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Checklist and taxonomic updates in grasshoppers (Orthoptera: Caelifera) of central and southwestern Tunisia with new records and a key for species identification

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Tuarega insignis (Lucas, 1851), photographed in its natural environment (Tunisia, Gafsa, Ben Younes Mountain (April 26, 2019)). Photo: H. Tlili.

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Checklist and taxonomic updates in grasshoppers (Orthoptera: Caelifera) of central and southwestern Tunisia with new records and a key for species identification

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ABSTRACT
Since the publication of Chopard's 1943 book, *Les Orthoptéroides d'Afrique du Nord*, the diversity of Orthoptera in Tunisia has not been studied or prospected except for 20 publications. Furthermore, the classification of Orthoptera has changed since 1943 due to taxonomic and phylogenetic advances. To allow a full survey of the Tunisian grasshopper fauna, it is thus necessary first to correctly survey the biological diversity of grasshoppers in Tunisia, and second to have an updated taxonomic reference in order to describe this diversity and compare it with the grasshopper faunas in the other countries of the Maghreb. In the present paper, we propose an updated checklist and a key for the identification of Tunisian grasshoppers, based primarily on field sampling in central and southwestern Tunisia, and literature data for other Tunisian areas. Each species is documented with habitus photographs, geographical distribution, and type of habitat. In total, for the prospected areas, 75 species of Caelifera belonging to five families and 43 genera are listed, while 83 species were recorded up to now for the whole Tunisia. Among these 75 species, seven are newly recorded for Tunisia, i.e., *Sphodromerus decoloratus* Finot, 1894, *Egnatioides coerulans* (Krauss, 1893), *Dociostaurus biskrensis* Moussi & Petit, 2014, *Aiolopus puissanti* Defaut, 2005, *Hilethera aeolopoides* (Uvarov, 1922), *Leptopternis rothschildi* Bolívar, 1913, and *Tenuitarsus angustus* (Blanchard, 1836); and one species is newly recorded for central and southwestern Tunisia, i.e., *Oedipoda fuscocincta fuscocincta* Lucas, 1849. We also confirm the presence of two species that were only tentatively recorded in Tunisia, i.e., *Oedaleus senegalensis* (Krauss, 1877) and *Stenohippus mundus* (Walker, 1871). DNA sequences (COI, ND2 and H3) are presented for 26 taxa, as a first step towards barcoding all Tunisian caeliferan taxa.

KEY WORDS
Acridoidea,
diversity,
distribution,
collection,
conservation,
molecular data.

RÉSUMÉ
Liste actualisée des criquets (Orthoptera: Caelifera) du centre et du sud-ouest de la Tunisie, avec de nouvelles signalisations et une clé d'identification des espèces.
Depuis la publication du livre *Les orthoptéroïdes d'Afrique du Nord* par Chopard (1943), la diversité des orthoptères en Tunisie n'a été ni étudiée ni prospectée, à l'exception de 20 publications. En outre, la classification des orthoptères a changé depuis 1943, du fait des avancées taxonomiques et phylogénétiques. Pour permettre une étude complète de la faune des criquets tunisiens, il est donc nécessaire premièrement de prospecter correctement la diversité biologique des criquets en Tunisie et deuxièmement de disposer d'une référence actualisée, afin de pouvoir la décrire et la comparer avec les faunes acridologiques des autres pays du Maghreb. Dans le présent article, nous proposons une liste actualisée et une clé d'identification des criquets tunisiens, basées principalement sur un échantillonnage des régions du centre et du sud-ouest du pays et sur des données de la litérature pour les autres régions tunisiennes. Chaque espèce est documentée avec des photographies d'habitus, la répartition géographique et le type d'habitat. Au total, pour les zones prospectées, 75 espèces de Caelifères appartenant à cinq familles et 43 genres sont répertoriées, sur les 83 jusqu'à présent signalées de Tunisie. Sur ces 75 espèces, sept sont signalées pour la première fois de Tunisie, i.e., *Sphodromerus decoloratus* Finot, 1894, *Egnatioides coerulans* (Krauss, 1893), *Dociostaurus biskrensis* Moussi & Petit, 2014, *Aiolopus puissanti* Defaut, 2005, *Hilethera aeolopoides* (Uvarov, 1922), *Leptopternis rothschildi* Bolívar, 1913 et *Tenuitarsus angustus* (Blanchard, 1836); et une espèce est nouvellement signalée dans le centre et du sud-ouest de la Tunisie, i.e., *Oedipoda fuscocincta fuscocincta* Lucas, 1849. Nous confirmons également la présence de deux espèces dont la présence était incertaine, i.e., *Oedaleus senegalensis* (Krauss, 1877) et *Stenohippus mundus* (Walker, 1871). Des séquences d'ADN (COI, ND2 et H3) sont finalement données pour 26 taxons, comme un effort préliminaire pour barcoder tous les caelifères tunisiens.

MOTS CLÉS
Acridoidea,
diversité,
distribution,
collection,
conservation,
données moléculaires.

INTRODUCTION

With more than 28000 described species and subspecies distributed worldwide (Cigliano *et al.* 2020), Orthoptera are considered the most diverse order of polyneopteran insects. This order is divided into two monophyletic suborders: the Ensifera (crickets, katydids and allies) with long antenna (longer than the body and with more than 30 articles), and the Caelifera (grasshoppers and allies) with short antenna (shorter than the body and with less than 28 articles) (Song et al. 2015).

Grasshoppers have been the subject of considerable attention related to their catastrophic damage to crops and all types of green vegetation. North Africa has a long history of desert locust plague upsurges, as it has been and still remains a witness to repeated locust invasions, especially by *Schistocerca gregaria* (Forskål, 1775).

The earliest scientific expeditions in North Africa started during the colonial period between 1883 and 1884 (Tlili *et al.* 2019b). Most more recent studies in the Maghreb have been part of field surveys of locust control. The countries that were most vulnerable to locust invasions had the largest share of

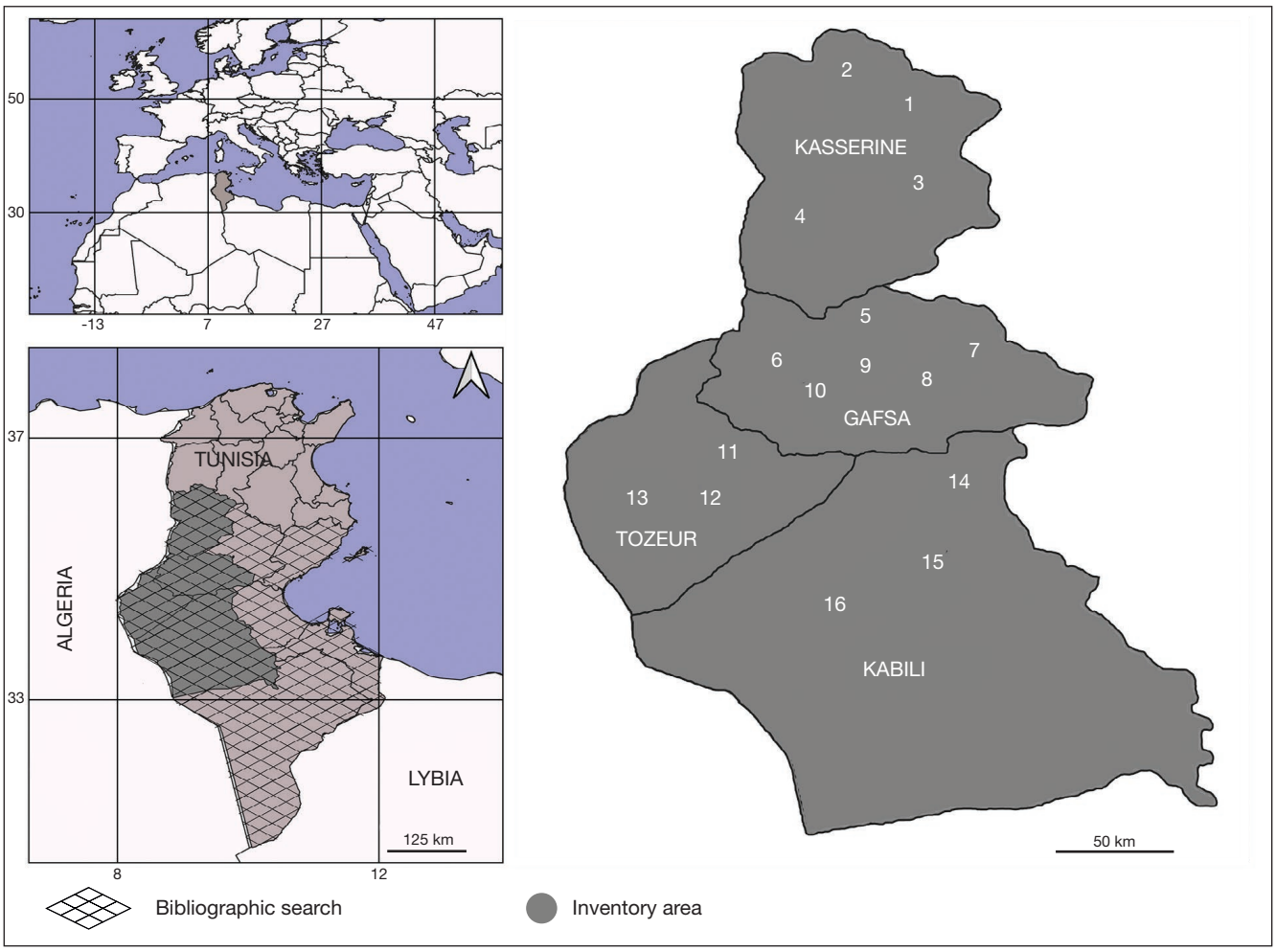

FIG. 1. — Maps of inventoried area and localities in central and southwest Tunisia. The following localities have been intensively sampled during a four-year survey: **1**, F'his; **2**, Mehreza; **3**, Sbeitla; **4**, Awled Mahfoudh; **5**, Metkides; **6**, Douwara; **7**, Sened; **8**, El Guetar; **9**, Ben Younes Mountain; **10**, Amra; **11**, Gouifla; **12**, Degache; **13**, Souani Ali; **14**, Essagui; **15**, Rahmet; **16**, Chott El Faranig. See Table 1 for locality coordinates.

studies. In that matter, Tunisia is the country with the fewest research studies published on Orthoptera compared to neighbouring countries, e.g. Morocco, Algeria, and Libya. As a result, Tunisia is still poorly known in terms of grasshopper diversity (Louveaux & Ben Halima 1986; Tlili *et al.* 2019b).

Based on intensive field work, this paper aims at completing the picture of the grasshopper fauna in Tunisia. An updated checklist and taxonomy for grasshoppers is given, limited at this stage to central and southwestern Tunisia, and a key for identification of all genera, species and subspecies is given. In total, 75 species of Caelifera belonging to five families and 43 genera are listed, while only 83 were recorded up to now from the whole country. Among these 75 species, seven are newly recorded for Tunisia, i.e., *Sphodromerus decoloratus* Finot, 1894, *Egnatioides coerulans* (Krauss, 1893), *Dociostaurus biskrensis* Moussi & Petit, 2014, *Aiolopus puissanti* Defaut, 2005, *Hilethera aeolopoides* (Uvarov, 1922), *Leptopternis rothschildi* Bolívar, 1913, and *Tenuitarsus angustus* (Blanchard, 1836); and one subspecies is newly recorded for central and southwestern Tunisia, i.e., *Oedipoda fuscocincta fuscocincta* Lucas, 1849. We also confirm the presence of two species for which there previously existed only tentative records, i.e., *Oedaleus senegalensis* (Krauss, 1877) and *Stenohippus mundus* (Walker, 1871).

Taxonomic studies incorporate an ever-increasing number of characters to identify different taxa, and the use of molecular data is now becoming common practice, even though its usefulness is directly dependent on the number of individuals sampled for the same molecular marker. To facilitate future studies of grasshoppers from the Maghreb we document 26 species for COI, H3 and / or ND2 DNA markers (Table 4).

MATERIAL AND METHODS

SAMPLING AREA

The present work is part of a study of the grasshopper fauna from central and southwestern Tunisia i.e., Kasserine, Gafsa, Tozeur and Kebili (Fig. 1). Grasshoppers were sampled during four successive years (2016 to 2019) in 16 localities (Fig. 2; Table 1), with three surveys each year (Tlili *et al.* 2016). They were actively searched and collected with a sweep net or by hand.

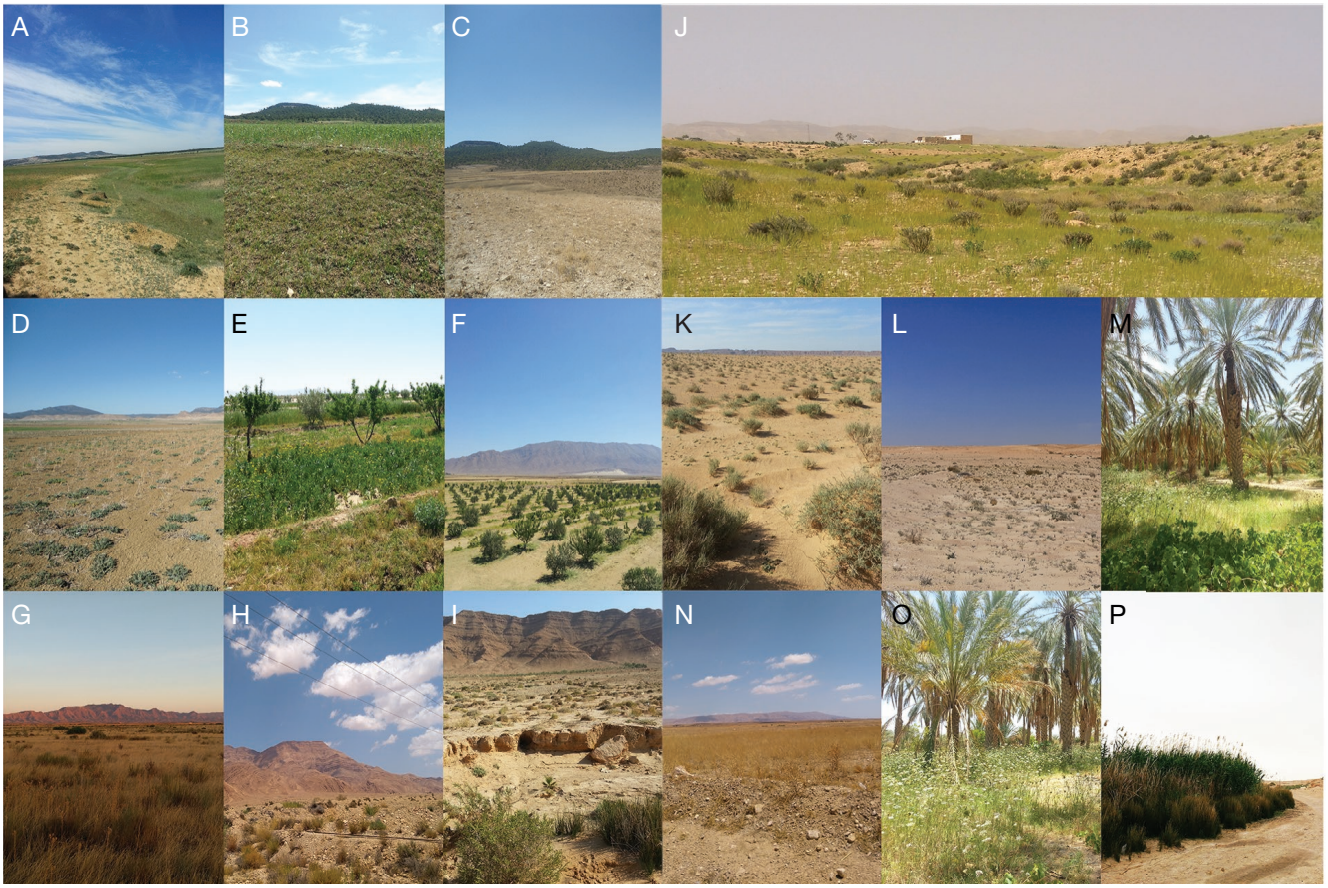

Fig. 2. — Sixteen primary habitats and localities photographed and actively sampled in central and southwestern Tunisia. **A**, Wasteland, at F'his; **B**, Wasteland, at Mehreza; **C**, Wasteland, at Sbeitla; **D**, Wasteland, at Awled Mahfoudh; **E**, Cultivated area, at Metkides; **F**, Cultivated area, at Douwara; **G**, Wasteland, at Sened; **H**, Wasteland, at El Guetar; **I**, Foothills, at Ben Younes Mountain; **J**, Valley, at Amra; **K**, Desert steppes, at Gouifla; **L**, Desert steppes, at Degache; **M**, Oasis, at Souani Ali; **N**, Desert steppes, at Essagui; **O**, Oasis, at Rahmet; **P**, Chott-side, at Chott El Faranig. Photos: H. Tlili.

Taxonomic list

Taxa are listed in alphabetical order of the genera and species in each family and subfamily. The nomenclature follows the current classification of the Orthoptera Species File Online (http://Orthoptera.SpeciesFile.org) (Cigliano *et al.* 2020). For each species, we give the following information: original taxonomic combination with author, year and page number; successive taxonomic combinations (including synonyms cited in the northern part of Africa, i.e., Lybia, Tunisia, Algeria, Morocco, and Canary Islands) with authors, year and page number; published geographical data for central and southwestern Tunisia; list of examined material; new geographical data resulting from our sampling effort; data on habitat, and remarks.

Species distributions were established based on published data (e.g. Dirsh 1965; Usmani 2008; Willemse *et al.* 2018). In this study, the northern part of Africa, hereafter referred to as North Africa, is limited to Lybia, Tunisia, Algeria, Morocco, and Canary Islands (Tlili *et al. in* prep.).

In the species list and Table 2, species marked with "*" have been found by previous authors, but not during our field survey; species marked with "**" are new records for Tunisia; species marked with "***" are confirmed in Tunisia. The species marked with a "▼" have been sequenced in the present study.

Data from literature for central and southwestern Tunisia

We searched all available studies of grasshoppers from 1884 to 2020, in central and southwestern Tunisia (Fig. 1), but only 20 publications could be found for the Orthoptera. We did not take into account however studies in which the record of species did not refer to specimens deposited in museum collections, which precludes checking identifications (e.g. Doumandji-Mitiche *et al.* 1990).

Material examined

The collected specimens were first identified using the keys of Chopard (1943) and Dirsh (1965). Identifications were then checked with the interactive key proposed by Louveaux *et al.* (2020) in the internet database "Orthoptera Acridomorpha from NorthWest Africa" (Louveaux *et al.* 2020; http://acrinwafrica.mnhn.fr), and finally confirmed by comparing each specimen with the specimens deposited in the reference collections in the MNHN and NHM.

For the species mentioned in the literature from Tunisia, but not found during our fieldwork, we examined the specimens originating from Tunisia deposited in MNHN and NHM collections. If no specimen from Tunisia was found, we examined samples from neighbouring countries (e.g. Libya,

TABLE 1. — Sampling localities in central and southwestern Tunisia.

Province	No.	Localities	Geographical coordinates	Altitude (m)	Habitat
Kasserine	1	F'his	35°33'26.6"N, 8°56'43.9"E	928	Wasteland
	2	Mehreza	35°37'33.5"N, 8°51'23.4"E	842	Wasteland
	3	Sbeitla	35°23'32.4"N, 9°00'08.9"E	527	Wasteland
	4	Ouled Mahfoudh	35°19'58.9"N, 8°33'32.4"E	748	Wasteland
Gafsa	5	Metkides	34°36'58.1"N, 8°43'25.1"E	453	Cultivated area
	6	Douwara	34°30'38.0"N, 8°27'56.7"E	399	Cultivated area
	7	Sened	34°31'50.0"N, 9°13'50.0"E	428	Wasteland
	8	El Guetar	34°20'23.6"N, 8°54'34.1"E	233	Wasteland
	9	Ben Younes Mountain	34°26'59.6"N, 8°45'55.5"E	405	Foothills
	10	Amra	34°31'04.4"N, 8°41'38.9"E	430	Valley
Tozeur	11	Gouifla	34°08'46.7"N, 8°17'38.9"E	53	Desert steppes
	12	Degueche	33°57'51.4"N, 8°11'12.6"E	70	Desert steppes
	13	Souani Ali	33°52'06.4"N, 7°50'39.7"E	61	Oasis
Kebili	14	Essagui	34°09'54.7"N, 9°11'27.5"E	163	Desert steppes
	15	Rahmet	33°38'34.5"N, 8°59'46.0"E	47	Oasis
	16	Chott El Faranig	33°24'42.1"N, 8°31'47.8"E	21	Chott-side

Algeria, and Morocco) or from any other country. When necessary, we also examined the high-quality photos deposited in collection databases on Orthoptera (e.g. collection databases of MNHN, NHM, and DORSA, see infra) or the website Orthoptera Species File Online (http://Orthoptera.SpeciesFile.org).

The information taken from the specimen labels is mentioned as follows: country and province, date of collection and collector, catalogue number of the museum collection.

Information about the identity and distribution of the grasshopper species in North Africa have been added generally to the internet database "Orthoptera Acridomorpha from NorthWest Africa".

ABBREVIATIONS

Repositories

INAT	Institut National Agronomique de Tunisie, Tunis;
ISA-CM	Institut Supérieur Agronomique de Chott Mariem, Sousse;
LSUK	Linnean Society United Kingdom, London;
MHNG	Muséum d'histoire naturelle de Genève, Geneva;
MNCN	Museo Nacional de Ciencias Naturales, Madrid;
MNHN	Muséum national d'Histoire naturelle, Paris;
MZLU	Museum of Zoology in Lund, Lund;
NHM	The Natural History Museum [formerly British Museum of Natural History], London (ex. BMNH);
NMW	Naturhistorisches Museum Wien, Wien;
OUMNH	Oxford University Museum of Natural History, [formerly University Museum of Natural History], Oxford (ex. UMO);
SMNS	Staatliches Museum für Naturkunde, Stuttgart;
UUZM	Uppsala University Zoological Museum, [formerly Universitets Zoologiska Institutionen Uppsala], Uppsala (ex. UZIU);
ZIN	Russian Academy of Sciences, Zoological Institute, St. Petersburg;
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin.

Private collection

Coll. MBC	Coll. M. Ben Chouikha, Tunis.

ILLUSTRATIONS

For each species, photos were taken for one male and one female in side and dorsal views, with a Nikon D90 camera and lens Micro-Nikkor, 105 mm, f 2.8 VR and Canon EOS 5DS R Camera fitted with Canon 100mm EF 2.8L Macro IS USM, with a size scale; they were then edited using Adobe Photoshop CS6 2012 (Tlili *et al.* 2019a; Moussi & Tlili 2020).

Genitalia were removed and treated using KOH 10% and colored by JBL punktol® Plus 125 (Tlili *et al.* 2019a), then photographed and afterward conserved in glycerine.

Genitalia images were also taken using a Canon camera EOS 6D attached to a canon macro lens MP-E 65mm f/2,8.

COLLECTION AND KNOWLEDGE DATABASE WEBSITES

Acrinwafrica (Orthoptera Acridomorpha from North West Africa): http://acrinwafrica.mnhn.fr/

DORSA (Deutsche Orthopteren-Sammlungen): http://www.dorsa.de

MNHN collection database: Specimens deposited in the Arthropod collection of the MNHN can be traced with their inventory numbers, MNHN-EO-CAELIFXXXX, in the collection database of the MNHN at the following address, https://science.mnhn.fr/institution/mnhn/collection/eo/search

NHM collection database: Specimens deposited in the NHM can be traced in the Natural History Museum Data Portal at the address, http://data.nhm.ac.uk

OSF (Orthoptera Species File): http://Orthoptera.SpeciesFile.org

GEOGRAPHIC DATA AND MAPS

We used QGIS 3.8.0 software to plot the localities sampled on the map of Tunisia. We used the maps of Aubert (1892) to identify the old localities which names have changed over time.

MOLECULAR PROTOCOLS

We extracted total genomic DNA from middle or hind femora of dried, alcohol-preserved, or newly collected specimens. We used the QIAamp DNA tissue kit (Qiagen) following the manufacturer's protocol. The molecular work was performed at the Service de Systématique Moléculaire of the MNHN.

We sequence three markers, two mitochondrial and one nuclear, used in previous phylogenetic studies on insects

TABLE 2. — Inventory of Orthoptera Caelifera species from central and southwestern Tunisia. Symbols: * Species recorded by earlier researchers but not found in the present research; ** New record for Tunisia; *** Presence confirmed in Tunisia; ▼ Species with DNA sequences generated in this study.

FAMILY / Subfamily	Genus (Subgenus)	Species
ACRIDIDAE		
Acridinae	*Acrida*	*turrita* (Linnaeus, 1758) ▼
	Duroniella	*lucasii* (Bolívar, 1881)
	Truxalis	*nasuta* (Linnaeus, 1758) ▼
		procera Klug, 1830 *
Calliptaminae	*Calliptamus*	*barbarus barbarus* (Costa, 1836) ▼
		deserticola (Vosseler, 1902)*
		wattenwylianus (Pantel, 1896) ▼
	Sphodromerus	*decoloratus* Finot, 1894**
Cyrtacanthacridinae	*Anacridium*	*aegyptium* (Linnaeus, 1764) ▼
	Schistocerca	*gregaria gregaria* (Forskål, 1775)
Egnatiinae	*Egnatioides*	*striatus* Vosseler, 1902*
		coerulans (Krauss, 1893)**
Eremogryllinae	*Eremogryllus*	*hammadae* Krauss, 1902*
	Notopleura	*pygmaea* Vosseler, 1902*
		saharica Krauss, 1902
Eyprepocnemidinae	*Eyprepocnemis*	*plorans plorans* (Charpentier, 1825) ▼
	Heteracris	*adspersa adspersa* (Redtenbacher, 1889)*
		annulosa Walker, 1870
		harterti (Bolívar, 1913)*
		minuta (Uvarov, 1921)*
Gomphocerinae	*Dociostaurus*	*biskrensis* Moussi & Petit, 2014**
	Dociostaurus (Kasakia)	*jagoi jagoi* Soltani, 1978
	Ochrilidia	*geniculata* (Bolívar, 1913) ▼
		gracilis gracilis (Krauss, 1902)*
		harterti harterti (Eversmann, 1859)*
	Stenohippus	*mundus* (Walker, 1871) ▼***
Oedipodinae	*Acrotylus*	*insubricus insubricus* (Scopoli, 1786) ▼
		longipes longipes (Charpentier, 1845) ▼
		patruelis (Herrich-Schäffer, 1838)*
	Aiolopus	*puissanti* Defaut, 2005**
		strepens strepens (Latreille, 1804)
	Helioscirtus	*capsitanus capsitanus* (Bonnet, 1884)*
		gracilis Vosseler, 1902*
	Hilethera	*aeolopoides* (Uvarov, 1922)**
	Hyalorrhipis	*calcarata* (Vosseler, 1902)*
	Leptopternis	*maculata* Vosseler, 1902
		rothschildi Bolívar, 1913**
	Mioscirtus	*wagneri wagneri* (Eversmann, 1859)*
	Oedaleus	*decorus* (Germar, 1825)
		senegalensis (Krauss, 1877)***
	Oedipoda	*fuscocincta fuscocincta* Lucas, 1849 ▼**
		miniata mauritanica Lucas, 1849 ▼
	Scintharista	*notabilis notabilis* (Walker, 1870)
	Sphingoderus	*carinatus* (Saussure, 1888) ▼
	Sphingonotus (Neosphingonotus)	*finotianus* (Saussure, 1885)
		paradoxus Bey-Bienko, 1948
		tricinctus (Walker, 1870) ▼
	Sphingonotus (Parasphingonotus)	*radioserratus* Johnsen, 1985*
	Sphingonotus (Sphingonotus)	*lucasii* Saussure, 1888 ▼
		octofasciatus (Serville, 1838) ▼
		rubescens rubescens (Walker, 1870) ▼
		savignyi Saussure, 1884 ▼
		vosseleri Krauss, 1902*
	Thalpomena	*algeriana algeriana* (Lucas, 1849)*
		coerulescens Uvarov, 1923*
Tropidopolinae	*Tropidopola*	*cylindrica cylindrica* (Marschall, 1836)*

Table 2. — Continuation.

FAMILY / Subfamily	Genus (Subgenus)	Species
DERICORYTHIDAE		
Dericorythinae	*Dericorys*	*albidula* Serville, 1838 ▼
		millierei Bonnet & Finot, 1884
	Pamphagulus	*bodenheimeri dumonti* Uvarov, 1929 ▼
PAMPHAGIDAE		
Pamphaginae	*Acinipe*	*algeriensis* Descamps & Mounassif, 1972*
		calabra (Costa, 1836)*
	Euryparyphes	*sitifensis* (Brisout, 1854)*
	Finotia	*spinicollis* Bonnet, 1884*
	Ocneridia	*nigropunctata* (Lucas, 1849) ▼
	Pamphagus	*meridionalis* Descamps & Mounassif, 1972
		tunetanus Vosseler, 1902
	Paracinipe	*foreli* (Pictet & Saussure, 1893) ▼
		saharae (Pictet & Saussure, 1891)
	Paraeuryparyphes	*quadridentatus* (Brisout, 1852)*
Thrinchinae	*Tmethis*	*cisti* (Fabricius, 1787) ▼
	Tuarega	*insignis* (Lucas, 1851) ▼
PYRGOMORPHIDAE		
Pyrgomorphinae	*Pyrgomorpha*	*cognata* Krauss, 1877*
		conica (Olivier, 1791) ▼
	Tenuitarsus	*angustus* (Blanchard, 1836) ▼**
TETRIGIDAE		
Tetriginae	*Paratettix*	*meridionalis* (Rambur, 1838)
14	43	75

Table 3. — PCR profiles and primers used, with their sources.

Gene	Primer sequence 5' to 3'	Denaturation	Annealing	Elongation	Number of cycles	Final elongation	Reference
Cytochrome oxidase I (COI)	LCOI1490-GGTCAACAAATCATAAAGATATTGG HCOI2198 - TAAACTTCAGGGTGACCAAAAATCA	30 s at 94°C	40 s at 49°C	40 s at 72°C	38	7 min at 72°C	Folmer *et al.* 1994
NADH dehydrogenase 2 (ND2)	ND2A - CGTTGATGATAGGAACGTACC ND2B - GGTGTCTAATTGATGATTATGC	20 s at 94°C	30 s at 55°C	2 min at 68°C	45	5 min at 68°C	Tokuda *et al.* 2010
Histone 3 (H3)	H3AF - ATGGCTCGTACCAAGCAGACACGGC H3AR - ATATCCTTAGGGCATAGATAGGTGAC	50 s at 94°C	40 s at 55°C	40 s at 72°C	45	7 min at 72°C	Colgan *et al.* 1998

(Table 3). These are a fragment of the mitochondrial gene coding for the cytochrome oxidase I (COI, *c.* 650 bp), a fragment of the mitochondrial gene coding for the NADH dehydrogenase 2 (ND2, *c.* 400 bp) and a fragment of the nuclear gene coding for the protein H3 (H3, *c.* 300 bp). Primers and annealing temperatures are given in Table 3. Sequencing reactions were carried out on both DNA strands. Ambiguous results were checked by multiple sequencing either of different DNA extractions from the same individuals or from an extraction from another conspecific individual.

The quality of museum-preserved specimens varied considerably and DNA degradation did not allow the amplification of all target sequences for each species (Table 4).

Newly generated sequences were edited in Sequencer v. 4.9 (Gene Codes Corporation, Ann Arbor, MI, USA) and Mesquite 3.6 (Maddison & Maddison 2018) and blasted with NCBI blast tools (Table 4). New sequences have been submitted to GenBank, where they should be published in January 2021.

Results

In this study, we recorded 64% (48 from 75) of species, 76.7% (33 from 43) of genera, 92.8% (13 from 14) of subfamilies, and all the families of grasshoppers mentioned until present for the Tunisian fauna. To these taxa, we added eight new records for this country and confirmed the presence of two additional species (Table 2).

We generated new DNA sequences for 54% (26 from 48) of species, 61% (19 from 33) of genera, 71% (10 from 14) of subfamilies and 80% (4 from 5) of families of grasshoppers recorded in this research for Tunisia (Table 4). The molecular markers amplified are mentioned in the information sheet of each species.

TABLE 4. — Specimens used for the molecular analysis, with voucher/repository data in the MNHN Orthoptera collection, and amplified length (bp) of the sequences generated in this study. Abbreviations: **F**, female; **M**, male.

FAMILY / Subfamily	Genus (Subgenus)	Species	Molecular codes	Voucher - repository/ sex	Locality	COI	ND2	H3
						bp		
ACRIDIDAE								
Acridinae	*Acrida*	*turrita*	HT_Atur01	MNHN-EO-CAELIF7622/F	Tozeur	666	443	–
	Truxalis	*nasuta*	HT_Tnas02	MNHN-EO-CAELIF7623/M	Gafsa	664	–	–
Calliptaminae	*Calliptamus*	*barbarus barbarus*	HT_Cbar03	MNHN-EO-CAELIF7624/F	Gafsa	654	459	–
		wattenwylianus	HT_Cwat04	MNHN-EO-CAELIF7625/F	Kasserine	675	–	–
Cyrtacanthacridinae	*Anacridium*	*aegyptium*	HT_Aaeg05	MNHN-EO-CAELIF7626/F	Kasserine	679	–	–
Eyprepocnemidinae	*Eyprepocnemis*	*plorans plorans*	HT_Eplo06	MNHN-EO-CAELIF7627/F	Tozeur	656	–	–
Gomphocerinae	*Ochrilidia*	*geniculata*	HT_Ogen10	MNHN-EO-CAELIF7602/F	Gafsa	651	–	–
	Stenohippus	*mundus*	HT_Ealb09	MNHN-EO-CAELIF7601/F	Gafsa	658	–	–
Oedipodinae	*Acrotylus*	*insubricus insubricus*	HT_Ains11	MNHN-EO-CAELIF7603/F	Gafsa	654	–	–
		longipes longipes	HT_Alon12	MNHN-EO-CAELIF7604/M	Kebili	654	–	–
	Oedipoda	*fuscocincta fuscocincta*	HT_Ofus17	MNHN-EO-CAELIF7606/M	Kasserine	656	–	–
		miniata mauretanica	HT_Omau18	MNHN-EO-CAELIF7607/F	Kasserine	655	–	–
	Sphingoderus	*carinatus*	HT_Scar20	MNHN-EO-CAELIF7608/M	Kasserine	651	–	–
	Sphingonotus (*Neosphingonotus*)	*tricinctus*	HT_Stri22	MNHN-EO-CAELIF7609 /F	Gafsa	654	444	–
	Sphingonotus (*Sphingonotus*)	*lucasii*	HT_Sluc23	MNHN-EO-CAELIF7610/F	Gafsa	666	457	–
		octofasciatus	HT_Soct24	MNHN-EO-CAELIF7444/F	Tozeur	–	454	–
		rubescens rubescens	HT_Srub25	MNHN-EO-CAELIF7611/F	Gafsa	653	449	–
		savignyi	HT_Ssav35	MNHN-EO-CAELIF7612/M	Tozeur	670	458	–
DERICORYTHIDAE								
Dericorythinae	*Dericorys*	*albidula*	HT_Dalb34	MNHN-EO-CAELIF7613/F	Tozeur	667	–	323
	Pamphagulus	*bodenheimeri*	HT_Pbod26	MNHN-EO-CAELIF7621/F	Tozeur	673	–	330
PAMPHAGIDAE								
Pamphaginae	*Ocneridia*	*nigropunctata*	HT_Onig28	MNHN-EO-CAELIF7614/F	Kasserine	656	–	–
	Paracinipe	*foreli*	HT_Pfor27	MNHN-EO-CAELIF7616/F	Kebili	673	–	–
Thrinchinae	*Tmethis*	*cisti*	HT_Tcis30	MNHN-EO-CAELIF7617/F	Gafsa	622	–	–
	Tuarega	*insignis*	HT_Tins31	MNHN-EO-CAELIF7618/F	Tozeur	658	–	–
PYRGOMORPHIDAE								
Pyrgomorphinae	*Pyrgomorpha*	*conica*	HT_Pcon32	MNHN-EO-CAELIF7619/F	Gafsa	663	–	–
	Tenuitarsus	*angustus*	HT_Tang33	MNHN-EO-CAELIF7620/F	Tozeur	655	–	–

SPECIES LIST AND RECORDS IN TUNISIA

Family ACRIDIDAE MacLeay, 1821
Subfamily ACRIDINAE MacLeay, 1821

Genus *Acrida* Linnaeus, 1758

Acrida turrita (Linnaeus, 1758)
(Fig. 3)

Gryllus Acrida turritus Linnaeus, 1758: 427.

Gryllus (*Acrida*) *turritus* – Linnaeus 1767: 692.

Gryllus turritus – Fabricius 1775: 279.

Acrida (*Truxalis*) *turritus* – Gamelin 1790: 2056.

Truxalis turritus – Rossi 1790: 263.

Tryxalis turrita – Charpentier 1841: 305. — Krauss 1877: 52.

Acrida turrita – Stål, 1873: 96. — Chopard 1943: 255. — Massa & Rizzo 1998: 288.

Tryxalis nasutus – Bonnet & Finot 1885: 211.

Tryxalis (*Acrida*) *turrita* – Saussure 1895: 93.

Truxalis nasuta – Finot 1895: 411.

Acrida turrita uvarovi Bolívar, 1936: 408.

Acrida maroccana Dirsh, 1949b: 21.

Acrida turrita tunetana Dirsh, 1949b: 25.

TYPE SPECIMEN. — **Algeria** • unspecified; unknown repository.

DISTRIBUTION. — This species is widely distributed throughout West Africa (Mestre & Chiffaud 2006) and North Africa (Chopard 1943). It is also found in Sicily, the largest island in the Mediterranean Sea (Massa *et al.* 2012), and on some Mediterranean islets (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Widespread throughout Tunisia from the north of the country to the oases of southern Tunisia (Bonnet & Finot 1885; Finot 1895); Gabes (Chopard 1943; Massa & Rizzo 1998); Meknassy (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Souani Ali; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4654 • 1 ♀; same data; MNHN-EO-CAELIF4655.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Souani Ali; Gafsa, oases.

HABITAT. — Humid places, grassland, oases and irrigated areas (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated new sequences for two markers: COI (666 bp) and ND2 (443 bp) (Table 4).

Genus *Duroniella* Bolívar, 1908

Duroniella lucasii (Bolívar, 1881) (Fig. 4)

Phleoba (*Duronia*) *lucasii* Bolívar, 1881: 502.

Phleoba (*Duronia*) *lucasi* – Bonnet & Finot 1885: 213.

Duronia lucasi – Krauss 1890: 260.

Phleoba lucasi – Finot 1895: 417.

Duronia (*Phleoba*) *lucasi* – Vosseler 1902a: 354.

Duroniella lucasii – Kirby 1910: 140.

Duroniella lucasi – Salfi 1929: 151. — Chopard 1943: 259.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; Oran; MNCN.

DISTRIBUTION. — North Africa (Chopard 1943; Usmani 2008); Iran (Hodjat *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes (Bonnet & Finot 1885; Vosseler 1902a); Kerkennah Island, Ksar el-Ahmar, Bled Thalah, Tozeur (Bonnet & Finot 1885); Gafsa (Vosseler 1902a); Kasserine (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Tozeur, Souani Ali; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4683 • 2 ♀; same data; INAT.
Morocco • 1 ♂; Maader Anziz; VIII.1987; Thewys; MNHN-EO-CAELIF529.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Souani Ali; Gafsa, Amra.

HABITAT. — This species is found in irrigated fields and oases (H. Tlili, pers. obs).

REMARK. — *Duroniella lucasii* was recently moved by Popov *et al.* (2019) from the subfamily Oedipodinae to the subfamily Acridinae using many morphological and genital structures.

Genus *Truxalis* Fabricius, 1775

Truxalis nasuta (Linnaeus, 1758) (Fig. 5)

Gryllus Acrida nasutus Linnaeus, 1758: 427.

Truxalis nasutus – Fabricius 1775: 279.

Gryllus nasutus – Poiret 1789: 309.

(*Acrida*) *Truxalis nasutus* – Gamelin 1790: 2056.

Truxalis annulatus Thunberg, 1815: 264.

Truxalis nasuta – Charpentier 1825: 126. — Finot 1895: 411. — Massa & Rizzo 1998: 288.

Truxalis nasutus – Brullé 1832: 91. — Bonnet & Finot 1885: 211.

Tryxalis nasuta – Charpentier 1841: 305.

Troxallis nasuta – Fischer von Waldheim 1846: 230.

Tryxalis unguiculata – Fischer 1853: 301.

Acrida nasuta – Stål 1873: 99.

Tryxalis nasutus – Bonnet & Finot 1885: 211.

Tryxalis (*Acridella*) *unguiculata* – Bolívar 1893: 163.

Acrida unguiculata – Saussure 1893: 581.

Acrida (*Truxalis*) *unguiculata* – Vosseler 1902a: 353.

Acrida (*Truxalis*) *nasuta* – Vosseler 1902b: 5.

Acrida (*Acridella*) *unguiculata* – Vosseler 1902b: 5.

Truxalis unguiculata – Innes 1912: 99.

Acridella nasuta – Chopard 1943: 257.

TYPE SPECIMENS. — **Algeria** • ♂, ♀; syntypes; North Algeria; LSUK.

DISTRIBUTION. — According to Dirsh (1950[1951]), *Truxalis nasuta* is distributed across the Canary Islands, Southern Europe (Spain, Italy, Greece, and Chypre), North Africa (Morocco, Algeria, Tunisia, Libya, and Egypt) and Palestine. It has recently been found in Saudi Arabia (El-Hawagry *et al.* 2013).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Widespread throughout Tunisia from Cape Bon to the oases of Chott el Djerid (Bonnet & Finot 1885; Finot 1895); Gabes (Vosseler 1902a; Massa & Rizzo 1998); Gafsa (Vosseler 1902a); Kebili (Finot 1895).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Sidi Bouzid, Meknassy, 1929; Dumont; MNHN-EO-CAELIF2078 • 1 ♂; Sfax; 01-30.V.1922; G. Babault; MNHN-EO-CAELIF2079 • 1 ♂; Gafsa, El Aiaicha; 30.IV.1884; MNHN-EO-CAELIF2080 • 1 ♀; Kasserine, Feriana; 01-31.X.1884; T. Robert; MNHN-EO-CAELIF2084 • 1 ♂; Kebili, Essagui; 24.V.2017; H. Tlili; MNHN-EO-CAELIF4656 • 1 ♀; same data; MNHN-EO-CAELIF4657 • 2 ♂, 2 ♀; Gafsa Douwara; 20.VII.2016; H. Tlili; INAT • 1 ♂, 1 ♀; same data; ISA-CM.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Sbeitla; Gafsa, Douwara, El Guetar, Sened; Kebili, Essagui.

HABITAT. — Frequently found in old farms, this species occupies grassland, tufty gramineous areas, and cultivated fields. It is only uncommonly spotted in dry grasses. According to many studies, *T. nasuta* is almost always correlated with Graminae crops and steppe environments (Usmani 2008; Moussi *et al.* 2011).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (664 bp) (Table 4).

Truxalis procera Klug, 1830* (Fig. 6)

Truxalis procera Klug, 1830: pl. 16 – Dirsh 1950[1951]: 183.

TYPE SPECIMEN. — **Saudi Arabia** • unspecified; South Saudi Arabia; unknown repository.

DISTRIBUTION. — Río de Oro, Mauritania, Algeria, Tunisia, Niger, Chad, Libya, Sudan, Eritrea, Somalia, Saudi Arabia, Iran, Pakistan (Dirsh 1950[1951]) and Saudi Arabia (El-Hawagry *et al.* 2013).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Nefta (Dirsh 1950[1951]).

MATERIAL EXAMINED. — **Mauritania** • 1 ♂; Togba; 19.VI.1938; Mission d'Etudes de la Biologie des Acridiens; MNHN-EO-CAELIF334 • 1 ♀; Rhat Atoui; 06.II.1937; Mission d'Études de la Biologie des Acridiens; MNHN-EO-CAELIF335.
Niger • 1 ♀; Agadez; VIII.1949; L. Chopard; MNHN-EO-CAELIF9100.
Saudi Arabi • 1 ♂; North of Lith; 27.III.1948; B. P. Uvarov; MNHN-EO-CAELIF9101.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Sandy Khor with shrubs (Maxwell-Darling 1934).

Subfamily CALLIPTAMINAE Jacobson, 1905
Genus *Calliptamus* Serville, 1831

Calliptamus barbarus barbarus (Costa, 1836)
(Fig. 7)

Acridium barbarum Costa, 1836: 13.

Calliptamus ictericus Serville, 1838: 689.

Caloptenus siculus Burmeister, 1838: 639.

Caloptenus barbarus – Fischer 1853: 380.

Caloptenus discoidalis Walker, 1870a: 686.

Caloptenus italicus var. *barbarus* – De Bormans 1879: 407.

Caloptenus italicus var. *sicula* – De Bormans 1884: 180. — Bonnet & Finot 1885: 235. — Finot 1895: 547. — Vosseler 1902a: 395.

Caloptenus italicus var. *minimus* Ivanov, 1888: 351.

Calliptamus siculis – Willemse 1936: 102.

Calliptamus barbarus – Salfi 1937: 5.

Calliptamus ictericus chopardi Grassé & Hollande, 1945: 49.

Calliptamus barbarus monspelliensis Grassé & Hollande, 1945: 49.

Calliptamus barbarus nanus Mistshenko, 1951: 273.

Calliptamus barbarus barbarus – Ramme 1951: 311.

TYPE SPECIMEN. — **Italy** • ♂; neotype (Jago 1963); South Apulia, Maglie; NHM.

DISTRIBUTION. — This species is well-known in countries around the Mediterranean Sea, and its distribution extends far into Palearctic Asia (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Gabes (Vosseler 1902a); Kerkennah Island, Djerba (Bonnet & Finot 1885; Finot 1895).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Kasserine, Laayoune; 5.VIII.2016; H. Tlili; MNHN-EO-CAELIF4658 • 3 ♂, 4 ♀; same data; INAT • 1 ♂ 1 ♀; same data; ISA-CM • 1 ♀; Kasserine, Sbeitla; 5.VIII.2016; H. Tlili; INAT • 1 ♀; Gafsa Sened; 17.VII.2016; H. Tlili; MNHN-EO-CAELIF4659.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Laayoune, Sbeitla; Gafsa, Sened, El Guetar.

HABITAT. — Frequently found in old farms, grassland, and dry area (H. Tlili, pers. obs).

REMARKS. — The genus *Calliptamus* showed significant pullulations in Kasserine, which resulted in enormous damage, especially on apple and olive trees (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated new sequences for two markers: COI (654 bp) and ND2 (459 bp) (Table 4).

Calliptamus deserticola (Vosseler, 1902)*
(Fig. 8)

Caloptenus italicus var. *deserticola* Vosseler, 1902a: 395.

Caloptenus deserticola – Kheil 1915: 89.

Calliptamus deserticola – Capra 1929: 151.

Calliptamus siculis deserticola – Werner 1932: 173.

Calliptamus barbarus deserticola – Jannone 1938: 116. — Chopard 1943: 404.

TYPE SPECIMEN. — **Algeria** • unspecified; syntype; Laghout; SMNS.

DISTRIBUTION. — Morocco (Defaut & François 2018); Algeria and Tunisia (Vosseler 1902a); Turkey (Uvarov 1934); Iran (Uvarov 1938).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Gabes (Vosseler 1902a); Mezzouna mountain (Chopard 1943).

MATERIAL EXAMINED. — **Algeria** • 1 ♂; Biskra; VI.1886; E. Lemoro; MNHN-EO-CAELIF94 • 1 ♂; Algeria; 1898; J. Kunckel; MNHN-EO-CAELIF1902.
Georgia • 1 ♀; Tbilisi; 1896; M. Thierrot; MNHN-EO-CAELIF1903.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — *Calliptamus deserticola* is found near *Quercus coccifera L.* 1753 (Defaut 2017).

Calliptamus wattenwylianus (Pantel, 1896)
(Fig. 9)

Caloptenus italicus var. *wattenwyliana* Pantel, 1896: 70.

Calliptamus italicus var. *wattenwylianus* – Jacobson & Bianchi 1902: 317.

Calliptamus wattenwylianus – Werner 1932: 173. — Massa & Rizzo 1998: 284.

Calliptamus wattenwylianus wattenwylianus – Baroni *et al.* 2018: 6.

TYPE SPECIMENS. — **Spain** • ♂, ♀; lectotype, paralectotype (Defaut 2012); Sitio; MNHN.

DISTRIBUTION. — Only present along the Mediterranean Coast from North Africa (Jago 1963), France (Chopard 1951), Spain (Heller *et al.* 1998), Italy (Baroni *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tamerza (Massa & Rizzo 1998).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Kasserine, Laayoune; 5.VIII.2016; H. Tlili; MNHN-EO-CAELIF4660 • 1 ♂; Gafsa, Sened; 17.VII.2016; H.Tlili; MNHN-EO-CAELIF7029.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Laayoune; Gafsa, Sened.

HABITAT. — *Calliptamus wattenwylianus* almost always coexists in the same habitat with *Calliptamus barbarus barbarus* (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (675 bp) (Table 4).

Genus *Sphodromerus* Stål, 1873

Sphodromerus decoloratus Finot, 1894 **
(Fig. 10)

Sphodromerus decoloratus Finot, 1894: xiii.

TYPE SPECIMENS. — **Algeria** • ♂, ♀; syntypes; Biskra; MNHN.

DISTRIBUTION. — Algeria (Chopard 1943).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

MATERIAL EXAMINED. — **Algeria** • 1 ♀; holotype; Biskra; W. Brunner MNHN-EO-CAELIF74 • 1 ♂; same data; M. Noualhier; MNHN-EO-CAELIF75.
Tunisia • 1 ♀; Gabes; MNHN-EO-CAELIF76 • 1 ♀; same data; MNHN-EO-CAELIF1904.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Steppe environment (Chopard 1938)

REMARKS. — The specimens deposited in the MNHN were identified by Marius Descamps in 1965, but this data was not published; *Sphodromerus decoloratus* is thus reported here for the first time from Southern Tunisia (Gabes province).

Subfamily CYRTACANTHACRIDINAE Kirby, 1910
Genus *Anacridium* Uvarov, 1923

Anacridium aegyptium (Linnaeus, 1764)
(Fig. 11)

Gryllus (*Locusta*) *aegyptius* Linnaeus, 1764: 138.

Acridium aegyptium – Stål, 1873: 63. — Bonnet & Finot 1885: 231 – Bolívar 1908: 125.

Orthacanthacris aegyptia – Kirby 1910: 444.

Anacridium aegyptium – Uvarov 1923a: 36. — Chopard 1943: 395 – Massa & Rizzo 1998: 284.

TYPE SPECIMEN. — **Egypt** • unspecified; type lost (Cigliano *et al.* 2020); UUZM.

DISTRIBUTION. — Widely distributed along the costal regions of the south and north Mediterranean Sea to East Asia (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Widely distributed in Tunisia (Bonnet & Finot 1885); Gabes (Massa & Rizzo 1998); Gabes, Gafsa (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Kasserine, Foussana; 26.IV.2016; H. Tlili; MNHN-EO-CAELIF4661 • 1 ♀; same data; MNHN-EO-CAELIF4662 • 1 ♂; same data; INAT • 1 ♀; same data; ISA-CM.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Sbeitla, Foussana; Gafsa, Douwara.

HABITAT. — Open bushy vegetation and woodland (Usmani 2008).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (679 bp) (Table 4).

Genus *Schistocerca* Stål, 1873

Schistocerca gregaria gregaria (Forskål, 1775)
(Fig. 12)

Gryllus gregarius Forskål, 1775: 81.

Acridium peregrina Olivier, 1804: 388.

Acridium (*Schistocerca*) *peregrinum* – Stål, 1873: 65.

Schistocerca peregrina – Brunner 1882: 215. — Bonnet & Finot 1885: 231 – Finot 1895: 538.

Schistocerca gregaria – Krauss 1907: 12. — Ammar *et al.* 2009: 147.

Schistocerca gregaria gregaria – Franekel 1929: 657.

TYPE SPECIMEN. — **Egypt** • unspecified; type lost (Cigliano *et al.* 2020); Cairo; unknown repository.

DISTRIBUTION. — Widely distributed in the Old World, and expands its range during periods of invasion (Lecoq 2004).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur (Bonnet & Finot 1885; Finot 1895); Tataouine, Douiret (Ammar *et al.* 2009).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Degache; 29.XI.2016; H. Tlili; MNHN-EO-CAELIF4663 • 1 ♀; same data; MNHN-EO-CAELIF4664 • 1 ♂, 2 ♀; same data; INAT • 1 ♀; Gafsa, Sened; 30.XI.2016; H. Tlili; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sened; Tozeur, Degache; Kebili, Essagui.

HABITAT. — Deserts of North and West Africa (Cisse *et al.* 2013).

Subfamily EGNATIINAE Bey-Bienko & Mistshenko, 1951
Genus *Egnatioides* Vosseler, 1902

Egnatioides striatus Vosseler, 1902*
(Fig. 13)

Egnatioides striatus Vosseler, 1902a: 362. — Uvarov 1942[1941]: 346. — Chopard 1943: 327.

TYPE SPECIMENS. — **Algeria** • unspecified; syntypes; Djelfa; SMNS.

DISTRIBUTION. — Morocco (Defaut 1984); Algeria (Moussi *et al.* 2011); Tunisia (Vosseler 1902a); Libya (Massa 1998).

Data from literature for central and southwestern Tunisia. — Gafsa, Gabes (Vosseler 1902a; Uvarov 1942 [1941]; Chopard 1943).

Material examined. — **Morocco** • 1 ♂; Midelt; 23.V.1983; B. Defaut; MNHN-EO-CAELIF119.
Algeria • 1 ♀; Boghari, R. Pasquier; MNHN-EO-CAELIF118.

New data for central and southwestern Tunisia. — None.

Habitat. — According to Chopard (1943), this species is present in all the south part of Tunisia and Algeria.

Egnatioides coerulans (Krauss, 1893)**
(Fig. 14)

Egnatius coerulans Krauss, 1893: XCV.

Egnatioides coerulans – Uvarov 1926b: 357.

Type specimens. — **Algeria** • ♂♂, ♀♀; syntypes; Mecheria; SMNS.

Distribution. — Algeria (Krauss 1893); Libya (Chopard 1943); Iran (Garai 2011).

Data from literature for central and southwestern Tunisia. — No data.

Material examined. — **Tunisia** • 1 ♀; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF4735.

Libya • 1 ♀; Cyrenaica, Regima; 25.VII.1957; K. M. Guichard; NHMUK 013806090.

New data for central and southwestern Tunisia. — Gafsa, El Guetar.

Habitat. — Sandy and stony steppe (Krauss & Vosseler 1896).

Subfamily Eremogryllinae Dirsh, 1956
Genus *Eremogryllus* Krauss, 1902

Eremogryllus hammadae Krauss, 1902*
(Fig. 15)

Eremogryllus hammadae Krauss, 1902: 231. — Vosseler 1902a: 355. — Uvarov 1923b: 64.

Leptopternis quadriocellata Werner, 1931: 202.

Sphingonotina ochracea Chopard, 1943: 323.

Type specimen. — **Algeria** • ♀; holotype; Sahara, Ouargla to Ghardaia; ZMHB.

Distribution. — North Africa (Uvarov & Volkonsky 1939); Egypt (Ebner 1956).

Data from literature for central and southwestern Tunisia. — Gafsa (Vosseler 1902a; Uvarov 1923a); Djerba (NHM).

Material examined. — **Tunisia** • 1 ♀; Djerba; 17.VI.1982; NHMUK 013806164.

New data for central and southwestern Tunisia. — None.

Habitat. — This species occurs in desert environments (Uvarov & Volkonsky 1939).

Genus *Notopleura* Krauss, 1902

Notopleura pygmaea Vosseler, 1902*
(Fig. 16)

Notopleura pygmaea Vosseler, 1902a: 356; 1902b: 5. — Bolívar 1915: 34. — Chopard 1943: 280.

Type specimen. — **Tunisia** • ♀; holotype; South of Gabes; SMNS.

Distribution. — Tunisia (Vosseler 1902a, 1902b ; Bolívar 1915 ; Chopard 1943.

Data from literature for central and southwestern Tunisia. — Gabes (Vosseler 1902a, b; Bolívar 1915; Chopard 1943).

Material examined. — None.

New data for central and southwestern Tunisia. — None.

Habitat. — According to Vosseler (1902a), *Notopleura pygmaea* occurs exclusively in desert environments.

Remarks. — This species is endemic in Southern Tunisia and is recorded only from the original citation of Vosseler (1902a). It has been erroneously reported from Algeria by Moussi *et al.* (2014) in the place of misidentified *Tenuitarsus angustus* (Pyrgomorphidae: Pyrgomorphinae).

Notopleura saharica Krauss, 1902
(Fig. 17)

Notopleura saharica Krauss, 1902: 241. — Vosseler 1902a: 355. — Bolívar 1915: 34. — Chopard 1943: 279.

Type specimens. — **Algeria** • ♂♂, ♀♀; syntypes; between Ghardaia and Guerrara; ZMHB.

Distribution. — Algeria (Zergoun *et al.* 2019); Tunisia (Vosseler 1902a); Libya (Massa 1998).

Data from literature for central and southwestern Tunisia. — Sfax (Vosseler 1902a; Bolívar 1915; Chopard 1943).

Material examined. — **Tunisia** • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF4739 • 1 ♀; Gafsa, Sened; 03.IV.2017; H. Tlili; MNHN-EO-CAELIF1905 • 1 ♀; same data; MNHN-EO-CAELIF1906.

New data for central and southwestern Tunisia. — Gafsa, Amra, Senad.

Habitat. — Desert and rocky environments with scattered vegetation (Uvarov 1924).

Subfamily Eyprepocnemidinae Brunner von Wattenwyl, 1893
Genus *Eyprepocnemis* Fieber, 1853

Eyprepocnemis plorans plorans (Charpentier, 1825)
(Fig. 18)

Gryllus plorans Charpentier, 1825: 134.

Acridium plorans – Costa 1836: 7.

Eyprepocnemis plorans – Fieber 1853: 98.

Euprepocnemis plorans – Stål 1876: 16. — Finot 1895: 541. — Chopard 1943: 407.

Eyprepocnemis plorans plorans – La Greca 1948: 176.

TYPE SPECIMEN. — **Portugal** • unspecified; unknown repository.

DISTRIBUTION. — This species is widely distributed around the Mediterranean Basin extending eastwards into Palearctic Asia (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Sfax, Gabes, Bou Hedma Mountain, Nefta (Chopard 1943); Oases of Djerid (Finot 1895).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Souani Ali; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4665 • 1 ♀; same data; MNHN-EO-CAELIF4666.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Souani Ali.

HABITAT. — This species occurs in humid grasslands and oases (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (656 bp) (Table 4).

Heteracris adspersa adspersa (Redtenbacher, 1889)* (Fig. 19)

Euprepocnemis adspersa Redtenbacher, 1889: 30.

Thisoicetrus adspersus – Jacobson & Bianchi 1902: 319.

Heteracris adspersa – Shumakov 1963: 106. — Grunshaw 1991: 37.

Heteracris adspersa adspersa – Buzzetti *et al.* 2014: 23.

TYPE SPECIMEN. — **Transcaspia** • ♂; lectotype (Grunshaw 1991); NMW.

DISTRIBUTION. — Algeria (Zergoun *et al.* 2019); Iran (Garai 2011); Senegal (Mestre & Chiffaud 2006).
The distribution area of this subspecies extends from southern Spain to central Asia (Grunshaw 1991); for the sub-Saharan region, *H. adspersa adspersa* is recorded only in Senegal (Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Zarzis (Grunshaw 1991).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Southern Tunisia; 1919; Abeille de Perrin E.A.E; MNHN-EO-CAELIF3726.
Algeria • 1 ♀ Oran; 01.X.1954; H. Maurel; MNHN-EO-CAELIF9131 • 1 ♀; same data; MNHN-EO-CAELIF9132.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Oases and the environment with halophytic plants (Moussi *et al.* 2011).

Genus *Heteracris* Walker, 1870

Heteracris annulosa annulosa Walker, 1870 (Fig. 20)

Heteracris annulosa Walker, 1870a: 674. — Grunshaw 1991: 22.

Pezotettix (*Euprepocnemis*) *charpentieri* Stål, 1873: 75.

Euprepocnemis littoralis Bonnet & Finot, 1885: 232.

Euprepocnemis annulosa – Kirby 1910: 560.

Thisoicetrus brevipes Bolívar, 1936: 416.

Thisoicetrus annulosus annulosus – Uvarov 1939: 379. — Chopard 1943: 410.

Heteracris (*Heteracris*) *annulosa* – Massa & Fontana 1998: 78.

Heteracris annulosa annulosa – Buzzetti *et al.* 2014: 23.

TYPE SPECIMEN. — ♂; holotype; NHM.

TYPE LOCALITY. — Unknown.

DISTRIBUTION. — This species is distributed from North and Sub-Saharan Africa to Arabia (Grunshaw 1991).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Djerba (Massa 1994); Nefta (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Souani Ali; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4667 • 1 ♂; same data; MNHN-EO-CAELIF7438 • 1 ♀; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF4668 • 1 ♂; Gafsa, Douwara; 20.VII.2016; H. Tlili; MNHN-EO-CAELIF7085 • 1 ♀; Gabes; 1898; M. Noualhier; MNHN-EO-CAELIF3756 • 1 ♀; Sfax; 1856; M. Ducouret; MNHN-EO-CAELIF3757.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, El Guetar; Tozeur, Souani Ali.

HABITAT. — This species occurs in grasslands and oases (H. Tlili, pers. obs).

Heteracris harterti (Bolívar, 1913)* (Fig. 21)

Thisoicetrus harterti Bolívar, 1913: 614. — Chopard 1943: 410.

Thisoicetrus littoralis harterti – Uvarov 1923b: 76.

Thisoicetrus littoralis bolívari Uvarov, 1923b: 76.

Heteracris harterti – Davey *et al.* 1959: 102. — Massa 1994: 5.

TYPE SPECIMEN. — **Algeria** • ♀; lectotype (Grunshaw 1991); Biskra; NHM.

DISTRIBUTION. — Morocco (Badih & Pascual 1998); Algeria (Zergoun *et al.* 2019); Tunisia (Chopard 1943); Libya (Usmani 2008); Sub-Saharan Africa (Grunshaw 1991; Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur (Chopard 1943); Zarzis, Ben Guerdan (Massa 1994).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Tozeur, C. Dumont; MNHN-EO-CAELIF3738.
Chad • 1 ♂; Soro; 2.VI.1935; Mission d'Etudes de la Biologie des Acridiens; MNHN-EO-CAELIF1907.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Desert environment (Chopard 1950).

Heteracris minuta (Uvarov, 1921)*
(Fig. 22)

Thisoicetrus littoralis variety *minuta* Uvarov, 1921b: 123. — Chopard 1943: 410.

Thisoicetrus littoralis minuta – Uvarov 1923b: 77.

Thisoicetrus littoralis minutus – Uvarov 1939: 382.

Heteracris littoralis minuta – Dirsh 1958: 53.

Heteracris minuta – Grunshaw 1991: 28.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; Annaba; NHM.

DISTRIBUTION. — Algeria, Tunisia, Libya (Grunshaw 1991).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Miknassi (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Meknassy; 3.VIII.1929; C. Dumont; MNHN-EO-CAELIF66.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — No data.

Subfamily GOMPHOCERINAE Fieber, 1853
Genus *Dociostaurus* Fieber, 1853

Dociostaurus biskrensis Moussi & Petit, 2014**
(Fig. 23)

Dociostaurus biskrensis Moussi & Petit, 2014: 381.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; Biskra; MNHN-EO-CAELIF995.

DISTRIBUTION. — Algeria (Moussi *et al.* 2014).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF4736 • 1 ♀; same data; MNHN-EO-CAELIF4737 • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF7101 • 1 ♀; same data; MNHN-EO-CAELIF7102 • 1 ♂; same data; MNHN-EO-CAELIF7103 • 1 ♀; same data; MNHN-EO-CAELIF7104 • 1 ♀; same data; MNHN-EO-CAELIF7105 • 1 ♀; same data; MNHN-EO-CAELIF7106 • 1 ♀; same data; MNHN-EO-CAELIF7107 • 1 ♀; same data; MNHN-EO-CAELIF7108 • 1 ♀; same data; MNHN-EO-CAELIF7109 • 1 ♂; Gafsa, Douwara; 27.IV.2019; H. Tlili; MNHN-EO-CAELIF7055 • 1 ♀; same data; MNHN-EO-CAELIF7056.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, El Guetar, Douwara.

HABITAT. — Grassland (Moussi *et al.* 2014).

REMARKS. — This species has been identified by A Louveaux (pers. comm.) and by one of the present authors (A. M.). It is thus recorded here for the first time in Tunisia.

Dociostaurus (*Kasakia*) *jagoi jagoi* Soltani, 1978
(Fig. 24)

Stauronolus genei – Bonnet & Finot 1885: 213 (misidentification). — Finot 1895: 435 (misidentification). — Vosseler 1902a: 354 (misidentification).

Dociostaurus (*Kasakia*) *jagoi jagoi* Soltani, 1978: 26.

Dociostaurus jagoi jagoi – Blondheim 1987: 127.

Dociostaurus (*Dociostaurus*) *jagoi* – Defaut 1999: 42.

Dociostaurus jagoi – Braud *et al.* 2002: 14.

TYPE SPECIMENS. — **Iran** • ♂; holotype; Ilam Province, Mehran Chalab, 350 m; NHM • ♀; paratype; same data as holotype; NHM.

DISTRIBUTION. — Morocco, Iran (Soltani 1978); Algeria (Moussi *et al.* 2011); Tunisia (Massa & Rizzo 1998; González-Serna 2018); Libya (Massa 2009); Portugal (Pina *et al.* 2017); Jordan (Willemse 2009).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Sfax, Gabes, Djerba Island (Bonnet & Finot 1885; Vosseler 1902a).

MATERIAL EXAMINED. — **Iran** • 1 ♂; holotype; Kermanshah, Mehran; 9.V.1973; A. A. Soltani; NHMUK 013806023.
Paratype Morocco • 1 ♀; Atlas Mountain, Ait Bou Guemmez; 7.VIII.1951; K. W. Miller; NHMUK 013806024.
Tunisia • 1 ♂; Gafsa; Sened; 03.IV.2017; H. Tlili; MNHN-EO-CAELIF4669 • 1 ♀; same data; MNHN-EO-CAELIF4670 • 1 ♂; same data; MNHN-EO-CAELIF7431 • 1 ♂, 1 ♀; same data; INAT • 1 ♂, 1 ♀; same data; ISA-CM.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sened, El Guetar, Amra.

HABITAT. — Grassland (Soltani 1978).

Genus *Ochrilidia* Stål, 1873

Ochrilidia geniculata (Bolívar, 1913)
(Fig. 25)

Platypterna geniculata Bolívar, 1913: 608. — Chopard 1943: 263.

Platypterna rothschildi Bolívar, 1913: 607.

Platypterna kraussi Bolívar, 1913: 610.

Platypterna lybica Salfi, 1925: 289.

Platypterna pruinosa agedabiae Salfi, 1928: 244.

Ochrilidia geniculata – Chopard 1949: 193. — Massa 1994: 6.

TYPE SPECIMEN. — **Algeria** • ♂; lectotype (Jago 1977); El Golea; MNCN.

DISTRIBUTION. — Widespread from North Africa (Chopard 1943; Usmani 2008) and sub-Saharan Africa across the Arabian Peninsula to Pakistan and India (Mestre & Chiffaud 2006); Iran (Garai 2011).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Meknassi (Chopard 1943); Nefta, Gafsa, Mareth, Kerkennah Island (Massa 1994).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF4673 • 1 ♀; same data; MNHN-EO-CAELIF4674 • 1 ♀; same data; 04.X.2016; INAT • 1 ♂, 1 ♀; same data; ISA-CM • 1 ♀; Gafsa, Douwara; 20.VII.2016; H. Tlili; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, El Guetar, Sened, Douwara; Tozeur, Souani Ali; Kebili, Rahmet.

HABITAT. — Widely distributed in grassland sub-desert areas (Usmani 2008).

REMARKS. — *Ochrilidia geniculata* showed a mean density of 50 individuals/m² in the site of Degache (Tozeur) at the herbaceous layer (without economic importance) (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (651 bp) (Table 4).

Ochrilidia gracilis gracilis (Krauss, 1902)*
(Fig. 26)

Platypterna gracilis Krauss 1902: 236. — Chopard 1943: 264.

Ochrilidia gracilis – Chopard 1950: 137.

Ochrilidia gracilis gracilis – Massa 1994: 7.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; Ghardaia; SMNS.

DISTRIBUTION. — Algeria (Zergoun *et al.* 2019); Egypt (Willemse 2009); Sindh, Pakistan (Sultana *et al.* 2013). This species is widespread in North Africa and sub-Saharan Africa to Central Asia (Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Maknassy, Bou Hedma (Chopard 1943); Tamerza (Massa 1994).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Meknassy; 4.IX.1929; C. Dumont; MNHN-EO-CAELIF397 • 1 ♀; same data; MNHN-EO-CAELIF398.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Humid places and oases (Moussi *et al.* 2011).

Ochrilidia harterti harterti (Bolivar, 1913)*
(Fig. 27)

Platypterna harterti Bolívar, 1913: 608. — Chopard 1943: 264.

Ochrilidia harterti – Chopard 1950: 138.

Ochrilidia harterti harterti – Jago 1977: 192.

TYPE SPECIMEN. — **Algeria** • ♀; holotype; Ain Guettara, north of Ain-Salah; MNCN.

DISTRIBUTION. — Morocco (Defaut & François 2018); Algeria (Zergoun *et al.* 2019); Tunisia (Chopard 1943); Libya (Massa 2009); Mauritania, Niger, Chad, Djibouti, Saudi Arabia (Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Maknassy, Tozeur (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀;Tozeur; 4.IX.1929; C. Dumont; MNHN-EO-CAELIF3783.
Algeria • 1 ♀; 09.V.1950; MNHN-EO-CAELIF404 • 1 ♀; Tilrempt; 1934; L. Chopard; MNHN-EO-CAELIF405.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Very common in clumps of grasses (Chopard 1950).

Stenohippus mundus (Walker, 1871)***
(Fig. 28)

Stenobothrus mundus Walker, 1871: 79.

Stenobothrus epacromioides var. *nigrovittata* Krauss, 1892b: 166.

Stenobothrus bonneti Bolívar, 1885: 116. — Finot 1895: 425. — Vosseler 1902b: 5.

Omocestus bonneti – Kirby 1910: 172.

Stauroderus nigrovittatus – Kirby 1910: 180.

Dociostaurus mundus – Kirby 1914: 119.

Stauroderus bonneti – Bolívar 1915: 33.

Stenohippus mundus – Uvarov 1926c: 425.

Stenohippus epacromioides var. *nigrovittata* – Uvarov 1926c: *Ibid.* 425.

Stenohippus bonneti – Uvarov 1926c: 425. — Chopard 1943: 277.

TYPE SPECIMEN. — **India** • ♂; holotype; Bombay; NHM.

DISTRIBUTION. — This species is present in North and sub-Saharan Africa, across Saudi Arabia to Pakistan and India (Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Bir Beni Zid, Chott Fedjej (Finot 1895); Bou Hedma (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF7030 • 1 ♀; same data; MNHN-EO-CAELIF7031 • 1 ♂; same data; MNHN-EO-CAELIF7432 • 1 ♀; same data; MNHN-EO-CAELIF7433 • 1 ♀; same data; MNHN-EO-CAELIF7434 • 1 ♀; same data; MNHN-EO-CAELIF7435 • 1 ♀; same data; MNHN-EO-CAELIF7436 • 1 ♀; same data; MNHN-EO-CAELIF7437 • 1 ♀; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF4672 • 1 ♂; same data; INAT • 1 ♂; Tozeur, Souani Ali; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4671.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Amra, El Guetar; Tozeur, Souani Ali.

HABITAT. — Waddies and depressions (Maxwell-Darling 1934).

REMARKS. — *Stenohippus mundus* has an extensive distribution from East Africa (Maxwell-Darling 1934) to West Asia (Walker 1871). In North Africa, the last record of this species was in 1884 by Bonnet. We confirm here the presence of *S. mundus* in Tunisia.

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (658 bp) (Table 4).

Subfamily Oedipodinae Walker, 1871
Genus *Acrotylus* Fieber, 1853

Acrotylus insubricus insubricus (Scopoli, 1786) (Fig. 29)

Gryllus insubricus Scopoli, 1786: 64.

Gryllus (*Locusta*) *insubricus* – Gamelin 1790: 2079.

Acrotylus insubricus – Walker 1871: 74. — Krauss 1892a: 148. — Finot 1895: 454. — Vosseler 1902b: 6. — Bolívar 1908:123. — Chopard 1943: 302. — Massa & Rizzo 1998: 285.

Acrotylus insubricus insubricus – Uvarov 1927: 206.

Oedipoda insubrica – Burmeister 1838: 641.

Acrotylus insubricus biskrensis Maran, 1958: 171.

Type specimen. — **Italy** • unspecified; Northern Italy (Insubria); unknown repository.

Distribution. — Widely distributed in the Palearctic region from Central Europe southwards into Africa and eastwards into Asia (Willemse *et al.* 2018).

Data from literature for central and southwestern Tunisia. — Recorded from the center to the north of Tunisia (Krauss 1892a; Finot 1895; Bolívar 1908; Chopard 1943; Massa & Rizzo 1998); Meknassi (Chopard 1943).

Material examined. — **Tunisia** • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF4675 • 1 ♀; Kebili, Essagui; 24.VII.2017; H. Tlili; MNHN-EO-CAELIF4676 • 1 ♀; same data; 24.V.2017; MNHN-EO-CAELIF7053 • 1 ♀; same data; MNHN-EO-CAELIF7054 • 1 ♀, 1 ♂; same data; ISA-CM • 1 ♂; Gafsa, Douwara; 27.IV.2019; H. Tlili; MNHN-EO-CAELIF7045 • 1 ♂; same data; MNHN-EO-CAELIF7046 • 1 ♂; same data; MNHN-EO-CAELIF7047 • 1 ♀; same data; MNHN-EO-CAELIF7048 • 1 ♀; same data; MNHN-EO-CAELIF7049 • 1 ♀; same data; MNHN-EO-CAELIF7050 • 1 ♀; same data; MNHN-EO-CAELIF7051 • 1 ♀; same data; MNHN-EO-CAELIF7052 • 1 ♂, 3 ♀; Gafsa, Moulares; 27.IV.2016; H. Tlili; INAT • 1 ♀, 1 ♂; Gafsa, Sened; 03.IV.2017; H. Tlili; INAT.

New data for central and southwestern Tunisia. — Species present in all surveyed stations, except in the desertic locality of Gouifla and the mountains.

Habitat. — This species is abundant in different vegetation in different localities, except the desertic area and the mountains; it is abundant in agricultural fields (H. Tlili, pers. obs) and oases (Chopard 1938).

DNA sequences. — We generated a new sequence for the mitochondrial marker COI (654 bp) (Table 4).

Acrotylus longipes longipes (Charpentier, 1845) (Fig. 30)

Oedipoda longipes Charpentier, 1845: Tab. 54.

Oedipoda (*Acrotylus*) *longipes* – Fieber 1853: 126.

Acrotylus longipes – Walker 1871: 74. — Bonnet & Finot 1885: 215. — Finot 1895: 452. — Vosseler 1902a: 360. — Chopard 1943: 301.

Acrotylus longipes longipes – Otte 1995: 320.

Type specimen. — **Greece** • ♂; neotype; Epidaurus; Harz collection.

Distribution. — Southeastern Europe, Africa, and southwestern Asia (Willemse *et al.* 2018); Croatia (Papković & Jelinčić 2019); Morocco, Algeria, Canary Islands (Moussi *et al.* 2018); Tunisia, Egypt (Haggag *et al.* 2008).

Data from literature for central and southwestern Tunisia. — Tozeur, Bou Hedma, El Guetar (Bonnet & Finot 1885: 215; Finot 1895); Bir Bou Rekbah, Graiba, Gafsa (Vosseler 1902a); Maknassy (Chopard 1943).

Material examined. — **Tunisia** • 1 ♀; Kebili, Essagui; 24.V.2017; H. Tlili; MNHN-EO-CAELIF4678 • 1 ♂; Gafsa, Sened; 17.VII.2017; H. Tlili; MNHN-EO-CAELIF4677 • 1 ♀; same data; INAT • 1 ♂, 1 ♀; Gafsa, Douwara; 27.VI.2016; H. Tlili • 1 ♂, 1 ♀; same data; ISA-CM • 1 ♀; same data; INAT • 1 ♂, 1 ♀; Gafsa, Douwara; 27.VI.2016; H. Tlili • 1 ♂, 1 ♀; same data; ISA-CM.

New data for central and southwestern Tunisia. — Kebili, Essagui; Gafsa, Sened; Gafsa, Douwara.

Habitat. — *Acrotylus longipes longipes* almost always coexists in the same habitat with *Acrotylus insubricus insubricus.*

DNA sequences. — We generated a new sequence for the mitochondrial marker COI (654 bp) (Table 4).

Acrotylus patruelis (Herrich-Schäffer, 1838)* (Fig. 31)

Gryllus patruelis Herrich-Schäffer, 1838: 157.

Oedipoda (*Acrotylus*) *patruelis* – Fieber 1853: 126.

Oedipoda patruelis – Fieber 1854: 198.

Acrotylus patruelis – Walker 1871: 74. — Bonnet & Finot 1885: 215. — Chopard 1943: 303.

Acrotylus patruelis patruelis – Massa 2009: 83.

Type specimen. — Unspecified, unknown repository.

Type locality. — S. Europe, W. Asia, Africa.

Distribution. — North Africa, Southern Europe, Southern West Asia (Chopard 1943); Egypt (Haggag *et al.* 2008); Sub-Saharan Africa (Mestre & Chiffaud 2006).

Data from literature for central and southwestern Tunisia. — Widely distributed in Tunisia (Bonnet & Finot 1885); Bou Hedma, Maknassy (Chopard 1943).

Material examined. — **Algeria** • 1 ♂; Skikda (ex. Philippeville); M. Le Boul; MNHN-EO-CAELIF468.
Senegal • 1 ♀; Ferlo; VIII.1970; M. Lepage; MNHN-EO-CAELIF9108.
Central African Republic • 1 ♂; Maboke; 22.XII.1967; P. Teocchi; MNHN-EO-CAELIF9109.

New data for central and southwestern Tunisia. — No data.

Habitat. — *Acrotylus patruelis* almost always coexists in the same habitat with *Acrotylus longipes longipes* and is also present in less dry places (Chopard 1950).

Genus *Aiolopus* Fieber, 1853

Aiolopus puissanti Defaut, 2005** (Fig. 32)

Aiolopus puissanti Defaut, 2005b: 105.

TYPE SPECIMEN. — **Morocco** • ♂; holotype; Sidi Bou Knadel; MNHN.

DISTRIBUTION. — France, Espagne, Morocco (Defaut & Jaulin 2008); Portugal (Pina *et al.* 2017); Algeria (Zergoun *et al.* 2019); Iran (Hodjat *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

MATERIAL EXAMINED. — **Morocco** • 1 ♂; holotype; Sidi Bou Knadel; 1.XI.1981; B. Defaut; MNHN-EO-CAELIF472.
Tunisia • 1 ♂; Gafsa, Douwara; 20.VII.2016; H. Tlili; MNHN-EO-CAELIF4679 • 1 ♀; Gafsa, El Guetar; 30.IV.2017; H. Tlili MNHN-EO-CAELIF7084 • 1 ♂; same data; 25.V.2017; MNHN-EO-CAELIF7439.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Douwara; Tozeur, Souani Ali.

HABITAT. — *Aiolopus puissanti* almost always coexists in the same habitat with *Aiolopus strepens strepens* (H. Tlili, pers. obs).

REMARKS. — The morphometric analysis of the North African specimens differs enough to distinguish the European specimens of *A. thalassinus* (Fabricius, 1871) as a different species (Defaut 2005b; Defaut & Jaulin 2008).

Aiolopus strepens strepens (Latreille, 1804) (Fig. 33)

Acrydium strepens Latreille, 1804: 154.

Acridium vittatum Brullé, 1840: 78. — Finot 1895: 422.

Aiolopus strepens – Fieber 1853: 100. — Chopard 1943: 287.

Epacromia strepens – Bolívar 1876: 348. — Bonnet & Finot 1885: 214. — Finot 1895: 422. — Vosseler 1902a: 354.

Aiolopus strepens strepens – Massa *et al.* 2012: 445.

TYPE SPECIMEN. — **France** • ♂; neotype (Hollis 1968); Dordogne; NHM.

DISTRIBUTION. — The distribution of this species is covers southern Europe, North Africa, and western Asia (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes (Bonnet & Finot 1885; Finot 1895); Bou Hedma Mountain (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF4681 • 1 ♀; Tozeur, Souani Ali; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4680 • 1 ♀; same data; MNHN-EO-CAELIF7440.
Algeria • 1 ♀; around Algiers; 1898; J. Kunckel; MNHN-EO-CAELIF9110.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Souani Ali; Gafsa, Douwara.

HABITAT. — Slightly-wet places, grassland, oases (Chopard 1943).

Genus *Helioscirtus* Saussure, 1884

Helioscirtus capsitanus capsitanus (Bonnet, 1884)* (Fig. 34)

Bryodema capsitana Bonnet, 1884: 548.

Helioscirtus capsitanus – Bonnet & Finot 1885: 213. — Vosseler 1902a: 366.

Vosseleria capsitana – Uvarov, 1923d: 30.

Helioscirtus capsitanus capsitanus – Massa 2009: 84.

TYPE SPECIMEN. — **Tunisia** • ♂; holotype; Bled Segui; MNHN.

DISTRIBUTION. — Morocco (Defaut & François 2018); Algeria (Vosseler 1902a); Tunisia (Bonnet & Finot 1885); Libya (Massa 2009); Egypt (Haggag *et al.* 2008).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Bled Segui (Bonnet & Finot 1885); Sfax, Gafsa (Vosseler 1902a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; holotype; Essagui; 27.V.1884; E. Bonnet; MNHN-EO-CAELIF480
Algeria • 1 ♀; Laghouat; 22.VI.1897; J. Vosseler; NHMUK 013806094 • 1 ♀; Msila; IV.1893; P. Lesne; MNHN-EO-CAELIF9111.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — This species lives in sandy desert (Vosseler 1902a).

Helioscirtus gracilis Vosseler, 1902* (Fig. 35)

Helioscirtus gracilis Vosseler, 1902a: 368. — Chopard 1943: 322.

Vosseleria gracilis – Uvarov 1923d: 30.

TYPE SPECIMEN. — **Tunisia** • ♀; holotype; Gafsa; SMNS.

DISTRIBUTION. — Tunisia (Vosseler 1902a).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa (Vosseler 1902a); Nefzaoua (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Kebili, Nefzaoua; IV.1884; E. Bonnet; MNHN-EO-CAELIF481.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Unknown.

REMARKS. — This species has never been recorded since Vosseler (1902a); based on known localities to date, seems endemic to Tunisia.

Genus *Hilethera* Uvarov, 1923

Hilethera aeolopoides (Uvarov, 1922)** (Fig. 36)

Lerina aeolopoides Uvarov, 1922: 359.

Hilethera aeolopoides – Uvarov 1923c: 84.

TYPE SPECIMEN. — **Sultanate of Oman** • ♂; holotype; Muscat; NHM.

DISTRIBUTION. — From Morocco and Sahel to Saudi Arabia and Pakistan (Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — No available data about this species in Tunisia.

MATERIAL EXAMINED. — **Oman** • 1 ♂; holotype; Muscat, A.S.G. Jayakar; NHMUK 013806007.
Tunisia • 1 ♂, 2 ♀; Gafsa, Metkides; 01.VI.2016; H. Tlili; INAT • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF4684 • 1 ♀; Gafsa, El Guetar; 04.X.2016; H. Tlili; MNHN-EO-CAELIF4685 • 1 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Metkides; Gafsa, El Guetar.

HABITAT. — This species lives in a sub-desert environment (Mestre & Chiffaud 2006).

Genus *Hyalorrhipis* Saussure, 1884

Hyalorrhipis calcarata (Vosseler, 1902)*
(Fig. 37)

Leptopternis calcarata Vosseler, 1902a: 382.

Hyalorrhipis calcarata – Kirby 1910: 280. — Massa & Rizzo 1998: 286.

TYPE SPECIMENS. — **Algeria** • ♂, ♀; syntypes; Bou Saada; SMNS.

DISTRIBUTION. — Morocco (Chopard 1943).

Algeria (Moussi *et al.* 2011); Tunisia (Massa & Rizzo 1998); Libya (Usmani 2008).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur (Massa & Rizzo 1998).

MATERIAL EXAMINED. — **Morocco** • 1 ♀; Tarfaya; 01.V.1967; Thewys; MNHN-EO-CAELIF486.
Algeria • 1 ♂; Beni Ounif; VI.1942; Karsakoff; MNHN-EO-CAELIF9112.
Sudan • 1 ♀; III.1895; Mourad; MNHN-EO-CAELIF9113.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Desert environment (Chopard 1943).

Genus *Leptopternis* Saussure, 1884

Leptopternis maculata Vosseler, 1902
(Fig. 38)

Leptopternis maculata Vosseler, 1902a: 380. — Chopard 1943: 324.

Sphingonotus acrotyloides Werner, 1908: 715.

TYPE SPECIMENS. — **Algeria** • ♂; syntype; Bou Saada; SMNS • ♀; syntype; Bou Saada; NHM.

DISTRIBUTION. — Algeria (Moussi *et al.* 2018); Tunisia (Moussi *et al.* 2018); Libya (Massa 2009).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sfax (Vosseler 1902a); Maknassy (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Gabes, Ghanouch; 26.VII.2018; M. Ben Chouikha; coll. MBC • 1 ♀; Gabes, Mareth; 3.X.2018; M. Ben Chouikha; coll. MBC • 1 ♀; Maknassy, VI.1927; MNHN-EO-CAELIF9114.
Algeria • 1 ♀; Bou Saada, Oued El Maittar; 17.X.1954; H. Maurel & R. P[asquier]; MNHN-EO-CAELIF493.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Douwara.

HABITAT. — This species lives in desertic steppe (H. Tlili, pers. obs.).

Leptopternis rothschildi Bolívar, 1913**
(Fig. 39)

Leptopternis rothschildi Bolívar, 1913: 611.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; Oued Nsa; MNCN.

DISTRIBUTION. — Algeria (Korsakoff 1958).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Gouifla; 26.VII.2017; H. Tlili; MNHN-EO-CAELIF4686 • 1 ♀; same data; MNHN-EO-CAELIF4687.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Douwara; Tozeur, Gouifla.

HABITAT. — This species lives in desertic sands and desertic steppe (H. Tlili, pers. obs.).

Genus *Mioscirtus* Saussure, 1888

Mioscirtus wagneri wagneri (Eversmann, 1859)*
(Fig. 40)

Oedipoda wagneri Eversmann, 1859: 145.

Scintharista wagneri – Saussure 1884: 121.

Mioscirtus wagneri – Saussure 1888: 36. — Chopard 1943: 293.

Scintharista (*Mioscirtus*) *wagneri* – Finot 1895: 448.

Mioscirtus wagneri wagneri – Huang *et al.* 2013: 555.

TYPE SPECIMEN. — **Turkmenistan** • ♀; holotype; Firiuza; ZIN.

DISTRIBUTION. — North Africa (Chopard 1943); Egypt (Haggag *et al.* 2008); Iran (Hodjat *et al.* 2018); China, Ukraine, Russia, Kazakhstan, Turkmenistan (Huang *et al.* 2013).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur (Chopard 1943).

MATERIAL EXAMINED. — **Algeria** • 1 ♂; Oran; 1.X.1954; H. Maurel; MNHN-EO-CAELIF498 • 1 ♀; same data; MNHN-EO-CAELIF499.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — This species lives in an environment characterized by halophilic plants (Moussi *et al.* 2011).

Genus *Oedaleus* Fieber, 1853

Oedaleus decorus decorus (Germar, 1825) (Fig. 41)

Acrydium decorum Germar, 1826: pl. 17.

Oedaleus nigrofasciatus (De Geer, 1773) – Vosseler 1902a: 359 (misidentification).

Oedaleus decorus – Uvarov 1923b: 69. — Chopard 1943: 295.

Oedaleus decorus decorus – Ritchie 1981: 124.

TYPE SPECIMEN. — **Russia** • ♂; neotype (Ritchie 1981); Southern Russia, Podolia; NHM.

DISTRIBUTION. — Species widespread throughout Africa and the Mediterranean basin (Ritchie 1981); Southern Europe and further eastwards into Asia (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa (Vosseler 1902a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Douwara; 20.VII.2016; H. Tlili; MNHN-EO-CAELIF4689 • 1 ♀; Tabarka; 5.VII.1889; MNHN-EO-CAELIF2596.
Algeria • 1 ♀; Oran, 5.VII.1979; MNHN-EO-CAELIF9115.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Douwara.

HABITAT. — Dry and open habitats (Usmani 2008).

Oedaleus senegalensis (Krauss, 1877) *** (Fig. 42)

Pachytylus senegalensis Krauss, 1877: 56.

Oedaleus senegalensis – Saussure 1884: 110. — Vosseler 1902a: 359.

TYPE SPECIMEN. — **Senegal** • ♂; neotype (Ritchie 1981); St Louis; NHM.

DISTRIBUTION. — North Africa (Chopard 1943; Massa 2009; Defaut & François 2013); Sub-Saharan countries (Mestre & Chiffaud 2006); the Middle East (Ingrisch 1999), extending eastwards to India (Shishodia *et al.* 2010).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa (Vosseler 1902a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Douwara; 20.VII.2016; H. Tlili; MNHN-EO-CAELIF4688 • 1 ♀; same data; MNHN-EO-CAELIF7095 • 1 ♀; same data; MNHN-EO-CAELIF7096 • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF7032 • 1 ♂; same data; 25.V.2017; N. Afnouch; MNHN-EO-CAELIF7097 • 1 ♂; same data, H. Tlili; MNHN-EO-CAELIF7098 • 1 ♀; same data; MNHN-EO-CAELIF7099 • 1 ♀; Kebili, Essagui; 24.V.2017; H. Tlili; MNHN-EO-CAELIF7033 • 1 ♀; Gafsa, Sened; 24.V.2017; H. Tlili; MNHN-EO-CAELIF7100.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Douwara; Gafsa, Sened; Gafsa, El Guetar; Kebili, Essagui.

HABITAT. — *Oedaleus senegalensis* lives in dry areas (H. Tlili, pers. obs.).

REMARKS. — Chopard (1943) mentioned that *Oedalus senegalensis* is reported in Gafsa by Krauss (1877), but this citation is not correct, because Krauss (1877) made his study in Senegal. The true citation of this species in Gafsa is found in Vosseler (1902a). Later, in his revision of the genus *Oedaleus*, Ritchie (1983) did not mention this species in Tunisia. Therefore we confirmed here the presence of *O. senegalensis* in south-west of Tunisia.

Genus *Oedipoda* Latreille, 1829

Oedipoda fuscocincta fuscocincta Lucas, 1849 ** (Fig. 43)

Oedipoda fusco-cincta Lucas, 1849b: 31.

Oedipoda fuscocincta – Walker 1870a: 737. — Bonnet & Finot 1885: 216. — Krauss 1892a: 148. — Finot 1895: 441. — Vosseler 1902a: 358. — Chopard 1943: 299. — Massa & Rizzo 1998: 286.

Oedipoda fuscocincta var. – Finot 1895: 443.

Oedipoda fuscocincta fuscocincta – Uvarov 1936: 130.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; MNHN.

DISTRIBUTION. — Iberian Peninsula, France, Morocco, Algeria, Tunisia, Canary Islands and Azores, Corsica, Sicily (Galvagni 2010); Egypt (Haggag *et al.* 2008).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Recorded only from the north part of Tunisia (Bonnet & Finot 1885; Krauss 1892a; Finot 1895; Vosseler 1902a; Chopard 1943; Massa & Rizzo 1998).

MATERIAL EXAMINED. — **Algeria** • 1 ♂; holotype; H. Lucas; MNHN-EO-CAELIF411.
Tunisia • 1 ♀; Gafsa, Ben Younes Mountain; 17.VII.2016; H. Tlili; MNHN-EO-CAELIF4692 •2 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Ben Younes Mountain; Kasserine, Laayoune.

HABITAT. — Subdesert areas and stony places (Usmani 2008); foothills (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (656 bp) (Table 4).

Oedipoda miniata mauritanica Lucas, 1849 (Fig. 44)

Oedipoda miniata – Chopard 1943: 300 (misidentification). — Massa & Rizzo 1998: 286 (misidentification).

Oedipoda gratiosa – Bonnet & Finot 1885: 216 (misidentification). — Finot 1895: 442 (misidentification). — Vosseler 1902a: 357 (misidentification).

Oedipoda mauritanica Lucas, 1849a: 32.

Oedipoda miniata mauritanica – Lepiney & Mimeur 1932: 14.

Oedipoda miniata mauretanica – Johnston 1956: 520 (misspelling).

TYPE SPECIMEN. — **Algeria** • ♀; holotype; Oran; MNHN.

DISTRIBUTION. — North Africa, Sardinia, Sicily, and Balearic Islands (Fontana *et al.* 2019).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Djerba (Bonnet & Finot 1885); Sfax, Gabes (Vosseler 1902a).

MATERIAL EXAMINED. — **Algeria** • 1 ♀; holotype; Oran; MNHN-EO-CAELIF416.
Tunisia • 1 ♂; Kasserine, Laayoune; 5.VIII.2016; H. Tlili; MNHN-EO-CAELIF4693 • 1 ♀; same data; MNHN-EO-CAELIF4694 • 4 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Laayoune, Gafsa, Sened.

HABITAT. — Subdesert areas (Usmani 2008).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (655 bp) (Table 4).

Genus *Scintharista* Saussure, 1884

Scintharista notabilis notabilis (Walker, 1870) (Fig. 45)

Acridium miniatum Brullé, 1840: 78 (name preoccupied, mentioned by Bolívar 1922: 174).

Oedipoda notabilis Walker, 1870a: 745.

Oedipoda brullei Saussure, 1884: 148.

Quiroguesia miniata – Bolívar 1886: 516.

Quiroguesia brullei – Saussure 1888: 52.

Quiroguesia notabilis – Kirby 1910: 217.

Scintharista notabilis – Willemse 1936: 102.

Scintharista notabilis notabilis – Uvarov 1941: 93.

TYPE SPECIMEN. — **Canary Islands** • unspecified; syntypes; Tenerife; NHM.

DISTRIBUTION. — Sub-Saharan Africa (Mestre & Chiffaud 2006); Morocco (Chopard 1943); Algeria (Moussi *et al.* 2018); Tunisia (Uvarov 1941); Libya (Massa 1998); Egypt (Haggag *et al.* 2008).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa (Uvarov 1941).

MATERIAL EXAMINED. — **Canary Islands** • unspecified syntype; Tenerife; NHMUK 013806005 • same data; NHMUK 013806005.

Tunisia • 1 ♂; Gafsa, Ben Younes Mountain; 17.VII.2016; H. Tlili; MNHN-EO-CAELIF4695 • 1 ♀; same data; MNHN-EO-CAELIF4696 • 2 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tlili; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Ben Younes Mountain, El Guetar.

HABITAT. — Generally, *Scintharista notabilis notabilis* occurs in dry mountain and stony places (H. Tlili, pers. obs).

Genus *Sphingoderus* Bei-Bienko, 1950

Sphingoderus carinatus (Saussure, 1888) (Fig. 46)

Sphingonotus coerulans var. *carinata* Saussure, 1888: 79.

Sphingonotus coerulans var. *mecheriae* Krauss, 1893: XCV.

Sphingonotus mecheriae – Vosseler 1902a: 370 (misidentification).

Sphingonotus carinatus – Mistshenko 1936: 186. — Chopard 1943: 312.

Sphingoderus carinatus – Bey-Bienko 1950: 203. — Husemann *et al.* 2012.

TYPE SPECIMEN. — **Algeria** • ♀; holotype; Biskra; ZIN.

DISTRIBUTION. — Algeria (Zergoun *et al.* 2019); Tunisia (Moussi *et al.* 2018); Egypt (Haggag *et al.* 2008).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes, Gafsa, Bou Hedma (Vosseler 1902a); Bou Hedma (Husemann *et al.* 2012).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Metkides; 01.VI.2016; H. Tlili; MNHN-EO-CAELIF4697 • 1 ♂, 2 ♀; same data; INAT • 1 ♀; Tozeur, Degache; 29.IV.2017; H. Tlili; MNHN-EO-CAELIF4698 • 1 ♂; Kasserine, Sbeitela; 25.VII.2017; M. Mahfoudhi; MNHN-EO-CAELIF7089 • 1 ♀; same data; MNHN-EO-CAELIF7090 • 1 ♀; same data; MNHN-EO-CAELIF7091 • 1 ♀; same data; MNHN-EO-CAELIF7092 • 1 ♀; same data; MNHN-EO-CAELIF7093 • 1 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Sbeitla; Gafsa, Metkides; Tozeur, Degach; Kebili, Essagui.

HABITAT. — Sub desert areas (H. Tlili, pers. obs.).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (651 bp) (Table 4).

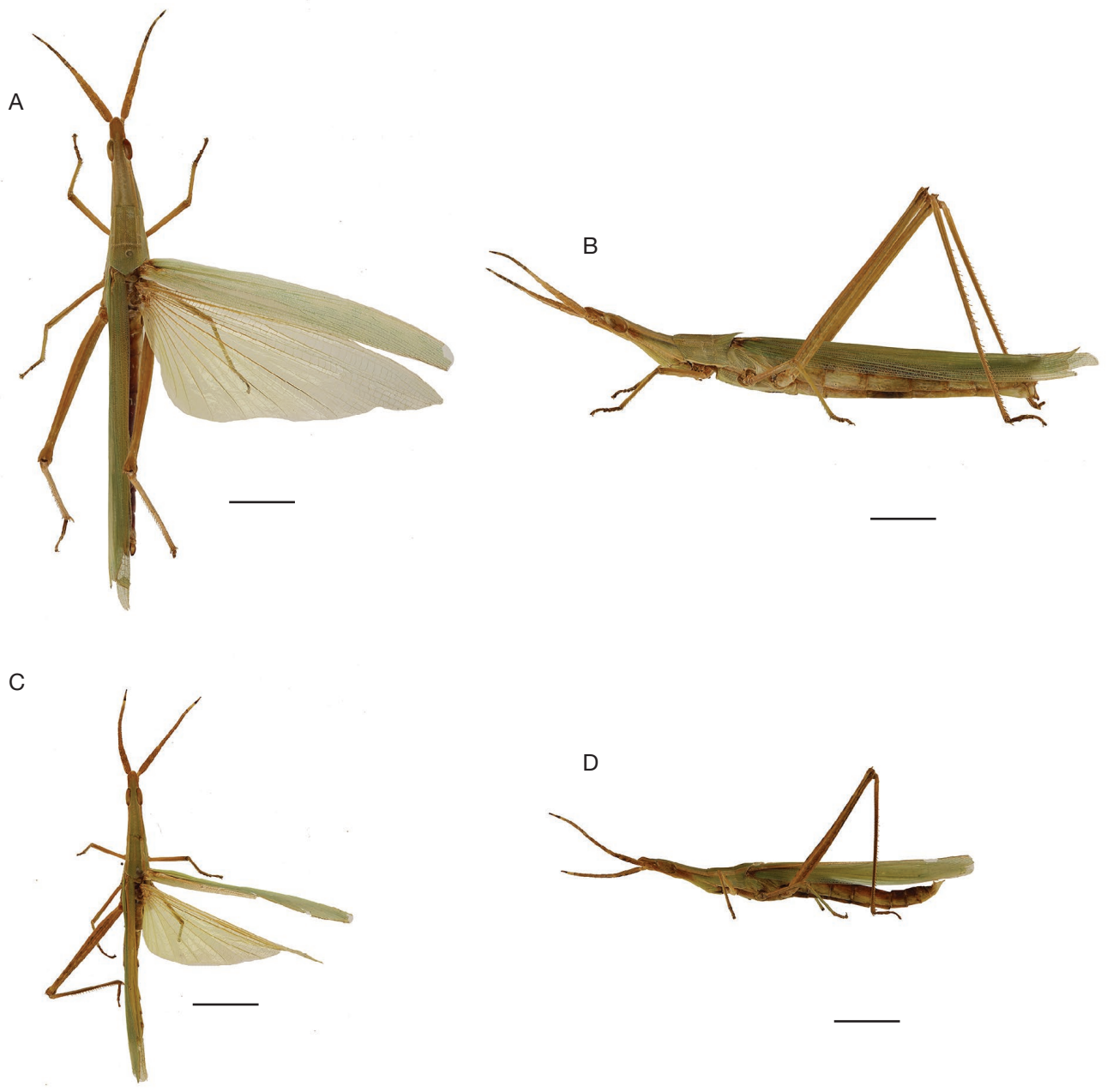

FIG. 3. — Habitus of *Acrida turrita* (Linnaeus, 1758): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**); **D**, lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

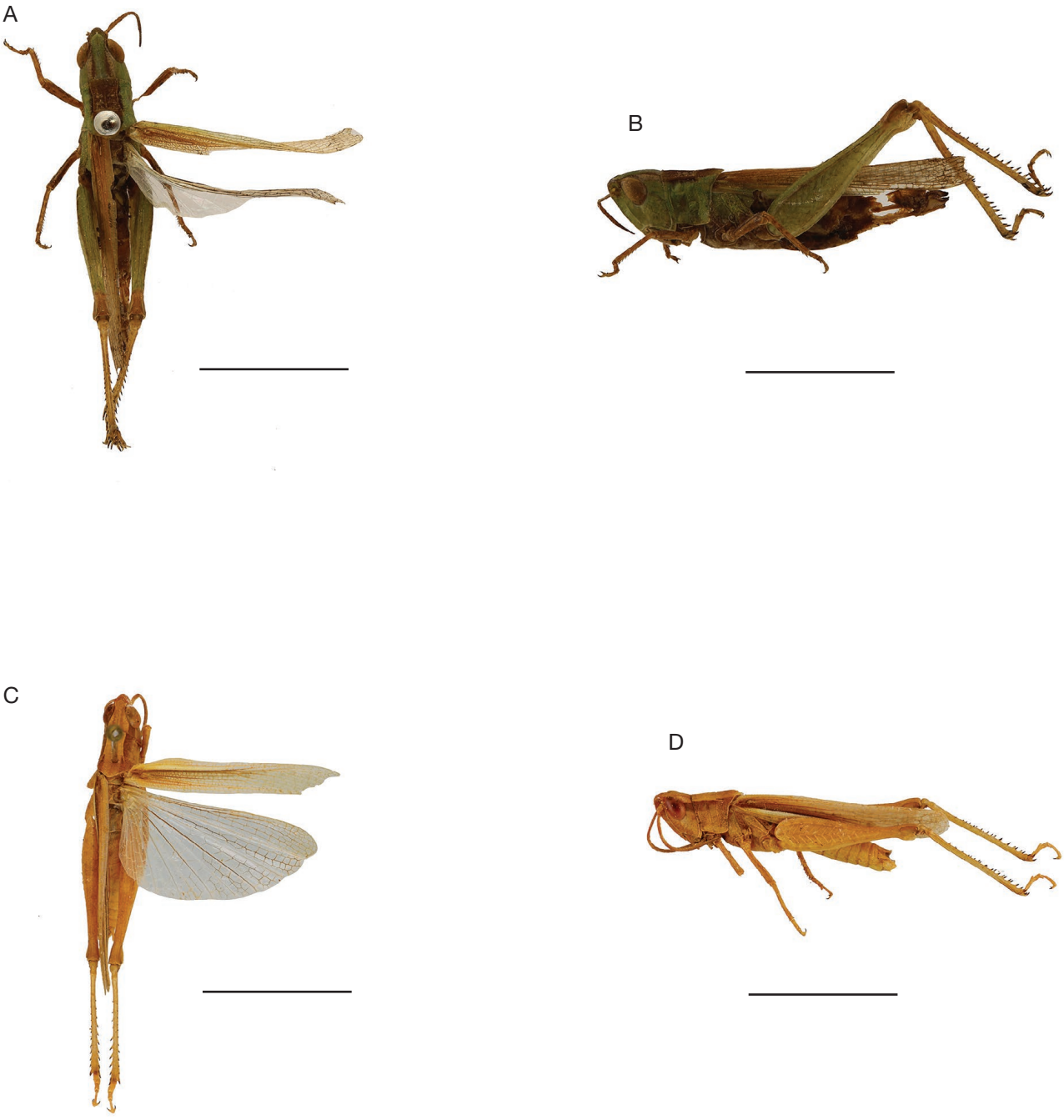

Fig. 4. — Habitus of *Duroniella lucasii* (Bolívar, 1881): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**). Photos: H. Tlili. **C**, **D**, male from Maader Anzi, Morocco, dorsal view (**C**), lateral view (**D**). Scale bar: 1 cm. Photos: S. Poulin.

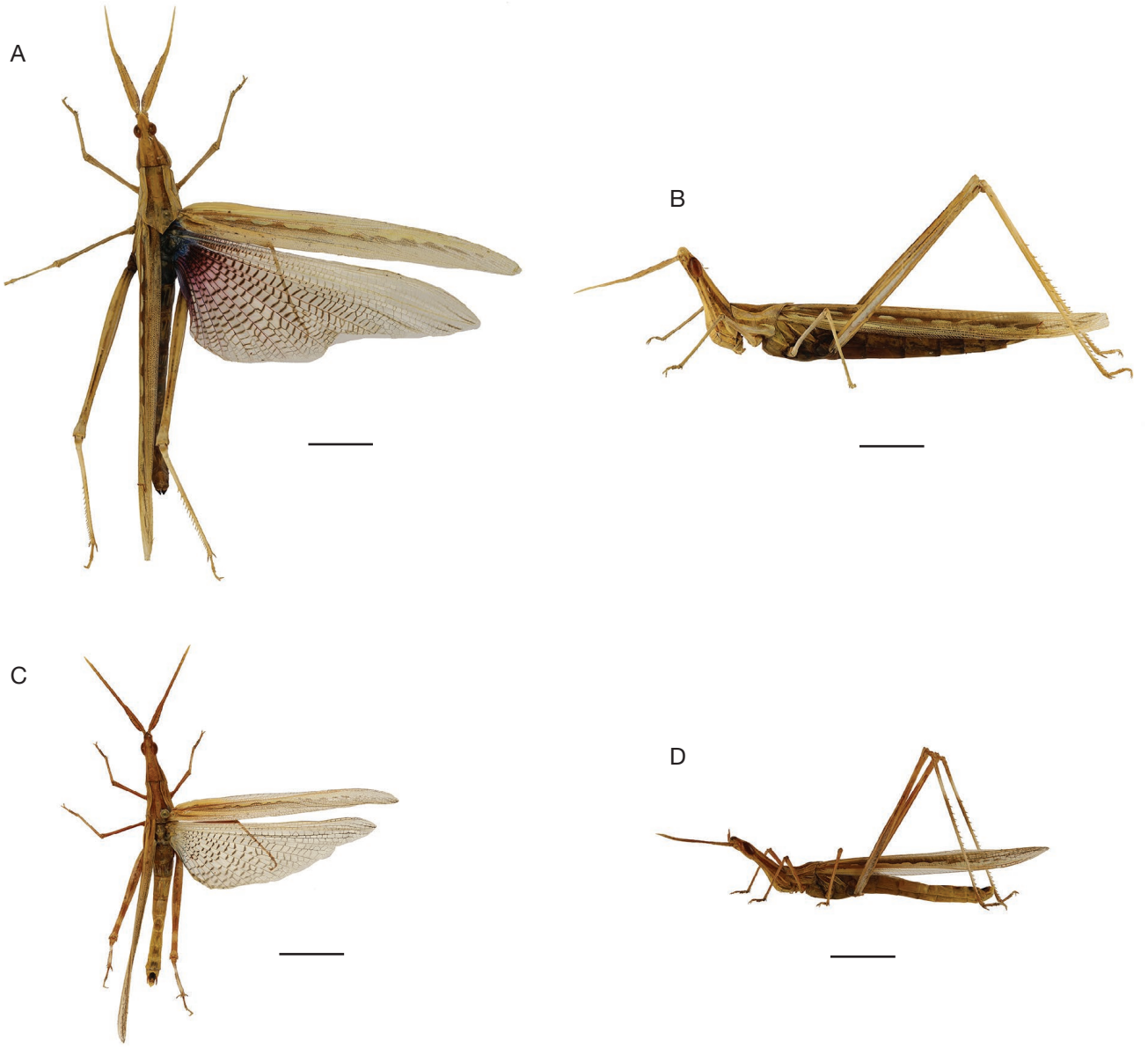

FIG. 5. — Habitus of *Truxalis nasuta* (Linnaeus, 1758): **A**, **B**, female from Kebili, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kebili, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

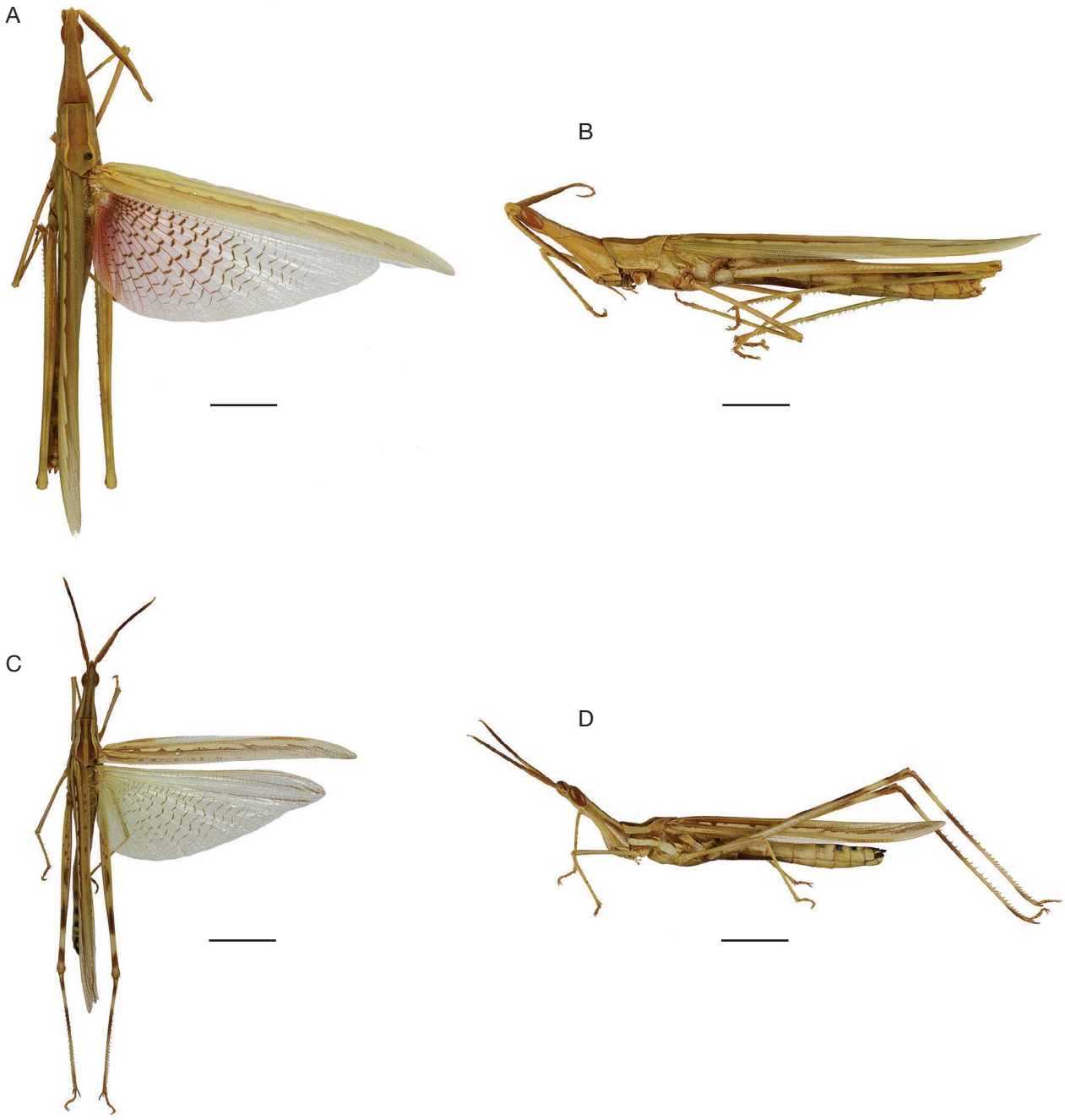

Fig. 6. — Habitus of *Truxalis procera* Klug, 1830: **A**, **B**, female from Agadez, Niger, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Lith, Saudi Arabia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 7. — Habitus of *Calliptamus barbarus barbarus* (Costa, 1836): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

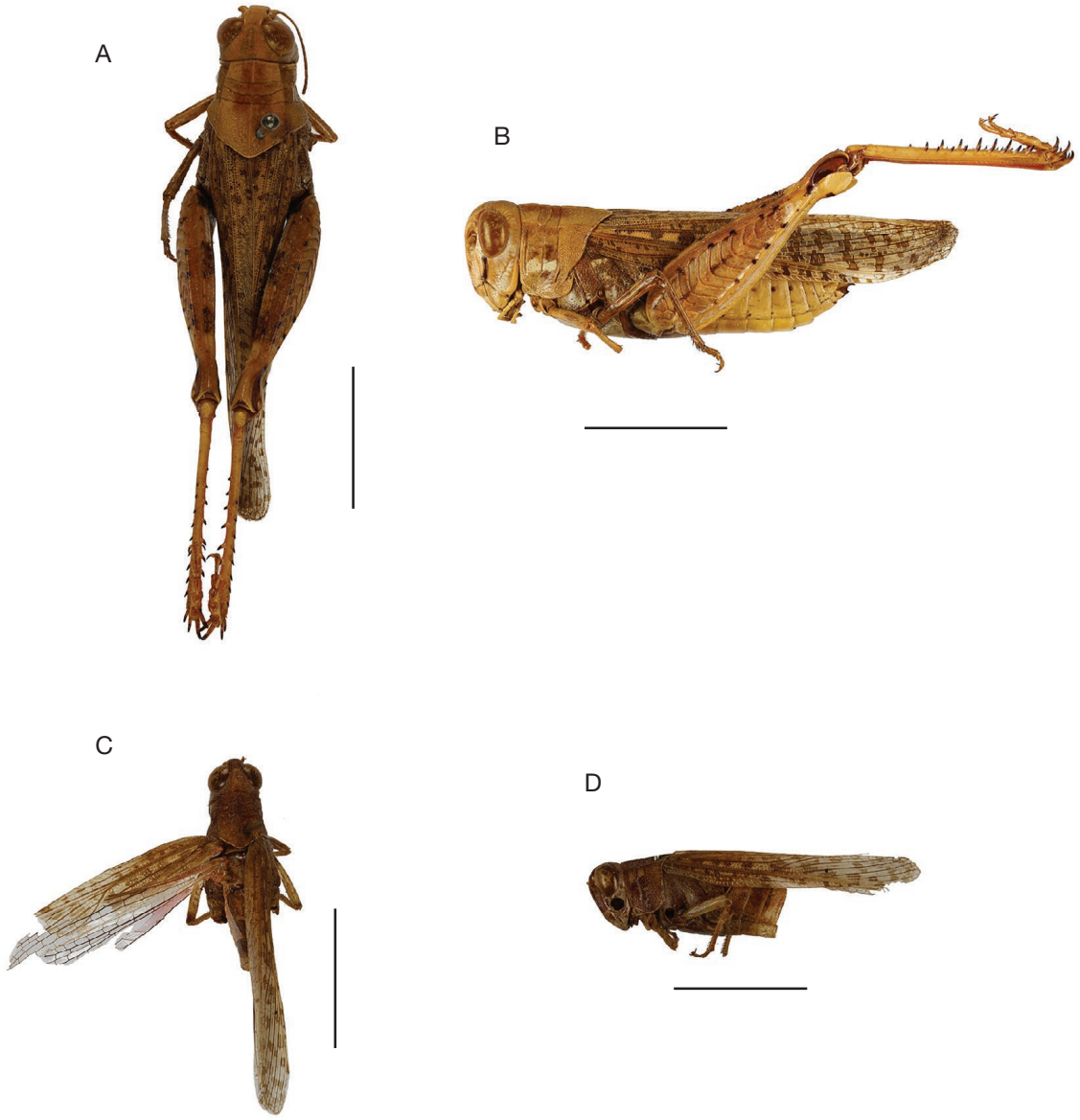

Fig. 8. — Habitus of *Calliptamus deserticola* Vosseler, 1902: **A**, **B**, female from Tbilisi, Georgia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Algeria (abdomen lost), dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

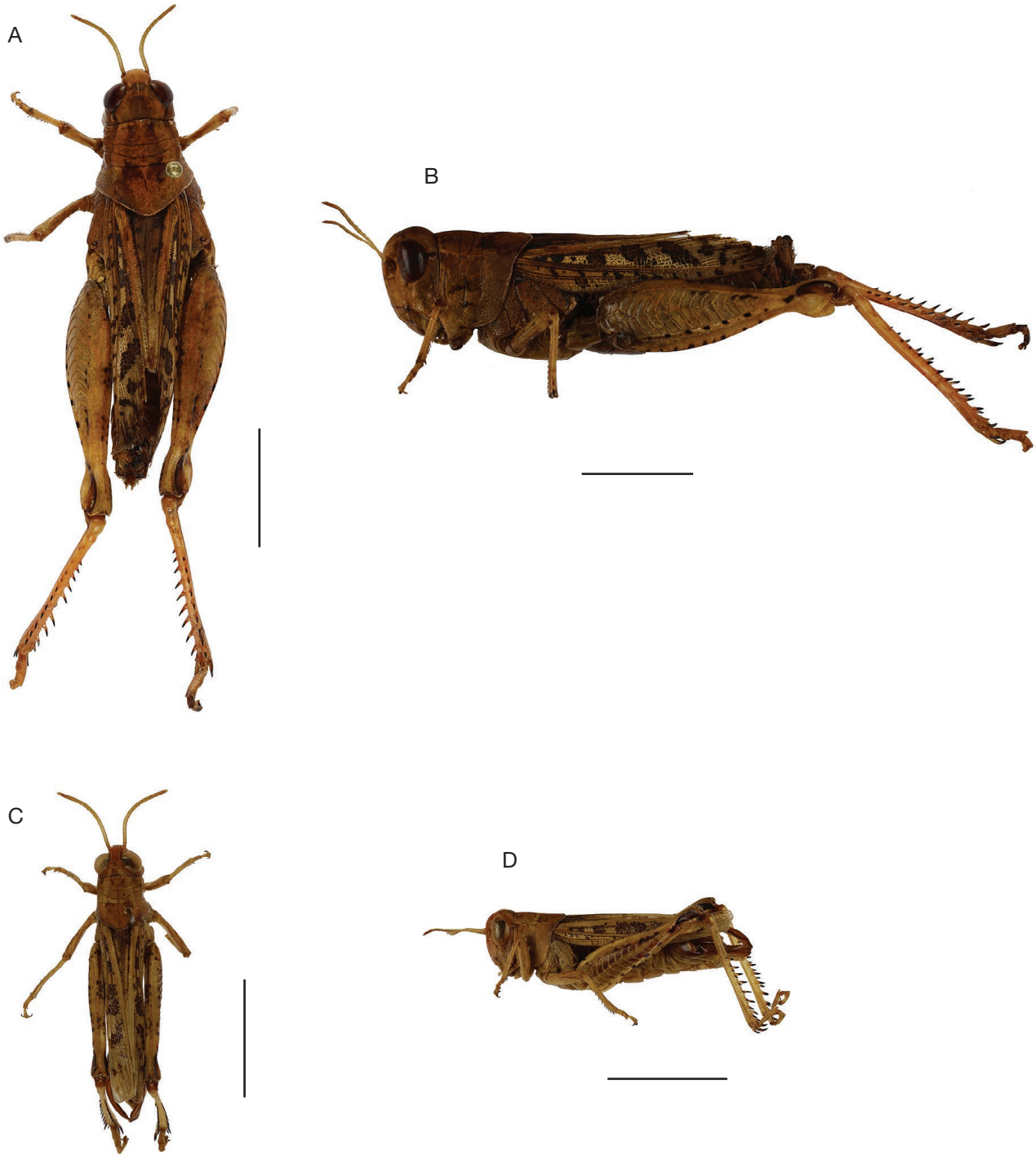

FIG. 9. — Habitus of *Calliptamus wattenwylianus* Pantel, 1896: **A**, **B**, female from Kasserine, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

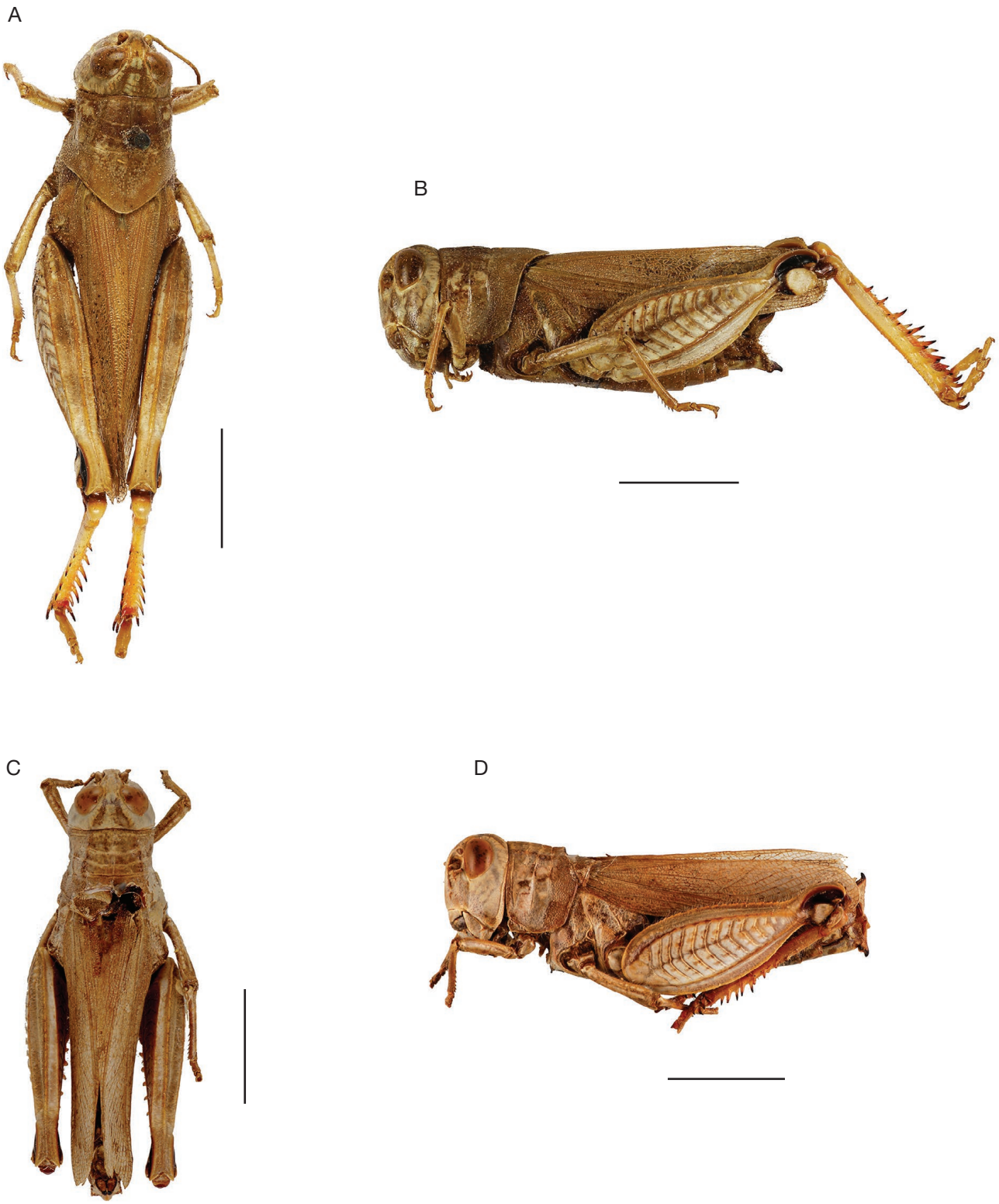

Fig. 10. — Habitus of *Sphodromerus decoloratus* Finot, 1894: **A**, **B**, female from Gabes, Tunisia, dorsal view (**A**), lateral view (**B**) (Photo © H. Tlili); **C**, **D**, male from Biskra, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: S. Poulin.

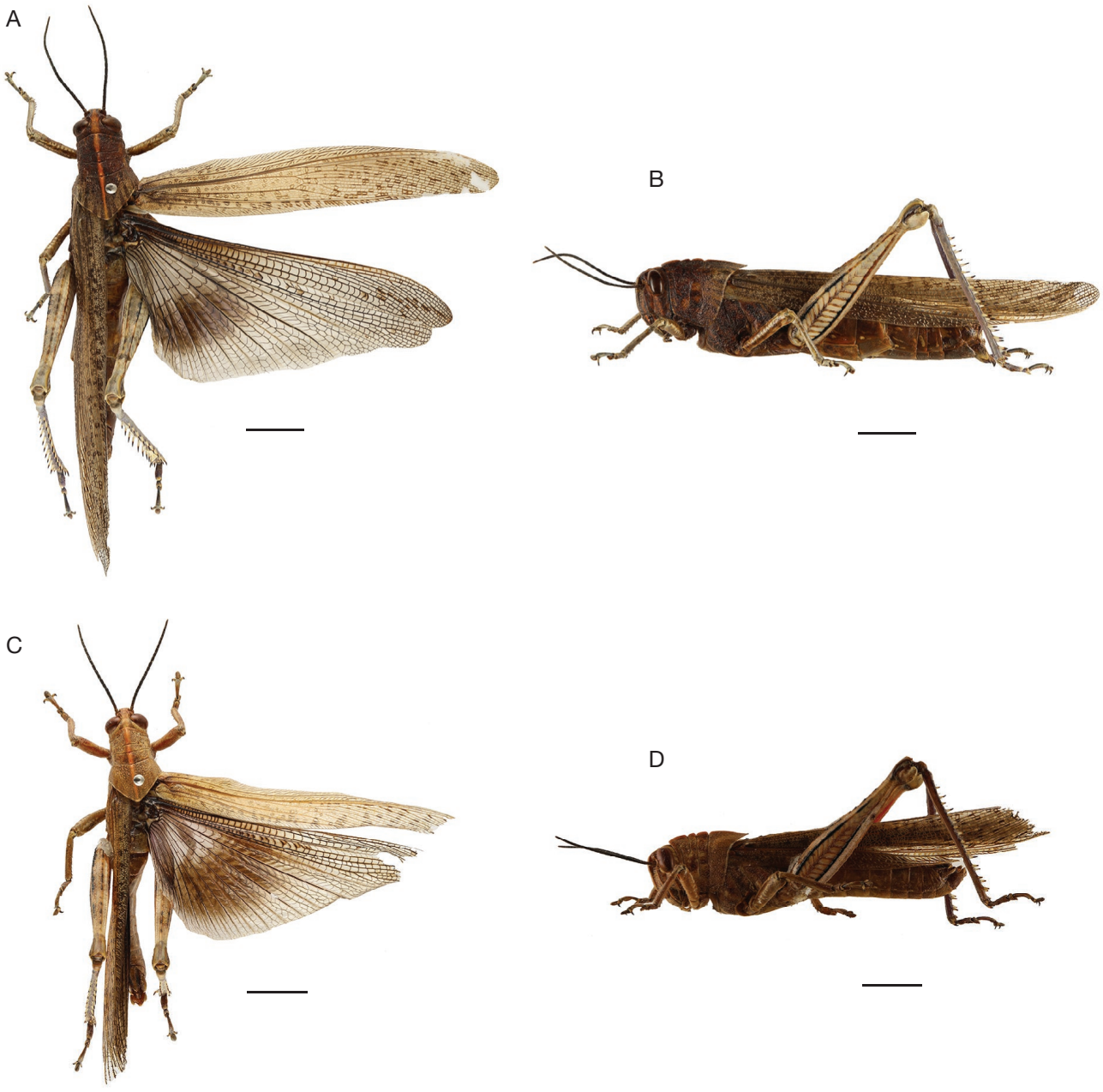

Fig. 11. — Habitus of *Anacridium aegyptium* (Linnaeus, 1764): **A**, **B**, female from Kasserine, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

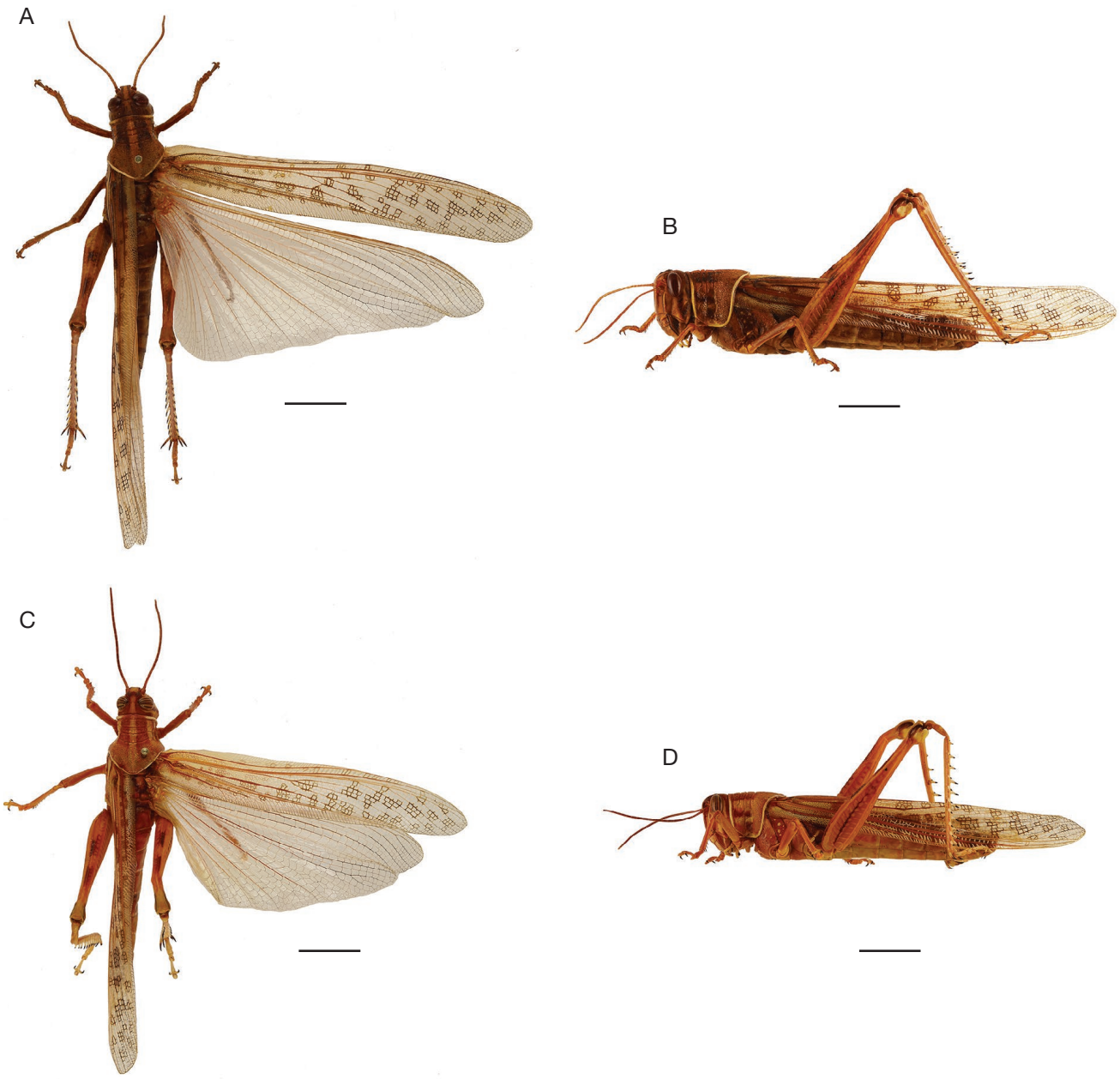

Fig. 12. — Habitus of *Schistocerca gregaria* (Forskål, 1775): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia; dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

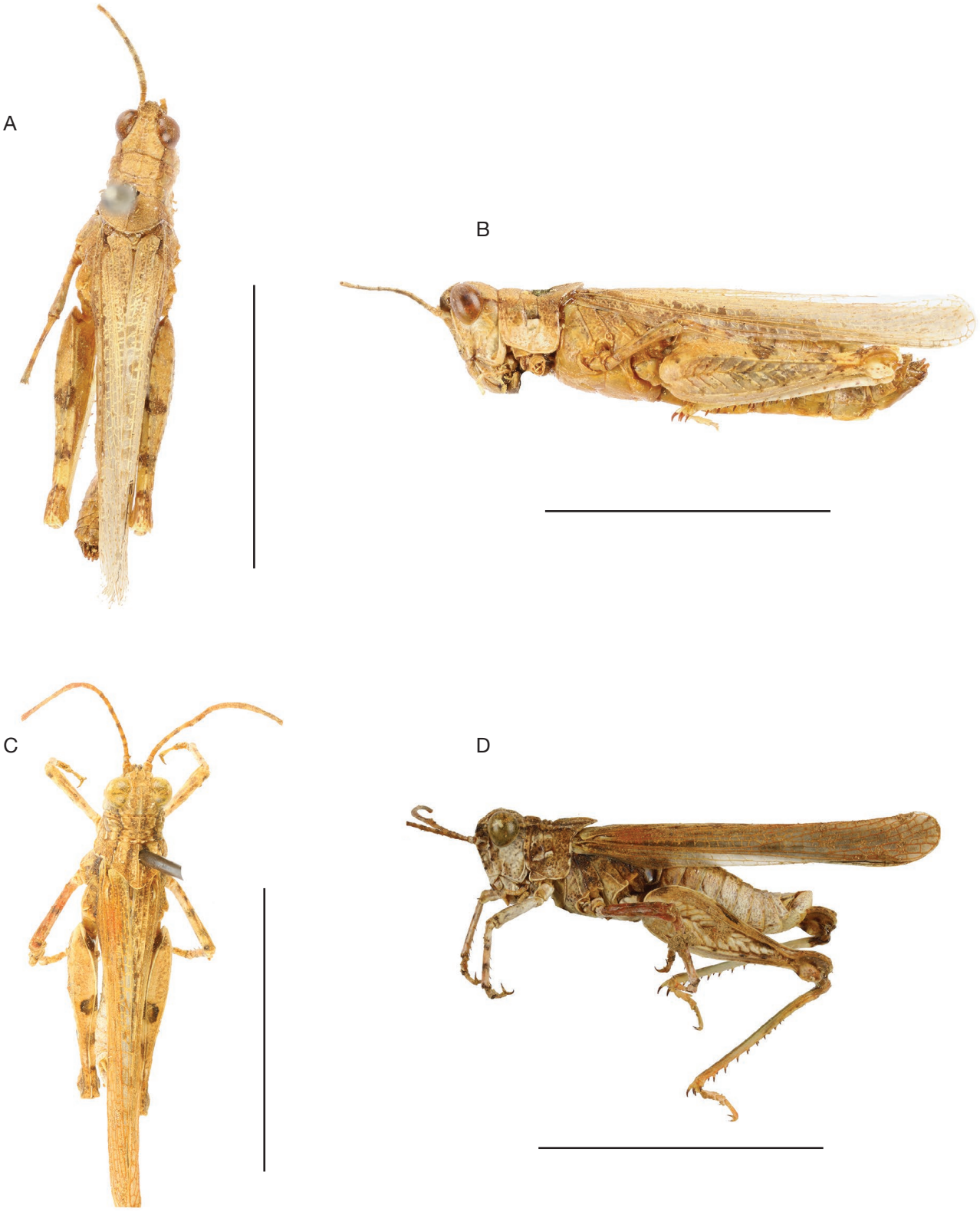

FIG. 13. — Habitus of *Egnatioides striatus* Vosseler, 1902: **A**, **B**, female from Medea, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Midelt, Morocco ; dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

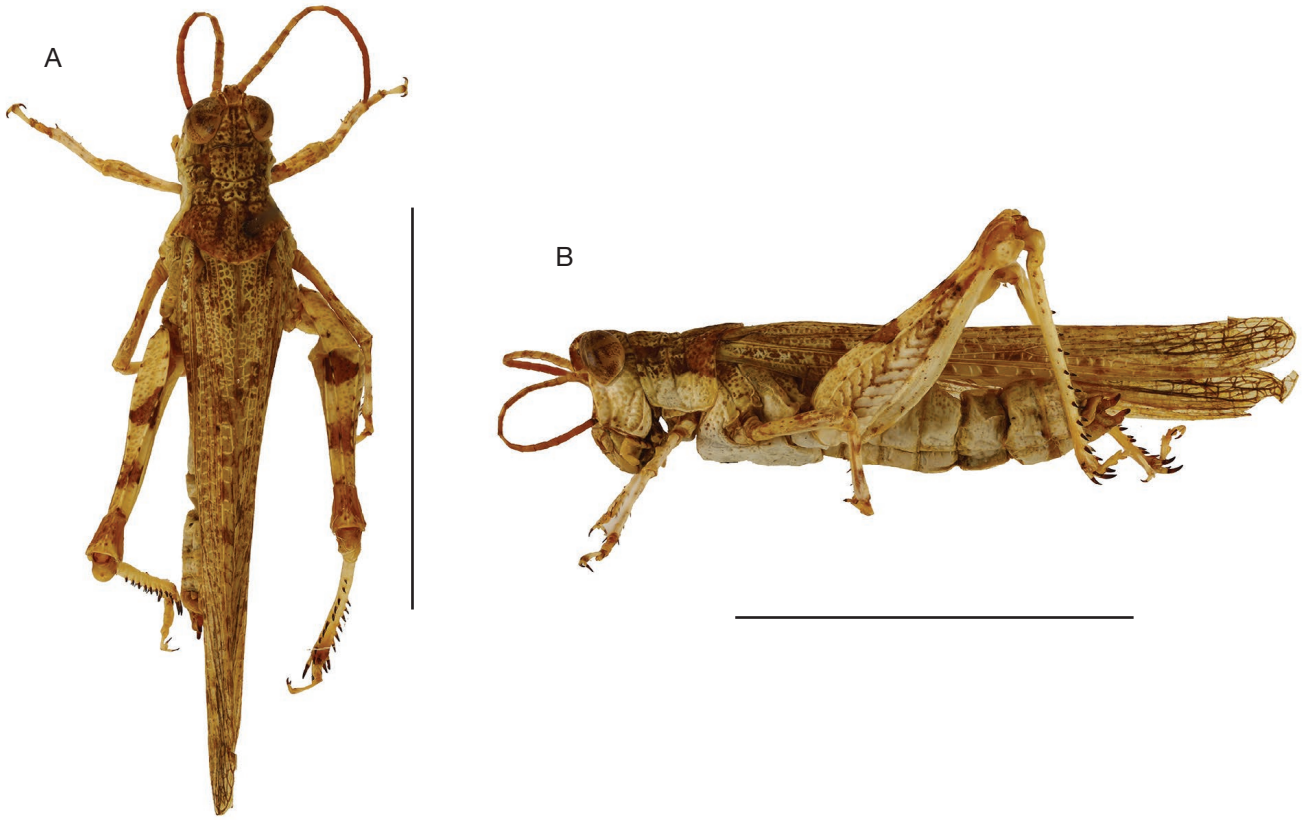

Fig. 14. — Habitus of *Egnatioides coerulans* (Krauss, 1893): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**). Scale bars: 1 cm. Photos: H. Tlili.

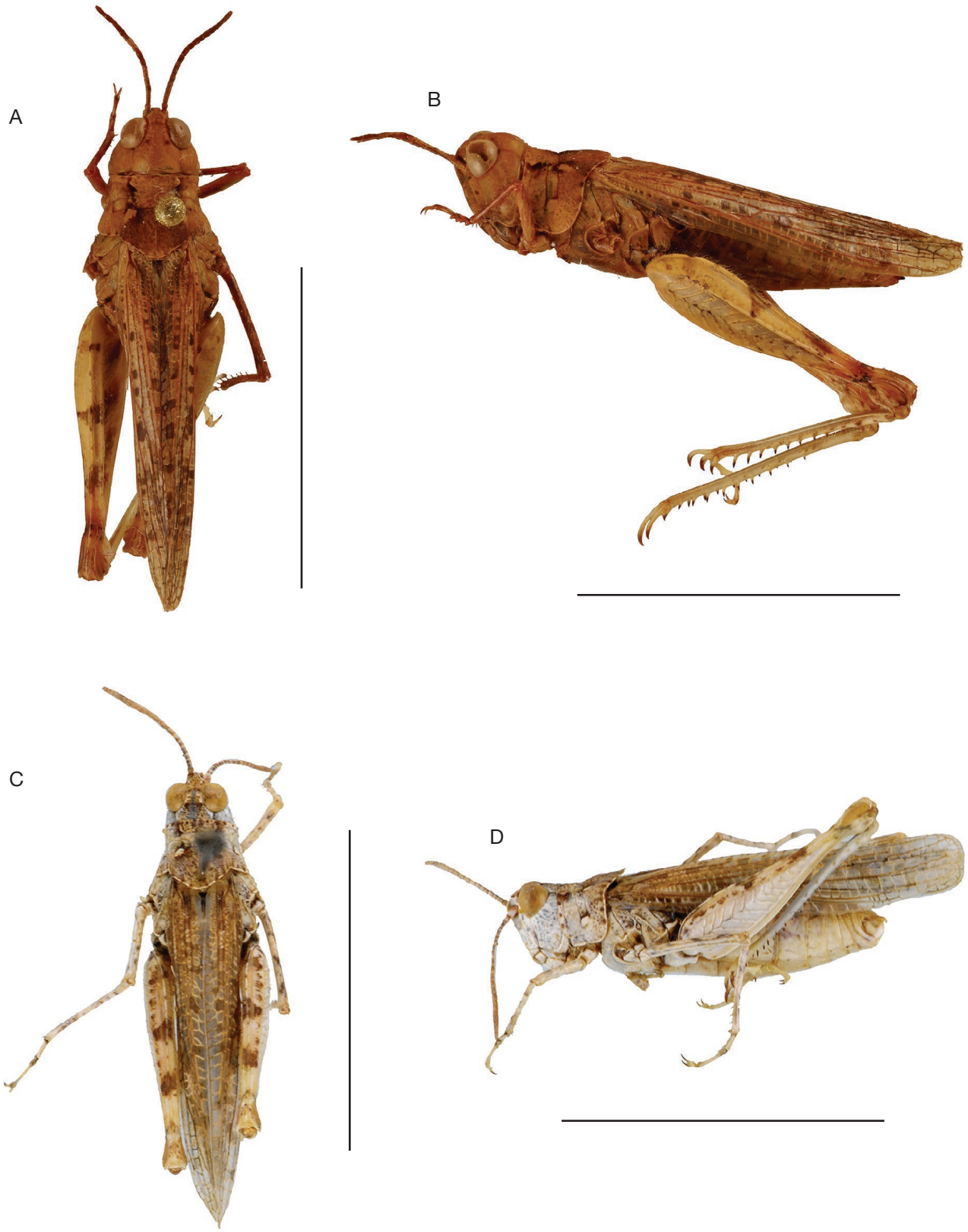

FIG. 15. — Habitus of *Eremogryllus hammadae* Krauss, 1902: **A**, **B**, female from Tangarfa, Morocco, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Djerba, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

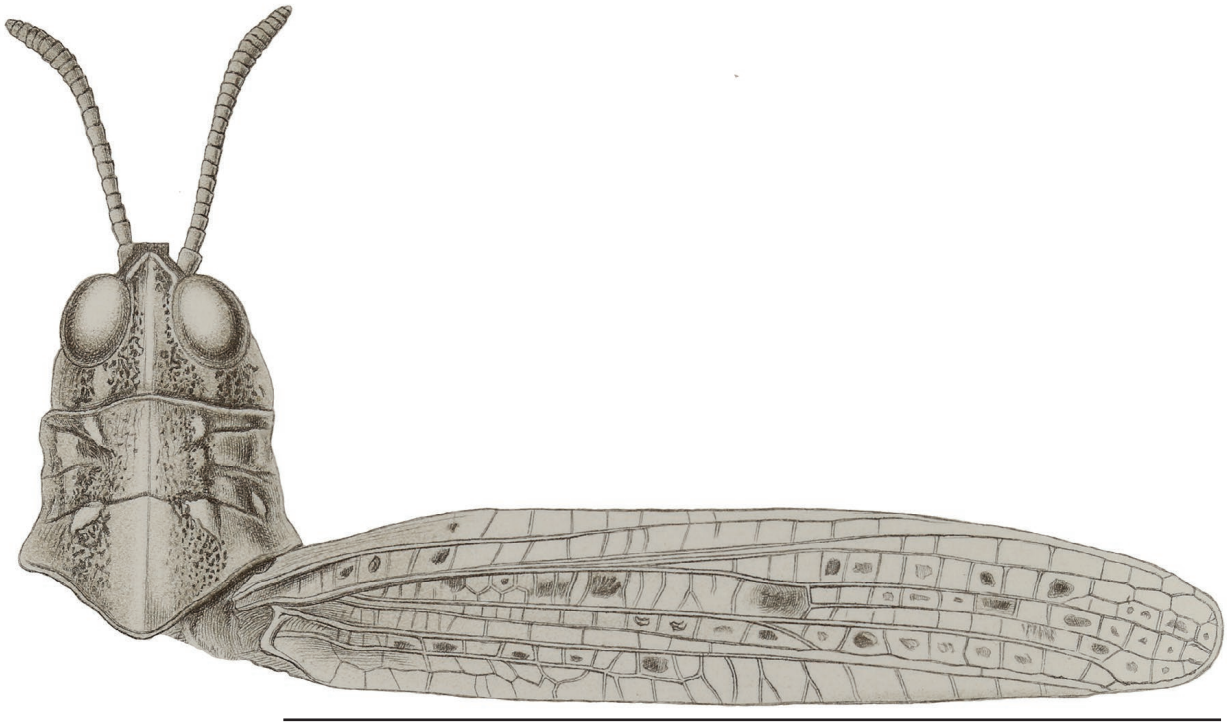

Fig. 16. — Body part of *Notopleura pygmaea* Vosseler, 1902. Female from Gabes, Tunisia, head, pronotum and tegmina, dorsal view (after Vosseler 1902a). Scale bar: 1 cm.

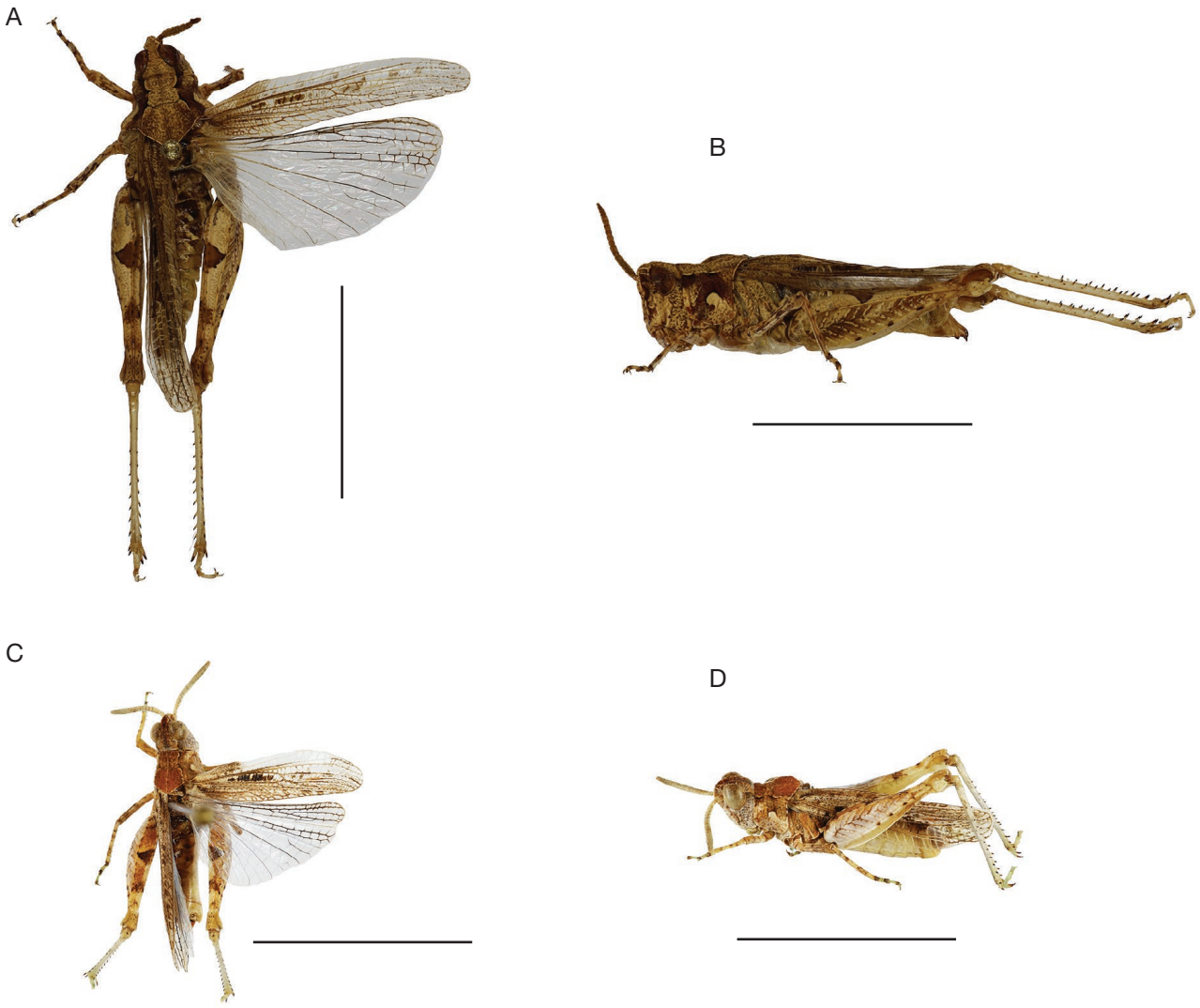

FIG. 17. — Habitus of *Notopleura saharica* Krauss, 1902: **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia,, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

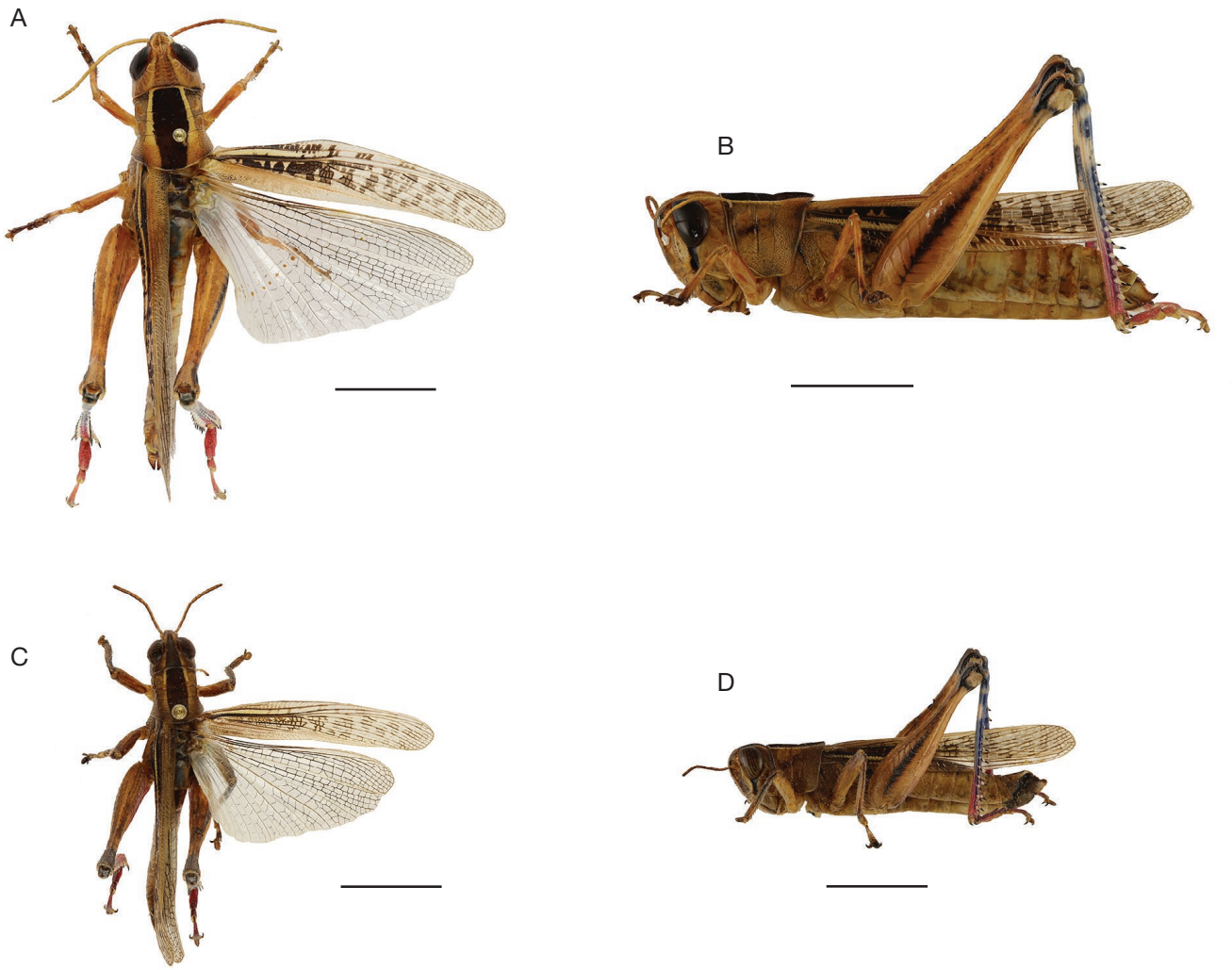

Fig. 18. — Habitus of *Eyprepocnemis plorans plorans* (Charpentier, 1825): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); C, D, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

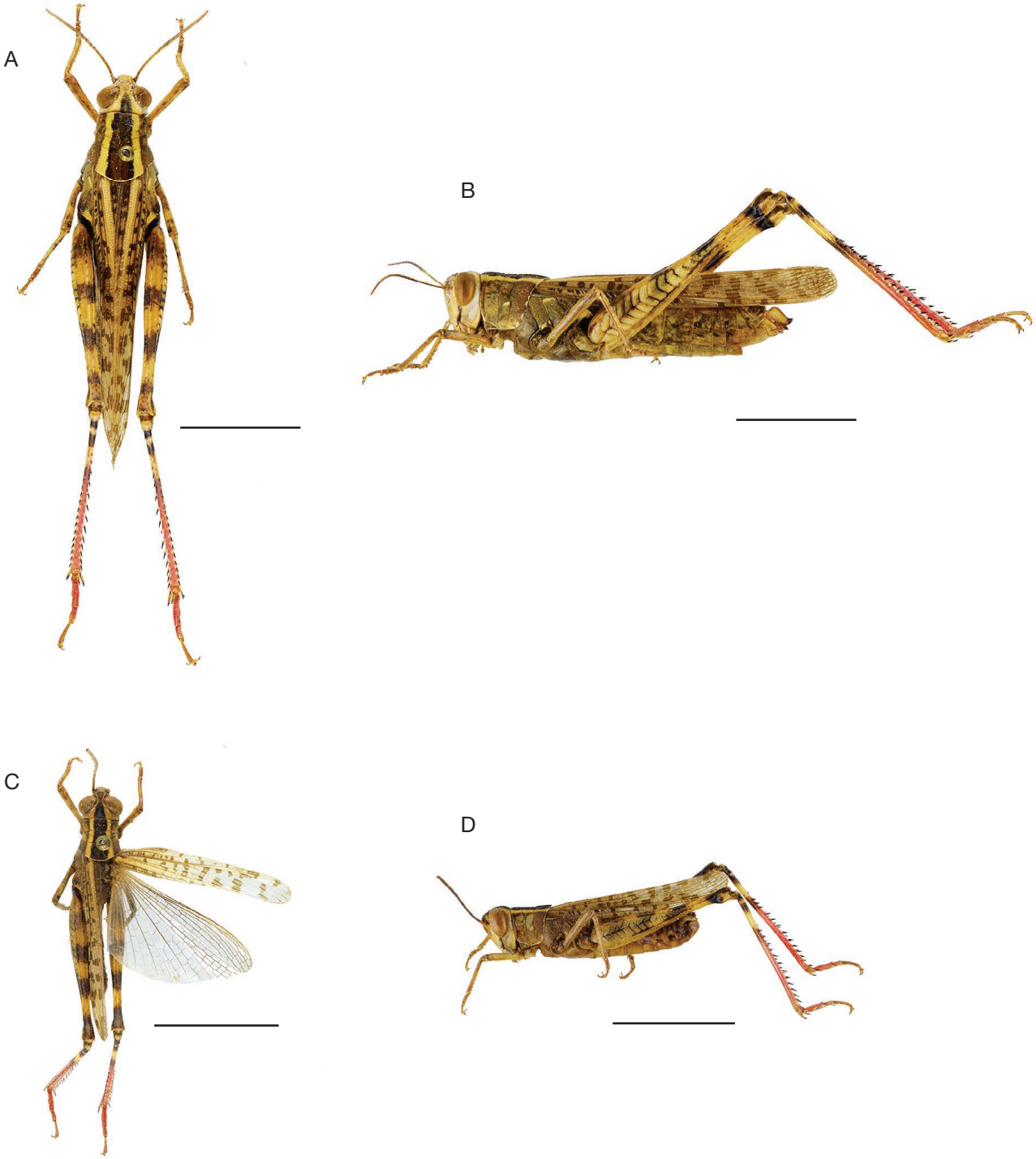

Fig. 19. — Habitus of *Heteracris adspersa adspersa* (Redtenbacher, 1889): **A**, **B**, female from Oran, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Oran, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: S. Poulin.

Fig. 20. — Habitus of *Heteracris annulosa* Walker, 1870: **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 21. — Habitus of *Heteracris harterti* (Bolívar, 1913): **A**, **B**, female from Biskra, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Soro, Chad, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

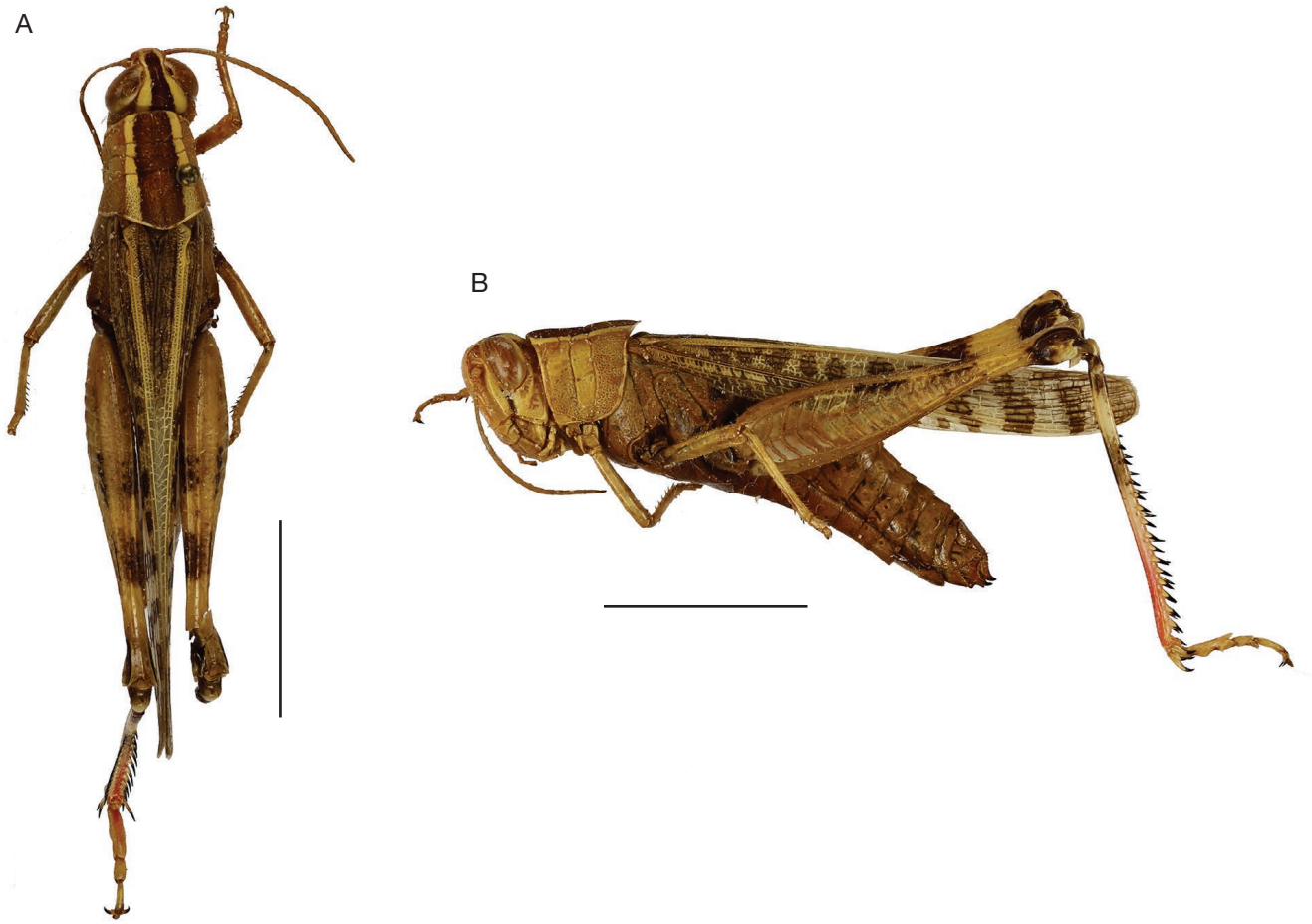

Fig. 22. — Habitus of *Heteracris minuta* (Uvarov, 1921): **A**, **B**, female from Sidi Bouzid, Tunisia, dorsal view (**A**), lateral view (**B**). Scale bars: 1 cm. Photos: H. Tlili.

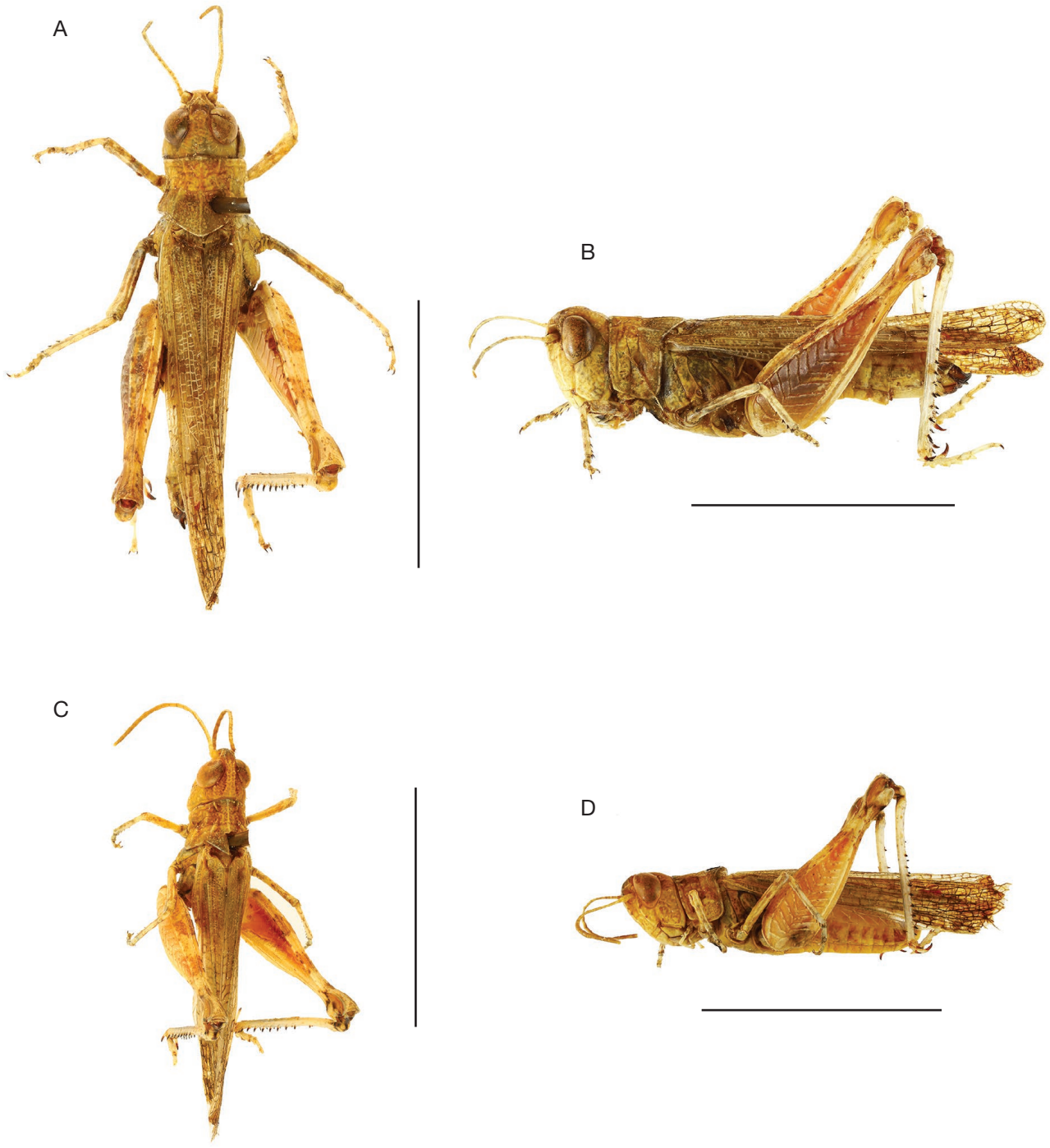

Fig. 23. — Habitus of *Dociostaurus biskrensis* Moussi & Petit, 2014: **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

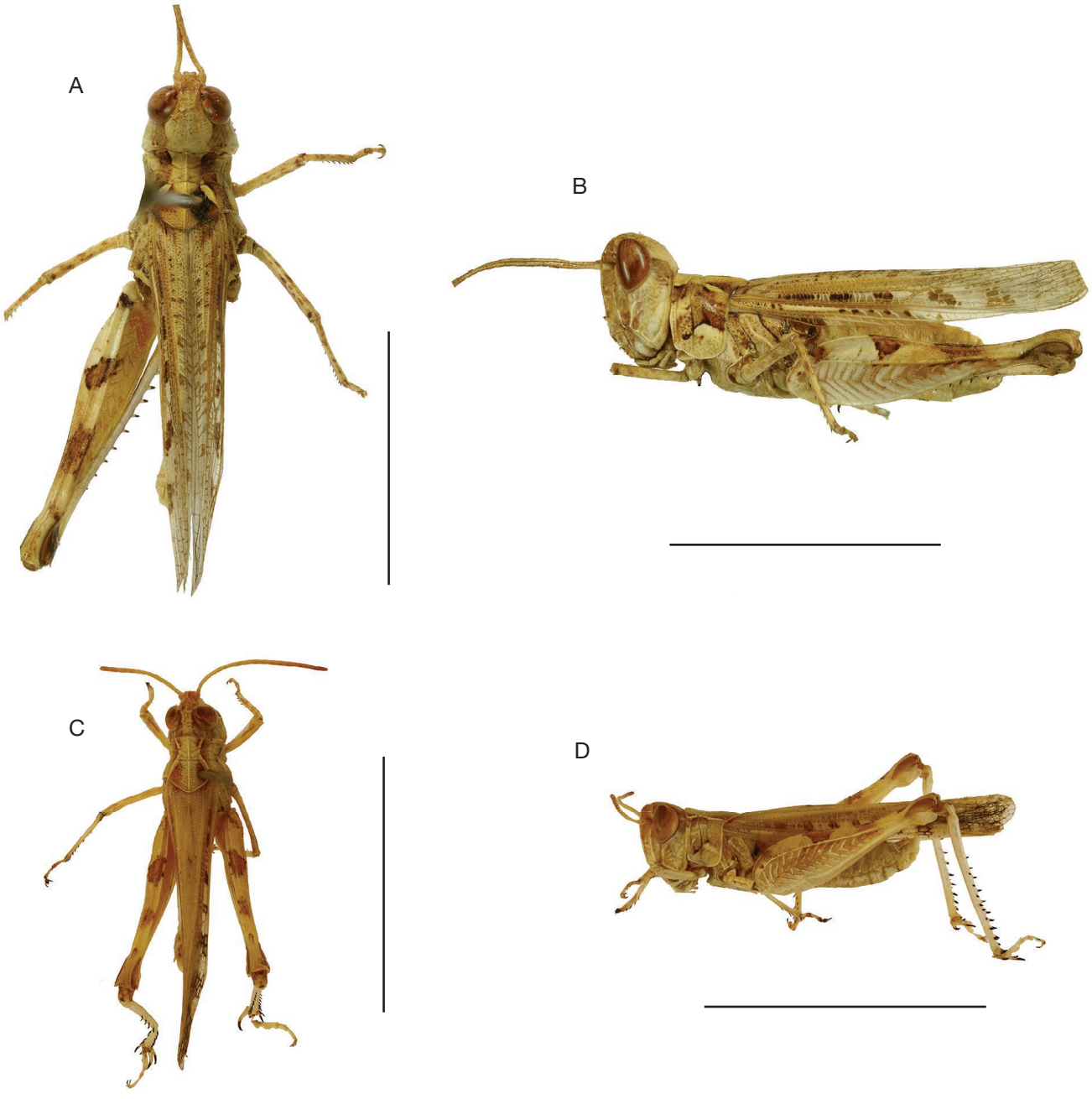

FIG. 24. — Habitus of *Dociostaurus* (*Kazakia*) *jagoi jagoi* Soltani, 1978: **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

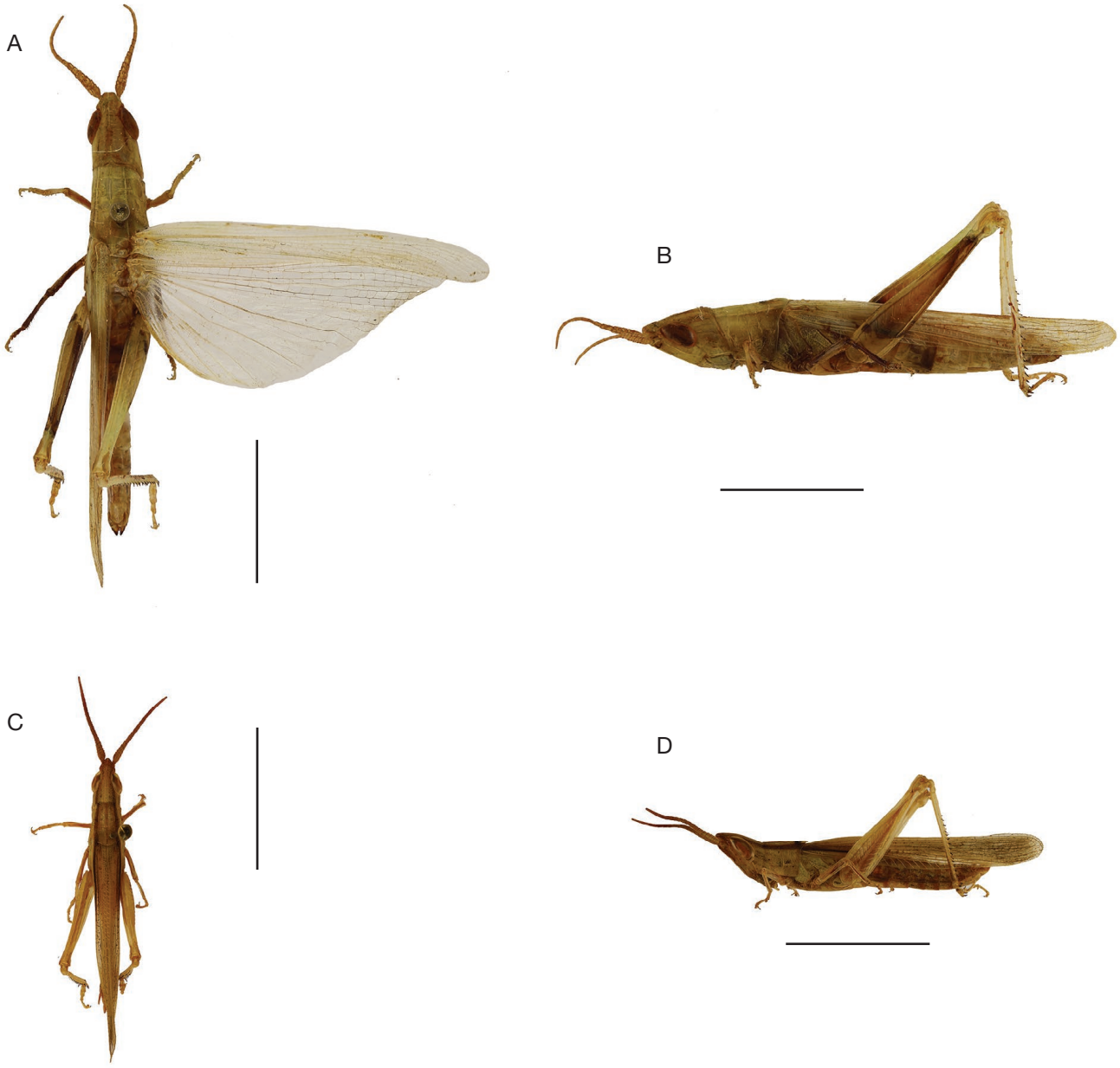

FIG. 25. — Habitus of *Ochrilidia geniculata* (Bolívar, 1913): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

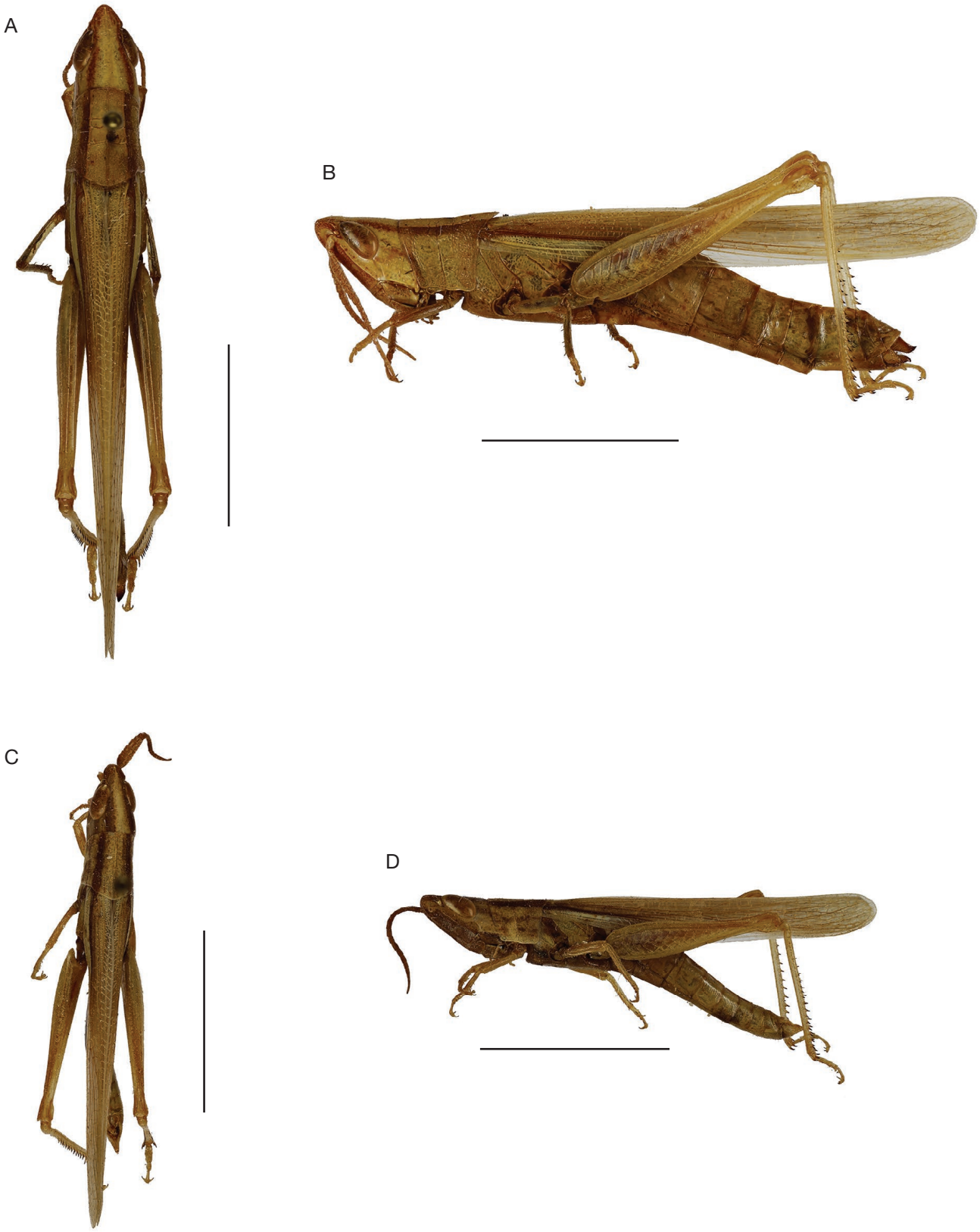

Fig. 26. — Habitus of *Ochrilidia gracilis gracilis* (Krauss, 1902): **A**, **B**, female from Sidi Bouzid, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Sidi Bouzid, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili

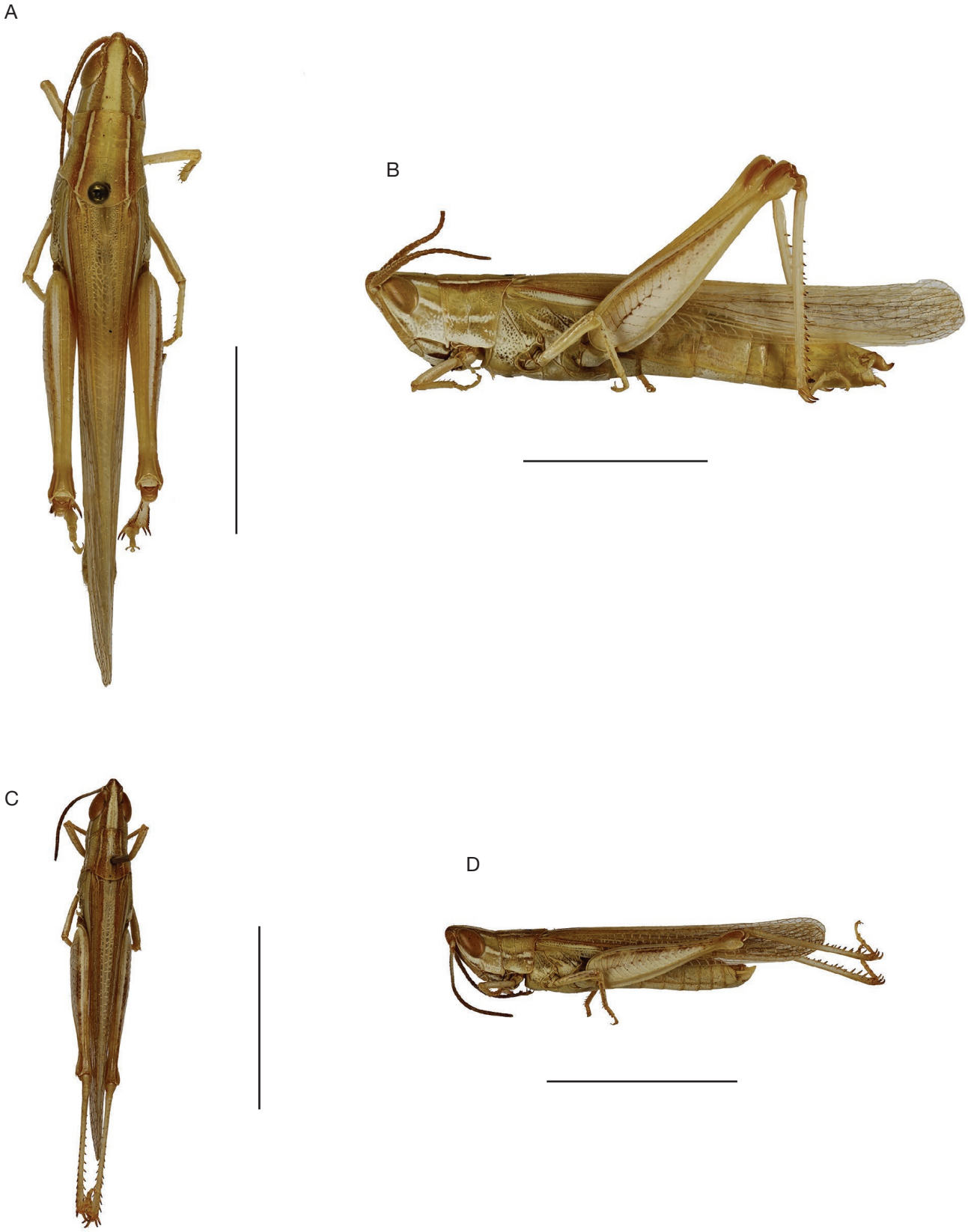

FIG. 27. — Habitus of *Ochrilidia harterti harterti* (Bolívar, 1913): **A**, **B**, female from Laghouat, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Bechar, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

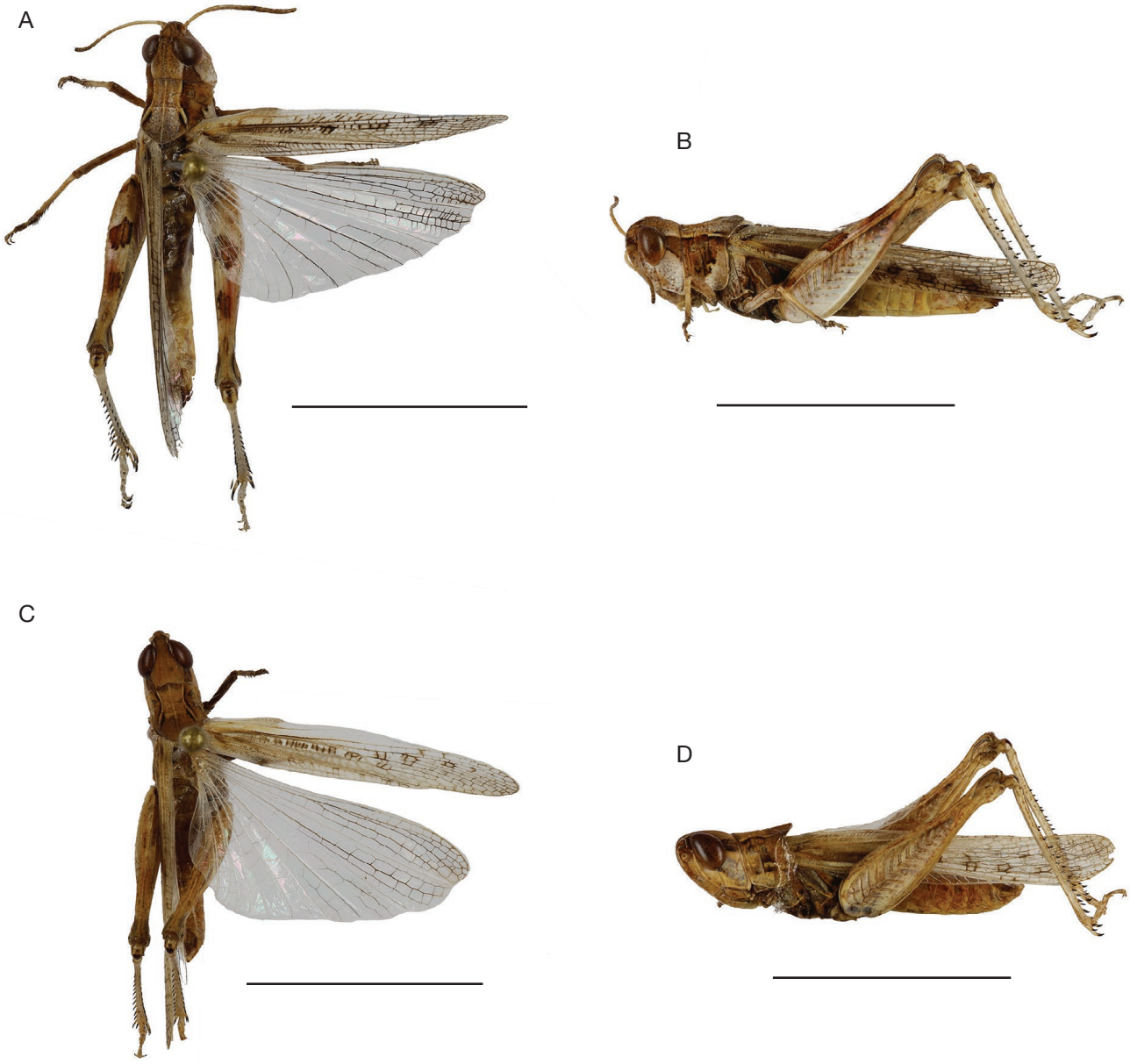

FIG. 28. — Habitus of *Stenohippus mundus* (Walker, 1871): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia; **C**, dorsal view; **D**, lateral view. Scale bars: 1 cm. Photos: H. Tlili.

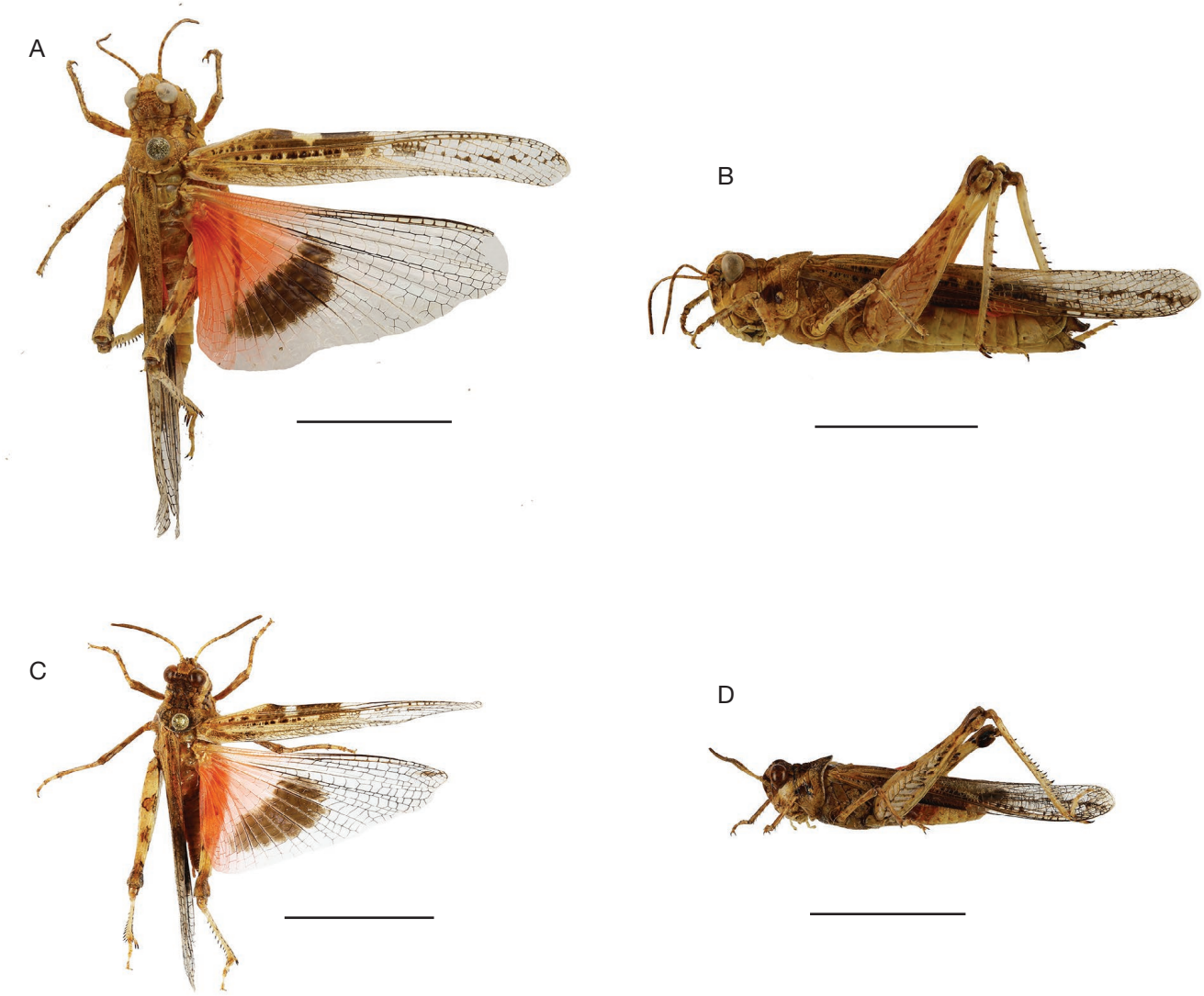

FIG. 29.— Habitus of *Acrotylus insubricus insubricus* (Scopoli, 1786): **A**, **B**, female from Kebili, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

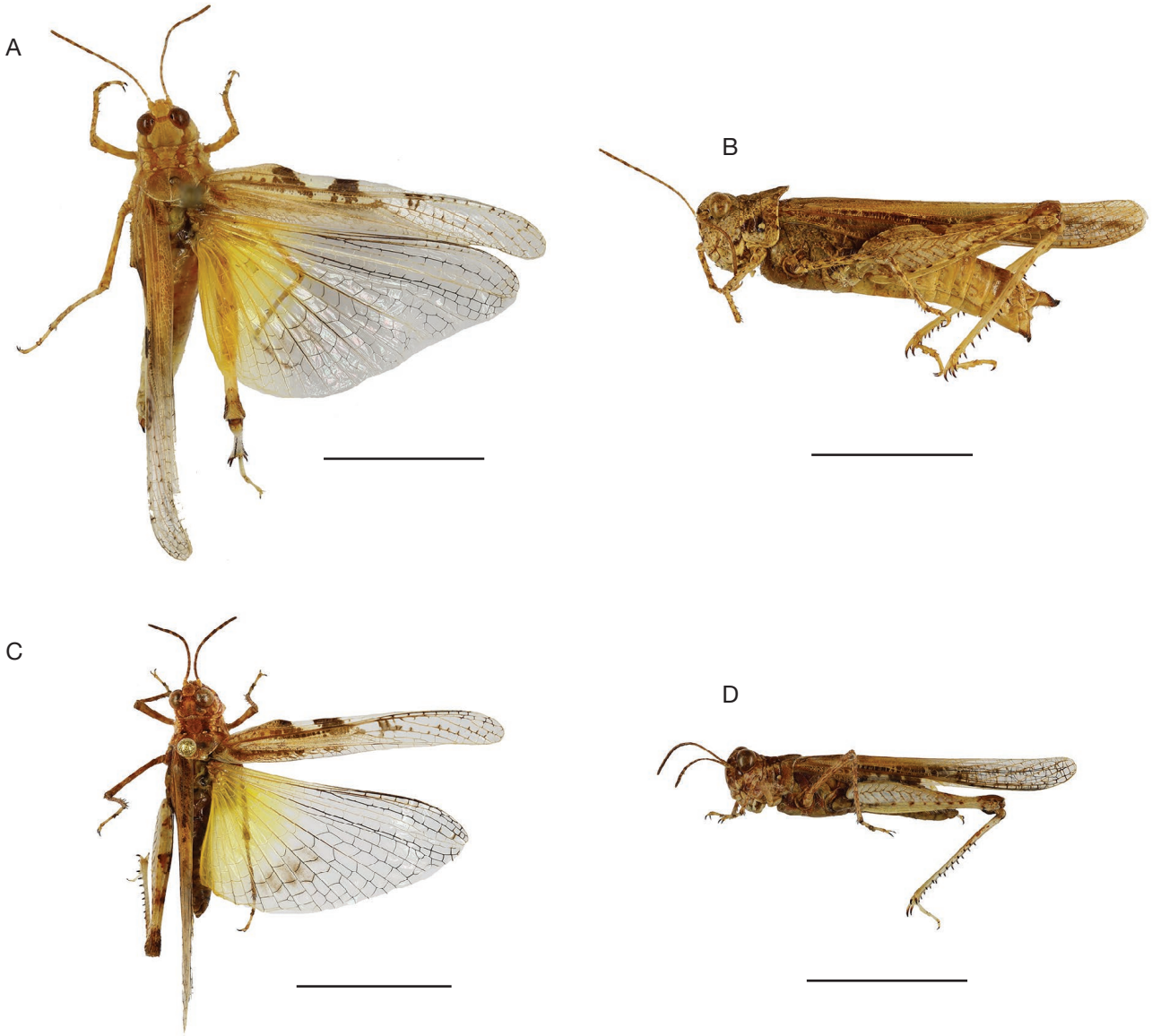

Fig. 30. — Habitus of *Acrotylus longipes longipes* (Charpentier, 1845): **A**, **B**, female from Kebili, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kebili, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

Fig. 31. — Habitus of *Acrotylus patruelis* (Herrich-Schäffer, 1838): **A**, **B**, female from Fete Ole, Senegal, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Maboke, Central African Republic, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

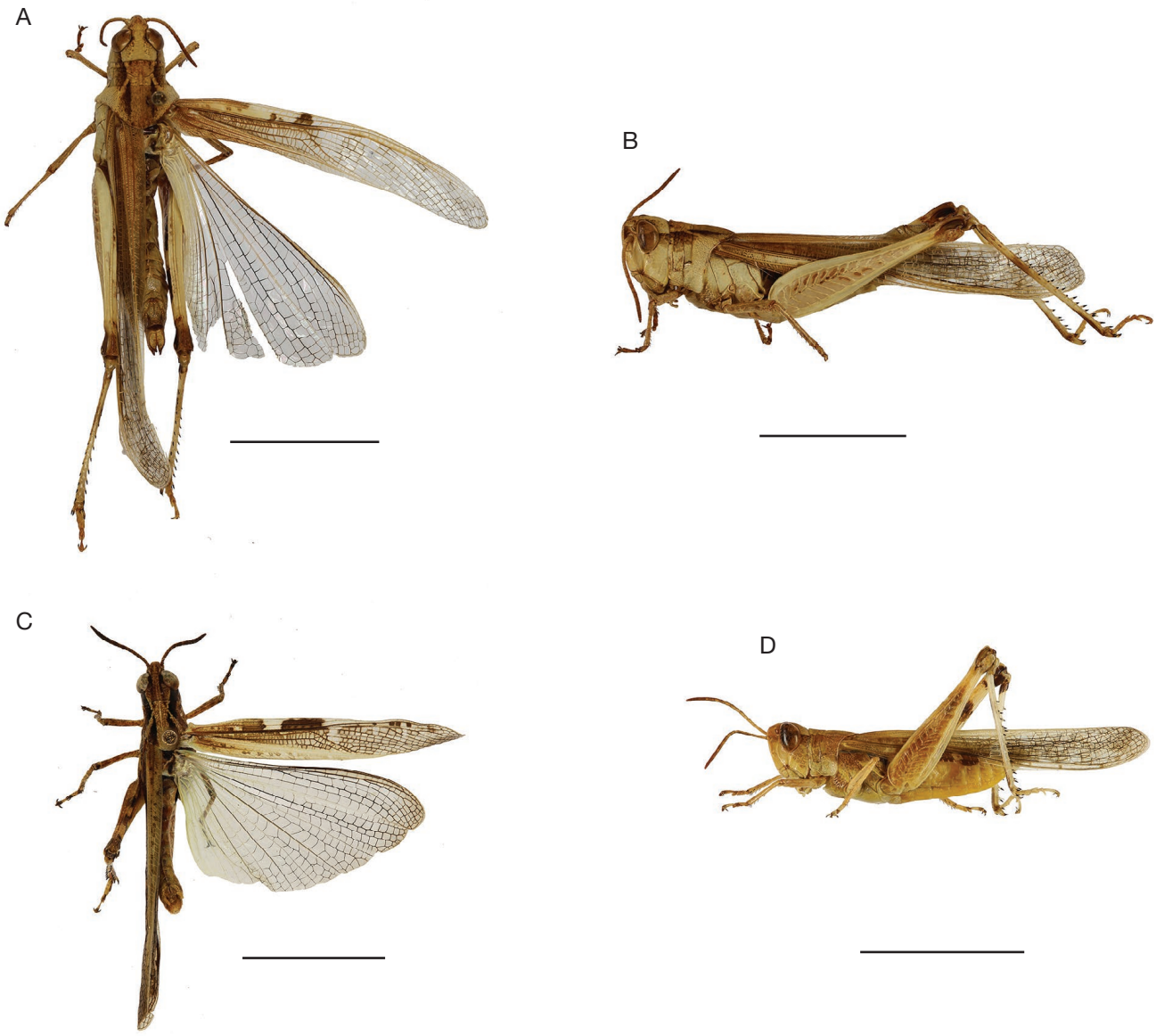

Fig. 32. — Habitus of *Aiolopus puissanti* Defaut, 2005: **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

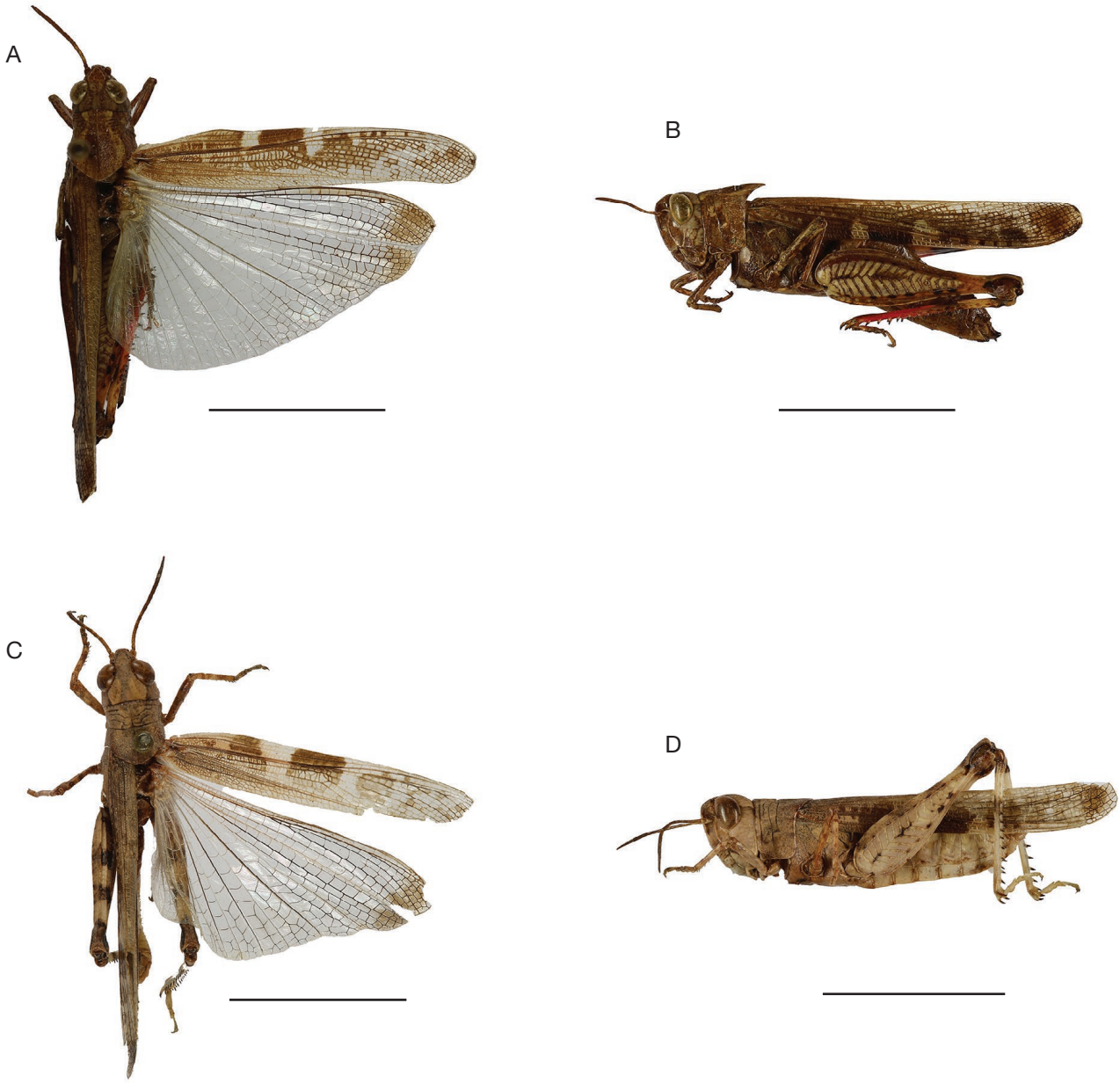

FIG. 33. — Habitus of *Aiolopus strepens strepens* (Latreille, 1804): **A**, **B**, female from Algiers, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

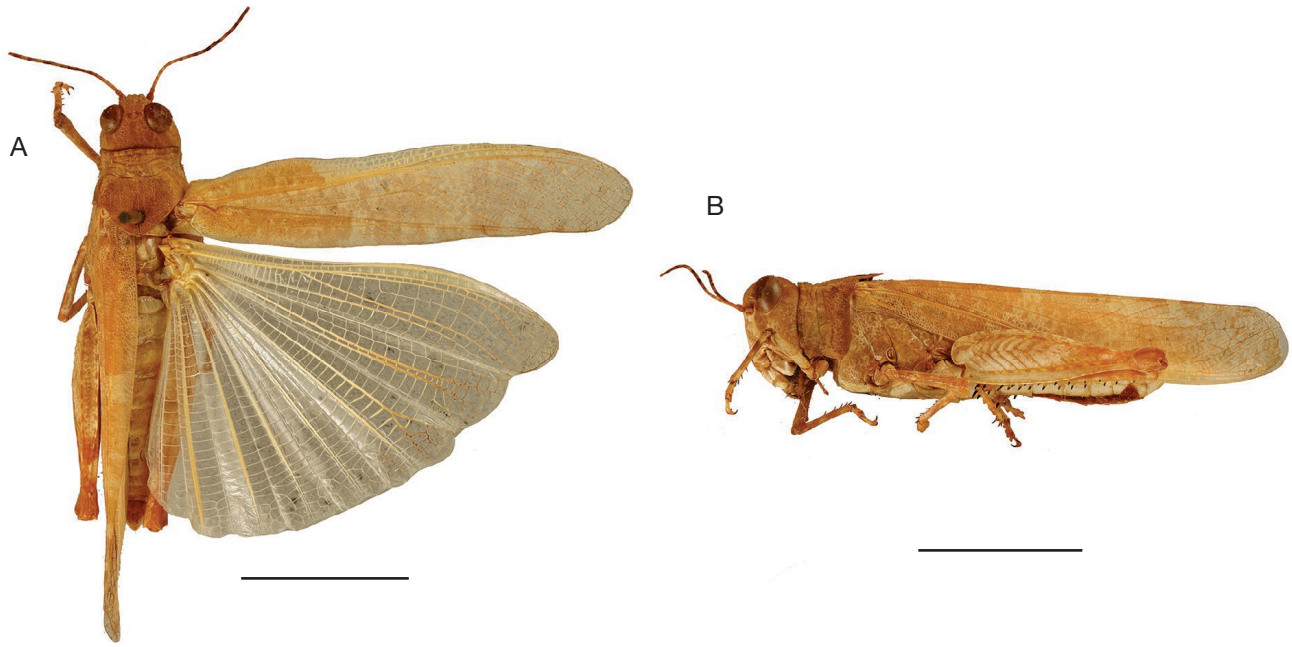

Fig. 34. — Habitus of *Helioscirtus capsitanus capsitanus* (Bonnet, 1884): **A**, **B**, male from Laghouat, Algeria, dorsal view (**A**), lateral view (**B**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 35. — Habitus of *Helioscirtus gracilis* Vosseler, 1902: Male from Gafsa, Tunisia, dorsal view. Scale bar: 1 cm. Photo: S. Poulin.

FIG. 36. — Habitus of *Hilethera aeolopoides* (Uvarov, 1922): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

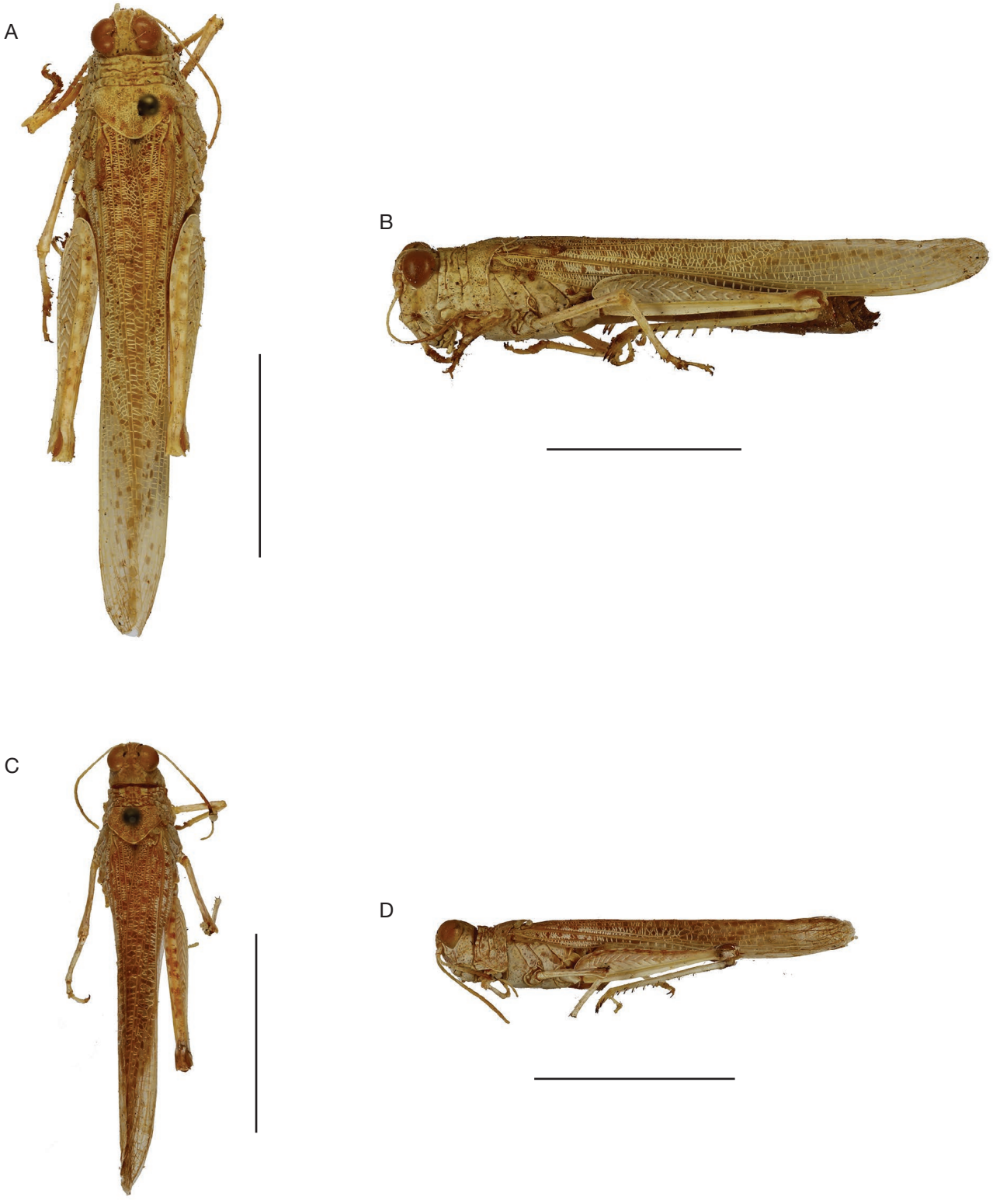

Fig. 37. — Habitus of *Hyalorrhipis calcarata* (Vosseler, 1902): **A**, **B**, female from Sudan, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Bechar, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

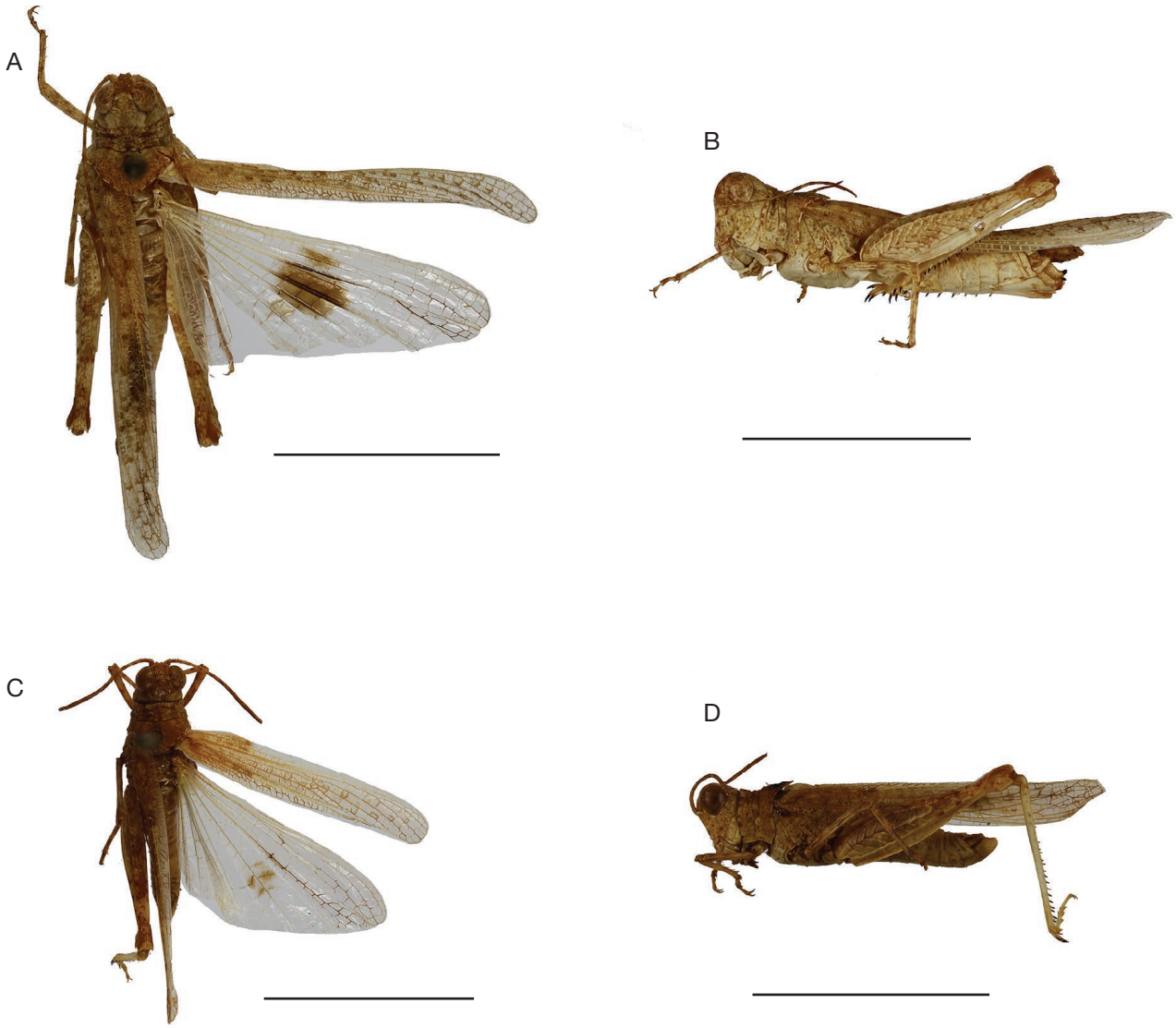

FIG. 38. — Habitus of *Leptopternis maculata* Vosseler, 1902: **A**, **B**, female from Msila, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Sidi Bouzid, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

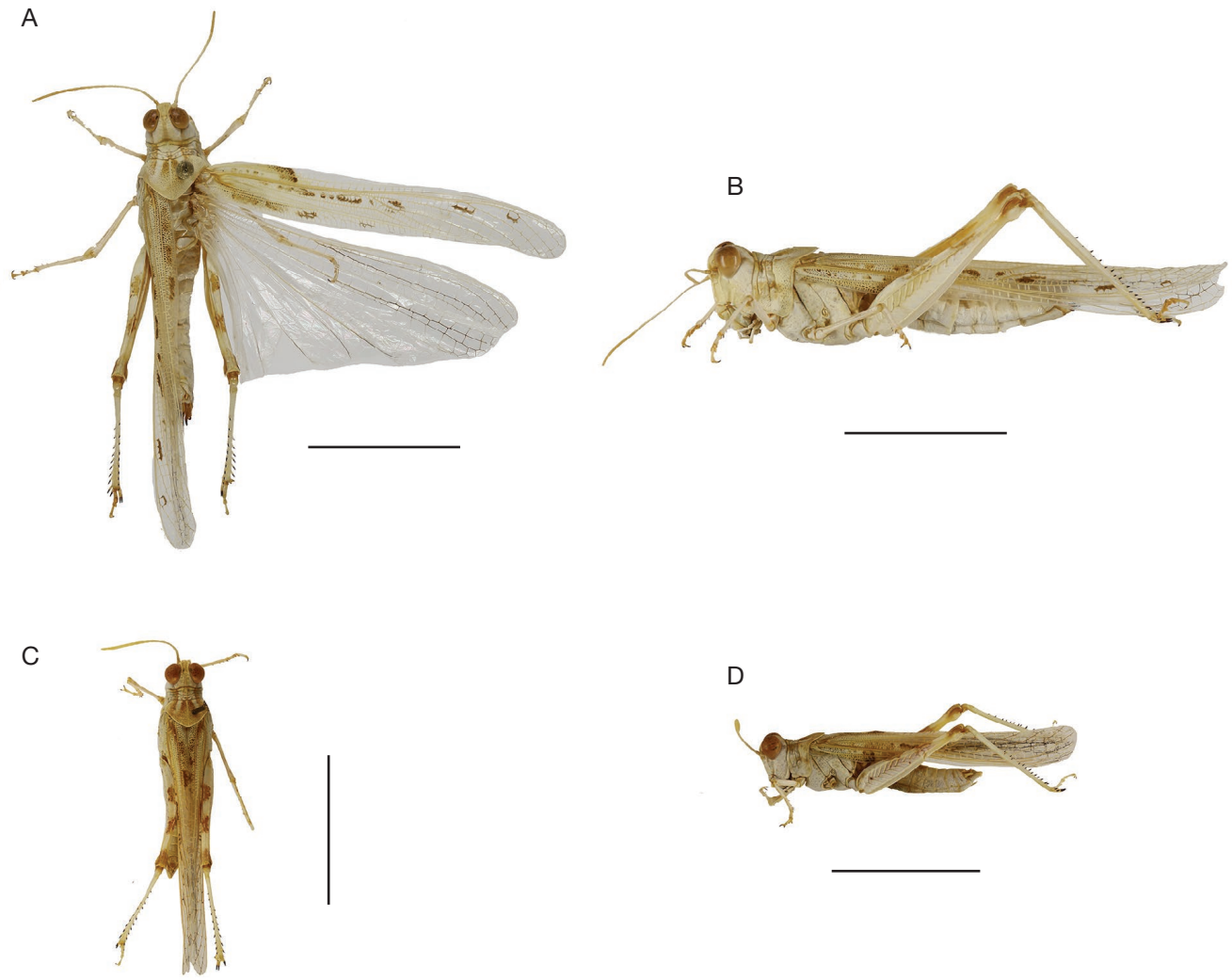

FIG. 39. — Habitus of *Leptopternis rothschildi* Bolívar, 1913: **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 40. — Habitus of *Mioscirtus wagneri wagneri* (Eversmann, 1859): **A**, **B**, female from Oran, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Oran, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: S. Poulin.

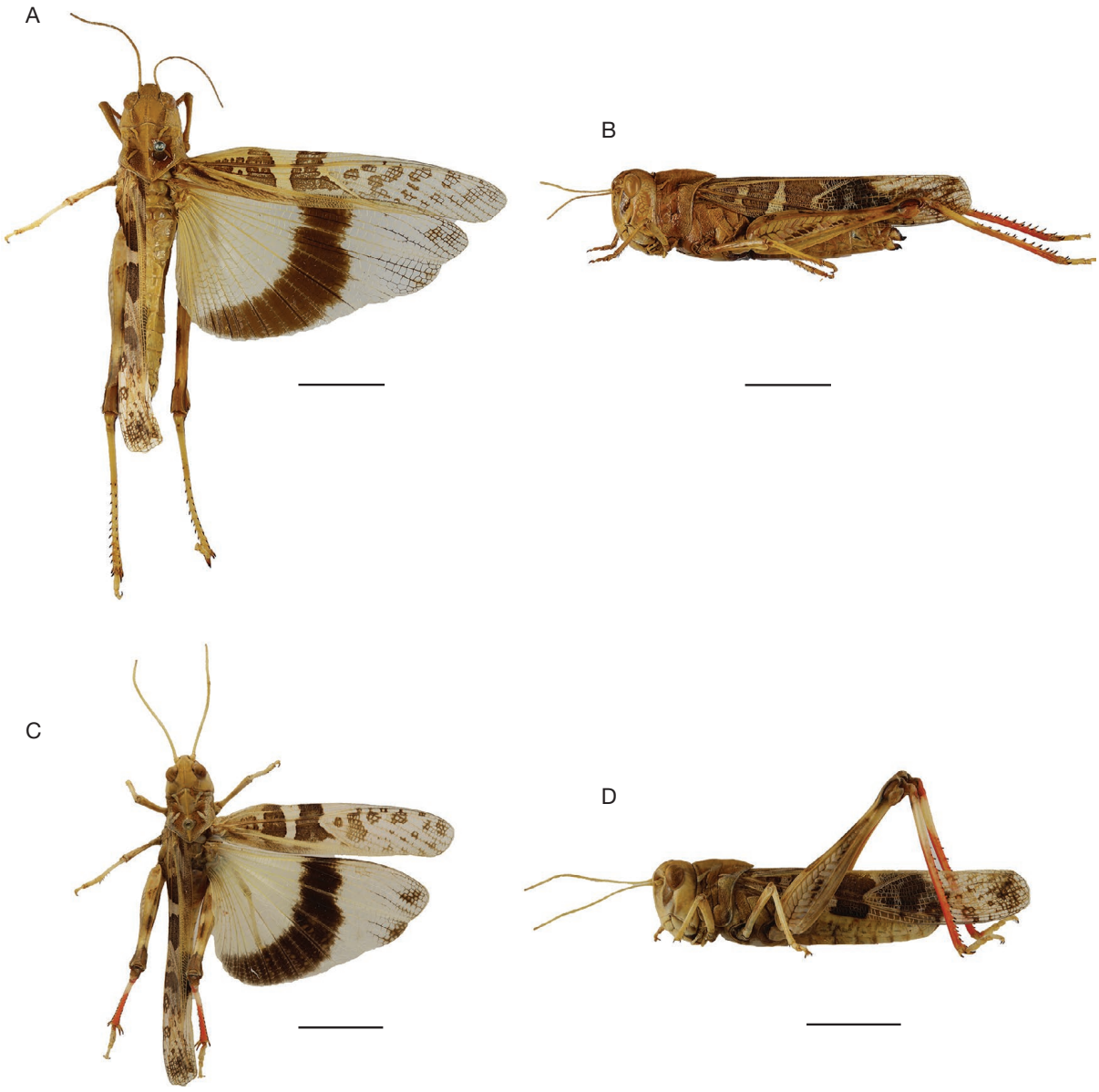

FIG. 41. — Habitus of *Oedaleus decorus decorus* (Germar, 1825): **A**, **B**, female from Tabarka, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

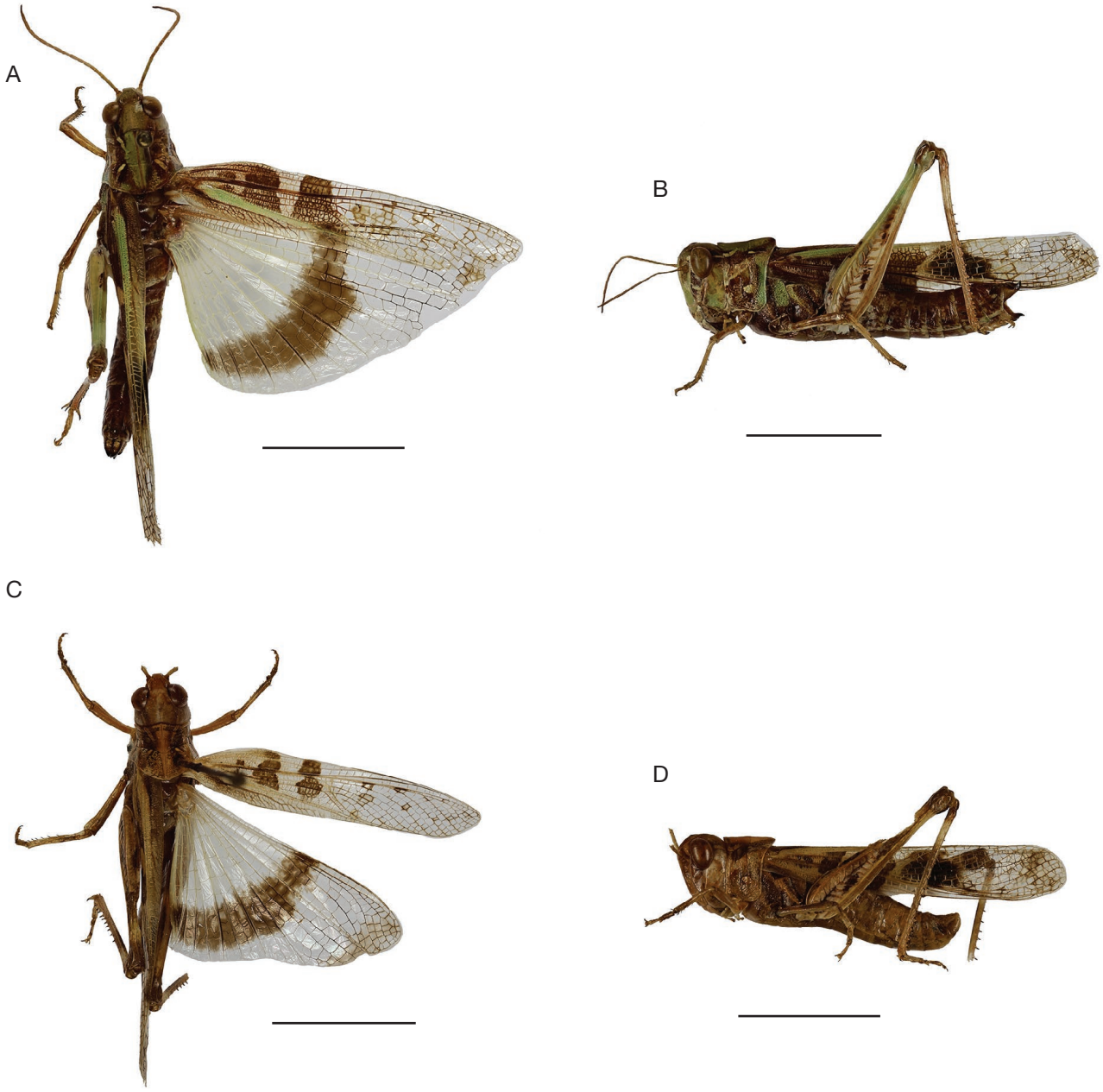

FIG. 42. — Habitus of *Oedaleus senegalensis* (Krauss, 1877): **A**, **B**, female from Kebili, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

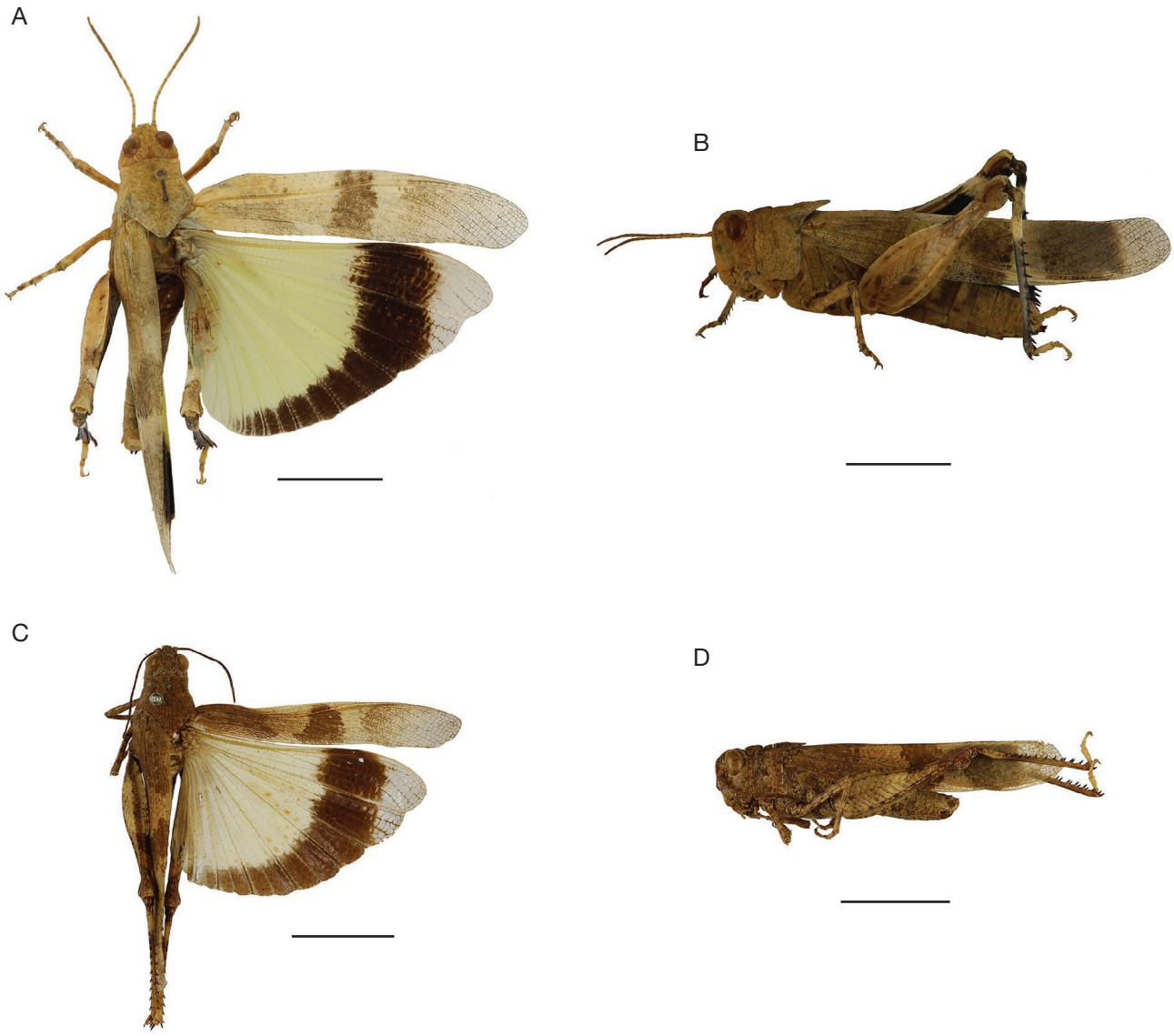

FIG. 43. — Habitus of *Oedipoda fuscocincta fuscocincta* Lucas, 1849: **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Morocco, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

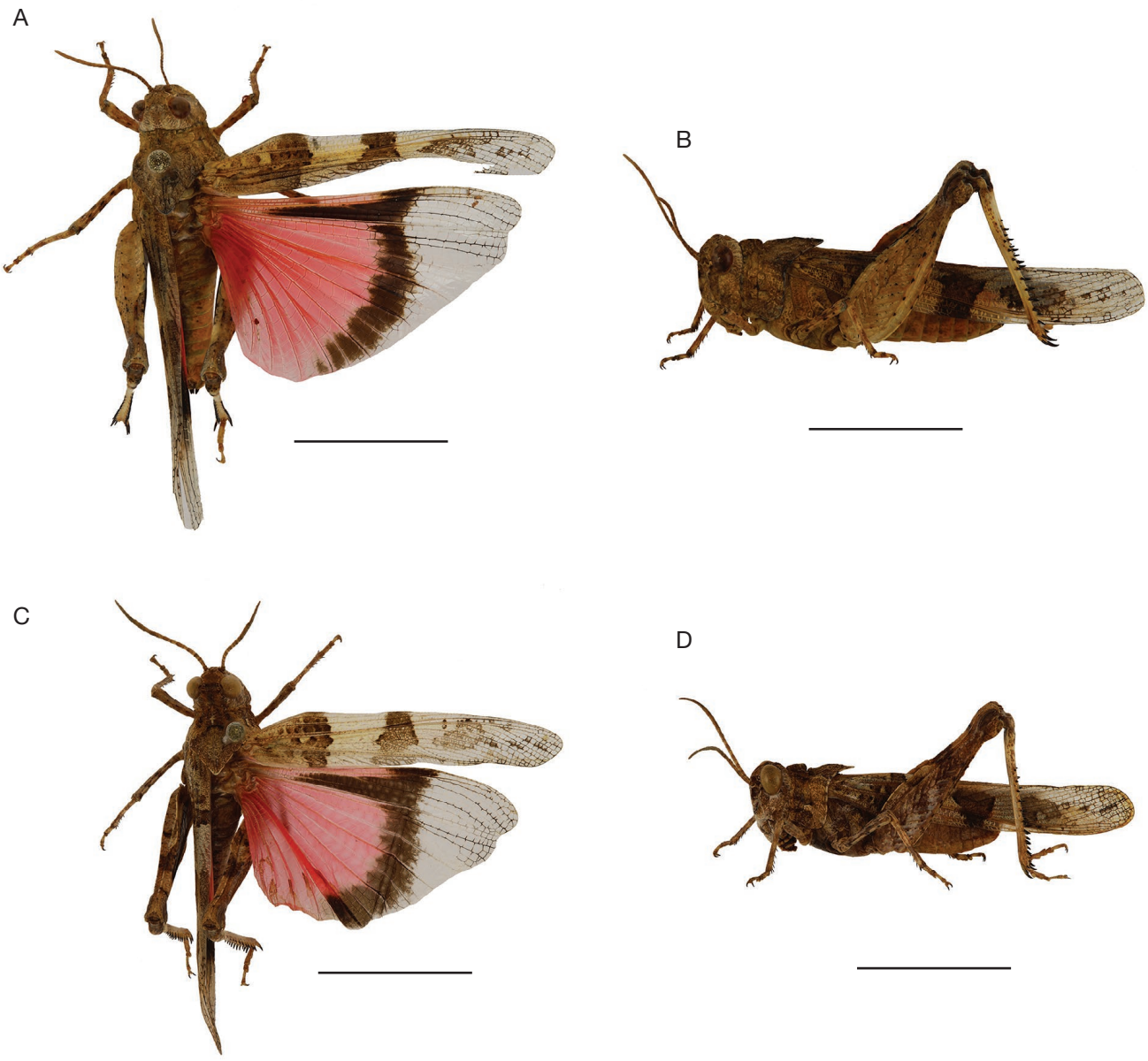

Fig. 44. — Habitus of *Oedipoda miniata mauritanica* Lucas, 1849: **A**, **B**, female from Kasserine, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 45. — Habitus of *Scintharista notabilis notabilis* (Walker, 1870): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

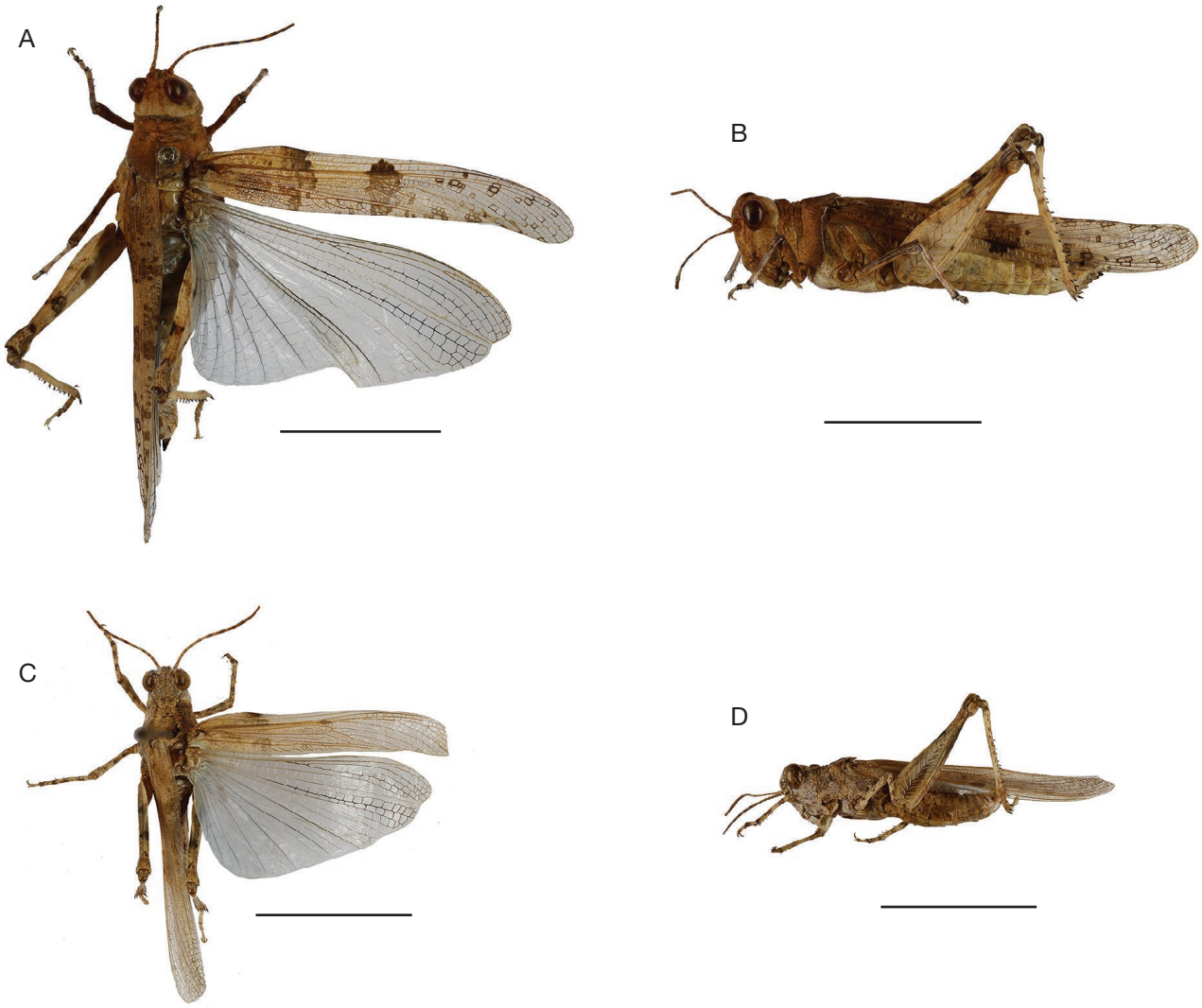

FIG. 46. — Habitus of *Sphingoderus carinatus* (Saussure, 1888): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

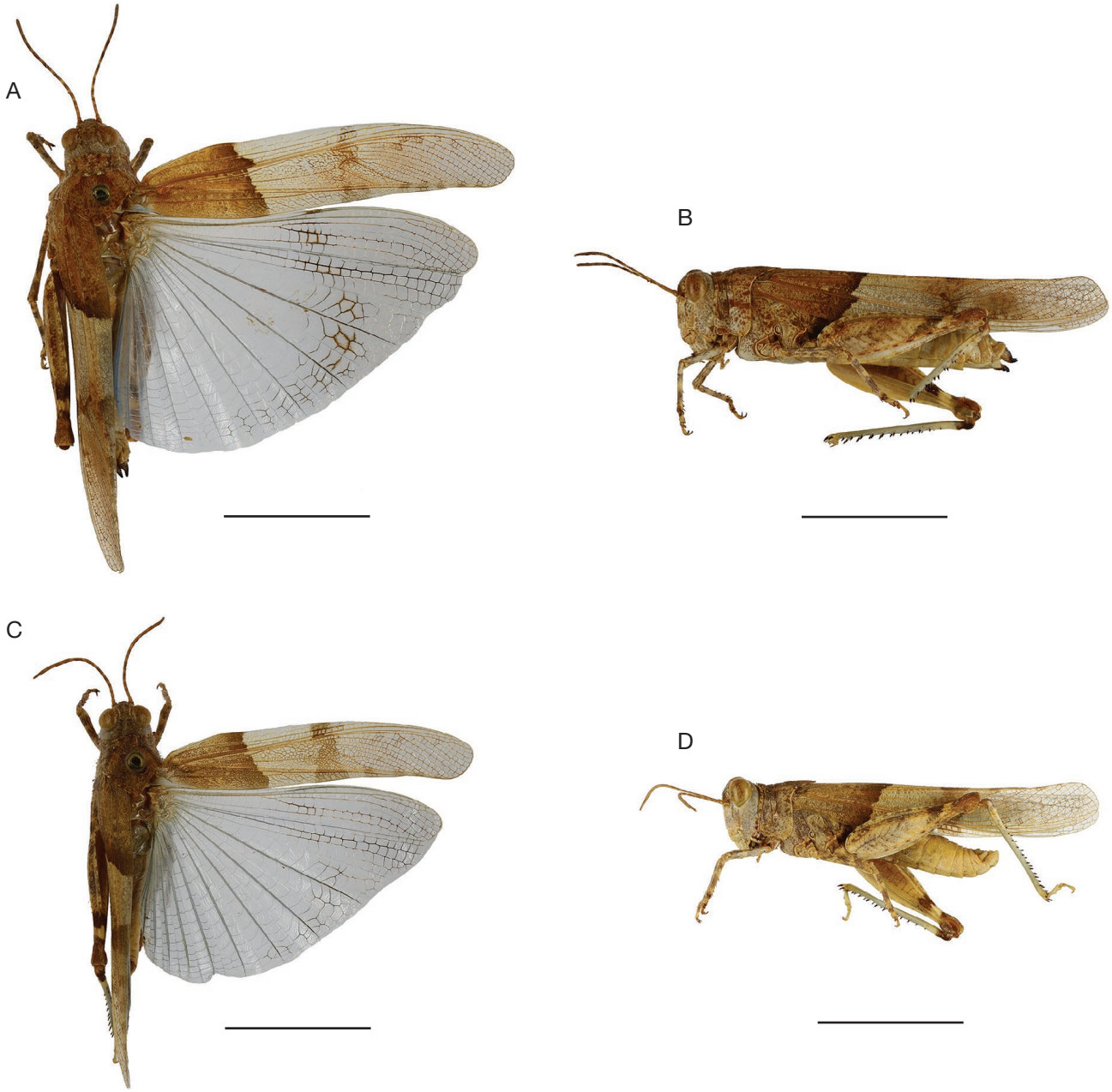

FIG. 47. — Habitus of *Sphingonotus* (*Neosphingonotus*) *finotianus* (Saussure, 1885): **A**, **B**, female from Algiers, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Algiers, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 48. — Habitus of *Sphingonotus* (*Neosphingonotus*) *paradoxus* Bey-Bienko, 1948: **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, Male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

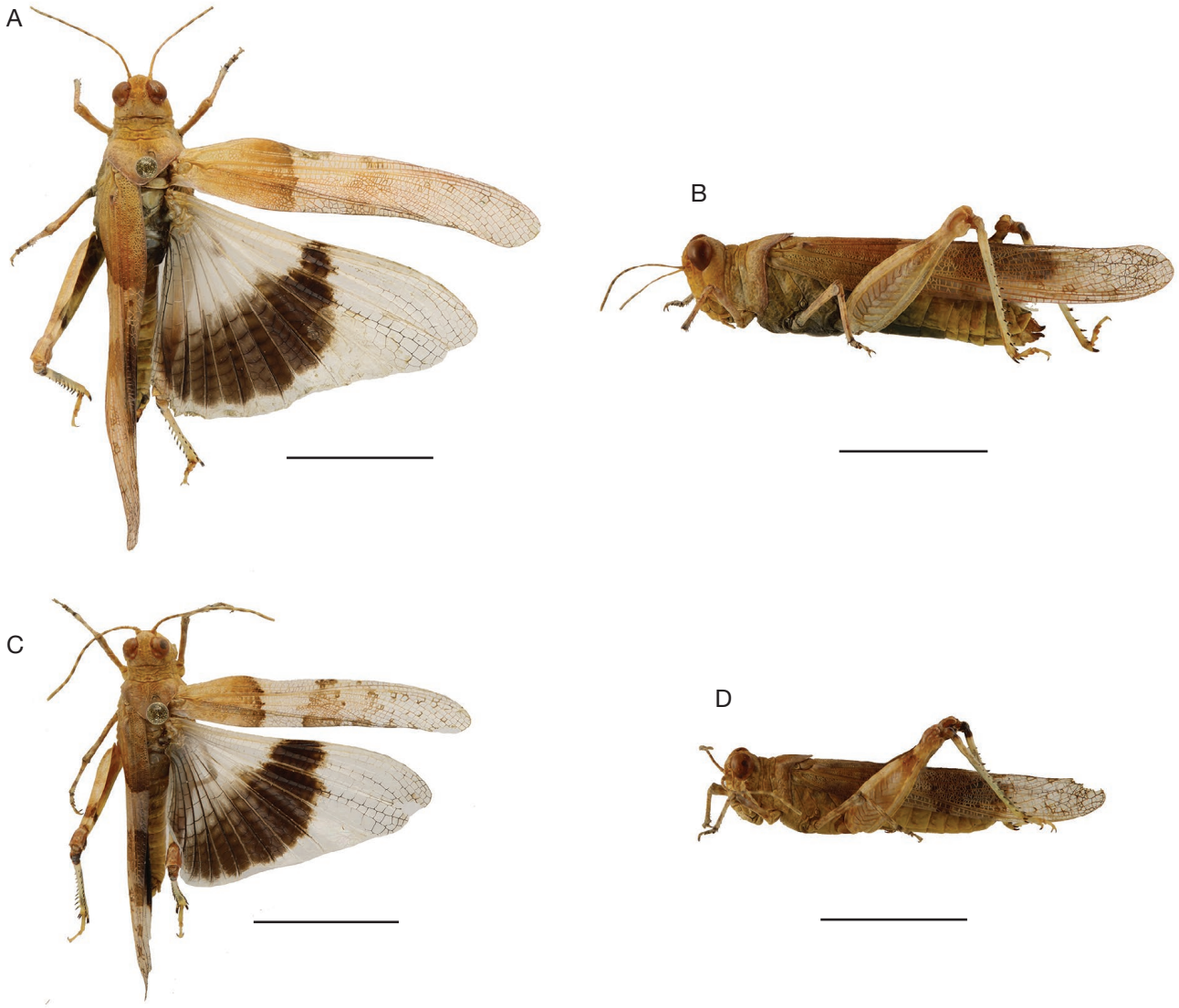

FIG. 49. — Habitus of *Sphingonotus* (*Neosphingonotus*) *tricinctus* (Walker, 1870): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

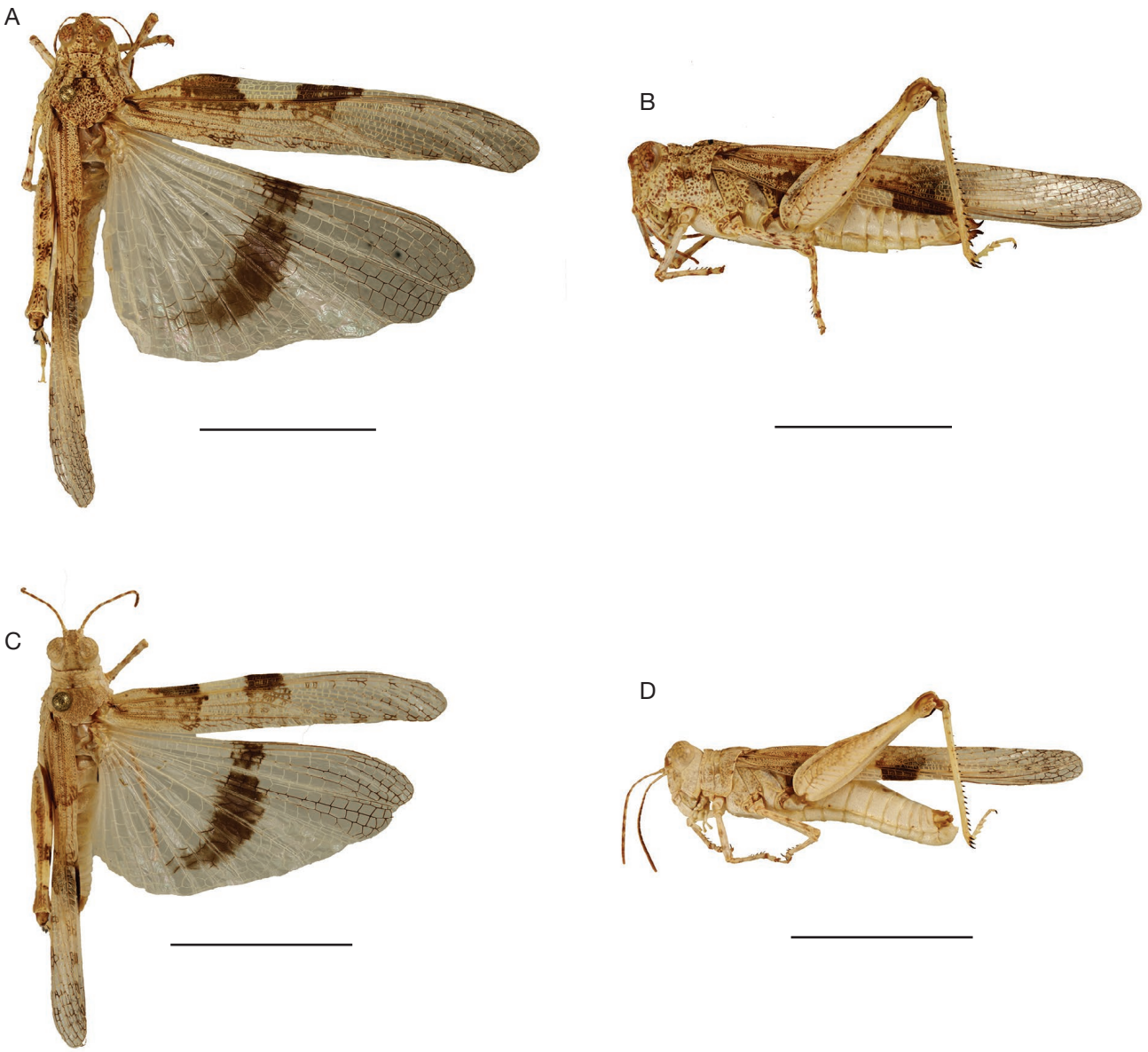

Fig. 50. — Habitus of *Sphingonotus* (*Parasphingonotus*) *radioserratus* Johnsen, 1985: **A**, **B**, female from Dra Tafilalt, Morocco, dorsal view (**A**), lateral view (**B**); **C**, **D**, Male from Dra Tafilalt, Morocco, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

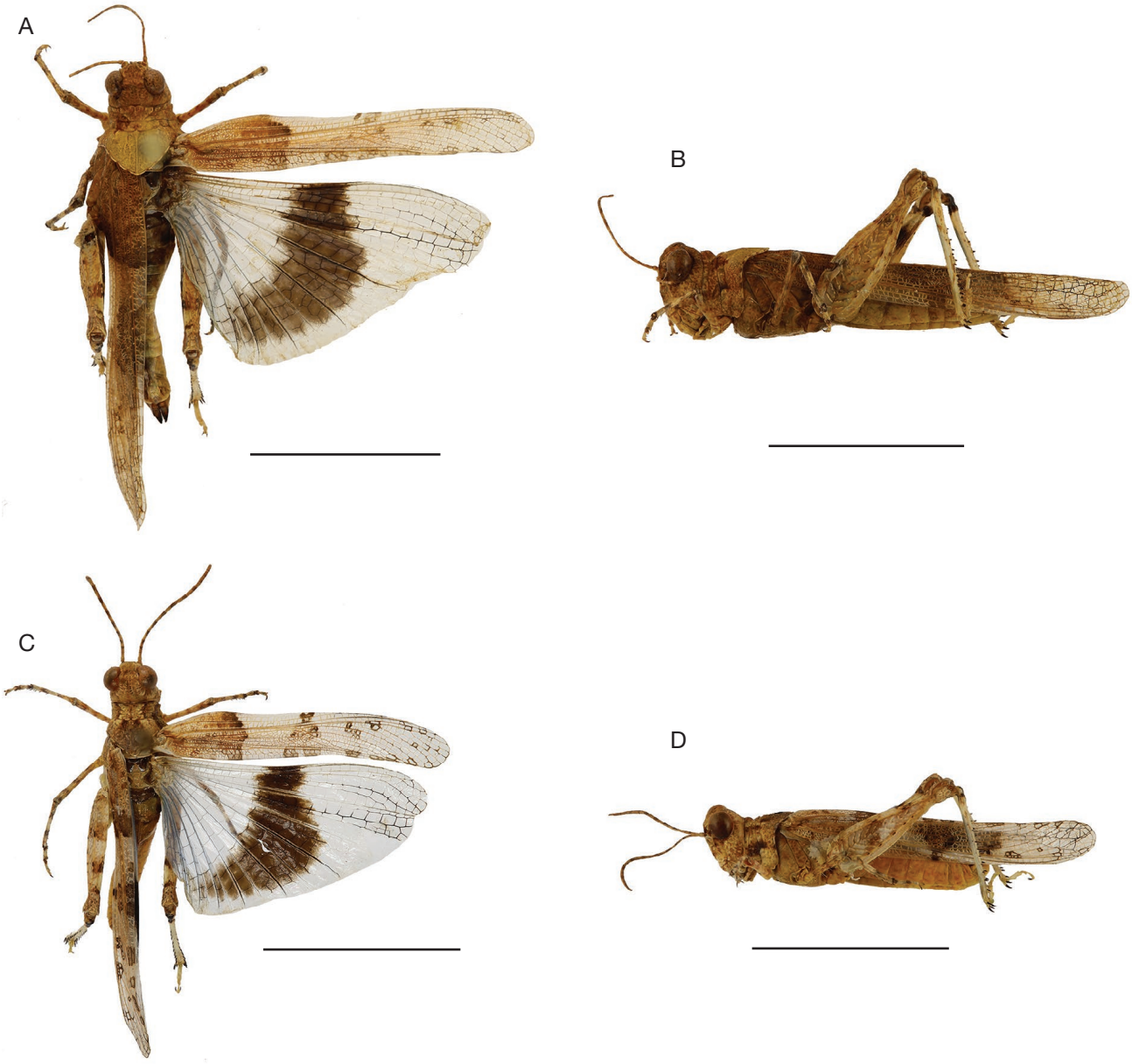

FIG. 51. — Habitus of *Sphingonotus* (*Sphingonotus*) *lucasii* Saussure, 1888: **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

Fig. 52. — Habitus of *Sphingonotus* (*Sphingonotus*) *octofasciatus* (Serville, 1838): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 53. — Habitus of *Sphingonotus* (*Sphingonotus*) *rubescens rubescens* (Walker, 1870): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, Male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

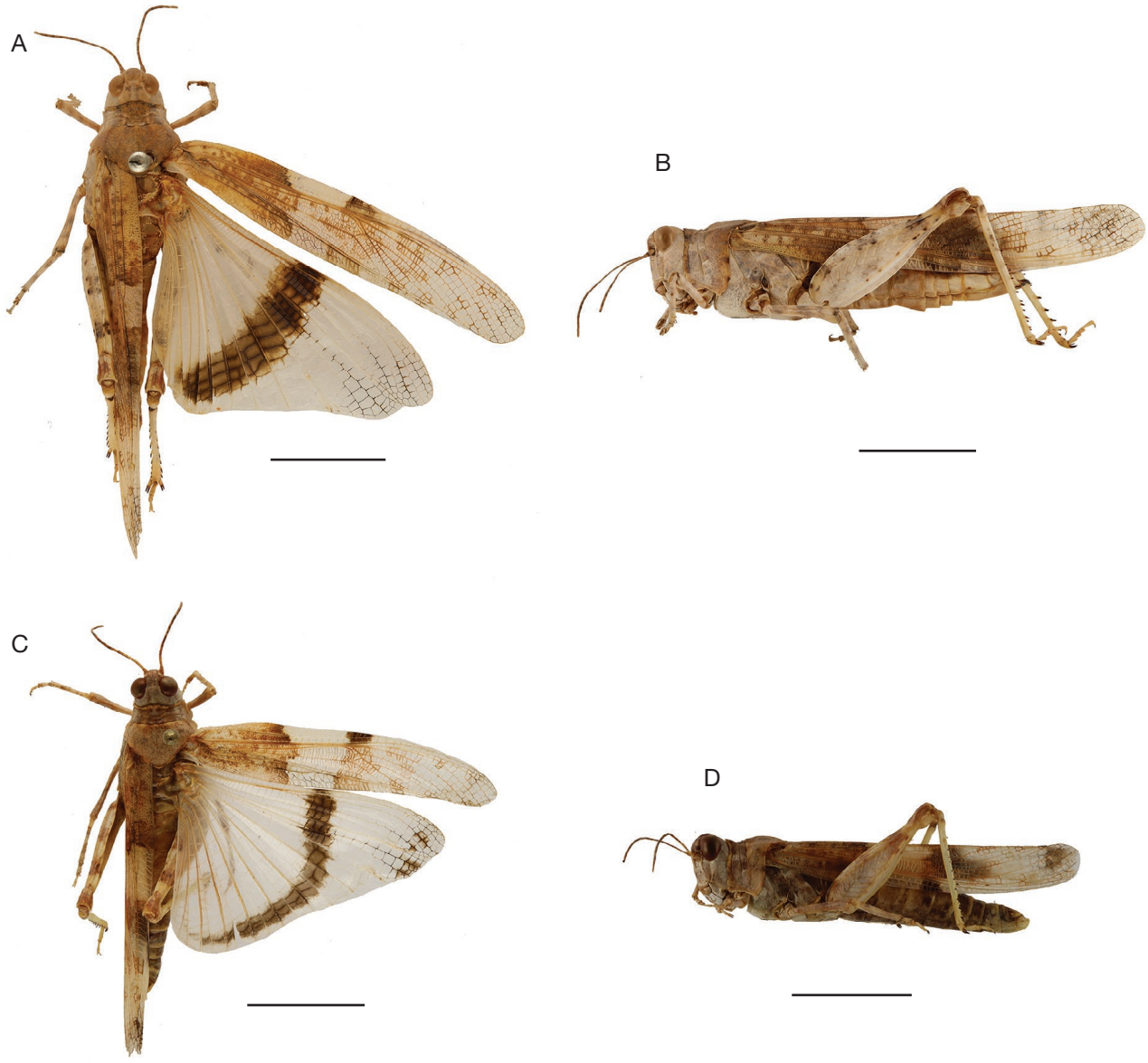

FIG. 54. — Habitus of *Sphingonotus* (*Sphingonotus*) *savignyi* Saussure, 1884: **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

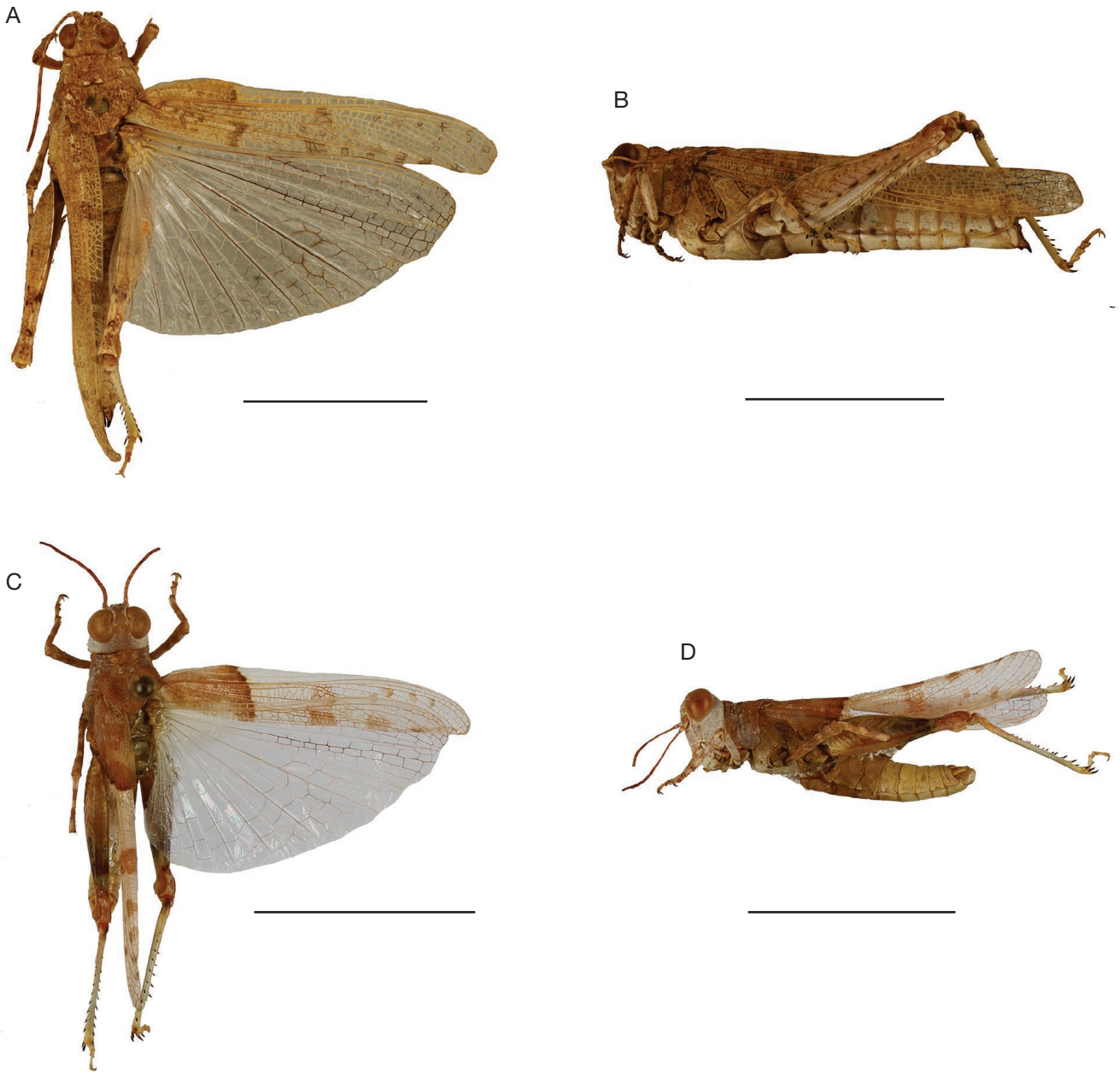

FIG. 55. — Habitus of *Sphingonotus* (*Sphingonotus*) *vosseleri* Krauss, 1902: **A**, **B**, female from Gabes, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Taznakht, Morocco, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

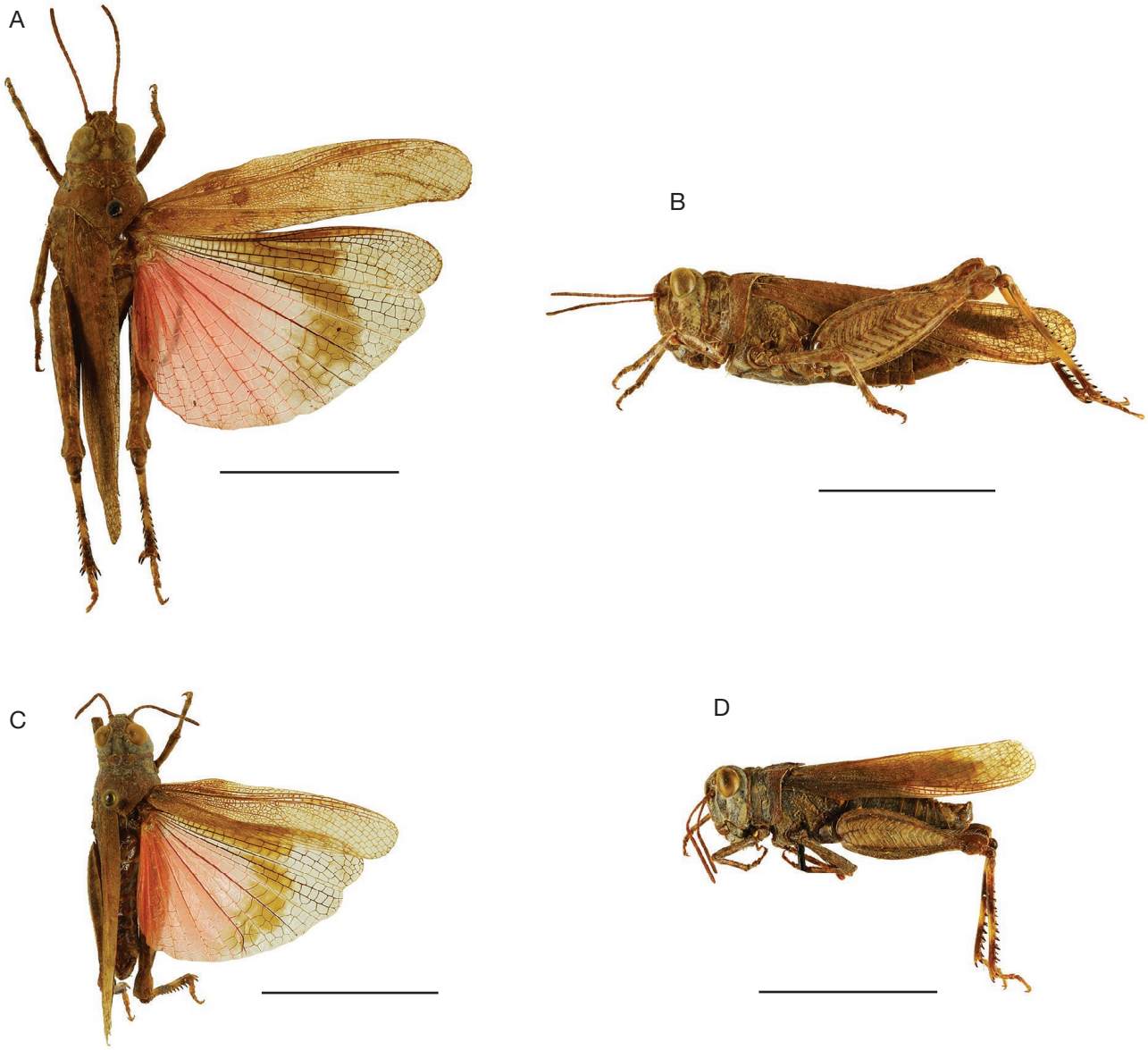

FIG. 56. — Habitus of *Thalpomena algeriana algeriana* (Lucas, 1849): **A**, **B**, female from Beja, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Hammam Lif, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

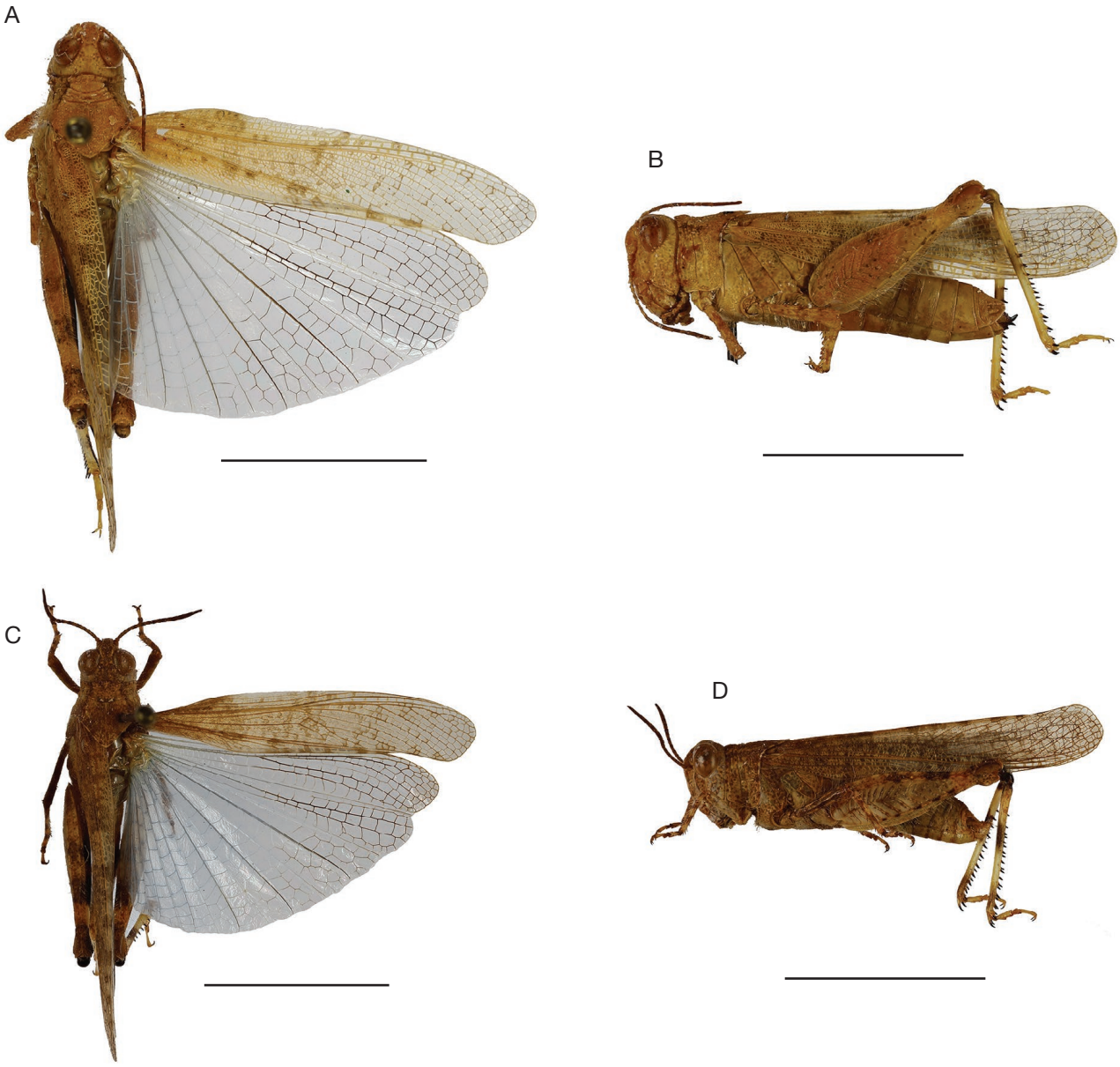

FIG. 57. — Habitus of *Thalpomena coerulescens* Uvarov, 1923: **A**, **B**, female from Sidi Bouzid, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Sidi Bouzid, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

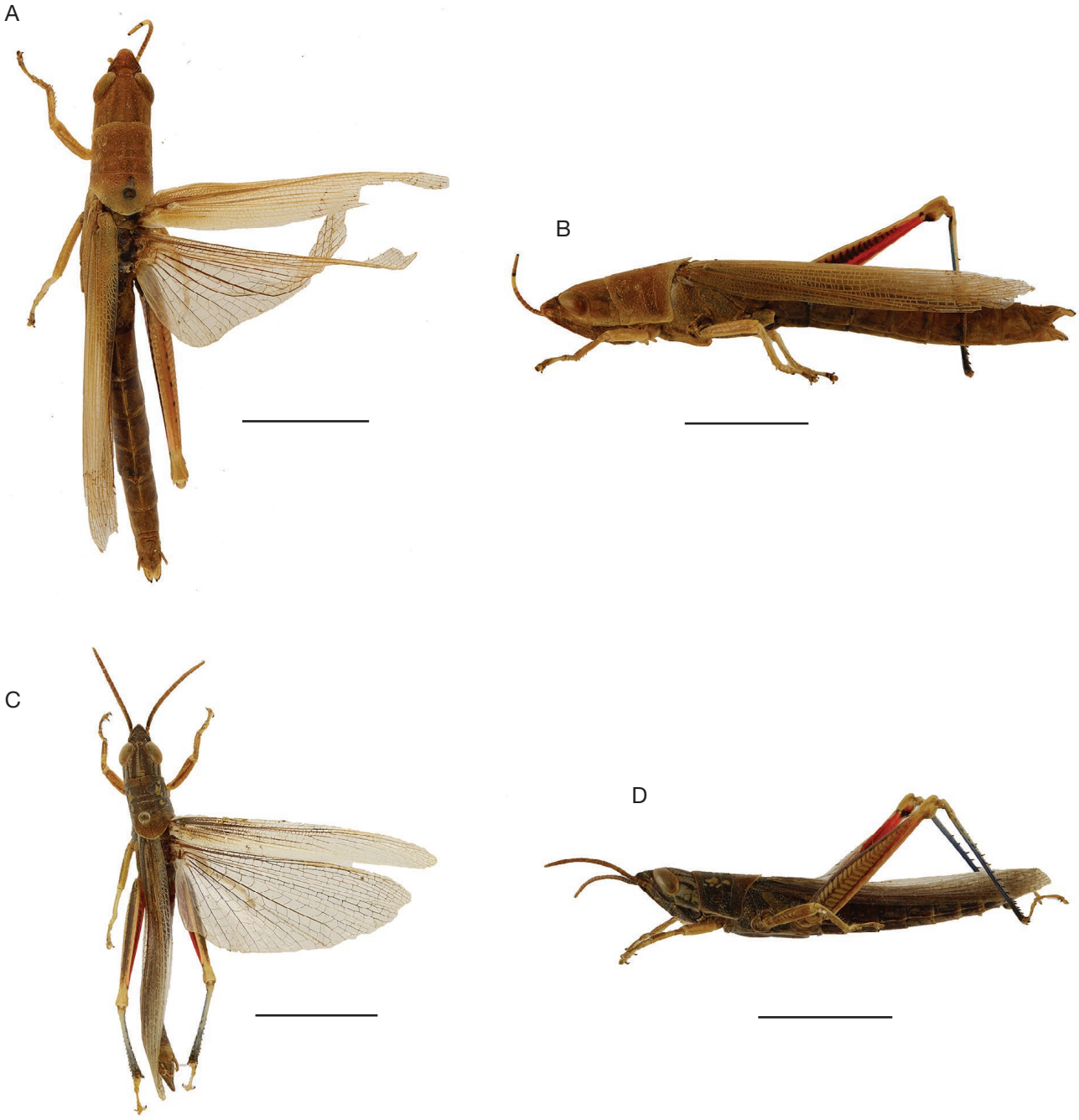

FIG. 58. — Habitus of *Tropidopola cylindrica cylindrica* (Marschall, 1836): **A**, **B**, female from Tunis, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tunis, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

FIG. 59. — Habitus of *Dericorys albidula* Serville, 1838: **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

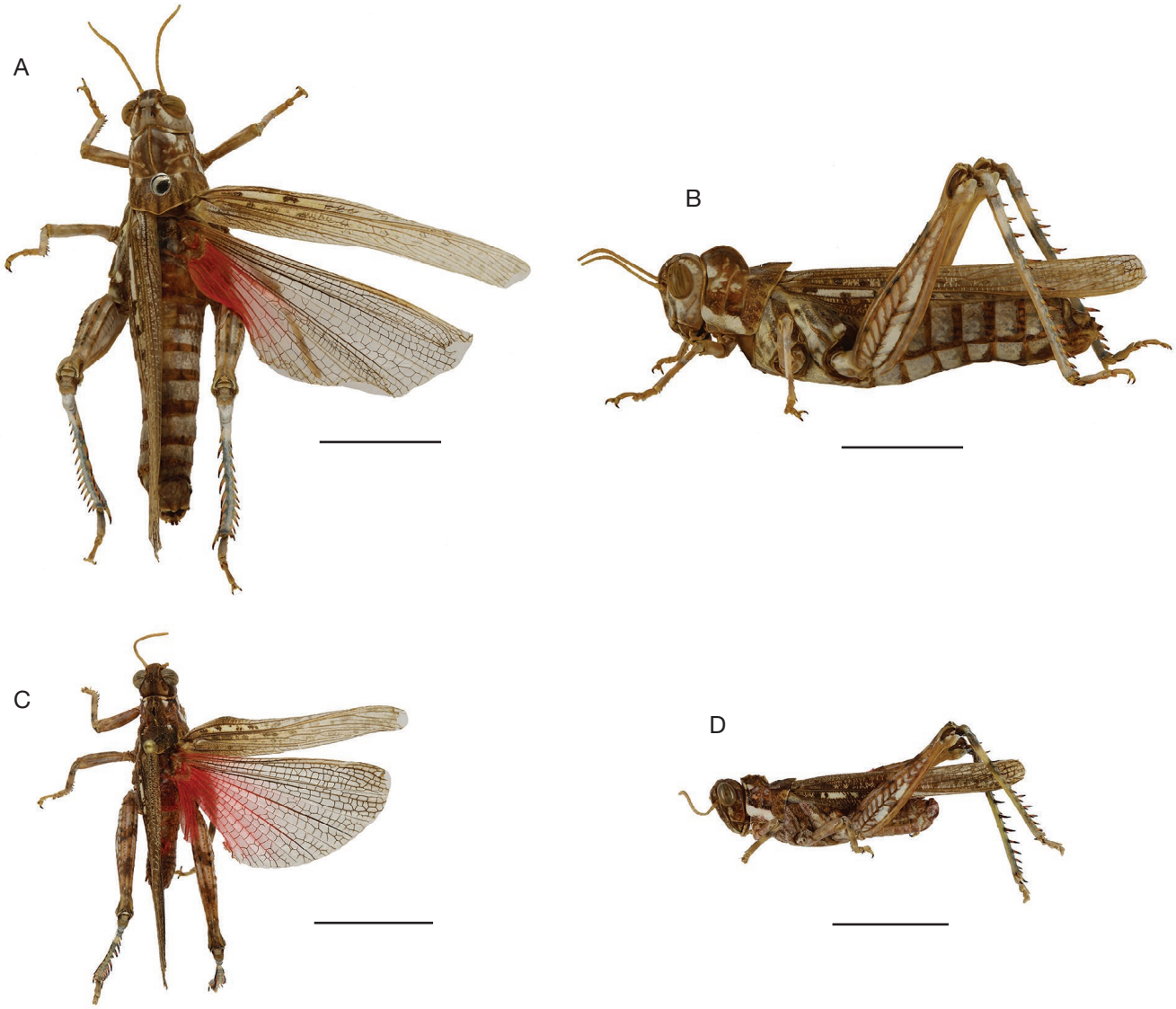

FIG. 60. — Habitus of *Dericorys millierei* Bonnet & Finot, 1884: **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Mednine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

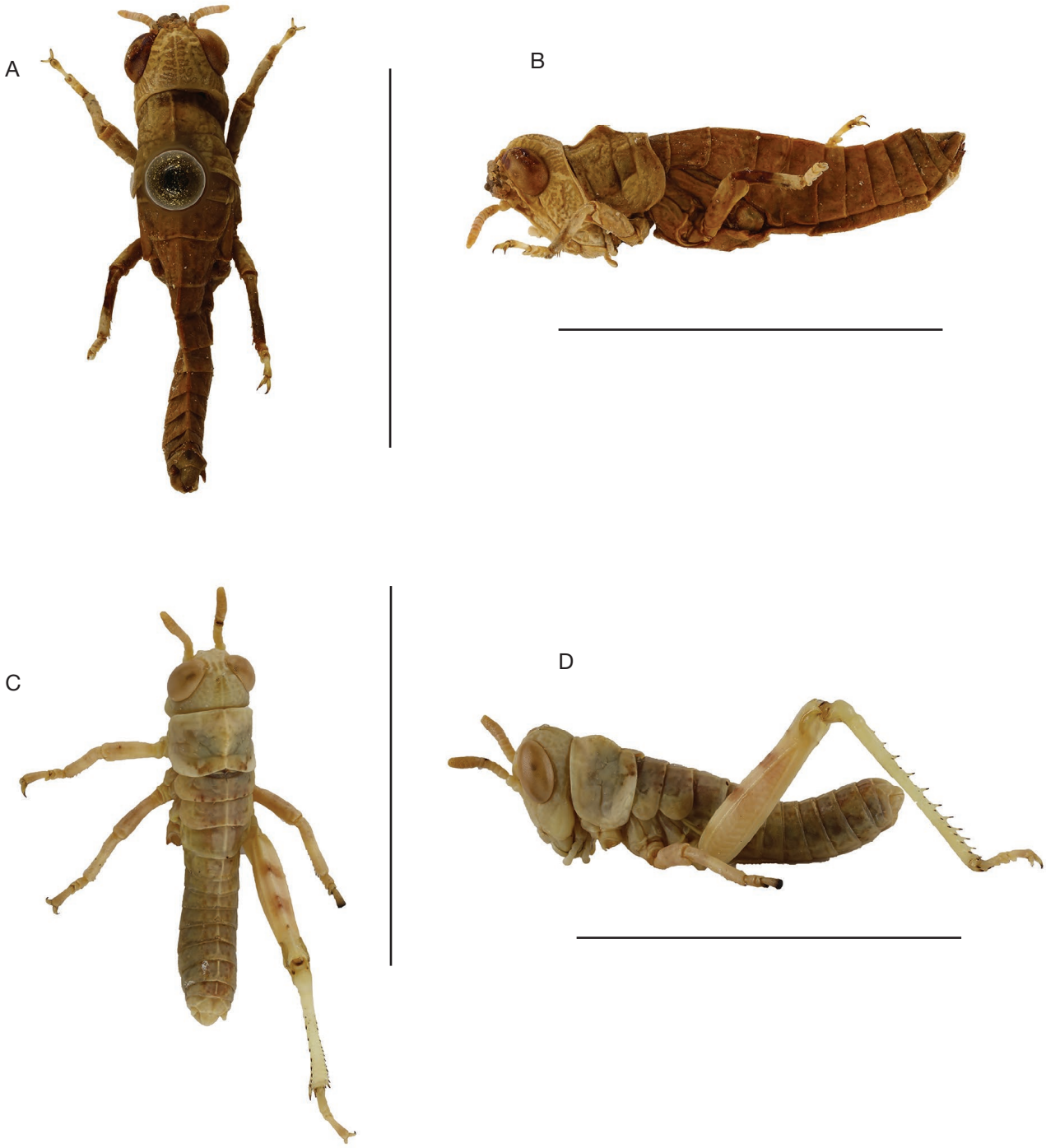

FIG. 61. — Habitus of *Pamphagulus bodenheimeri dumonti* Uvarov, 1929: **A**, **B**, male from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, Larva from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

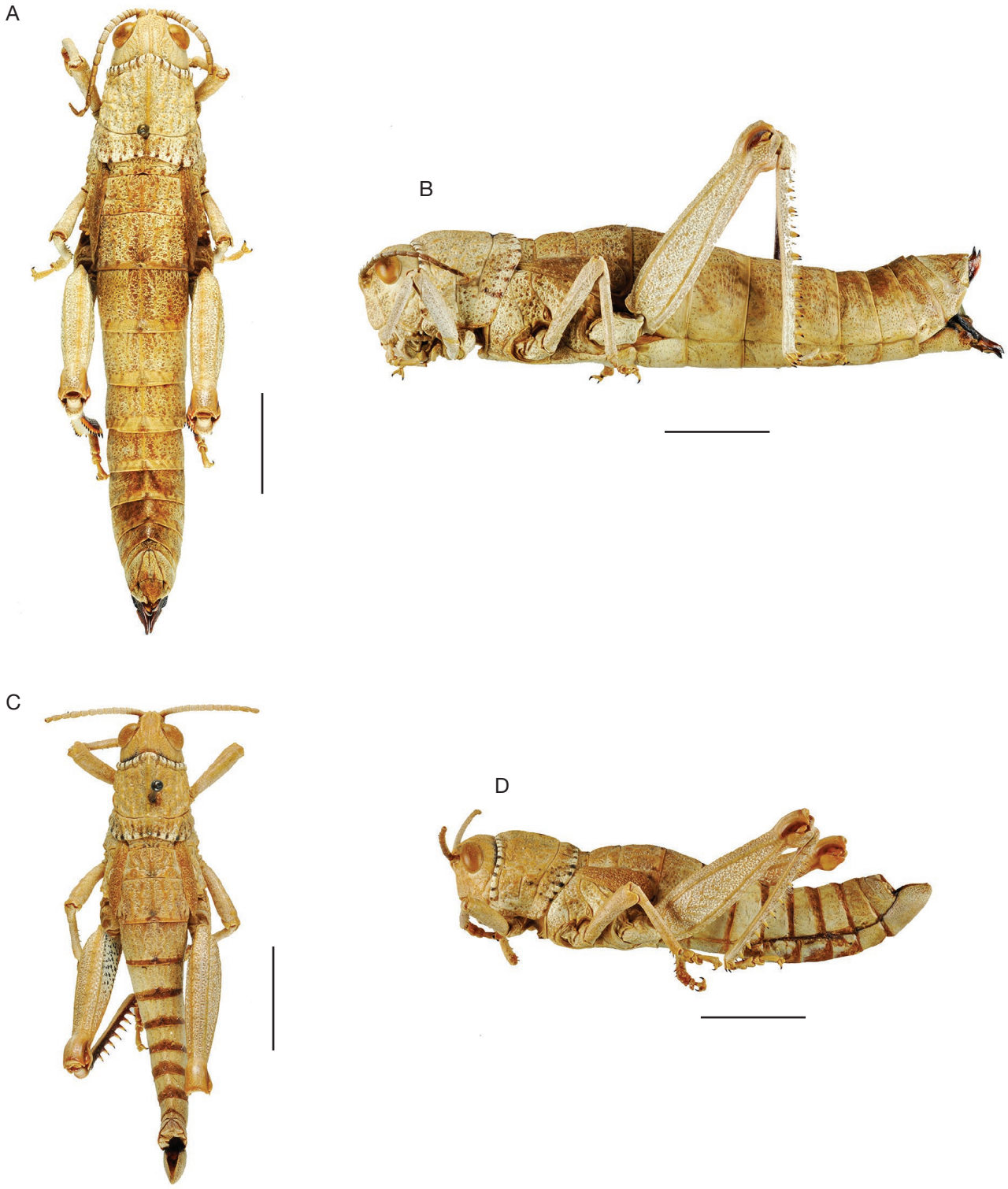

FIG. 62. — Habitus of *Acinipe algeriensis* Descamps & Mounassif, 1972: **A**, **B**, female allotype from Laghouat, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male holotype from Laghouat, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: S. Poulin.

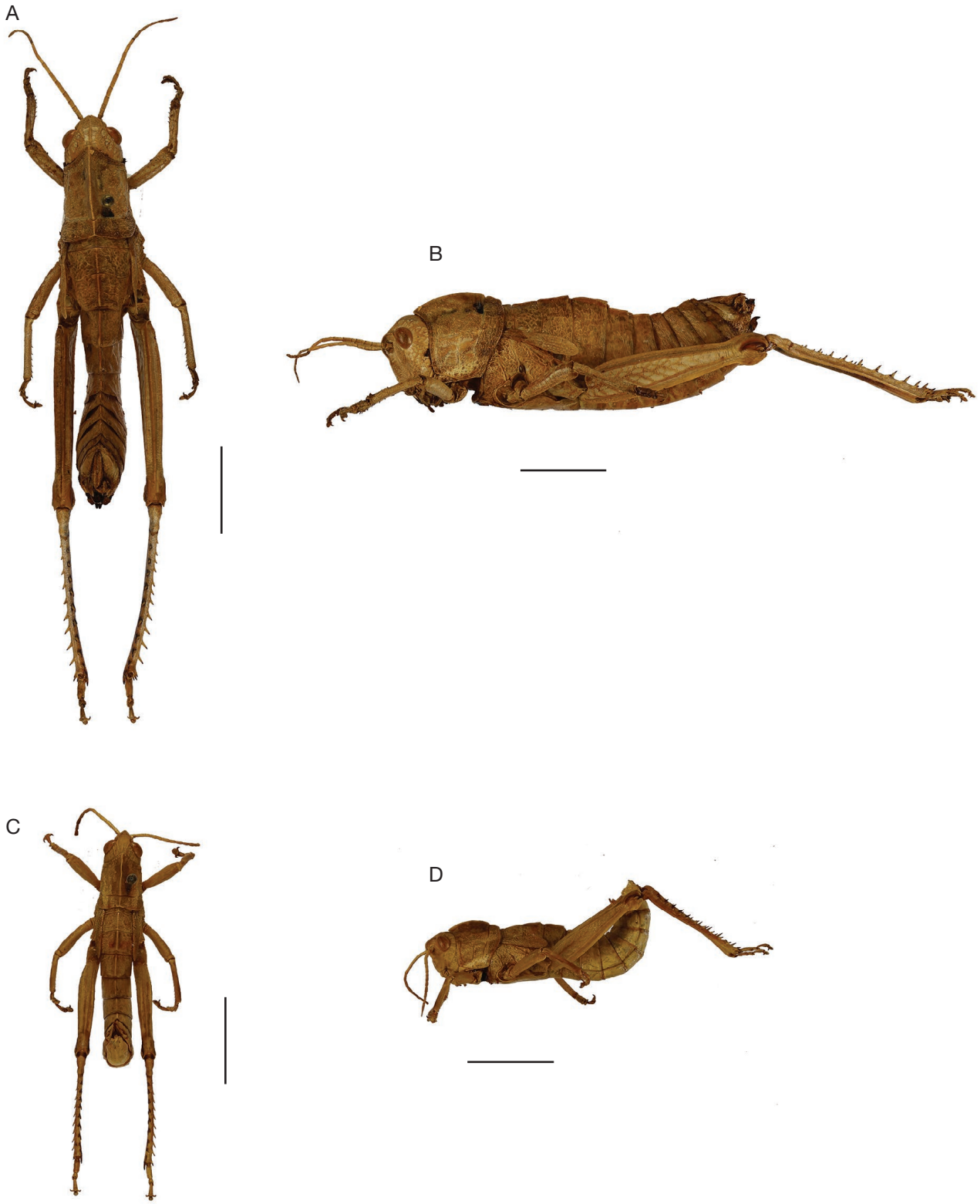

FIG. 63. — Habitus of *Acinipe calabra* (Costa, 1836): **A**, **B**, female from Kroumirie, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tebersouk, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

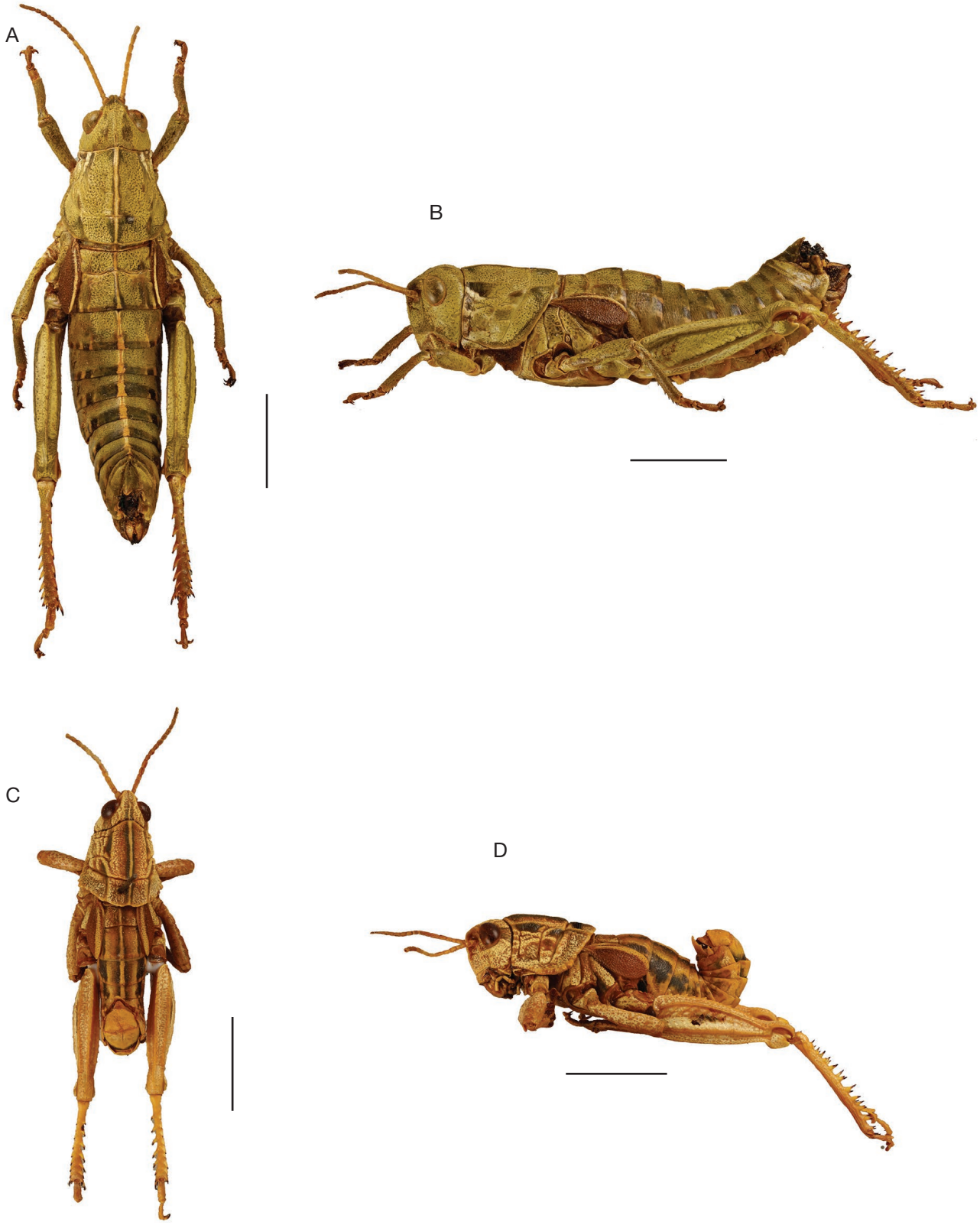

FIG. 64. — Habitus of *Euryparyphes sitifensis* (Brisout de Barneville, 1854): **A**, **B**, female from Oran, Algeria, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Oran, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

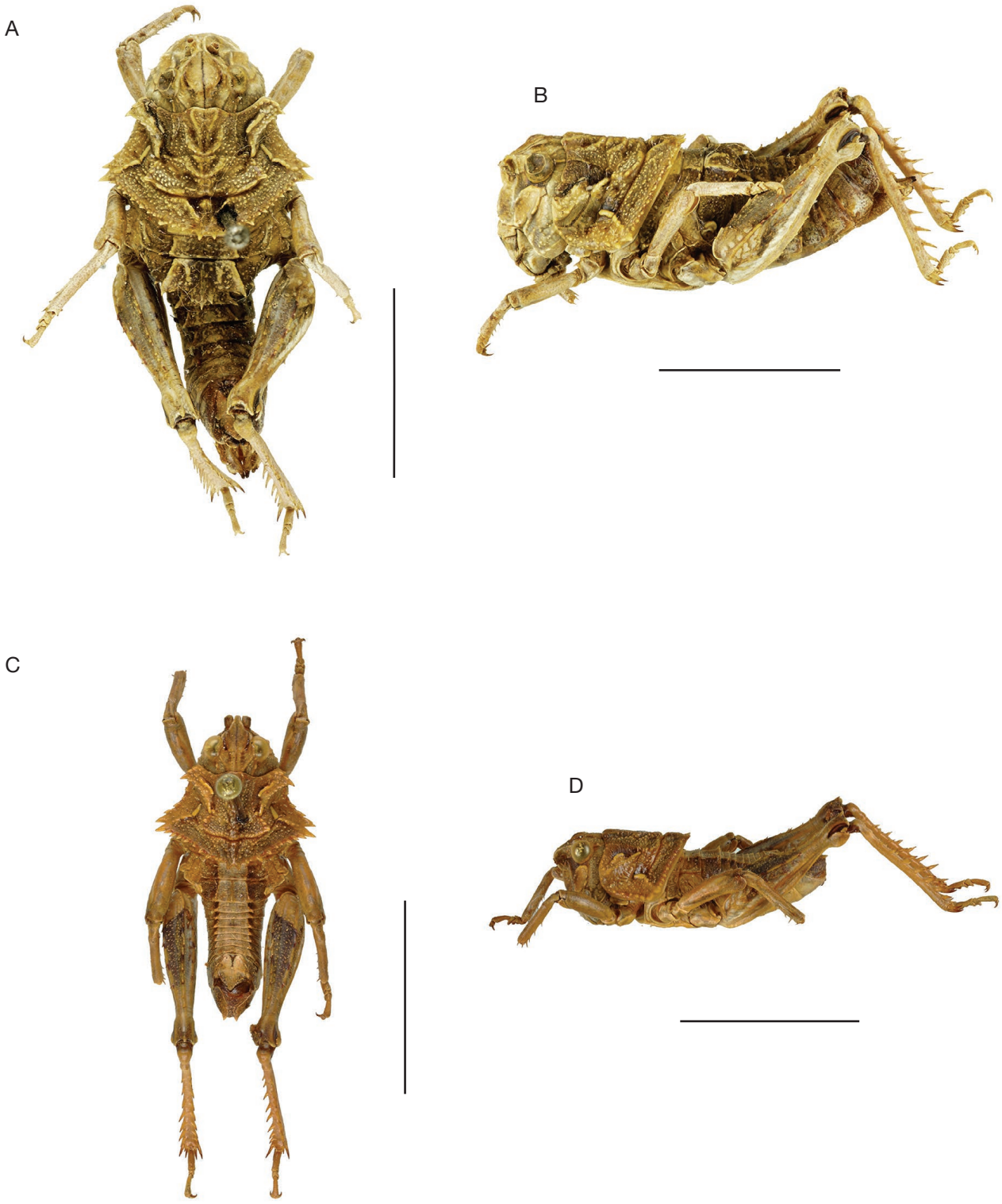

FIG. 65. — Habitus of *Finotia spinicollis* Bonnet, 1884: **A**, **B**, female type from Sfax, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Sfax, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: S. Poulin.

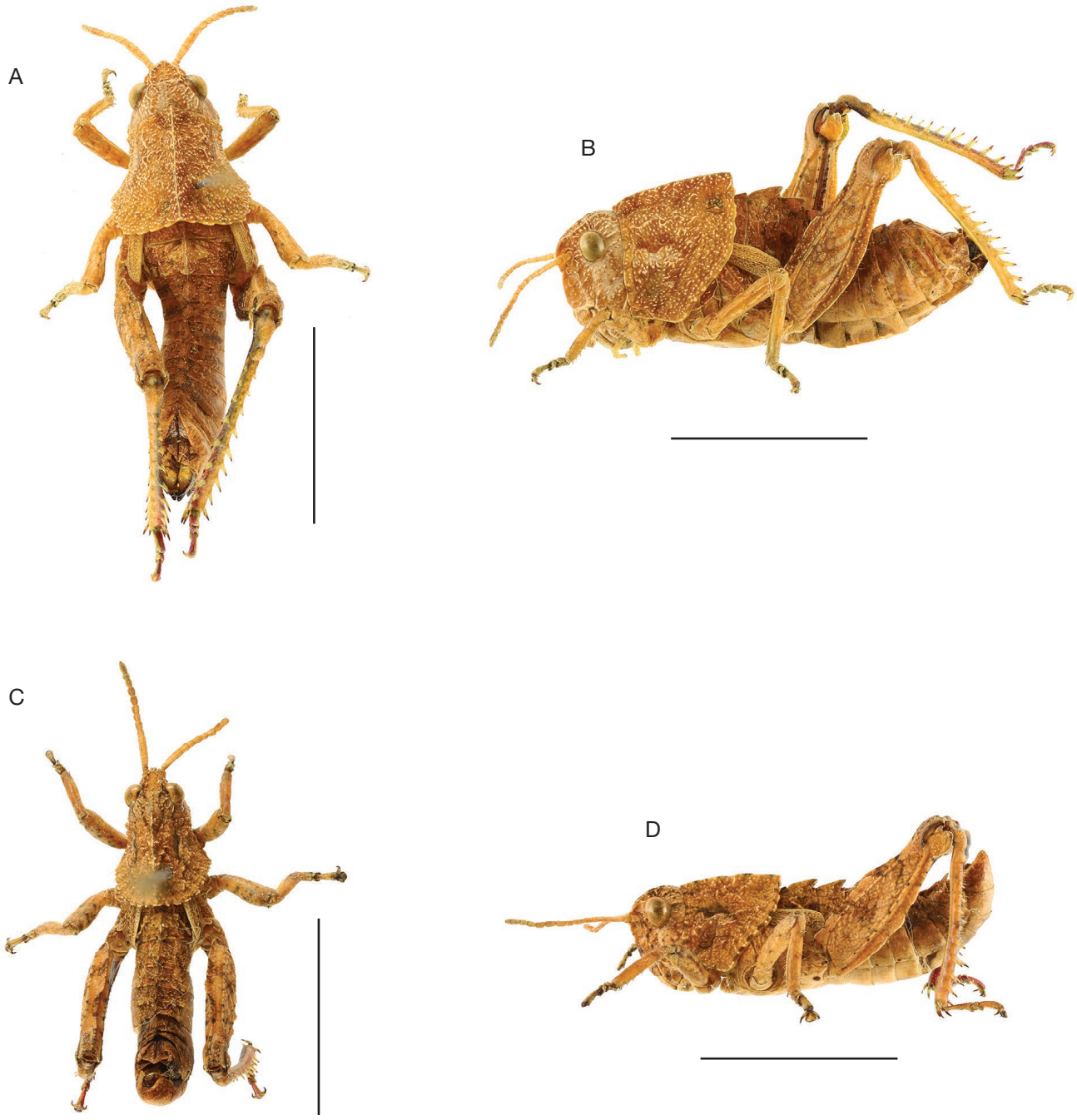

FIG. 66. — Habitus of *Ocneridia nigropunctata* (Lucas, 1849): **A**, **B**, female from Kasserine, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

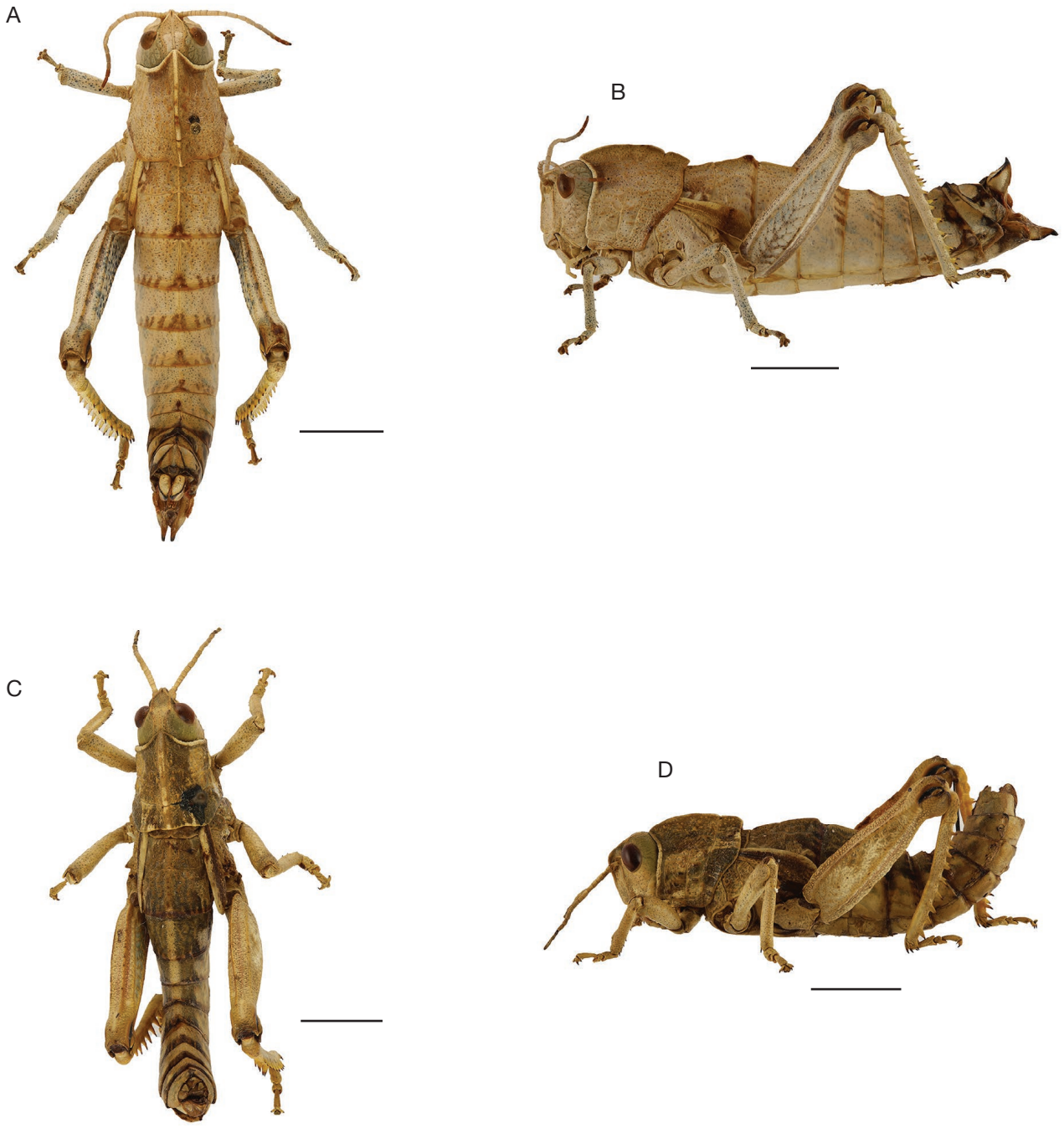

FIG. 67. — Habitus of *Pamphagus meridionalis* Descamps & Mounassif, 1972: **A**, **B**, female from Kasserine, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

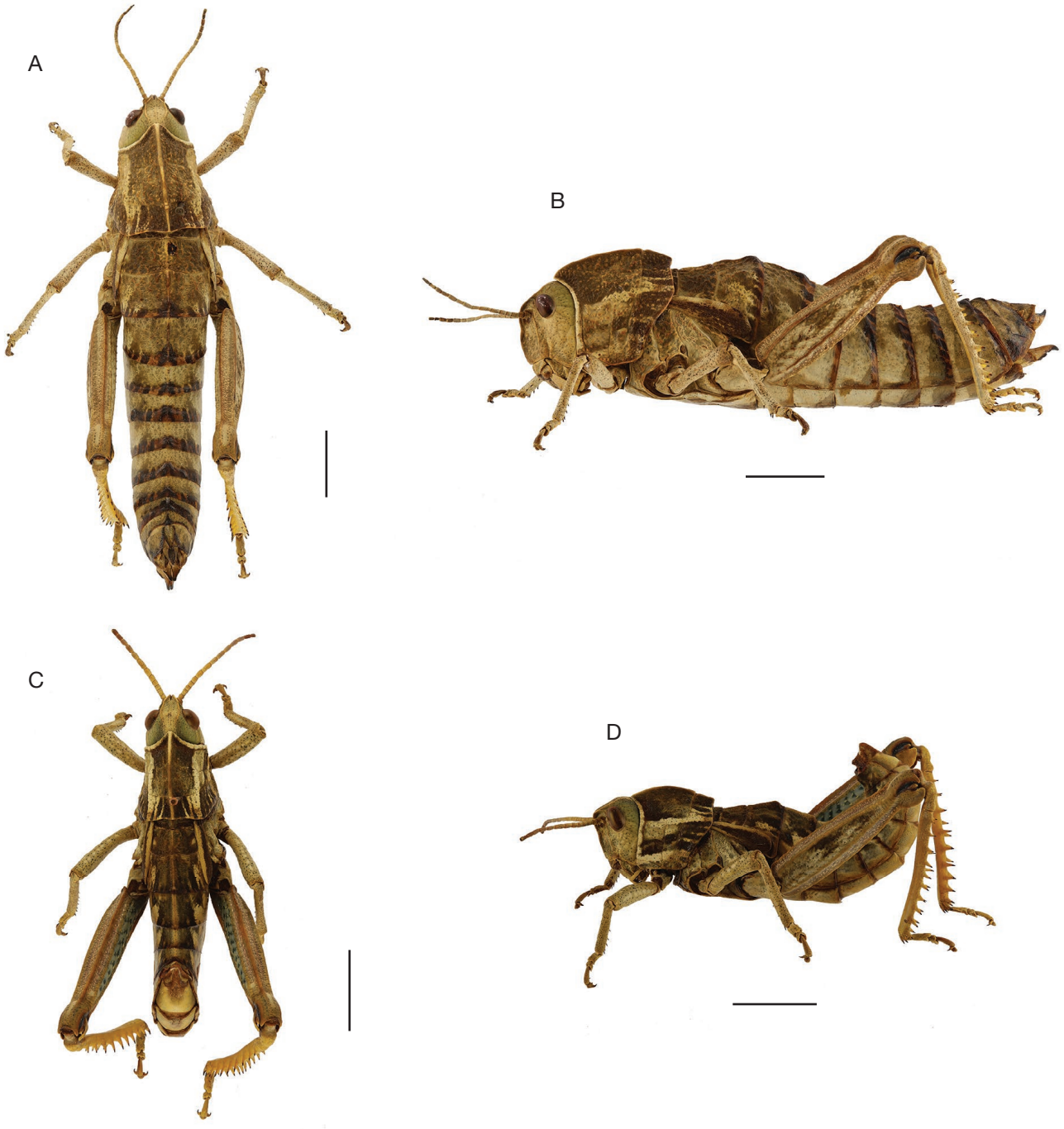

FIG. 68. — Habitus of *Pamphagus tunetanus* Vosseler, 1902: **A**, **B**, female from Kasserine, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kasserine, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

Fig. 69. — Habitus of *Paracinipe foreli* (Pictet & Saussure, 1893): **A**, **B**, female from Kebili, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kebili, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

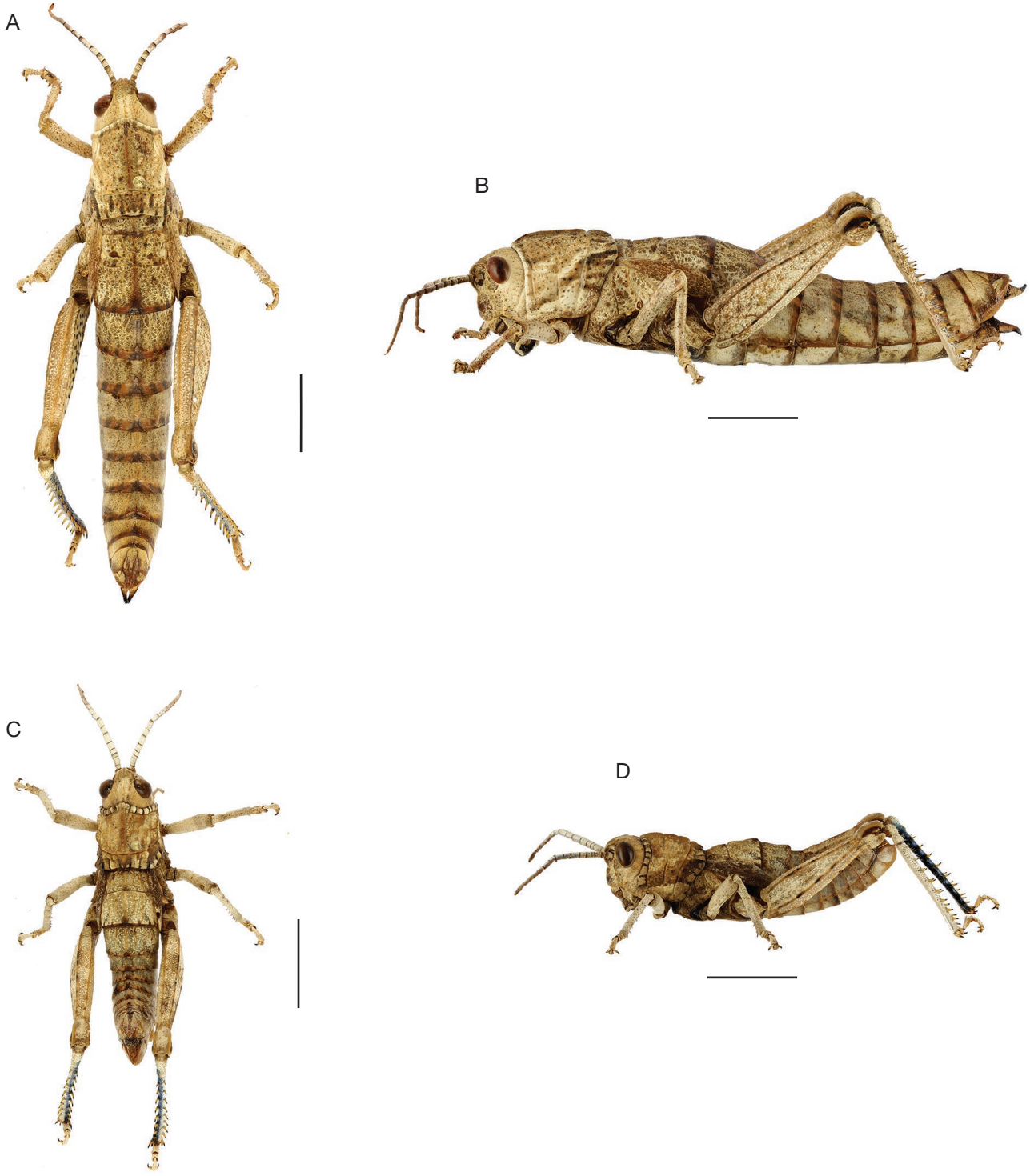

FIG. 70. — Habitus of *Paracinipe saharae* (Pictet & Saussure, 1893): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

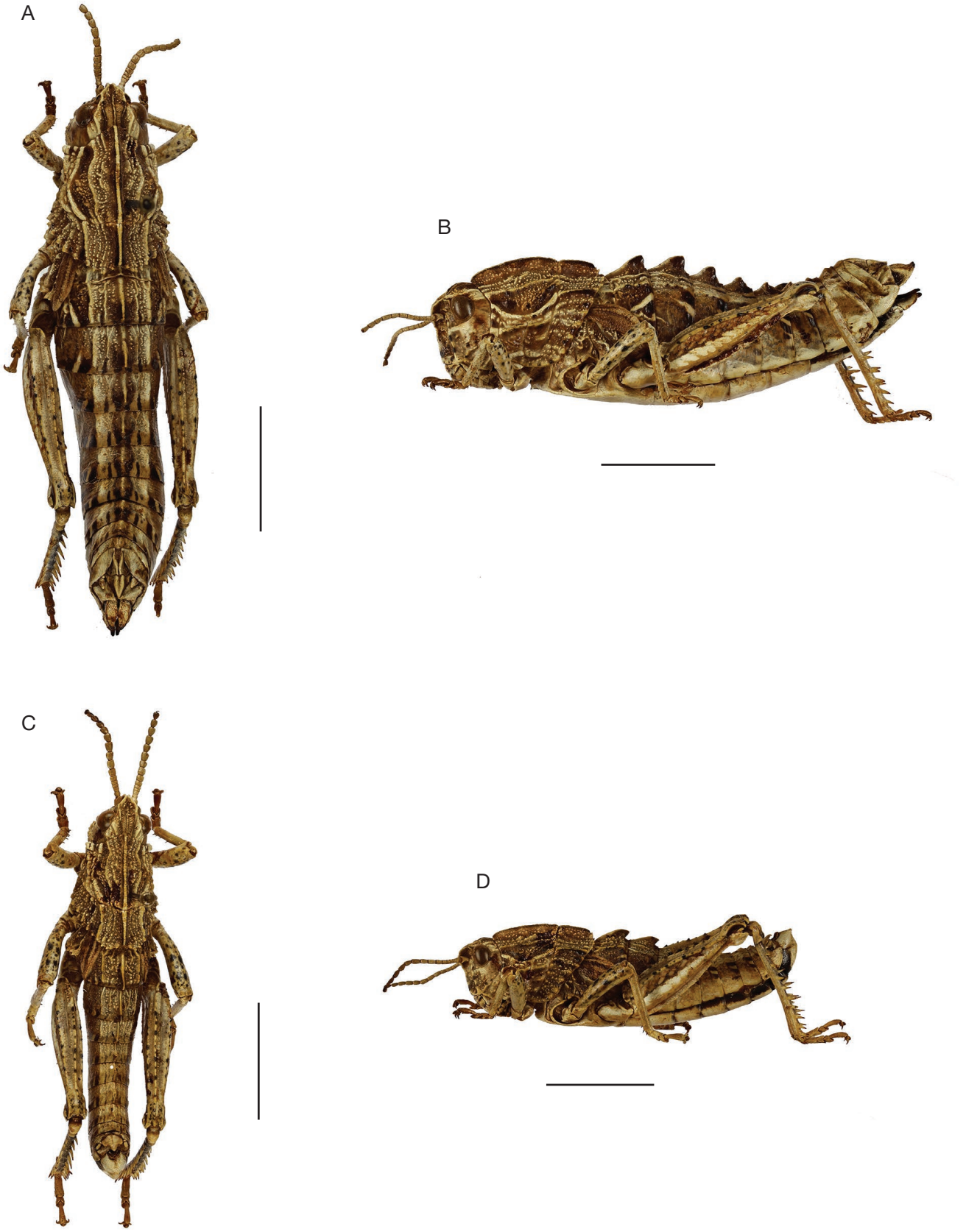

FIG. 71. — Habitus of *Paraeuryparyphes quadridentatus* (Brisout de Barneville, 1852): **A**, **B**, female from Boulemane, Morocco, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Boulemane, Morocco, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

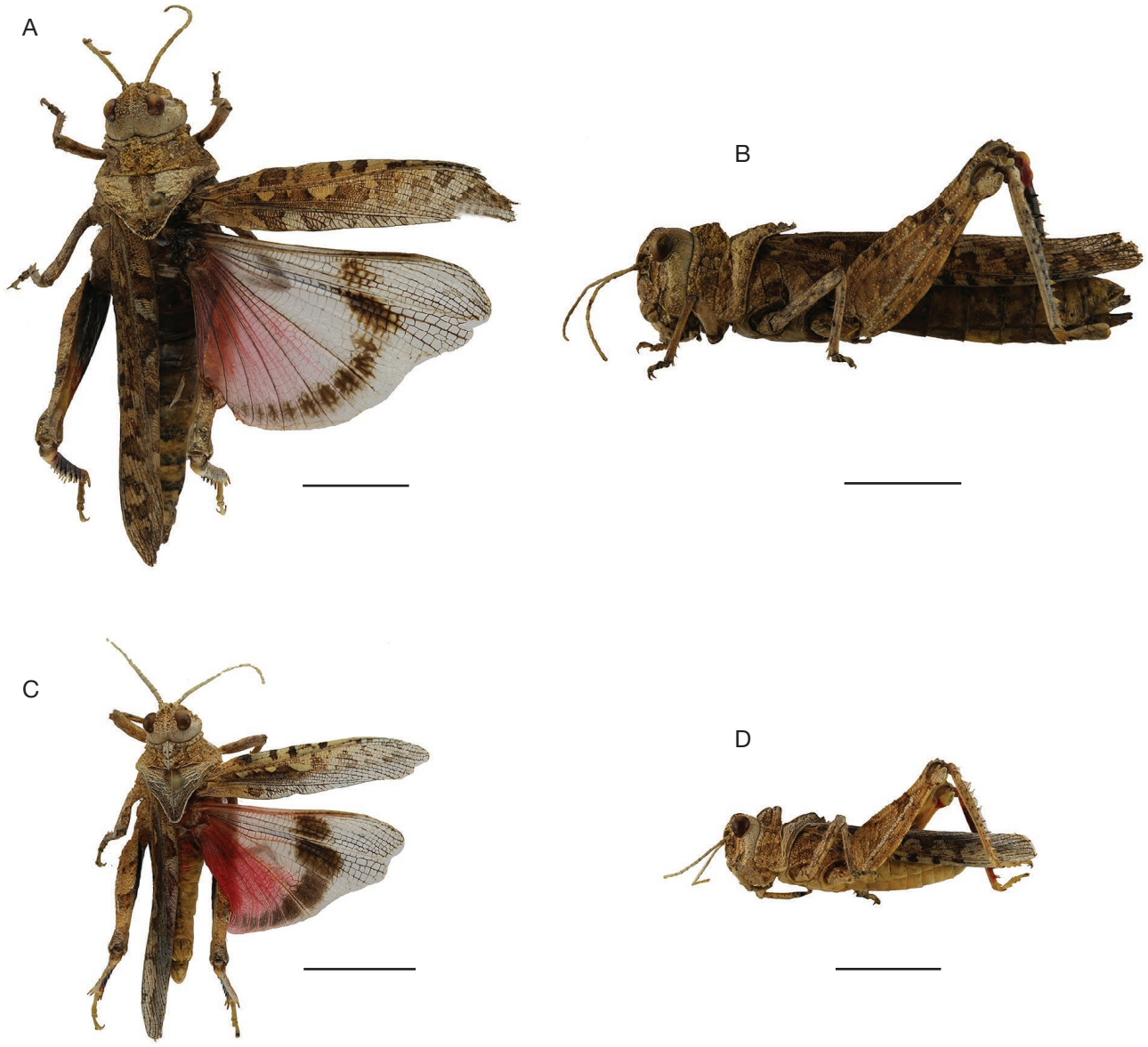

Fig. 72. — Habitus of *Tmethis cisti* (Fabricius, 1787): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

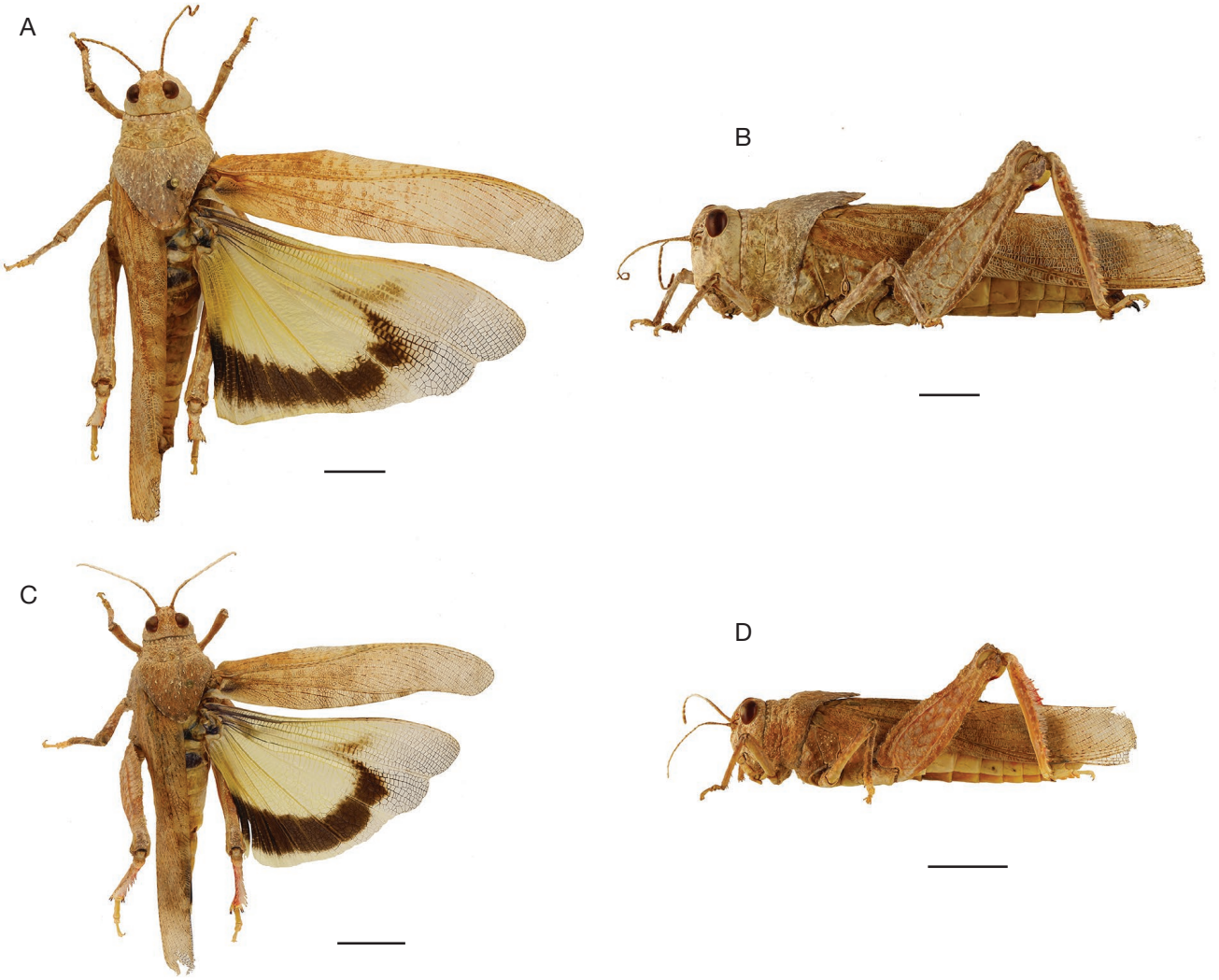

FIG. 73. — Habitus of *Tuarega insignis* (Lucas, 1851): **A**, **B**, female from Kebili, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Kebili, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

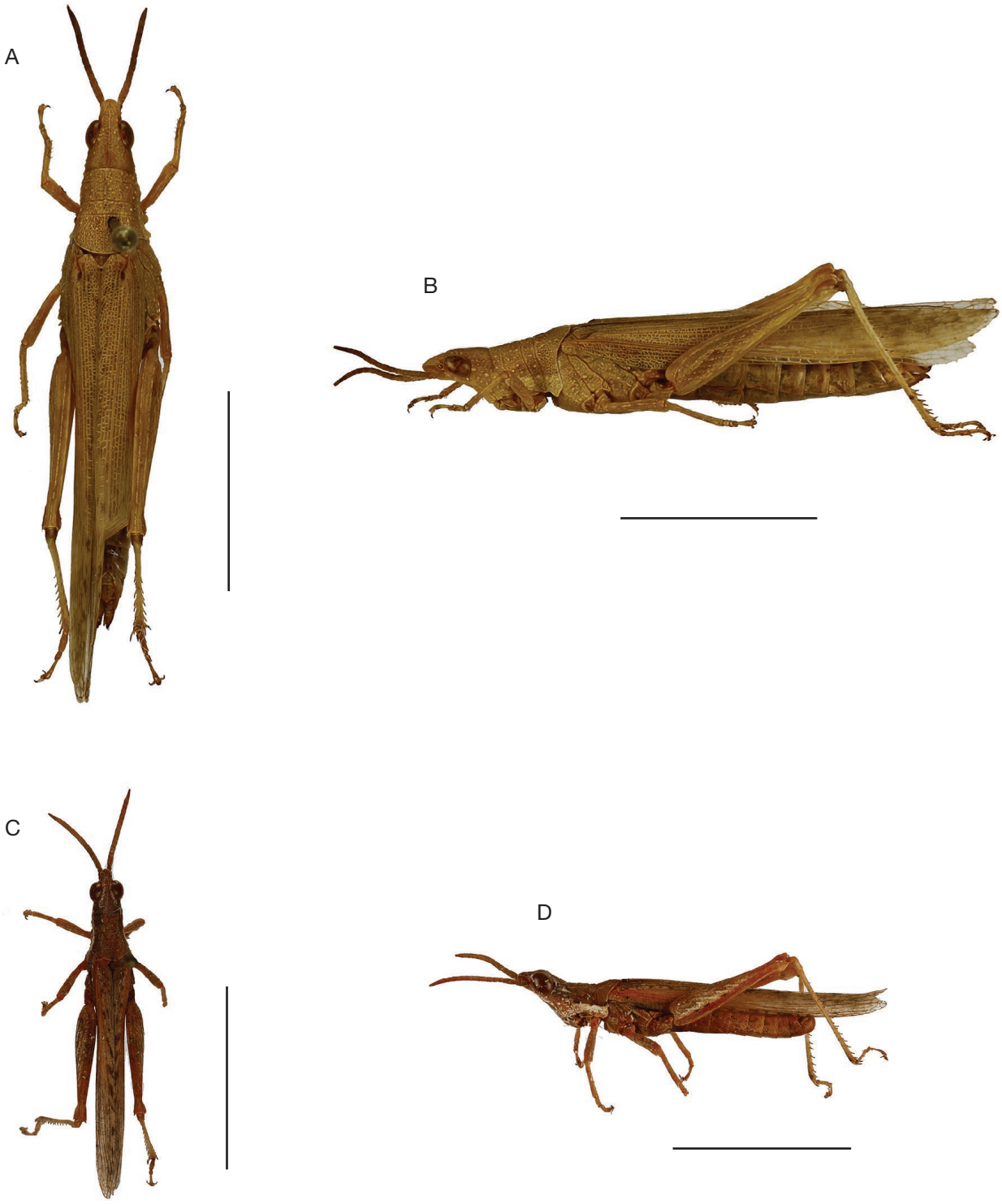

Fig. 74. — Habitus of *Pyrgomorpha cognata* Krauss, 1877: **A**, **B**, female from Trarza, Mauritanie, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Batna, Algeria, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

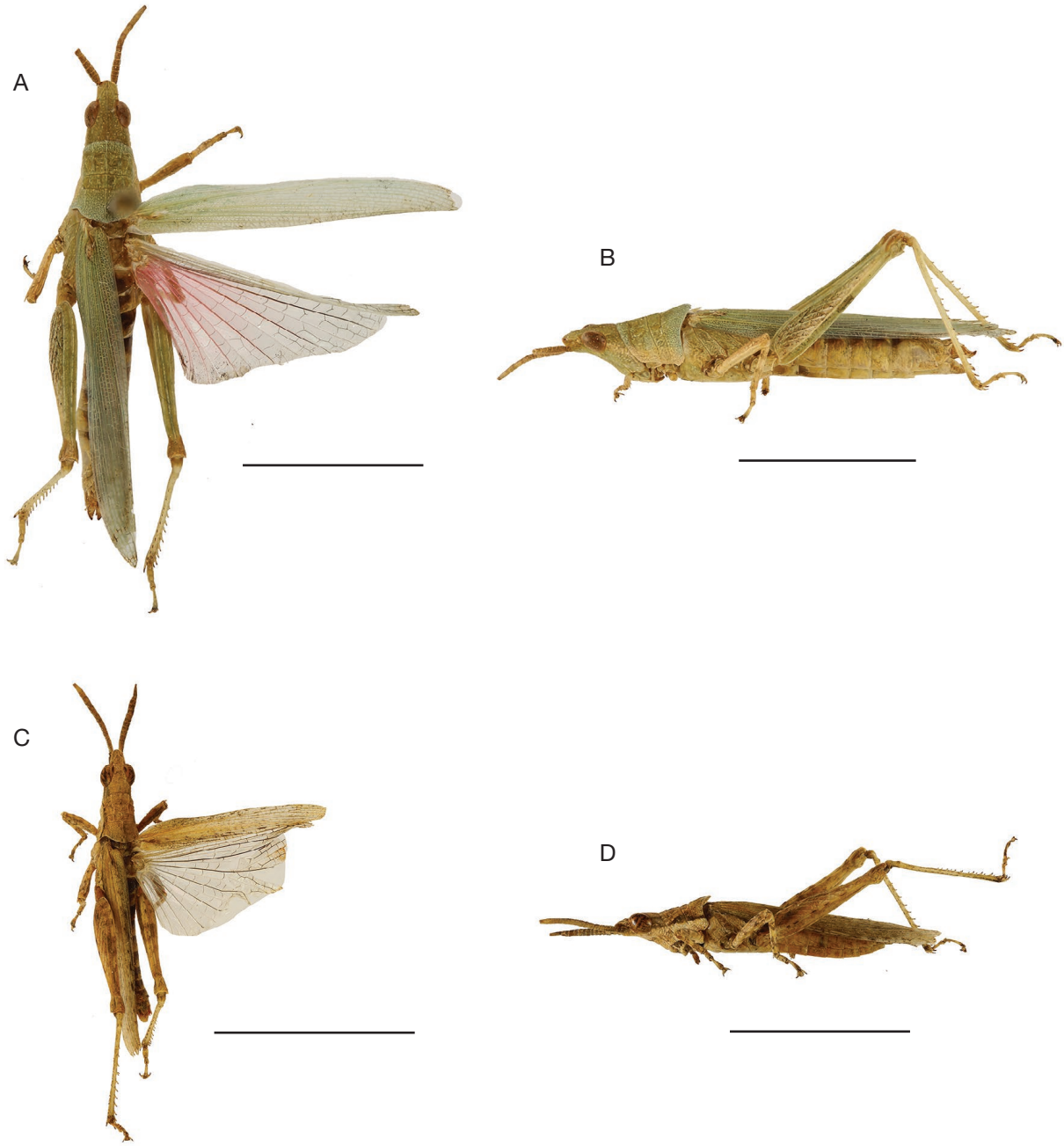

FIG. 75. — Habitus of *Pyrgomorpha conica* (Olivier, 1791): **A**, **B**, female from Gafsa, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Gafsa, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

Fig. 76. — Habitus of *Tenuitarsus angustus* (Blanchard, 1836): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Mauritania, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

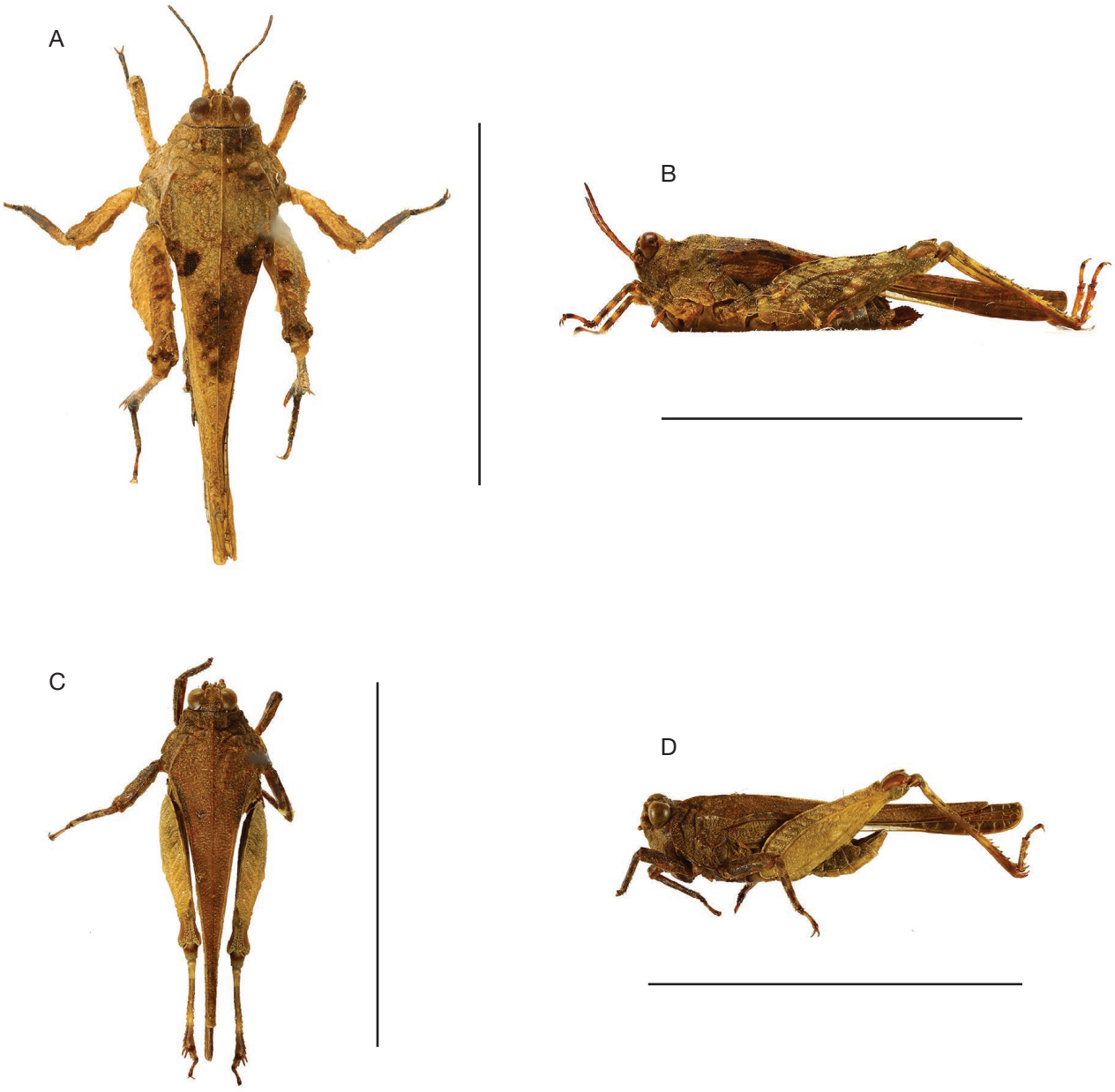

FIG. 77. — Habitus of *Paratettix meridionalis* (Rambur, 1838): **A**, **B**, female from Tozeur, Tunisia, dorsal view (**A**), lateral view (**B**); **C**, **D**, male from Tozeur, Tunisia, dorsal view (**C**), lateral view (**D**). Scale bars: 1 cm. Photos: H. Tlili.

Genus *Sphingonotus* Fieber, 1852
Subgenus *Neosphingonotus* Benediktov, 1998

Sphingonotus (*Neosphingonotus*) *finotianus* (Saussure, 1885) (Fig. 47)

Helioscirtus finotianus Saussure, 1885: 28. — Finot 1895: 440.

Sphingonotus finotianus – Vosseler 1902a: 370. — Chopard 1943: 310.

Pseudosphingonotus finotianus – Descamps 1970: 31.

Neosphingonotus finotianus – Benediktov 1998: 13.

Sphingonotus (*Neosphingonotus*) *finotianus* – Benediktov 2009: 29.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; Oran; MHNG.

DISTRIBUTION. — Morocco (Defaut & François 2018); Algeria and Tunisia (Moussi *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes, Gafsa (Vosseler 1902a); Bouhedma (Hochkirch & Husemann 2008).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Degache; 29.IV.2016; H. Tlili; MNHN-EO-CAELIF4699 • 2 ♀; same data; INAT. **Algeria** • 1 ♂; Algiers, Hammam Melouane; 5.X.1954; C. A, H. Maurel & R. P[asquier]; MNHN-EO-CAELIF9116 • 1 ♀; same data; MNHN-EO-CAELIF9117.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Degache.

HABITAT. — Desert area (Werner 1932).

REMARKS. — A few specimens were collected from one locality only.

Sphingonotus (*Neosphingonotus*) *paradoxus* Bey-Bienko, 1948 (Fig. 48)

Sphingonotus paradoxus Bey-Bienko, 1948: 498.

Pseudosphingonotus paradoxus – Shumakov 1963: 160. — Johnsen 1985: 155.

Sphingonotus (*Neosphingonotus*) *paradoxus* – Benediktov 2009: 29.

TYPE SPECIMEN. — **Iran** • ♂; holotype; Chudza; ZIN.

DISTRIBUTION. — Morocco, Algeria (Descamps 1970); Tunisia (Johnsen 1985); Mauritania, Niger, Chad (Mestre & Chiffaud 2006); Iran (Dey *et al.* 2018); Yemen (Ingrisch 1999).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa (Johnsen 1985).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Tozeur, Degache; 29.IV.2017; H. Tlili; MNHN-EO-CAELIF7083 • 1 ♂; same data; MNHN-EO-CAELIF7074.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla, Degache.

HABITAT. — Very abundant in desertic steppe (H. Tlili, pers. obs.).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (654 bp) (Table 4).

Sphingonotus (*Neosphingonotus*) *tricinctus* (Walker, 1870) (Fig. 49)

Oedipoda tricincta Walker, 1870b: 2300.

Oedipoda balteata – Walker 1870a: 736 (misidentification rectified by Johnston 1956: 486).

Sphingonotus balteatus – Finot 1895: 475 (misidentification rectified by Chopard 1943: 316). — Vosseler 1902a: 377 (misidentification rectified by Uvarov 1924: 24).

Sphingonotus tricinctus – Kirby 1910: 272. — Uvarov 1924.: 24. — Chopard 1943: 316.

Sphingonotus (*Neosphingonotus*) *tricinctus* – Benediktov 2009: 29.

TYPE SPECIMENS. — **Egypt** • ♂, ♀; types lost (Johnston 1956); Sinaï; unknown repository.

DISTRIBUTION. — Morocco (Maurel 2008); Algeria, Tunisia, Libya, Egypt (Chopard 1943).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Djerba (Finot 1895); Gabes, Gafsa (Vosseler 1902a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Sened; 17.VII.2017; H. Tlili; MNHN-EO-CAELIF4703 • 1 ♀; same data; MNHN-EO-CAELIF4704 • 4 ♀; same data; INAT • 1 ♀; Gafsa, Douwara; 20.VII.2016; H. Tlili; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sened; Gafsa, Douwara.

HABITAT. — Sub desertic areas (H. Tlili, pers. obs.).

DNA SEQUENCES. — We generated new sequences for two markers: COI (654 bp) and ND2 (444 bp) (Table 4).

Subgenus *Parasphingonotus* Benediktov & Husemann, 2009

Sphingonotus (*Parasphingonotus*) *radioserratus* Johnsen, 1985* (Fig. 50)

Sphingonotus radioserratus Johnsen, 1985: 149.

Sphingonotus (*Parasphingonotus*) *radioserratus* – Husemann *et al.* 2011: 55.

TYPE SPECIMEN. — **Tunisia** • ♂; holotype; Gafsa; MZLU.

DISTRIBUTION. — Morocco, Tunisia (Husemann *et al.* 2011); Algeria (Moussi *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa (Johnsen 1985; Husemann *et al.* 2011).

MATERIAL EXAMINED. — **Morocco** • 1 ♂; Errachidia; 20.V.2008; M. Husemann; NHMUK 013806118 • 1 ♀; same data; NHMUK 013806119.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — That species lives in open areas of oases and abandoned fields (M. Husemann, pers. comm. 2019).

REMARKS. — The last report of this species in Southern Tunisia dates from 1931 (Johnsen 1985).

Sphingonotus (*Sphingonotus*) *lucasii* Saussure, 1888
(Fig. 51)

Sphingonotus azurescens – Bonnet & Finot 1885: 214 (misidentification rectified by Chopard 1943: 313).

Sphingonotus scabriusculus var. *lucasii* Saussure, 1888: 83 – Finot 1895: 475.

Sphingonotus lucasii – Vosseler 1902a: 374. — Hollier 2012a : 251.

Sphingonotus lucasi – Bolívar 1915: 38. — Chopard 1943: 313.

Wernerella pachecoi dimidiata Bolívar, 1936: 404.

TYPE SPECIMENS. — **Algeria** • ♂, ♀; syntypes; MHNG.

DISTRIBUTION. — Morocco (Moussi *et al.* 2018); Algeria, Tunisia (Hollier 2012a).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Wide distribution in Tunisia (Finot 1895); Gafsa, Sfax, Graiba (Vosseler 1902a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Sened; 17.VII.2017; H. Tlili; MNHN-EO-CAELIF4705 • 1 ♀; same data; MNHN-EO-CAELIF4706.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sened.

HABITAT. — Sub desertic areas (H. Tlili, pers. obs.).

REMARKS. — A few specimens were collected from one locality only.

DNA SEQUENCES. — We generated new sequences for two markers: COI (666 bp) and ND2 (457 bp) (Table 4).

Sphingonotus (*Sphingonotus*) *octofasciatus* (Serville, 1838)
(Fig. 52)

Oedipoda octofasciata Serville, 1838: 728.

Acrotylus octofasciatus – Bonnet & Finot 1885: 215.

Sphingonotus octofasciatus – Finot 1895: 477. — Vosseler 1902a: 379.

Sphingonotus (*Sphingonotus*) *octofasciatus.* — Shishodia *et al.* 2010: 101– Husemann *et al.* 2015: 5.

TYPE SPECIMEN. — **Egypt** • ♀; holotype; MNHN.

DISTRIBUTION. — Morocco (Defaut & François 2018); Algeria (Moussi *et al.* 2011); Tunisia, Libya, Egypt, Palestine, Iran, Turkestan (Chopard 1943); Palestine (Abusarhan *et al.* 2017); Spain (Badih *et al.* 1995); India (Shishodia *et al.* 2010).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Bled Segui, Bir Beni Zid, oases of Djerid (Bonnet & Finot 1885); Gafsa (Vosseler 1902a; Husemann *et al.* 2015).

MATERIAL EXAMINED. — **Egypt** • 1 ♀; holotype; 1802; Bové; MNHN-EO-CAELIF438.
Tunisia • 1 ♂; Tozeur, Degache; 29.IV.2017; H. Tlili; MNHN-EO-CAELIF4707 • 1 ♀; same data; MNHN-EO-CAELIF4708 • 1 ♂; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Douwara; Tozeur, Degache.

HABITAT. — Rocky hills (Krauss 1902); foothills (H. Tlili, pers. obs.).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker ND2 (454 bp) (Table 4).

Sphingonotus (*Sphingonotus*) *rubescens rubescens* (Walker, 1870)
(Fig. 53)

Oedipoda rubescens Walker, 1870b: 2304.

Sphingonolus coerulans (Linnaeus, 1767) – Finot 1895: 469 (misidentification rectified by Chopard 1943: 318). — Vosseler 1902a: 372 (misidentification rectified by Uvarov 1923b: 67).

Sphingonotus rubescens – Kirby 1910: 274. — Chopard 1943: 318 – Tlili *et al.* 2019a: 391.

Sphingonotus rubescens rubescens – Mistshenko 1936: 168.

Sphingonotus (*Sphingonotus*) *rubescens rubescens* – Shishodia *et al.* 2010: 101.

TYPE SPECIMENS. — **Egypt** • ♂; type lost (Johnston 1956); Sinai • ♀; holotype; Sinai; NHM.

DISTRIBUTION. — This species is widely distributed from Central Asia to North and Sub-Saharan Africa (Mistshenko 1936).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla (Tlili *et al.* 2019a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Jebel Ben Younes; 01.IV.2017; H. Tlili; MNHN-EO-CAELIF4709 • 1 ♀; same data; MNHN-EO-CAELIF4710 • 1 ♂; same data; 26.IV.2019; MNHN-EO-CAELIF7075 • 1 ♀; same data; MNHN-EO-CAELIF7076 • 1 ♂; same data; MNHN-EO-CAELIF7077 • 1 ♀; same data; MNHN-EO-CAELIF7078 • 1 ♂; same data; MNHN-EO-CAELIF7079 • 1 ♀; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF7080 • 1 ♀; same data; MNHN-EO-CAELIF7081 • 1 ♀; Tozeur, Degache; 29.IV.2016; H. Tlili; MNHN-EO-CAELIF4700 • 1 ♀; Kasserine, Sbeitla; 25.VII.2017; M. Mahfoudhi; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Sbeitla; Gafsa, Jebel Ben Younes, El Guetar; Tozeur, Degache.

HABITAT. — Desert or semi-desert region (Usmani 2008); base of mountain (H. Tlili, pers. obs.).

DNA SEQUENCES. — We generated new sequences for two markers: COI (653 bp) and ND2 (449 bp) (Table 4).

Sphingonotus (*Sphingonotus*) *savignyi* Saussure, 1884
(Fig. 54)

Sphingonotus savignyi Saussure, 1884: 208. — Vosseler 1902a: 378. — Massa & Rizzo 1998: 286.

Pseudosphingonotus savignyi – Shumakov 1963: 158.

Sphingonotus (*Sphingonotus*) *savignyi savignyi* – Dey *et al.* 2018: 170.

TYPE SPECIMENS. — **Egypt** • 2 ♂; possible syntypes (Hollier 2012a); MHNG.

DISTRIBUTION. — This species is well-known from Central Asia to North and Sub-Saharan Africa (Mistshenko 1936).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Southern Tunisia (Vosseler 1902a); Tamerza (Massa & Rizzo 1998).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Degache; 29.IV.2017; H. Tlili; MNHN-EO-CAELIF4701 • 1 ♂; same data; 29.IV.2016; MNHN-EO-CAELIF9118 • 1 ♀; same data; MNHN-EO-CAELIF9119 • 1 ♀; Tozeur, Gouifla; 02.VI.2016; H. Tlili; MNHN-EO-CAELIF4711 • 4 ♂, 4 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla.

HABITAT. — Subdesert and desert environment (Chopard 1950, Tlili *et al.* 2019a).

DNA SEQUENCES. — We generated new sequences for two markers: COI (670 bp) and ND2 (458 bp) (Table 4).

Sphingonotus* (*Sphingonotus*) *vosseleri Krauss, 1902*
(Fig. 55)

Sphingonotus vosseleri Krauss, 1902: 242. — Massa 1999: 78.

Sphingonotus desertorum Vosseler, 1902a: 372; 1902b: 6.

TYPE SPECIMENS. — **Algeria** • ♂♂, ♀♀; syntypes; Biskra; SMNS.

DISTRIBUTION. — Algeria (Moussi *et al.* 2011); Tunisia (Vosseler 1902a).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes (Vosseler 1902a; Vosseler 1902b; Massa 1999); Gafsa (Vosseler 1902a; Vosseler 1902b); Tamerza, Metlaoui (Massa 1999).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; syntypes; Gabes; 15.VI.1901; J. Vosseler; NHMUK 013806061 • 1 ♂; same data; NHMUK 013806062.
Morocco • 1 ♂; Tazenakhte; 25.VII.1985; M. Descamps; MNHN-EO-CAELIF9120.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Steppe environment (Moussi *et al.* 2011).

Genus *Thalpomena* Saussure, 1884

Thalpomena algeriana algeriana (Lucas, 1849)
(Fig. 56)

Oedipoda algeriana Lucas, 1849b: 34.

Thalpomena algeriana – Saussure 1884: 184.

Thalpomena algeriana algeriana – Dirsh 1949a: 366. — Massa 1999: 78.

TYPE SPECIMEN. — **Algeria** • ♀; holotype; Kouba; MNHN.

DISTRIBUTION. — Algeria (Moussi *et al.* 2018); Tunisia (Massa 1999).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Meknassy (Chopard 1943); Feriana (Massa 1999).

MATERIAL EXAMINED. — **Algeria** • 1 ♀; holotype; Kouba; H. Lucas; MNHN-EO-CAELIF538.
Tunisia • 1 ♀; Beja, Bechouk; 12.II.2017; W. Bedoui; MNHN-EO-CAELIF4712 • 1 ♂; Hammam Lif; 1901; J. de Gaulle; MNHN-EO-CAELIF3777 • 1 ♂; Tunis; 1901; J. de Gaulle; MNHN-EO-CAELIF3778 • 1 ♀; Jendouba, Ain Draham; 1889; S. Seurat; MNHN-EO-CAELIF3779.
Algeria • 1 ♀; Oran; 14.II.1880; MNHN-EO-CAELIF9146.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Rocky, dry and sunny places (Chopard 1943).

Thalpomena coerulescens Uvarov, 1923
(Fig. 57)

Thalpomena coerulescens Uvarov, 1923b: 65. — Dirsh 1949a: 374.

TYPE SPECIMEN. — **Algeria** • ♀; holotype; Ain Sefra; NHM.

DISTRIBUTION. — Morocco (Uvarov 1923b); Algeria (Moussi *et al.* 2018); Tunisia (Dirsh 1949a).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Meknassy (Dirsh 1949a).

MATERIAL EXAMINED. — **Algeria** • 1 ♀; holotype; Ain Sefra; V.1913; W. R & E. H; NHM.
Tunisia • 1 ♀; Meknassy; 1929; C. Dumont; MNHN-EO-CAELIF3790 • 1 ♀; same data; MNHN-EO-CAELIF9121.
Morocco • 1 ♂; Sous; 1.VII.1954; C. Rungs; MNHN-EO-CAELIF9122.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None

HABITAT. — No data.

Subfamily TROPIDOPOLINAE Jacobson, 1905
Genus *Tropidopola* Stål, 1873
(Fig. 58)

Tropidopola cylindrica cylindrica
(Marschall, 1836)*

Gryllus cylindricus Marschall, 1836: 210.

Opsomala sicula Serville, 1838: 594.

Tropidopola fasciculata Charpentier, 1841. — Stål 1873: 86.

Opsomala cylindrica – Fieber 1853: 98.

Opomala cylindrica – Fischer 1853: 306. — Bonnet & Finot 1885: 333.

Tropidopola cylindrica – Bolívar 1876: 304. — Chopard 1943: 394.

Tropidopola obtusa algeriana Uvarov, 1922: 366.

Tropidopola cylindrica cylindrica – Uvarov 1926a: 163.

TYPE SPECIMEN. — **Italy** • ♀; holotype; Sicily; NHM.

DISTRIBUTION. — North-West Africa up to Tripolitania and Fezzan (Chopard 1943; Massa 2009); Southeastern Europe (Chopard 1943; Pomares *et al.* 2005).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Between Sfax and Gafsa (Bonnet & Finot 1885); Kebili, Fatnassa (Uvarov 1926a); Tozeur (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Tunis, Menzeh; 04.III.2016; H. Tlili; MNHN-EO-CAELIF4714 • 1 ♂; same data; 23.III.2017; Khawla, Boughanmi; MNHN-EO-CAELIF4713.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Riparian and humid areas (Pomares *et al.* 2005).

Family DERICORYTHIDAE Jacobson & Bianchi, 1905
Subfamily DERICORYTHINAE Jacobson & Bianchi, 1905
Genus *Dericorys* Serville, 1838

Dericorys albidula Serville, 1838
(Fig. 59)

Dericorys albidula Serville, 1838: 639. — Tlili *et al.* 2019a: 387.

TYPE SPECIMEN. — **Egypt** • ♀; lectotype (Tlili *et al.* 2019a); Desert of the Sinaï; MNHN.

DISTRIBUTION. — This species is well-known from Central Asia to North Africa (Tlili *et al.* 2019a).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla, Degache (Tlili *et al.* 2019a).

MATERIAL EXAMINED. — **Egypt** • 1 ♀; lectotype; Sinaï, 1833, D. Bové; MNHN-EO-CAELIF163.
Tunisia • 1 ♂; Tozeur, Gouifla; 02.VI.2016; H. Tlili; MNHN-EO-CAELIF4715 • 1 ♀; same data; MNHN-EO-CAELIF4716 • 1 ♀; same data; MNHN-EO-CAELIF7068 • 1 ♂; same data; INAT • 1 ♂; same data; 23.V.2017; MNHN-EO-CAELIF7067 • immature; same data; 28.IV.2016; MNHN-EO-CAELIF7069 • immature; same data; MNHN-EO-CAELIF7070 • immature; same data; MNHN-EO-CAELIF7071 • 3 ♂, 4, ♀; Tozeur, Degache; 26.VI.2017; H. Tlili; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla, Degache.

HABITAT. — This species has a preference for sandy areas where *Anabasis articulata* grows, as well as open clay depressions and compacted soils along sheep trails (Tlili *et al.* 2019a).

REMARKS. — *D. albidula* has been recently reported in Tunisia and Libya (Tlili *et al.* 2019a).

DNA SEQUENCES. — We generated new sequences for the mitochondrial marker COI (667 bp) and the nuclear marker H3 (323 bp) (Table 4).

Dericorys millierei Bonnet & Finot, 1884
(Fig. 60)

Dericorys millierei Bonnet & Finot, 1884: XXVII; 1885: 223. — Finot 1895: 529. — Vosseler 1902a: 394. — Chopard 1943: 391. — Massa & Rizzo 1998: 284.

TYPE SPECIMEN. — **Algeria** • ♂; holotype; around Oran; MNHN.

DISTRIBUTION. — Morocco (Bolívar 1914, Badih & Pascual 1998); Algeria (Mahloul *et al.* 2016); Tunisia (Tlili *et al.* 2019a); Libya (Massa 2009); Palestinian territories (Abusarhan *et al.* 2017).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes, Djerba (Bonnet & Finot 1885; Finot 1895); Gafsa (Vosseler 1902a); Meknassy (Chopard 1943); Tamerza (Massa & Rizzo 1998).

MATERIAL EXAMINED. — **Algeria** • 1 ♂; holotype; Oran; 11.VIII.1880; E. Bonnet & A. Finot; MNHN-EO-CAELIF173.
Tunisia • 1 ♀; Tozeur, Gouifla; 31.III.2016; H. Tlili; MNHN-EO-CAELIF4717 • 1 ♂; Mednine, Ben Guerdane; 19.IX.2017; M. Ben Chouikha; MNHN-EO-CAELIF7072.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla.

HABITAT. — Salty land near sebkha (Mahloul *et al.* 2016).

REMARKS. — During our prospection we found just one specimen of *D. millierei* in a desert steppe sharing the same habitat and feeding on the same plant as *D. albidula*, *Pamphagulus bodenheimeri dumonti* Uvarov, 1929 (Dericorythidae: Dericorythinae), *Tuarega insignis* (Lucas, 1851) (Pamphagidae: Thrinchinae), *Sphingonotus* (*Neosphingonotus*) *paradoxus* (Acrididae: Oedipodinae), *Sphingonotus* (*Sphingonotus*) *savignyi* (Acrididae: Oedipodinae) and *S. S. rubescens rubescens* (*Acrididae: Oedipodinae*).

Genus *Pamphagulus* Uvarov, 1929

Pamphagulus bodenheimeri dumonti Uvarov, 1929
(Fig. 61)

Pamphagulus bodenheimeri dumonti Uvarov, 1929: 101. — Chopard 1943: 384. — Tlili *et al.* 2019a: 391.

TYPE SPECIMEN. — **Tunisia** • ♀; holotype; Maknassy; MNHN.

DISTRIBUTION. — Algeria (Moussi *et al.* 2014); Tunisia (Tlili *et al.* 2019a); Libya (Massa 1998).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Meknassy (Uvarov 1929); Tozeur, Gouifla (Tlili *et al.* 2019a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; holotype; Maknassy; VII.1927; C. Duniad; MNHN-EO-CAELIF156 • 1 ♂; Tozeur, Gouifla; 28.IV.2016; M. Ammar; MNHN-EO-CAELIF4718.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla.

HABITAT. — Desertic steppe and sandy areas (Tlili *et al.* 2019a).

REMARKS. — This species is very rare (Tlili *et al.* 2019a).

DNA SEQUENCES. — We generated new sequences for the mitochondrial marker COI (673 bp) and the nuclear gene H3 (330 bp) (Table 4).

Family Pamphagidae Burmeister, 1840
Subfamily Pamphaginae Burmeister, 1840
Genus *Acinipe* Rambur, 1838

Acinipe algeriensis Descamps & Mounassif, 1972*
(Fig. 62)

Acinipe hesperica algeriensis Descamps & Mounassif, 1972: 280.

Acinipe hesperica – Massa 1994: 4 (misidentification rectified by Biondi & Massa 1995: 104).

Acinipe algeriensis – Biondi & Massa 1995: 104.

Type specimens. — **Algeria** • ♂; holotype; Laghouat; MNHN • ♀; allotype; Laghouat; MNHN.

Distribution. — Algeria (Moussi *et al.* 2011); Tunisia (Biondi & Massa 1995).

Data from literature for central and southwestern Tunisia. — Kasserine, Bireno mountain (Biondi & Massa 1995).

Material examined. — **Algeria** • 1 ♂; holotype; Laghouat, 1934, L. Chopard; MNHN-EO-CAELIF265.
Allotype • 1 ♀; same data; MNHN-EO-CAELIF266.

New data for central and southwestern Tunisia. — None.

Habitat. — Sandy steppe (Moussi *et al.* 2011).

Acinipe calabra (Costa, 1836)
(Fig. 63)

Podisma calabrum Costa, 1836: 45.

Acinipe calabra – Capra 1938: 87. — Biondi & Massa 1995: 81.

Type specimen. — **Italy** • unspecified; Calabria (South Italy); unknown repository.

Distribution. — Sicily (Capra 1938), and from Morocco to Tunisia (Biondi & Massa 1995).

Data from literature for central and southwestern Tunisia. — Tunisia, Kasserine (Biondi & Massa 1995).

Material examined. — **Tunisia** • 1 ♂; Kroumirs; VII.1888; MNHN-EO-CAELIF9123 • 1 ♀; Teboursouk; VII.1892; S. Dedit; MNHN-EO-CAELIF9124.

New data for central and southwestern Tunisia. — None.

Habitat. — Dry natural grasslands and fields (Iorio *et al.* 2019).

Genus *Euryparyphes* Fischer, 1853

Euryparyphes sitifensis (Brisout, 1854)*
(Fig. 64)

Acridium sitifense Brisout, 1854: LXXI.

Porthetis sitifensis – Walker 1871: 56.

Pamphagus brunneri Stål, 1876: 34.

Eunapius brunneri – Bolívar 1878: 438. — Bonnet & Finot 1885: 341.

Eunapius sitifensis – Finot 1895: 519.

Euryparyphes sitifensis – Kirby 1910: 353. — Chopard 1943: 359. — Massa 2012: 384.

Type specimen. — **Algeria** • unspecified; type lost (Chopard 1943); Setif; unknown repository.

Distribution. — From Morocco to West Libya (Massa 2013).

Data from literature for central and southwestern Tunisia. — Between Feriana and Haidra (Massa 2012).

Material examined. — **Algeria** • 1 ♀; Oran; 29.IV.1881; A. Finot; NHMUK 013806116 • 1 ♂; Ain Sefra; 1-18.V.1913; W. R. & E. H.; NHMUK 013806117.

New data for central and southwestern Tunisia. — None.

Habitat. — *Euryparyphes sitifensis* is very adapted to its environment and prefers rocky soils over sandy ones, it is found near Halfa bushes (Krauss & Vosseler 1896).

Genus *Finotia* Bonnet, 1884

Finotia spinicollis Bonnet, 1884*
(Fig. 65)

Finotia spinicollis Bonnet, 1884: 548.

Type specimen. — **Tunisia** • ♀; holotype; Bir Arrach; MNHN.

Distribution. — Known only from the original type material. According to Massa (2013), this species is endemic to central Tunisia.

Data from literature for central and southwestern Tunisia. — Gafsa, Sfax (Bonnet 1884).

Material examined. — **Tunisia** • 1 ♀; holotype; Bir Arrach, 1884; E. Bonnet; MNHN-EO-CAELIF239 • 1 ♂; Bir Arrach, 1884; E. Bonnet; MNHN-EO-CAELIF240 • 1 ♀; same data; MNHN-EO-CAELIF241 • 1 ♂; Sfax, 1856; E. Ducouret; MNHN-EO-CAELIF2069.

New data for central and southwestern Tunisia. — We made several surveys specifically for this species specifically, following the paths of the past collectors, but we did not find it.

Habitat. — *Finotia spinicollis* prefers dry habitats (Chopard 1943).

Remarks. — The last collected specimens of this species are those of Bonnet (1884).

Genus *Ocneridia* Bolívar, 1912

Ocneridia nigropunctata (Lucas, 1849)
(Fig. 66)

Pamphagus nigropunctatus Lucas, 1849b: 28.

Acinipe (*Pamphagus*) *nigropunctata* – Lucas 1851: 359.

Porthetis nigropunctata – Walker 1870a: 597.

Nocarodes nigropunctatus – Bolívar 1878: 439.

Porthetis canonicus Fischer, 1853: 386.

Ocnerodes nigro-punctatus – Bonnet & Finot 1885: 340.

Ocnerodes nigropunctatus – Finot 1895: 496.

Ocnerodes canonicus – Bonnet & Finot 1885: 340. — Vosseler 1902a: 389.

Ocneridia canonica – Bolívar, 1912: 7. — Chopard 1943: 350.

Ocneridia nigropunctata – Bolívar, 1916: 24. — Chopard 1943: 349.

Ocneridia nigro-punctata – Johnston 1956: 76.

TYPE SPECIMENS. — **Algeria** • ♂ "hololectotypus", ♀, "allolectotypus" (Massa & Biondi 1987); Milah; Constantine (Massa & Biondi 1987); MNHN.

DISTRIBUTION. — Algeria, Tunisia (Chopard 1943); Libya (Massa 1998); Sicily (Iorio *et al.* 2019).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — This species was previously recorded from northern Tunisia (Bonnet & Finot 1885; Finot 1895; Bolívar 1908; Chopard 1943; Massa & Biondi 1987).

MATERIAL EXAMINED. — **Algeria** • 1 ♂; Constantine; IV.1840; H. Lucas; "hololectotypus"; MNHN-EO-CAELIF211 • 1 ♀; same data; "allolectotypus"; MNHN-EO-CAELIF212.
Tunisia • 1 ♂; Kasserine, Mehreza; 26.IV.2016; H. Tlili; MNHN-EO-CAELIF4719 • 1 ♀; same data; MNHN-EO-CAELIF4720 • 1 ♂; same data; MNHN-EO-CAELIF7066 • 2 ♀; same data; INAT • 1 ♀; Kasserine, Foussana; 26.IV.2016; H. Tlili; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Mehreza, Foussana.

HABITAT. — Foothills of grassy mountains (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (656 bp) (Table 4).

Genus *Pamphagus* Thunberg, 1815

Pamphagus meridionalis Descamps & Mounassif, 1972 (Fig. 67)

Pamphagus meridionalis Descamps & Mounassif, 1972: 259.

TYPE SPECIMEN. — **Tunisia** • ♂; holotype; Feriana; MNHN.

DISTRIBUTION. — Tunisia (Descamps & Mounassif 1972; Massa 2013; Benkenana & Massa 2017).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Bled Thalah, Gafsa, Arad, El Ayaicha, between Feriana and Haidra, around Feriana, Oum Ali mountain, Berda Mountain; El Ayaicha (Descamps & Mounassif 1972; Massa *et al.* 1993).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; holotype; Feriana; V.1884; E. Bonnet; MNHN-EO-CAELIF14 • 1 ♂; Kasserine, Sbeitla; 15.IV.2016; M. Mahfoudhi; MNHN-EO-CAELIF7442 • 1 ♀; same data; MNHN-EO-CAELIF7042 • 1 ♀; same data; MNHN-EO-CAELIF7043 • 1 ♀; same data; MNHN-EO-CAELIF7044.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Sbeitla.

HABITAT. — No observation.

Pamphagus tunetanus Vosseler, 1902 (Fig. 68)

Pamphagus marmoratus var. *tunetanus* Vosseler, 1902a: 391.

Pamphagus tunetanus – Uvarov 1942 (1941): 347. — Chopard, 1943: 427.

Acinipe tunetana Chopard, 1943: 378. — Descamps & Mounassif 1972: 248.

TYPE SPECIMEN. — **Tunisia** • syntypes; MNHN.

DISTRIBUTION. — Tunisia (Massa & Rizzo 1998); Libya (Massa 2013).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kerkennah Island, Sfax (Massa *et al.* 1993).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; syntype; Djel(el) Bou Kornien; 9.V.(18)83 (identified as a type of *Pamphagus tunetanus* Vosseler, 1902 by M. Descamps & M. Mounassif, 1972 and a type of *Acinipe tunetana* Chopard, 1943 by M. Descamps, 1972); MNHN-EO-CAELIF22 • 1 ♂; Kasserine, Sbeitla; 15.IV.2016; M. Mahfoudhi; MNHN-EO-CAELIF4721 • 1 ♀; same data; MNHN-EO-CAELIF4722 • 4 ♂, 1 ♀; same data; INAT • 1 ♀; Kasserine, Mehreza; 26.IV.2016; H. Tlili; MNHN-EO-CAELIF9151 • 1 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kasserine, Sbeitla, Mehreza.

HABITAT. — Foothills of grassy mountains (H. Tlili, pers. obs).

Genus *Paracinipe* Descamps & Mounassif, 1972

Paracinipe foreli (Pictet & Saussure, 1893: cf OSF) (Fig. 69)

Pamphagus foreli Pictet & Saussure, 1893: 294. — Krauss 1892a. — Finot 1895: 509. — Vosseler 1902b: 7.

Acinipe foreli – Kirby 1910: 350.

Paracinipe foreli – Descamps & Mounassif 1972: 266. — Massa 2013: 447.

TYPE SPECIMEN. — **Tunisia** • ♂; holotype; Gabes; MHNG.

DISTRIBUTION. — Tunisia (Massa 2013).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gabes (Pictet & Saussure, 1893 (1891); Krauss 1892a; Massa 2013); Bou Hedma mountain, Bir Arrach, Oued Batcha, Gafsa, Bled Essagui, Maknassy (Finot 1895; Descamps & Mounassif 1972; Massa 2013); Bled Talah, Arad, Bir Dellaja, R'dir Tiniat, B. Sidi Ali Ben Hamid, El Guettar, Skhira, Djerba Island (Massa 1996).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Kebili, Essagui; 28.III.2017; H. Tlili; MNHN-EO-CAELIF4723 • 1 ♀; same data; MNHN-EO-CAELIF4724 • 1 ♂; same data; MNHN-EO-CAELIF7088 • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tlili; MNHN-EO-CAELIF7065.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, El Guetar; Kebili, Essagui.

HABITAT. — Subdesert environment (H. Tlili, pers. obs).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (673 bp) (Table 4).

Paracinipe saharae (Pictet & Saussure, 1893)
(Fig. 70)

Pamphagus saharae Pictet & Saussure, 1893: 293.

Acinipe saharae – Kirby 1910: 350.

Paracinipe saharae – Descamps & Mounassif 1972: 265. — Massa 2013: 447.

TYPE SPECIMENS. — **Algeria** • ♂♂, ♀♀; syntypes; Biskra; MHNG.

DISTRIBUTION. — Algeria, Tunisia (Massa 2013); Libya (Usmani 2007).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Kebili, Oum Ali mountain; Gafsa, Berda mountain (Descamps & Mounassif 1972; Massa 1996); Bireno mountain, Tamerza (Massa 2013).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF7038 • 1 ♀; Gafsa, Ben Younes Mountain; 26.IV.2019; M. Chwaya; MNHN-EO-CAELIF7039 • 1 ♀; same data; 28.IV.2017; H. Tlili; MNHN-EO-CAELIF7040 • 1 ♀; Gafsa, Sidi Ahmed Zarroug; 10.IV.2018; W. Aziza; MNHN-EO-CAELIF7041 • 1 ♂; Gafsa, Berda mountain; 29.V.1884; E. Bonnet; MNHN-EO-CAELIF50 • 1 ♀; Kebili, Oum Ali mountain; 26.V.1884; E. Bonnet; MNHN-EO-CAELIF51.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Ben Younes mountain, Sidi Ahmed Zarroug.

HABITAT. — Lives on rocky slopes (Krauss 1902).

Genus *Paraeuryparyphes* La Greca, 1993

Paraeuryparyphes quadridentatus (Brisout, 1852)*
(Fig. 71)

Acinipe quadridentata Brisout, 1852: LXVII.

Acridium quadridentata – Brisout 1854: LXXII.

Porthetis quadridentata – Walker 1871: 56.

Eunapius quadridentatus – Bonnet & Finot 1885: 341.

Eunapius numida Saussure, 1887: 79.

Euryparyphes quadridentatus – Kirby 1910: 353.

Paraeuryparyphes quadridentatus – La Greca 1993: 394. — Massa 2012: 385.

TYPE SPECIMEN. — **Algeria** • ♀; type lost (Chopard 1943); unknown repository.

DISTRIBUTION. — Morocco, Algeria, Tunisia (Massa 2012); Libya (Massa 2013).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Sfax, Bir Arrach (Bonnet & Finot 1885; Massa 2012; Hollier 2012b).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Sfax, Bir Arrach; 19.IV.1884; E. Bonnet & A. Finot; MNHN-EO-CAELIF2654 • 1 ♀; Bir el Aja; 20.IV.1884; E. Bonnet & A. Finot; MNHN-EO-CAELIF2655. **Morocco** • 1 ♀; between Boulemane and Midelt; 11.VII.1965; M. Descamps; MNHN-EO-CAELIF9125 • 1 ♂; same data; MNHN-EO-CAELIF9126.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Rocky soil near Halfa bushes (Krauss & Vosseler 1896).

Subfamily THRINCHINAE Stål, 1876
Genus *Tmethis* Fieber, 1853

Tmethis cisti (Fabricius, 1787)
(Fig. 72)

Gryllus cisti Fabricius, 1787: 237.

Eremobia cisti – Serville 1838: 707. — Vosseler 1902a: 384.

Eremobius clavelii Lucas, 1851: 364.

Tmethis cisti – Fieber 1854: 201. — Uvarov 1943: 63. — Massa 1994: 3; 2013: 437. — Massa & Rizzo 1998: 279.

Tmethis pulchripennis algerica Saussure, 1888: 130.

Eremobia clavelii var. *tunensis* Saussure, 1888: 131. — Krauss 1892a: 148.

Eremobia clavelii var. *gracilis* Saussure, 1888: 131. — Krauss 1892a: 148.

Eremobia claveli var. *laeviuscula* Krauss, 1892a: 149.

Eremobia claveli var. *mozabitica* Krauss, 1902: 244.

Tmethis cisti barcaeus Salfi, 1926: 86.

Tmethis cisti cisti – Salfi 1930: 402.

TYPE SPECIMEN. — **Tunisia** • unspecified; unknown repository.

DISTRIBUTION. — Algeria (Zergoun *et al.* 2018); Libya (Massa 1998); Iraq (Uvarov 1938).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tamerza (Massa & Rizzo 1998); Gabes (Krauss 1892a; Vosseler 1902a; Massa 1994, 2013); Gafsa (Uvarov 1943; Massa 1994, 2013); Kerkennah Island, Djerba (Massa 1994); Shkira, North Gabes, South Gabes, Mareth, Sidi Mansour, Ben Gerdane (Massa 2013).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Sened; 03.IV.2017; H. Tlili; MNHN-EO-CAELIF4725 • 1 ♀; same data; MNHN-EO-CAELIF4726 • 1 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sened.

HABITAT. — Desert environments (Innes 1929).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (622 bp) (Table 4).

Genus *Tuarega* Uvarov, 1943

Tuarega insignis (Lucas, 1851)
(Fig. 73)

Oedipoda insignis Lucas, 1851: 370.

Eremobia jaminii Lucas, 1853: LXV.

Eremobia insignis – Bonnet & Finot 1885: 221.

Eremocharis insignis – Saussure 1888: 134. — Chopard 1943: 334.

Tuarega insignis – Uvarov 1943: 47. — Massa & Rizzo 1998: 280. — Massa 2013: 442.

Tuarega ouarzazatensis Yin X.-C., Husemann & Xin-Jiang Li, 2011: 539.

Tuarega sahara Yin & Li, 2011: 98.

Tuarega parisi Yin & Li, 2011: 100.

TYPE SPECIMEN. — **Algeria** • ♀; type probably lost (H. Tlili, pers. obs.); Kef Oum Teboul; MNHN.

DISTRIBUTION. — Morocco (Chopard 1943); Algeria (Zergoun *et al.* 2018); Tunisia (Massa & Rizzo 1998); Libya (Massa 1998); Mauritania, Chad (Mestre & Chiffaud 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — The Great Chotts of Kebili (Chopard 1943); Arid and desert environments (Massa & Rizzo 1998); Sfax, Sidi Mansour; Gafsa; Gabes: Bled Segui; Bou Hedma mountain (Massa 2013).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Kebili, Essagui; 24.VI.2017; H. Tlili; MNHN-EO-CAELIF4727 • 1 ♀; Tozeur, Degache; 29.IV.2017; H. Tlili; MNHN-EO-CAELIF4728 • 1 ♀; same data; INAT • 1 ♂; Gafsa, Ben Younes Mountain; 26.IV.2019; A. Ahmadi; MNHN-EO-CAELIF7037 • 3 larva; Gafsa, Sened; 16.I.2016; O. Hamed; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Sened, El Guetar; Tozeur, Gouifla, Degache; Kebili, Essagui.

HABITAT. — Arid and desertic environments (Massa & Rizzo 1998).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (658 bp) (Table 4).

Family PYRGOMORPHIDAE Brunner von Wattenwyl, 1874
Subfamily PYRGOMORPHINAE Brunner von Wattenwyl, 1874
Genus *Pyrgomorpha* Serville, 1838

Pyrgomorpha cognata Krauss, 1877
(Fig. 74)

Pyrgomorpha cognata Krauss, 1877: 58. — Vosseler 1902a: 387; 1902b: 7. — Chopard 1943: 338.

TYPE SPECIMENS. — **Senegal** • ♂, ♀; syntypes; Dagana; NMW.

DISTRIBUTION. — North Africa (Chopard 1943; Massa 2009); Sub-Saharan Africa (Mestre & Chiffaud 2006); Southwest Asia (Ünal 2006).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Sfax, Graiba, Gabes (Vosseler 1902a); Maknassy, Bou Hedma, Tozeur (Chopard 1943).

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Sidi Bouzid, Bou Hedma; V.1929; C. Dumont; MNHN-EO-CAELIF968.
Algeria • 1 ♂; Ain Touta; 1929; A. Thery; MNHN-EO-CAELIF9127.
Mauritania • 1 ♀; Aftout Faye, Sbaya; X.1987; A. Louveaux; MNHN-EO-CAELIF9128.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — None.

HABITAT. — Dry areas (Usmani 2008).

Pyrgomorpha conica (Olivier, 1791)
(Fig. 75)

Acridium conicum Olivier, 1791: 230.

Truxalis grylloides Latreille, 1804: 148.

Pyrgomorpha grylloides – Fieber 1853: 97. — Bonnet & Finot 1885: 222. — Finot 1895: 490. — Vosseler 1902b: 7.

Pyrgomorpha cognata – Vosseler 1902a: 387 (misidentification rectified by Uvarov 1923b: 74).

Pyrgomorpha conica – Bolívar 1904: 452. — Chopard 1943: 338. — Massa & Rizzo 1998: 279.

TYPE SPECIMEN. — **France** • ♀; neotype (Mc Kevan 1971); South France; MNHN.

DISTRIBUTION. — Very common around the Mediterranean Sea, in West Africa and the Middle East extending up to India (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Recorded from the north to the south of the country (Bonnet & Finot 1885; Finot 1895); Tamerza (Massa & Rizzo 1998: 279); Sfax, Graiba, Gabes (Vosseler 1902a).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Gafsa, Moulares, Chanoufia; 27.IV.2016; H. Tlili; MNHN-EO-CAELIF4729 • 1 ♀; same data; MNHN-EO-CAELIF4730 • 1 ♂,1 ♀; same data; INAT • 1 ♂; Gafsa, Douwara; 20.VII.2016; H. Tlili; INAT • 1 ♀; Sidi Bouzid, Meknassi; 1929; C. Dumont; MNHN-EO-CAELIF950 • 1 ♂; Gafsa, Amra; 26.IV.2019; H. Tlili; MNHN-EO-CAELIF7057 • 1 ♂; same data; MNHN-EO-CAELIF7058 • 1 ♂; same data; MNHN-EO-CAELIF7059 • 1 ♀; same data; MNHN-EO-CAELIF7060 • 1 ♀; same data; MNHN-EO-CAELIF7061 • 1 ♀; same data; MNHN-EO-CAELIF7062 • 1 ♀; same data; MNHN-EO-CAELIF7063 • 1 ♀; Kebili, Essagui; 25.IV.2017; H. Tlili; MNHN-EO-CAELIF7064 • 1 ♂, 4 ♀; Gafsa, Metkides; 01.VI.2016; H. Tlili; INAT • 1 ♀; Gafsa, Sened; 01.VI.2016; H. Tlili; INAT.
France • 1 ♀; neotype; Cannes; 15.IV.1878; A. Finot; MNHN-EO-CAELIF970.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Gafsa, Metkides, Gafsa, Sened, Gafsa, Moulares, Gafsa, Douwara; Tozeur, Souani Ali.

HABITAT. — Dry habitats (Usmani 2008).

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (663 bp) (Table 4).

Genus *Tenuitarsus* Bolívar, 1904

Tenuitarsus angustus (Blanchard, 1836) **
(Fig. 76)

Ommexecha angustum Blanchard, 1836: 624.

Leptoscirtus angustus – Jacobson & Bianchi 1902: 191.

Tenuitarsus angustus – Uvarov 1924: 36.

TYPE SPECIMEN. — **Egypt** • ♀; neotype (Kevan 1953); Cairo; OUMNH.

DISTRIBUTION. — Morocco (Defaut & Francois 2018); Algeria (Zergoun *et al.* 2019); Libya (Massa 2009); Mauritania, Chad (Mestre & Chiffaud 2006); Egypt (Saussure 1889); Somalia (Chopard 1943); Iraq (Uvarov 1921a); Iran (Hodjat *et al.* 2018); United Arab Emirates (Buzzetti *et al.* 2014).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — No available data for this species in Tunisia.

MATERIAL EXAMINED. — **Tunisia** • 1 ♀; Tozeur, Gouifla; 05.X.2016; H. Tlili; MNHN-EO-CAELIF4731.
Mauritania • 1 ♂; Coppolani; 25.VIII.1956; C. Rungs; MNHN-EO-CAELIF9129.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Gouifla, Degache.

HABITAT. — Arid and desertic environments (Morales Agacino 1945).

REMARKS. — This species was erroneously reported from Algeria as *Notopleura pygmaea* Vosseler, 1902 (Moussi *et al.* 2014), a misidentification rectified here.

DNA SEQUENCES. — We generated a new sequence for the mitochondrial marker COI (655 bp) (Table 4).

Superfamily TETRIGOIDEA Rambur, 1838
Family TETRIGIDAE Rambur, 1838
Subfamily TETRIGINAE Rambur, 1838
Genus *Paratettix* Bolívar, 1887

Paratettix meridionalis (Rambur, 1838)
(Fig. 77)

Tetrix meridionalis Rambur, 1838: 65.

Tetrix brachyptera Lucas & Brisout de Barneville, 1849: 65.

Paratettix meridionalis – Montrouzier 1855: 111.

Tettix meridionalis – Bolívar 1876: 369. — Bonnet & Finot 1885: 342.

TYPE SPECIMEN. — **Spain** • ♀; lectotype (Uvarov 1948); Malaga; NHM.

DISTRIBUTION. — This species is distributed throughout southern Europe and North Africa eastwards, reaching Iran and the Caucasus (Willemse *et al.* 2018).

DATA FROM LITERATURE FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur (Bonnet & Finot 1885).

MATERIAL EXAMINED. — **Tunisia** • 1 ♂; Tozeur, Souani Ali; 31.III.2016; K. Abdellaoui; MNHN-EO-CAELIF4732 • 1 ♀; same data; MNHN-EO-CAELIF4733 • 1 ♀; same data; INAT.

NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Tozeur, Souani Ali.

HABITAT. — Humid places, gardens, oases, and irrigated areas (Chopard 1943).

KEY TO FAMILIES, SUBFAMILIES, GENERA, AND SPECIES FOR THE SPECIES FROM CENTRAL AND SOUTHWESTERN OF TUNISIA

1. Pronotum narrowed and prolonged backward to or beyond the tip of abdomen; arolium between the claws of tarsus absent (Fig. 81A) ..... Tetrigidae Rambur, 1838
(Only one genus and one species in Tunisia: *Paratettix meridionalis* (Rambur, 1838), Fig. 77).
— Pronotum neither narrowed, nor prolonged backward to or beyond the tip of abdomen; arolium between the claws of tarsus variable in size but always present (Fig. 81B-F) ..... 2.

2. Head from above with fastigial furrow (Fig. 78A, B); fastigium of the vertex sometimes with a simple concave cicatrix (Fig. 78C); hind femur lower basal lobe longer than upper lobe (Fig. Fig. 88A-E) ..... 3.
— Head without a fastigial furrow; fastigium of the vertex without a cicatrix (Fig. 78D-F); hind femur lower basal lobe shorter or seldom as long as the upper lobe (Fig. 88F-K) ..... 5.

3. Head conical, frons strongly curved in side view (Fig. 80A); apical fastigial areolae almost always present (Fig. 78C); Krauss's organ absent; upper carina of femur smooth and without tubercles or spines (Fig. 78E) .....Pyrgomorphidae Brunner, 1874 ..... 14.
— Head of variable shape, but not acutely conical (Fig. 80B); apical fastigial areolae absent (Fig. 78A, B); Krauss's organ almost always present (Fig. 92A, B); upper carina of femur almost rough with tubercles or spines (Fig. 88B-C) .....Pamphagidae Burmeister, 1840 ..... 4.

4. Elytra and wings fully developed .....Thrinchinae Stål, 1876 ..... 15.
— Apterous or squamipterous species .....Pamphaginae Burmeister, 1840 ..... 16.

5. Pronotum with a strong crest in the prozona (Fig. 80C); posterior tibia almost arched (Fig. 89A) ....Dericorythidae Jacobson & Bianchi, 1905 ..... 22.
— Pronotum without a strong crest in the prozona (Fig. 80D-F); posterior tibia not arched (Fig. 89B) ....Acrididae MacLeay, 1821 ..... 6.

6. Prosternal process present (Fig. 82A) ..... 7.
— Prosternal process absent (Fig. 82B) ..... 10.

7. Body cylindrical; head strongly elongate and almost conical; pronotum without carinae .... Tropidopolinae Jacobson, 1905
(only one genus and one species known in Tunisa, *Tropidopola cylindrica cylindrica* (Marschall, 1836), Fig. 58).
— Body of variable shape but not cylindrical; head with variable shape but not elongated or conical; pronotum with carinae ..... 8.

8. Size large (40-70 mm); pronotum almost subcylindrical or tectiform, median carina incised by three sulci; lateral carena of pronotum absent ..... Cyrtacanthacridinae Kirby, 1910 ..... 23.
— Size small to medium (<40 mm); dorsum of pronotum flat; lateral carinae of pronotum almost always present ..... 9.

9. Hind femur very thick (Fig. 88F); hind wings basally light pink; male cerci large and pincer-shaped (Fig. 95A) ..... Calliptaminae Jacobson, 1905 ..... 56.
— Hind femur slender (Fig. 88G-H); hind wings hyaline; male cerci small and not pincer-shaped (Fig. 95B) .... Eyprepocnemidinae Brunner von Wattenwyl, 1893 ..... 24.

10. Frons very oblique (Fig. 80E-F) ..... Acridinae MacLeay, 1821 ..... 25.
— Frons not very oblique (Fig. 80D) ..... 11.

11. Inner side of hind femur with a stridulatory mechanism (Fig. 90) ..... 12.
— Inner side of hind femur without a stridulatory mechanism ..... 13.

12. Arolium between tarsal claws very small or absent; subgenital plate very short (Fig. 94C); male cercus short and curved (Fig. 94A) .....Eremogryllinae Dirsh,1956 ..... 27.
— Arolium between tarsal claws present and large; male cercus of different shape but not short and curved .... Gomphocerinae Fieber, 1853 ..... 28.

13. Hind wings transparent; furcal suture of mesosternum curved backward (Fig. 87A, B) .... Egnatiinae Bey-Bienko & Mistshenko,1951 ..... 55.
(Only one genus known in Tunisia, *Egnatioides* Vosseler, 1902).
— Hind wings almost always colored or with a black band; furcal suture of mesosternum not curved backward (Fig. 87C, D) ..... Oedipodinae Walker, 1871 ..... 30.

14. Species sand-colored, spotted with brown and white; middle leg twice as long as the foreleg; spurs of hind tibia strongly elongated (Fig. 91A) ..... *Tenuitarsus* Bolívar, 1904
(only one species known in Tunisia, *Tenuitarsus angustus* (Blanchard, 1836), Fig. 76).
— Colour variable, brownish or greenish; middle leg not elongate; spurs of hind tibia not elongated (Fig. 91B) ..... *Pyrgomorpha* Serville, 1838 ..... 42.

15. Fastigial furrow obliterated; pronotum depressed; hind wing tinted with yellowish with a black band..... ..... *Tuarega* Uvarov, 1943.
(Only one species known in Tunisia, *Tuarega insignis* (Lucas, 1851), Fig. 73).
— Fastigial furrow well marked; pronotum in prozona highly raised; hind wing tinted with pinkish in male, sometimes transparent in female; with a black band in both sexes ..... *Tmethis* Fieber, 1853
(only one species known in Tunisia, *Tmethis cisti* (Fabricius, 1787), Fig. 72).

16. Size small; Krauss's organ absent; hind border of pronotum with spines; wings absent or very small ..... 17.
— Size medium to large; Krauss's organ present (Fig. 90A, B); hind border of pronotum without spines; wings present ..... 18.

17. Hind wings absent; upper carina of hind femora provided with spines (Fig. 88C) ..... *Finotia* Bonnet, 1884
(only one species known in Tunisia, *Finotia spinicollis* Bonnet, 1884, Fig. 65).

— Hind wings present; upper carina of hind femora undulate and slightly decline toward the apex (Fig. 88D) ..... *Ocneridia* Bolívar, 1912.
(only one species known in Tunisia, *Ocneridia nigropunctata* (Lucas, 1849), Fig. 66).

18. Prosternum process with pointed tubercles (Fig. 83A, B) ..... 19.
— Prosternum process without pointed tubercles ..... 20.

19. Prosternum process with two pointed tubercles (Fig. 83A) ..... *Euryparyphes* Fischer, 1853.
(Only one species known in Tunisia, *Euryparyphes sitifensis* (Brisout de Barneville, 1854), Fig. 64).
— Prosternum process with four pointed tubercles (Fig. 83B) ..... *Paraeuryparyphes* La Greca, 1993.
(Only one species known in Tunisia, *Paraeuryparyphes quadridentatus* (Brisout de Barneville, 1852), Fig. 71).

20. Hind femora with a pre-genicular narrowing less evident; colour variable, between grey and greenish, mottled with white; pronotum highly tectiform (Fig. 80B); integument slightly rugose; hind tibiae hairless ..... *Pamphagus* Thunberg, 1815 ..... 44.
— Hind femurs slender, with a pre-genicular narrowing more evident; colour brownish; pronotum less tectiform; integument strongly rugose; hind tibiae hairy..... 21.

21. Male subgenital plate not divided into two parts (Fig. 93A); hind border of epiphallus monolobate..... ..... *Acinipe* Rambur, 1838 ..... 43.
— Male subgenital plate divided into two parts (Fig. 93B); hind border of epiphallus bilobate (Fig. 96A) .....*Paracinipe* Descamps & Mounassif, 1972 ..... 45.

22. Size small (9.6-19.3 mm); elytra, wings and tympanum absent ..... *Pamphagulus* Uvarov, 1929
(only one species known in Tunisia, *Pamphagulus bodenheimeri dumonti* Uvarov, 1929, Fig. 61).
— Size medium to large (> 20mm); elytra and wings fully developed; tympanum present .... *Dericorys* Serville, 1838 ..... 46.

23. Ash-brown colored; pronotum tectiform, constricted; median carina slightly raised; wings with a large brown fascia ..... *Anacridium* Uvarov, 1923
(only one species known in Tunisia, *Anacridium aegyptium* (Linnaeus, 1764), Fig. 11).
— Sand colored; pronotum subcylindrical, median carina not raised; wings transparent ..... *Schistocerca* Stål, 1873
(only one species known in Tunisia, *Schistocerca gregaria gregaria* (Forskål, 1775), Fig. 12).

24. Presence of a black 'tear' under the eyes; hind leg colourful; hind femur outer side with a longitudinal black band (Fig. 88G); hind femur inner and outer sides without black spots ..... *Eyprepocnemis* Fieber, 1853
(only one species known in Tunisia, *Eyprepocnemis plorans plorans* (Charpentier, 1825), Fig. 18).
— No black 'tear' under the eyes; hind tibia and tarsus red; hind femur outer side without a longitudinal black band; hind femur inner and outer sides with two black spot (Fig. 88H) ..... *Heteracris* Walker, 1870 ..... 47.

25. Body large (>40mm); head strongly elongate (Fig. 80F) ..... 26.
— Body of small size (<30mm); head not elongated (Fig. 80E) ..... *Duroniella* Bolívar, 1908
(only one species known in southern Tunisia, *Duroniella lucasii* (Bolívar, 1881), Fig. 4).

26. Lateral carina of pronotum straight and slightly incurved in metazona; wings greenish in male and female without small macules; inner face of male and female femora without stridulatory comb; arolium large (Fig. 81F) .... *Acrida* Linnaeus, 1758
(only one species known in Tunisia *Acrida turrita* (Linnaeus, 1758), Fig. 3).
— Lateral carina of pronotum incurved down in metazona; wing base pink and purplish in female, greenish in male, with several small macules in both sexes; inner side of male and female femora with a stridulatory comb (Fig. 90A); arolium small to medium size (Fig. 81D-E) ..... *Truxalis* Fabricius, 1775 ..... 50.

27. Middle leg twice as long as fore leg; inner spurs of hind tibia strongly elongated (Fig. 91C); arolium vestigial ..... *Eremogryllus* Krauss, 1902
(only one species known in Tunisia *Eremogryllus hammadae* Krauss, 1902, Fig. 15).
— Middle leg not elongate; spurs of hind tibia short; claws short; arolium about half the claws length .... *Notopleura* Krauss, 1902.....51.

28. Antenna ensiform; head conical ..... *Ochrilidia* Stål, 1873 ..... 52.
— Antenna filiform; head subconical ..... 29.

29. Lateral carina of pronotum angularly incurved; dorsum with X-shaped (Fig. 79A) .... *Dociostaurus* Fieber, 1853 ..... 54.

— Lateral carina slightly incurved; dorsum without X-shaped ..... *Stenohippus* Uvarov, 1926
(only one species known in Tunisia *Stenohippus mundus* (Walker, 1871), Fig. 28).

30. Median carina strongly tectiform in prozona; upper carina of femur drop in apical part (Fig. 88I) .....
..... *Oedipoda* Latreille, 1829 ..... 59.
— Median carina with different shape but not only tectiform in prozona; upper carina of femur never drop in apical part (Fig. 88J) ..... 31.

31. Median carina tectiform in prozona and metazona ..... 32.
— Median carina with different shape but not tectiform in both parts of pronotum ..... 33.

32. Pronotum above with X-shaped (Fig. 79B); median carina not interrupted by transverse posterior groove; hind wings yellowish with one dark fascia ..... *Oedaleus* Fieber, 1853 ..... 60.
— Pronotum above without X-shaped; median carina interrupted by transverse posterior groove; hind wings brightly coloured by red at base with one or two dark fascia ..... 34.

33. Size medium; body thickset; hind wings brightly coloured and red at base with long dark fascia
..... *Scintharista* Saussure, 1884
(only one species known in Tunisia *Scintharista notabilis notabilis* (Walker, 1870), Fig. 45).
— Small to medium size; body not thickset; hind wings brightly coloured at base by red in female and yellow in male, with short dark fascia in both sexes ..... *Mioscirtus* Saussure, 1888
(only one species known in Tunisia *Mioscirtus wagneri wagneri* (Eversmann, 1859), Fig. 40).

34. Inner spurs of hind tibia longer than the first tarsal segment (Fig. 92E-F) ..... 35.
— Inner spurs of hind tibia never exceeding the half-length of first basal tarsal segment (Fig. 91D); slightly longer than outer spurs ..... 36.

35. Median carina of pronotum distinct in prozona; inner spurs of hind tibia slightly shorter than half-length of basal tarsal segment (Fig. 91E) .....
..... *Leptopternis* Saussure, 1884 ..... 61.
— Median carina in prozona obliterate; spurs of hind tibia longer than half-length of basal tarsal segment (Fig. 91F) ..... *Hyalorrhipis* Saussure, 1884
(only one species known in Tunisia *Hyalorrhipis calcarata* (Vosseler, 1902), Fig. 37).

36. Fastigium of vertex above concave with well developed lateral carinula; fastigial faveoale trapezoidal (Fig. 78E)
..... *Aiolopus* Fieber, 1853 ..... 62.
— Fastigium of vertex above slightly concave, lateral carinula obliterate; fastigial faveoale of different shaped but not trapezoidal ..... 37.

37. Wing strongly widened, venation strongly thickened; third vannal vein bifurcate at apex (Fig. 86).....
..... *Helioscirtus* Saussure, 1884 ..... 63.
— Wing slightly widened, venation normal and not strongly thickened; third vannal vein not bifurcate ..... 38.

38. Pronotum short and strongly saddle-shaped ..... *Acrotylus* Fieber, 1853 ..... 64.
— Pronotum not short and slightly saddle-shaped or different shape ..... 39.

39. Branches of cubital vein of elytron incurved (Fig. 84A) ..... *Hilethera* Uvarov, 1923.
(Only one species known in Tunisia *Hilethera aeolopoides* (Uvarov, 1922), Fig. 36).
— Branches of cubital vein of elytron not incurved (Fig. 84B) ..... 40.

40. Hind femur short, widened and hairy ..... *Thalpomena* Saussure, 1884 ..... 74.
— Hind femur moderately elongate, slender and almost hairless ..... 41.

41. Median carina of pronotum slightly raised in prozona ..... *Sphingoderus* Bey-Bienko, 1950.
(Only one species known in Tunisia *Sphingoderus carinatus* (Saussure, 1888), Fig. 46).
— Median carina of pronotum absent ..... *Sphingonotus* Fieber, 1852 ..... 66.

42. Elytra enlarged at base ..... *Pyrgomorpha conica* (Olivier, 1791) (Fig. 75).
— Elytra less enlarged at base ..... *Pyrgomorpha cognata* Krauss, 1877. (Fig. 74).

43. Median carina curved ..... *Acinipe calabra* (Costa, 1836) (Fig. 63).
— Median carina slightly curved ..... *Acinipe algeriensis* Descamps & Mounassif, 1972 (Fig. 62).

44. Metasternal interspace in females between 2.0 and 3.0 times wider than long .... *Pamphagus meridionalis* Descamps & Mounassif, 1972 (Fig. 67).
— Metasternal interspace in females between 1.5 and 2.5 times wider than long ....*Pamphagus tunetanus* Vosseler, 1902 (Fig. 68).

45. Head, pronotum, metanotum and first abdominal tergites with many impressed points; sometimes pronotum covered by a net-work of raised carinulae; aedeagus valves stout, epiphallus with few big spines, and hind border deeply concave (Fig. 97A, B) ..... *Paracinipe saharae* (Pictet & Saussure, 1893) (Fig. 70).
— Head smooth, often with some small white points and a network of carinulae behind the eyes; pronotum covered by more or less wide tubercles, evidently raised; fore and hind borders of the pronotum thick, with white and dark spots; aedeagus valves slender, epiphallus with small spines and hind border concave (Fig. 96A, B)..... .....*Paracinipe foreli* (Pictet & Saussure, 1893) (Fig. 69).

46. Wings tinted at base with bright pink ..... *Dericorys millierei* Bonnet & Finot, 1884 (Fig. 60).
— Wings yellowish-green with a smoky spot at the tip ..... *Dericorys albidula* Serville, 1838. (Fig. 59).

47. Subgenital plate bilobate at apex (Fig. 95B) ..... *Heteracris adspersa adspersa* (Redtenbacher, 1889) (Fig. 19).
— Subgenital plate of different shapes but not bilobate at apex ..... 48.

48. Size large: males 28-30, females 40-50 ..... *Heteracris harterti* (Bolívar, 1913) (Fig. 21).
— Size small to medium: males < 28-30, females < 40-50 ..... 49.

49. Size medium: males 18.7 - 25.7 mm (mean 22.8), females 33.1-43.3 mm (mean 34); femora slender: males 2.79-4.21 mm (3.33), females 4.43-5.40 mm (mean 5.05) (measurements after Grunshaw 1991)..... ..... *Heteracris annulosa annulosa* Walker, 1870 (Fig. 20).
— Size small: males 17.0-21.4 mm (mean 19.9), females 24.5-28.3 mm (mean 26.16); femora slender: males 2.22-3.03 mm (2.60), females 3.22-4.36 mm (mean 3.62) (measurements after Grunshaw 1991) .... *Heteracris minuta* (Uvarov, 1921) (Fig. 22).

50. Arolium small, shorter than half spurs (Fig. 81D) ..... *Truxalis nasuta* (Linnaeus, 1758) (Fig. 5).
— Arolium longer than half spurs (Fig. 81E) ..... *Truxalis procera* Klug, 1830 (Fig. 6.

51. Prozona without lateral carina; furcal suture of mesosternum not curved backward (Fig. 87E) .... *Notopleura pygmaea* Vosseler, 1902. (Fig. 16).
— Prozona with lateral carina; furcal suture of mesosternum slightly curved backward (Fig. 87F) .... *Notopleura saharica* Krauss, 1902 (Fig. 17).

52. Temporal foveolae visible from above; black spot on inner knee of hind femora .... *Ochrilidia geniculata* (Bolívar, 1913) (Fig. 25).
— Temporal foveolae not visible from above; inner knee of hind femora uncolored ..... 53.

53. Lateral lobes of pronotum with a white spot .....*Ochrilidia harterti harterti* (Bolívar, 1913) (Fig. 27).
— Lateral lobes of pronotum without a white spot ..... *Ochrilidia gracilis gracilis* (Krauss, 1902) (Fig. 26).

54. Stridulatory comb (Fig. 90B) with 26-42 teeth (mean 33) in female and with 33-52 teeth (mean 43) in male ..... *Dociostaurus* (*Kazakia*) *jagoi jagoi* Soltani, 1978 (Fig. 24).
— Stridulatory comb with 55-74 teeth (mean 64) in female and with 67-93 teeth (mean 78) in male .... *Dociostaurus biskrensis* Moussi & Petit, 2014 (Fig. 23).

55. Mesosternal suture arcuate between mesosternal lobes (Fig. 87B) .... *Egnatioides striatus* Vosseler, 1902 (Fig. 13).
— Mesosternal suture straight between mesosternal lobes (Fig. 87B) .... *Egnatioides coerulans* (Krauss, 1893) (Fig. 14).

56. Lateral carena absent; wings colorless ..... *Sphodromerus* Stål, 1873.
(Only one species known in Tunisia *Sphodromerus decoloratus* Finot, 1894, Fig. 10).
— Lateral carena present; wings more or less pinkish ..... *Calliptamus* Serville, 1831 ..... 57.

57. Wings faintly pinkish and sometimes hyaline ..... *Calliptamus deserticola* Vosseler, 1902 (Fig. 8).
— Wings clearly tinted with pink ..... 58.

58. Inner side of posterior femur with a single large black spot (Fig. 89C) .... *Calliptamus barbarus barbarus* (Costa, 1836) (Fig. 7).

— Inner side of posterior femur with two small black spots (Fig. 89D) ..... *Calliptamus wattenwylianus* (Pantel, 1896) (Fig. 9).

59. Wing brightly colored with pink, with dark fascia ..... *Oedipoda miniata mauritanica* Lucas, 1849 (Fig. 44).
— Wing brightly colored with yellowish, with dark fascia ..... *Oedipoda fuscocincta fuscocincta* Lucas, 1849 (Fig. 43).

60. Pronotum posterior margin angular (Fig. 79B) ..... *Oedaleus decorus* (Germar, 1825) (Fig. 41).
— Pronotum posterior margin rounded ..... *Oedaleus senegalensis* (Krauss, 1877) (Fig. 42).

61. Hind wings with black spot ..... *Leptopternis maculata* Vosseler, 1902 (Fig. 38).
— Hind wings without black spot ..... *Leptopternis rothschildi* Bolívar, 1913 (Fig. 39).

62. Hind wings with a smoky spot at the tip; hind femur thick *Aiolopus strepens strepens* (Latreille, 1804) (Fig. 33).
— Hind wings without a smoky spot at the tip; hind femur slender ... *Aiolopus puissanti* Defaut, 2005 (Fig. 32).

63. Vertex one and a half times wider than frontal side ..... *Helioscirtus capsitanus capsitanus* (Bonnet, 1884) (Fig. 34).
— Vertex narrower between the eyes ..... *Helioscirtus gracilis* Vosseler, 1902 (Fig. 35).

64. Median carina incised by one sulci; hind wing yellowish at base without black spot; middle leg twice as long as the foreleg ..... *Acrotylus longipes longipes* (Charpentier, 1845) (Fig. 30).
— Median carina incised by two sulci; hind wing red at base with back spot; middle leg not elongate ..... 65.

65. Antenna longer than head and pronotum together; pronotum between first and second sulcus flat (lateral view); black band on hind wing big; arolium between tarsal claws large and triangular ..... *Acrotylus patruelis* (Herrich-Schäffer, 1838) (Fig. 31).
— Antenna not longer than head and pronotum together; pronotum between first en second sulcus elevated (lateral view), black band on hind wing smaller; arolium between tarsal claws small ..... *Acrotylus insubricus insubricus* (Scopoli, 1786) (Fig. 29).

66. Hind wing with one or two dark fascia of different size ..... 67.
— Hind wing without dark fascia ..... 72.

67. Hind wings tinted at base with bright red, with two fascias (one medial, one apapical) ..... *Sphingonotus* (*Sphingonotus*) *octofasciatus* (Serville, 1838) (Fig. 52).
— Hind wings bluish at base or transparent with one fascia ..... 68.

68. Supra-anal plate with a horseshoe-shaped ridge at apex (Fig. 94B) ..... *Sphingonotus* (*Parasphingonotus*) *radioserratus* Johnsen, 1985 (Fig. 50).
— Supra-anal plate variable in shape but not horseshoe-shaped at apex ..... 69.

69. Hind wings with a very large black fascia, located in the middle but extended almost always to the base ..... *Sphingonotus* (*Neosphingonotus*) *tricinctus* (Walker, 1870) (Fig. 49).
— Hind wings with black fascia variable in size but not very large ..... 70.

70. Prozona median carina raised; hind wings bluish at base ..... *Sphingonotus* (*Sphingonotus*) *lucasii* Saussure, 1888 (Fig. 41).
— Prozona median carina not raised ..... 71.

71. Intercalary vein smooth (Fig. 85A) .... *Sphingonotus* (*Neosphingonotus*) *paradoxus* Bey-Bienko, 1948 (Fig. 48).
— Intercalary vein serrated (Fig. 85B) ..... *Sphingonotus* (*Sphingonotus*) *savignyi* Saussure, 1884 (Fig. 54).

72. Prozona with a pair of calluses on both sides of the median carina in front of the typical groove (Fig. 79C) ... *Sphingonotus* (*Sphingonotus*) *vosseleri* Krauss, 1902 (Fig. 55).
— Prozona without a pair of calluses on both sides of the median carina in front of the typical groove ..... 73.

73. Veins in anal part of hind wing all thickened ..... *Sphingonotus* (*Neosphingonotus*) *finotianus* (Saussure, 1885)(Fig. 47).
— Veins in anal part of hind wing not thickened ..... *Sphingonotus* (*Sphingonotus*) *rubescens rubescens* (Walker, 1870) (Fig. 53).

74. Hind wings tinted at the base with pink; with one black-brown fascia with a cubutal extension towards the base of the hind wing..... *Thalpomena algeriana algeriana* (Lucas, 1849) (Fig. 56).
— Hind wings bluish at the base; without black-brown fascia ... *Thalpomena coerulescens* Uvarov, 1923 (Fig. 57).

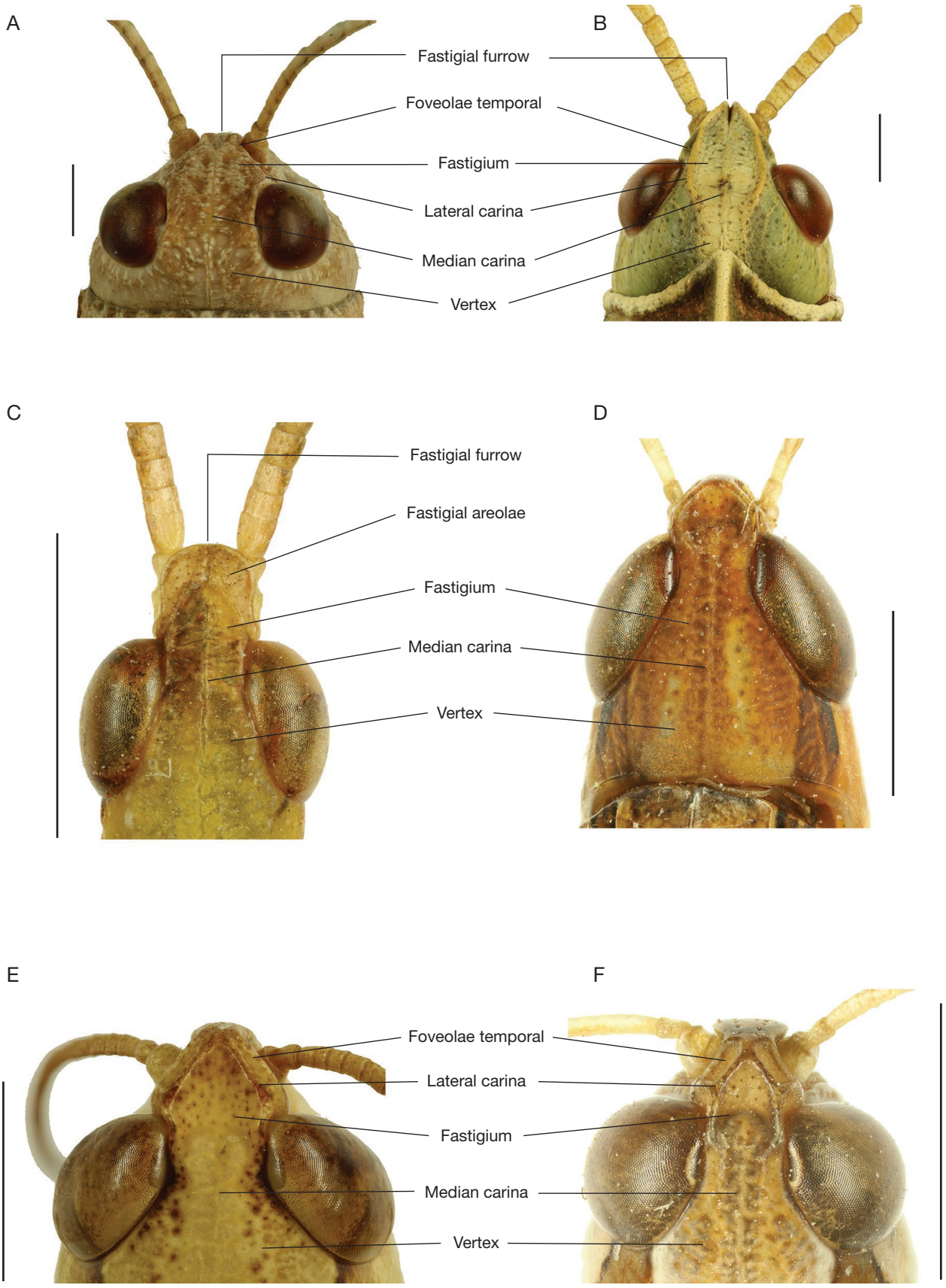

FIG. 78. — Head, dorsal view: **A**, *Tuarega insignis* (Lucas, 1851) (male); **B**, *Pamphagus tunetanus* Vosseler, 1902 (male); **C**, *Pyrgomorpha conica* (female) (Olivier, 1791); **D**, *Euchorthippus albolineatus albolineatus* (Lucas, 1849) (female); **E**, *Aiolopus strepens strepens* (Latreille, 1804) (female); **F**, *Stenohippus mundus* (Walker, 1871) (female). Scale bars: 2 mm. Photos: H. Tlili.

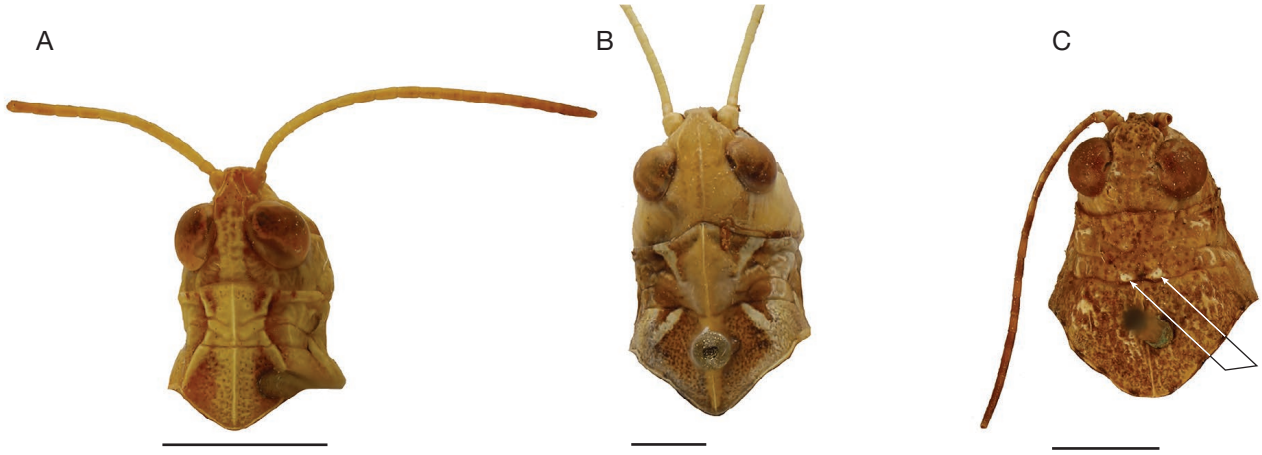

FIG. 79. — Head and pronotum, dorsal view: **A**, *Dociostaurus* (*Kasakia*) *jagoi jagoi* Soltani, 1978 (male); **B**, *Oedaleus decorus* (Germar, 1825) (male)**; C**, *Sphingonotus* (*Sphingonotus*) *vosseleri* Krauss, 1902 (female). **Arrows**: pair of calluses. Scale bars: 5 mm. Photos: H. Tlili.

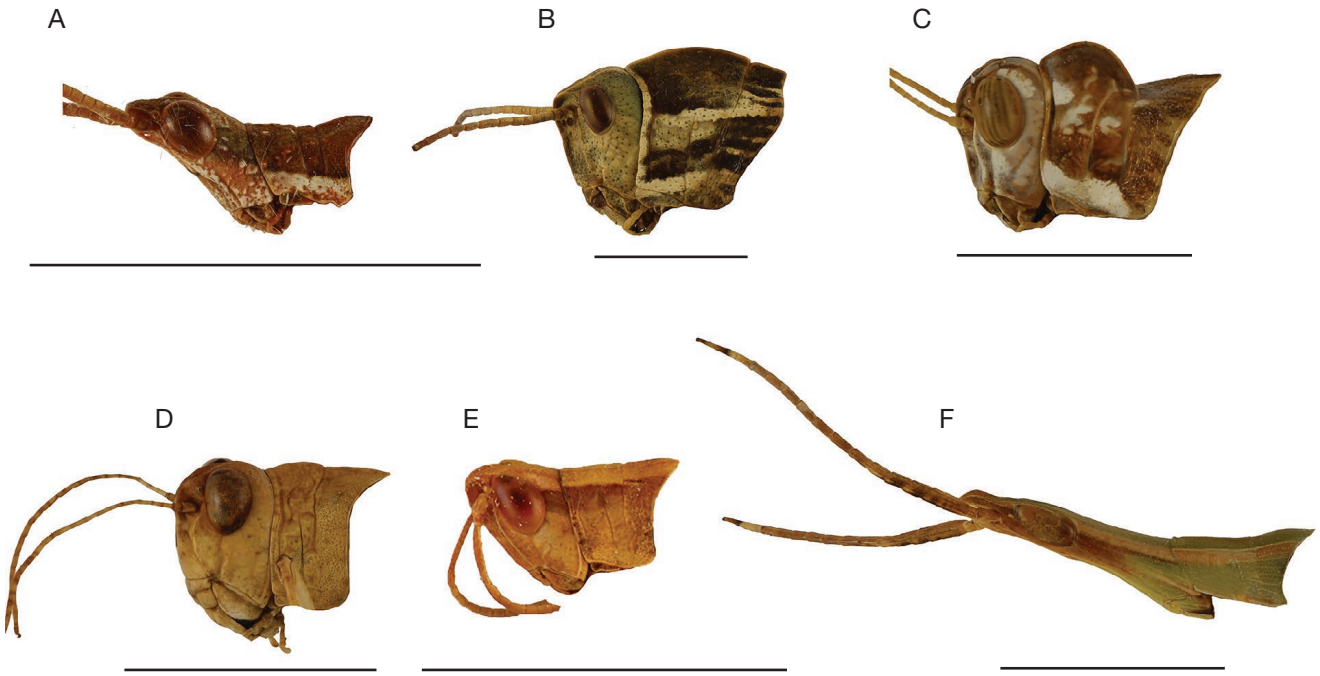

FIG. 80. — Head shape, lateral view: **A**, *Pyrgomorpha conica* (Olivier, 1791) (male); **B**, *Pamphagus tunetanus* Vosseler, 1902 (male); **C**, *Dericorys millierei* Bonnet & Finot, 1884 (female); **D**, *Scintharista notabilis notabilis* (Walker, 1870) (male); **E**, *Duroniella lucasii* Saussure, 1888 (male); **F**, *Acrida turrita* (Linnaeus, 1758) (female). Scale bars: 1 cm. Photos: H. Tlili.

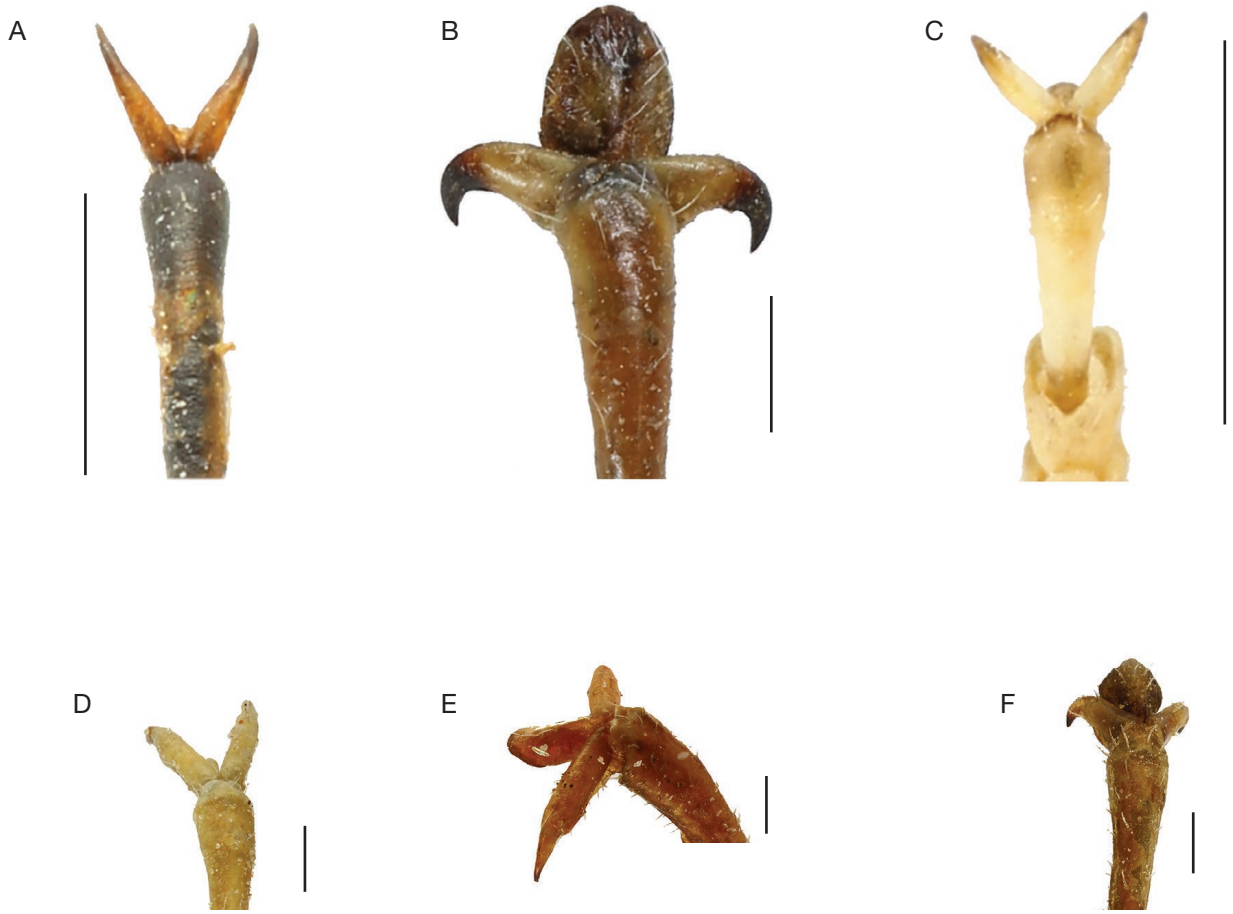

FIG. 81. — Claws and arolium: **A**, *Paratettix meridionalis* (Rambur, 1838) (female); **B**, *Anacridium aegyptium* (Linnaeus, 1764) (male); **C**, *Pamphagulus bodenheimeri dumonti* Uvarov, 1929 (male); **D**, *Truxalis nasuta* (Linnaeus, 1758) (female); **E**, *Truxalis procera* Klug, 1830 (female); **F**, *Acrida turrita* (Linnaeus, 1758) (female). Scale bars: 1 mm. Photos: H. Tlili.

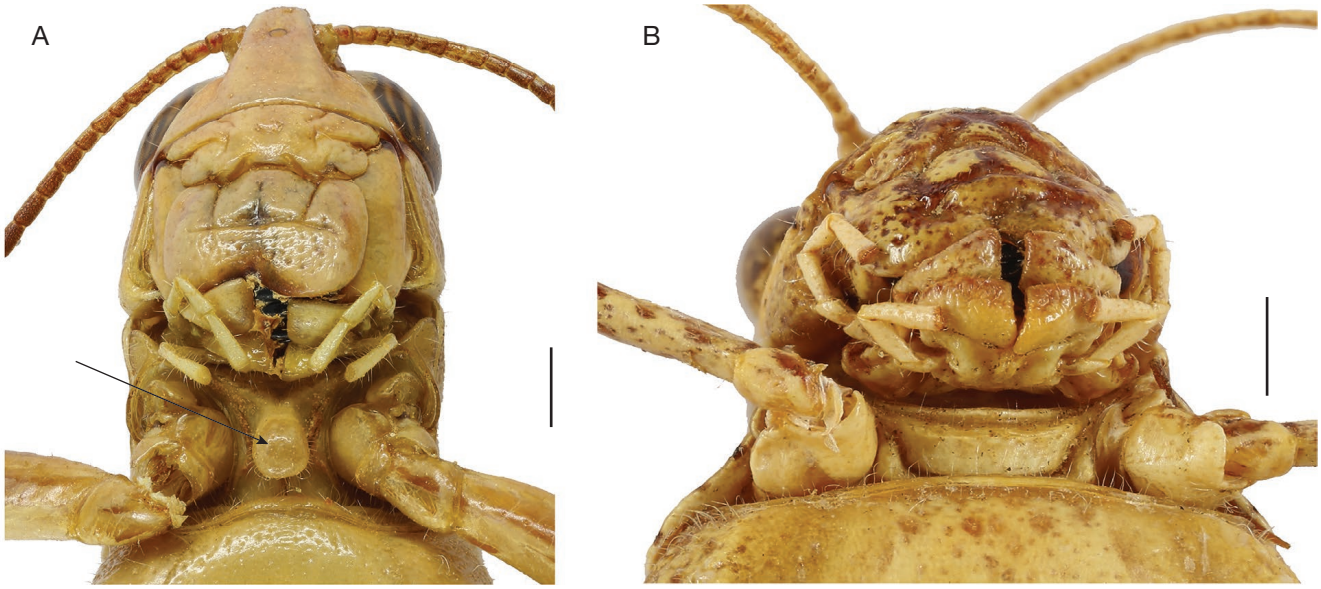

Fig. 82. — Prosternal process: **A**, *Eyprepocnemis plorans plorans* (Charpentier, 1825) (female), process present; **B**, *Oedipoda miniata mauritanica* Lucas, 1849 (female), process absent. **Arrow**: prosternal process. Scale bars: 2 mm. Photos: H. Tlili.

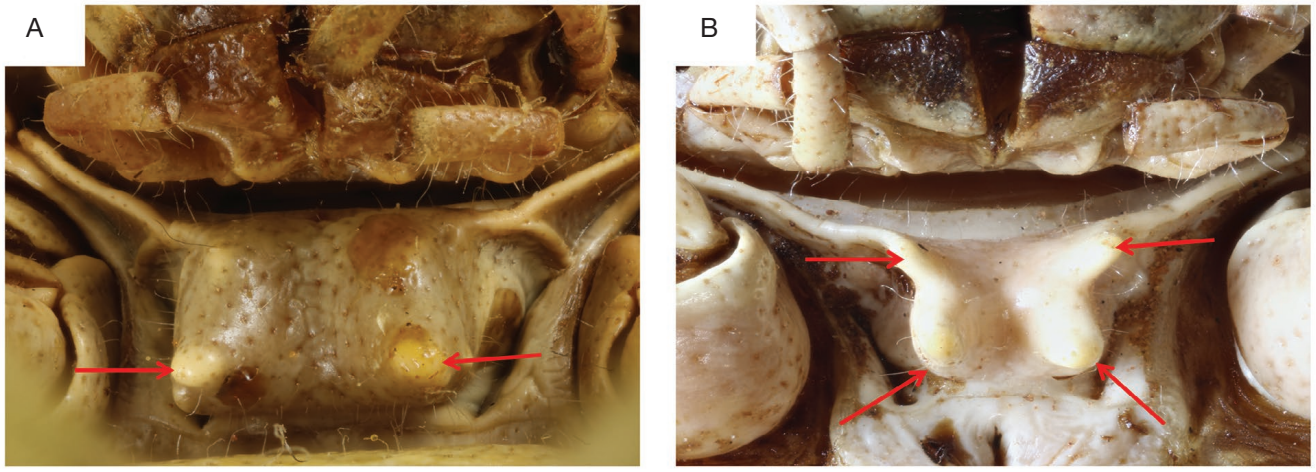

Fig. 83. — Shape of prosternal process: **A**, prosternum process of *Euryparyphes sitifensis* (Brisout de Barneville, 1854) (female) with two pointed tubercles; **B**, *Paraeuryparyphes quadridentatus* (Brisout de Barneville, 1852) (female) with four pointed tubercles. Scale bars: 2 mm. Photos: H. Tlili.

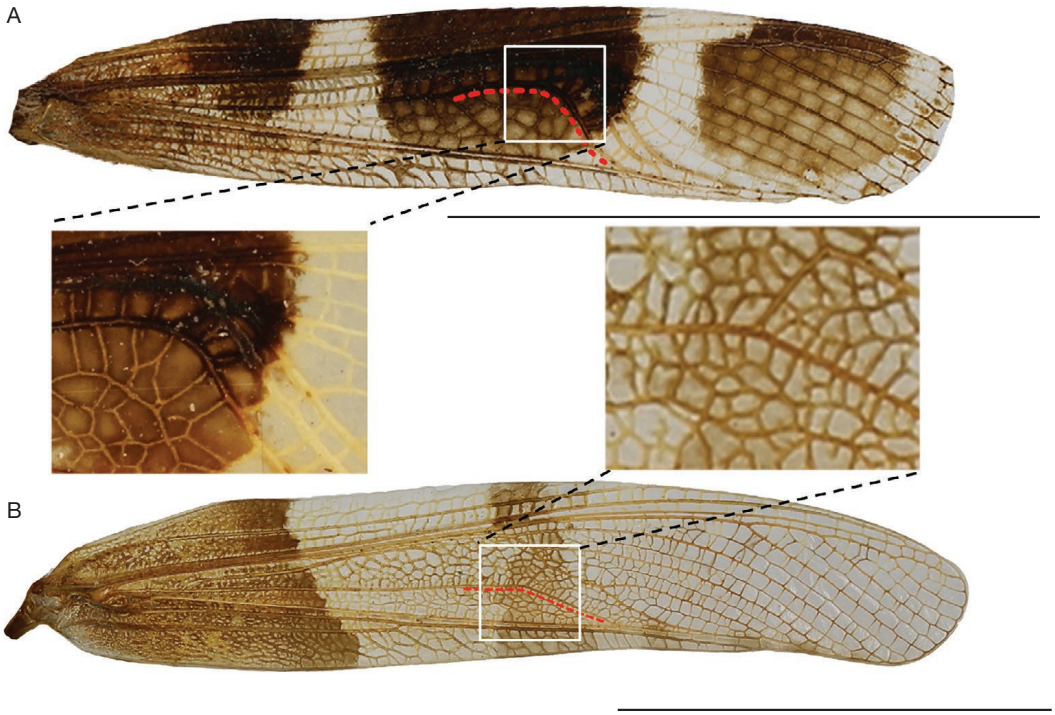

Fig. 84. — Tegminal cubital vein: **A**, *Hilethera aeolopoides* (Uvarov, 1922) (male); **B**, *Sphingonotus* (*Neosphingonotus*) *finotianus* (Saussure, 1885) (female). Scale bars: 1 cm. Photos: H. Tlili.

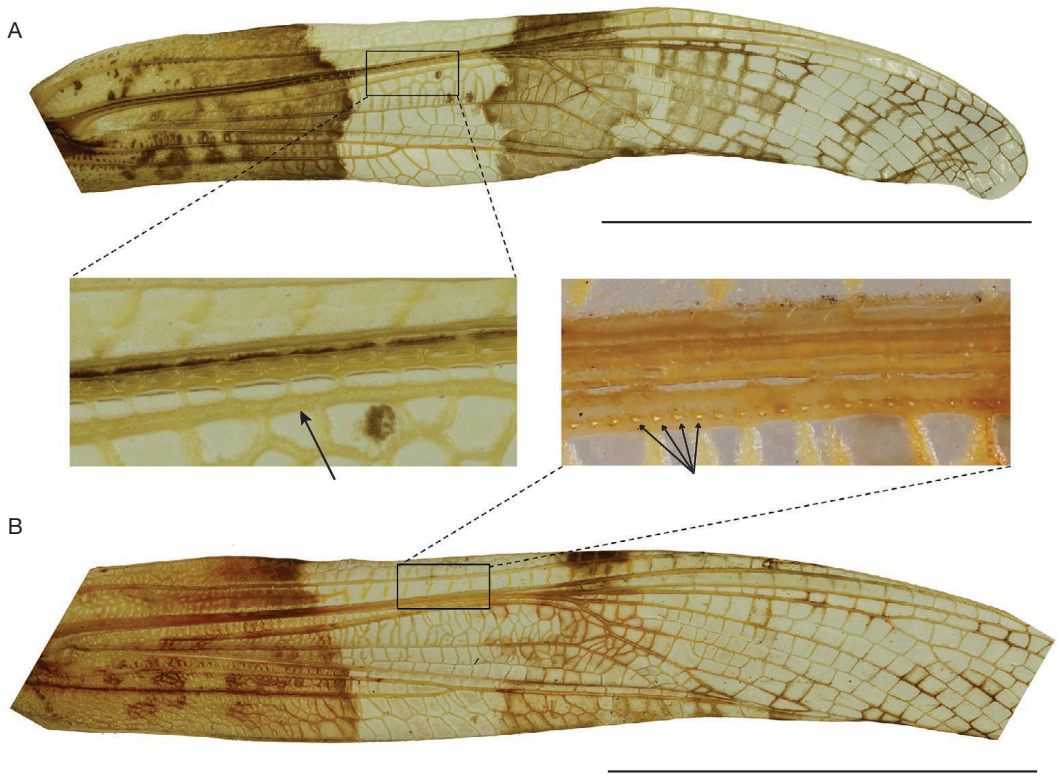

Fig. 85. — Tegminal stridulatory apparatus: **A**, *Sphingonotus* (*Neosphingonotus*) *paradoxus* Bey-Bienko, 1948 (male); **B**, *Sphingonotus* (*Sphingonotus*) *savignyi* Saussure, 1884 (male). Scale bars: 1 cm. Photos: H. Tlili.

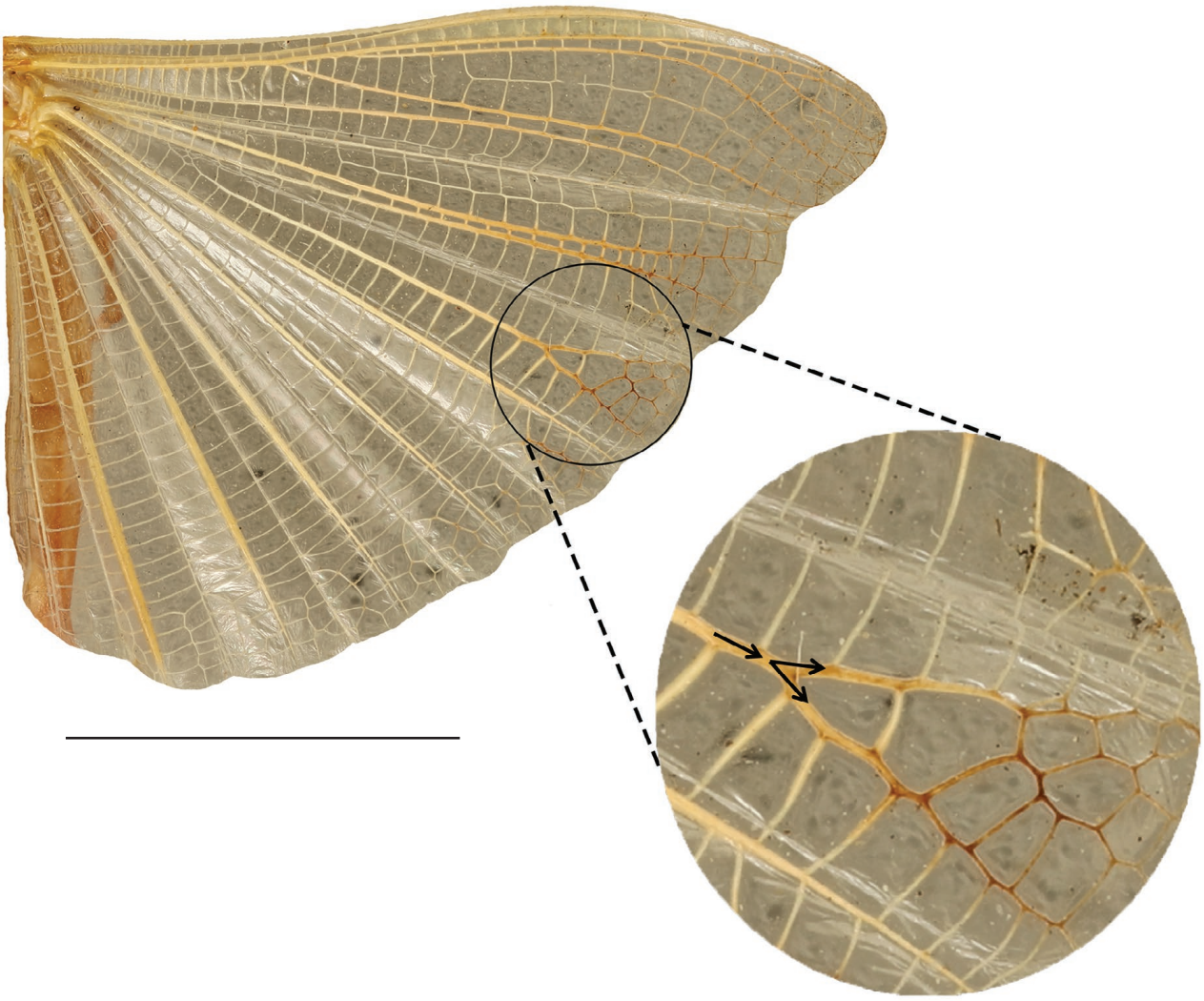

FIG. 86. — Hind wing of *Helioscirtus capsitanus capsitanus* (Bonnet, 1884) (male). Scale bar: 1 cm. Photos: H. Tlili.

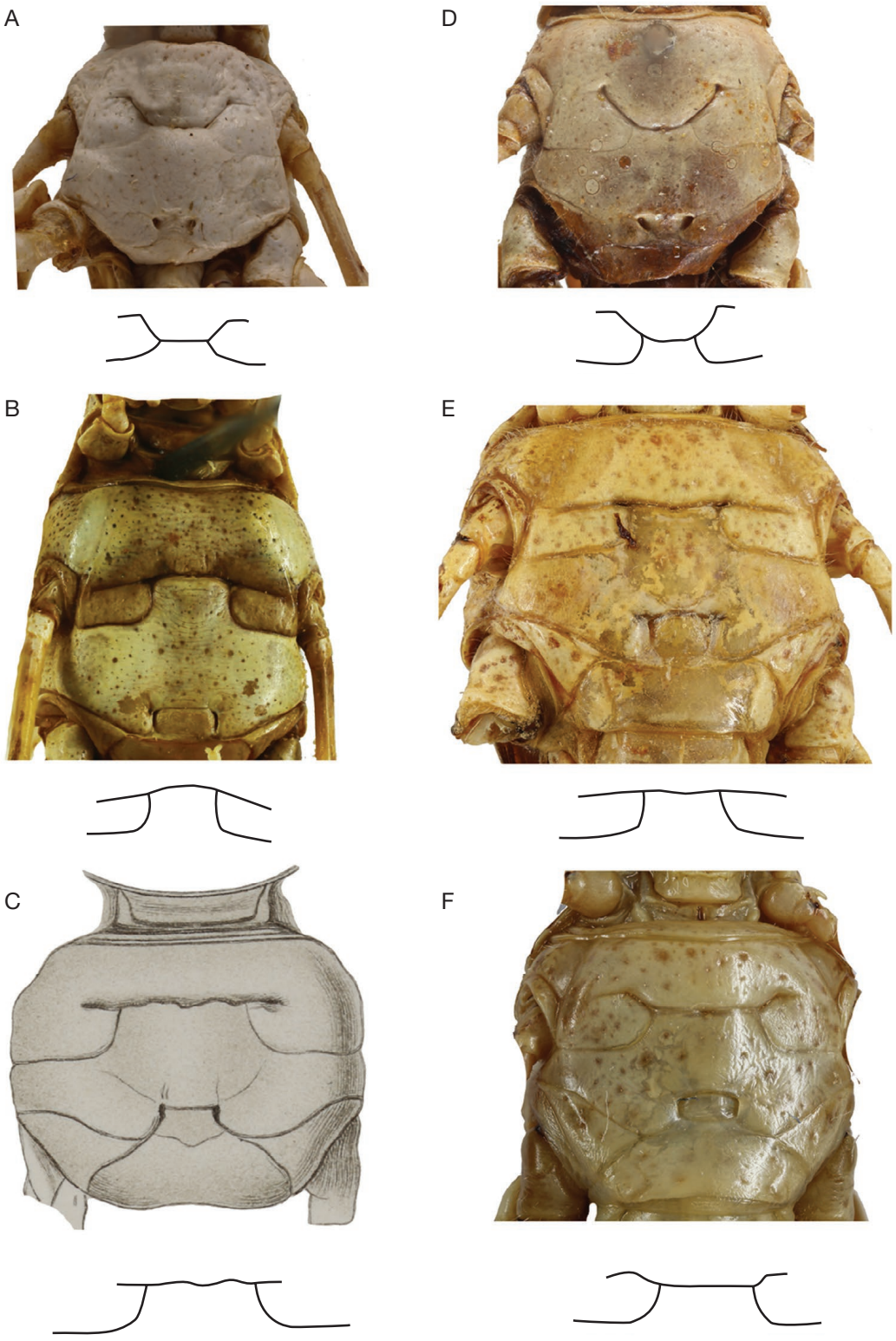

Fig. 87. — Metasternum shape and mesosternal suture: **A**, *Egnatioides coerulans* (Krauss, 1893) (female); **B**, *Egnatioides striatus* Vosseler, 1902 (female); **C**, *Leptopternis rothschildi* Bolívar, 1913 (male); **D**, *Oedipoda miniata mauritanica* Lucas, 1849 (female); **E**, *Notopleura pygmaea* Vosseler, 1902 (female) (after Vosseler 1902a); **F**, *Notopleura saharica* Krauss, 1902 (female). Scale bars: 2 mm. Photos: H. Tlili.

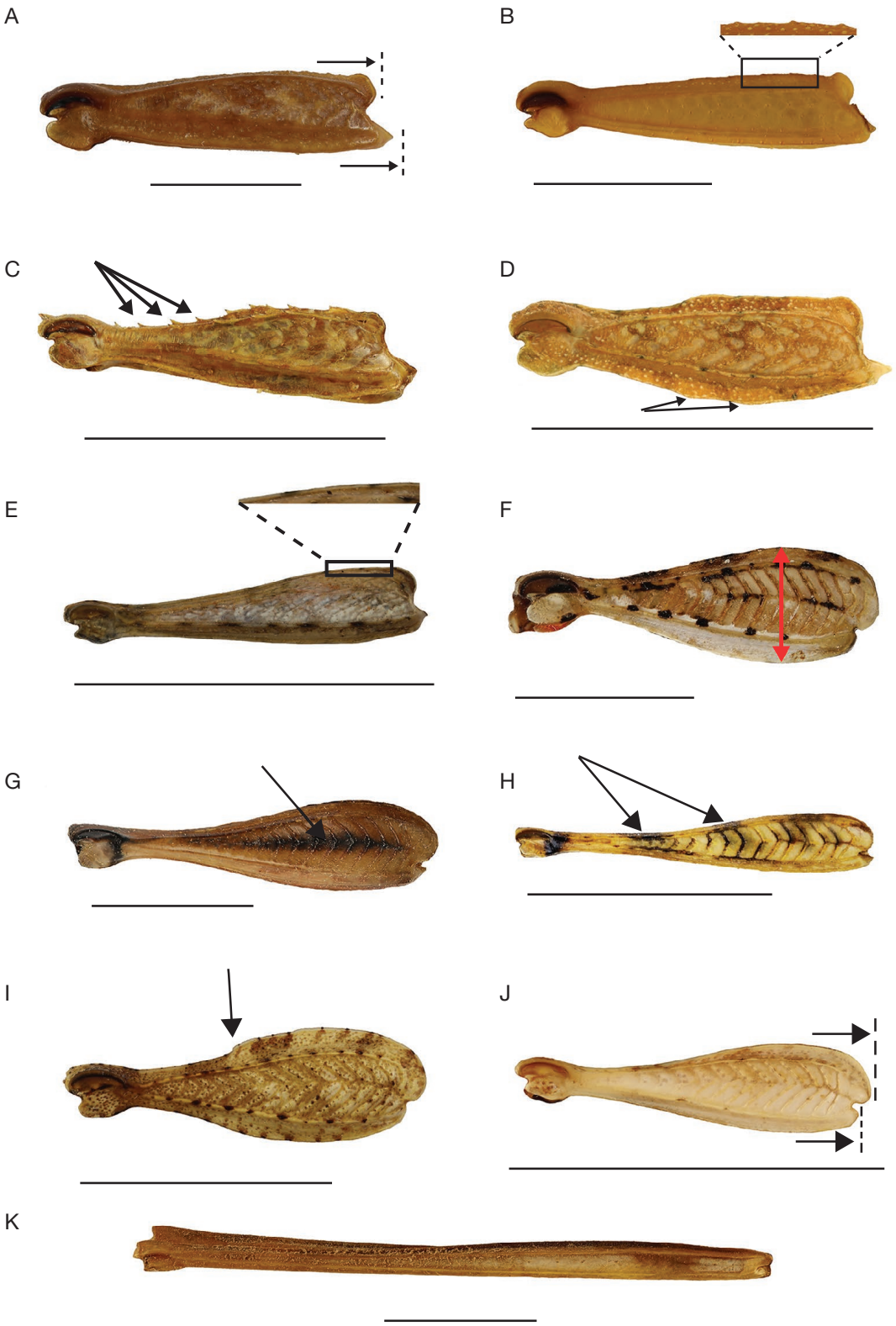

FIG. 88. — Hind leg outer side: **A**, *Pamphagus tunetanus* Vosseler, 1902 (female); **B**, *Paracinipe foreli* (Pictet & Saussure, 1893) (female); **C**, *Finotia spinicollis* Bonnet, 1884 (male); **D**, *Ocneridia nigropunctata* (Lucas, 1849) (female); **E**, *Pyrgomorpha conica* (Olivier, 1791) (female); **F**, *Calliptamus barbarus barbarus* (Costa, 1836) (female); **G**, *Eyprepocnemis plorans plorans* (Charpentier, 1825) (female); **H**, *Heteracris harterti* (Bolívar, 1913) (female); **I**, *Oedipoda miniata mauritanica* Lucas, 1849 (female); **J**, *Sphingonotus* (*Parasphingonotus*) *radioserratus* Johnsen, 1985 (male); **K**, *Truxalis nasuta* (Linnaeus, 1758) (female). Scale bars: 1 cm. Photos: H. Tlili.

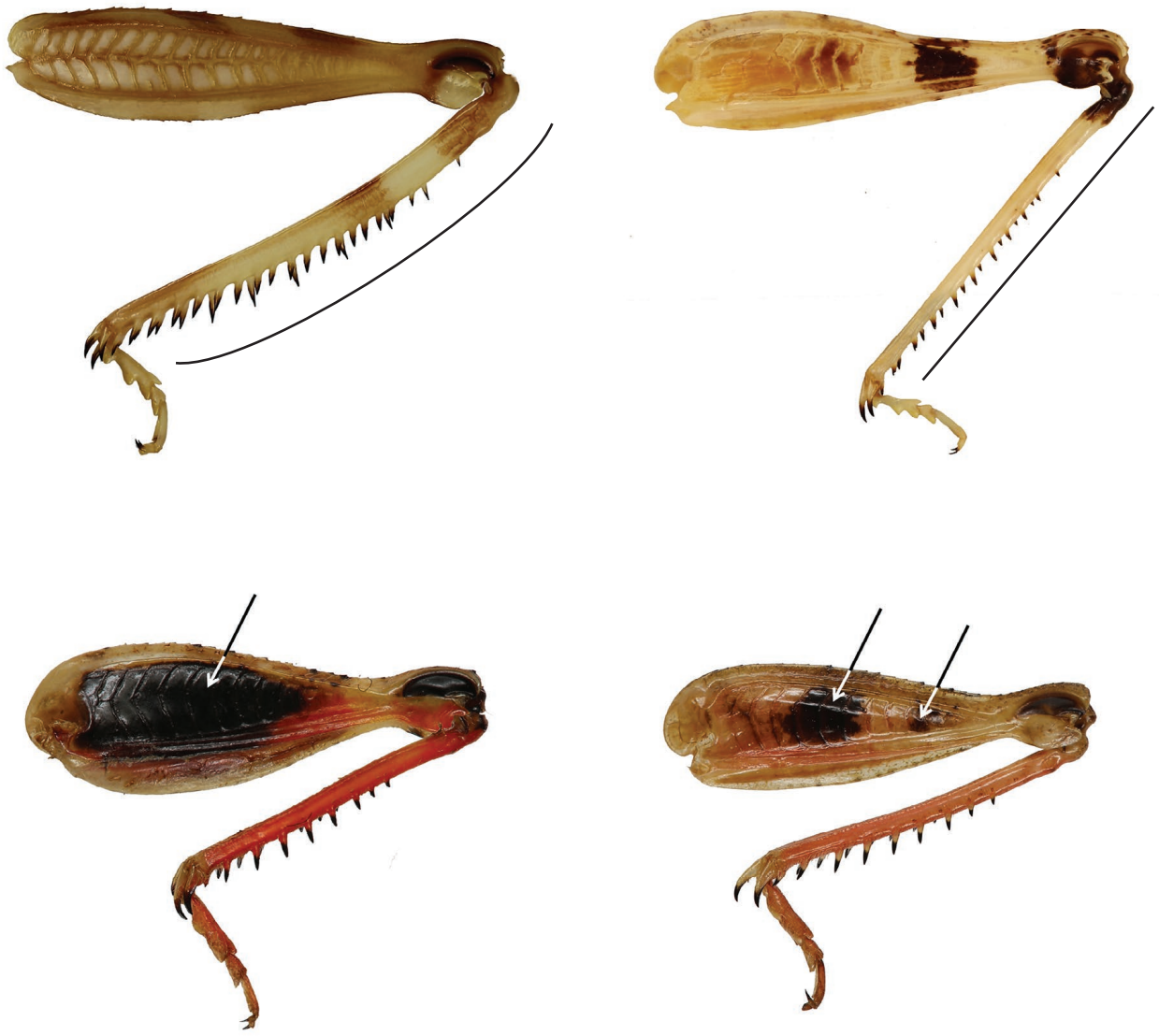

FIG. 89. — Hind leg inner side: **A**, *Dericorys albidula* Serville, 1838 (female); **B**, *Sphingonotus* (*Parasphingonotus*) *radioserratus* Johnsen, 1985 (female); **C**, *Calliptamus barbarus barbarus* (Costa, 1836) (male); **D**, *Calliptamus wattenwylianus* (Pantel, 1896) (male). Scale bars: 1 cm. Photos: H. Tlili.

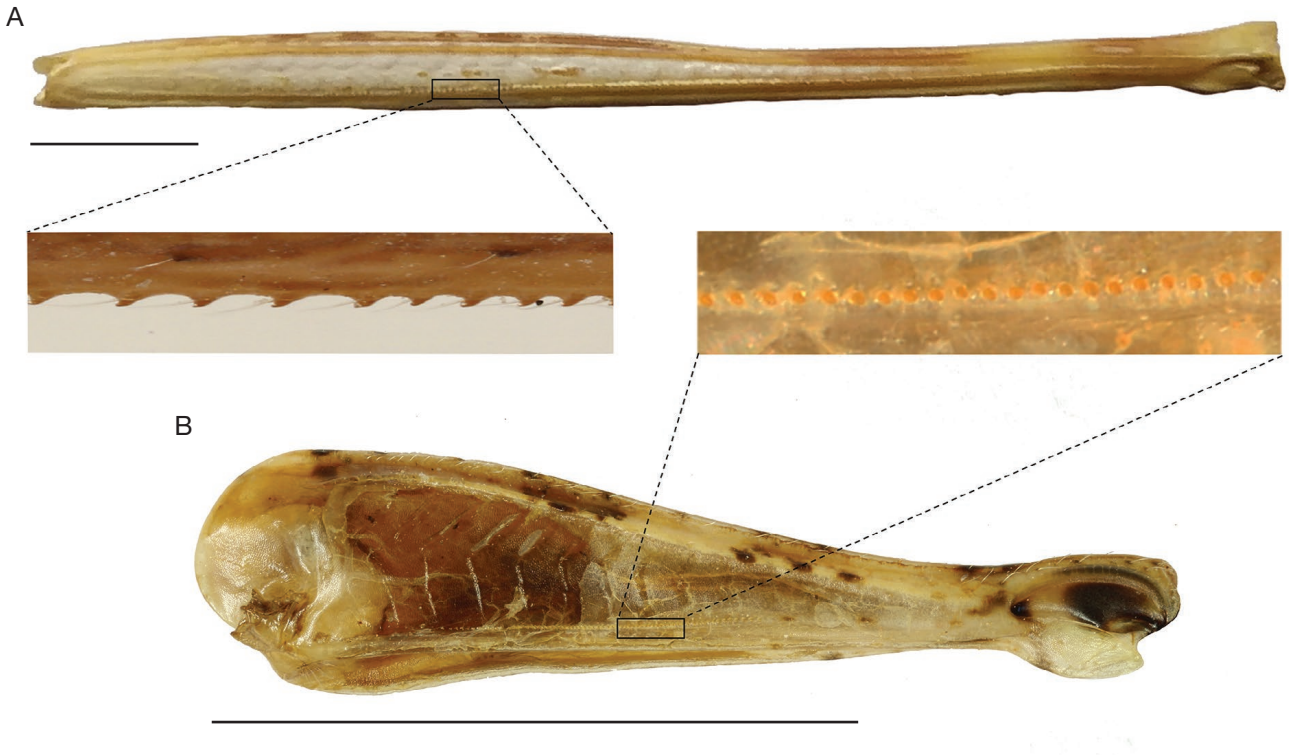

Fig. 90. — Stridulatory comb on hind femur inner side: **A**, *Truxalis nasuta* (Linnaeus, 1758) (female); **B**, *Dociostaurus* (*Kasakia*) *jagoi jagoi* Soltani, 1978 (female). Scale bars: 1 cm. Photos: H. Tlili.

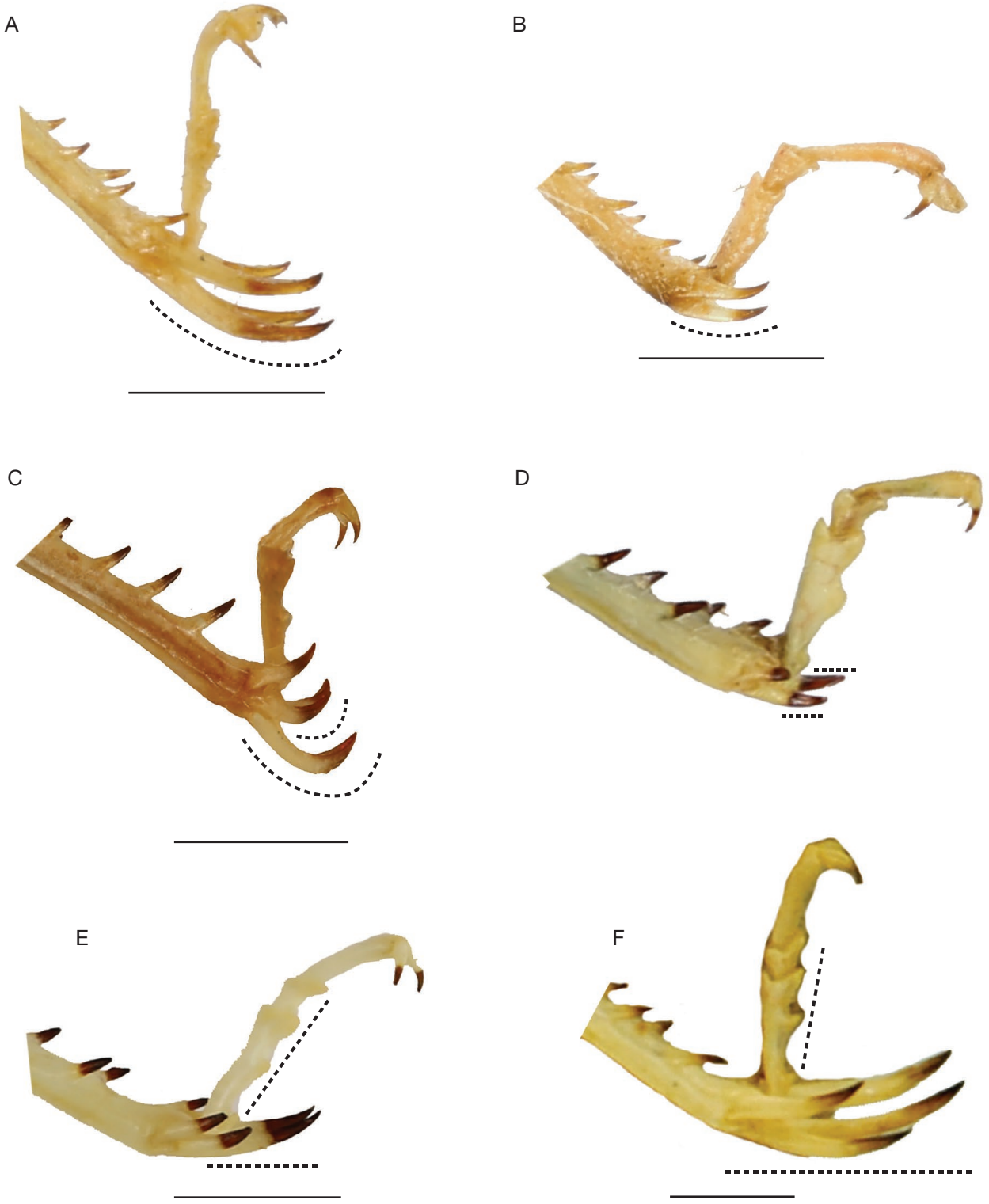

FIG. 91. — Hind tibial spurs: **A**, *Tenuitarsus angustus* (Blanchard, 1836) male; **B**, *Pyrgomorpha cognata* Krauss, 1877 (male); **C**, *Eremogryllus hammadae* Krauss, 1902 (female); **D**, *Sphingonotus* (*Neosphingonotus*) *finotianus* (Saussure, 1885) (male); **E**, *Leptopternis rothschildi* Bolívar, 1913 (male); **F**, *Hyalorrhipis calcarata* (Vosseler, 1902) (female). Scale bars: 1 mm. Photos: H. Tlili.

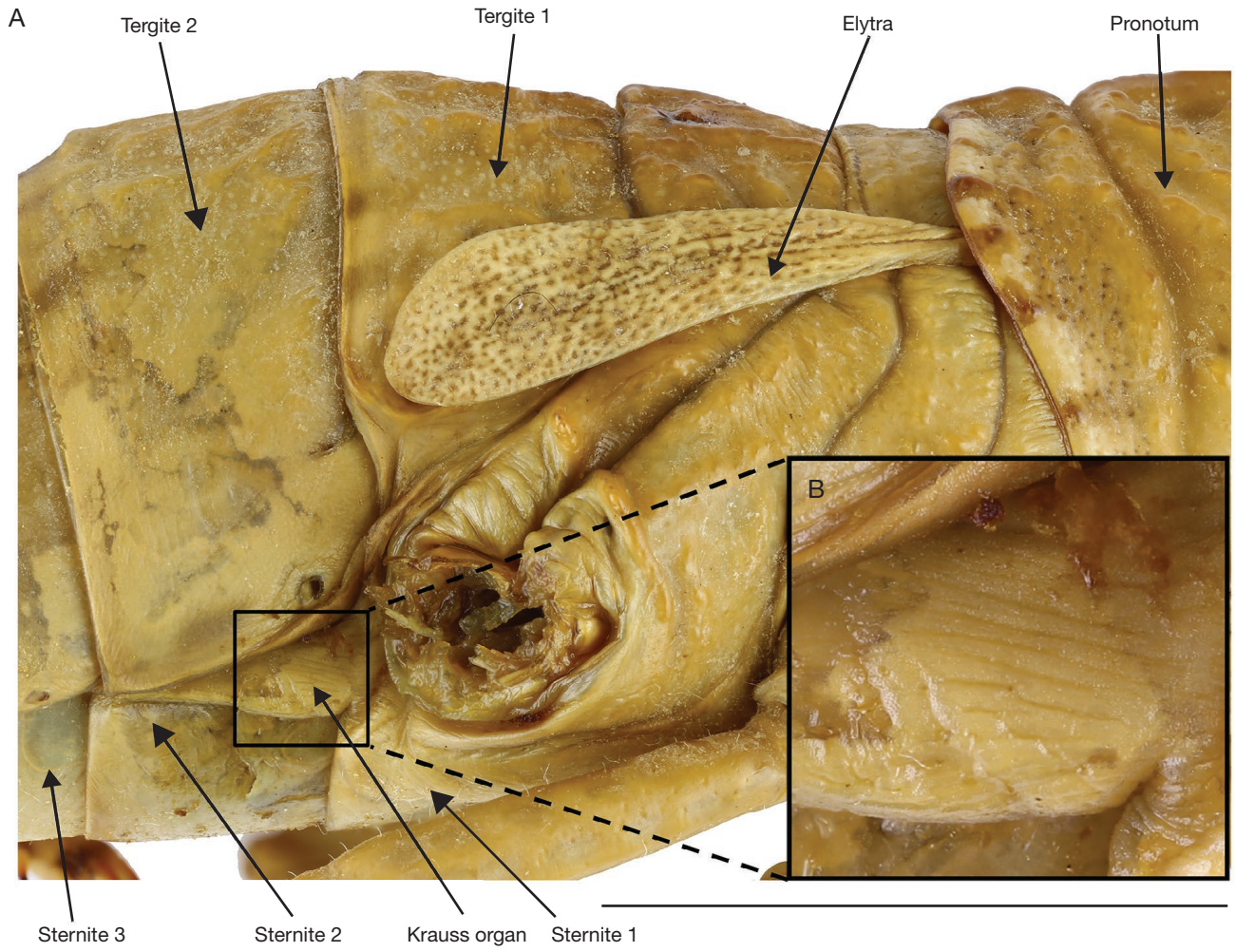

FIG. 92. — Krauss's organ morphology of *Paracinipe foreli* (Pictet & Saussure, 1893) (female): **A**, thorax and first abdominal segments, lateral view; **B**, higher magnifications of Krauss's organ. Scale bar: 1 cm. Photo: © H. Tlili.

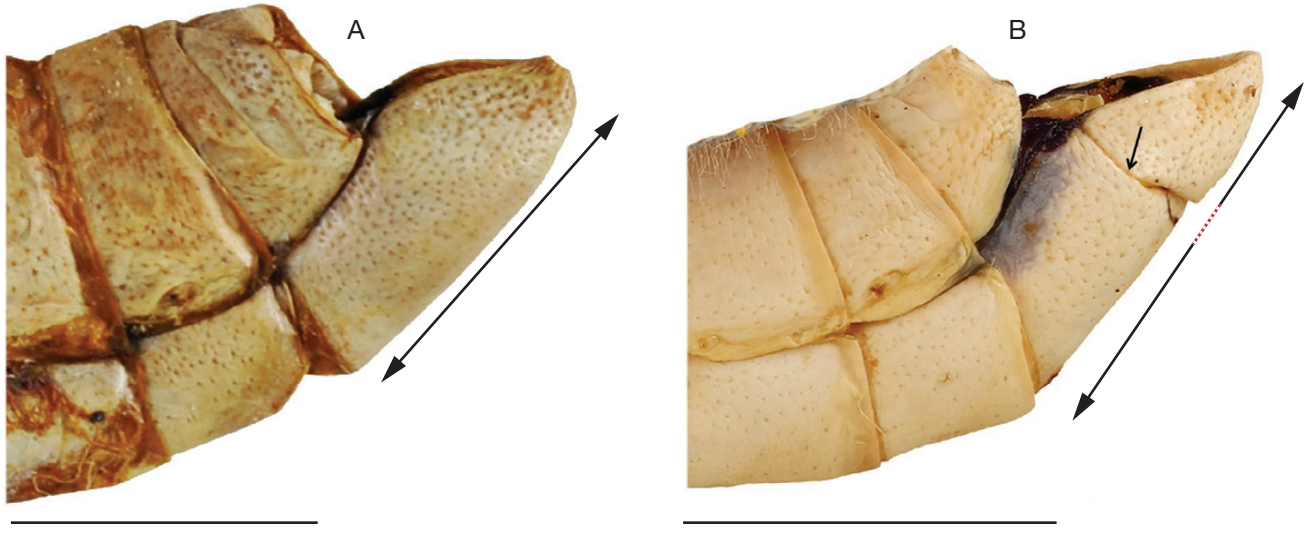

FIG. 93. — Male subgenital plate, lateral view: **A**, *Acinipe algeriensis* Descamps & Mounassif, 1972; **B**, *Paracinipe foreli* (Pictet & Saussure, 1893). Scale bars: 5 mm. Photos: H. Tlili.

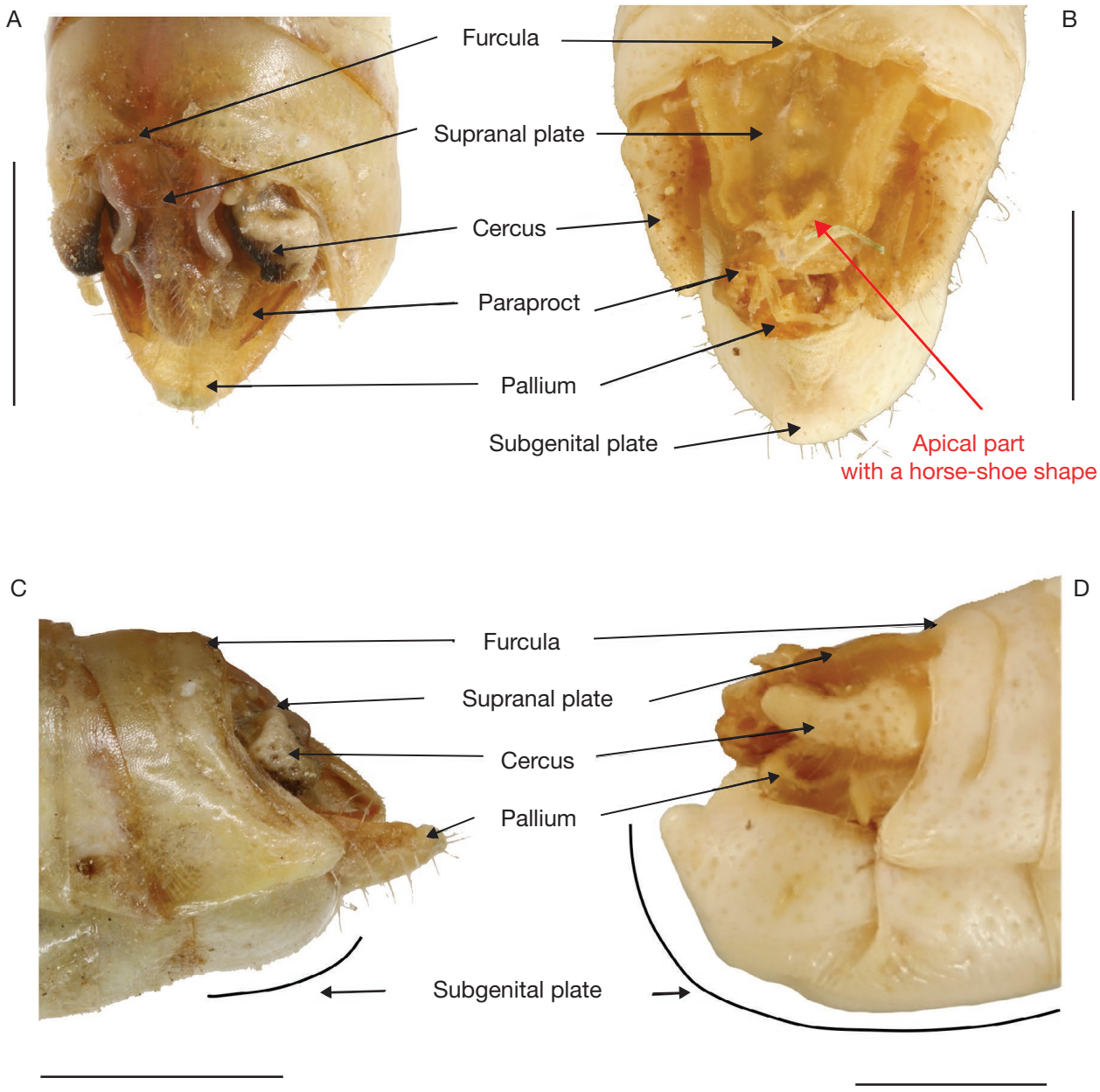

FIG. 94. — Apex of male abdomen: **A**, *Eremogryllus hammadae* Krauss, 1902, dorsal view; **B**, *Sphingonotus* (*Parasphingonotus*) *radioserratus* Johnsen, 1985, dorsal view; **C**, *Eremogryllus hammadae*, lateral view; **D**, *Sphingonotus* (*Parasphingonotus*) *radioserratus*, lateral view. Scale bars: 5 mm. Photos: H. Tlili.

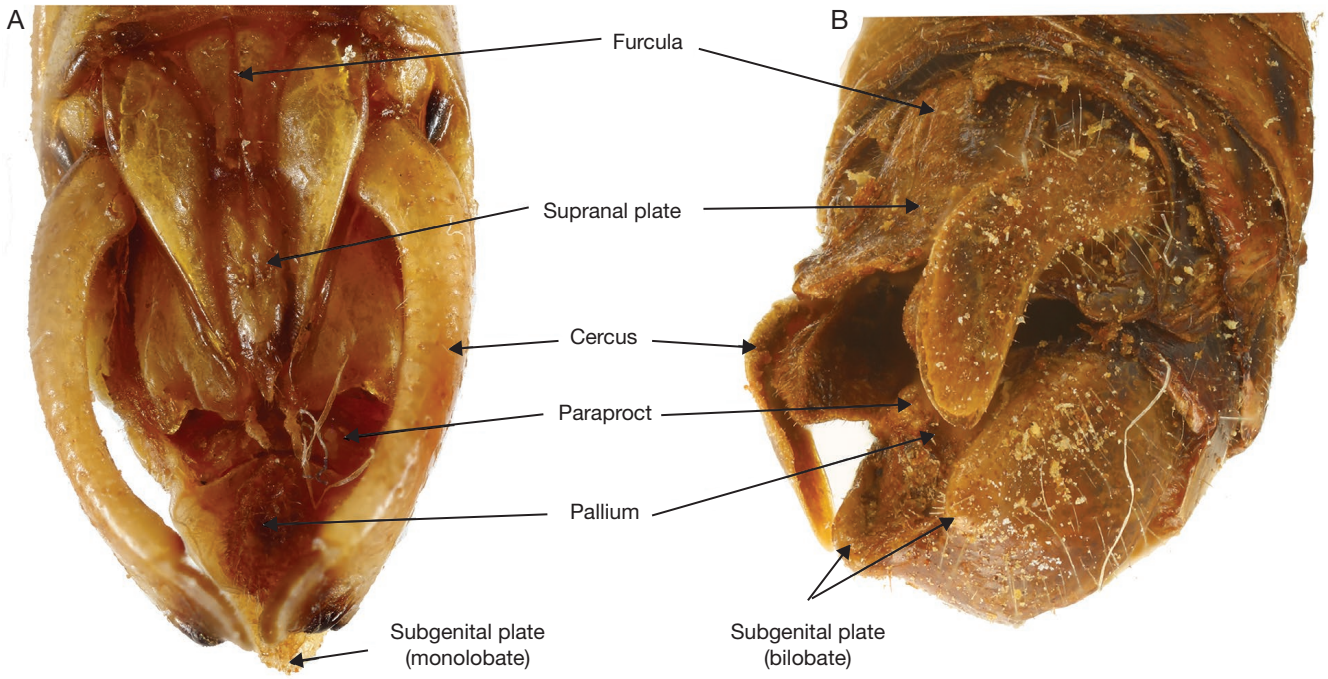

FIG. 95. — Apex of male abdomen: **A**, *Calliptamus barbarus barbarus* (Costa, 1836), dorsal view; **B**, *Heteracris adspersa adspersa* (Redtenbacher, 1889), lateral view. Scale bars: 1 mm. Photos: H. Tlili.

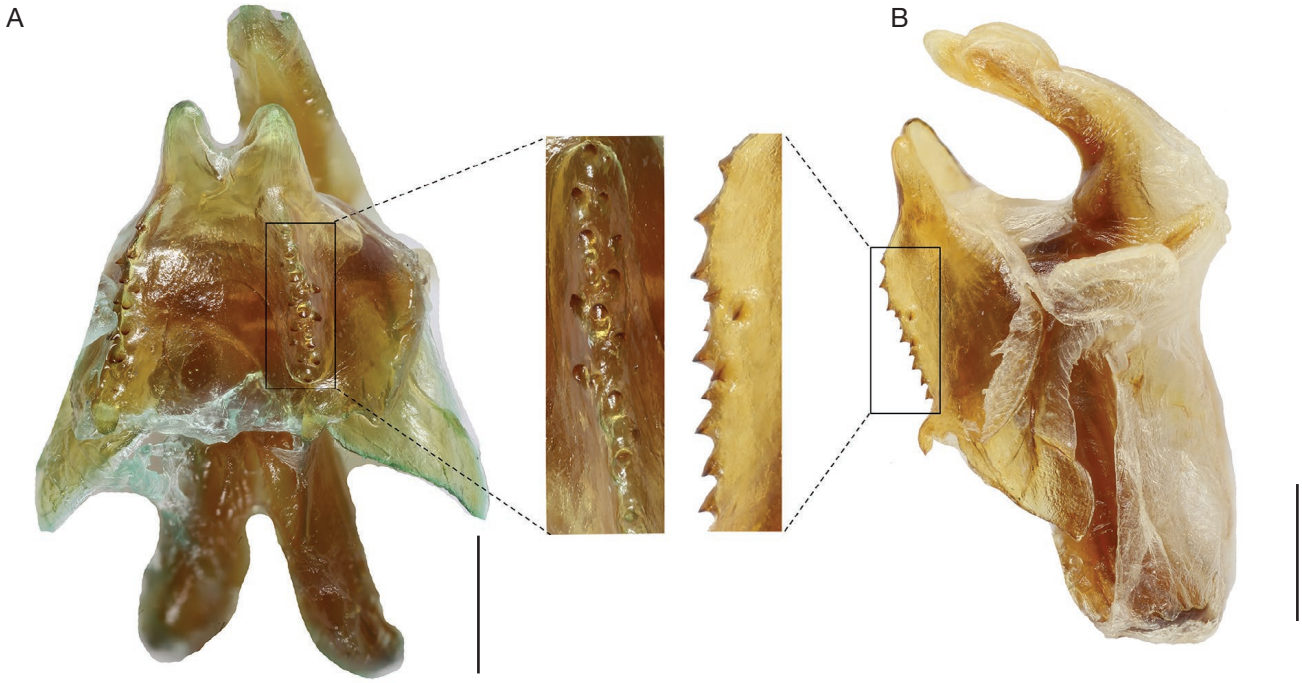

FIG. 96. — Phallic complex of *Paracinipe foreli* (Pictet & Saussure, 1893), dorsal view (**A**), lateral view (**B**). Scale bars: 1 mm. Photos: H. Tlili.

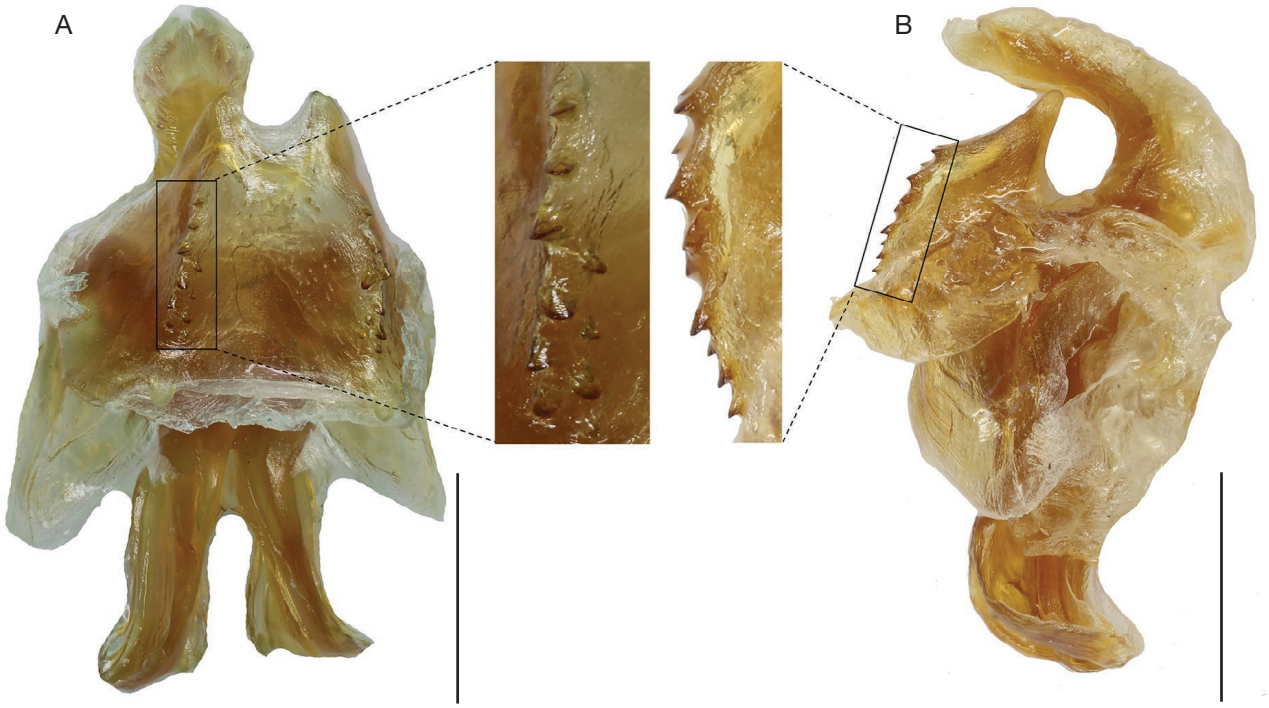

FIG. 97. — Phallic complex of *Paracinipe saharae* (Pictet & Saussure, 1891), dorsal view (**A**), lateral view (**B**). Scale bars: 1 mm. Photos: H. Tlili.

DISCUSSION

The publications from the last 150 years mentioned 83 species of grasshoppers from Tunisia, of which 16 (19%) are recorded from the north only, along the coast and in the Atlas mountains, *Duroniella laurae* (De Bormans, 1885), *Euchorthippus albolineatus albolineatus* (Lucas, 1849), *Chorthippus* (*Glyptobothrus*) *vagans africanus* Nadig, 1981, *Dociostaurus* (*Dociostaurus*) *maroccanus* (Thunberg, 1815), *Omocestus* (*Omocestus*) *lucasii* (Brisout de Barneville, 1850), *Ramburiella* (*Ramburiella*) *hispanica* (Rambur, 1838), *Acrotylus fischeri* Azam, 1901, *Locusta migratoria* (Linnaeus, 1758), *Oedipoda caerulescens sulfurescens* Saussure, 1884, *Oedipoda fuscocincta fuscocincta* Lucas, 1849, *Platypygius platypygius* (Pantel, 1886), *Sphingonotus* (*Neosphingonotus*) *azurescens* (Rambur, 1838), *Sphingonotus* (*Sphingonotus*) *arenarius* (Lucas, 1849), *Sphingonotus* (*Sphingonotus*) *eurasius eurasius* Mistshenko, 1937, *Pezotettix giornae* (Rossi, 1794) and *Pamphagus cristatus* Descamps & Mounassif, 1972 (Finot 1895; Bolívar 1908; Chopard 1943; Massa *et al.* 1993; Massa & Rizzo 1998; Massa 1999; Defaut 2005a; Willemse 2009; Louveaux *et al.* 2020). 67 species (82%) are reported from central and southwestern Tunisia, i.e., only 27% of the area of Tunisia, which we studied in more detail.

Among the 67 species previously reported in this part of the country, we collected and identified 40 species (60%; Table 2). The new data are arranged as follows:

- Six species are newly recorded for Tunisia, i.e., *Egnatioides coerulans*, *Dociostaurus biskrensis*, *Aiolopus puissanti*, *Hilethera aeolopoides*, *Leptopternis rothschildi*, *Tenuitarsus angustus;*
- One species of the 16 known species from North Tunisia is newly recorded from the south, i.e. *Oedipoda fuscocincta fuscocincta*;
- *Sphodromerus decoloratus* Finot, 1894 from Gabes is present in MNHN collection: identified by M. Descamps in 1965, it represents the first and only mention of the genus *Sphodromerus* in Tunisia.
- The presence of *Oedaleus senegalensis* is confirmed in Tunisia. *Oedaleus senegalensis* was cited in the locality of El Guetar for the first time in Tunisia by Vosseler (1902a), and Chopard (1943) mentioned that Krauss (1877) reported it from the same locality. The study of Krauss (1877) deals however with Senegal. And Ritchie (1981), in his taxonomic revision of the genus *Oedaleus*, did not mentioned any specimen cited in the above references. In the present study, we confirm the presence of *Oedaleus senegalensis* in Tunisia, in the very same locality cited by Vosseler (1902a).
- The presence of *Stenohippus mundus* is also confirmed in Tunisia: it was reported from southern Tunisia by Bolívar (1885) as *Stenobothrus bonneti*, and this was the only citation of this species from North Africa. We collected *Stenohippus mundus* in the localities of Amra, El Guetar and Souani Ali.

By contrast, we failed to find 26 (39%) of the 67 previously recorded species in the central and southern Tunisia, even though we sampled the localities from which these species were reported. These are *Truxalis procera*, *Calliptamus desertícola*, *Egnatioides striatus*, *Eremogryllus hammadae*, *Notopleura pygmaea*, *Heteracris adspersa adspersa*, *Heteracris harterti*, *Heteracris minuta*, *Ochrilidia gracilis gracilis*, *Ochrilidia harterti harterti*, *Acrotylus patruelis, Helioscirtus capsitanus capsitanus*, *Helioscirtus gracilis*, *Hyalorrhipis calcarata*, *Mioscirtus wagneri wagneri*, *Sphingonotus* (*Parasphingonotus*) *radioserratus*, *Sphingonotus* (*Sphingonotus*) *vosseleri*, *Thalpomena algeriana algeriana*, *Thalpomena coerulescens*, *Tropidopola cylindrica cylindrica*, *Acinipe algeriensis*, *Acinipe calabra*, *Euryparyphes sitifensis*, *Finotia spinicollis*, *Paraeuryparyphes quadridentatus* and *Pyrgomorpha cognata*.

To our knowledge, our study is the most exhaustive inventory and taxonomic study of Tunisian grasshoppers ever performed. In total, 90 species of grasshoppers are now recorded in the whole Tunisia country. This account will have to be reviewed with further surveys, as we did not, for example, sample high altitude localities (e.g. mountains), the coast and wetlands. According to previous studies (e.g. Usmani 2008), North-West Africa is the most impoverished African region in terms of biodiversity despite the 241 Acridomorpha species recorded today in this territory (Louveau *et al.* 2020; Cigliano *et al.* 2020). Tunisia hosts the lowest grasshopper diversity, with 90 species compared with the neighboring countries (e.g. Morocco 170 species, Algeria 120 species, and Libya 97 species). According to scientific databases for grasshoppers, i.e., *The Grasshoppers from North West Africa* (Louveaux *et al.* 2020) and *The Orthoptera Species File* (Cigliano *et al.* 2020), the number of species described from Tunisia is also the lowest, i.e., 11 species including six endemics, against 130 species including 124 endemics in Morocco, 73 species including 34 endemics in Algeria, and 18 endemic species in Libya. The different rates of endemism can be related directly to the surface and geographic position of those countries in the African continent, and to their landscape diversity (Louveaux & Ben Halima 1986). We surveyed here just one thirds of the landscape of Tunisia, and found two third of the species recorded from the country. More than 60% of Tunisian territory remains to be prospected to get a complete catalog of grasshoppers for Tunisia.

The amount of species that are newly recorded or confirmed for Tunisia attest the efficiency of our sampling strategy. So how could we interpret the fact that we could not found 26 species? The balance between the amount of species that could not be found (39%) and those newly recorded (12%), could suggest that Tunisian grasshopper biodiversity is in decline. Tunisian grasshoppers could actually be negatively impacted by environmental changes (e.g. anthropization, pollution, climate changes) as the whole entomofauna, as shown by previous authors (e.g. Schuch *et al.* 2011; Sánchez-Bayo & Wyckhuys 2019; Phillips *et al.* 2019; Iorio *et al.* 2019).

The impact of environmental changes on species distributions is attested by those species that are positively influenced via the expansion of their habitats. This is the case, for example, for *Acrotylus insubricus insubricus*, which we found in almost all the sites we prospected, except for the desert localities and foothills of the mountains, while it was recorded in the past only in oases (Chopard 1938). The 26 species that we could not find during our prospection in the field, even in localities where they were previously mentioned, could have been

negatively impacted through natural and anthropic changes in the environment, leading potentially to their disappearance, or to their displacement toward other habitat types, or their specialisation to very localized habitats (see Tlili *et al.* 2019a for *Dericorys albidula* for example. Further investigation of all types of habitat from Tunisia are now necessary to check this hypothesis.

More sampling is thus necessary to increase knowledge of Tunisian grasshoppers. The present paper is meant to facilitate further contributions. We focus here on species morphology, but molecular data should also be generated and compared to help taxonomic identification of taxa for which morphological characters are ineffective or insufficient. This long-term task, which must be based on well-documented and preserved specimens, has been initiated in the present study for species belonging to 19 genera, using three different mitochondrial genes e.g. COI, ND2 and H3 (Tables 3, 4). Additional molecular tools, based on high-throughput sequencing of DNA and RNA, are now available to explore the molecular mechanisms underlying morphological biodiversity at varying levels of divergence in African orthopterans (Moussi *et al.* 2018).

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