSSILA 1973: 19.

Male diagnosis. Head, especially cheeks, with more or less erect, long hairs, giving bearded appearance when viewed face-on (Fig. 54), abdomen mostly black, or at least on terga 4-apex (Figs. 137, 140), legs black except yellow tibiae and tarsi. It is similar to dark forms of *E. microcellus* sp. nov. from which it differs by the long hairs on the cheek. It is Holarctic occurring also in the northern Nearctic.

Male description. Flagellum: short to moderately stout (Fig. 12), glumes sparse. Head: clypeus not upturned (Fig. 53), long, hairs on head more or less erect, giving fuzzy appearance, cheeks appear bearded in face-on view, frons mostly densely punctulate and strigillose, ocellar distance greater than or equal to 1. Mesopleurum: sparsely punctulate across central area. Propodeum: apophysis reduced or nearly absent. Femur III: moderately slender to slender (Fig. 179). Abdomen: terga 1-2 granulate and little punctulate, sometimes a little strigillose, or sometimes only faintly granulate and punctulate. Wing: areolet often a little widened, 1st intercubital vein distinctly angled. Colour: yellow - femora I-II more apically, tibiae except III black apically; orange - sometimes terga 2-3 more orangish (Fig. 137); black - most of legs (except tibiae), abdomen (except often terga 2-3). Length: 4.5-6.5 mm.

Female diagnosis. Face and frons shiny, sparsely punctate (Figs. 245, 246), flagellum mostly blackish, flagellomeres 3-9 usually pale-orangish suffused with black, abdomen distinctly black on terga 3 (apically) to apex (Fig. 145), tergum 1 broadly widened (Fig. 125). It is similar to female of *E. stictogastris* sp. nov. from which it differs by the characters in the diagnosis, particularly the flagellum, the wider postpetiole, as well as by the sparser, longer hairs on the cheek.

Female description. Flagellum: slender and mostly linear, faintly narrowed apically (Fig. 36), mostly black, flagellomeres 3-9 usually pale-orange, basal 3 nearly moniliform. Head: face and clypeus shiny, sparsely punctate, clypeus not upturned (Fig. 66), frons sparsely punctate (Fig. 245, 246), hairs on head sparse, more or less erect and elongate giving head fuzzy appearance (Fig. 65). Abdomen: tergum 1 stout, postpetiole broadly widened from petiole, 3rd valvula about as long as basal 4 hind tarsomeres. Wing: radial cell short, radial sector often

slightly bowed (Fig. 224). Colour: yellow - tibiae except III blackish apically (Fig. 214), tarsi; orange - sometimes tergum 1 entirely, usually 2nd, 3rd except apically; black - scape, clypeus, legs except tibiae and tarsi, often most or all of abdomen 1, sometimes tergum 2 more apically, 3rd apically, terga 4-apex. Body hairs on legs and body more or less erect giving overall fuzzy appearance. Length: 4.5-5.5 mm.

Hosts. Unknown.

Material studied: 18 mm, 13 ff. Germany, France Sweden, Switzerland (HC, HCZI, NRS). Nearctic (LUHMAN 1990: 108).

*Endasys microcellus* sp. nov. (Figs. 38, 126, 136, 180, 216)

Male diagnosis. Abdominal terga 2-4 variably orange and black, 3 or more tyloids, clypeal margin upturned, frons densely punctulate, ocellar distance distinctly greater than 1, ocelli small, terga 1-3 granulate (3rd weakly). It is related to a western North American species from which it differs by the number of tyloids (more than 2) and the more yellowish tibia III. It is similar to light forms of European *E. triannulatus* sp. nov. from which it differs by the 3rd tyloid and the black femur III. See additional remarks under *E. stictogastris* sp. nov. and *E. melanurus* (ROM.).

Male description. Flagellum: 3 tyloids on flagellomeres 10-12, sometimes 4th on flagellomere 13 or 9, glumes moderately sparse to dense. Head: clypeal margin upturned, frons moderately to densely punctulate, ocellar distance about 1.5, ocelli small. Mesopleurum: often a little strigillose or punctate across central area. Femur III: moderately slender to slender (Fig. 180). Abdomen: terga 1-2 granulate or weakly so, sometimes weakly punctulate, tergum 3 weakly to faintly granulate. Colour: yellow - trochanters apically, femora I-II (usually blackish at least ventrally), tibiae I-II (often II blackish apically), tibia III except apically and sometimes basally blackish; orange - variably on terga 2-4; black - scape, clypeus, coxae, trochanters basally, femur III (Fig. 180), tarsus III, most or all of tergum 1 (orangish apically), variably on terga 2-4 (Fig. 136), entirely on 5-apex; variability - sometimes femur III mostly blackish orange, sometimes terga 2-3 orange, 4-apex. Length: 5-6.5 mm.

Female diagnosis. Flagellum slender and narrowed apically (Fig. 38), basal 3 flagellomeres elongate, 6 or 7 to 9 whitish, frons sparsely punctulate, ocellar distance nearly 2, abdomen distinctly black on terga 4-apex. It differs from a similar Nearctic species by the white on flagellomeres 6 or 7 to 9 (remaining ones black), and the flagellum slender and elongate. It is distinguished from *E. triannulatus* sp. nov. by the flagellum narrowed apically, and elongate basally.

Female description. Flagellum: slender and narrowed apically, elongate basally, flagellomeres 6 or 7 to 9 whitish. Head: sparsely punctulate, ocellar distance nearly 2. Abdomen: postpetiole abruptly but moderately widened (Fig. 126), 3rd valvula

about as long as basal 4 hind tarsomeres. Colour: yellow - trochanters apically, femora (III blackish at least apically, Fig. 216), tibiae, tarsi; orange - terga 1-3; black - scape, clypeus, coxae, trochanters basally, femur III at least basally, tergum 4-apex. Length: 5.5 mm.

Hosts. Unknown.

Material studied: 33 mm, 2 ff. Holotype (m): "Fennia N Vantaa 19.6.80 leg. O. RANIN" (SCW). Paratypes (32 mm, 2 ff): (1 m) Czechoslovakia, (1 m) Finland, (6 mm, 1 f) France, (7 mm) BRD, (2 mm) Italy, (1 f) Poland, (1 m) Spain, (13 mm) Sweden, (1 m) Switzerland (BC, HC, IAZ, JC, SCW, TMA).

*Endasys stictogastris* sp. nov. (Figs. 44, 89, 127, 138, 181, 217)

Male diagnosis. Abdominal tergum 1 elongate, postpetiole narrow (Fig. 89), terga 1-6 weakly granulate, moderately densely punctulate, 2nd more punctate. It appears related to *E. microcellus* sp. nov. from which it is distinguished by the punctate and punctulate terga 1-6 and the mostly orange abdomen. It is sometimes similar to *E. striatus* (KISS) from which it differs by the weakly granulate abdomen (not shiny and punctate), the sparse glumes, and the more slender femur III.

Male description. Flagellum: flumes sparse. Head: clypeal margin upturned, frons densely punctulate, ocellar distance less than or equal to 1. Mesopleurum: sparsely punctate across central area. Propodeum: areola broadly hexagonal, often elongate apically, apophysis reduced, but present. Femur III: moderately slender to slender (Fig. 181). Abdomen: tergum 1 elongate, postpetiole narrow, weakly granulate and usually punctate, terga 2-6 weakly granulate and moderately punctulate, or 2nd more punctate. Colour: yellow - trochanters I-II apically, most of femur III (often black ventrally and posteriorly), tibiae I-II (II often blackish apically); orange - sometimes tibia III more blackish orange basally, usually abdomen except most of tergum 1 and apex black; black - scape, clypeus, coxae, trochanters basally, usually tibia II except yellow basally and anteriorly, leg III mostly black (trochanters more orangish apically - Fig. 181), some forms with abdomen more orangish black on terga 2-6 (Fig. 138). Length: 4-7 mm.

Female diagnosis. Abdomen weakly blackish on terga 3 (apically) to apex (cf. Fig. 143), flagellum linear, yellowish orange basal half, basal 3 flagellomeres moniliform (Fig. 44), postpetiole moderately widened (Fig. 127). It differs from *E. microcellus* sp. nov. by the flagellum without white band, linear, and basal 3 flagellomeres moniliform. See additional remarks under *E. melanurus* (ROM.).

Female description. Flagellum: yellowish orange basal half (usually suffused with blackish), apical half black, linear, basal 3 flagellomeres moniliform. Head: clypeus more or less upturned, frons moderately to sparsely punctate or punctulate. Abdomen: tergum moderately widened, 3rd valvula as long as basal 4 hind tarsomeres. Colour: yellow - sometimes coxa I blackish yellow, trochanters I-II



blackish yellow or yellowish only apically, tibiae (III more blackish apically); orange - abdomen except most of tergum 1 blackish, and blackish orange from 3rd apically to apex; black - scape orangish black, clypeus, usually coxae, trochanters basally, femur III (Fig. 217). Length: 4-5.5 mm.

Hosts. Tenthredinidae - *Pristiphora abietina* (CHRIST) (BM).

Material studied: 48 mm, 45 ff. Holotype (m): "Poland, Bieszczady Moczarne 15-29.07.1985 leg. C. WATAŁA, A. JADWISZCZAK" (SCW). Paratypes (47 mm, 45 ff): (3 mm, 1 f) Austria, (6 mm, 30 ff) Germany, (1 m, 7 ff) Czechoslovakia, (21 mm, 6 ff) France, (3 mm) Hungary, (3 mm) Italy, (3 mm, 1 f) Poland, (7 mm) Switzerland (BC, HC, HCZI, IAZ, IPSF, IZPAN, SCW, SPCZ, TMA, TC, ZSBS, UW).

***Endasys striatus* (KISS, 1924)** (Figs. 128, 182, 218)

*Acanthocryptus striatus*, KISS: 1924: 66. - Holotype (m) det. by SAWONIEWICZ (1984: 316): "Borosjenő Diószeghy". Loc. typ.: Romania, Boros-Jenő near Arad. Coll. TMA, Budapest. SAWONIEWICZ (1984: 316) erroneously synonymized it with *Endasys erythrogaster* (GRAV.).

Male diagnosis. Abdominal terga 2-3 mostly shiny with distinct pits, clypeal margin distinctly upturned. It appears related to *E. stictogastris* sp. nov. from which it differs by the yellow trochanters and legs I-II, the distinctly punctate, but mostly shiny terga 2-3, and the dense glumes. Some forms are similar to *E. varipes* (GRAV.) from which it is separated by the dense glumes, yellow trochanters, and abdomen apically orange.

Male description. Flagellum: glumes dense. Head: clypeus distinctly upturned apically, frons moderately punctulate, ocellar distance less than or equal to 1. Abdomen: terga 1-2 and 3 (basally) strongly punctate, mostly shiny, faintly granulate. Colour: yellow - sometimes scape more blackish yellow, coxae apically, trochanters except blackish basally, femora I-II, tibiae I-II, often femur III basally (Fig. 182), usually tibia III more yellowish black with black apically (sometimes mostly yellow except apex), usually hind basitarsus basally; orange - abdomen except tergum 1 mostly black (sometimes parameres blackish); black - scape blackish, usually clypeus, most of coxae except apically, usually most of femur III, usually most of hind tarsus except basally, tergum 1 except orange apically. Length: 4-7 mm.

Female diagnosis. Legs mostly yellow, except sometimes femur III more blackish, clypeus narrowly but distinctly upturned, flagellum linear, flagellomeres 1-4 orangish, 5-9 pale-yellow, remaining ones black. It is distinguished from *E. stictogastris* sp. nov. by the mostly yellow legs and the entirely orange abdomen. Darker forms are distinguished from similar *E. rusticus* (HAB.) by the linear flagellum more yellowish medially, and the distinct apophysis.

Female description. Flagellum: linear, faintly tricoloured (orangish, pale-yellow, black), basal 3 flagellomeres short. Head: clypeus narrowly but distinctly upturned, frons more densely punctate, sometimes more punctulate. Mesopleurum: sparsely to densely punctulate and strigillose. Propodeum: apophysis distinct (vertically projecting). Abdomen: postpetiole widely rectangular (Fig. 128), 3rd valvula as long as basal 3 hind tarsomeres. Colour: yellow - scape, usually legs (tibiae I-II pale-yellow dorsally); orange - abdomen except often most of tergum 1 blackish; black - clypeus, sometimes coxae and trochanters, sometimes femur III more blackish (Fig. 218). Length: 4-6 mm.

Hosts. Tortricidae - *Epinotia* (= *Epiplena*) *tedella* (CL.) (SCHEDL, SCHEDL 1951: 99, 104).

Material studied: 211 mm, 62 ff. Austria, British Isles, Bulgaria, Czechoslovakia, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Romania, Sweden, BRD, USSR (European) (BC, FSA, HC, HCZI, IPSF, IZPAN, IAZ, JC, SCT, SCW, SCZ, TMA, TC, ZMD, ZSBS).

***Endasys triannulatus* sp. nov** (Figs. 39, 129, 183, 215)

Male diagnosis. Black abdomen, legs mostly yellow with black coxae and trochanters (basally). It may be related to *E. brunnulus* sp. nov. from which it differs by the diagnosis. See *E. megamelanus* sp. nov. for additional remarks.

Male description. Flagellum: glumes sparse. Head: clypeal margin sharp, weakly upturned, frons sparsely punctulate, ocellar distance equal to or less than 1. Abdomen: terga 1-2 more or less granulate and weakly punctulate, 3rd faintly punctulate. Wing: radial cell elongate. Colour: yellow - trochanters more blackish yellow apically, femora (III black apically; Fig. 183), tibiae (III black apically); black - scape, clypeus, coxae, trochanters basally, abdomen; variability - sometimes terga 2-3 more orangish, Length: 5-6 mm.

Female diagnosis. Flagellum faintly narrowed apically (Fig. 39), basal 3 flagellomeres a little elongate, 5-7 white, abdominal terga 1-4 yellowish orange, remaining terga black, legs mostly yellow except coxae black. It is distinct from *E. brunnulus* sp. nov. by the bicoloured abdomen and mostly yellow legs. See *E. microcellus* sp. nov. for additional remarks.

Female description. Flagellum: slightly narrowed apically, basal 3 flagellomeres a little elongate, 5-7 white. Head: clypeal margin sharp but weakly upturned, frons moderately punctate. Abdomen: postpetiole moderately widened (Fig. 129), 3rd valvula less than or equal to basal 4 hind tarsomeres. Wing: radial cell elongate. Colour: yellow - trochanters (sometimes more blackish basally), femora, tibiae (III blackish apically - Fig. 215), usually terga 1-4 more yellowish orange; orange - sometimes terga 1-4; black - scape, clypeus, coxae, tarsus III, terga 5 to apex. Length: 4-6 mm.

Hosts. Unknown.

Material studied: 14 mm, 14 ff. Holotype (m): "Poland, Gardno Wlk. Distr. Słupsk 3.IX.1976 leg. T. HUFLEJT" (SCW). Paratypes (13 mm, 14 ff): (2 mm, 2 ff) British Isles, (7 mm, 9 ff) Denmark, (2 mm, 3 ff) Germany, (2 mm) Poland (BC, BM, HCZI, IZPAN, SCW, ZMD).

*Endasys varipes* (GRAVENHORST, 1829) (Figs. 40, 84, 130, 184, 219)

*Cryptus (Phygadeuon) varipes* GRAVENHORST, 1829: 747. - Lectotype (f) by designation of FRILLI (1974: 119): without original labels, "*Stylocryptus varipes* GRAV. f" label of HABERMEHL. Loc. typ.: Poland, Cieplice (=Warmbrunn). Coll. GRAVENHORST, Wrocław (UW).

*Endasys varipes*: CAVRO 1954: 48.

Male diagnosis. Femur III slender and black (Fig. 184), abdominal terga 4 to apex more or less blackish, frons densely punctulate, clypeus weakly upturned, abdominal tergum 2 faintly granulate and sparsely punctulate. See *E. striatus* (KISS) for similarities.

Male description. Flagellum: glumes sparse. Head: clypeus weakly upturned, frons densely punctulate, ocellar distance less than or equal to 1. Femur III: slender, nearly parallel sided. Abdomen: tergum 1 moderately slender, postpetiole a little longer than wide (Fig. 84), tergum 2 faintly granulate and sparsely punctulate. Colour: yellow - trochanters more blackish yellow apically, femora I-II more apically, tibiae I-II (pale-yellow dorsally), tibia III with black apically; orange - usually terga 2-3, often terga 4-6 more orangish with blackish suffusion; black - scape, clypeus, coxae, trochanters at least basally, femora I-II at least basally, femur III, tarsus III (yellowish at base), tergum 1 except orange apically, sometimes variably on 2-3, more or less on 4-6, apex black; variability - dark forms with blackish on terga 2-3. Length: 4.5-6 mm.

Female diagnosis. Tibia III with white dorsal, sub-basal patch (Fig. 219), remainder of tibia yellowish orange with black apically, flagellum tricoloured (orangish, white, black; Fig. 40). See *E. striatus* (KISS) for similarities. The white sub-basal patch is unique among both European and Nearctic *Endasys* species. The white patches of *E. parviventris* (GRAV.) and *E. maculatus* (PROV.) are dorsomedian and elongate with the rest of the tibiae black.

Female description. Flagellum: tricoloured (flagellomeres 1-3 orangish, 4-9 white, remaining black), mostly linear (Fig. 40), basal 3 flagellomeres short. Head: clypeal margin sharp and upturned, frons densely punctulate. Propodeum: areola elongate anteriorly. Abdomen: tergum 1 gradually widened, wedge-shaped (Fig. 130), 3rd valvula as long as basal 3 hind tarsomeres or longer. Wing: radial cell short. Colour: white - tibiae I-II dorsally, tibia III with patch dorsally and sub-basally; yellow - trochanters apically (more yellowish black basally), femora I-II

more blackish yellow, tibiae I-II except dorsally; orange - scape, tibia III yellowish orange except white patch and black apically, hind basitarsus basally, abdomen except tergum 1 blackish basally; black - clypeus, coxae and trochanters (basally) more yellowish black, femur III, tarsus III more orangish black. Length: about 5 mm.

Hosts. Tenthredinidae - *Pristiphora abietina* (CHRIST) (COMELLINI 1971: 34).

Material studied: 57 mm, 31 ff. Austria, England, Denmark, Germany, Finland, France, Hungary, Italy, Poland, Sweden, Switzerland (BC, FSA, HCZI, HC, IAZ, IPSF, IZPAN, SCW, SCT, TC, TMA, UH, UW, ZMD, ZSBS).

### 7. Species with uncertain taxonomic position

*Stylocryptus testaccus* [sic!] TASCHENB. var. *nigricoxis* CONSTANTINEANU, 1927: 228. - Holotype (f) not examined. Original description not sufficient to identify species. Junior primary homonym of *Stylocryptus erythrogaster* GRAV. var. *nigricoxis* HABERMEHL, 1912: 182.

### 8. Species incorrectly referred to *Endasys* FOERSTER

*Acanthocryptus rugiventris* STROBL, 1901: 216. Erroneously assigned by HABERMEHL (1912: 188) to *Stylocryptus* THOMSON; probably belongs to *Ethelurgus* FOERSTER according to HORSTMANN (1973: 71).

*Acanthocryptus nigriceps* THOMSON, 1883: 868. Erroneously assigned by HABERMEHL (1912: 382) to *Stylocryptus* THOMSON. It belongs to *Medophron* FOERSTER (SAWONIEWICZ 1985: 132).

*Cratocryptus bispinus* THOMSON, 1894: 2117. Erroneously assigned by THOMSON (1896: 2385) to *Stylocryptus* THOMSON. Junior synonym of *Amphibulus gracilis* KRIECHB. (ROMAN 1925: 9).

*Cryptus (Phygadeuon) vagabundus* GRAVENHORST, 1829: 735. Various authors erroneously assigned it to *Stylocryptus* THOMSON. Belongs to *Glyphicnemis* FOERSTER.

*Glyphicnemis suffolciensis* MORLEY, 1907: 67. Erroneously assigned by SCHMIEDEKNECHT (1908: 80) to *Stylocryptus* THOMSON. Junior synonym of *Glyphicnemis atrata* (STROBL) (AUBERT 1975: 14).

*Hemiteles ruficaudatus* BRIDGMAN, 1883: 149. Erroneously assigned by DALLA TORRE (1902: 711) to *Stylocryptus* THOMSON. Junior synonym of *Bathythrix pellucidator* (GRAV.) (SAWONIEWICZ 1978: 127).

*Ichneumon profligator* FABRICIUS, 1775: 334. Various authors erroneously assigned it to *Stylocryptus* THOMSON. Belongs to *Glyphicnemis* FOERSTER.

*Phygadeuon obscuripes* TASCHENBERG, 1865: 43. Erroneously synonymized by SCHMIEDEKNECHT (1905: 665, 1932: 43) with *Stylocryptus erythrogaster*

- (GRAV.). Junior synonym of *Polytribax perspicillator* (GRAV.) (SAWONIEWICZ 1984: 319).
- Stylocryptus aertsi* HABERMEHL, 1926: 330. Junior synonym of *Amphibulus gracilis* KRIECHB. (SAWONIEWICZ 1985: 140).
- Stylocryptus atratus* STROBL, 1901: 219. Belongs to *Glyphicnemis* FOERSTER (AUBERT 1980: 133).
- Stylocryptus brevis* GRAV. f. *exannulata* HEDWIG, 1956: 236. Junior synonym of *Glyphicnemis vagabunda* (GRAV.) (SAWONIEWICZ 1985: 140).
- Stylocryptus* (*Gnathocryptus*) *clypealis* THOMSON, 1883: 870. Belongs to *Glyphicnemis* FOERSTER (MORLEY 1907: 68).
- Stylocryptus elegans* SCHMIEDEKNECHT, 1932: 54. Junior synonym of *Medophron nigriceps* (THOMS.) (SAWONIEWICZ 1985: 132).
- Stylocryptus montanus* LANGE, 1911: 542. Junior synonym of *Phygadeuon ovatus* (GRAV.) (OEHLKE, HORSTMANN 1987: 151).
- Stylocryptus isomorphus* SCHMIEDEKNECHT, 1932: 53. Belongs to *Pleolophus* TOWNES (SAWONIEWICZ 1984: 322).
- Stylocryptus senilis* GRAV. var. *alpina* STROBL, 1901: 219. Junior synonym of *Glyphicnemis atrata* (STROBL) (SAWONIEWICZ 1985: 137).

#### 9. Names in error (lapsus calami)

- "*Endasys erythrogaster* GRAV. var. *clypeator* [sic!] HAB.": OZOLS 1959: 133. Probably is name of form "*clipealis*" HABERMEHL.
- Glyphicnemis* "*clypeator* [sic!] HABERM. 1912": KLOET, HINCK 1945: 250.
- "*Spilocryptus erythrogaster* GRAV.": KISS 1924: 57, 1930: 108; SCHIMITSCHEK 1964: 334. GRAVENHORST (1829: 741) used the species name "*erythrogaster*" only in the genus *Cryptus* (*Phygadeuon*) but this species belongs temporarily to the genus *Endasys* (= *Stylocryptus*) nec *Agrothereutes* (= *Spilocryptus*).
- Spilocryptus erythrogaster*: SCHIMITSCHEK (1964: 334) ex cocoon *Diprion pini* (L.) probably was *Endasys erythrogaster* (GRAV.).
- Stylocryptus* "*clypeatus* [sic!] THOM.": KETTNER 1968: 70. Probably is *Glyphicnemis clypealis* (THOMS.).
- Stylocryptus erythrogaster* GRAV. f. "*clypealis* [sic!] HAB.": SCHMIEDEKNECHT 1932: 42; AERTS 1953: 11. Probably is name of form "*clipealis*" HABERMEHL.
- Stylocryptus* "*migrator* GRAV.": PFANKUCH 1929: 177. Probably was *Agrothereutes* (= *Spilocryptus*) *migrator* auct.

## 10. Acknowledgements

We thank the following for their loans of specimens used in this study: R. BAUER (BC - Großschwarzenlohe), R. DANIELSSON (ZIL - Lund), E. DILLER and H. HILPERT (ZSBS - München), M. DORN (UHS - Halle), M. G. FITTON (BM - London), E. GÓRNAŚ (GC - Warszawa), E. HAESSELBARTH (IAZ - München), L. HEDSTRÖM (UU - Uppsala), R. HINZ (HC - Einbeck), K. HORSTMANN (HCZI - Würzburg), P. B. HUBL (SC - Admont), I. IZQUIERDO (MNM - Madrid), R. JUSSILA (JC - Paattinen), M. KAK (UW - Wrocław), F. KOCH (MN - Berlin), J. P. KOPELKE (NMS - Frankfurt/M.), M. KOPONEN (UH - Helsinki), T. KRONESTEDT (NRS - Stockholm), K. H. LAMPE (ZF - Bonn), W. MATZ (SMH - Rudolstadt), J. OEHLKE (IPSF - Eberswalde-Finow), J. PAPP (TMA - Budapest), B. PETERSEN (ZMD - København), A. P. RASNITSYN and E. M. ANTONOVA (ZMM - Moscow), A. RODZIEWICZ (IBL - Warszawa), R. L. SCARAMOZZINO (SCT - Torino), J. ŠEDIVÝ (SPCZ - Praha), M. SCHWARZ (SCZ - Zwetl/R.), M. SORG (SKKI - Köln), C. THIRION (FSA - Gembloux), H. TOWNES (TC - Gainesville), S. WALTER (TUD - Tharandt). In the present paper also the materials collected in Poland by W. CZECHOWSKA, W. CZECHOWSKI, H. GARBARCZYK, S. GŁOGOWSKI, T. HUFLEJT, A. JADWISZCZAK, W. JEDRYCZKOWSKI, E. KIERYCH, P. MARCZAK, M. LUSZCZAK, H. PIEKARSKA, A. SŁOJEWSKA, A. ŚLIPINSKI, and C. WATAŁA are used (IZPAN, SCW). We are deeply grateful to all of them for their help and cooperation.

This paper has been completed and supported by the Department of Systematics and Zoogeography of the Institute of Zoology, Polish Academy of Sciences, Warszawa.

## 11. Explanation of Figures

Figs. 1-12. *Endasys* spp., antennae of mm: 1 - *E. minutulus* (THOMS.); 2 - *E. proteuryopsis* sp. nov.; 3 - *E. transverseareolatus* (STROBL); 4 - *E. magnocellus* sp. nov.; 5 - *E. praegracilis* sp. nov.; 6 - *E. femoralis* (HABERM.); 7 - *E. nitidus* (HABERM.); 8 - *E. plagiator* (GRAV.); 9 - *E. rusticus* (HABERM.); 10 - *E. brevis* (GRAV.); 11 - *E. megamelanus* sp. nov.; 12 - *E. melanurus* (ROMAN).

Figs. 13-27. *Endasys* spp.: 13-16 - tyloids of antennae of mm, 17-20 - glumes of antennae of mm, 21-27 - antennae of ff: 13, 26 - *E. praegracilis* sp. nov.; 14 - *E. annulatus* (HABERM.); 15, 18 - *E. alutaceus* (HABERM.); 16, 20 - *E. brevis* (GRAV.); 17 - *E. euxestus* (SPEIS.); 19 - *E. rusticus* (HABERM.); 21 - *E. eurycerus* (THOMS.); 22 - *E. lissorulus* sp. nov.; 23 - *E. minutulus* (THOMS.); 24 - *E. thunbergi* nom. nov.; 25 - *E. rugifacies* sp. nov.; 27 - *E. talitzkii* (TEL.).

Figs. 28-44. *Endasys* spp., antennae of ff: 28 - *E. parviventris* (GRAV.); 29 - *E. amoenus* (HABERM.); 30 - *E. testaceus* (TASCHENB.); 31 - *E. nitidus* (HABERM.); 32 - *E. melanistus* sp. nov.; 33 - *E. plagiator* (GRAV.); 34 - *E. rusticus* (HABERM.); 35 - *E. alutaceus* (HABERM.); 36 - *E. melanurus* (ROMAN); 37 - *E. anglianus* sp. nov.; 38 - *E. microcellus* sp. nov.; 39 - *E. triarunulatus* sp. nov.; 40 - *E. varipes* (GRAV.); 41 - *E. proteuryopsis* sp. nov.; 42 - *E. annulatus* (HABERM.); 43 - *E. euxestus* (SPEIS.); 44 - *E. stictogastris* sp. nov.

Figs. 45-56. *Endasys* spp., heads of mm: 45 - *E. minutulus* (THOMS.); 46 - *E. transverseareolatus* (STROBL); 47 - *E. praegracilis* sp. nov.; 48 - *E. areolellae* sp. nov.; 49 - *E. cnemargus* (GRAV.); 50 - *E. femoralis* (HABERM.); 51 - *E. eurythrogaster* (GRAV.); 52 - *E. plagiator* (GRAV.); 53, 54 - *E. melanurus* (ROMAN); 55 - *E. brevis* (GRAV.); 56 - *E. analis* (THOMS.). 45-47, 49, 54 - anterior view; 48, 51-53 - lateral view; 55, 56 - ventral view; 50 - posterior view.

Figs. 57-66. *Endasys* spp., heads of ff: 57 - *E. eurycerus* (THOMS.); 58 - *E. praegracilis* sp. nov.; 59, 60 - *E. senilis* (GMEL.); 61, 62 - *E. cnemargus* (GRAV.); 63, 64 - *E. melanistus* sp. nov.; 65, 66 - *E. melanurus* (ROMAN). 57-59, 61, 63, 65 - anterior view; 60, 64, 66 - lateral view; 62 - posterior view.

Figs. 67-82. *Endasys* spp., propodea: 67, 69-73 - area dentipara; 68, 74, 82 - area dentipara and areola; 76-81 - areola: 67 - *E. amoenus* (HABERM.) m; 68 - *E. brevis* (GRAV.) m; 69 - *E. brunnulus* sp. nov. f; 70 - *E. transverseareolatus* (STROBL) m; 71 - *E. rusticus* (HABERM.) m; 72 - *E. hungarianus* sp. nov. m; 73, 78, 79 - *E. praegracilis* sp. nov.: 73, 79 - m, 78 - f; 74 - *E. nitidus* (HABERM.) f; 75 - *E. magnocellus* sp. nov. m; 76 - *E. senilis* (GMEL.) f; 77 - *E. pieninus* sp. nov. m; 80 - *E. talitzkii* (TEL.) f; 81 - *E. melanistus* sp. nov. f; 82 - *E. areolellae* sp. nov. m. 67, 69-73 - lateral view; 68, 74-81 - dorsal view; 82 - dorso-posterior view.

Figs. 83-96. *Endasys* spp., mm: 83-89 - abdominal tergum 1; 90-96 - abdominal terga 1-2: 83 - *E. melanistus* sp. nov.; 84 - *E. varipes* (GRAV.); 85 - *E. amoenus* (HABERM.); 86 - *E. parviventris* (GRAV.); 87 - *E. erythrogaster* (GRAV.); 88 - *E. pieninus* sp. nov.; 89 - *E. stictogastris* sp. nov.; 90 - *E. praegracilis* sp. nov.; 91 - *E. areolellae* sp. nov.; 92 - *E. cnemargus* (GRAV.); 93 - *E. brunnulus* sp. nov.; 94 - *E. rusticus* (HABERM.); 95 - *E. alutaceus* (HABERM.); 96 - *E. analis* (THOMS.).

Figs. 97-130. *Endasys* spp., abdominal tergum 1, ff: 97 - *E. lissorulus* sp. nov., 98 - *E. minutulus* (THOMS.), 99 - *E. petiolus* sp. nov., 100 - *E. proteuryopsis* sp. nov., 101 - *E. thunbergi* nom. nov., 102 - *E. rugifacies* sp. nov., 103 - *E. melanopodis* sp. nov., 104 - *E. praegracilis* sp. nov., 105 - *E. senilis* (GMEL.), 106 - *E. talitzkii* (TEL.), 107 - *E. amoenus* (HABERM.), 108 - *E. cnemargus* (GRAV.), 109 - *E. femoralis* (HABERM.), 110 - *E. parviventris* (GRAV.), 111 - *E. annulatus* (HABERM.), 112 - *E. testaceipes* (BRISCHKE), 113 - *E. euxestus* (SPEISER), 114 - *E. testaceus* (TASCHENB.), 115 - *E. brunnulus* sp. nov., 116 - *E. erythrogaster* (GRAV.), 117 - *E. melanistus* sp. nov., 118 - *E. nitidus* (HABERM.), 119 - *E. plagiator* (GRAV.), 120 - *E. rusticus* (HABERM.), 121 - *E. alutaceus* (HABERM.), 122 - *E. analis* (THOMS.), 123 - *E. brevis* (GRAV.), 124 - *E. hungarianus* sp. nov., 125 - *E. melanurus* (ROMAN), 126 - *E. microcellus* sp. nov., 127 - *E. stictogastris* sp. nov., 128 - *E. striatus* (KISS), 129 - *E. triannulatus* sp. nov., 130 - *E. varipes* (GRAV.).

Figs. 131-140. *Endasys* spp., abdomen colour, dorsal view, mm: 131 - *E. senilis* (Gmel.), 132 - *E. annulatus* (HABERM.), 133 - *E. plagiator* (GRAV.), 134 - *E. rusticus* (HABERM.), 135 - *E. alutaceus* (HABERM.), 136 - *E. microcellus* sp. nov., 137, 140 - *E. melanurus* (ROMAN), 138 - *E. stictogastris* sp. nov., 139 - *E. praegracilis* sp. nov.



Figs. 141-148. *Endasys* spp., abdomen colour, lateral view, ff: 141 - *E. rusticus* (HABERM.), 142 - *E. cnemargus* (GRAV.), 143 - *E. proteuryopsis* sp. nov., 144 - *E. alutaceus* (HABERM.), 145 - *E. melanurus* (ROMAN), 146 - *E. praegracilis* sp. nov., 147 - *E. minutulus* (THOMS.), 148 - *E. eurycerus* (THOMS.).

Figs. 149-160. *Endasys* spp., leg III, lateral view, mm: 149 - *E. lissorulus* sp. nov., 150 - *E. minutulus* (THOMS.), 151 - *E. proteuryopsis* sp. nov., 152 - *E. thunbergi* nom. nov., 153 - *E. rugifacies* sp. nov., 154 - *E. transverseareolatus* (STROBL), 155 - *E. magnocellus* sp. nov., 156 - *E. melanopodis* sp. nov., 157 - *E. praegracilis* sp. nov., 158 - *E. femoralis* (HABERM.), 159 - *E. areolellae* sp. nov., 160 - *E. euxestus* (SPEISER).

Figs. 161-170. *Endasys* spp., leg III, lateral view, mm: 161 - *E. cnemargus* (GRAV.), 162 - *E. senilis* (GMELIN), 163 - *E. parviventris* (GRAV.), 164 - *E. annulatus* (HABERM.), 165 - *E. amoenus* (HABERM.), 166 - *E. testaceipes* (BRISCHKE), 167 - *E. testaceus* (TASCHENB.), 168 - *E. brunulus* sp. nov., 169 - *E. erythrogaster* (GRAV.), 170 - *E. nitidus* (HABERM.).

Figs. 171-184. *Endasys* spp., leg III, lateral view, mm: 171 - *E. plagiator* (GRAV.), 172 - *E. rusticus* (HABERM.), 173 - *E. analis* (THOMS.), 174 - *E. alutaceus* (HABERM.), 175 - *E. pieninus* sp. nov., 176 - *E. brevis* (GRAV.), 177 - *E. hungarianus* sp. nov., 178 - *E. megamelanus* sp. nov., 179 - *E. melanurus* (ROMAN), 180 - *E. microcellus* sp. nov., 181 - *E. stictogastris* sp. nov., 182 - *E. striatus* (KISS), 183 - *E. triannulatus* sp. nov., 184 - *E. varipes* (GRAV.).

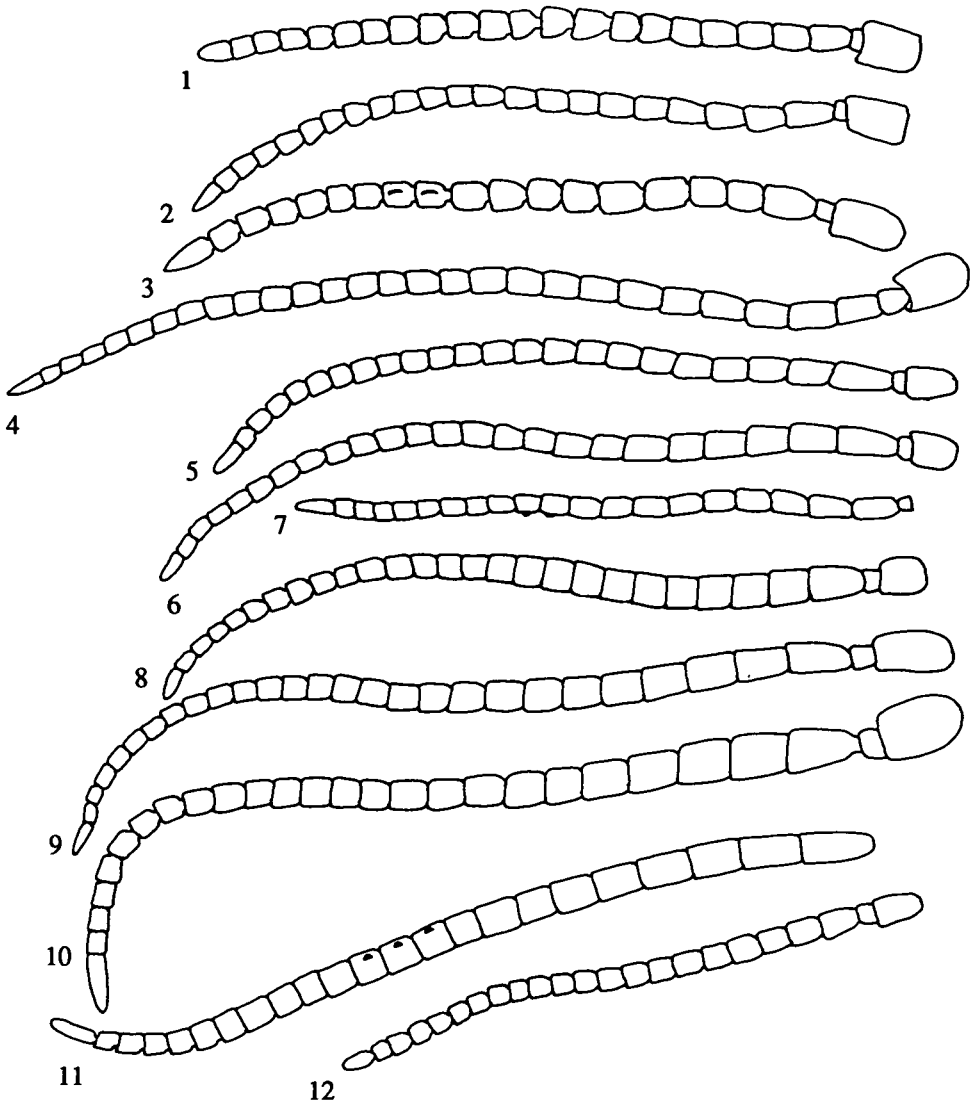
Figs. 185-199. *Endasys* spp., leg III, lateral view, ff: 185 - *E. eurycerus* (THOMS.), 186 - *E. lissorulus* sp. nov., 187 - *E. minutulus* (THOMS.), 188 - *E. petiolus* sp. nov., 189 - *E. proteuryopsis* sp. nov., 190 - *E. thunbergi* nom. nov., 191 - *E. rugifacies* sp. nov., 192 - *E. melanopodis* sp. nov., 193 - *E. praegracilis* sp. nov., 194 - *E. senilis* (GMEL.), 195 - *E. talitzkii* (TEL.), 196 - *E. amoenus* (HABERM.), 197 - *E. testaceus* (TASCHENB.), 198 - *E. melanistus* sp. nov., 199 - *E. parviventris* (GRAV.).

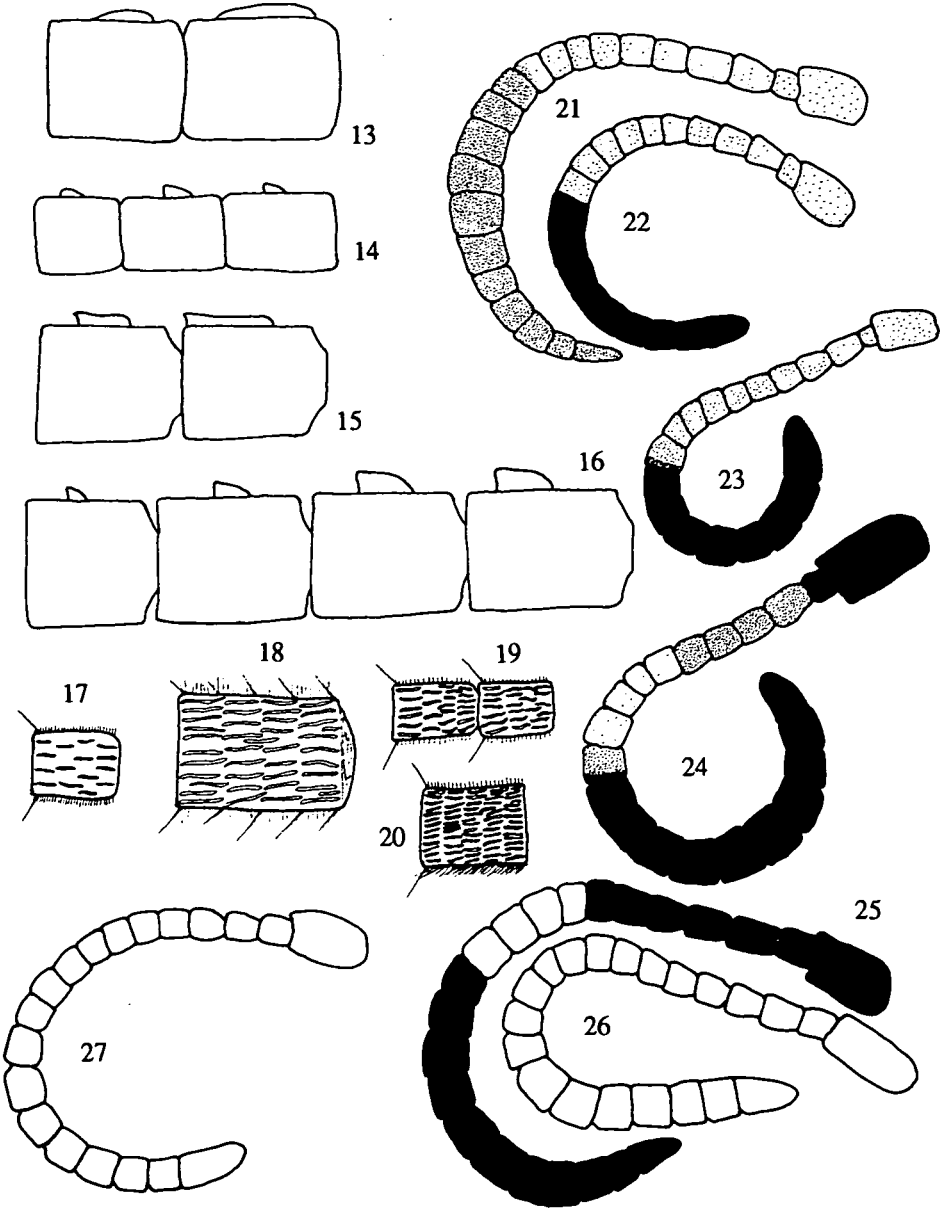
Figs. 200-219. *Endasys* spp., leg III, lateral view, ff: 200 - *E. annulatus* (HABERM.), 201 - *E. euxestus* (SPEISER), 202 - *E. testaceipes* (BRISCHKE), 203 - *E. cnemargus* (GRAV.), 204 - *E. erythrogaster* (GRAV.), 205 - *E. femoralis* (HABERM.), 206 - *E. nitidus* (HABERM.), 207 - *E. plagiator* (GRAV.), 208 - *E. rusticus* (HABERM.), 209 - *E. alutaceus* (HABERM.), 210 - *E. analis* (THOMS.), 211 - *E. anglianus* sp. nov., 212 - *E. brevis* (GRAV.), 213 - *E. hungarianus* sp. nov., 214 - *E. melanurus* (ROMAN), 215 - *E. triannulatus* sp. nov., 216 - *E. microcellus* sp. nov., 217 - *E. stictogastris* sp. nov., 218 - *E. striatus* (KISS), 219 - *E. varipes* (GRAV.).

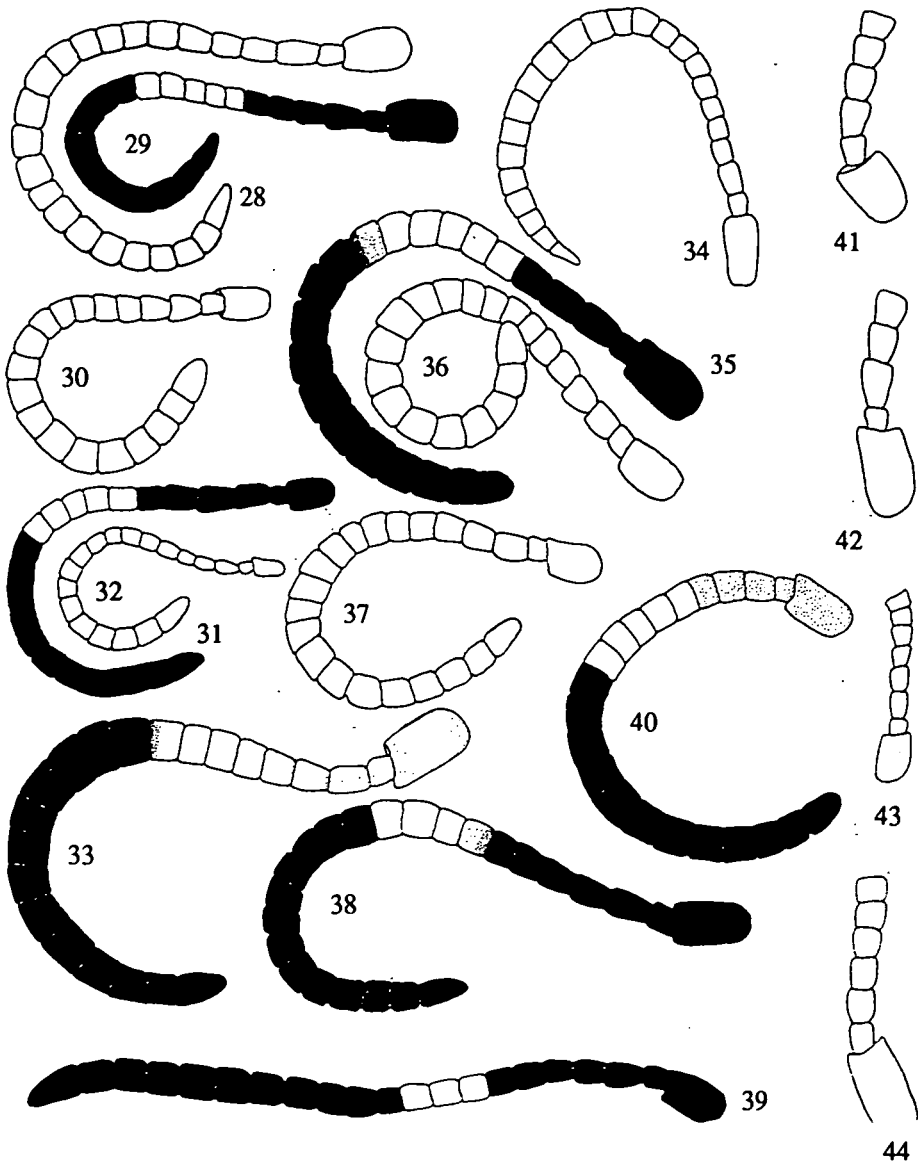
Figs. 220-236. *Endasys* spp., fore wings: 220 - 2nd discoidal cell and areolet; 221, 224-236 - stigma, radial cell, and areolet; 222 - stigma, radial cell, areolet, and 2nd discoidal cell: 220 - *E. transverseareolatus* (STROBL) m; 221 - *E. lissorulus* sp. nov. f; 222 - *E. melanopodis* sp. nov. f; 224 - *E. melanurus* (ROMAN) f; 223, 225 - *E. minutulus* (THOMS.): 223 - m, 225 - lectotype, f; 226 - *E. anglianus* sp. nov. f; 227 - *E. erythrogaster* (GRAV.) f; 228 - *E. alutaceus* (HABERM.) m; 229, 235 - *E. annulatus* (HABERM.): 229 - m, 235 - f; 230 - *E. thunbergi* nom. nov. m; 231 - *E. testaceus* (TASCHENB.) m; 232 - *E. brevis* (GRAV.) m; 233 - *E. amoenus* (HABERM.) m; 234 - *E. megamelanus* sp. nov. m; 236 - *E. euxestus* (SPEISER) m.

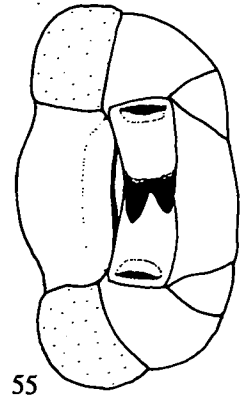
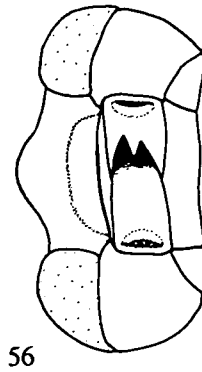
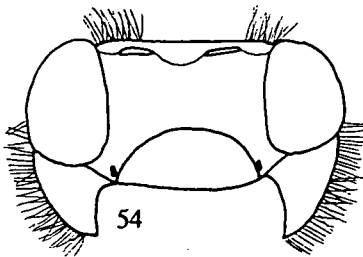
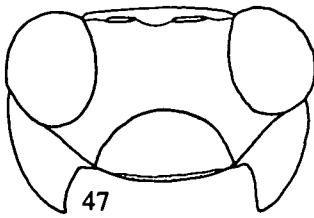
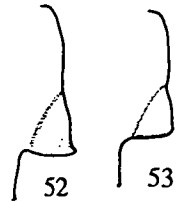
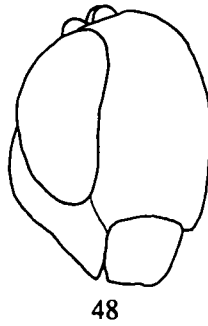
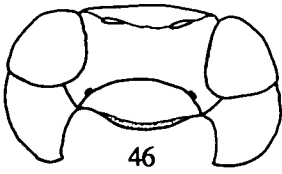
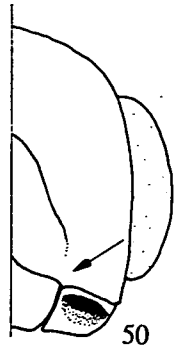
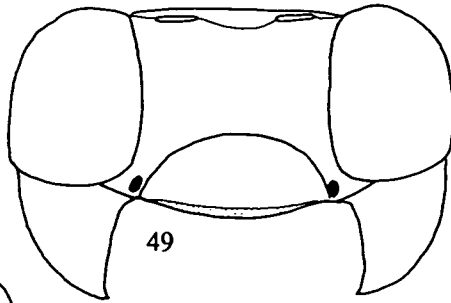
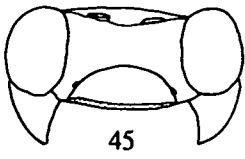
Figs. 237-258. *Endasys* spp., punctation and surfaces: 237-240 - *E. alutaceus* (HABERM.) m: 237, 238 - abdominal tergum 3, weakly granulate; 239, 240 - abdominal tergum 2, granulate; 241, 242 - *E. erythrogaster* (GRAV.) f, frons, variably, sparsely punctulate; 243, 244 - *E. rusticus* (HABERM.) m, abdominal tergum 2, sparsely punctulate; 245, 246 - *E. melanurus* (ROMAN) f, frons, sparsely punctulate; 247, 248 - *E. alutaceus* (HABERM.) m, frons, moderately punctulate; 249, 250 - *E. annulatus* (HABERM.) m, frons, densely punctulate (surface smooth); 251, 252 - *E. praegracilis* sp. nov. f, frons, densely punctulate (surface strigilose); 253, 254 - *E. cnemargus* (GRAV.) m, frons, densely punctate (surface strigilose); 255, 256 - *E. rugifacies* sp. nov. f, face, densely, coarsely punctate and strigose; 257, 258 - *E. (cnemargus* group), mesopleurum lateral view, strigose. 237, 239, 241, 243, 245, 247, 249, 251, 253, 255 - dorsal view; 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 257 - cross section.

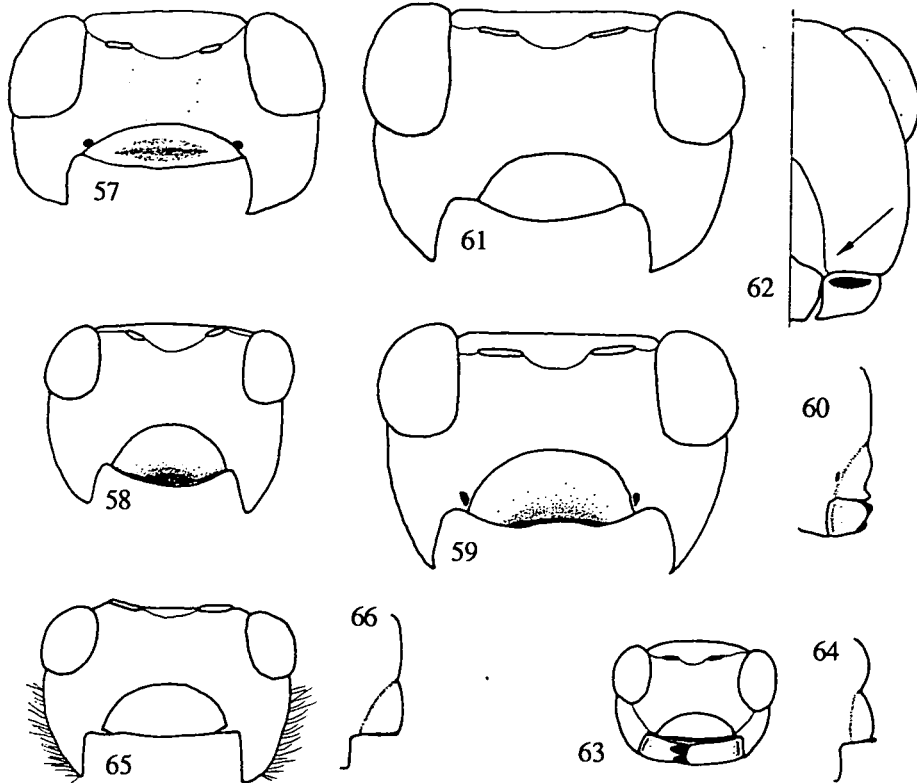
Figs. 259, 260. *Endasys* spp., propodea lateral view, ff: 259 - *E. rugifacies* sp. nov., 260 - *E. euxestus* (SPEISER).

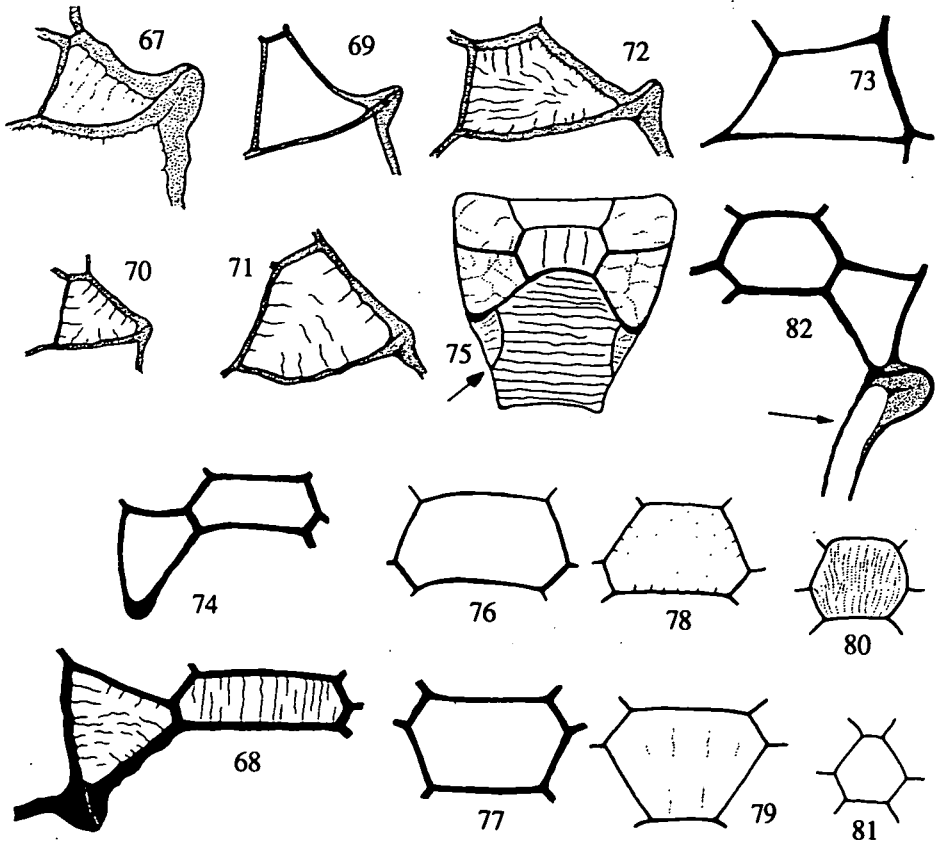




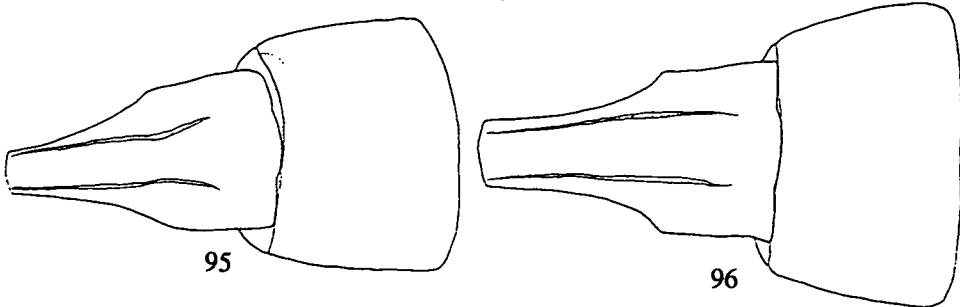
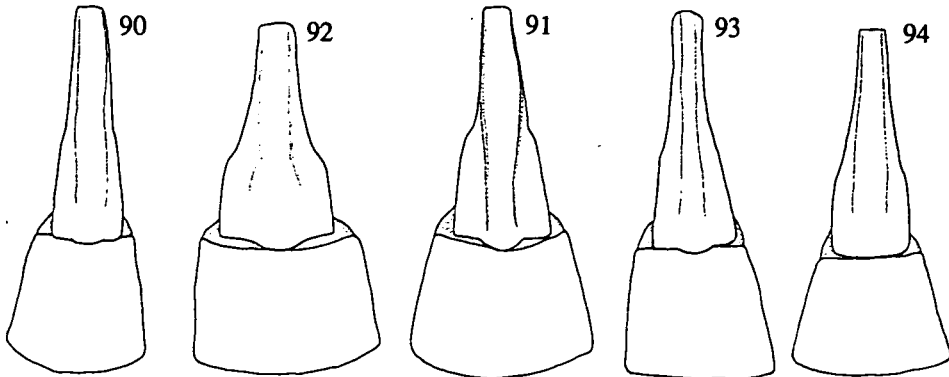
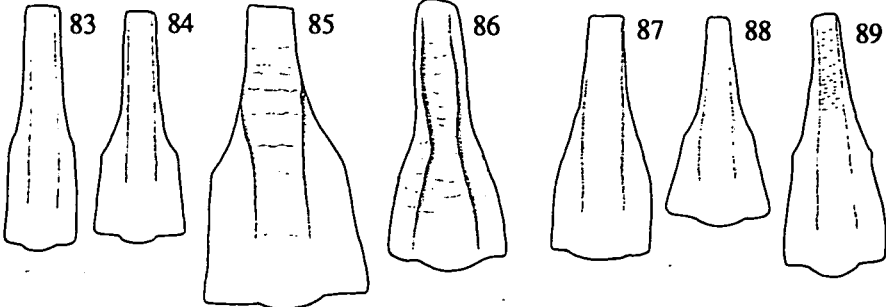


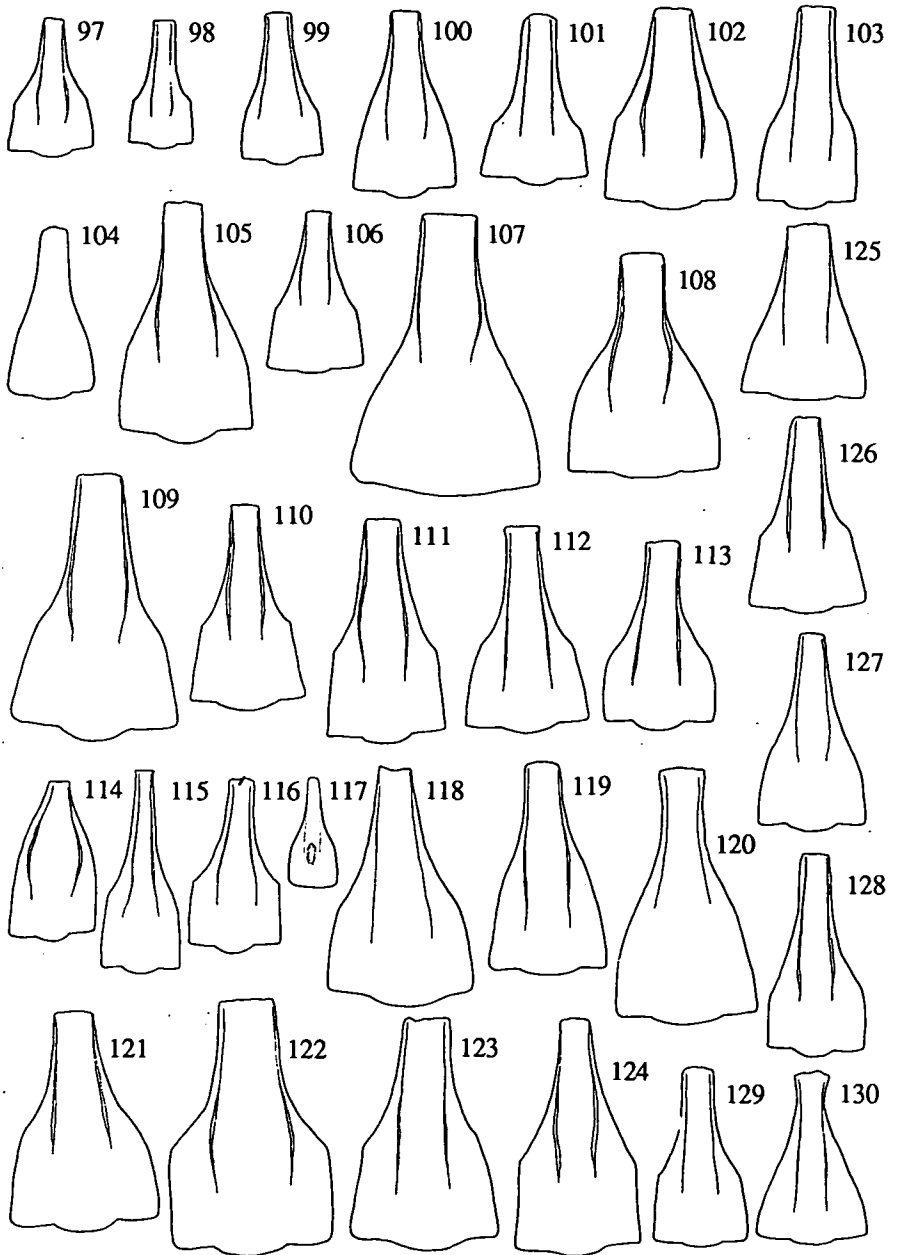


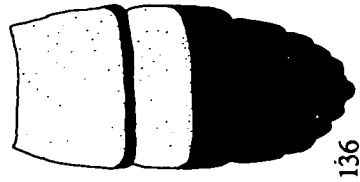
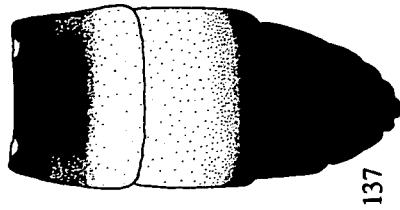
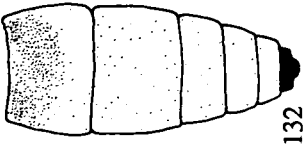
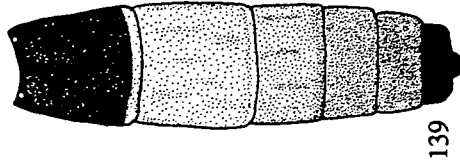
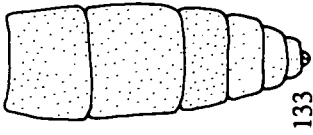
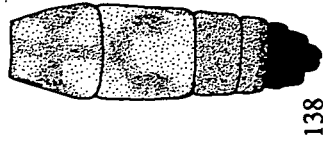
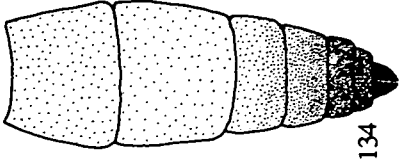
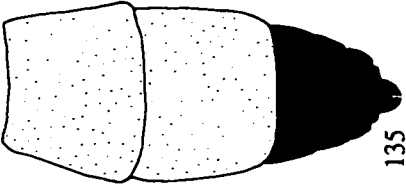


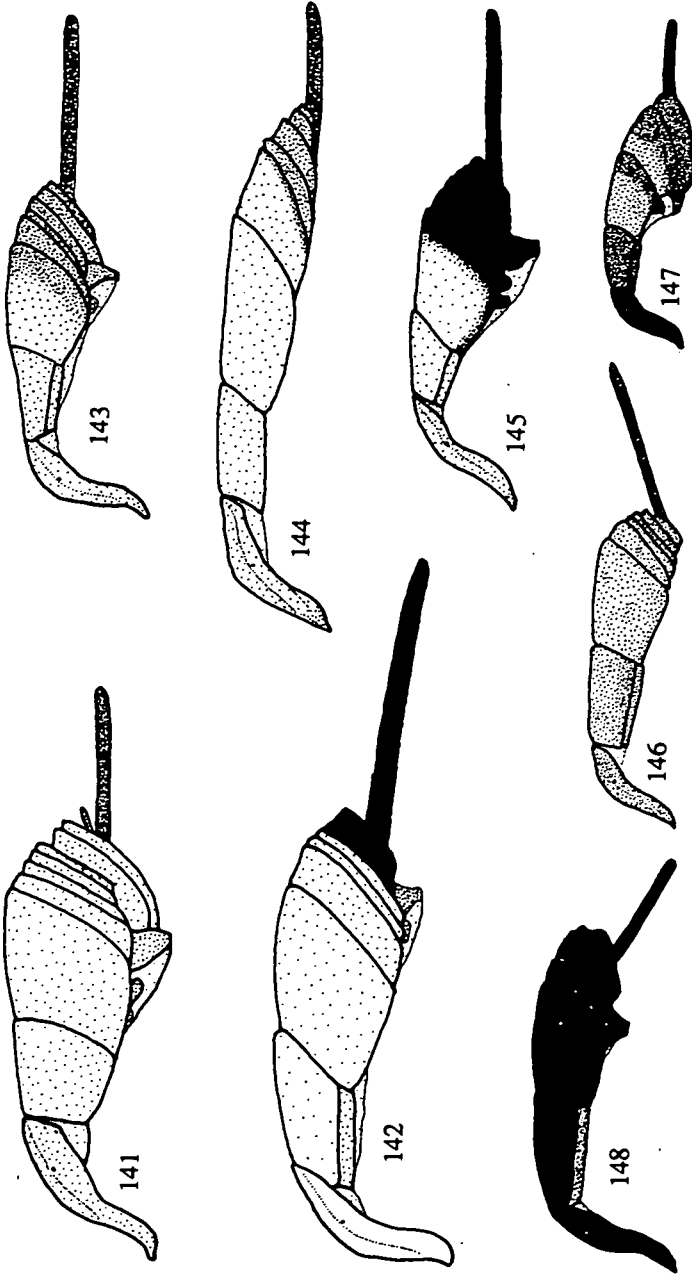


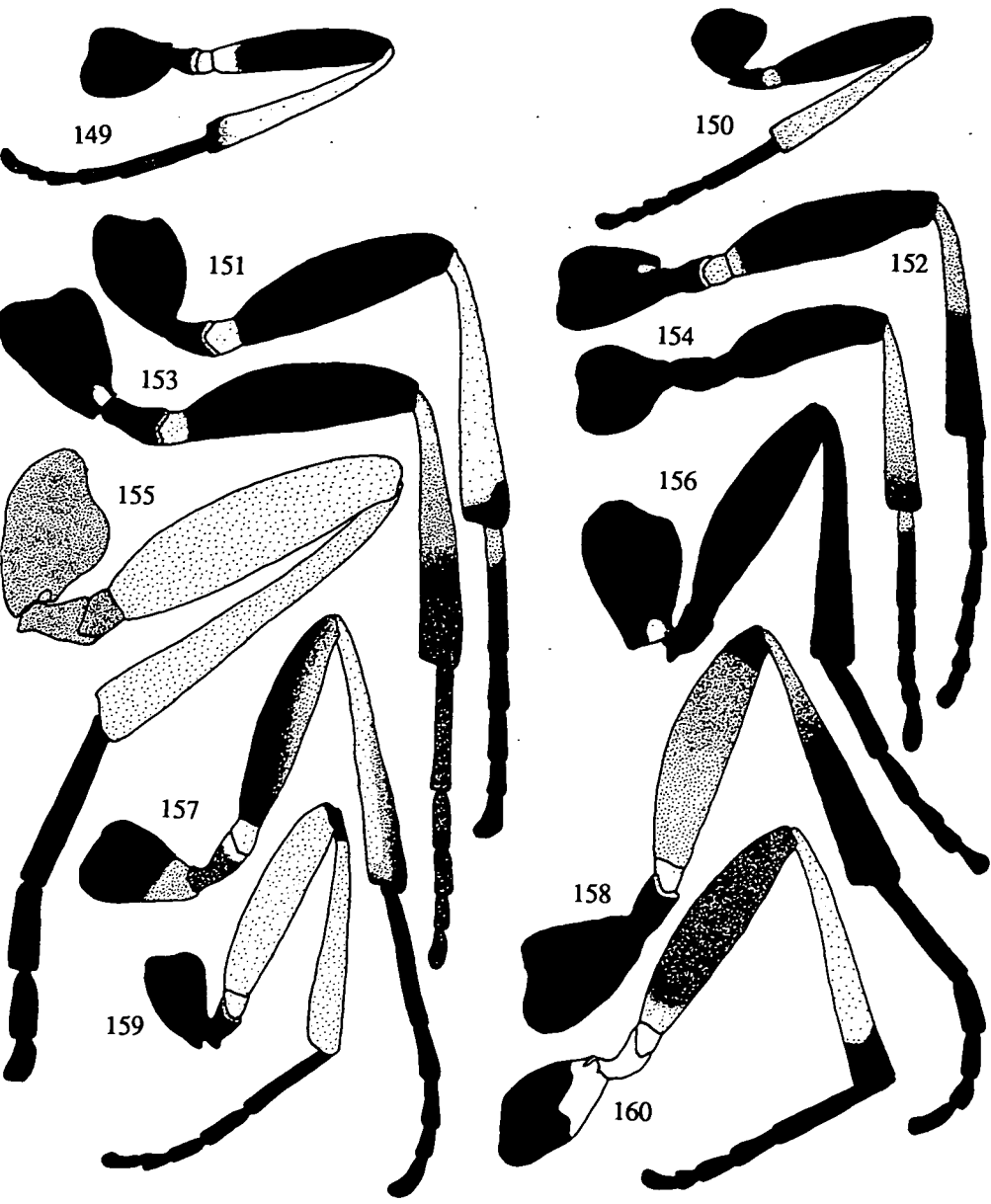


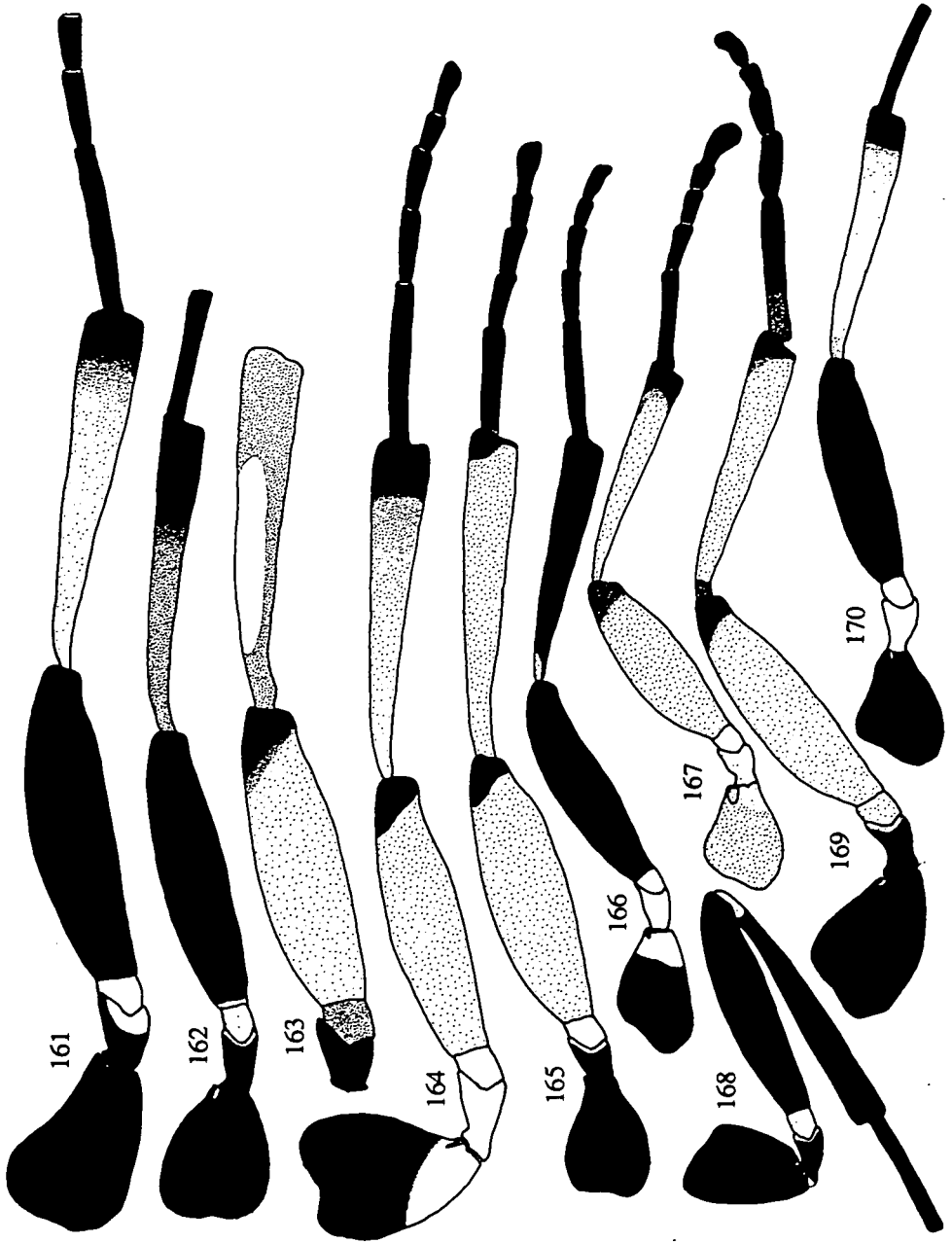


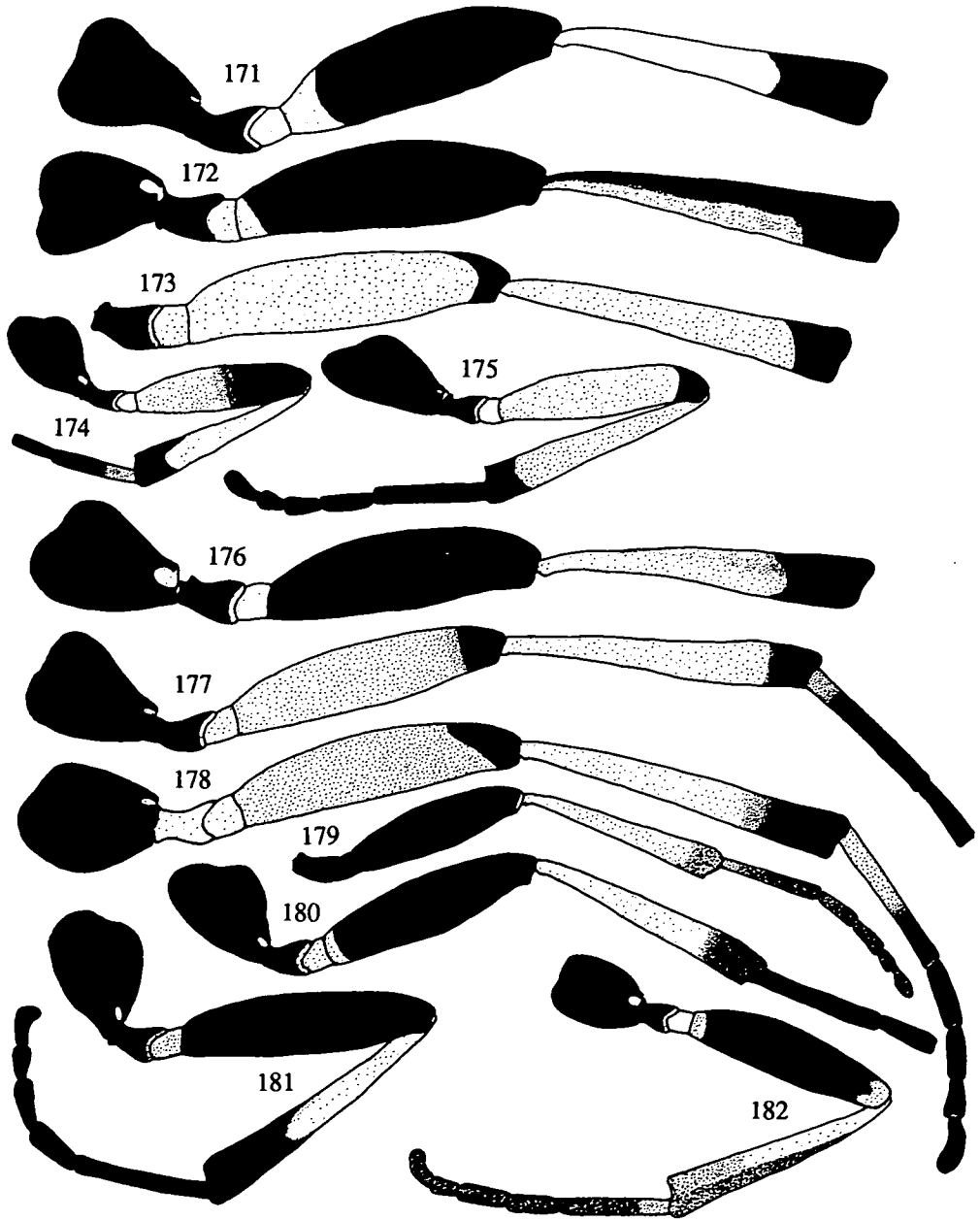


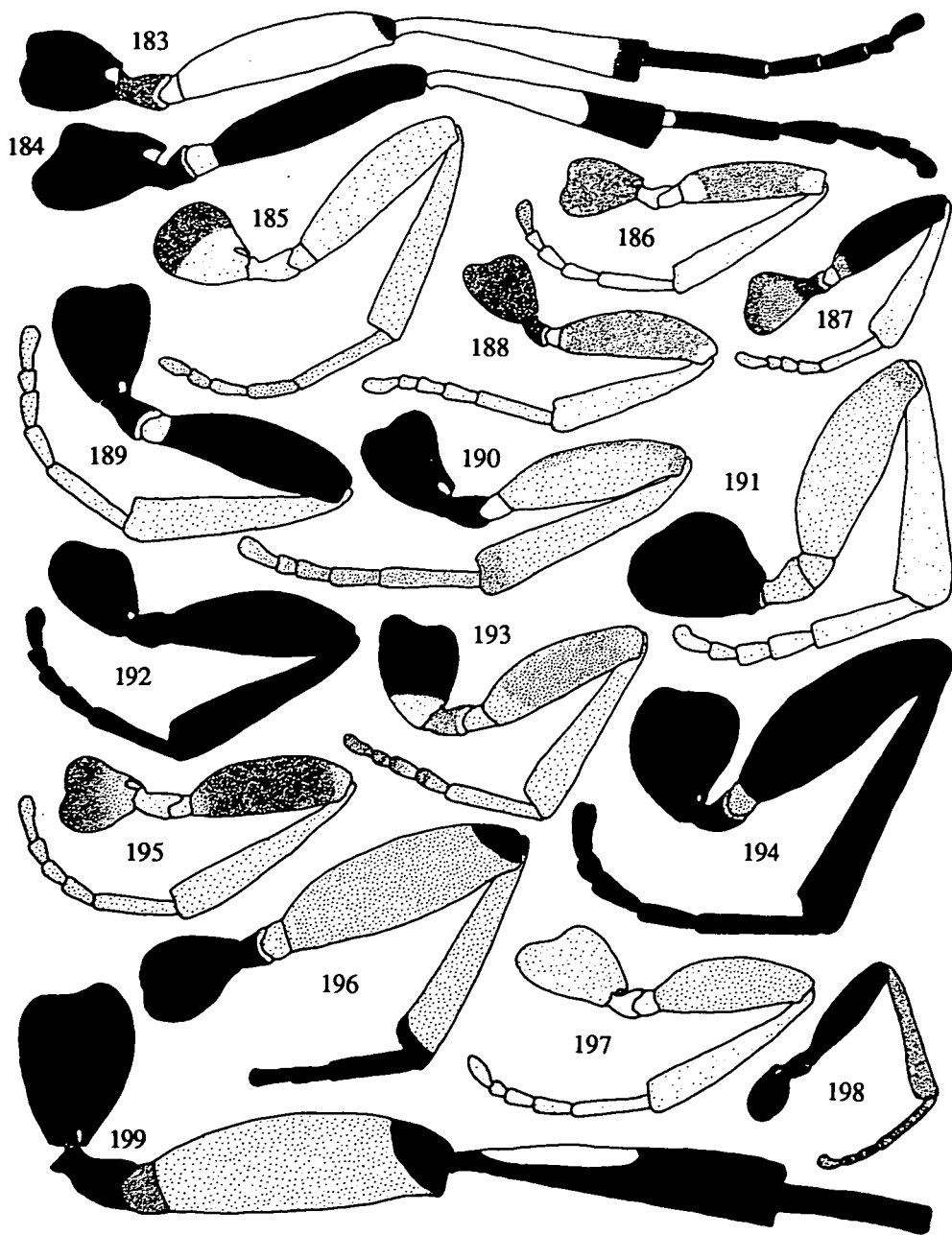




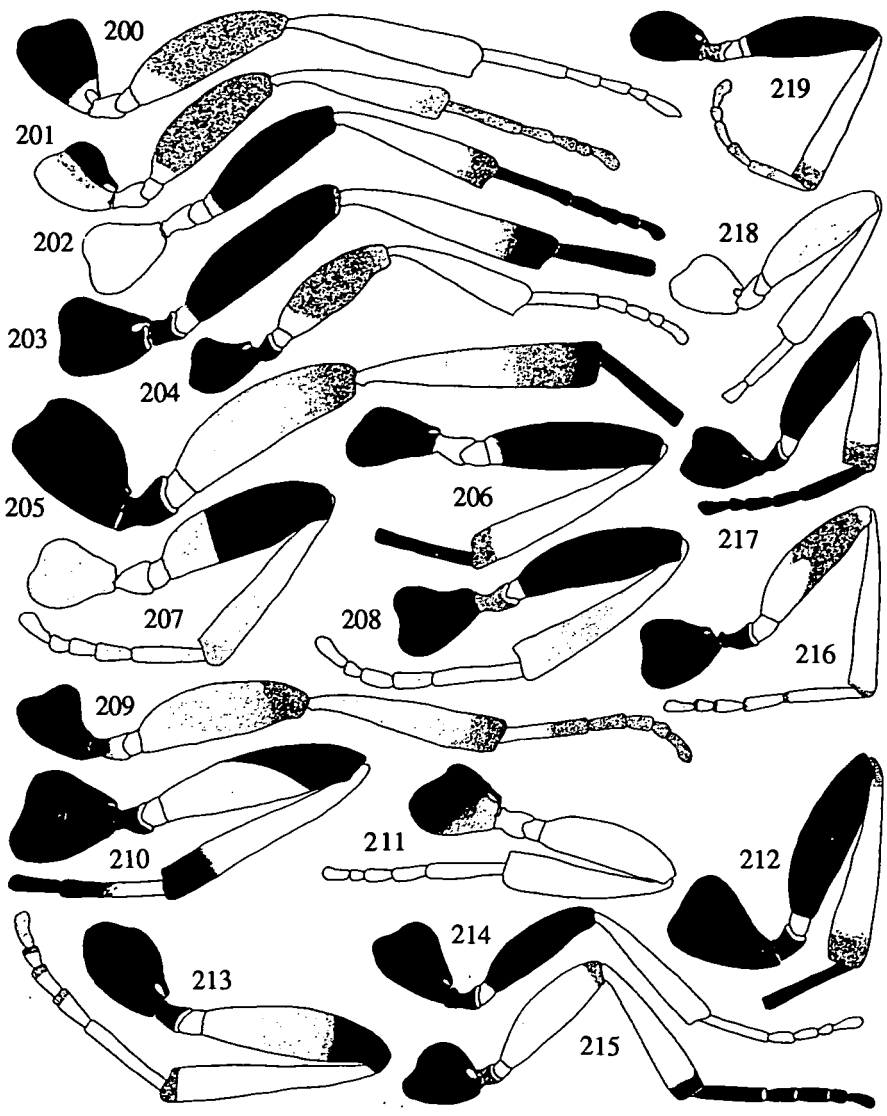


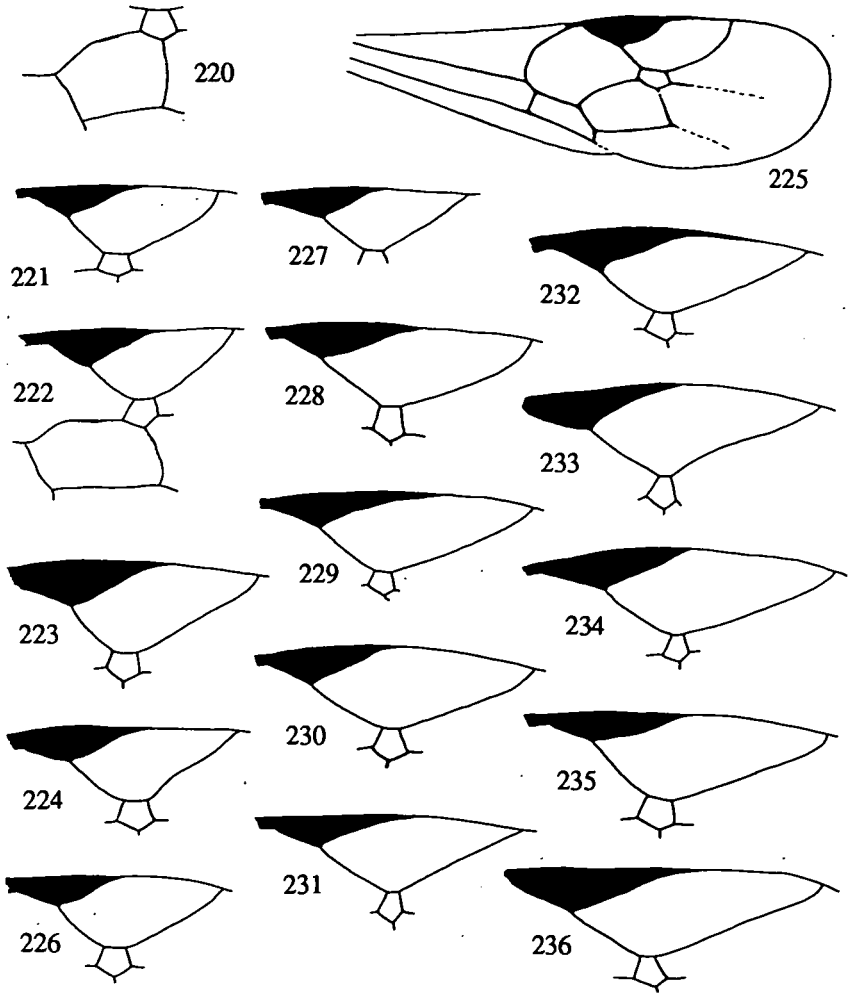


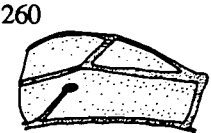
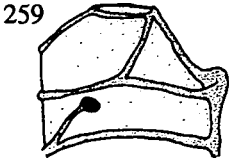
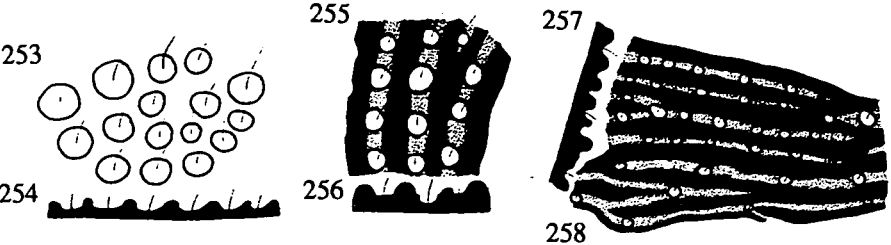
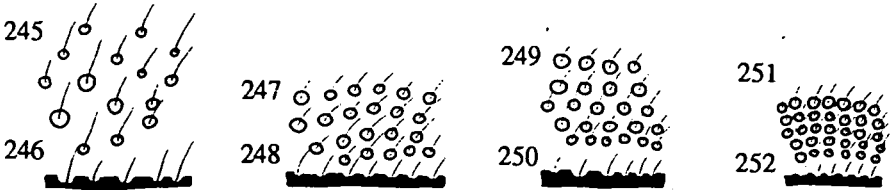
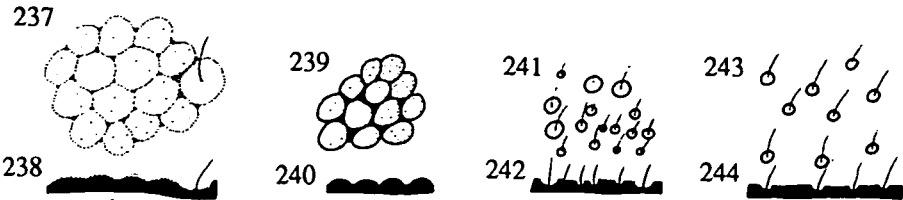












## 12. References

- AERTS, W. 1953. - Hymenoptera, die an der Fichte (*Picea excelsa* Link) beobachtet wurden. - Nachr. naturw. Mus. Aschaffenburg, 40: 1-42.
- AERTS, W. 1957. - Die Schlupfwespen-(Ichneumoniden-) Fauna des Rheinlandes. - Verh. naturh. Ver. preuss. Rheinl., Bonn, 109(1956): 137-212.
- AUBERT, J. F. 1957. - Révision des travaux concernant les Ichneumonides de France et premier supplément au catalogue De Gaulle. - Entomophaga, Paris, 2: 213-243.
- AUBERT, J. F. 1975. - Les Ichneumonides pétiolées ouest-paléarctiques de Morley. - Bull. Soc. ent. Mulhouse, 1975: 13-17.
- AUBERT, J. F. 1980. - 9 e. supplément au catalogue De Gaulle (100 espèces d'Ichneumonides nouvelles pour la faune française). - Bull. Soc. linn. Lyon, 49: 533-544.
- BAUER, R. 1958. - Ichneumoniden aus Franken (Hymenoptera: Ichneumonidae). - Beitr. Ent., Berlin, 8: 438-477.
- BLEDOWSKI, R., KRASIŃSKA, M. K. 1926. - Materiały do fauny Ichneumonidów Polski (Cz. II). - Pol. Pismo ent., Lwów, 5: 30-51.
- BRIDGMAN, J. B. 1883. - Further additions to Mr. Marshall's Catalogue of British Ichneumonidae. - Trans. ent. Soc. London, 1883: 139-171.
- BRISCHKE, C. G. A. 1881. - Die Ichneumoniden der Provinzen West- und Ostpreussen. - Schr. naturf. Ges. Danzing, 5: 331-353.
- BRISCHKE, C. G. A. 1891. - Bericht über eine zweite Excursion nach Steegen im Jahre 1889. - Schr. naturf. Ges. Danzing, 7: 50-74.
- CARLSON, R. W. 1979. - Family Ichneumonidae, pp. 315-740. In: KROMBEIN, K. V. and others. - Catalog of Hymenoptera in America North of Mexico. Vol. 1. Symphyta and Apocrita (Parasitica). Washington, 1198 pp.
- CAVALCASELLE, B. 1968. - Contributo alla conoscenza di *Stauronematus compressicornis* (F.) (Hymenoptera - Tenthredinidae). - Pubbl. Centro sperim. Agric. Forest., Roma, 9: 235-280.
- CAVRO, E. 1954. - Catalogue des Hyménoptères du département du Nord et des régions limitrophes. III. Térébrants (Parasites porte-tarière). - Bull. Soc. ent. Nord France, Paris, Suppl., 75: 1-134.
- COMELLINI, A. 1971. - Liste d'identification des entomophages. 8. - OILB, Genève, 64 pp.
- CONSTANTINEANU, M. I. 1927. - Nouvelle Contribution à la Faune ichneumonologique de la Roumanie. - Ann. sci. Univ. Jassy, 15: 213-247.
- CONSTANTINEANU, M. I. 1962. - Cryptines (Cryptinae, Hym.) du Muséum d'Histoire Naturelle "Grigore Antipa" de Bucarest (la Collection du Dr. Worell-Sibiu). - Trav. Mus. Hist. Nat. "Gr. Antipa", Bucarest, 3: 173-181.
- CONSTANTINEANU, M. I., PISICS, C. 1966. - Ichneumonides de la R. S. Roumanie obtenus par des cultures et leurs hôtes. - Ann. sci. Univ. Jassy, ser. Biol., 12: 205-215.

- COULON, L. 1933. - Catalogue de la Collection d'Hyménoptères de la Famille des Ichneumonidae du Musée d'Elbeuf. - Bull. Soc. Sci. nat. Elbeuf, 51: 73-96.
- DALLA TORRE, C. G. 1902. - Catalogus Hymenopterorum hucusque descriptorum systematicus et synonymicus. Vol. III. Lipsiae, pp. 545-1141.
- DELUCCHI, V. 1963. - Liste d'identification No 5. - Entomophaga, Paris, 8: 335-373.
- DOBRODĚVA, A. I. 1915. - Vinogradnyja listovetki, dvuletnaja (*Clysia* [*Cochylis*] ambiguaella Hübn.) i grozdevaja (*Polychrosis botrana* Schiff.) i mery borby s' nimi po novejšim' izslédovanijam'. - Trudy Bjuro Ent. St.Peterburg', 11(5): 37 pp.
- EADY, R. D. 1968. - Some illustrations of microsculpture in the Hymenoptera. - Proc. roy. ent. Soc. London, 43: 66-72.
- EICHORN, O. 1981. - Autökologische Untersuchungen an Populationen der Gemeinen Kiefern-Buschhornblattwespe *Diprion pini* (L.) (Hym., Diprionidae). VI. Zur Kenntnis der Kokonparasiten und *Exenterus*-Arten. - Z. angew. Ent., Hamburg, Berlin, 92: 252-285.
- ESCHERICH, K. 1942. - Die Forstinsekten Mitteleuropas. Ein Lehr- und Handbuch. Fünfter Band. Hymenoptera (Hautflügler) und Diptera (Zweiflügler). Berlin, 746 pp.
- FABRICIUS, J. C. 1775. - Systema entomologiae. Flensburgi and Lipsiae, 832 pp.
- FITTON, M. G. 1982. - A catalogue and reclassification of the Ichneumonidae (Hymenoptera) described by C. G. Thomson. - Bull. brit. (nat. Hist.), London, 45: 1-119.
- FOERSTER, A. 1868. - Synopsis der Familien und Gattungen der Ichneumonen. - Verh. naturh. Ver. preuss. Rheinl., Bonn, 25: 135-221.
- FRILLI, F. 1974. - Studi sugli imenotteri Ichneumonidi. V. I "Phygadeuon" della collezione Gravenhorst. - Mem. Soc. ent. Ital., Genova, 53: 97-216.
- FRILLI, F. 1978. - Studies on Hymenoptera Ichneumonidae. VI. The types of *Cryptus* and other material in Gravenhorst's collection, Zoological Museum of Wrocław University. - Pol. Pismo ent., Wrocław, 48: 147-175.
- FÖHRER, E. 1964. - Zum Auftreten des Fichtennestwicklers *Epiblema tedella* Cl. (Lep., Tortricidae) in Schleswig-Holstein. 2. Mitteilung: Die Parasiten. - Z. angew. Ent., Hamburg, Berlin, 52: 150-163.
- GAULLE, J., de. 1907. - Catalogue systématique et biologique des Hyménoptères de France. - Feuille (jeunes) Natural., Rennes, 37: 47-49. [Also the separate, Paris, 1908: 171 pp.].
- GMELIN, J. F. 1790. - Ichneumon: 2674-2722 pp. - In: LINNAEUS, C. Systema Naturae, Tom. I., Pars V., Lipsiae, pp. 2225-3020.
- GRAVENHORST, J. L. C. 1829. - Ichneumonologia Europaea. Pars 2. Vratislaviae, 989 pp.
- HABERMEHL, H. 1912. - Revision der Cryptiden-Gattung *Stylocryptus* C. G. Thoms. unter Berücksichtigung Gravenhorstscher und Thomsonscher Typen (Hym.). - Dtsch. ent. Z., Berlin, 1912: 165-190.
- HABERMEHL, H. 1916. - Superrevision der Cryptiden-Gattung *Stylocryptus* C. G. Thoms. mit einer Tabelle zur Bestimmung der Arten (Hym.). - Dtsch. ent. Z., Berlin, 1916: 376-382.
- HABERMEHL, H. 1926. - Neue und wenig bekannte paläarktische Ichneumoniden (Hym.). - Dtsch. ent. Z., Berlin, 1926: 321-331.

- HABERMEHL, H. 1929. - Neue und wenig bekannte paläarktische Ichneumoniden (Hym.). - Konowia, Wien, 8: 257-267.
- HADŽISTEVIĆ, D. 1959. - Prilog poznavanju šljivinih osica na području Sarajeva. - Zast. Bilja, Beograd, 54: 29-40.
- HEDWIG, K. 1956. - Ein Beitrag zur Fauna der Ichneumoniden und Braconiden Finnlands. - Ent. Mitt. zool. Staatsinst. Hamburg, 1: 235-237.
- HEDWIG, K. 1958. - Mitteilungen der Sammelstelle für Schmarotzerbestimmung. Mitteleuropäische Schlupfwespen und ihre Wirte. - Nachr. naturw. Mus. Aschaffenburg, 58: 21-37.
- HEDWIG, K. 1959. - Mitteilungen der Sammelstelle für Schmarotzerbestimmung. Mitteleuropäische Schlupfwespen und ihre Wirte. - Nachr. naturw. Mus. Aschaffenburg, 62: 85-93.
- HEINRICH, G. 1949. - Ichneumoniden des Berchtesgadener Gebietes. (Hym.). - Mitt. münch. ent. Ges., 35-39: 1-101.
- HEINRICH, G. 1951. - Ichneumoniden der Steiermark (Hym.). - Born. zool. Beitr., 2: 235-290.
- HELLÉN, W. 1957. - Zur Ichneumonidenfauna Finnlands IX (Hym.). - Notul. ent. Helsingfors, 36(1956): 125-141.
- HERTING, B. 1975. - A catalogue of parasites and predators of terrestrial arthropodes. - Sec. A. Host or prey/enemy. Vol. VI. Lepidoptera, Part 1 (Microlepidoptera). Slough, 218 pp.
- HERTING, B. 1977. - A catalogue of parasites and predators of terrestrial arthropodes. - Sec. A. Host or prey/enemy. Vol. IV, Hymenoptera. Slough, 206 pp.
- HORSTMANN, K. 1973. - Revision der europäischen Arten der Gattung *Dichrogaster* Doumerc (Hym., Ichneumonidae). - Ent. scand., Copenhagen, 4: 65-72.
- HORSTMANN, K. 1983. - Die Ichneumoniden-Sammlung Erich Bauers in der Zoologischen Staatssammlung in München (Hymenoptera). - Spixiana, München, 6: 281-290.
- HORSTMANN, K. 1986. - Revision der von Aerts, Dominique, Kieffer und Verhoeff beschriebenen Ichneumoniden-Taxa, mit einer Bearbeitung von *Diaglyptellana* Horstmann (Hymenoptera, Ichneumonidae). - Nachr.bl. bayer. Ent., München, 35: 100-106.
- HORSTMANN, K. 1990. - Revision einiger Typen der von Otto Schmiedeknecht beschriebenen palaarktischen Ichneumonidae (Hymenoptera). - Beitr. Ent. Berlin, 40: 31-61.
- HSIN, C.-S. 1936. - Beiträge zur Naturgeschichte der Blattwespen. - Z. angew. Ent., Berlin, 22: 253-294.
- JAHN, E., SINREICH, A. 1963. - Beobachtungen zur Verbreitung der Kleinen Fichtenblattwespe *Pristiphora abietina* Christ. in Österreich im Zeitraum 1945-1962 und zur Auswirkung verschiedener Bekämpfungsmethoden. - Z. angew. Ent., Hamburg, Berlin, 51: 165-181.
- JÄNNER, G. 1937. - Beiträge zur Fauna Thüringens 5. Hymenoptera: Ichneumonidae (1). Erfurt, 128 pp.
- JONAITIS, V. 1970. - Vidovoj sostav parazitov obyknovennogo elovogo pilil'sčika *Lygaeonematus abietinus* Christ. (Hymenoptera, Tenthredinidae) i ich rol' v sniženii čislennosti populjacii vreditelja. - Ent. Obozr., Leningrad, 49: 68-71.

- JONAITIS, V. 1975. - Fauna gelin (Hymenoptera, Ichneumonidae, Gelini) Litovskoj SSR (1. Rody *Endasys* Foerster, *Glyphicnemis* Foerster). - Liet. TSR Moksl. Akad. Darb., Vilnius, ser. C, 4: 53-60.
- JONAITIS, V. 1981. - 7. Podsem. Gelineae (Cryptinae), pp. 175-274. - In: *Opredelitel' nasekomych evropejskoj časti SSSR. T. III. Pereponcatokrylye. 3 čast'*. Leningrad, 688 pp.
- JONAITIS, V. 1985. - Ocenka trofižeskich cepej naezdnikov-ichnevmonid podsemejstva Cryptinae fauny SSSR i nekatorye aspekty ich formirovanija v biocenozech. - *Acta ent. Lituanaica*, Vilnius, 8: 5-31.
- JUSSILA, R. 1965. - The Ichneumonidae of the Kevojoki area in Inari Lapland (Finland). - *Ann. Univ. abo. (turku.)*, A II, 34: 1-186.
- JUSSILA, R. 1973. - Ichneumonidae from Hardangervidda. - In: *Fauna of the Hardangervidda*, No. 2. Bergen, Oslo, Tromso, 50 pp.
- KALANDRA, A. 1941. - Erfahrungen über das epidemische Auftreten des Fichtennestwicklers *Epiblema tedella* Cl. in den Jahren 1939-1941. - *Zentralbl. ges. Forstw.*, Wien, 69: 18-27.
- KETTNER, F. W. 1968. - Die Schlupfwespen (Ichneumonidae) Nordwestdeutschlands (II. Teil). - *Verh. Ver. naturw. Unterh. (Heimatsforsch.)*, Hamburg, 37: 51-90.
- KISS von ZILAH, A. 1924. - Beiträge zur Kenntnis der ungarischen und siebenbürgischen Ichneumoniden- (Schlupfwespen-) Fauna. - *Verh. Mitt. siebenbürg. Ver. Naturw.*, Sibiu, 72/74: 32-146.
- KISS von ZILAH, A. 1930. - Dritter Beitrag zur Kenntnis der ungarischen und siebenbürgischen Ichneumoniden- (Schlupfwespen) Fauna. - *Verh. Mitt. siebenbürg. Ver. Naturw.*, Sibiu, 79/80: 89-144.
- KLOET, G. S., HINCKS, W. D. 1945. - A check list of British insects. With a preface by N. D. RILEY. Stockport, LIX + 483 pp.
- KOLUBAJEV, S. 1934. - Zkusénosti s pěstováním parasitických druhů hmyze z jejich hostitelů, získané ve státním výzkumném ústavě pro ochranu lesů v Praze v roce 1929-1933. - *Čas. čsl. Spol. ent.*, Praha, 31: 59-68, 113-120, 155-163.
- KOLUBAJEV, S. 1938. - Příspěvek k biologii pilatky ryšsavé. - *Lesn. Práce, Pisek*, 17: 325-348.
- KOLUBAJEV, S. 1939. - Příspěvek k biologii pilatek smrkových *Lygaeonematus* Pini Retz. (= *Nematus abietinus* Christ.) a *Pachynematus montanus* Zadd. - *Lesn. Práce, Pisek*, 18: 317-338.
- KOLUBAJEV, S. 1952. - Naše nejškodlivější smrkové pilatky a boj proti nim. - *Lesnická Knihovna (malá řada)*, Praha, 16: 47 pp.
- KOLUBAJEV, S. 1954. - Úžitelné hmyz a jeho význam pro ochranu lesa. - *Lesnická Knihovna (malá řada)*, Praha, 48: 88 pp.
- KOLUBAJEV, S. 1958. - Příspěvek k bionomii, ekologii a gradologii smrkových pilatek skupiny *Nematini*. - *Sborn. čsl. Akad. Zeměd., Praha, Lesnictvi*, 4: 123-150.

- KOLUBAJTV, S. 1962. - Výsledky chovu entomofágů (cizopasníků a dravců) hmyzích skůdců - hlavně lesních - získané v období 1934-1958. - Rozpr. české Akad. (Véd Umění), Praha, 72(6): 72 pp.
- KOLUBAJTV, S., KALANDRA, A. 1952. - Další kalamitní rozvoj pilatek (*Pachynematus scutellatus* Htg. a *P. montanus* Zadd.) na smrku v Československu po roce 1950 a boj leteckými a pozemními poprašovači proti nim. - Práce Výz. Út. Lesn., Praha, 1: 88-124.
- KŘÍSTEK, J. 1964. - Některé poznatky z gradace pilatky proužkované [*Pachynematus scutellatus* (Htg.)] z polesí Rájec, lesní závod Rájec. - Sborn. vys. Školy zemed. Brno, C, 33: 215-229.
- KŘÍSTEK, J., OBRTEL, R. 1958. - Příspěvek k poznání cizopasníků pilatky proužkované (*Pachynematus scutellatus* [Htg.]). - Zool. ent. Listy, Brno, 7: 309-324.
- KŘÍSTEK, J., PETRUŠKA, F. 1982. - Gradation der Kiefernbuschhornblattwespe *Diprion pini* (L.)/Hymenoptera, Diprionidae/ in Forstbetrieb Strážnice (Südostmähren). - Sborn. vys. školy zeměd. Brno, C, 51: 83-106.
- KUCHARCZYK, J., WIACKOWSKI, S. 1984. - Przyczynek do znajomości wrogów naturalnych poprocha cetyniaka (*Bupalus piniarius* L.), strzygoni choińówki (*Panolis flammea* Schiff.), zawisaka borowca (*Hyloicus pinastris* L.) oraz boreczników (*Diprion* spp.) w Polsce środkowej. - Sylwan, Warszawa, 128: 33-40.
- KUDELA, M., KOLOFIK, K. 1955. - Poznatky z kalamity pilatky horské *Pachynematus montanus* (Zadd.) v Beskydech v letech 1948-1952. - Zool. ent. Listy, Brno, 4: 205-226.
- LAIDLAW, W. B. R. 1933. - Two Ichneumon parasites of *Lophyrus pini* Klug. - Ent. monthly Mag., London, ser. 3, 19: 124-132.
- LANGE, C. F. 1911. - Neue paläarktische Ichneumoniden. (Hym.). - Dtsch. ent. Z., Berlin, 1911: 540-547.
- LECLERCQ, J. 1949. - Catalogue des Cryptinae (Hym. Ichneumonidae) de la Belgique. - Bull. Ann. Soc. ent. Belg., Bruxelles, 85: 80-90.
- LUHMAN, J. C. 1990. - A Taxonomic Revision of Nearctic Endasys Foerster, 1868 (Hymenoptera: Ichneumonidae, Gelinae). - Univ. Calif. Publ. Ent., Berkeley, 109:XII+185 pp.+ 89 Figs.+ 22 Maps.
- MARTINEK, V. 1951. - Význam parazitace zlatěnky druhu *Cleptes semiauratus* L. při potírání kalamitního výskytu pilatky *Pachynematus scutellatus* Htg. u nás v roce 1950. - Lesn. Práce, Praha, 30: 141-145.
- MARTINEK, V. 1958. - Příspěvek k poznání bionomie a populační dynamiky pilatky *Pteronidea salicis* L. (Hym., Tenthredinidae). - Zool. ent. Listy, Brno, 7: 1-20.
- MEYER, N. F. 1927. - Naездники (Ichneumonidae et Braconidae) выведенные в России из вредных насекомых, с 1881 по 1926-й год. - Изв. Оtd. prikl. E., Leningrad, 3: 75-91.
- MEYER, N. F. 1933. - Паразитические перепончатокрылые сем. Ichneumonidae СССР и сопредельных стран. Подсем. Cryptinae. - In: Определители по фауне СССР, Москва, Leningrad, 15(2): 325 pp.



- MEYER, N. F. 1936. - Parazitičeskie perepončatokrylye sem. Ichneumonidae SSSR i sopredel'nyh stran. Podsem. Tryphoninae. Spisok parazitov po ich chozjaevam. - In: Opredeliteli po faune SSSR, Moskva, Leningrad, 22(6): 356 pp.
- MORLEY, C. 1907. - Ichneumonologia Britannica. II. The Ichneumons of Great Britain. Cryptinae. London, XII + 351 pp.
- MORLEY, C., RAFT-SMITH, W. 1933. - The hymenopterous parasites of the British Lepidoptera. - Trans. ent. Soc. London, 81: 133-183.
- NÄGELI, W. 1936. - Die kleine Fichtenblattwespe. (*Lygaeonematus pini* Retz. = *Nematus abietinus* Christ). - Mitt. schweiz. Anst. forstl. Vers., Zürich, 19: 213-381.
- NIGRZ, H. P. 1974a. - Über die Fichten-Nematinen (Hym., Tenthredinidae) der Steiermark. - Z. angew. Ent., Hamburg, Berlin, 75: 264-284.
- NIGRZ, H. P. 1974b. - Über die Parasiten der Kleinen Fichtenblattwespe, *Pristiphora abietina* Christ. (Hymen., Tenthredinidae), in der Steiermark. - Z. angew. Ent., Hamburg, Berlin, 76: 167-189.
- NIKLAS, O. F. 1944. - Zur Lebensweise der kleinen Fichtenblattwespe *Lygaeonematus abietum* Htg. (= *Lyg. pini* Retz.) in verschiedenen Bestandsformen des Forstamtes Eichwald, Ostpreußen. - Z. angew. Ent., Hamburg, Berlin, 30: 224-251.
- NOWÁK, K. 1957. - Vliv přirozených nepřátel na průběh přemnožení hřebenule borové (*Diprion pini* L.) na západním Slovensku. - Čas. čsl. Spol. ent., Praha, 54: 356-362.
- OEHLEKE, J. 1966. - Die in europäischen Kiefernbuschhornblattwespen (Diprionidae) parasitierenden Ichneumonidae (Hymenoptera). - Beitr. Ent., Berlin, 15(1965): 791-879.
- OEHLEKE, J., HORSTMANN, K. 1987. - Die Hymenopterensammlung C. F. Lange/Annaberg und Revision seiner Ichneumoniden-Typen. - Beitr. Ent., Berlin, 37: 147-157.
- OEHLEKE, J., TOWNES, H. K. 1969. - Schmiedeknechts Ichneumonidentypen aus der Kollektion des Museums Rudolstadt. - Beitr. Ent., Berlin, 19: 395-412.
- OHNESORGE, B. 1957. - Untersuchungen über die Populationsdynamik der Kleinen Fichtenblattwespe, *Pristiphora abietina* (Christ) (Hym. Tenth.). I. Teil. Fertilität und Mortalität. - Z. angew. Ent., Hamburg, Berlin, 40: 443-493.
- OHNESORGE, B. 1960. - Der Einfluß der Temperatur auf die Entwicklung der Kleinen Fichtenblattwespe, *Pristiphora abietina* (Christ), im Kokon (Hymenoptera: Tenthredinidae). - Beitr. Ent., Berlin, 10: 854-871.
- OHNESORGE, B., THALENHORST W. 1966. - Untersuchungen über die Populationsdynamik der Kleinen Fichtenblattwespe, *Pristiphora abietina* (Christ) (Hym. Tenth.). III. Teil: Die Latenz. - Z. angew. Ent., Hamburg, Berlin, 57: 229-293.
- OZOLS, E. 1934. - Material zur Ichneumonidenfauna Lettlands. II. - Fol. zool. hydrobiol., Riga, 7: 1-12.
- OZOLS, E. 1959a. - Vvedennye iz Diprionidae naezdnyki sem. Ichneumonidae. Kratkije itogi naučnyh issledovanij po zašč. rast. v severozapadnoj zone SSSR v 1959 g. Riga, 67-68 pp.

- OZOLS, E. 1959b. - Novye vidy Ichneumonidae fauny Latvijas SSR. In: Fauna Latvijas SSR i sopredel'nych territorij. II. - Trudy Inst. Biol. Akad. Nauk Latv. SSR, 12: 121-145.
- OZOLS, E. 1961. - Latvija izaudzētie Ichneumonidae dzimtas jātnieciņi. - Latv. Entomol., Rīgā, 3: 3-17.
- PAGLIANO, G., SCARAMOZZINO P. 1990. - Elenco dei generi di Hymenoptera del mondo. - Mem. Soc. ent. Ital., Genova, 68(1989): 212 pp.
- PATOČKA, J. 1960. - Die Tannenschmetterlinge der Slowakei mit Berücksichtigung der Fauna Mitteleuropas. Bratislava, 215 pp.
- PERKINS, J. F. 1962. - On the type species of Foerster's genera (Hymenoptera: Ichneumonidae). - Bull. Brit. Mus. (nat. Hist.), Ent, London, 11: 385-483.
- PFANKUCH, K. 1929. - Die Ichneumoniden (Schlupfwespen) des Zehlaurbruchs. Beiträge zur Fauna des Zehlau-Hochmoores in Ostpreußen, V. - Schr. phys.-okon. Ges. Königsberg, 66: 175-180.
- PFEFFER, A. 1954. - Lesnická zoologie. II. Praha, 623 pp.
- PSCHORN-WALCHER, H. 1982. - Unterordnung Symphyta, Pflanzenwespen, pp. 4-196. - In: SCHWENKE, W. Die Forstschädlinge Europas. Ein Handbuch in fünf Bänden. IV. Band. Hautflügler und Zweiflügler. Hamburg-Berlin, 392 pp.
- RATZBURG, J. T. C. 1844. - Die Ichneumonen der Forstinsecten in entomologischer und forstlicher Beziehung. Ein Anhang zur Abbildung und Beschreibung der Forstinsecten, 1. Berlin, VIII + 224 pp.
- ROMAN, A. 1909. - Ichneumoniden aus dem Sarekgebirge. - In: HAMBURG, A. Naturwissenschaftliche Untersuchungen des Sarekgebirges in Schwedisch - Lappland. 4. Stockholm, pp. 199-374.
- ROMAN, A. 1912. - Die Ichneumonidentypen C. P. Thunbergs. - Zool. Bidr., Uppsala, 1: 229-293.
- ROMAN, A. 1913. - Neubesreibungen und Synonyme zur nördlichen Ichneumonidenfauna Schwedens. - Ent. Tidskr., Stockholm, 34: 112-132.
- ROMAN, A. 1925. - Schwedische Schlupfwespen, alte und neue. - Ark. Zool., Stockholm, 17A(4): 34 pp.
- RÜHL M. 1913 and 1914. - Liste neuerdings beschriebener oder gezogener Parasiten und ihre Wirte. III. - Soc. ent., Stuttgart, 28: 106 and 29: 16.
- RÜHL, M. 1923. - Liste neuerdings beschriebener oder gezogener Parasiten und ihre Wirte. VIII. - Soc. ent., Stuttgart, 38: 28.
- RÜHM, W. 1959. - Beeinflussung der Parasitenfauna der Kleinen Fichtenblattwespe (*Pristiphora abietina* Christ) durch eine chemische Bekämpfung. - In: Verhandlungen des IV. Internationale Pflanzenschutz - Kongresses Hamburg 1957. Braunschweig, pp. 979-983.
- SAWONIEWICZ, J. 1978. - Zur Systematik und Faunistik der Ichneumonidae (Hymenoptera). - Ann. zool., Warszawa, 34: 121-137.

- SAWONIEWICZ, J. 1979. - The effect of shrub layer on the occurrence of the Ichneumonidae (Hymenoptera) in pine stands on different sites. - *Memorabilia zool.*, Warszawa, 30: 89-130.
- SAWONIEWICZ, J. 1984. - Revision of some type-specimens of European Ichneumonidae (Hymenoptera). - *Ann. zool.*, Warszawa, 37: 313-330.
- SAWONIEWICZ, J. 1985. - Revision of European species of the subtribe Endaseina (Hymenoptera, Ichneumonidae), I. - *Ann. zool.*, Warszawa, 39: 131-146.
- SCHEDL, K. E. 1953. - Die kleine Fichtenblattwespe (*Lygaeonematus pini* Retz.). - Forstl. Bundesversuchsanst. Mariabrunn (Wien - Hadersdorf), 180 pp.
- SCHEDL, K. E., SCHEDL, C. 1951. - Der Fichtennestwickler (*Epiblema tedella* Cl.). Klagenfurt, 136 pp.
- SCHMITSCHKEK, E. 1941. - Die Übervermehrung von *Diprion pini* L., im Westslowakischen Kiefernggebiet. - *Z. Pfl.krankh.*, Stuttgart, 51: 257-278.
- SCHMITSCHKEK, E. 1943. - Untersuchungen über Parasitenreihen. - *Mitt. H. Göring-Akad. dtsh. Forstwiss.*, Frankfurt am Main, 3: 272-305.
- SCHMITSCHKEK, E. 1959. - Parasiten der kleinen Fichtenblattwespe *Nematus abietinus* in Niederösterreich 1950-1953. - In: *Beiträge zur Vorratsschutzforschung* herausgegeben v. d. Ges. Vorratsschutz, Berlin-Steglitz, anlässlich des 75. Geburtstages von F. Zacher, pp. 65-66.
- SCHMITSCHKEK, E. 1964. - Liste der 1934-1936 und 1940-1953 gezogenen Parasiten und ihrer Wirte. - *Z. angew. Ent.*, Hamburg, Berlin, 53: 320-341.
- SCHMIEDEKNECHT, O. 1905. - *Opuscula Ichneumonologica*. 2, Cryptinae. Blankenburg i. Thür., pp. 643-722.
- SCHMIEDEKNECHT, O. 1908. - Hymenoptera. Fam. Ichneumonidae. Subfam. Cryptinae. - *Genera Insect.*, Bruxelles, 75: 165 pp.
- SCHMIEDEKNECHT, O. 1932. - *Opuscula Ichneumonologica*. Supplement-Band. II. Genus *Stylocryptus* Thoms. Fasc. 13 and 14, Blankenburg i. Thür., pp. 18-55.
- SCHWERTFEGGER, F. 1957. - Die Waldkrankheiten. Ein Lehrbuch der Forstpathologie und des Forstschutzes. Hamburg and Berlin, 2. Auflage, 485 pp. (3. Auflage, 1970: 509 pp.; 4. Auflage, 1981: 486 pp.).
- SHORT, J. R. T. 1978. - The final larval instars of the Ichneumonidae. - *Mem. Amer. ent. Inst.*, Ann Arbor, 25: 508 pp.
- SORG, M., CYMOREK, S. 1986. - Typenliste zur Sammlung Ulbricht, Krefeld (Hymenoptera, Ichneumonidae). - *Entomofauna*, Linz, 7: 185-199.
- SPEISER, P. 1908. - Notizen über Hymenopteren. - *Schr. naturf. Ges. Danzing*, 12: 31-57.
- STARKE, H. 1940. - Erster Nachtrag zu den Schlupfwespen von K. T. Schütze, Rachlau und Dr. Roman, Stockholm. - *Isis budiss.*, Bautzen, 14: 63-95.
- STELLWAAG, F. 1921. - Die Schmarotzerwespen (Schlupfwespen) als Parasiten. - *Monogr. angew. Ent.*, Berlin, 6: 100 pp.
- STRAND, E. 1928. - *Miscellanea nomenclatorica zoologica et palaentologica*. I-II. - *Arch. Naturg.*, Berlin, A, 92(8)(1926: 30-75.

- STROBL, G. 1901. - Ichneumoniden Steiermarks (und der Nachbarländer). - Mitt. naturw. Ver. Steierm., Graz, 37(1900): 132-257.
- STROBL, G. 1904. - Ichneumoniden Steiermarks (und der Nachbarländer). - Mitt. naturw. Ver. Steierm., Graz, 40(1903): 34-160.
- ŚWIEŻYŃSKA, H., GŁOWACKA-PILOT, B. 1980. - Spostrzeżenia nad zdrowotnością larw borecznika sosnowego (*Diprion pini* L.) pochodzących z Nadl. - Jędrzejów. Prace IBL Nr 565-572, Biuletyn IBL, Warszawa, 1980: 147-154.
- TALITZKI, V. I. 1961. - Naezdniki i muchi-tachiny - parazity vreditel'ev sada v Moldavi. - Trudy moldav. nau.-issl. Inst. Sadov., Vinog. Vinod., Kišinev, 7: 119-154.
- TALITZKI, V. I. 1963. - Zaščita plodovych kul'tur ot vreditel'ev i boleznej. - Trudy moldav. nau.-issl. Inst. Sadov., Vinog. Vinod., Kišinev, 8(1962): 315-341.
- TALITZKI, V. I. 1965. - Nasekomye èntomofagi i puti ich ispol'zovanija v ograničeni cislennosti vreditel'ev sada v Moldavii. -In: Materialy zoologičeskogo soveščanija po probleme "Biologičeskije osnovy rekonstrukcii, racional'nogo ispol'zovanija i ochrany fauny južnoj zony evropejskoj časti SSSR". Kišinev, 448-450 pp.
- TALITZKI, V. I. 1966. - Nasekomye èntomofagi vreditel'ev sada v Moldavskoj SSR. - Trudy moldav. nau.-issl. Inst. Sadov., Vinog. Vinod., Kišinev, 13: 149-189.
- TASCHENBERG, E. L. 1865. - Die Schlupfwespenfamilie *Cryptides* (Gen. *V. Cryptus* Gr.) mit besonderer Berücksichtigung der deutschen Arten. - Z. Naturw., Berlin, 25: 1-142.
- TELENGA, N. A. 1961. - Novye vidy parazitov (*Ichneumonidae*, *Braconidae*) sadovych vreditel'ev Moldavii. - Trudy moldav. nau.-issl. Inst. Sadov., Vinog. Vinod., Kišinev, 7: 163-164.
- THALENHORST, W. 1959. - Vergleichende Untersuchungen über den Massenwechsel der Fichten-Nematinen. - In: Ver. dtsh. Ges. angew. Ent., XIV. Mitgliedervers. Göttingen, 1957, Hamburg/Berlin, pp 95-109.
- THOMPSON, W. R. 1944. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 5. Parasites of the Lepidoptera (A-Ch). Belleville, VII + pp. 1-130.
- THOMPSON, W. R. 1945. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 6. Parasites of the Lepidoptera (Ci-F). Belleville, pp. 131-258.
- THOMPSON, W. R. 1946a. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 7. Parasites of the Lepidoptera (G-M). Belleville, pp. 259-385.
- THOMPSON, W. R. 1946b. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 8. Parasites of the Lepidoptera (N-P). Belleville, pp. 386-523.
- THOMPSON, W. R. 1947. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 9. Parasites of the Lepidoptera (Q-Z). Belleville, pp. 524-627.

- THOMPSON, W. R. 1950a. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 10. Index of parasites of Lepidoptera. Ottawa, 107 pp.
- THOMPSON, W. R. 1950b. - A catalogue of the parasites and predators of insect pests. Sect. 1. Parasite host catalogue. Part 4. Parasites of the Hymenoptera, Isopoda and Isoptera (2nd edit.). Ottawa, IV + 130 pp.
- THOMPSON, W. R. 1957. - A catalogue of the parasites and predators of insect pests. Sect. 2. Host parasite catalogue. Part 4. Hosts of the Hymenoptera (Ichneumonidae). Ottawa, pp. 331-561.
- THOMSON, C.G. 1873. - Opuscula Entomologica. Lund, 5: 455-527.
- THOMSON, C.G. 1883. - Opuscula Entomologica. Lund, 9: 843-936.
- THOMSON, C. G. 1894. - Opuscula Entomologica. Lund, 19: 1971-2137.
- THOMSON, C. G. 1896. - Opuscula Entomologica. Lund, 21: 2343-2404.
- THUNBERG, C. P. 1822. - Ichneumonidea, Insecta Hymenoptera, illustrata. - Mém. Acad. Imp. Sci. St. Pétersb., 8: 249-281.
- TOWNES, H. 1970. - The genera of Ichneumonidae. Part 2. - Mem. Amer. ent. Inst., Ann Arbor, 12: 537 pp.
- TOWNES, H., MOMOI, S., TOWNES, M. 1965. - A catalogue and reclassification of the Eastern Palearctic Ichneumonidae. - Mem. Amer. ent. Inst., Ann Arbor, 5: 661 pp.
- URBAN, S. 1966. - Zum Auftreten von Parasiten und Mikroorganismen bei Kieferinsekten (Ein Beitrag zur Auswertung der Winterprobesuchen 1964/65). - Beitr. Ent., Berlin, 16: 707-772.
- VIERECK, H. L. 1914. - Type species of the genera of ichneumon flies. - Bull. U. S. nat. Mus., Washington, 83: 186 pp.
- WOLFF, M., KRAUBE, A. 1922. - Die forstlichen Lepidopteren. Systematische und biologische Übersicht sämtlicher schädlichen und harmlosen Arten des deutschen Sprachgebietes unter Mitberücksichtigung wichtiger außer deutscher paläarktischer Arten. Jena, 337 pp.
- ZAJANČKAUSKAS, P., JONAITIS, V. 1979. - Sidjačėbrjuchie (Hymenoptera, Phytophaga) Litovskoj SSR. - Acta ent. Lituanica, Vilnius, 4: 5-51.
- ZAJANČKAUSKAS, P., JONAITIS, V., JAKIMAVIČIUS, A., STANIONYTĖ, S. 1979. - Étomoparazity nasekomych - vreditelėj sada Litvy. Vilnius, 164 pp.

**Authors' addresses:**

**Dr. Janusz SAWONIEWICZ**  
**Katedra Ochrony Lasu i Ekologii, SGGW**  
**ul. Rakowiecka 26/30**  
**02-528 Warszawa**  
**Poland**

**Dr. John C. LUHMAN**  
**Department of Entomology**  
**Pennsylvania State University**  
**State College**  
**Pennsylvania 16802**  
**USA**

### Literaturbesprechung

RATTI, P., CAVAZZUTI, P., CASALE, A., BATTONI, S.: Les Coleopteres du Monde. The Beetles of the World. Vol.8. Carabini 1. - Sciences Nat, 2, rue André Mellenne, 60200 Venette, France, 1990. 122 S., 15 Farbtafeln, 21 Verbreitungskarten.

Ein in dieser Reihe schon lang erwarteter Start der im System an erster Stelle stehenden Familie Carabidae hat begonnen. Die Gattungen *Apotomopterus*, *Ohomopterus*, *Archaeocarabus*, *Isiocarabus* und *Morphocarabus* der Tribus Carabini machen den Anfang. In gewohnter Weise werden die einzelnen Arten anhand von fotografischen Farbtafeln und begleitendem Text, beziehend auf Autor, Synonyme, Kurzbeschreibung, Größe, Lokalität, Biologie, Seltenheitsgrad und Variationsbreite vorgestellt. Übersichtliche Verbreitungskarten erleichtern das Auffinden der Lokalitäten in den ostpaläarktischen Fundgebieten. Über 30 Typen sind in diesem Band fotografisch erfaßt. Schade, daß auf ein Literaturverzeichnis und auf schematische Abbildungen morphologischer Bestimmungsmerkmale, vor allem Genitalabbildungen verzichtet wurde.

Es ist zu wünschen, daß sich für die Bearbeitung der Familie Carabidae weitere Autoren finden.

Max KÜHBANDNER

MORON, M.- A.: Los Coleópteros del Mundo. The Beetles of the World. Vol.10. Rutelini 1. - Sciences Nat, 2, rue André Mellenne, 60200 Venette, France, 1990. 145 S., 5 Farbaufnahmen, 18 fotografischen Farbtafeln, 97 Schwarzweißzeichnungen, 10 Verbreitungskarten.

Dieser in drei Sprachen (Spanisch, Englisch, Französisch) erschienene Band behandelt die Gattungen *Plusiotis*, *Chrysina*, *Chrysophora*, *Pelidnotopsis* und *Ectinoplectron* der Scarabaeidae-Unterfamilie Rutelinae. Der besseren Zuordnung wegen sind die Gattungen *Plusiotis* und *Chrysina* in Gruppen aufgeteilt. Die Arten werden ausführlich beschrieben und Angaben zu Autor, Synonymen, Originalbeschreibung, Größe, Seltenheitsgrad, Biologie, Verbreitung, und Variationsbreite werden gegeben. Die Tafeln mit den Fotografien der einzelnen Arten sind hervorragend gelungen. 52 Typen werden fotografisch vorgestellt. Schwarzweißzeichnungen der Genitalarmaturen beider Geschlechter erleichtern die Determination. Bei einigen Arten werden Dorsalansichten des Kopfes und des Labiums abgebildet. Verbreitungskarten der in Mittel- und im Norden Südamerikas vorkommenden Arten, Index und Literaturverzeichnis schließen den Band ab.

Ein gelungenes Buch, das allen Coleopterologen, vor allem aber den bibliophilen Zoologen empfohlen sei.

Max KÜHBANDNER

**HORN, W., KAHLE, I., FRIESE, G., GAEDIKE, R.:** *Collectiones entomologicae*. Ein Kompendium über den Verbleib entomologischer Sammlungen der Welt bis 1960. Teil 1 und 2. - Institut f. Pflanzenschutzforschung d. Adl (Deutsches Entomologisches Institut), Schicklerstraße 5, O-1300 Eberswalde-Finow 1, 1990. 573 S., 125 Schwarzweiß-Porträtaufnahmen, 38 Schwarzweißtafeln.

Durch ständige Nachfragen aus aller Welt nach der schon bereits vor dem 2. Weltkrieg vergriffenen 2. Auflage des Werkes von Walter HORN, entschloß man sich, eine überarbeitete Neufassung herauszugeben. In dieser 3. Auflage wurden vorhandene Informationen eingebracht und sie enthält somit den Besitzwechsel der Sammlungen von etwa 7000 Entomologen bis einschließlich 1960, biologische Daten zu den Sammlern jedoch bis 1989. Folgende weitere Ergänzungen wurden vorgenommen: Einarbeitung der Nachträge und Korrekturen von 1937 bis 1961, vor allem die Aufnahme von Sammlungen, die den Besitzer gewechselt haben. Einarbeitung der inzwischen bekannt gewordenen Weitergaben von Sammlungen an Dritt- oder Viertbesitzer. Hinweise auf Verluste, welche sich besonders auf die Vernichtung von Sammlungen während des 2. Weltkrieges beziehen. Erstellung eines Verzeichnisses der Museen und Institutionen. Ergänzung der Daten zu den Sammlern und Determinatoren, nebst Aufnahme weiterer Porträts bekannter Entomologen. Die Tafeln mit den fotografierten Originaletiketten der im Band erwähnten Entomologen sowie die Porträtaufnahmen der 2. Auflage wurden übernommen.

Für Museen und Institute, die über Entomologische Sammlungen verfügen, sowie für jeden Profi- oder Amateurentomologen gehört dieses Nachschlagewerk zu einem der wichtigsten Bestandteile der Bibliothek.

Max KÜHBANDNER

---

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich: Maximilian Schwarz, Konsulent für Wissenschaft der O.Ö. Landesregierung, Eibenweg 6, A - 4052 Ansfelden.  
Redaktion: Erich Diller, Münchhausenstraße 21, D - 8000 München 60.  
Max Kühbandner, Marsstraße 8, D - 8011 Aschheim.  
Wolfgang Schacht, Scherrerstraße 8, D - 8081 Schöngeising.  
Thomas Witt, Tengstraße 33, D - München 40.  
Postadresse: Entomofauna, Münchhausenstraße 21, D - 8000 München 60.



# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Entomofauna](#)

Jahr/Year: 1992

Band/Volume: [0013](#)

Autor(en)/Author(s): Sawoniewicz Janusz, Luhmann John C.

Artikel/Article: [Revision of European species of the subtribe Endaseina, III. Genus: Endasys FOERSTER, 1868 \(Hymenoptera, Ichneumonidae\). 1-94](#)