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Metrioptera-group, showing that all these genera form a higher natural unit.

Pronotum. Several genera with much-abbreviated clytra have rounded pronota. It is at present impossible to indicate their exact affinities, since convergence has produced a considerable degree of resemblance. On the whole there appears to be a tendency for the pronotal carinae to disappear where the wings have become functionless. Much rounded pronota are often combined with very short clytra, though this does not apply without exception. In some genera, the shape of the pronotum is typical for all species, as for instance in *Montana*, *Platyceis*, *Tessellana*, in which the disc is depressed and anteriorly converging carinae are indicated, or in *Sporadiana* in which the pronotum is smoothly rounded, with a narrow back and obliquely sloping lateral lobes. In other genera, however, the shape of the pronotum is less constant, as for instance in *Parnassiana*, in which rounded and depressed pronota occur side by side, and to a minor degree in *Decorana*. In view of this fact, and on the evidence of the structure of the subgenital plate and the general coloration, most of the extremely brachypterous genera have been attached to the *Platyceis*-group.

Arrangement of genera. Summarising the evidence, one arrives at the following arrangement of the genera which, to some extent, reflects their phylogenetic relationships:—

- (*Eodecticus*)
 - (*Decticus*)
 - (*Medecticus*)
 - 1. *Montana* (related to *Decticus*)
 - 2. *Semenoviana* (related to *Montana*)
 - 3. *Parnassiana* (related to *Pholidoptera*)
(*Pholidoptera* and allies)
 - 4. *Platyceis*
 - 5. *Squamiana*
 - 6. *Allicolana*
 - 7. *Sepiana*
 - 8. *Tessellana*
 - 9. *Incertana*
 - 10. *Decorana*
 - 11. *Sporadiana*
 - 12. *Eumetrioptera*
 - 13. *Metrioptera*
 - 14. *Sphagniana*
 - 15. *Bicolorana*
 - 16. *Roeseliana*
- } *Platyceis*-group
- } *Platyceid*iii
- } *Metrioptera*-group

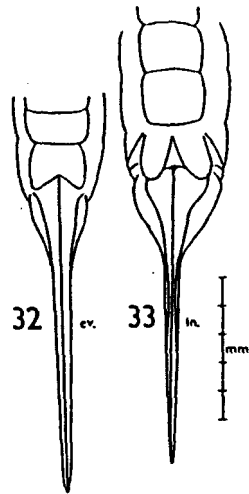
AN ARTIFICIAL KEY TO THE GENERA.

This key is based on the 74 species represented in the British Museum. Characters common to both sexes are used in conjunction with those of the female genitalia.

1. Ovipositor regularly curved, maintaining its width for some distance, tapering only towards the apex, mostly much longer than pronotum (figs. 1-21) 2.
- 1a. Ovipositor suddenly recurved near base, then tapering rapidly, rarely longer than pronotum, often shorter than pronotum (figs. 22-31) 12.

2. Ovipositor light-coloured, often with apex and edges dark, much longer than pronotum, and fairly straight 3.
- 2a. Ovipositor compressed and high, dark-coloured with yellow base, or brown throughout 5.
3. Hind femora at least three times as long as pronotum. Slender species 4.
- 3a. Hind femora hardly more than twice as long as pronotum. Stout species. Elytra much abbreviated. Dark brown *Parnassiana* gen. n. (p. 18).
4. Small to medium-sized species. Disc of pronotum depressed, with distinct edges converging anteriorly. In habitus reminiscent of *Platyceis* Fieb. Ovipositor with dark apex and edges. Many macropterous species *Montana* gen. n. (p. 15).
- 4a. Medium-sized species. Disc of pronotum rounded, not depressed, lateral keels absent. Hind legs very long. Edge of pronotal lobes with an unusually narrow yellow band *Sepiana* gen. n. partim (p. 35).
5. Fully-winged species. Grey, yellowish-grey, or greyish-brown with spotted clytra. Green coloration abnormal. Female subgenital plate with longitudinal furrow *Platyceis* Fieb. partim (p. 22).
- 5a. Elytra and wings abbreviated 6.
6. Hind femora hardly more than twice as long as pronotum. Stout species. Pronotum rounded, lateral keels absent *Eumetrioptera* Mir. (p. 39).
- 6a. Hind femora at least 2½, mostly three to four times as long as pronotum. Species of average build or slender. Pronotum variable 7.
7. Brown or greyish-brown species of the *Platyceis*-pattern. Pencil 7th sternite modified or not 8.
- 7a. Dark brown or partly green species. Female 7th sternite not modified 11.
8. Female 6th (and 7th) sternite modified 9.
- 8a. Female 6th sternite not modified, 7th larger than 6th, or of normal size 10.
9. Hind femora four times as long as pronotum. Ovipositor widest in distal third. Pronotum long, without lateral keels, with a marked, unusually thin edge of the lobe *Sepiana* gen. n. partim (p. 35).
- 9a. Hind femora 2½ times as long as pronotum. Pronotum broad, rounded anteriorly, flattened in metazona. Yellow edge broad or indistinct *Squamiana* gen. n. (p. 34).
10. Back of pronotum depressed, at least in metazona. Female 7th sternite unmodified or very slightly enlarged, never with pointed and flattened tubercles on the hind margin *Platyceis* Fieb. partim (p. 22).
- 10a. Back of pronotum not depressed. Female 7th sternite much wider and longer than 6th, with two pointed and flattened tubercles on the hind margin *Allicolana* gen. n. (p. 34).
11. Metazona of pronotum normal, only slightly wider than fore portion *Metrioptera* Wesm. (p. 40).
- 11a. Metazona of pronotum enlarged, twice as broad as fore portion *Sphagniana* gen. n. (p. 43).
12. Hind femora 2½ times as long as pronotum, bottle-shaped, thin distal portion very short. Pronotum much rounded, lateral keels absent, pattern on back very narrow. Elytra shorter than pronotum. Small species *Sporadiana* gen. n. (p. 39).
- 12a. Hind femora of normal shape and size, or long and slender 13.
13. Pencil 7th sternite with longitudinal carina. Back of pronotum flat or triangularly depressed. Macropterous or brachypterous, clytra with a very marked line of black spots between R and M *Tessellana* gen. n. (p. 36).
- 13a. Female 7th sternite without longitudinal carina, though sometimes gibbous or spined 14.
14. Female 6th sternite twice as long as fifth or seventh *Semenoviana* gen. n. (p. 18).

- 14a. Female 6th sternite approximately of the same size as other sternites . . . 15.
 15. Last tergite with a deep and narrow incision, its lobes extended into long spines which, in the male, are almost as long as the cerci. Female 7th sternite with indistinct cross-ridge. Small to medium-sized, in habitus reminiscent of *Tessellana* *Incertana* gen. n. (p. 37).
 15a. Last tergite of female with very short spines only 16.
 16. Ovipositor $\frac{1}{2}$ to $\frac{3}{4}$ as long as hind femur. Medium-sized species, brown. Back of pronotum broad, lateral lobes more divergent than usual *Decorana* gen. n. (p. 38).
 16a. Ovipositor $\frac{1}{3}$ or less as long as hind femur. Medium-sized to fairly large species. Coloration brown, green or yellow, shiny 17.
 17. Female subgenital plate much longer than wide, tightly fitting the base of the ovipositor (except in *B. domogledi* which approaches *Roeseliana*) *Bicolorana* gen. u. (p. 44).
 17a. Female subgenital plate large, deeply bilobate, standing off, not touching the sides of the ovipositor *Roeseliana* gen. n. (p. 48).



FIGS. 32 and 33.—The two main types of ovipositor, viewed from below. Fig. 32, *Montana evermanni* (Kitt.); fig. 33, *Platycleis intermedia* (Serv.). same specimens and same enlargement as figs. 3 and 19 respectively. Considering the much smaller size of *M. evermanni*, its ovipositor is much thicker throughout, whilst that of *P. intermedia* is very thin beyond the basal swelling. The former is a piercing instrument, the latter a cutting instrument.

LIST OF GENERA AND SPECIES.

The following signs and abbreviations are used:—

- * Specimens studied of the species in question.
 H Holotype studied.
 P Paratype or paratypes studied.
 C Cotype or cotypes studied.
 L Lectotype studied.

Where "Type locality", but no "Distribution" is given, the species is so named from the type locality only.

1. *Montana* gen. n.

Genotype. *Locusta montana* Koll.

Diagnosis. Small to medium-sized. Elytra (if fully developed) narrow, with a very long sector radii, not exceeding the hind knees. Pronotum depressed above, lateral keels indistinct but present, converging anteriorly. Coloration nearly always brown, grey or yellow, rarely green. Elytra spotted.

Female subgenital plate with little or no sculpture on surface, often with a median carina, but never with a furrow or groove. Lateral lobes rounded, pointed, or absent. Ovipositor more than half as long as hind femur, slightly curved, light-coloured (grey or yellow), often with dark brown tip and edges.

* 1. *Montana montana* (Koll.), fig. 2.

1830. *Locusta tessellata* Charp. : Philippi, *Orth. Berol.* : 23, pl. 1 fig. 4. (Misidentification.)

1833. *Locusta montana* Kollar, *Beitr. Landeskd. Österr.* 3 : 79.

1840. *Decticus trockii* Kittary, *Bull. Soc. Nat. Mosc.* 22 : 459, pl. 8 fig. 3. (Mount Bogdo.)

1840. *Decticus philippicus* Zeller, *Stettin. ent. Ztg.* 10 : 116.

1853. *Decticus (Platycleis) montanus* Kollar : Fischer, *Orth. Eur.* : 271, pl. 13 fig. 4, 4a-c. (Synonymises *philippicus* Zell. with *montana* Koll.)

1939. *Metrioptera trockii* Negediv & Miram, *Bull. Inst. Res. biol. Perm* 11 (9-10) : 270. (Regard *trockii* as distinct from both *evermanni* and *montana*.)

Type Locality. Mt. Anninger, Mödling, near Vienna.

Distribution. Germany, Italy, Austria, Balkan Peninsula, Russia, Siberia, Altai, Mongolia, Yakutia.

* 2. *Montana striata* (Hfitt.).

1849. *Decticus striatus* Kittary, *Bull. Soc. Nat. Mosc.* 22 : 462, pl. 8 fig. 4.

1024. *Metrioptera moldavica* Uvarov, *Trans. ent. Soc. Lond.* 1923 : 630, pl. 28 figs. 24, 25. (Berlad valley, Moldavia.)

1032. *Metrioptera striata* Kittary : Uninov, *Konowia* 11 : 23. (Synonymises *moldavica* with *striata*.)

Type Locality. Stawka-Chana, Kirguize Steppe.

Distribution. South-east Russia, Moldavia.

* 3a. *Montana evermanni evermanni* (Kitt.), figs. 3, 32.

1849. *Decticus evermanni* Kittary, *Bull. Soc. Nat. Mosc.* 22 : 459, pl. 8 figs. 1, 2.

1931. *Platycleis evermanni* (Kitt.) : Ramme, *Mit. zool. Mus. Berlin* 17 : 180. (Synonymises *dubia* Uv. and *falszeini* Rmc. with *evermanni*.)

Type Locality. Désert des Kirguises.

Distribution. South-east Russia, west and central Siberia.

3b. *Montana evermanni zaisanica* (B.B.).

1026. *Metrioptera evermanni zaisanica* Bey-Bienko, *Trans. Sil. Akad. Agr. For. Omsk* 6 (8) : 6, fig. 1.

Type Locality. Lake Zaisan, Semipalatinsk, Siberia.

* 4. *Montana falszeini* Rmc.

1920. *Platycleis falszeini* Ramme, *Arch. Naturges.* 86 : 131, figs. 14-17.

1031. *Platycleis evermanni* Kitt. : Ramme, *Mit. zool. Mus. Berlin* 17 : 180 (partim).

Type Locality. Askania Nowa, Gouv. Cherson, south Russia.

Remarks. Ramme is inclined to synonymise this and the following species (*dubia* Uv.) with *evermanni* Kitt.

* 2d. *Platypleis grisea* f. *mirabilis* Rmc.

1023. *Platypleis grisea* f. *mirabilis* Ramme, *Arch. Naturgesch.* 89 : 167.
 1027. *Platypleis grisea* f. *mirabilis* Ramme : Ramme, *Eos* 3 : 139.

Type Locality. Eisack valley, southern Alps.

Remarks. Colour variety.

* 3a. *Platypleis intermedia intermedia* (Serv.), fig. 19.

1839. *Decticus intermedius* Serville, *Ins. Orth.* : 488.
 1846. *Decticus krinickii* Fischer-Waldheim, *Nouv. Mém. Soc. Imp. Nat. St. Pétersb.* 8 : 164, pl. 10 fig. 3. (Khar'kov.)
 1853. *Decticus (Platypleis) griseus* Fab. variet. major : Fischer, *Orth. Eur.* : 270.
 1922. *Metrioptera intermedia* (Serv.) : Chopard, *Faune de France* 3 : 83, 61, figs. 211, 214.
 1924. *Metrioptera intermedia* (Serv.) : Uvarov, *Trans. ent. Soc. Lond.* 1923 : 636.
 1927. *Platypleis intermedia* Serv. : Ramme, *Eos* 3 : 140, fig. 15d; pl. 5 fig. 3; pl. 6 fig. 4.
 1929. *Metrioptera intermedia* Serv. : Miram, *Annu. Mus. zool. Acad. Sci. URSS* 1020 : 465, 468, pl. 36 fig. 21a, b, c.
 1929. *Platypleis intermedia* Serv. : Zcuner, *Mitt. zool. Mus. Berlin* 16 : 209, fig. 4.

Type Locality. Montpélier, Prauce.

Distribution. Morocco, Spain, south France, Corsica, Italy, Dalmatia, Greece, Serbia, Asia Minor, Palestine, Cyprus, Iran, Baluchistan, south Russia, Turkestan, Altai, China. (I have seen no specimens from Altai or China.)

* 3b. *Platypleis intermedia turanica* Znr.

- HP 1929. *Platypleis intermedia turanica* Zcuncr, *Mitt. zool. Mus. Berlin* 15 : 209, figs. 1 and 4.

Type Locality. Buchara.

Distribution. Turkestan.

* 3c. *Platypleis intermedia mesopotamica* Rmc., fig. 20.

- II 1927. *Platypleis mesopotamica* Ramme, *Eos* 3 : 141, fig. 15e; pl. 6 fig. 5.
 1929. *Platypleis mesopotamica* Ramme : Zcuner, *Mitt. zool. Mus. Berlin* 15 : 213, fig. 7.

Type Locality. Tel Halaf, central Mesopotamia.

Distribution. Greece, Transcaucasia, Turkestan, Cyprus, Mesopotamia, Iran, Baluchistan.

Remarks. This form, in which the 6th sternite of the female repeats more or less the structure of the 7th, is connected with typical *P. intermedia* by many transitions. It is most frequent in the Near East, where it appears to dominate in certain districts over the typical form. It is certainly not more than a subspecies.

* 3d. *Platypleis intermedia sylvestris* Az.

1001. *Platypleis intermedia* var. *sylvestris* Azam, *Misc. ent.* 9 : 158.
 1022. *Metrioptera intermedia* var. *sylvestris* Azam : Chopard, *Faune de France* 3 : 83, fig. 213.
 1027. *Platypleis intermedia* subsp. *sylvestris* Azam : Ramme, *Eos* 3 : 141.

Type Locality. Bagnols, Var, south France.

Remarks. According to Ramme, who saw the holotype, not essentially different. It is characterised by a prominent sculpture of the 7th sternite and a gibbosity on the 6th. It thus approaches *P. i. mesopotamica*. Owing to the courtesy of Dr. Chopard, I have been able to examine a male and a female from the type locality.

3c. *Platypleis intermedia umbilicata* (Costa).

1885. *Platypleis umbilicata* Costa, *Bull. Soc. ent. Ital.* 17 : 242.
 1911. *Platypleis biedermanni* Wolf, *Zool. Anz.* 37 : 121, figs. 1-3. (Asuni, Sardinia.—Possibly identical with *umbilicata*.)

Type Locality. Sardinia.

Remarks. Perhaps identical with typical form.

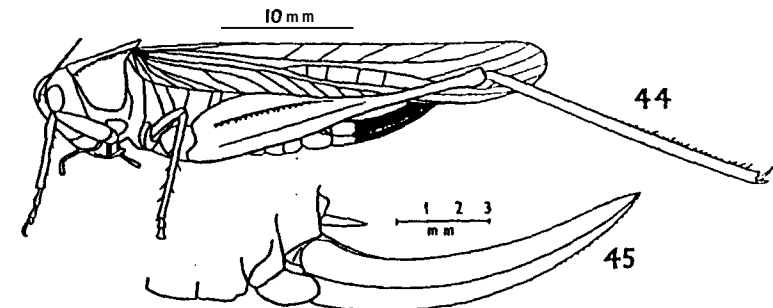
* 4. *Platypleis ragusai* Rmc.

- HP 1927. *Platypleis ragusai* Ramme, *Eos* 3 : 140, fig. 15c; pl. 5 fig. 2, pl. 6 fig. 3.
 1929. *Platypleis ragusai* Ramme : Zcuner, *Mitt. zool. Mus. Berlin* 15 : 214, fig. 7.

Type Locality. Colle S. Rizzo near Messina, Sicily.

Distribution. Sicily.

Remarks. Possibly a subspecies of *P. intermedia*.



Ras. 44-45.—*Platypleis pathana* sp. n. 44. Lateral view. 45. Ovipositor.

* 5a. *Platypleis sabulosa sabulosa* Az.

1901. *Platypleis sabulosa* Azam, *Misc. ent.* 9 : 157.
 1922. *Metrioptera sabulosa* (Azam) : Chopard, *Faune de France* 3 : 83, 61, figs. 215, 216.
 1927. *Platypleis sabulosa* Azam : Ramme, *Eos* 3 : 139, fig. 15b, pl. 6 fig. 2.
 1929. *Platypleis sabulosa* Azam : Zcuner, *Mitt. zool. Mus. Berlin* 15 : 211, fig. 6.

Type Locality. Tréjus, French Riviera.

Distribution. Canaries, Spain, south France, Algeria, Palestine.

Remarks. I have examined a pair from the type locality. In these, the ridge connecting the two tubercles of the 7th sternite is fairly prominent. It is often weak in other specimens.

5b. *Platypleis sabulosa indecisa* (Bol.).

1914. *Metrioptera sabulosa indecisa* Bolívar, *Mem. R. Soc. Esp. Hist. nat.* 8 : 232.

Type Locality. Tanger.

Distribution. Morocco, and elsewhere in the area of the species.

Remarks. Apparently almost identical with typical form. The 7th sternite of the female is said to be nearly flat. Such specimens are very frequent, not only in Morocco, and connected with *P. sabulosa sabulosa* by numerous transitions. They hardly deserve a name.

* 6. *Platypleis pathana* sp. n., figs. 44, 45.

Diagnosis. More slender than any other species of *Platypleis*. Pronotum small. Elytra considerably exceeding the hind knees, of the *sabulosa*-type.

Fieb., the structure of the pronotum is that of *Sepiana*, and the peculiar male cerci may be derived from those of *S. sepium*. The position of this species, however, remains doubtful so long as the female is unknown.

ii. *Sepiana kraussi* (Pad.).

1900. *Platyceis kraussi* Padewieth, *Glasn. Hrvats. naravoslov. Društ. Zagreb* 11 : 30.

Type Locality. Sv. Križ near Piumc, Croatia.

Remarks. Said to be most closely allied to *modesta*. Description insufficient and contradictory. Tentatively placed here.

8. *Tessellana* gen. n.

Genotype. *Locusta tessellata* Charp.

Diagnosis. Size small to medium. Elytra fully developed and very slender, or reduced. A row of black markings between R and M, separated by oblique cross-veins, is universally present. Pronotum as in *Platyceis* and *Montana*, slightly depressed above, with fairly distinct lateral keels which converge anteriorly. Hind legs variable in size, but never short. Coloration strawy-yellow to mottled brown.

Male last tergite with two short processes.

Female last sternite with a sharp, longitudinal ridge. Subgenital plate with a median furrow. Ovipositor very short, rapidly tapering and sharply bent upwards near the base. About as long as the pronotum.

Remarks. This genus is easily recognisable by its ovipositor and the markings of the elytra. It is closely allied to *Platyceis* on the one hand, and to *Incertana* on the other.

* 1. *Tessellana tessellata* (Charp.), fig. 30.

1825. *Locusta tessellata* Charpentier, *Hor. ent.* : 121, pl. 3 fig. 4.

1922. *Metrioptera tessellata* (Charp.) : Cloupe, *Faune de France* 3 : 83, 61, figs. 207, 208.

Type Locality. "Gallia meridionalis, Lusitania."

Distribution. Canaries, Morocco, Algeria, Spain, Portugal, south France, south-west Germany, Italy, Sardinia, Sicily, Balkan peninsula, south Russia, Turkey, Palestine.

* 2. *Tessellana vittata* (Charp.).

1825. *Locusta vittata* Charpentier, *Hor. ent.* : 116.

Type Locality. Hungary.

Distribution. Balkan peninsula, south Russia, Asia Minor, north Persia, Transcaucasia, Turkestan.

* 3. *Tessellana nigrosignata* (Costa).

1863. *Decticus nigrosignatus* Costa, *Atti Acad. Sci. Napoli* 1 (2) : 30, pl. 3 figs. 3, 3c, 4.

1899. *Platyceis orina* Burr, *Ent. Rec.* 11 : 20.

1908. *Metrioptera orina* Burr : Caudell, *Gen. Ins.* 72 : 32. (Misspelling.)

1912. *Platyceis orina* Burr : Karny, *Wien. ent. Ztg.* 31 : 292. (Identifies *nigrosignata* with *orina*, but uses latter name.)

1922. *Metrioptera carinata* Berland & Chopard, *Bull. Mus. Hist. nat. Paris* 28 : 231, fig. 5. (Vakoufkoï, N.-E. of Florina, Macedonia.)

1924. ~~*Melocarinata nigrosignata*~~ (Costa) : Uvarov, *Trans. ent. Soc. Lond.* 1023 : 531. (Synonymy-)

Type Locality. "Calabria ulteriore."

Distribution. Balkan peninsula, and Calabria.

4. *Tessellana seniae* (Fin.).

1893. *Platyceis seniae* Finot, *Bull. Soc. ent. France* 1803 : celi.

1896. *Platyceis seniae* Finot : Finot, *Ann. Soc. ent. France* 65 : 535.

Type Locality. Hamam-bou-Hadjar, la Sénia, Oran.

Distribution. Algeria.

Remarks. According to author, allied to *T. nigrosignata*. Tentatively placed here.

9. *Incertana* gen. n.

Genotype. *Platyceis incerta* Brunner v. Wattenwyl.

Diagnosis. Size small to medium. Elytra fully developed and slender, or reduced. A row of black markings between R and M is often present. Pronotum flat above, not distinctly depressed, more rounded than in *Tessellana* gen. n., lateral keels indistinct. Hind legs long. Coloration strawy-yellow to mottled brown, as in *Tessellana*.

Male last tergite with two long spines which almost reach the apex of the cerci.

Female 7th sternite with rounded or transverse bulge. Subgenital plate hardly incised, with median carina in a very shallow depression.

Remarks. Closely allied to *Tessellana* gen. n.

* 1. *Incertana persica* (Uv.).

1917. *Platyceis persica* Uvarov, *Izv. Kavkaz. Muz.* 11 : 11, fig. 9.

Type Locality. Teheran (Persia).

Distribution. Persia, Mesopotamia.

* 2. *Incertana incerta* (Br. W.), fig. 31.

1882. *Platyceis incerta* Brunner v. Wattenwyl, *Prodr. eur. Orih.* : 352.

1901. *Platyceis truncata* Werner, *Sitzb. Akad. Wiss. Wien* 110 : 296, pl. 1 fig. 3. (Constantinople.)

1922. *Metrioptera minuta* Berland & Chopard, *Bull. Mus. Hist. nat. Paris* 28 : 232, figs. 6, 7. (Isvor, Macedonia.)

1924. *Metrioptera truncata* (Wern.) : Uvarov, *Trans. ent. Soc. Lond.* 1923 : 529. (Synonymises *minuta* with *truncata*.)

1933. *Metrioptera incerta* (Br.): Ramme, *Mitt. zool. Mus. Berlin* 18 : 424. (Synonymises *truncata* with *incerta*.)

Type Locality. Unknown. Not Rhénish Prussia.

Distribution. Balkan peninsula, Crete, Asia Minor.

3. *Incertana chopardi* (Janii.).

1896. *Metrioptera chopardi* Jannone, *R. Lab. ent. Agr. Portici, Faun. Isol. Ital. Pgo* 5 : 136, fig. 21.

Type Locality. Torrente di Rodino, Tomba di Toloinco, Asgura, Rhodes.

Distribution. Rhodes and Coe, off the coast of Asia Minor.

Remarks. Not allied to *Sporaditana brevipes* (Uv.) as suggested by Jannone. Probably closely related to, or even identical with, *I. incerta* (Br. W.).