

# New species of *Spathius* Nees, 1818 and a key to the species of Europe and Canary Islands

(Hym. Ichneumonoidea, Braconidae)

BY

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Estocolmo.

In 1943 Nixon revised the *Spathiinae* of the "Old World", but for Europe he met some difficulties because he could not see the types during the second world war. He tried to give a key to the European species and I think it will be the base for the taxonomical work with *Spathius* Nees, 1818 in Europe because some of the types has been lost during the war, specially species described by Ratzeburg (see Königsmann 1964).

The keys given by Fahringer (1930-34), Marshall (1888-90) and Telenga (1941) are partly or quite unworkable. Fischer (1966) compiled a key and redescribed some species, but he writes that he is not satisfied. Below I have tried to compile a key. To my disposal I have had over 1.000 specimens —mostly reared— from many localities of Europe. To all entomologists who have given me specimens, I am much indebted.

## 1. *Spathius canariensis* nov. sp.

Holotype ♀, Las Mercedes, Teneriffe, Canary Islands (In coll. Hedqvist).

♀. Head, antennae, all tarsi and terebra yellowish brown. The rest of body dark brown with trochanters and a basal ring of tibiae pale yellowish white. The colour is variable and in some specimens only gaster brown.

Apterous (fig. 1 B) with in some specimens ocelli nearly wanted. Pronotum and pleurae with striation, mesothorax and propodeum ru-

gose. Terebra as long as gaster + half thorax. Antennae 22-jointed. Femora thickened.

♂. Similar to the female but yellowish brown and with antenna 24-jointed.

Length: ♀ 3,0-3,2 mm; ♂ 3,1 mm.

Holotype: In coll. mea. Canary Islands, Teneriffe, Las Mercedes, 12-III-1970. leg. Karl-Johan Hedqvist.

Paratypes: 1 ♂ + 6 ♀♀, Canary Islands, in coll. mea: 3 ♀♀, Teneriffe, Santa Cruz (leg. T. Palm); 1 ♀, Teneriffe, Monte Aguirre; 1 ♀ and 1 ♂, Teneriffe, Bailadero; 1 ♀, La Gomera.

## 2. *Spathius hirtus* nov. sp.

Holotype ♀, Estepona, Málaga, Spain (In coll. Hedqvist).

♀. Stramineus with head and gaster dorsally brownish.

Apterous (fig. 1 C) with scattered long hairs. Antennae 18-jointed. Terebra as long as gaster except petiole. Thorax finely rugose.

♂. Unknown.

Length: 2,3 mm.

Holotype: In coll. mea. Spain, Málaga, Estepona, 27-VII-1959 (leg. S. Erlandsson).

## 3. *Spathius depressus* nov. sp.

Holotype ♀, Träkvista, Prov. Uppland, Sweden (In coll. Hedqvist).

♀. Yellowish brown with head brown. Thorax dorsally, propodeum and gaster dark brown. Claw-joint of mid tarsi dark brown. Fore wing with veins brown except base of stigma. Wings very faintly fuscous.

This species differs from all known european species except *Spathius phymatodis* Fisch. by flattened thorax (fig. 2 A). From the latter differs *Sp. depressus* nov. sp. by rounded head and flattened propodeum—see the key—. Mesoscutum, scutellum and propodeum in lateral view on the same line. Notauli shallow with rugose sculpture. Head nearly smooth. Antenna with 30 joints. Thorax dorsally reticulate coriaceous. Propodeum with a mediam carina, which is forked and

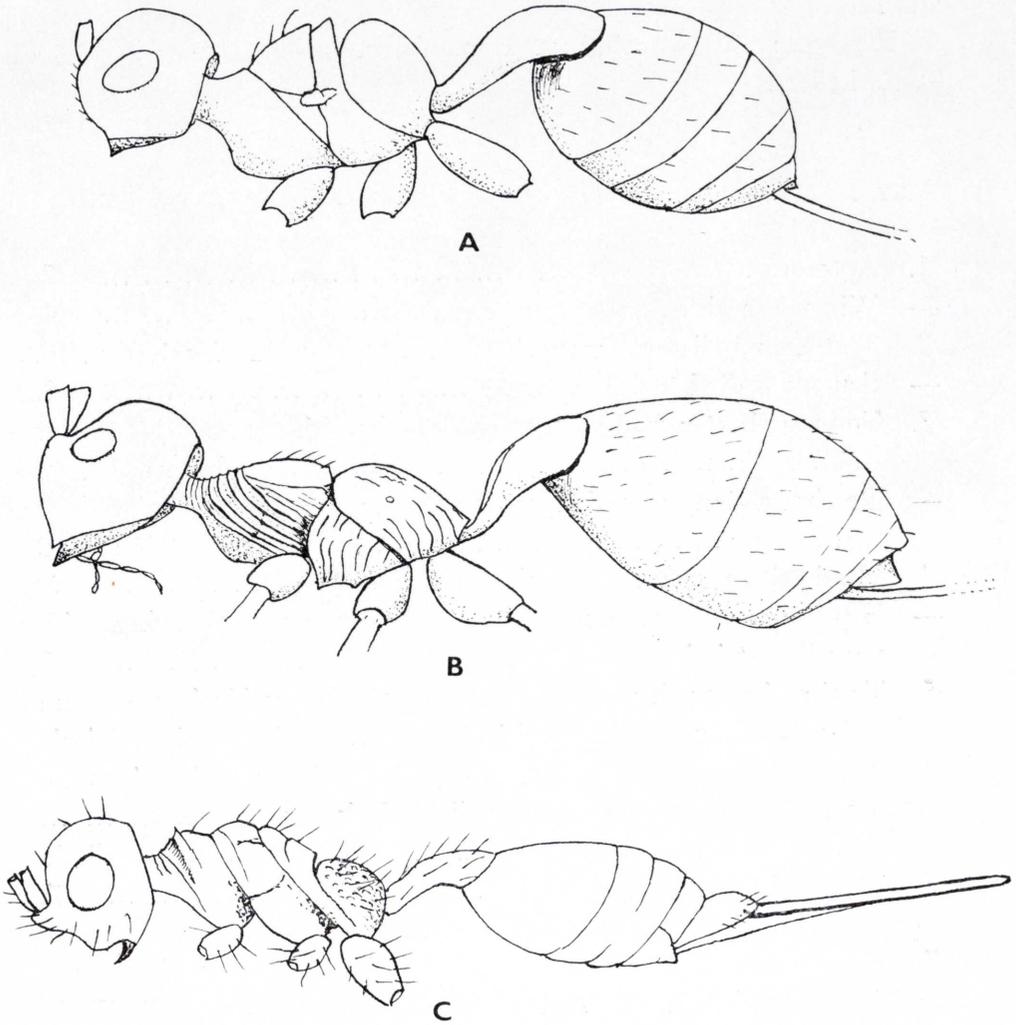


Fig. 1.—Lateral view of: A) *Spathius pedestris* Wesm., ♀; B) *S. canariensis* nov. sp., ♀; C) *S. hirtus* nov. sp., ♀.

enclosing an oblong areola. Sculpture of propodeum is reticulate coriaceous with some irregular carinae. Gaster (fig. 3 F) with 2nd tergite finely reticulate coriaceous, terebra a little longer than half gaster.

♂. Similar to the female. Antenna 27-jointed.

Length: ♀ 3,5 mm; ♂ 3,4 mm.

Holotype: in coll. mea. Sweden, Prov. Uppland, Träkvista (leg. R. Baranowski). Reared from *Betula* sp. infested by *Agrius viridis* L. and *Magdalis carbonaria* L.

Paratype: 1 ♂ in coll. mea. Rumania, Herculane, 18-V-1970 (leg. T.-E. Leiler).

#### KEY TO SPECIES OF *Spathius* FROM EUROPE AND CANARY ISLANDS.

1. Apterous ... .. 2.
- Winged species ... .. 4.
2. Scutellum indistinct, wanted ... .. **canariensis** nov. sp.
- Scutellum distinct ... .. 3.
3. Terebra shorter than gaster, whole body with scattered long hairs  
... .. **hirtus** nov. sp.
- Terebra as long as or longer than gaster, the scattered hairs short  
... .. **pedestris** Wesm.
4. Head with transverse striation ... .. 5.
- Head without transverse striation only near antennal sockets with  
very fine striation ... .. 6.
5. Terebra longer than gaster. Head red, thorax black, pronotum  
and mesonotum partly reddish yellow ... .. **polonicus** Niezb.
- Terebra shorter than gaster. Head dark, thorax red with meso-  
notum, scutellum and post-scutellum dark (brown) ... ..  
... .. **melanophilae** Fisch.
6. Thorax flattened ... .. 7.
- Thorax arched ... .. 8.
7. Head in lateral view triangle-shaped, thorax flattened with propo-  
deum rounded ... .. **phymatodis** Fisch.
- Head in lateral view hemispherical, thorax flattened with propo-  
deum flattened in lateral view nearly on the same line as thorax  
... .. **depressus** nov. sp.
8. Propodeum on each side with a rounded tooth ... .. **dentatus** Tel.
- Propodeum without a tooth on each side ... .. 9.

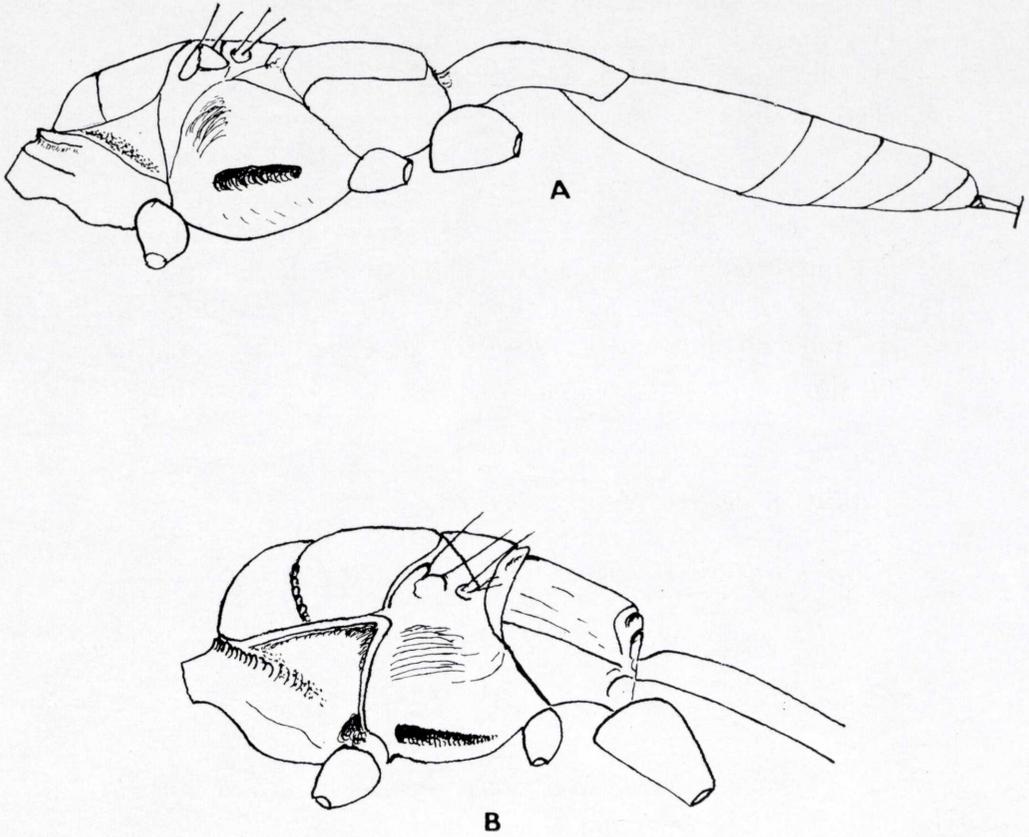


Fig. 2.—Lateral view of: A) *Spathius depressus* nov. sp., ♀; B) *S. exarator* (L.), ♀.

9. Petiole as long as the rest of gaster. Terebra as long as body ...  
 ... .. **exarator** (L.).  
 — Petiole shorter than the rest of gaster. Terebra shorter than  
 body ... .. 10.  
 10. Wings hyalina ... .. **brevicaudis** Ratzb.  
 — Wings more or less fasciated ... .. 11.  
 11. Terebra nearly as long as body —as long as thorax + gaster—  
 ... .. **moderabilis** Wilk.  
 — Terebra as long as gaster + propodeum or shorter ... .. 12.  
 12. Terebra as long as gaster or little longer ... .. 13.  
 — Terebra shorter than gaster ... .. 14.  
 13. Terebra distinctly curved upwards. Fore wing nearly hyalina ...  
 ... .. **curvicaudis** Ratzb.  
 — Terebra straight. Fore wing conspicuously fasciated ... ..  
 ... .. **erythrocephalus** Wesm.  
 14. 1st intercubitus as long as 2nd abscissae of the radius ... ..  
 ... .. **rubidus** (Rossi).  
 — 1st intercubitus longer (1/2 longer) than 2nd abscissae of the ra-  
 dius ... .. **radzaynus** Ratzb.

4. **Spathius pedestris** Wesm., 1838 (fig. 1 A).

*Spathius pedestris* Wesm., 1838. *N. Mém. Acad. Sci. Bruxelles*, t. XI,  
 pág. 132.

*Spathius apterus* Wollaston, 1858. *Ann. Mag. Nat. Hist.*, t. I (3), pág. 24.

*Distribution*: Denmark, Germany, France, Albania, Madeira and  
 Jugoslavia.

*Host*: *Ochina* sp., *Anobium punctatum* Deg., *Gastrallus laevigatus*  
 Ol., and *Stegobium paniceum* (L.) (*Anobiidae*).

5. **Spathius polonicus** Niezb., 1910.

*Spathius polonicus* Niezabitowski, 1910. *Kraków. Spraw. Kom. fizyogr.*,  
 t. XLIV, pág. 67.

*Distribution*: Poland.

*Host*: Unknown.

6. *Spathius melanophilae* Fisch., 1966.

*Spathius melanophilae* Fischer, 1966. *Entomophaga*, t. XI, págs. 341-344 (Spain).

*Distribution*: Spain.

*Host*: *Melanophila picta* Pall. (*Buprestidae*).

7. *Spathius phymatodis* Fisch., 1966.

*Spathius phymatodis* Fischer, 1966. *Z. angew. Zool.*, t. LIII, págs. 219-221 (France).

*Distribution*: France.

*Host*: *Phymatodes fasciatus* Vill. (*Cerambycidae*).

8. *Spathius dentatus* Tel., 1941.

*Spathius dentatus* Telenga, 1941. *Faune de l'URSS. V*, págs. 36, 380 (Jaroslavsk).

*Distribution*: USSR. (Jaroslavsk).

*Host*: Unknown.

9. *Spathius exarator* (L., 1758) (fig. 2 B, 3 A, 4 D, 5 A).

*Ichneumon exarator* Linné, 1758. *Syst. Nat.*, ed. 10, pág. 564, núm. 35.

*Ichneumon mutillarius* Fabricius, 1775. *Syst. Ent.*, pág. 342, núm. 82.

*Ichneumon mystacatus* Schrank, 1781. *Enum. Ins. Austr.*, pág. 369, número 746.

*Ichneumon immaturus* Gravenhorst, 1807. *Vergl. übersicht zool. Syst.*, pág. 261, núm. 3758.

*Cryptus clavatus* Panzer, 1809. *Fauna Ins. German*, IX, pág. 102.

*Cryptus formicatus* Fabricius, 1804. *Syst. Piez.*, pág. 88, núm. 80.

*Cryptus affinis* Fabricius, 1804. *Syst. Piez.*, pág. 88, núm. 82.

*Ichneumon attenuator* Thunberg, 1822. *Bull. Acad. Sci. St. Petersb.*, tomo VIII, pág. 260.

*Spathius strandi* Fahringer, 1930-34. *Opusc. Bracon. Paläark. Region*, t. II, págs. 63 y 82.

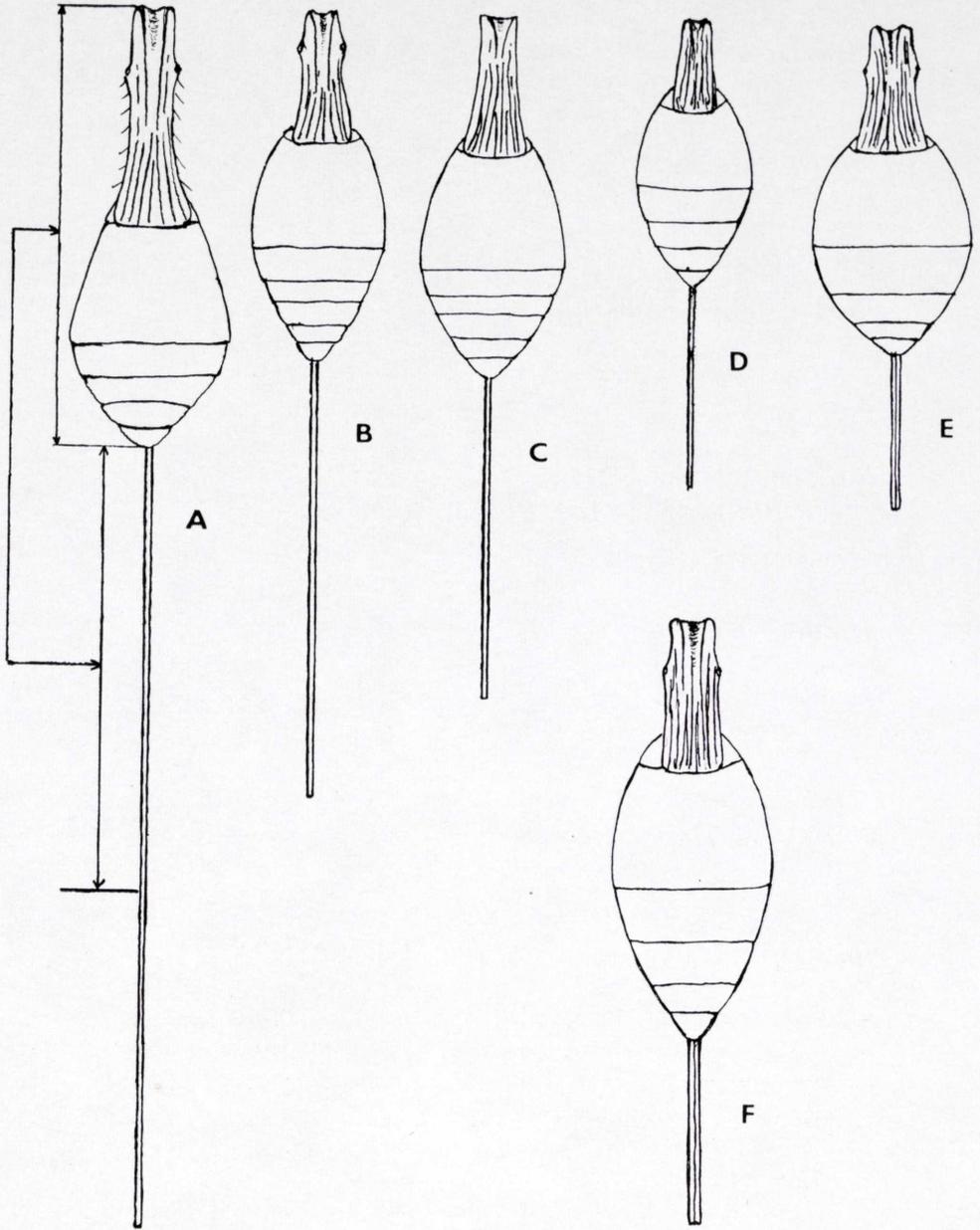


Fig. 3.—Gaster of: A) *Spathius exarator* (L.), ♀; B) *S. curvicaudis* Ratzb., ♀; C) *S. erythrocephalus* Wesm., ♀; D) *S. brevicaudis* Ratzb., ♀; E) *S. rubidus* (Rossi), ♀; F) *S. depressus* nov. sp., ♀.

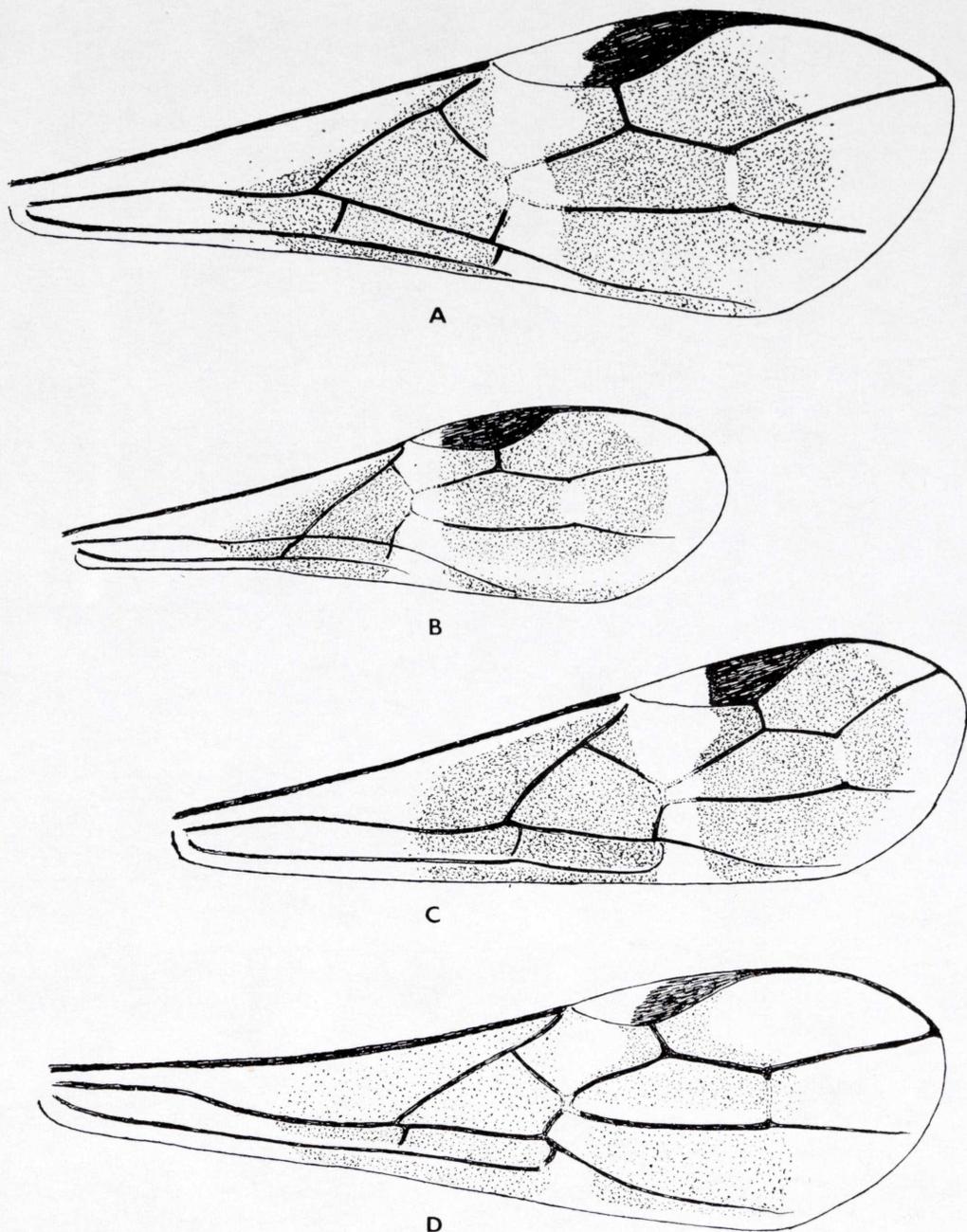


Fig. 4.—Fore wing of: A) *Spathius rubidus* (Rossi), ♀; B) *S. curvicaudis* Ratzb., ♀; C) *S. erythrocephalus* Wesm., ♀; D) *S. exarator* (L.), ♀.

I have checked in Fabricius coll. (Copenhagen) *Ichneumon mutillarius*, *Cryptus formicatus* and *Cryptus affinis*. They are all *Spathius exarator* (L.). *Sp. strandi* described by Fahringer is only a variation of *Sp. exarator*. Among more than 500 specimens I have seen from different parts of Europe there are some variation and *Sp. strandi* Fahr. is within the limits of that variation.

*Distribution*: Whole Europe.

*Host*: *Anobium punctatum* Deg., *A. pertinax* L. and *Ptilinus pectinicornis* L. (*Anobiidae*). All records from *Ipidae* are doubtful.

10. ***Spathius brevicaudis*** Ratzb., 1844 (3 D, 5 E).

*Spathius brevicaudis* Ratzeburg, 1844. *Ichneum. Forstins. Berlin*, t. I, pág. 49.

*Distribution*: Austria, Denmark, Sweden and USSR.

*Host*: *Scolytus koenigi* Sem. (*Ipidae*).

11. ***Spathius moderabilis*** Wilk., 1931.

*Spathius moderabilis* Wilkinson, 1931. *Trans. ent. Soc. London*, t. LXIX, pág. 518 (Madeira).

*Distribution*: Madeira, Canary Islands (Tenerife).

*Host*: Unknown.

12. ***Spathius rubidus*** (Rossi, 1794) (fig. 3 E, 4 A, 5 F).

*Ichneumon rubidus* Rossi, 1794. *Mant. Ins. II*, pág. 137, núm. 88.

*Cryptus umbratus* Fabricius, 1804. *Syst. Piez.*, pág. 89, núm. 85.

*Bracon umbratus* Trentepohl, 1829. *Isis.*, pág. 963.

*Spathius rugosus* Ratzeburg, 1848. *Ichneum. Forstins. Berlin*, t. II, pág. 44.

*Spathius rubidus* var. *sculpturatus* Hellén, 1921. *Acta Soc. Fauna. Flora Fenn.*, V, págs. 51 y 56.

In the collection of Fabricius, Copenhagen stood 2 specimens under the name *Cryptus umbratus*. The specimen labelled "*umbratus*" is selected as lectotype.

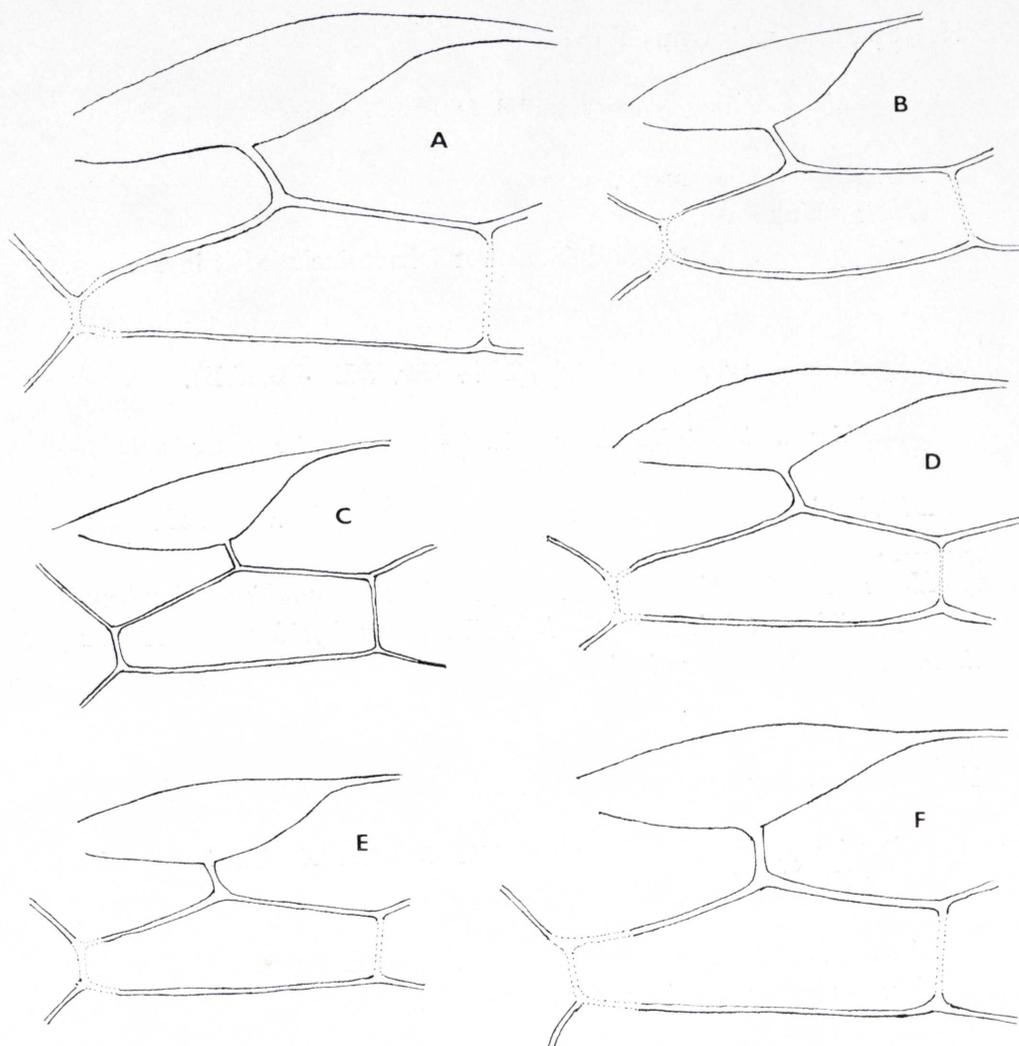


Fig. 5.—2nd cubital cell of: A) *Spathius exarator* (L.); B) *S. curvicaudis* Ratzb.;  
 C) *S. depressus* nov. sp.; D) *S. erythrocephalus* Wesm.; E) *S. brevicaudis* Ratzb.;  
 F) *S. rubidus* (Rossi).

*Distribution:* Cyprus, Denmark, England, France, Germany, Siberia, Sweden, Morocco and USSR.

*Host:* *Agrilus biguttatus* F. (*Buprestidae*), *Anobium rufipes* F. and *Hedobia imperialis* L. (*Anobiidae*).

13. ***Spathius radzaynus*** Ratzb., 1848.

*Spathius radzaynus* Ratzeburg, 1848. *Ichneum. Forstins.*, t. II, pág. 43.

*Distribution:* Germany.

*Host:* Unknown.

This species seem to me dubious but I have included it in the key.

14. ***Spathius curvicaudis*** Ratzb., 1844 (fig. 3 B, 4 B, 5 B).

*Spathius curvicaudis* Ratzeburg, 1844. *Ichneum. Forstins.*, t. I, pág. 49.

*Distribution:* France, Germany, Italy, Jugoslavia, Sweden and Turkey.

*Host:* *Agrilus biguttatus* F. (*Buprestidae*), *Xestobium plumbeum* Ill. (*Anobiidae*), *Obrium cantharinum* L. (*Cerambycidae*) and *Magdalis carbonaria* L. (*Curculionidae*).

15. ***Spathius erythrocephalus*** Wesm., 1838 (fig. 3 C, 4 C, 5 D).

*Spathius erythrocephalus* Wesmael, 1838. *N. Mém. Acad. Sci., Bruxelles*, t. XI, pág. 131.

*Distribution:* Austria, Denmark, England, Hungary and Sweden.

*Host:* *Ochina ptinoides* Marsh. (*Anobiidae*).

*Remarks:* I have been restrictive above with the host records because many of them seem dubious.

In the Palearctic region following not included species are known: *Spathius fasciatus* Walker, 1874. *Cist. ent.*, t. I, pág. 307, Japan.

*Spathius radjabii* Fischer, 1970. *Ann. Soc. ent. Fr. (N. S.)*, t. VI (3), págs. 705-708, Iran.

*Spathius ussuriensis* Tobias, 1961. *Izvestija Sibirskoi Akademii Nauk SSSR.*, núm. 11, págs. 121-123, East Sibiria.

Following species are not possible to place satisfactory:

*Spathius ferrugatus* Goureau, 1866. *Bull. Soc. Sc. hist. Yonne*, página 55, perhaps synonymous to *Sp. exarator* L.

*Spathius petiolatus* (Spinola, 1808) (*Bracon petiolatus* Spin.), *Insect. Ligur.* 11, pág. 137, núm. 23.

### References.

- [1] FAHRINGER, J.  
1930-34. *Opuscula braconologica, paläarktische Region*, Vienna, t. III, págs. 1-594.
- [2] FISCHER, M.  
1966. Studien über Braconiden (*Hymenoptera*). *Z. angew. Zool.*, t. LIII, págs. 215-236.
- [3] KÖNIGSMANN, E.  
1964. *Braconidae* aus den Resten der Ratzeburg-Sammlung (*Hymenoptera*). *Beitr. Ent., Berlin*, t. XIV, págs. 631-661.
- [4] MARSHALL, T. A.  
1888-90. *Les Braconides*. In André, E., *Species des Hyménoptères d'Europe et d'Algérie*, t. IV, págs. 1-609.
- [5] MATTHEWS, R. W.  
1970. A revision of the genus *Spathius* in America north of Mexico (*Hymenoptera, Braconidae*). *Contributions of the American Entomological Institute*, t. IV, págs. 1-86.
- [6] NIXON, G. E. J.  
1943. A revision of the *Spathiinae* of the Old World (*Hymenoptera, Braconidae*). *Trans. R. ent. Soc. Lond.*, t. XCIII, págs. 173-456.
- [7] SZÉPLIGETI, G. V.  
1904. *Hymenoptera* fam. *Braconidae*. In Wytsman, P., *Gen. Ins.*, fasc. 22, págs. 1-253.
- [8] TELENGA, N. A.  
1941. Faune de l'URSS. *Insectes Hyménoptères*, t. V; fam. *Braconidae*. *Ins. zool. Acad. Sci. U. R. S. S.*, Moscou, págs. 1-465.

