

Koleopterologische Rundschau	67	121 - 129	Wien, Juni 1997
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Two new species of *Scopaeus* ERICHSON, 1840 from Anatolia and the Iberian Peninsula, with a redescription of *Scopaeus franzi* COIFFAIT, 1968 (Coleoptera: Staphylinidae: Paederinae)

J. FRISCH

Abstract

Scopaeus tauricus sp.n. from Anatolia (Taurus Mountains) and *S. pusilloides* sp.n. from the Iberian Peninsula are described. *Scopaeus franzi* COIFFAIT (= *S. tricuspis* OUTERELO syn.n.) from northwestern Spain and Portugal is redescribed.

Key words: Coleoptera, Staphylinidae, Paederinae, *Scopaeus*, Anatolia, Iberian Peninsula, new species, new synonymy

Introduction

The revision of West Palaearctic *Scopaeus* species (FRISCH 1994, 1996) is continued with the description of two new species from the Iberian Peninsula and Turkey, and by the redescription of *S. franzi* COIFFAIT from northwestern Spain and Portugal. The relationships and geographical distributions of these species are discussed.

I am much indebted to those colleagues who loaned types and provided study material of *Scopaeus*, in particular N. Berti (Muséum national d'Histoire naturelle, Paris), J. Jelinek (Národní Muzeum, Prague), I. Löbl (Muséum d'Histoire naturelle, Geneva) and H. Schilhammer (Naturhistorisches Museum, Vienna). I am also indebted to P.M. Hammond (The Natural History Museum, London) and A. Smetana (Eastern Cereal and Oilseed Research Centre, Ottawa) for correcting and criticizing the manuscript. This paper is a part of a Ph.D. project at the University of Gießen, supported by the Studienstiftung des Deutschen Volkes, Bonn-Bad Godesberg.

Material and methods

The terminology employed for genital structures follows FRISCH (1994, 1996) and UHLIG (1989). The terminology for parts of the spermatheca follows the usage of FRISCH (1996): the term chamber is used for the hollow part, from which the sclerotized ductus arises; the solid part is termed the process. Abdominal sternites and tergites are counted from the morphological first segment. Measurements and ratios are defined as follows: length = interval from apical margin of mandibles to end of abdomen; forebody length = interval from apical margin of mandibles to posterior margin of elytra at suture; length of head = interval from apical margin of clypeus to occipital groove; HLW = head length : head breadth; PLW = pronotal length : pronotal breadth; HPW = breadth of head : pronotal breadth; HPL = length of head : pronotal length; PSL = pronotal length : elytral sutural length (excluding scutellum); PLL = pronotal length : elytral lateral length; ELW = elytral lateral length : elytral breadth; ET = length of eye : length of temple (both measured laterally); MT = mesotibial length : mesotibial breadth; A = length

(measured without basal and distal tapering) : breadth of antennomeres 1-11; T = length : breadth of central area (field between sclerite margins) of tergite 10; V = length : breadth of central area of valve of females.

***Scopaeus pusilloides* sp.n.**
(Figs. 1 - 3, 7, 9, 10)

Holotype ♂: Spain: "Sierra de Guadarama leg. Moczarski (handwritten) / ♂ / ex coll. Scheerpeltz / HOLOTYPUS *Scopaeus* ERICHSON *pusilloides* sp.n. des. J. Frisch 1996" (Naturhistorisches Museum, Vienna). **Paratype** ♂: "PORTUGAL-CASTELO Br. Manteigas, 1650m 16.4.1960. BESUCHET / PARATYPUS *Scopaeus* ERICHSON *pusilloides* sp.n. des. J. Frisch 1996" (Muséum d'Histoire naturelle, Geneva).

DESCRIPTION. Length 2.8 - 2.9 mm; forebody 1.4 - 1.5 mm. Forebody uniformly brown; abdomen darker; antennae, legs and mouthparts yellowish-brown; third segment of maxillary palpus darker; puncturation of elytra dense and relatively coarse; head with somewhat enlarged temples and slightly concave posterior margin; length of eyes less than half length of temples; elytra conspicuously short, their lateral length somewhat shorter than pronotum; sutural length about 1/5 shorter than pronotum; wings reduced; protarsomeres 1 - 4 of male twice as broad as long; mesotibia distinctly thickened, less than five times as long as broad; dorsal dilatation of lateral tergite 9 (Fig. 9) very slight and obtuse.

Male. Posterior fifth of sternite 8 (Fig. 7) with a triangular emargination; aedeagus (Figs. 1 - 3) differing from that of *S. pusillus* KIESENWETTER (Figs. 4 - 6) as follows: size discernibly smaller, with apical lobes broader and less curved dorsad; each with shallower ventral emargination which is oriented dorso-ventrad; dorsal lobe not elongate but nearly semicircular, not exceeding the ventral emargination of the apical lobes in lateral view; lateral lobes somewhat shorter.

Female unknown.

Ratios. HLW 1.13 - 1.15; PLW 1.22 - 1.23; HPW 1.11 - 1.12; HPL 1.03; PSL 1.15 - 1.21; PLL 0.94 - 0.97; ELW 1.18 - 1.23; ET 0.44 - 0.45; MT 4.44 - 4.88; A 2.1, 1.0, 1.2, 1.2, 1.0, 1.0, 0.9, 0.8, 0.8, 0.8, 1.6; T 2.2.

GEOGRAPHICAL DISTRIBUTION. *Scopaeus pusilloides* is known only from the Sistema Central and Madrid in central Spain and from eastern Portugal; it is likely to be widely distributed across the Iberian Peninsula, apparently replacing the allopatric *S. pusillus*, which is widespread in the temperate areas of the Palaearctic region.

COMMENTS. *Scopaeus pusilloides* resembles in general appearance *S. pusillus*, but it differs, in addition to the sexual characters, mainly by somewhat smaller size. No bionomic information is available. Based on the illustration of the aedeagus, the specimen recorded by OUTERELO (1981) as *S. pusillus* from Madrid belongs to *S. pusilloides*.

***Scopaeus tauricus* sp.n.**
(Figs. 13 - 20)

Holotype ♂: Turkey: "Ulukisla Anat. 28.7.47. Exp. N. Mus. CSR / HOLOTYPUS *Scopaeus* ERICHSON *tauricus* sp.n. des. J. Frisch 1996" (Národní Muzeum, Prague). **Paratype** ♀: "Ulukisla, Anat. 28.7.47 Exp. N. Mus. CSR / PARATYPUS *Scopaeus* ERICHSON *tauricus* sp.n. des. J. Frisch 1996" (Národní Muzeum, Prague).

DESCRIPTION. Length 3.1 mm; forebody 1.7 mm. Dark brown; posterior margin of elytra and sutural streak somewhat lighter; abdomen darker; antennae, legs and mouthparts yellowish-brown; head with parallel or slightly expanded temples; posterior margin straight; eyes distinctly longer than half length of temples; wings fully developed; lateral elytral length about 1.25 times as long as pronotum; sutural length hardly larger than latter; protarsomeres 1 - 4 in both sexes about twice as broad as long, but slightly broader in males; dorsal margin of lateral tergite 9 (Fig. 16) with a slight, obtuse dilatation.

Male. Distal quarter of sternite 8 (Fig. 17) with a triangular emargination; aedeagus (Figs. 13 - 15) characteristic of the *S. heinzi* subgroup (FRISCH 1994); apical lobes of aedeagus short; each dorso-laterally broadened, with subparallel margins ventro-laterally; apical lobes obtusely rounded with weakly convex ventral margins in lateral view; ventral endophallic spine curved backward dorsally, forming an acute angle; dorsal lobe extremely short, truncate apically; extended into two mediad, short, sharp spines ventrally; lateral lobes marked by a few minute setae; phallobase with a strong, ventral enlargement.

Female. Spermatheca (Fig. 20) slender, with weakly bent parts; distal margin of chamber triangular in dorsal view.

Ratios. HLW 1.08 - 1.1; PLW 1.15 - 1.24; HPW 1.11 - 1.16; HPL 1.03 - 1.05; PSL 0.9 - 0.91; PLL 0.72; ELW 1.25 - 1.30; ET 0.59 - 0.71; MT 6.86 - 7.00; A 2.2, 1.4, 1.3, 1.3, 1.1, 1.1, 0.9, 0.8, 0.8, 0.9, 1.7. T 1.7; V (♀) 4.5.

GEOGRAPHICAL DISTRIBUTION. *Scopaeus tauricus* is known only from Ulukışla (Niğde Province) in the eastern Taurus Mountains.

COMMENTS. No bionomic information is available. Based on the structure of the aedeagus, *S. tauricus* belongs to the *S. heinzi* subgroup of the *S. elegans* group (FRISCH 1994). *Scopaeus tauricus* is very closely related to *S. persicus* FRISCH from western Iran, but *S. persicus* differs mainly by the aedeagus with dorsal lobe elongate, reaching the apices of the apical lobes, with the less curved endophallic spine and with the ventral enlargement of the phallobase absent.

Scopaeus franzi COIFFAIT, 1968 (Figs. 21 - 23, 27, 29 - 32)

Scopaeus (Alloscopaeus) franzi COIFFAIT 1968: 416; 1984: 196.

Scopaeus (s. str.) *tricuspis* OUTERELO 1978: 473; syn.n.

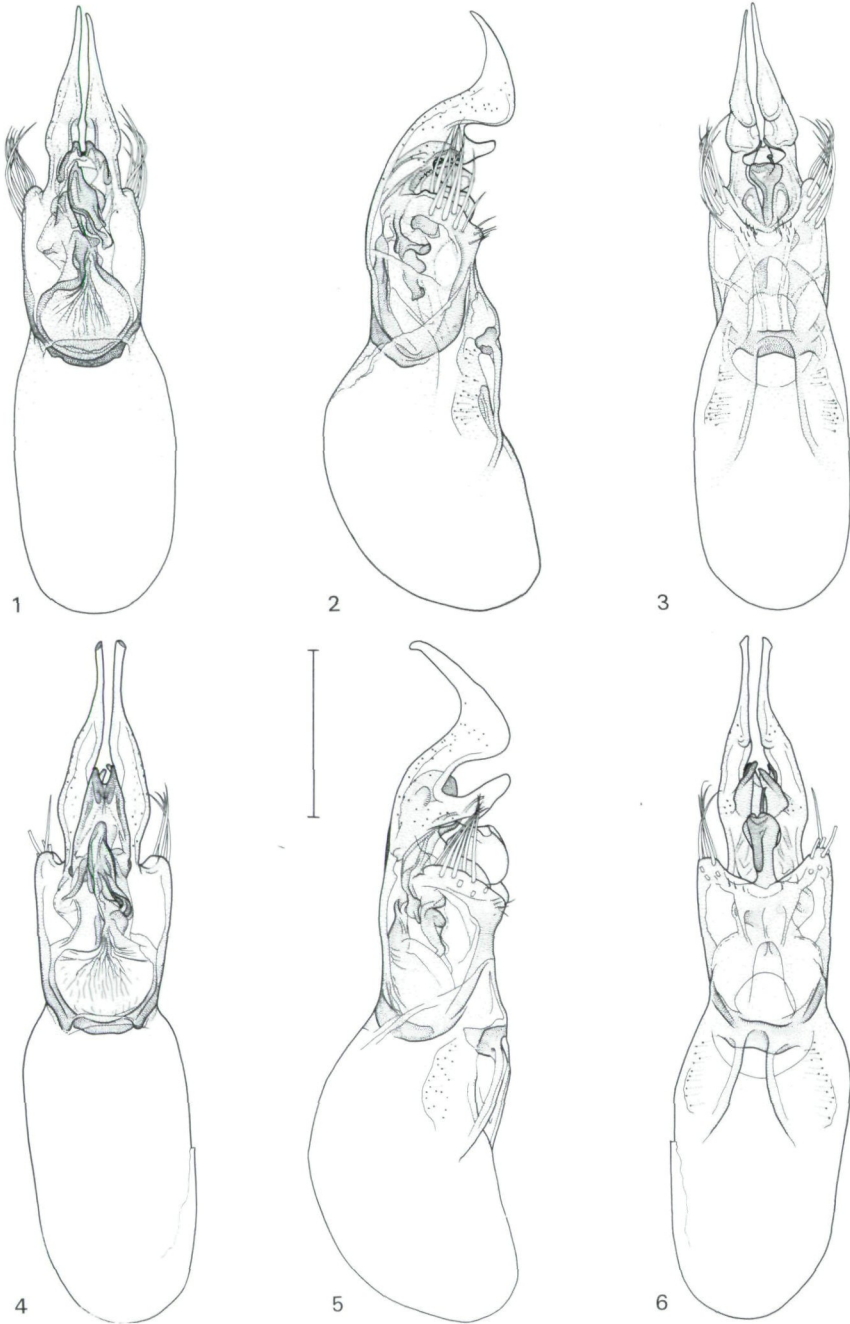
Type material: *Scopaeus franzi*, **holotype** ♂: "Sierra de Son Umg. San Feliz de las Lavanderas / Muséum Paris 1985 Coll. H. Coiffait / HOLOTYPE / *S. (Alloscopaeus) franzi* Coiff. H. COIFFAIT 1967" (Muséum national d'Histoire naturelle, Paris); the aedeagus of the holotype is missing. *Scopaeus tricuspis*: **holotype** ♂, **paratype** ♀: "Spain, Orense Province, Campobeceros, Montes do Invernadoiro, Valle de Ribeira Grande, El Rocin, 09.05.1976, leg. Outerelo" (University of Madrid, Biological Faculty); not examined.

Additional material: 5 ♂♂, 5 ♀♀, "Portugal, Vila Real, Valpacos, 28.08.1969, leg. Senglet" (Muséum d'Histoire naturelle, Geneva; coll. Frisch).

DESCRIPTION. Similar to *S. hispanicus* BINAGHI, but slightly larger and broader. Length 3.1 - 3.4 mm; forebody 1.5 - 1.7 mm. Mature specimens dark brown; elytra very slightly lighter brownish posteriorly; antennae, legs and mouthparts light brown; third segment of maxillary palpus distinctly darker; temples slightly expanded; posterior margin of head weakly concave; length of eyes about half length of temples, frequently up to 1/20 longer than half length of temples; pronotum with narrow midline, corresponding to half the breadth of base of protibia; elytra relatively long, but slightly shorter than in *S. hispanicus*; lateral length between 1.20 and 1.25 times as long as pronotum; along suture less than 1.10 times as long as pronotum; wings well developed; male protarsomeres 1 - 4 more than twice as broad as long; in females only about twice as broad as long; mesotibia slender; lateral tergite 9 (Fig. 29) with a strong, dorsal tooth.

Male. Posterior fifth of sternite 8 (Fig. 27) with a broad, triangular emargination; sternite bearing two elongated, light-coloured depressions, which are much more narrow and more clearly marked than those of *S. hispanicus* (Fig. 28); aedeagus (Figs. 21 - 23) similar to that of *S. hispanicus* (Figs. 24 - 26), but different mainly by distinctly narrower apical lobes, which are in dorsal view basally tapered but not with parallel lateral margins as in *S. hispanicus*.

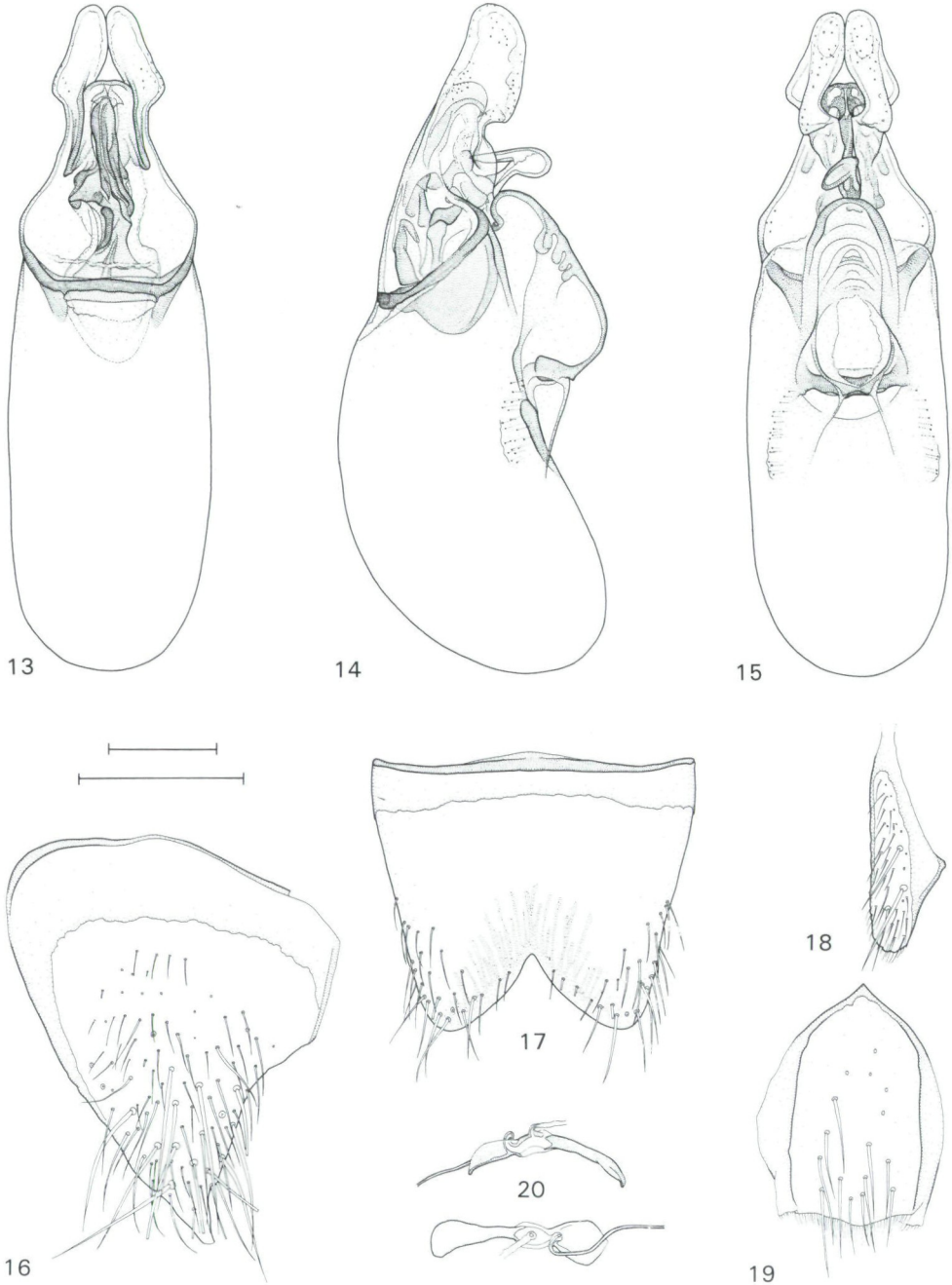
Female. Spermatheca (Fig. 32) as in *S. hispanicus* (Fig. 33), distinguished by stronger bent process and chamber.



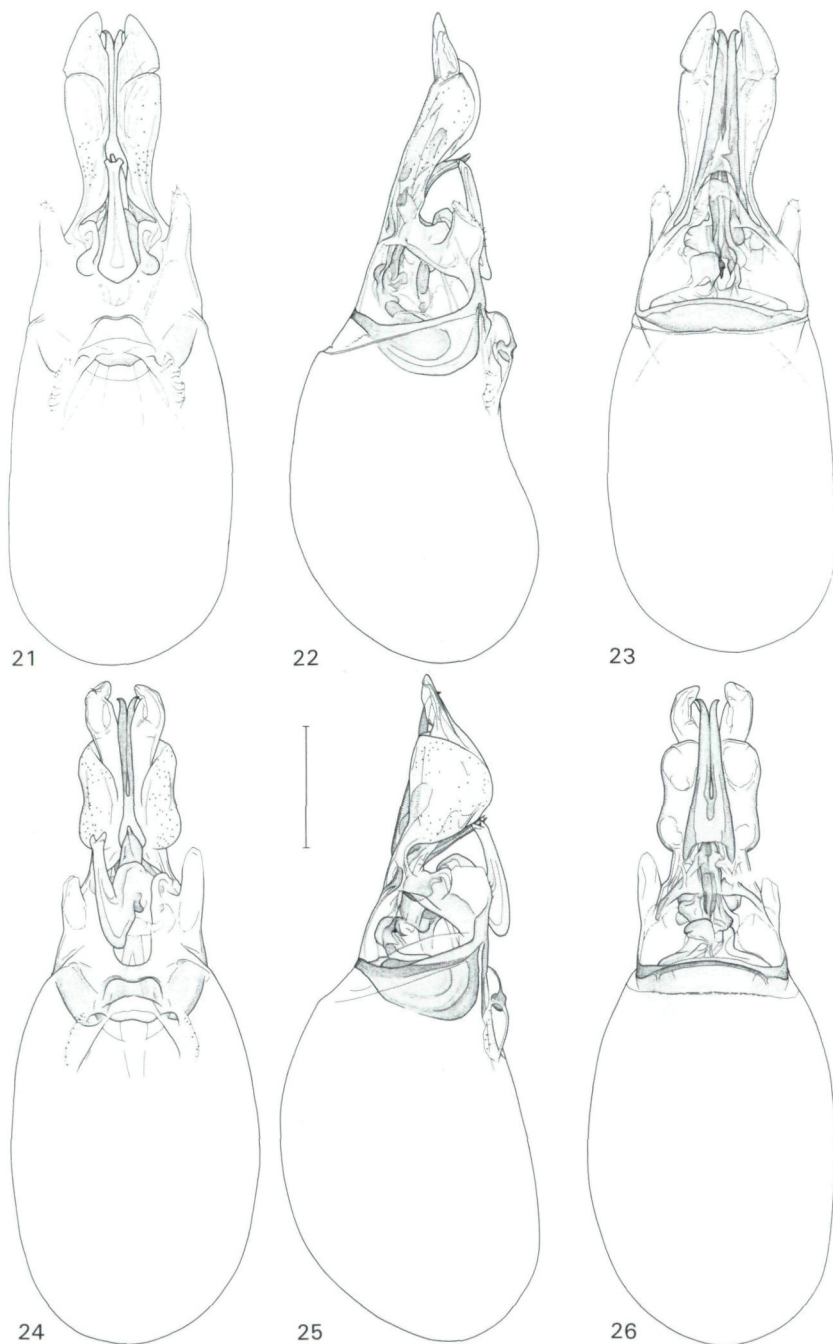
Figs. 1-3: *Scopaeus pusilloides*, ♂, holotype: aedeagus in 1) dorsal, 2) lateral, 3) ventral view.
Figs. 4-6: *S. pusillus*, ♂, lectotype: aedeagus in 4) dorsal, 5) lateral, 6) ventral view. Scale bar = 0.1 mm.



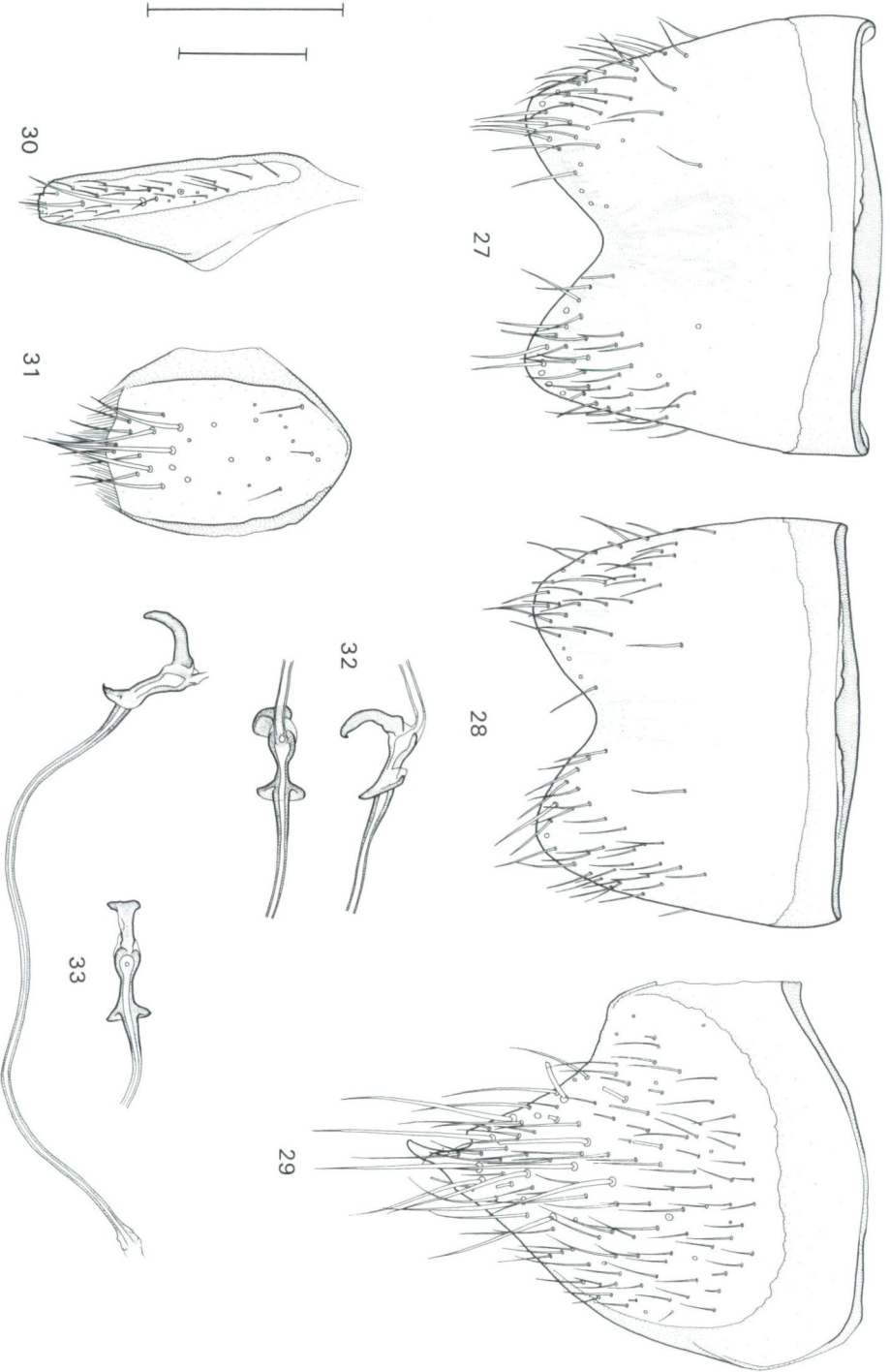
Figs. 7, 9, 10: *Scopaeus pusilloides*, ♂, holotype: 7) sternite 8, 9) lateral tergite 9, 10) tergite 10. Figs. 8, 11, 12: *S. pusillus*, ♂, Greece, Peloponnese: 8) sternite 8. ♀, Austria: 11) lateral tergite 9, 12) tergite 10. Scale bars = 0.1 mm, short scale bar refers to sternites 8.



Figs. 13 - 20: *Scopaeus tauricus*, ♂, holotype: aedeagus in 13) dorsal, 14) lateral, 15) ventral view. 17) sternite 8. ♀, paratype: 16) lateral tergite 9, 18) valve, 19) tergite 10, 20) spermatheca. Scale bars = 0.1 mm, short scale bar refers to sternite 8.



Figs. 21-23: *Scopaeus franzi*, ♂, Portugal, Vila Real: aedeagus in 21) ventral, 22) lateral, 23) dorsal view.
Figs. 24-26: *S. hispanicus*, ♂, Spain, Burgos: aedeagus in 24) ventral, 25) lateral, 26) dorsal view. Scale bar = 0.1 mm.



Figs. 27, 29 - 32: *Scopaeus franzi*, ♂, Portugal, Vila Real: 27) sternite 8, ♀, same locality; 29) lateral tergite 9, 30) valve, 31) tergite 10, 32) spermatheca.
Figs. 28, 33: *S. hispanicus*, ♂, Spain, Burgos: 28) sternite 8, ♀, same locality; 33) spermatheca.

Ratios. HLW 1.1 - 1.14; PLW 1.18 - 1.24; HPW 1.06 - 1.14; HPL 1.00 - 1.05; PSL 0.92 - 1.03; PLL 0.75 - 0.80; ELW 1.20 - 1.29; ET 0.49 - 0.56; MT 5.63 - 6.14; A 2.4, 1.5, 1.2, 1.2, 1.0, 0.9, 0.9, 0.8, 0.8, 0.9, 1.8. T 1.7; V (♀) 7.1.

GEOGRAPHICAL DISTRIBUTION. *Scopaeus franzi* is known only from northern Portugal, from Galicia and from the León Province in northwestern Spain. It obviously replaces the allopatric *S. hispanicus*, which is known from Spain south of Salamanca.

COMMENTS. *Scopaeus tricuspis* is considered to be a junior synonym of *S. franzi*, although the type specimens of *S. tricuspis* have not been studied. The synonymy is based on the excellent illustrations of the aedeagus (see OUTERELO 1978: Figs. 20 - 23), and by the corresponding areas of distribution. Based on the shape of the aedeagus, the allopatric species *S. franzi* and *S. hispanicus* are apparently adelphotaxa and form a distinct species group, which is characterized by the shape of the aedeagus (slightly sclerotized apical parts of the apical lobes, the characteristic shape of the dorsal lobe, the shape of the ventral endophallic spine and the well developed, slightly sclerotized lateral lobes). *Scopaeus hispanicus* was redescribed by FRISCH (1997).

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Johannes FRISCH

Institut für Allgemeine und Spezielle Zoologie, Justus-Liebig-Universität Gießen, Stephanstr. 24, D - 35390 Gießen, Germany

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Jahr/Year: 1997

Band/Volume: [67_1997](#)

Autor(en)/Author(s): Frisch Johannes

Artikel/Article: [Two new species of Scopaeus Erichson, 1840 from Anatolia and the Iberian Peninsula, with a redescription of Scopaeus franzi Coiffait, 1968 \(Staphylinidae\). 121-129](#)