ANDALUSIAN *ORTHOPTERA* DESCRIBED BY RAMBUR

BY

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Some years ago, the British Museum (Natural History) was presented by M. René Oberthür with the collection of Orthoptera belonging to P. Mabille and including the whole of Rambur's collection. Although some of the specimens have suffered damage from pests, many of them are still in a surprisingly good condition after more than one hundred years.

Some of Rambur's type specimens have been studied by I. Bolívar, who has published short notes on three of them (Actas Soc. Esp. Hist. Nat., 1878, pp. 91-93) ; these types have been returned by I. Bolívar to Mabille and are in the collection now. The same author has also studied the types of the two Rambur's species of *Odontura,* and retained them ; they are still in the collections of the Instituto Español de Entomología, though paratypes of one of them are in the British Museum.

In the following pages, I have listed all species of Orthoptera (not Dermaptera, as the collection does not include any specimens of Rambur's own species) mentioned by Rambur in the «Faune Entomologique de l'Andalousie», vol. II, in the same order, recording all specimens still in the collection. In the list, the name used by Rambur comes first, in the inverted commas, followed by the page reference to Rambur's work in brackets, and by the name (in heavy type) now recognised as valid for the species. Whenever a species described by Rambur is represented by several typical specimens, a single type is designated. The names of Rambur's own species are marked with an asterisk.

BLATTIDAE

«**Blatta orientalis** Linné» (p. 13) = **Blatta orientalis** (Linné, 1758).

Several specimen labelled «Málaga».

«**Blatta americana**» (p. 14) = **Periplaneta americana** (Linné, 1758).

One specimen, without a locality label, but with a green identification label «*Kaverlac americana*».

* «**Blatta subaptera** Mihi» (p. 14) = **Hololampra subaptera** (Rambur, 1839).

A single female, labelled «Granada» and with a green identification label, both in Rambur's writing ; it is obviously the type, since Rambur (p. 15) had a single female when describing the species. The type has no abdomen, and agrees in all details with the description by Pantel (1886, An. Soc. Esp. Hist. Nat., XV, p. 258). I am not sure of the correct generic assignment of this species, since independent sub-division of the genus *Hololampra* Saussure in genera and subgenera by three authors has introduced a confusión (see Morales, 1941, Eos, XVII, p. 372). The collection also includes a specimen from Uclés, obviously one of Pantel's, and two without locality, apparently added by I. Bolívar.

MANTIDAE

«**Ampusa pauperata** Thunberg» (p. 17) = **Empusa pennata** (Thunberg, 1815).

One male and one female labelled «Granada» and one female with a green identification label in Rambur's writing.

«**Mantis religiosa** Linné» (p. 18) = **Mantis religiosa** (Linné, 1758).

Several specimens.

«**Mantis oratoria** Linné» (p. 19) = **Iris oratoria oratoria** (Linné, 1758).

Several specimens.

* «**Mantis baetica** Mihi (p. 19) = **Rivetina baetica** (Rambur, 1838).

The collection contains four specimens, but one is labelled «Alger» and does not belong to the original series. One female, with the wings closed and the head missing, is labelled «Málaga» which is the type locality quoted by Rambur. A male and a female, with the wings spread out, bear labels A.1 and A.2, respectively, and are obviously the specimens from which the figures 1 and 2 of Rambur's plate I have been made. The female (A.2), which also bears a green label with the specific name in Rambur's writing is designated here as the type, and the other two specimens as paratypes.

Giglio-Tos (1916, Boll. Soc. Ent. Ital., XVII, p. 21) has applied to this species the name *Mantis fasciata* Thunberg (1815, Mém. Acad. Imp. Sci. St. Petersburg, V, p. 292). The latter species has been described without any indication of its country of origin and the description is sufficiently brief and vague to be as applicable to several other Mantids as it is to *R. baetica*. Even if Thunberg's species was really a *Rivetina,* there is no proof of the specific synonymy suggested by Giglio-Tos, since the genus *Rivetina* is known to include some six species (Beier, 1934, Gen. Ins., 196, p. 108), and I have reasons to suggest that a greatly needed revision will bring to light several additional ones. In the circumstances, the restoration of Thunberg's name appears, at least, premature and likely to lead to a confusion and unnecessary controversy.

* «**Mantis brevis** Mihi» (p. 21) = **Ameles nana** (Charpentier, 1825, nec auctorum !), syn. nov.

The genus *Ameles* which includes now some 20 species is in need of a thorough revision and it is dangerous to attempt clearing the synonymy of isolated species. We are concerned here,

however, only with the three specific names published before Rambur's *M. brevis,* as follows:

Mantis abjecta Cyrillo, 1787 (Ent. Neapol., p. 4, pl. 5, fig. 4). Naples.
Mantis spallanzania Rossi, 1792 (Mant. Ins., I, p. 102; II, pl. 5. figs. G & H). Etruria.
Mantis nana Charpentier, 1825 (Horae entom., p. 91). Lusitania.

The species of Cyrillo (*abjecta*) has been described from a male; the description is not sufficient for its specific recognition, but the figure, although very crude, shows a male of considerably larger size than the male of *brevis,* with a long pronotum, and the wings extending well beyond the elytra (see table). In other words, there is no reason to regard *brevis* as a synonym of *abjecta* as has been done by several authors.

MALES	Pronotum	Elytra	Wings
Abjecta.			
(Figure).....	5	18	21
Nana.			
(Photograph of the type).....	4.3	15.7	14
Brevis.			
(Type).....	4 0	12.5	12

The interpretation of *M. spallanzania* Rossi is more difficult, since its description is based on a female and the figure shows it in an oblique aspect. Although neither the description, nor the figure provide any definite characters differentiating *spallanzania* from *brevis,* it would be obviously unwise to accept purely negative evidence as a proof of the two species being identical. On geographical grounds, the two Italian species may well be synonymous, but it would not be justifiable to refer an insect from Spain to the same species without positive evidence in support of such a conclusion. The problem can only be solved by a de-

tailed study of abundant Italian and Spanish material and a comparison with Rambur's types. In the meantime, it is preferable to regard the Italian species (*abjecta*, possibly synonymous with *spallanzania*) and the Spanish one (*brevis*) as distinct.

The next name that may be regarded as superseding Rambur's *brevis* is *nana* of Charpentier.

The original description of the latter says: «Thorace breviusculo et oculorum apice in tuberculum subacuminatum desinente facile distingui potest», making it clear that *nana* is a species of the group with short pronotum. In a subsequent paper, Charpentier (1841, Ztschr. Ent., III, p. 288) definitely referred Rambur's figure of the male of *brevis* (fig. 4) to his own *Mantis nana* even though Rambur misapplied the name *nana* to his fig. 5. Fischer (1853, Orth. Europaea, p. 124, pl. VIII, figs. 4, 4 a, 5), who has studied Charpentier's male type, also included *brevis* among synonyms of *nana*, and his figures leave no doubt that he regarded both as belonging to a species with short and broad pronotum ; the fact that he has adopted for it the name *spallanzania* is irrelevant to the identity of Charpentier's species. I have before me a photograph of Charpentier's type, kindly supplied by Dr. W. Ramme of the Berlin Museum, and it shows unmistakably the same small species, with broad and short pronotum, relatively short elytra and the wings shorter than the elytra, as Rambur's *brevis* (see table) ; the photograph also suggests that Fischer's figure of the male must have been based on Charpentier's type of *nana*. Therefore, I feel fully justified in regarding *brevis* Rambur as a synonym of *nana* Charpentier.

This synonymy, which should have been clear since Fischer's book, was unnecessarily confused by later authors. I. Bolívar (1876, Sin. Orth. Esp. Port., p. 59) while dealing with Spanish fauna, has re-described Rambur's *brevis* from Dalmatian material and referred it to *spallanzania*. Later on, the same author (I. Bolívar, 1898, Ann. Sci. Nat. Porto, IV, p. 204) included *brevis* and *spallanzania* amongst synonyms of *abjecta*, referring to the authority of Pantel stating that the latter has examined the types, although Pantel himself in the paper quoted by Bolívar does not even mention this fact (Pantel, 1891, An. Soc. Esp. Hist. Nat., XIX, p. 407). Brunner (1882, Prodr. europ, Orth., p. 68) has doubtfully regarded *brevis* as a synonym

of *nana*, but he misinterpreted the latter as a species with narrow pronotum. Giglio-Tos (1927, Das Tierreich, 50, p. 162) has regarded the male of *brevis* as representing a distinct species (which he, however, included in the group with the narrow pronotum), while he referred the female to synonyms of *abjecta*. This treatment of *brevis* was adopted also by Beier (1934, Gen. Ins., 196, p. 34) where *brevis* appears as an independent species.

Rambur's original series includes a male, labelled «Granada» and «*Mantis brevis* Ramb.», and two females without any labels. The male is, apparently, not the one that has been figured, since it has the wings not expanded, but it undoubtedly belongs to the typical series, and is designated by me as the type, the females becoming paratypes.

«**Mantis nana** Charpentier» (p. 22, pl. 1, fig. 3) = **Ameles picteti** Saussure, 1869.

As shown above, *M. nana* of Charpentier has been consistently misinterpreted by all authors after Fischer, and the study of Rambur's specimens shows that they belong to *picteti*, described by Saussure from Spain. Descriptions of this species have been given by the following authors:

1869. *Ameles picteti*, Saussure, Mitt. Schweiz. ent. Ges., III, p. 72.
1882. *Ameles nana* (*nec* Charpentier!), Brunner, Prodr. eur. Orth., p. 67.
1897. *Ameles* (*Parameles*) *nana* (*nec* Charpentier!), I. Bolívar, Ann. Sci. Nat. Porto, IV, p. 25.
1927. *Ameles nana* (*nec* Charpentier!), Giglio-Tos, Das Tierreich, 50, p. 162.
1943. *Ameles nana* (*nec* Charpentier!), Chopard, Faune Emp. Fran., I, p. 69.

This species is represented in the collection by four males. One has a green label «*Mantis nana*» in Rambur's writing and a white label «Granada» ; another bears a white label «*M. nana* Rbr.» and a small square label «Rambur type» ; the remaining two have similar square labels.

PHASMIDAE

«**Bacillus rossius** Fabricius» (p. 24) = ? **Clonopsis gallica** (Charpentier, 1825).

The above interpretation has been adopted by a number of authors, but I am unable to express an opinion, as Rambur reported this insect from Málaga, while the only specimen in his collection now bears a label with the locality the name of which cannot be deciphered but is certainly not Málaga (about six letters ending with *irs*). The specimen is a female of *C. gallica*, but it does not belong to the original series of Rambur.

GRYLLOTALPIDAE

«**Gryllotalpa vulgaris** Latreille» (p. 26) = **Gryllotalpa grillotalpa** (Linné, 1758).

No specimens.

TRIDACTYLIDAE

«**Xya variegata** Illiger» (p. 27) = **Tridactylus variegatus** (Latreille, 1809).

One specimen from Granada, with a green species label, *Tridactylus variegatus*.

GRYLLIDAE

«**Acheta capensis** Fabricius» (p. 28, pl. 2, figs. 4, 5) = **Gryllus bimaculatus** (De Geer, 1773).

Two males labelled «Málaga»: one of them with a green species label; one unlabelled female.

«Acheta campestris Linné» (p. 30) = **Gryllus campestris** Linné, 1758.

There are no Andalusian specimens in the collection, only two females labelled «Landes», and one female labelled «*Acheta hybrida*. Montpellier». The last named female is obviously the specimen mentioned by Rambur in a footnote on pp. 29-30, in which the hind wings are developed and project by some 4 mm. beyond the elytra, and to which he applied the name *hybrida*. This specimen is exactly similar to a macropterous female of *G. campestris* reported and figured by Cousin (1933, Bull. Soc. Ent. Fr., XXXVIII, p. 191, pl. 1, fig. 1), who bred it from the normal *G. campestris* in captivity and thus proved its non-hybrid character. Therefore, the following synonymy should be recorded: *Acheta hybrida* Rambur 1839 = *Gryllus campestris* Linné 1758 (syn. nov.).

* **«Acheta Arvensis** Mihi» (p. 30, pl. 2, figs. 7, 8) = **Gryllulus burdigalensis** (Latreille, 1804).

There are in the collection two males, one labelled «Granada» (and also with a green species label), another «Málaga»; and a female with only a white species label not in Rambur's writing. Both males are very dark, but the Granada one has traces of pale pattern on the occiput, as well as a distinct interocular band; the Málaga male is almost quite black and may be a distinct species; the female is also very dark but with some pale pattern. The male from Granada is here designated as the type.

* **«Acheta Agricola** Mihi» (p. 32, pl. 2, fig. 6) = **Gryllulus desertus** (Pallas, 1771).

A single female obviously the type with a label «Granada» and a green species label.

«Acheta domestica Linné» (p. 33) = **Gryllulus domesticus** (Linné, 1758).

A very small and pale female, labelled «Granada», and with a green species label.

* «**Acheta hispanica** Mihi» (p. 33, pl. 2, fig. 3) = **Gryllulus hispanicus** (Rambur, 1838).

One female, the type, with a green species label only.

* «**Acheta longicauda** Mihi» (p. 34, pl. 2, fig. 9) = **Gryllomorpha longicauda** (Rambur, 1838).

Rambur's specimens include one female and two males.

They were studied by Pantel (1891, An. Soc. Esp. Hist. Nat., XIX, p. 369) and he considered the males to be immature, which is, probably, true ; however, as the female is here designated as the type, the males can be ignored. Rambur's figure of the male is much too dark, the type (from which it was obviously made) being somewhat lighter. Pantel has quite correctly indicated that the female supraanal plate in *longicauda* differs from that in *dalmatina* by a sharply pronounced inflexion of the external margin just before the middle ; in addition, the subgenital plate in *longicauda* is relatively longer and less wide than it is in *dalmatina*. Therefore, the validity of *longicauda* is beyond doubt even if the male associated with it by Pantel belongs to a distinct species which is not very probable.

The female type bears a green identification label by Rambur ; the males are labelled «Málaga».

* «**Platyblemmus lusitanicus** Serville» (p. 36, pl. II, figs. 1, 2) = **Sciobia lusitanica** (Rambur, 1838).

One male with a green label «*lusitanica*» is designated as the type ; two males and one female without labels and one female labelled «Málaga» are paratypes.

This species has been always credited to Serville. However, Serville has merely given the manuscript name *lusitanicus* to a specimen in his collection and Rambur accepted it, crediting it to Serville in print as a matter of courtesy, even though he said (p. 36, footnote) : «Malgré le nom imposé a l'individu de cette espèce qui fait partie de la collection de M. Serville, j'ai lieu de croire qu'il vient du midi de l'Espagne». The priority of Rambur's publication over that of Serville has been admitted by the latter in print (see below, under *Trigonidium cicindeloides*) and must be restored.

* «**Trigonidium cicindeloides** Serville» (p. 39) = **Trigonidium cicindeloides** (Rambur, 1838).

Although Rambur credits the genus to Serville, that author (Ins. Orth., p. 351) says explicitly that he would have adopted for this genus the manuscript name *Alamia* of Géné, «si M. le docteur Rambur, qui avait pris le nom de *Trigonidium* dans ma collection, ne l'eût pas déjà fait imprimer dans sa Faune entomologique d'Andalousie ; *c'est là une antériorité de publication* qui me force à conserver ce nom, de préférence à celui créé par M. Géné». Obviously, Serville and Rambur have exchanged manuscript names, and both, particularly Rambur, have regarded as the author of a name the person who first proposed it in manuscript, not who published it first. This accounts for the fact that Rambur credited the genus *Trigonidium* to Serville, although his own description of it appeared before Serville's as stated by the latter. It is more curious that Rambur considered Serville the author of *cicindeloides,* although Serville never used the name in print. The correct authorship of both the genus and the species have been commonly recognised, and the same treatment has not been extended to *Platyblemmus lusitanicus* (see above) merely through an oversight.

There is only one female in the collection with a green species label, and it is obviously the type.

«**Oecanthus italicus** Fabricius» (p. 41) = **Oecanthus pelluceus** (Scopoli, 1763).

No specimens in the collection, and it is possible that there were none, since Rambur gives neither a description of the species (apart from a Latin diagnosis), nor any notes on its occurrence in Andalusia.

TETTIGONIIDAE

«**Conocephalus mandibularis** Charpentier» (p. 42) = **Homorocoryphus nitidulus** (Scopoli, 1786).

There is only one female in the collection, with a white label «Perpignan», i. e. not from Andalusia, although Rambur records the species from Málaga.

«**Phaneroptera liliifolia** Fabricius» (p. 44) = **Tylopsis lilifolia** (Fabricius, 1793).

One male, with green species label, and white label «Málaga». Also a female labelled «Montpellier».

«**Phaneroptera falcata** Scopoli» (p. 44) = **Phaneroptera falcata** (Poda, 1761).

No Andulasian specimens, although the species was reported by Rambur from Málaga.

* «**Odontura spinulicauda** Mihi» (p. 45, pl. V, figs. 2, 3) = **Odontura spinulicauda** Rambur, 1838. Fig. 1, S.

This species has been synonymised by Fischer (1852, Orth. Europ., p. 234) with *Barbitistes glabricauda* Charpentier, 1825, but Charpentier's type, examined by Fischer was a female larva and the synonymy appears, at least, highly doubtful, as has already been suggested by I. Bolívar (1876, Sin. Orth. Esp. Port., p. 229). The doubts are further increased by the fact that Fischer's conception of *spinulicauda* was based on Rambur's description and on a mixed series of specimens from Sardinia and Algeria ; he has definitely stated that he has not seen a female taken in Europe, so that his identification of Charpentier's female type is obviously unreliable, while his drawings illustrating female characters are only poor copies of Rambur's figures. Even his figure of the male genital appendages represents some other species than *spinulicauda,* since in the type of the latter the cercus is distinctly curved with acute apex (see fig. 1, S) while Fischer's figure show a straight cercus with an inner spine at the apex. Thus, Fischer's re-description of *spinulicauda,* based on a mixture of species, has to be rejected. A re-examination of the types of *B. glabricauda* Charpentier made at my request by Dr. W. Ramme at the Berlin Museum, has shown that there are one male (without abdomen) and two female larvae ; this makes Charpentier's species indeterminable, and *spinulicauda* Rambur is a valid species. Brunner's descriptions of it (1878, Mon. Phaneropt., p. 73 ; 1882, Prodr. eur. Orth., p. 282) are correct and agree in every detail with Rambur's type specimens.

The typical series of Rambur's species consists of one male and one female in the Instituto Español de Entomología, and another pair in the British Museum. The first pair was recorded by Morales Agacino (1943, Eos, 19, 273), who mentioned that the female bears a label in I. Bolivar's handwriting «*Tipo de Rambur*», as well as a green label with the specific name. Such green labels are the original ones of Rambur and there is no doubt that the pair belongs to the original series. Since neither I. Bolívar, nor Morales Agacino have selected the type, I designate as such the male in the Instituto Español de Entomología, from which the fig. 1, S of the present paper has been prepared. The female in Madrid and the pair in London become paratypes of *O. spinulicauda*.

The distribution of this species, under the name *O. glabricauda*, is given by Morales Agacino (*l. c.*).

* «**Odontura aspericauda** Mihi» (p. 47, pl. V, fig. 1) = **Odonturella aspericauda** (Rambur, 1838). Fig. 1, A.

The unique female type described by Rambur from Granada is in the Instituto Español de Entomología (Morales Agacino, *l. c.*, p. 275). The species has been re-described by Morales Agacino (*l. c.*), who has established that I. Bolivar's re-description of *O. aspericauda* (1876, Sin. Ort. Esp. Port., p. 227, pl. V, figs. 11, 11 a, b, c), based on specimens from Central Spain, should be referred to *O. macphersoni* Morales Agacino (*l. c.*, p. 275). I am greatly obliged to Sr. Morales Agacino in helping to clear up the two Rambur's species, and for providing their figures.

* **Ephippiger andalusius** Mihi» (p. 49, pl. III, figs. 3, 4) = **Stenopleurus andalusius** (Rambur, 1838).

One male bearing a square white label on which the number «2 c» appears twice (this is designated as the type) ; one male without any label ; and one female with a green species label and with a square label marked «2 c» in Rambur's writing.

* «**Ephippiger scabricollis** Mihi» (p. 51) = **Steropleurus andalusius** (Rambur, 1838).

Not represented in the collection. I. Bolívar (1876, Sin. Orth. Esp. Port., p. 199) has listed this name as a synonym of *S. andalusius*, and this view is generally accepted. The types, according to Rambur were immature individuals and they must be presumed lost.

* «**Ephippiger ustulatus** Mihi» (p. 52, pl. IV, figs. 3, 4) = **Baetica ustulata** (Rambur, 1838).

One male with a white label «*S. nev.*» (obviously, Sierra Nevada); another male and a female without labels; one female (designated here as the type) with a white label «*S. nev.*» and a green label, in Rambur's writing «*Ephippiger adusta*». The latter must have been a manuscript name which Rambur has changed to *ustulatus* for publication.

* «**Barbitistes baetica** Mihi» (p. 54, pl. III, figs. 1, 2) = **Amphiestris baetica** (Rambur, 1838).

One male (designated here as the type), in an excellent state of preservation, without original labels, but bearing a square label, in I. Bolivar's handwriting «*tipo de Rambur*»; another male, with a green species label, and I. Bolivar's label as above; two unlabelled females; and two nymphs (possibly not from the original series).

* «**Bradyporus inermis** Mihi» (p. 57, pl. IV, figs. 1, 2) = **Pycnogaster (Bradygaster) inermis** (Rambur, 1838).

One male labelled «*S. nev.*» (Sierra Nevada), designated here as the type; and one female with green species label in Rambur's handwriting; both bear I. Bolivar's labels «*Tipo de Rambur*» (see notes by I. Bolívar, 1878, *l. c.*).

* «**Pterolepis spoliata** Mihi» (p. 60, pl. V, figs. 4, 5) = **Pterolepsis spoliata** Rambur, 1838.

One female, with a green species label in Rambur's handwriting, designated here as the type ; one legless male and one female without any label. The second female is small and may belong to var. *minor* I. Bolívar (1900, Ann. Sci. Nat. Porto, VI, p. 14).

«**Decticus albifrons** Fabricius» (p. 63) = **Decticus albifrons** (Fabricius, 1775).

One male, with green species label and a white label «Málaga».

«**Decticus griseus** Fabricius» (p. 63) = ? **Platycleis grisea** (Fabricius, 1781).

There are no specimens of this species. or of any *Platycleis*, in the collection. It is possible that Rambur's record refers to some other species of this genus.

TETRIGIDAE

* «**Tetrix meridionalis** Mihi» (p. 65) = **Paratettix meridionalis** (Rambur, 1838).

Two females with white labels «Málaga» ; one of them (here designated as the type of *T. meridionalis*) also with a green label in Rambur's handwriting «*Tetrix baetica*», a name which has remained in manuscript. Also one female labelled «Corse», mentioned by Rambur in a footnote on p 66.

ACRIDIDAE

* «**Acinipe hesperica** Mihi» (p. 69, pl. VI, figs. 1, 2) = **Acinipe hesperica** Rambur, 1838.

One female, with a green species label in Rambur's handwriting, designated here as the type ; two females and one male, without any labels. See notes by I. Bolívar, 1878 (*l. c.*).

* **Acinipe monticola** Mihi» (p. 71, pl. VI, figs. 3, 4) = **Acinipe monticola** Rambur, 1838.

One male (designated here as the type) and two females bearing small white labels «*S. nev.*» (Sierra Nevada) ; two females without original labels, but one of them bearing a species label in I. Bolivar's handwriting. See notes by I. Bolívar, 1878 (*l. c.*).

* «**Truxalis unguiculata** Mihi» (p. 72) = **Acridella nasuta** (Linné, 1758).

Two females without labels (one of them designated here as the type) ; one female with a white label «Málaga» ; one male, with a green label in Rambur's handwriting «*Truxalis baetica*» (a manuscript name).

«**Truxalis rosea** Charpentier» (p. 75) = **Pyrgomorpha conica** (Olivier, 1791).

Two females with white labels «Granada» ; one male with similar label and a green species label in Rambur's handwriting ; one female with a white species label, not in Rambur's writing.

«**Gryllus lineola** Fabricius» (p. 77) = **Anacridium aegyptium** (Linné, 1764).

No specimens in the collection.

«**Gryllus plorans** Charpentier» (p. 78) = **Euprepocnemis plorans** (1825).

No specimens in the collection.

* «**Gryllus littoralis** Mihi» (p. 78, pl. VII, figs. 1, 2) = **Thisoicetrus littoralis littoralis** (Rambur, 1838).

No specimens in the collection. For the definition of this Spanish subspecies see Uvarov, 1939, Novit. Zool., XLI, pp. 378, 381.

«**Gryllus italicus** Linné» (p. 80) = **Calliptamus italicus** (Linné, 1758).

No specimens in the collection.

«**Grillus** (sic!) **giornae** Rossi» (p. 81) = **Pezotettix giornae** (Rossi, 1794).

No specimens in the collection.

«**Gryllus migratorius** Linné» (p. 81) = **Locusta migratoria** (Linné, 1758) ph. **solitaria**.

One female with a small label «2» and a green species label in Rambur's handwriting.

«**Gryllus Flavus** Linné (p. 82) = **Oedaleus decorus** (Germar, 1826).

One female, bearing a green label with two names, in Rambur's handwriting: «*G. flavus* and *Acryd. nigro-fasciatum* De G.».

«**Gryllus caerulans** Linné» (p. 83) = **Sphingonotus coerulans** (Linné, 1758) sbsp.?

No Andalusian specimens in the collection.

* «**Gryllus azurescens** Mihi» (p. 83, pl. VII, fig. 3) = **Sphingonotus azurescens** (Rambur, 1838).

This species was described from a single male, which is fortunately still in the collection and is very well preserved. The unique type has a green label, on which the name «*Cyanopterus*» has been crossed out and «*Azurescens*» written above it; both names are in Rambur's handwriting.

S. azurescens of Rambur has usually been misinterpreted. The latest monograph of the genus, by Mistshenko (1937, *Eos*, XII, p. 210), presents a re-description which has been based on a mixed series, and the synonymy wrongly includes *S. callosus* (Fieber) and *S. diadematus* Vosseler which are both good species, very far removed from *azurescens*. A more recent re-description by Chopard (1943, Orth. Afr. Nord, p. 315) corresponds very well to Rambur's type and undoubtedly refers to his species.

«**Gryllus Cyanopterus** ? Charpentier» (p. 84) = **Oedipoda charpentieri** (Fieber, 1852).

No specimens in the collection, but the synonymy established by I. Bolívar (1898, An. Sci. Porto, V, p. 74) is beyond doubt.

«**Gryllus thalassinus** Fabricius» (p. 85) = ? **Aiolopus thalassinus** (Fabricius, 1781).

No specimens in the collection and Rambur's remarks suggest that he had a mixed series, possibly *A. thalassinus* and *A. strepens* (Latreille, 1804).

Gryllus insubricus Scopoli» (p. 86) = **Acrotylus insubricus** (Scopoli, 1786).

No Andalusian specimens in the collection, but Rambur's mention of short, subclavate antennae makes it clear that he had this species and not *A. patruelis* (Herrich-Schaeffer, 1838).

* «**Gryllus crucigerus** Mihi» (p. 86) = **Dociostaurus genei** (Ocskay 1832). Syn. nov.

Although there are no specimens in the collection, the synonymy of this species, which recently became unnecessarily confused, can be cleared up on the available evidence.

All authors have agreed that *crucigerus* Ramb. is a *Dociostaurus*. I. Bolívar (1876, Sin. Orth. Esp. Porto, p. 136) suggested that in may be identical with *crucialus* Charp., i. e. *D. maroccanus* (Thunb.), and Brunner (1882, Prod. eur. Orth., p. 136) followed I. Bolívar. This latter author (I. Bolívar, 1898, Ann. Sci. Nat. Porto, V, p. 67) has described *Stauronotus brevicollis* var. *Hispanicus*, differing from the typical (Russian) specimens in more robust habitus and less constristed pronotum. In my revision of the genus *Dociostaurus* (Uvarov, 1921, Bull. Ent. Res., XI, p. 402) I have suggested that *crucigerus* Ramb. is synonymous with *brevicollis* Eversmann 1848 and that Rambur's name has a priority. At the same time, I distinguished two subspecies, an Eastern and a Spanish one, I have, howerer, committed two serious errors in regarding Southern France as the typical lo-

cality for Rambur's *crucigerus* and in assuming, without sufficient evidence, that the Eastern subspecies extends its distribution as far westwards as southern France.

Actually, there is only one old unconfirmed record from Toulon by Brisout de Barneville (1851, Ann. Soc. Ent. Fr., p. LXXXV ; see Chopard, 1922, Faune de France, 3, p. 156) ; otherwise, the species is not known to occur in southern Europe anywhere west of the Balkan peninsula. As a result of my mistake, the name *crucigerus* (with *brevicollis* as a subspecific synonym) has been applied by me to the Eastern subspecies, and *hispanicus* to the Spanish one. My mistake has not only been passed unnoticed by the latest reviser of the genus, Morales Agacino (1941, Boll. Pat. veg. Ent. agr., X, p. 14, sep. repr.), but further aggravated by his recognition of two Spanish subspecies, a more slender one which he called *crucigerus* Ramb. and a robust one *hispanicus* I. Bol. Specimens of the two supposed Spanish forms have been kindly sent to me by Sr. Morales Agacino and in my opinion they do not differ sufficiently to be regarded even as subspecies. On the other hand, they belong to a form which can be clearly separated from the Eastern *brevicollis* Ev. by much more robust habitus, and more particularly by inflated cheeks, broad pronotum, and sternum, in which the male metasternal interspace is clearly developed (in *brevicollis* the metasternal lobes are practically contiguous), and the female interspace is transverse (elongated in *brevicollis*). A thorough critical study (including the examination of male genitalis) is required to establish whether the two forms should be regarded as good species, or only subspecies, but the only valid names for them are *brevicollis* Ev. for the Eastern and *hispanicus* I. Bol. for the Spanish one.

Therefore, there are four species of *Dociostaurus* known from Spain : *maroccanus, crassiusculus, hispanicus* and *genei*. In the absence of types, which must be considered lost, an attempt has to be made to determine Rambur's *crucigerus* from his description, comparing the latter with these four species. To begin with, it is certainly not *maroccanus* which is a much larger insect as pointed out by Rambur himself (p. 86, footnote). It is equally impossible to identify *crucigerus* with *crassiusculus* Pantel, which is a distinctly larger and stouter insect than *Chorthippus bigut-*

tulus with which Rambur compares his *crucigerus* ; it is also doubtful whether *crassiusculus* occurs in Southern Spain.

There remain two species: *genei* Ocsk. and *hispanicus* I. Bol. Rambur's species has been usually referred to the latter (apart from the nomenclatorial confusion discussed above), but I am now convinced that it should be identified with the first, for the following reasons.

1. *Size.*—Rambur says: «Il est à peu près de la grosseur du *biguttulus,* mais beaucoup plus court...». This implies that *crucigerus* is comparable to *biguttulus* in its bulk, but not in its length. This would correspond to *genei,* and not to *hispanicus* which is certainly much more robustly built than *biguttulus.* Even leaving the bulk aside, in its total length *hispanicus* is certainly not «Beaucoup plus court» than *biguttulus,* while *genei* is.

2. *Head.*—Rambur says: «... la tête est grosse, courte, très declive postérieurement, très saillante au dessus du corselet, surtout chez les mâles».

This description fits *genei* to perfection, while it does not agree with *hispanicus,* in which the head certainly does not project strongly above the pronotum and the occiput is not strongly sloping which is a feature of *genei.*

3. *Eyes.*—Rambur says: «... les yeux sont gros, saillants et dépassent quelque fois un peu le dessus de la tête...». Large, bulging eyes, which almost project above the level of the vertex are highly characteristic of *genei,* while the eyes of *hispanicus* are quite normal.

4. *Foveolae of vertex.*—In the Latin diagnosis, Rambur describes the foveolae as «subtrianguli». In *hispanicus,* the foveolae are narrow, parallel-sided ; in *genei* they are short and somewhat narrower in front than behind. Therefore, Rambur's description fits *genei* fairly well, while it is not applicable to *hispanicus.*

5. *Hind femur.*—Black spots on the upper side of femur are according to Rambur, «... saepe obsoleti vel in medio pallidi...». This tendency of the spots to become obsolete is well marked in *genei,* but not in *hispanicus.*

6. *Hind tibia.*—Rambur does not mention the colour of hind tibia in *crucigerus.* If all his descriptions of *Acrididae* are examined, it will be seen that he omits mentioning the colour of hind tibia only in those species where the tibia has no distincti-

ve colour ; in all other cases he invariably describes the colour. As the tibia in *hispanicus* is red and in *genei* it is not distinctively coloured, it must be inferred that *crucigerus* agreed in this respect with the latter.

7. *Distribution.*—There is no evidence that *hispanicus* occurs in Southern Spain ; in fact, I am informed by Sr. Morales Agacino that there are no specimens from that part of the country in the Instituto Español de Entomología. On the other hand, *genei* is a very common species over the whole peninsula and one should expect it to occur in the hills near Málaga which is the type locality of *crucigerus*.

Therefore, unless it can be proved by specimens that an insect, agreeing better with Rambur's description than does *genei*, occurs near Málaga, *crucigerus* of Rambur must be relegated to synonyms of the latter.

«**Gryllus elegans** Charpentier» (p. 87) = ? **Euchorthippus declivus** (Brisout, 1848).

No specimens in the collection, but I. Bolívar (1878, An. Soc. Esp. Hist. Nat., Actas, p. 93) examined Rambur's specimen and referred it to the species of Brisout. It remains to be seen whether the same species or subspecies of *euchorthippus* occurs in S. Spain as near Paris, whence Brisout types came.

* «**Gryllus hispanicus** Mihi (p. 88, pl. VII, figs. 6, 7) = **Ramburiella hispanica** (Rambur, 1838).

No specimens in the collection, but the identity of the species is not in doubt.

* «**Gryllus dubius** Mihi» (p. 90, pl. VII, figs. 4, 5) = **Calephorus compressicornis** (Latreille, 1804).

No specimens in the collection, but Rambur's figures leave no doubt as to the species they represent.

«**Gryllus bisignatus** Charpentier» (p. 92) = **Paracinema tricolor bisignata** (Charpentier, 1825).

No specimens in the collection. For the subspecific determination see Key (1936, Trans. R. Ent. Soc. London, 85, p. 388).

«**Gryllus lineatus** Panzer» (p. 92) = **Stenobothrus lineatus** (Panzer, 1796).

No specimens in the collection, but Rambur's identification was probably correct.

* «**Gryllus stigmaticus** Mihi» (p. 93) = **Stenobothrus stigmaticus** (Rambur, 1838).

No specimens, but the description is unmistakable.

«**Gryllus biguttulus** Linné» (p. 94) = **Chorthippus** sp.

The group of species related to *Ch. biguttulus* appears to include several, superficially similar, species and no specific determination can be attempted in the absence of specimens.

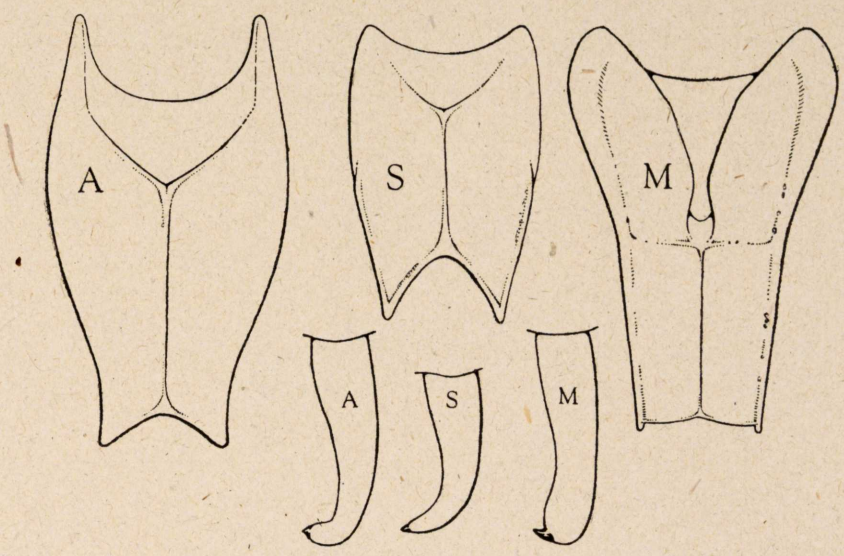
CONCLUSIONS

The results of the above revision of Rambur's collection are tabulated below.

	Listed by Rambur	Represented in collection	Rambur's species	Represented by types
Blattidae	3	3	1	1
Mantidae	6	6	2	2
Phasmidae	1	—	—	—
Gryllotalpidae	1	—	—	—
Tridactylidae	1	1	—	—
Gryllidae	11	9	7	7
Tettigoniidae	13	11	8	5
Tetrigidae	1	1	1	1
Acrididae	24	12	9	4
TOTAL	61	43	28	20

Out of the eight missing types of Rambur's species, two (*Odontura aspericauda* and *O. spinulicauda*) are in the Instituto Español de Entomología, while paratypes of the latter are in the

British Museum. The types of the following six species are neicher in London, nor in Madrid and must be considered lost; *Ephippiger scabricollis, Gryllus littoralis, G. crucigerus, G. hispanicus, G. dubtus* and *G. stigmaticus*. Fortunately, all these species can be interpreted from Rambur's descriptions which are



Male subgenital plate and cercus. A, *Odonturella aspericauda* Rambur, topotype; M, *O. macphersoni* Morales Agacino, type; S, *Odontura spinulicauda* Rambur, type.

truly remarkable for their clarity and stress laid on essential morphological features which make the species easily recognisable. In fact, the identity of some of Rambur's species has often been obscured by the insufficiently careful analysis of his description by later authors, as, for example, in the case of *Gryllus crucigerus* fully discussed above. As a result, none of Rambur's own species remains obscure.

New synonymy has been established for three of Rambur's species: *Mantis brevis, Acheta hybrida* and *Gryllus crucigerus*; two names given by Rambur and later wrongly relegated to synonyms have been restored (*Mantis baetica* and *Odontura spinulicauda*); and Rambur's authorship of *Platyblemmus lusitanicus*, wrongly attributed to Serville, has been established.