

A REVIEW OF OLD WORLD SPECIES OF *THYREUS*  
PANZER (= *CROCISA* JURINE)  
(Hym., Apoidea, Anthophoridae)

Part 4. Palearctic Species

by

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With 38 text-figures and 4 plates

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A — GENERAL

Introduction

The present account is the fourth and last instalment<sup>1)</sup> of a partial revision of *Thyreus* Panzer, a melectine genus of parasitic anthophorid bees, geographically restricted to the Eastern Hemisphere.

1) References to communications published earlier on the same subject are to be found in the writer's last review of the Indo-Australian fauna, which appeared in this journal (Lieftinck, 1962, Zoologische Verhandlungen, Leiden 53: 1-212, 72 figs. & 3 plates).

Measurements: ♂ (holotype) body 9.0 mm, fore wing 8.3 mm; ♀ (allotype) 9.8 mm and 8.2 mm, respectively. The ♀ paratype is somewhat smaller.

Evidently very close to *T. impexus*. There are no near allies unless *Crocisa uncinata* Hedicke also belongs here, see p. 134). The names chosen for these two mountain species are allusions to the unkempt appearance of their body pubescence.

Distribution. — Mountains of Central Chiina:

*Thyreus illudens* sp.n. (fig. 19)

Material. — Central China, prov. Szechuan: ♂ (dissected), Wei Chow, 65 mi. NW of Chengtu, 5500-9000 ft., 1-4.viii.1933, D. C. Graham collector. Holotype in USNM.

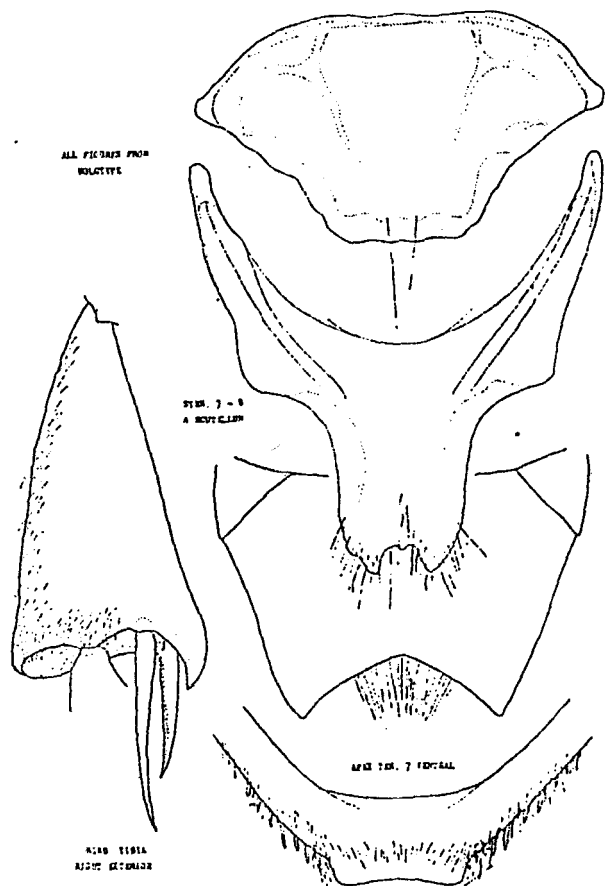


Fig. 19. *Thyreus illudens* sp.n., ♂ holotype from China. Scutellum, external view of right hind tibia and terminalia.

Male. — A unique specimen. Pubescence and wings rather worn but readily recognizable as a distinct species.

Superficially resembling *T. impexus* sp. n. and *incultus* sp. n., but body broader, shaped much as in *T. ramosus* and allies. Immediately distinguished from the latter by the long, loose, erect, greyish white and black hairs covering head and thoracic segments without forming a distinct pattern, the tomentum in this respect recalling the two species first mentioned. Like these, the fore wing membrane is strongly contrastingly coloured: hyaline are the radial cell (except a sharply defined stripe along basal vein), area posterior to the discoidal cells but including most of the hindmost (first) discoidal, as well as a streak below pterostigma and coalescent spots bordering the submarginal cells; for the rest the membrane is dark brown. Differs very markedly from *impexus* and *incultus* (which are both of them from the same region and altitude) by the flat scutellum, the hinder angles of which are even a little upturned; also the punctures of mesoscutum and scutellum are small, superficial and much more widely spaced than in these. The terminalia are, of course, entirely different (fig. 19).

Median impressed area of sternite 6 very shallow, narrowly oval with feebly developed longitudinal crest, punctures and hairs slightly fewer in number than on the surrounding area.

Female unknown.

Distribution. — Mountains of Central China.

*Thyreus histrionicus* (Illiger) (pl. 3 fig. 17; and fig. 20)

Selected references :

- 1806. Illiger, Magaz. f. Insectenk. 5: 99-100 (no. B 10). — "Südl. Europa, Portugall, Russland" (*Melecta histrionica* nov.)
- 1875. Morawitz, in Fedtsch. Reise Turk. Mellif. 1, Mem. Inp. Anthrop. & Ethnogr. 19 (2): 143. — ♀ ♂ Taschkent, etc., Turkestan; also Greece and Dalmatia (*C. major* nov. sp.)
- 1883. Pérez, Act. Soc. Linn. Bordeaux 37: 310-311. — Bordeaux, Royan; Pyrénées; Montpellier (*C. major* Mor.)
- 1893. Radoszkowski, Bull. Soc. Imp. Nat. Moscou, n.s. 7: 174, fig. 1 (♂ structures) (*C. major* Mor.)
- 1895. Friese, Bienna Europa's 1: 173-174 (key ♀ ♂), 175-176. — Europa; Canary Is.; Syria (*C. major* Mor.)
- 1905. Dusmet, Bol. Real Soc. esp. Hist. nat.: 156-157 (key ♀ ♂), 158. — Spain, various locs. (*C. major* Mor.)
- 1905. Pérez, Butlletí Inst. Catal. Hist. Nat. 5, num. 5: 81-82. — ♀ la Garriga, Catalon (*C. divisa* J. Pér. nov.). Syn. nov.
- 1913. Dusmet, Mem. Real Soc. esp. Hist. nat. 8: 333. — ♀ Morocco (*C. major* Mor.)
- 1920. Fertou, Ann. Soc. ent. France 89: 332-333 (biol. notes). — Djidjelli, Algeria (*C. major* Mor.)

- Meyer Archiv f. Naturgesch. 87 A: 77-78 (key ♀ ♂). 01-06 (partim): excl. var. *truncata* Pér.), incl. var. *alboscuteclata* Meyer. *Syn. nov.*
1927. Alfken, Konowia 6: 114, 117-119 (key ♀ ♂). — ♀ ♂ Cyrenaica (*C. dimidiatipunctata* M. Spin.)
1927. Alfken, Konowia 6: 114, 117-119 (key ♀ ♂). — ♀ ♂ Cyrenaica (*C. rimosiscutum* sp. n.) *Syn. nov.*
1927. Bischoff, Biologie Hym. Berlin: 399 (host record) (*C. major* Mor.)
1929. Alfken, Mitteil. Entom. Ver. Bremen 15-17. Ber. 1927-1929, p. ? (sep.). — ♀ ♂ Malta, descriptive notes (*C. major* Mor.)
1930. Schmiedeknecht, Hym. Nord- u. Mitteleuropas: 831-832. — ♂ ♀ "Südeuropa bis Budapest" (*C. major* Mor.)
1934. Alfken, Bull. Soc. R. Ent. d'Egypte 18 (1-2): 167, 169 (key ♀ ♂), 174. — Egypt (*C. major* F. Mor.)
1937. Maréchal, Bull. & Ann. Soc. ent. Belg. 77 (11): 400-403 (compar. notes), fig. 1, 3, 5, 6 and 10 (♂ ♀ struct.) (*C. major* Mor.)
1939. De Beaumont, Ann. Soc. ent. France 108: 164-165 (key ♂ ♀), 166-167, fig. 1 (♂ genit.), 8, 10, 16 and 20 (♂ ♀ striict.) — Europe, Afrique du Nord, Asia occ., Egypte (*C. histrionica* Ill.)
1954. Stöckhert, Abh. Bayer. Akad. Wiss. N.F. 65: 64. — S. Germany & Austria.
1957. Moczár, Apidae in Fauna Hung. 19: 1334-1335. — Hungary (*C. histrionica* Ill.; excl. var. *truncata* Pérez).
1958. Iuga, Anthophorinae, in Faun. Republ. Pop. Romine 9 (3): 215-216, 217-218 (pars), not fig. 82! — ♀ only; Rumania, various locs. (*C. histrionica* Ill.)
1958. Lieftinck, Comment. Biol. 18, Soc. Sci. Fennica: 30-31. — ♀ Canary Is.
1958. Moczár, Rovart. Közlem. (Biol. Ent. Hung.) n.s. 11 (Y) 415. — Hungaria, various locs. (*C. histrionica* Ill.)
1965. Leclercq, Bull. Inst. agron. et Stat. Rech. Gembloux 33: 115. — S. France, Spain, Portugal, Italy, Dalmatia, Sicily; flower records.
1967. Popov, Trudy Zool. Inst. Moscou 38: 102-103, 304 (host and flower records).
1967. Vergés, Miscelánea Zoológica, Barcelona 2 (2): 102 (key ♀ ♂), 104-105, fig. 1, 2, 7, 10 and 18. — Spaiiii.

Type material. — Spain: ♀, holotype *Crocisa divisa* J. Pérez, labelled: La Garige 15.vii. Bofill (J. Pérez' writing), Typus (red) 942, *Crocisa divisa* n. sp.? (unknown hand) (MZB). — Tripolitania: ♀, syntype *C. rimosiscutum* Alfken, lectotype by present designation, labelled: Cyrenaica, R. U. Agrario, Derna, VII, Geo C. Krüger, and *C. rimosiscutum* m., det. Alfken 1933 (ex coll. J. D. Alfken, ZMB).

Further material. — Like *T. ramosus*, this species in Europe has mainly southern distribution, being of common occurrence throughout the Mediterranean basin and far beyond towards the east. In West and Central Europe *histrionicus* seems to have a more easterly range and to be more widely spread than *ramosus*. Stöckhert (1954) records it from Sachsen, Brandenburg (Frankfurt-Oder), Franken (Erlangen), Hessen-Württemberg (Aschaffenburg) and Niederbayern in Germany; also from Schlesien in Poland and Niederösterreich in Austria. I have seen German *histrionicus* from the environs of Frankfurt a.M., Spandau (near Berlin), Giessmannsdorf in Nieder Lausitz (2 ♂ diss., vii.1950, ZMB) and Oberbayern. Records

for Austria are Wies (leg. Pittioni), Styria (BM) and Griffen, iii.1961, in Carinthia (CB). In collections from Czechoslovakia which I could examine *histrionicus* was represented from Celakovice, Karany, Holonin, Uher and Bzenek (Moravia mer.). Apparently widely distributed in Hungary (for records, see Moczár, 1958). Localities in Rumania are given by Iuga (1958). In France, *T. histrionicus* and *ramosus* often occur together: identified specimens are from Vaucluse (La Bonde), Var (Ramatuille, Callian, Montauroux, St. Aygulf), Bses-Alpes (Digne), Pyrén. Or. (Argelès-Plage, Banyuls), Hérault (Montpellier), Bouches-du-Rhône (Port de Bouc), Alpes-Mar. (Cagnes, Menton, Plateau S. Michel), Char.-marit. (Royan), H.-Gar. (Toulouse). Authorized localities in northern Italy are: Piemont (MP), Bolzano and Merano (ZMB), Triest, 12.vii.1897, leg. Ducke, *C. major*, det. J. D. Alfken (ZMB), and Venezia (CGS). Numerous specimens were examined by me from the Iberian Peninsula, Ibiza, the Balears, Corsica, central and southern Italy, Sardinia, Sicily, Malta, all countries along the Adriatic coast, the Ionian islands, Macedonia and Greece. Also from the islands in the Aegean Sea, Crete (where it is very common), and Rhodos.

The examples from Malta in the Berlin Museum (♂, Citadelle, l'leimes 1920; ♂♀, 1914, A. Rautenburg) were identified with *C. major* by Alfken in 1933, one being marked by him with "Schildchen grober punktiert". This is of interest, because in 1929 the same author also recorded *C. circulata* Alfken, a synonym of *T. ramosus* (Lep.), from Malta. This means that both *T. histrionicus* and *ramosus* occur in the island. Further specimens, also from Malta are: ix.1926, H. C. Harford (BM) and "Malte" (MP).

The following material, arranged more or less geographically from west to east, is from North Africa, the Eastern Mediterranean and other eastern countries.

Canary Is.: many ♂♀, Tenerife, 2.98. leg. Hintz (ZMB); Tenerife, various locs. (CV, CVS, ZSM). ♀, Gran Canaria, Maspalomas, 17.vi.1964, K. M. Guichard (BM); ♀, Gran Canaria, Cruz de Tejeda, 27.vi.1957, O. Lundblad (NRS); ♀, Hierro, Valverde, 500 m, vii.1966, K. M. Guichard (BM). ♂♀, Las Palmas (BM, DEI, ZMB). Series ♀, Fuerteventura, Puerto del Rosario, 30.iv. & 12.v.1964, K. M. Guichard (BM). — Morocco: ♀, Morocco (ZMB). ♀, Tanger (MP). ♀, Maroc, Ifrane, vii.1932, leg. Nadig, *C. major*, det. J. D. Alfken 1933 (ZMB). ♂♀, Haut Atlas, Asni, 1150 m, 14.vii.1963, W. Linsenmaier (CL). ♀, Rabat-Chellah, 18.v.1966: 2 ♀, Marrakech, 31.v.1966; and Jbelet, 50 km E of Marrakech, 9.vi.1966; all M. A. Lieftinck (ML). — Algeria: ♀, Alger, R. P. Guillemé (ML); ♂♀, La Calle, vii.96, Biskra and Algérie (BM). ♂, Biskra, A.5.54. W.

Linsemaier (CL). ♂, Algier, leg. Merkl. (MBUD). ♂♀, Bône and Alger (MP). ♀, Algerien, Constantine, vii.1910, leg. Seitz, *C. scutellaris*, det. E. Strand (ZMB). ♂♀, Sahara, Laghouat (IRSN). — Tunisia: ♂ (diss.), Tunisie, Hammamet, iv.1960, W. Grünwaldt (CVS). — Tripolitania: series ♂♀, Leptis Magna, vi, E. M. Guichard (BM). Series ♂♀, Cyrenaica, Wadi Derna; viii and Benghazi, Rommel's Pool, viii, K. M. Guichard (BM). ♂ (diss.) ♀, Cyrenaica, R. U. Agrario 8229, Geo. C. Krüger, *C. dimidiatipunctata*, det. J. D. Alfken and *C. major*, det. J. D. Alfken 1932 (ZMB). — Egypt: several ♂♀, Egypt, Beni Meggon, xi.1924; Wadi Mayer, x.1925; Pyramids, vi.1932, all leg. Mabroek, labelled *C. major* Mor., by J. D. Alfken (ZMB). ♂, Egypt, Meadi, Dept. Agric. Egypt 1911, coll. L.H.G. (EM). ♀, "Syria Aegypten", Morice 10, *C. truncata*, det. H. Friese, *C. major* Mor., det. R. Meyer (ZMB). ♀, Eastern Desert, Wadi Hof, 12.vi.1930, H. Priesner, *C. major* Mor., det. J. D. Alfken (CP). ♂ (diss.), Egypt, Abou Rouache, 3.ii.1938, Coll. Anastase Alfieri (USNM). — Syria: ♂, Nord-Libanon, Becharre, 1-4.vii.1931, leg. Zerny (NMW). ♀ Syrie, Akbès, Été 1890, leg. Ch. Delagrange (ML). ♂ (diss.), Beirut, ii-iv.1919, E. S. Sewell (BM). — Cyprus: many ♂♀, various locs. & coll. — Asia Minor (Turkey): ♀, Bosphorus, Beiko (MBUD). ♀, Asia Minor (DEI) and Asia Minor, Amasia (MP). Series ♂♀, Turkey, Bursa Orhangazi; Ankara; İçel; ♂ (diss.), Ararat, below Serdarbulak, 5000 ft., 7.ix.1960; ♂ (diss.), Adana; Osmanlye Area, 200 ft., 19.vi.1960; all K. M. Guichard & D. H. Harvey (BM). ♀, Taurien, Sudagh, viii.1861, leg. Nordmann, *C. ramosa*, det. H. Friese 1908 (ZMB). 2 ♂ (diss.) ♀, Turkey, Mut, 9-13.vi.1965, Max. Schwarz (CMS). — Sokotra [Gulf of Aden]: Hadibo, ii.1953 (BM). — Iran: ♂ (diss.) 3 ♀, Persien, Elburs, Meshediser, vi.1927 & Kiasar, 1200 m, vii.1927, G. Heinrich, *C. scutellaris* F., det. J. D. Alfken (ZMB). — USSR: ♂, E. Russia, Orenburg, coll. O. Sichel (MP). 2 ♀, Russia mer., Jekaterinalow, leg. (?) Bramson (ML). ♂ (diss.), Sarepta [= Krasnoarmeysk, S. of Saratov], 1893, leg. Becker, *C. major*, det. R. Meyer, *C. tricuspis*, det. H. Friese (ZMB). ♀, Sarepta, coll. O. Vogt (MA) and ♂♀, Sarepta (MBUD). ♂♀, Krim, leg. Nordm. (ZMB). ♂♀, Nord Ukraine, südl. Gomel, viii.1941, leg. Kl. Zimmermann (ZMB). ♀, Caucasus, Batum, coll. Konow (DEI). ♂ (diss.), Transcaucasus, Helenendorf 1886 (BM). ♀, Turkestan, Mts. Ghissar, F. Hauser 1898 (ZMB). ♀, Samarkand (MP). ♂ (diss.), Bucharia/Repetek [Repetek. S of Thardjou] (ZMW). ♂♀, Bukhara, Tschardschui [Thardjou], 1913, H. Veth (BM). ♂♀, Ost-Turkestan, Narin (ZMB). 2 ♀, Aulie Ata, Syr-Darja and Altai (DEI). 2 ♂ (diss.) 2 ♀, Tyan-Chan occid. [Kirgiz], Mouts Sussamy, Ketmen Tjube, M. Pic 1914 (MP). — China (Sinkiang): 2 ♂ (diss.)

♀, Chin. Turkestan, Chassan Bugra-Jarkand, 1740 m, 9.7.90 (♀) and Sampuia b. Chotan, 1250 m, 13-15.6.1890, and Chotan, 1200 m, 6.1890

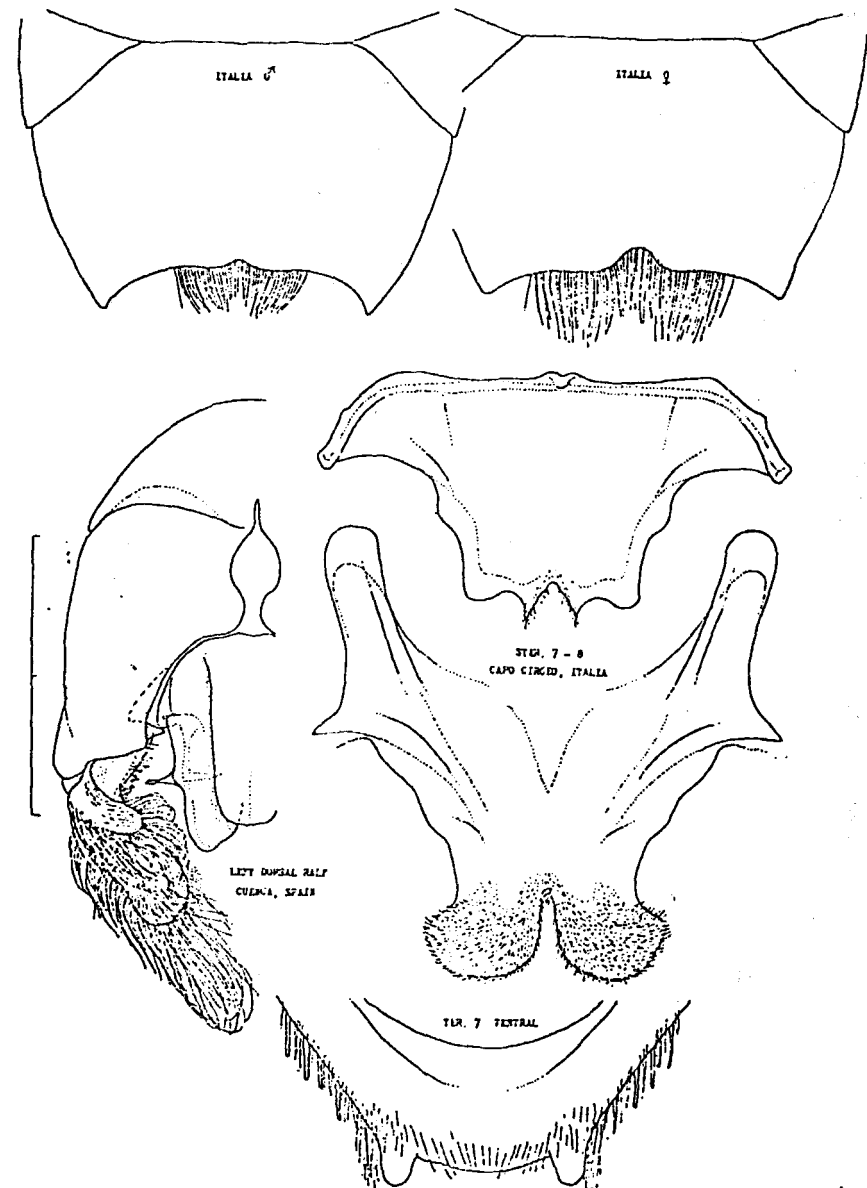


Fig. 20. *Thyreus histrionicus* (Illiger), from Italia and Spain. Scutella and ♂ terminalia after specimen from Capo Circeo (Italy) and genitalia after ♂ from Spain. Scale-line — 1 mm.

(♂), all leg. Conrath (ZMB). ♀, Kashgar, leg. Raquette (NRS). ♀, Sin-Kiang, Dsungarei, Kuldsha, ix.1924, leg. Beik (ZMB).

A well-known and widely distributed species that has often been mentioned in the literature. All the same, it is easily confounded with other members with partly overlapping ranges, like *T. hellenicus* sp.n., *picaron* sp.n. and certain individuals of *parthenope* sp.n. The most obvious characters thus far employed in taxonomic works, i.e. shape of scutellum and apical tergite of abdomen, do not always suffice to recognize even the male. In doubtful cases, where the existing variability of external body parts may give rise to confusion with other species, it will be necessary to dissect out the terminalia, which are altogether different on comparison with those of the species just mentioned. With respect to the general form and microvestiture of the internal organs, two other species, *T. truncatus* and *hirtus*, appear to be more nearly allied. In details of structure, however, *histrionicus* shows some characteristic differences, most easily understood by comparing the figures, which have proved to be constant, ensuring its recognition. The gonostylus of the three species involved, viewed from the side, has been well figured by de Beaumont (1939).

Vestiges of the maxillary palpi usually consist of two minute segments, as in *T. ramosus*, but the palpus may be reduced to a single rudiment.

Females diverging from the common type in some way or other should be looked on with caution as they might belong to the undescribed sex of the much rarer *T. picaron* sp. n. For instance, in a series of 11 males (all of them dissected) and 19 females from Palamos (Catalonia, Spain), vii-ix. 1959, leg. Bischoff (ZMB), I found 10 males and all (?) females to be *histrionicus*, only 1 male belonging to *T. picaron* sp. n. (see under that species).

Synonymic notes. — I have not seen Meyer's variety *alboscuteclata* (♂, Gultscha), which is admittedly only a variety with some whitish hairs above the emargination of the scutellum. The type of *C. divisa* Pérez is a normal individual of *histrionicus* and it is difficult to comprehend why the author considered it a distinct species. A direct comparison reveals the following discrepancies in the description: (1) total body length 12.5 mm (not 10 mm, as stated); (2) the "pinceau sous-scutellaire" is not "dédoublé", although the hairs are shortest medially, as they frequently are; (3) only the basitarsi and last segment are white-haired externally; (4) antennae differ not from those of *histrionicus*; (5) scutellum comparatively short but posterior emargination and hinder angles not unusually formed; and (6) pygidial plate normally triangular, the median crest not "fortement

caréné", but blunt. I have compared the type of *divisa* also with the female of *hellenicus* m., a species likewise occurring in Spain. Suffice it to say that the two are not conspecific, the differences between *histrionicus* and *hellenicus* being set forth in the description of the latter. The status of two North African species, *C. rimosiscutum* and *C. circulata*, both described by Alfken (1927), also requires consideration. But for the characterization he gave of *tricuspis*, the key characters Alfken used to discriminate between the four *Crocisa* he had from Cyrenaica, are quite misleading. This is due mainly because Alfken mistook the true *histrionicus* for *C. dimidiatipunctata* (sic), an error that was admitted and corrected by him some years later (see Alfken, 1934: 172, sub *C. major* F. Mor.). And secondly, Alfken failed to realise that the definitions of his two new species (male as well as female) are based on trifling characters falling well within the range of individual variation of each. His *C. rimosiscutum* now turns out to be *histrionicus* as well, while both sexes of *C. circulata* are identical with *T. ramosus* (Lep.). It must be pointed out also that the localities given for *C. rimosiscutum* in Alfken's list should be transposed, the female (not the male) being labelled as from Derna. I have not seen the male (which is probably lost) but since both examples were listed "Typus" in Alfken's paper, I have designated the female from Derna in the Berlin Museum as the lectotype of *C. rimosiscutum*. This differs in no way from typical *histrionicus* of that sex (pl. 3 fig. 17).

Lastly, attention must be drawn to Iuga's account of the anthophorid bees of Rumania, in which the author supplies figures of the 7th gastral sternite and male genitalia of alleged *T. histrionicus*. The slide preparations on which these drawings were based are, however, obviously taken from a different species, probably *T. hellenicus* sp. n. If so, it would mean that the latter species also occurs in Rumania, which is not surprising.

Flower record. — *Knautia arvensis* (near Spandau).

Host (see also p. 8, *huj. op.*). — *Anthophora* (rect. *Amegilla*) *quadri-fasciata* (Vill.), sec. Ferton, 1920, and Bischoff, 1927, sub *Crocisa major* Mor.; *Amegilla quadri-fasciata* (Vill.), sec. Stöckert, 1954. Iuga, 1958, and Popov, 1967. A series of ♂♀ from Simontornya (W. Hungary), in the Budapest Museum, bear labels with "7.1933, bei *Anthophora albigena*, leg. Pillich"; these were identified by Alfken as *C. albociliata* R. Meyer.

*Thyreus hirtus* (de Beaumont) (fig. 21)

1905. Dusmet, Bol. Real Soc. esp. Hist. nat.: 156-157 (key ♀♂), 157. — ♂ Madrid. notes (*C. scutellaris* F.)

1939. De Beaumont, Ann. Soc. ent. France 108: 163 (key ♂♀), 169-170, fig. 5 (♂ genit.), 12 and 22 (structures). — ♂♀ Suisse, France & Corse (*Crocisa hirta*, n. sp.)