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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Submitted on 12 May 2020 | Accepted on 6 August 2020 | Published on 15 December 2020

urn:lsid:zoobank.org:pub:ED85BA40-9044-4174-AD62-8782A3A00805

Tlili H., Abdellaoui K., Chintauan-Marquier I.-C., Ben Chouikha M., Moussi A., Ammar M., Desutter-Grandcolas L. 2020. — Checklist and taxonomic updates in grasshoppers (Orthoptera: Caelifera) of central and southwestern Tunisia with new records and a key for species identification. Zoosystema 42 (31): 607-738. https://doi.org/10.5252/zoosystema2020v42a31. http://zoosystema.com/42/31
ABSTRACT
Since the publication of Chopard’s 1943 book, *Les Orthoptéroïdes 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 habitat photographs, geographical distribution, and type of habitat. In total, for the prospectied 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 bisakensis Moussi & Petit, 2014*, *Aiolopus puissanti* Defaut, 2005, *Hilethera aepoaloidei* (Uvarov, 1922), *Leptopternis rothschildi* Bolivar, 1913, and *Tenuitar arus angustus* (Blanchard, 1836); and one species is newly recorded for central and southwestern Tunisia, i.e., *Oedipoda fuscoincta 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 *Stenophippus mundus* (Walker, 1871). DNA sequences (COI, ND2 and H3) are presented for 26 taxa, as a first step towards barcoding all Tunisian caeliferan taxa.

INTRODUCTION
With more than 28000 described species and subspecies distributed worldwide (Cigiano et al. 2020), Orthoptera are considered the most diverse order of polynoteperan 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...
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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 Bolivar, 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. 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, Mehrez; 3, Sbeitla; 4, Awled Mahfoudh; 5, Metkides; 6, Douwara; 7, Sened; 8, El Guetar; 9, Ben Younes Mountain; 10, Anra; 11, Gouiffa; 12, Degache; 13, Souani Ali; 14, Essagui; 15, Rahmet; 16, Chott El Faranig. See Table 1 for locality coordinates.

Bibliographic search

Inventory area
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., Libya, 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; Willemsen 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   | Mehrezza                        | 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 Mahfouch                  | 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  | Gouiffa                         | 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       |

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 (Tili et al. 2019a; Moussi & Tili 2020).

Genitalia were removed and treated using KOH 10% and colored by JBL punktol® Plus 125 (Tili 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/eco/search

NMHN 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

ABBREVIATIONS

Repositories

INAT  Institut National Agronomique de Tunisie, Tunis; INQ  Institut National Agronomique de Querqueville, Douala; Sousse; LSUK  Linncean Society United Kingdom, London; MHNG  Muséum d’histoire naturelle de Genève, Geneva; MCNC  Museo Nacional de Ciencias Naturales, Madrid; MNHN  Muséum national d’Histoire naturelle, Paris; MZLU  Museum of Zoology in Lund, Lund; NMNH  National Museum of Natural History, Washington, D.C.; OUMNH  Oxford University Museum of Natural History, Oxford (ex. UOM); SMNS  Staatliches Museum für Naturkunde, Stuttgart; UUZM  Uppsala University Zoological Museum, 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.
| FAMILY / Subfamily | Genus (Subgenus) | Species                        |
|-------------------|------------------|--------------------------------|
| ACRIDIDAE         |                  |                                |
| Acridinae         | Acrida           | turrita (Linnaeus, 1758) ▼    |
|                   | Duroniella       | lucasii (Bolivar, 1881)       |
|                   | Truxalis         | nasuta (Linnaeus, 1758) ▼    |
|                   |                  | protera Klug, 1830 *          |
| Calliptaminae     | Calliptamus      | barbarus barbarus (Costa, 1836) ▼ |
|                   |                  | desertica (Vossele, 1902)*    |
|                   |                  | wattenwylianus (Pantel, 1896) ▼ |
|                   |                  | decoloratus Finot, 1894**     |
| Sphodromerus       |                  |                                |
| Cyrtacanthacridinae| Anacridium       | aegyptium (Linnaeus, 1764) ▼  |
|                   | Schistocerca     | gregaria gregaria (Forskål, 1775) |
| Egnatiinae        | Egnatioides      | striatus Vossele, 1902*       |
|                   |                  | coerulans (Krauss, 1893)**    |
| Eremogryllinae    | Eremogryllus     | hammadae Krauss, 1902*        |
|                   | Notopleura       | pygmaea Vossele, 1902*        |
|                   |                  | saharica Krauss, 1902         |
| Eyprepocnemidinae | Eyprepocnemis    | plorans plorans (Charpentier, 1825) ▼ |
|                   |                  | adspersa adspersa (Redtenbacher, 1889)* |
|                   |                  | annulosa Walker, 1870         |
|                   |                  | harteri (Bolivar, 1913)*      |
|                   |                  | minuta (Uvarov, 1921)*        |
| Gomphocerinae     | Dociostaurus     | biskrensis Moussi & Petit, 2014** |
|                   | Dociostaurus (Kasakia) | jagoi jagoi Soliani, 1978 |
|                   | Ochrilidia       | gniculata (Bolivar, 1913) ▼   |
|                   |                  | gracilis gracilis (Krauss, 1902)* |
|                   |                  | harteri harteri (Eversmann, 1859)* |
|                   | Stenohippus      | mundus (Walker, 1871) ▼ **    |
| Oedipodinae       | Acrotylus        | insubricus insubricus (Scopoli, 1786) ▼ |
|                   |                  | longipes longipes (Charpentier, 1845) ▼ |
|                   |                  | patreulies (Herrich-Schäffer, 1838)* |
|                   | Aiolopus         | puissant Defaut, 2005**       |
|                   |                  | strepens strepens (Latreille, 1804) |
|                   | Helioscirtus      | capsitanus capsitanus (Bonnet, 1884)* |
|                   |                  | gracilis Vossele, 1902*       |
|                   | Hiletthera       | aeolopoides (Uvarov, 1922)**  |
|                   | Hyalorrhipis     | calcarata (Vossele, 1902)*    |
|                   | Leptopternis     | maculata Vossele, 1902        |
|                   |                  | rothschildi Bolivar, 1913**   |
|                   | Mioscirtus       | wagneri wagneri (Eversmann, 1859)* |
|                   | Oedaleus         | decorus (Germar, 1825)        |
|                   |                  | senegalensis (Krauss, 1877)** |
|                   | Oedipoda         | fuscocincta fuscocincta Lucas, 1849 ▼ ** |
|                   |                  | miniata mauntanica Lucas, 1849 ▼ |
| Scincharista      |                  | notabilis notabilis (Walker, 1870) |
| Sphingoderus      | carinatus (Saussure, 1888) ▼ |
| Sphingonotus (Neosphingonotus) | finotianus (Saussure, 1885) |
|                   |                  | paradoxus Bey-Bienko, 1948    |
|                   | 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)* |
|                   |                  | coeurulescens Uvarov, 1923*   |
| Tropidopolitaniae | Tropidopola       | cylindrica cylindrica (Marschall, 1836)* |
Checklist of grasshoppers in central and southwestern Tunisia

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 (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 3).

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.

| FAMILY / Subfamily | Genus (Subgenus) | Species                  |
|--------------------|-----------------|--------------------------|
| DERICORYTHIDAE      | Dericorys       | albidula Serville, 1838 ▼ |
|                    | Pamphagus       | bodenheimeri dumonti Uvarov, 1929 ▼ |
| PAMPHAGIDAE        | Acinipe         | algeriensis Descamps & Mounassif, 1972* |
|                    | Finotia         | spinicollis Bonnet, 1884* |
|                    | Ocenidina       | nigropunctata (Lucas, 1849) ▼ |
|                    | Pamphagus       | meridionalis Descamps & Mounassif, 1972 |
|                    | Paracinipe      | forell (Pictet & Saussure, 1893) ▼ |
|                    | Paraeurypharynx | quadridentatus (Brisout, 1852)* |
| Thrinchninae       | Tmethis         | cisti (Fabricius, 1787) ▼ |
|                    | Tuarega         | insignis (Lucas, 1851) ▼ |
| PYRGOMORPHIDAE     | Pyrgomorpha     | cognata Krauss, 1877* |
|                    | Tenuitarsus     | conica (Olivier, 1791) ▼ |
| TETRIGIDAE         | Paratettix      | meridionalis (Rambur, 1838) |

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               |
|-----------------------|--------------------------|--------------|-----------|------------|------------------|------------------|-----------------------|
| COI                   | LCO1490-GGTCACAACACATCATAACATAAGATATGG HCO12198 - TAAACTTCAGGGGTGACCAAAAATCAA  | 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 |
| ND2                   | ND2A - CGTTGATGATAGGAACGTACC ND2B - GGTGTCTAATTGATGATTGATGC  | 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 |
| H3                    | H3AF - ATGGCTCGTACCAACAGCAAGCACGCACGC H3AR - ATATCCCTTTGGCGATGATGACG  | 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 |

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 bp | ND2 H3 |
|--------------------|------------------|---------|----------------|--------------------------|----------|--------|--------|
| **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| HT_Cbar03       | MNHN-EO-CAELIF7624/F   | Gafsa    | 645    | –      |
|                    |                  | wattensyanus | HT_Cwat04 | MNHN-EO-CAELIF7625/F | Kasserine| 675    | –      |
| Cyrtacanthacridinae| Anacridium       | aegyptrum| HT_Aaeg05       | MNHN-EO-CAELIF7626/F   | Kasserine| 679    | –      |
| Eypreporstimeniinae| Eypreporstimeni | plorans plorans | HT_Epl06 | MNHN-EO-CAELIF7627/F | Tozeur   | 656    | –      |
| Gomphocerinae      | Ocrilliida       | geniculata | HT_Ogen10 | MNHN-EO-CAELIF7628/F | Gafsa    | 651    | –      |
|                    | Stenohippus      | mundus  | HT_Ealb09       | MNHN-EO-CAELIF7629/F   | Gafsa    | 658    | –      |
| Oedipodinae        | Acrotylus        | insubricus insubricus | HT_Ains11 | MNHN-EO-CAELIF7630/F | Gafsa    | 654    | –      |
|                    | Oedipoda         | fuscocincta| HT_Ofed17     | MNHN-EO-CAELIF7631/M   | Kasserine| 656    | –      |
|                    | Pamphagus        | bodenheimeri | HT_Pbod26 | MNHN-EO-CAELIF7632/F | Tozeur   | 673    | 330    |
| **DERICORYTHIDAE** | Dericorythus     | albigula | HT_Dalb34       | MNHN-EO-CAELIF7633/F   | Tozeur   | 667    | 323    |
|                    | Pamphagulus      |         |                |                          |          |        |        |
| **PYRGOMORPHIDAE** | Pygromorphinae   | conica  | HT_Pcon32       | MNHN-EO-CAELIF7634/F   | Gafsa    | 663    | –      |
|                    | Tenulitarsus     | angustus| HT_Tang33       | MNHN-EO-CAELIF7635/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 turrita* 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.

*Tryxalis nasuta* — Finot 1895: 411.

**Acrida turrita uvarovi** Bolivar, 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 (Masa 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); Gomes (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. Tili, pers. obs).

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

**Genus Duroniella** Bolivar, 1908

*Duroniella lucasi* (Bolivar, 1881) (Fig. 4)

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**Phleoba (Duroniella) lucasi** Bolivar, 1881: 502.

**Phleoba (Duroniella) lucasi** — Bonnet & Finot 1885: 213.

**Duroniella lucasi** — Krauss 1890: 260.

**Phleoba lucasi** — Finot 1895: 417.

**Duroniella (Phleoba) lucasi** — Vosseler 1902a: 354.

**Duroniella lucasi** — Kirby 1910: 140.

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

TYPE SPECIMEN. — **Algeria** • σ; 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. Tili; 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. Tili, pers. obs).

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

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**Genus Truxalis** Fabricius, 1775

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

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**Gryllus Acrida nasuta** Linnaeus, 1758: 427.

**Truxalis nasuta** — Fabricius 1775: 279.

**Gryllus nasutus** — Poirét 1879: 309.

**(Acrida) Truxalis nasuta** — 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.

**Truxalis nasuta** — Charpentier 1841: 305.

**Truxalis nasuta** — Fischer von Waldheim 1846: 230.

**Truxalis unguiculata** — Fischer 1853: 301.

**Acrida nasuta** — Stål 1873: 99.

**Truxalis nasutus** — Bonnet & Finot 1885: 211.

**Truxalis (Acridella) unguiculata** — Bolivar 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** • σ, ♀; 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. Tili; MNHN-EO-CAELIF4656 • 1 ♀; same data; MNHN-EO-CAELIF4657 • 2 ♀; 2 ♀; Gafsa Douwara; 20.VII.2016; H. Tili; 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 new sequences 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.
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 discoioides 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 siculus – 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. Tili; MNHN-EO-CAELIF4658 • 5 ♂, 4 ♀; same data; INAT • 1 ♂ 1 ♀; same data; ISA-CM • 1 ♂; Kasserine, Sbeitla; 5.VIII.2016; H. Tili; INAT • 1 ♀; Gafsa Sened; 17.VII.2016; H. Tili; 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. Tili, pers. obs).

Remarks. – The genus Calliptamus showed significant pullulations in Kasserine, which resulted in enormous damage, especially on apple and olive trees (H. Tili, 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; Laghouat; SMNS.

Distribution. – Morocco (Defaut & Francois 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. Thieron; 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); Sirio; 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).
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* ♀, ♂ holotype; Biskra; W. Brunner MNHN-EO-CAELIF75; ♀; same data; M. Noualhier; MNHN-EO-CAELIF75.

Tunisia ♀; Gabes; MNHN-EO-CAELIF76 • 1 ♀; same data; M. Noualhier; MNHN-EO-CAELIF76.

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 *Cytacanthacridinae* 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 – Bolivar 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 (Willense 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).

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* ♀; Tozeur, Degache; 29.XI.2016; H. Tlili; INAT • 1 ♀; same data; MNHN-EO-CAELIF4661 • 1 ♀; same data; INAT • 1 ♀; same data; ISA-CM.

New data for central and southwestern Tunisia. — Gabes, Gafsa; Sened; Douiret (Ammar 2009).

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: 346. — Chopard 1943: 327.

Type specimen. — *Algeria* ♂ unspecified; syntypes; Djelfa; SMNS.

Distribution. — Morocco (Defaut 1984); Algeria (Moussi et al. 2011); Tunisia (Vosseler 1902a); Libya (Massi 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. Defaout; 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.—None.

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

Subfamily Ereomoropini Dirsh, 1956

Genus Ereomoropus 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. — Bolivar 1915: 34. — Chopard 1943: 280.

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

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

Data from literature for central and southwestern Tunisia.—Gafsa (Vosseler 1902a, b; Bolivar 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. — Bolivar 1915: 34. — Chopard 1943: 279.

Type specimen.—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; Bolivar 1915; Chopard 1943).

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.—None.

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

Subfamily Eyprepocnemiinae Brunner von Wattenwyl, 1893

Genus Eyprepocnemis Fieber, 1853

Eyprepocnemis plorans plorans (Charpentier, 1825)

(Fig. 18)

Eyprepocnemis plorans plorans (Charpentier, 1825): 134. — Costa 1836: 7.

Acridium plorans — Costa 1836: 7.

Eyprepocnemis plorans — Fieber 1853: 98.
Euprepocnemis plorans – Stål 1876: 16. — Finot 1895: 541. — Chopard 1943: 407.

Euprepocnemis 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 (Willemsen 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.

Thisiocetrus 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; Abelle de Petrin 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.

Thisiocetrus brevipes Bolivar, 1936: 416.

Thisiocetrus 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-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 (Bolivar, 1913)*
(Fig. 21)

Thisiocetrus harterti Bolivar, 1913: 614. — Chopard 1943: 410.

Thisiocetrus littoralis harterti – Uvarov 1923b: 76.

Thisiocetrus littoralis littoralis Bolivar, 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. Dumo; 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)

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

Thioicetrus littoralis minuta – Uvarov 1923b: 77.

Thioicetrus littoralis minuta – Uvarov 1939: 382.

Heteracris littoralis minuta – Dinh 1958: 53.

Heteracris minuta – Dinh 1958: 53.

Heteracris minuta – Tunisia 1973: 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-CAELIF4666.

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-CAELIF7102 • 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 – Blondheim 1987: 127.

Dociostaurus (Dociostaurus) jagoi – Defaut 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-CAELIF4666 • 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 Salí, 1925: 289.

Platypterna pruinosa agedabiae Salí, 1928: 244.

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

Type specimen. — Algeria • ♂; lectotype (Jago 1977); El Golea; MNHN-EO-CAELIF995.

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. — Tunisía • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tili; 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.VI.2016; H. Tili; 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 Degace (Tozeur) at the herbaceous layer (without economic importance) (H. Tili, 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)

Ochrilidia gracilis (Krauss 1902: 36). — Waddies and depressions (Maxwell-Darling 1934). — Very common in clumps of grasses (Chopard 1950).

Stenobothrus mundus (Walker, 1871)**

(Fig. 28)

Stenobothrus mundus Walker, 1871: 79.

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

Stenobothrus bonneti Bolivar, 1885: 116. — Finot 1895: 425. — Vossler 1902b: 5.

Omocestus bonneti — Kirby 1910: 172.

Stauroderus nigrovittatus — Kirby 1910: 180.

Dociostaurus mundus — Kirby 1914: 119.

Stauroderus bonneti — Bolivar 1915: 33.

Stenobothrus mundus — Uvarov 1926c: 425.

Stenobothrus epacromioides var. nigrovittata — Uvarov 1926c: Ibid. 425.

Stenobothrus 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); Chott Fedjej; same data; 04.X.1950; MNHN-EO-CAELIF404 • 1 ♂; Tilrempt; 09.V.1950; MNHN-EO-CAELIF405 • 1 ♂; Tozeur; 4.IX.1929; C. Dumont; MNHN-EO-CAELIF3783.

New data for central and southwestern Tunisia. — Gafsa, El Guetar, Tozeur; 4.IX.1929; C. Dumont; MNHN-EO-CAELIF4671.

Material examined. — Tunisía • 1 ♂; Tozeur; 30.IV.2017; Anyima; 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.VI.2016; H. Tili; INAT.

New data for central and southwestern Tunisia. — Gafsa, El Guetar, Tozeur, Souani Ali; Kebili, Rahmet.

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

Stenobothrus mundus Walker, 1871: 79.

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

Stenobothrus bonneti Bolivar, 1885: 116. — Finot 1895: 425. — Vossler 1902b: 5.

Omocestus bonneti — Kirby 1910: 172.

Stauroderus nigrovittatus — Kirby 1910: 180.

Dociostaurus mundus — Kirby 1914: 119.

Stauroderus bonneti — Bolivar 1915: 33.

Stenobothrus mundus — Uvarov 1926c: 425.

Stenobothrus epacromioides var. nigrovittata — Uvarov 1926c: Ibid. 425.

Stenobothrus 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); Chott Fedjej; same data; 04.X.1950; MNHN-EO-CAELIF404 • 1 ♂; Tilrempt; 09.V.1950; MNHN-EO-CAELIF405 • 1 ♂; Tozeur; 4.IX.1929; C. Dumont; MNHN-EO-CAELIF3783.

New data for central and southwestern Tunisia. — Gafsa, El Guetar, Tozeur; 4.IX.1929; C. Dumont; MNHN-EO-CAELIF4671.
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. — Bolivar 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 (Willemsen et al. 2018).

Data from literature for central and southwestern Tunisia. — Recorded from the center to the north of Tunisia (Krauss 1892a; Finot 1895; Bolivar 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, Essaguì; 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, Douvera; 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 Gouïfa 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 – Ott 1995: 320.

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

Distribution. — Southeastern Europe, Africa, and southwestern Asia (Willemsen 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 Bourekbah, Graîfa, Gafsa (Vosseler 1902a); Maknassy (Chopard 1943).

Material examined. — Tunisia • 1 ♀; Kebili, Essaguì; 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, Douvera; 27.VI.2016; H. Tlili • 1 ♂; 1 ♀; same data; ISA-CM • 1 ♀; same data; INAT • 1 ♂; 1 ♀; Gafsa, Douvera; 27.VI.2016; H. Tlili • 1 ♂; 1 ♀; same data; ISA-CM.

New data for central and southwestern Tunisia. — Kebili, Essaguì; Gafsa, Sened; Gafsa, Douvera.

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 Bou; MNHN-EO-CAELIF468.

Senegal • 1 ♀; Ferlo; VIII.1970; M. Lepage; MNHN-EO-CAELIF9109.

Central African Republic • 1 ♂; Maboke; 22.XII.1967; P. Teocchi; MNHN-EO-CAELIF9108.

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 puissantii* Defaut, 2005**

(Fig. 32)

*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. Tili; MNHN-EO-CAELIF4679 • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tili; 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 puissantii* almost always coexists in the same habitat with *Aiolopus strepens strepens* (H. Tili, 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)

*Acrsidium strepens* Latreille, 1804: 154.

*Acrsidium vittatum* Brullé, 1840: 78. — Finot 1895: 422.

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

*Epacromia strepens* — Bolivar 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 (Willems 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. Tili; MNHN-EO-CAELIF4681 • 1 ♂; Tozeur, Souani Ali; 31.III.2016; H. Tili; 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 capitanus capitanus* (Bonnet, 1885)*

(Fig. 34)

*Bryodema capitanana* Bonnet, 1884: 548.

*Helioscirtus capitanus* — Bonnet & Finot 1885: 213. — Vosseler 1902a: 366.

*Vosseria capitanana* — Uvarov, 1923d: 30.

*Helioscirtus capitanus capitanus* — 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.

*Vosseria 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); Neftzaoua (Chopard 1943).

*Material examined.* — **Tunisia** • 1 ♂; Kebili, Neftzaoua; 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)

*Vosseria aeolopoides* — Uvarov, 1922: 359.

*Type specimen.* — Sultanate of Oman • ♀; holotype; Muscat; NHM.
**Hyalorrhipis calcarata** (Vosseler, 1902)*

(Fig. 37)

_Hyalorrhipis calcarata_ — Kirby 1910: 280. — Massa & Rizzo 1998: 286.

**Type specimens.** — Algeria • ♂; holotype: Bou Saada; SMNS.

**Distribution.** — Morocco (Chopard 1943), 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-E0-CAELIF486.

Algeria • 1 ♀; Beni Ounif; VI.1942; Karsakoff; MNHN-E0-CAELIF9112.

Sudan • 1 ♀; III.1895; Mourad; MNHN-E0-CAELIF9113.

**New data for central and southwestern Tunisia.** — None.

**Habitat.** — Desert environment (Chopard 1943).

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**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 & Rizzo 2008); Tunisia (Moussi et al. 2013); Kazakhstan, Turkmenistan (Huang et al. 2008); Iran (Hodjat et al. 2013).

**Data from literature for central and southwestern Tunisia.** — Tozeur (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-E0-CAELIF9114.

Algeria • 1 ♀; Bou Saada, Oued El Maitar; 17.X.1954; H. Maurel & R. Plassquier; MNHN-E0-CAELIF493.

**New data for central and southwestern Tunisia.** — Gafsa, Douwara.

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

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**Genus Mioscirtus Saussure, 1888**

**Mioscirtus wagneri wagneri** (Eversmann, 1859)*

(Fig. 40)

_Oedipoda wagneri_ Eversmann, 1859: 145.

_Scintarista wagneri_ — Saussure 1888: 121.

**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-E0-CAELIF4686 • 1 ♀; same data; MNHN-E0-CAELIF4687.

**New data for central and southwestern Tunisia.** — Gafsa, Douwara; Tozeur, Gouiffa.

**Habitat.** — This species lives in desertic sands and desertic steppe (H. Tlili, pers. obs.).
Habitat. — This species lives in an environment characterized by halophilic plants (Moussi et al. 2011).

Genus Oedaleus Fieber, 1853

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

Acridium decorum Germain, 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 (Willemsen et al. 2018).

Data from literature for central and southwestern Tunisia. — Gafsa (Vosseler 1902a).

Material examined. — Tunisia • 1 ♀; Gafsa, Douwara; 20.VII.2016; H. Tili; MNHN-E-O-CAELIF4689 • 1 ♀; Tabarka; 5.VII.1889; MNHN-E-O-CAELIF2596.

Algeria • 1 ♂; Oran, 5.VII.1979; MNHN-E-O-CAELIF9115.

New data for central and southwestern Tunisia. — Gafsa, Douwara.

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

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

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

Type specimen. — Senegal • ♂; neotype (Ritchie 1981); St Louis; NHM.

Distribution. — North Africa (Chopard 1943; Massa 2009; Dufour & 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. Tili; MNHN-E-O-CAELIF4688 • 1 ♂; same data; MNHN-E-O-CAELIF7095 • 1 ♀; same data; MNHN-E-O-CAELIF7096 • 1 ♂; Gafsa, El Guetar; 30.IV.2017; H. Tili; MNHN-E-O-CAELIF7032 • 1 ♀; same data; 25.V.2017; H. Tili; MNHN-E-O-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. Tili, pers. obs.).

Remarks. — Chopard (1943) mentioned that Oedaleus 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 fuscocincta — Walker 1870a: 737. — Bonnet & Finot 1885: 216. — Krauss 1892a: 148. — 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; Vosseler 1902a; Chopard 1943; Massa & Rizzo 1998).

Material examined. — Algeria • 1 ♂; holotype; H. Lucas; MNHN-E-O-CAELIF411.

Tunisia • 1 ♂; Gafsa, Ben Younes Mountain; 17.VII.2016; H. Tili; MNHN-E-O-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. Tili, 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 • ♀; 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. — Gafsa, Ben Younes Mountain, El Guetar.

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

Genus Scintharista Saussure, 1884

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

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

Oedipoda notabilis Walker, 1870a: 745.

Oedipoda brullei Saussure, 1884: 148.

Quiroguesia miniata – Bolivar 1886: 516.

Quiroguesia brullei – Saussure 1888: 52.

Quiroguesia notabilis – Kirby 1910: 217.

Scintharista notabilis – Willems 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, Merkides; 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, Sbeïra; 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, Sbeïra; Gafsa, Merkides; Tozeur, Degache; Kebili, Essagui.

Habitat. — Generally, Scintharista notabilis notabilis occurs in dry mountain and stony places (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 lucasi* (Bolivar, 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. Tili.
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. Tili.
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. Tilli.
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 *Egnatoides 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. Tili.
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. Tilli.
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. Tilli.
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. Tili.
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 *Dociostraous (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 (Bolivar, 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. Tili.
Fig. 26. — Habitus of Ochrilidia gracillii gracillii (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. Tili
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. Tili.
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 Oue, 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. Tili.
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. Tili.
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. Tilli.
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 Bolivar, 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. Tilić.
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. Tili.
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 mauretanica 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. Tili.
Fig. 45. — Habitus of Scinthurista 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 caninatus (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. Tili.
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. Tili.
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. Tili.
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. Tili.
Fig. 51. — Habitus of *Sphingonotus* (*Sphingonotus*) lucasi 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. Tili.
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. Tili.
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 Pamphagus 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. Tili.
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. Tili.
Fig. 64. — Habitus of *Eunaparyphes 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 *Finota 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. Tili.
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. Tili.
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 *Paracinpe 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 *Paraerumparyphes 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. Tili.
Fig. 72. — Habitus of *Tnethis 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. Tili.
Fig. 74. — Habitus of Pyrgomorpha cognata Krauss, 1877: A, B, female from Trarza, Mauritania, 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. Tili.
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. Tili; MNHN-EO-CAELIF4699 • *2♀*; same data; INAT. *Algeria* • *1♂*; Algiers, Hammam Melouane; 5.X.1954; C. A, H. Maurel & R. Pasquier; 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. Tili; MNHN-EO-CAELIF7083 • *1♂*; same data; MNHN-EO-CAELIF7074.

**New data for central and southwestern *Tunisia*.** — Tozeur, Gouiffa, Degache.

**Habitat.** — Very abundant in desertic steppe (H. Tili, 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, 1870a: 2300.
*Oedipoda baltecta* – Walker 1870a: 736 (misidentification rectified by *Johnston* 1956: 486).
*Sphingonotus baltecta* – *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); *Sinai*; 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. Tili; MNHN-EO-CAELIF4703 • *1♀*; same data; MNHN-EO-CAELIF4704 • *4♀*; same data; INAT • *1♀*; Gafsa, Douwara; 20.VII.2016; H. Tili; INAT.

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

**Habitat.** — Sub desertic areas (H. Tili, 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.
Sphingonotus (Sphingonotus) lucasii Saussure, 1888 (Fig. 51)

*Sphingonotus azurens* 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** Bolivar, 1936: 404.

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

**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 ♀; holotype; 1802; Bové; MNHN-E0-CALIF438.
*Egypt* ♀ 1 ♀; holotype; 1802; Bové; MNHN-E0-CALIF438.
*Tunisia* ♀ 1 ♀; Tozeur, Degache; 29.IV.2017; H. Tlili; MNHN-E0-CALIF4707 ♀ 1 ♀; same data; MNHN-E0-CALIF4708 ♀ 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, Gouïf, Tlili et al. 2019a).

**MATERIAL EXAMINED.** — *Tunisia* ♀ 1 ♀; Gafsa, Jebel Ben Younes; 01.IV.2017; H. Tlili; MNHN-E0-CALIF4709 ♀ 1 ♀; same data; MNHN-E0-CALIF4710 ♀ 1 ♀; same data; 26.IV.2019; MNHN-E0-CALIF4707 ♀ 1 ♀; same data; MNHN-E0-CALIF4706 ♀ 1 ♀; same data; MNHN-E0-CALIF47077 ♀ 1 ♀; same data; MNHN-E0-CALIF47078 ♀ 1 ♀; same data; MNHN-E0-CALIF47079 ♀ 1 ♀; same data; MNHN-E0-CALIF47080 ♀ 1 ♀; same data; MNHN-E0-CALIF47081 ♀ 1 ♀; Tozeur, Degache; 29.IV.2016; H. Tlili; MNHN-E0-CALIF4700 ♀ 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.

**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 azurens* – 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** Bolivar, 1936: 404.

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

**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-E0-CALIF4705 ♀ 1 ♀; same data; MNHN-E0-CALIF4706.

**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 (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 (Abusaran 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).
**Pseudosphingonotus savignyi** – Shumakov 1963: 158.
**Sphingonotus** (Sphingonotus) savignyi savignyi – Dey et al. 2018: 170.

**Type specimens.** — **Egypt** • 2 ♂; possible syntypes (Hollier 2012a); MNHN.

**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. Tili; MNHN-E0-CAELIF4701 • 1 ♂; same data; 29.IV.2016: MNHN-E0-CAELIF9118 • 1 ♂; same data; MNHN-E0-CAELIF9119 • 1 ♂; Tozeur, Gouifla; 02.VI.2016; H. Tili; MNHN-E0-CAELIF711 • 4 ♂, 4 ♀; same data; INAT.

**New data for central and southwestern Tunisia.** — Tozeur, Gouifla.

**Habitat.** — Subdesert and desert environment (Chopard 1950, Tili 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. 2018); Tunisia (Dirsh 1949a).

**Data from literature for central and southwestern Tunisia.** — Gabes (Vosseler 1902a; Vosseler 1902b; Massa 1999); Gafsa (Vosseler 1902a; Vosseler 1902b); Tamerza, Mitilaou (Massa 1999).

**Material examined.** — **Tunisia** • 1 ♂; same data; MNHN-EO-CAELIF9120.

**New data for central and southwestern Tunisia.** — None.

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

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**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-E0-CAELIF538.

**Tunisia** • 1 ♂; Beja, Bechouk; 12.II.197; W. Bedou; MNHN-E0-CAELIF712 • 1 ♂; Hammam Lif; 1901; J. de Gaulle; MNHN-E0-CAELIF3777 • 1 ♂; Tunis; 1901; J. de Gaulle; MNHN-E0-CAELIF3778 • 1 ♂; Jendouba, Ain Draham; 1889; S. Seurat; MNHN-E0-CAELIF3779.

**Algeria** • 1 ♂; Oran; 14.II.1880; MNHN-E0-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-E0-CAELIF9120.

**Morocco** • 1 ♂; Sous; 1.VII.1954; C. Rungs; MNHN-E0-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.

**Opomalaricula servillei** Serveille, 1838: 594.

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

**Opomala cylindrica** — Fieber 1853: 98.

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

**Tropidopola cylindrica** — Bolivar 1876: 304. — Chopard 1943: 394.

**Tropidopola obtusa** algeriana Uvarov, 1922: 266.

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**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.
**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); South-eastern Europe (Chopard 1943; Pomares et al. 2005).

**FAMILY DERICORYTHIDAE** Jacobson & Bianchi, 1905

**SUBFAMILY DERICORYTHINAE** Jacobson & Bianchi, 1905

**Genus Dericorys** Serville, 1838

**Dericorys albidula** Serville, 1838

*(Fig. 59)*

**Dericyors 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, Gouiffa, Degache (Tlili et al. 2019a).

**Material examined.** — **Tunisia** • ♀; Tunis, Menzech; 04.III.2016; H. Tlili; MNHN-EO-CAELIF4714 • 1 ♂; same data; 23.III.2017; Khawa, Boughanni; 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 Pamphagus** Uvarov, 1929

**Pamphagus bodenheimeri dumonti** Uvarov, 1929

*(Fig. 61)*

**Pamphagus 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, Gouiffa (Tlili et al. 2019a).

**Material examined.** — **Tunisia** • ♀; holotype; Maknassy; MNHN.**

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

**NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA.** — Tozeur, Gouiffa.

**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*, *Pamphagus bodenheimeri dumonti* Uvarov, 1929 (Dericorythidae: Dericorythinae), *Triairea insignis* (Lucas, 1851) (Pamphagidae: Thrinchinae), *Sphingonotus (Neosphingonotus) paradoxa* (Acrididae: Oedipodinae), *Sphingonotus (Sphingonotus) savignyi* (Acrididae: Oedipodinae) and *S. rubescens rubescens* (Acrididae: Oedipodinae).

**Genus Dericorys** Serville, 1838

**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, Gouiffa; 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, Gouiffa.

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

**REMARKS.** — 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).

**DNA SEQUENCES.** — We generated new sequences for the mitochondrial marker COI (667 bp) and the nuclear marker H3 (323 bp) (Table 4).
Family PAMPHAGIDÆ 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* • ♂; holotype; Laghouat, 1934, L. Chopard; MNHN-EO-CAELIF265.

**Allotype** • ♂; 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* • ♂; Kroumirs; VII.1888; MNHN-EO-CAELIF9123 • ♂; Teboursouk; VII.1892; S. Dedid; MNHN-EO-CAELIF9124.

**New data for central and southwestern Tunisia.** — None.

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

Genus *Euparyphes* Fischer, 1853

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

*Acridium sitifense* Brisout, 1854: LXXI.

*Porthetes sitifensis* – Walker 1871: 56.

*Pamphagus brunneri* Stål, 1876: 34.

*Eunapius brunneri* – Bolivar 1878: 438. – Bonnet & Finot 1885: 341.

*Euparyphes sitifensis* – Finot 1895: 519.

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

**New data for central and southwestern Tunisia.** — None.

**Habitat.** – *Euparyphes 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* • ♂; holotype; Bir Arrach, 1884; E. Bonnet; MNHN-EO-CAELIF239 • ♂; Bir Arrach, 1884; E. Bonnet; MNHN-EO-CAELIF240 • ♂; 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.

*Porthetes nigropunctata* – Walker 1870a: 597.

*Nocarodes nigropunctatus* – Bolivar 1878: 439.

*Porthetes 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 — Bolivar, 1912: 7. — Chopard 1943: 350.
Ocneredia nigropunctata — Bolivar, 1916: 24. — Chopard 1943: 349.
Ocneridia nigro-punctata — Johnston 1956: 76.

Type specimens. — Algeria ♀ «hololectotypus», 9, «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-E0-CAELIF2111 ♀ 1 ♀; same data; «allolectotypus»; MNHN-E0-CEALIF212.

Tunisia ♀ 1 ♀; Kasserine, Mehreza; 26.IV.2016; H. Tlili; MNHN-E0-CAELIF4719 ♀ 1 ♀; same data; MNHN-E0-CAELIF4720 ♀ 1 ♀; same data; MNHN-E0-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 (636 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 Alli mountain, Benj Mountain; El Ayaicha (Descamps & Mounassif 1972; Massa et al. 1993).

Material examined. — Tunisia ♀ 1 ♀; holotype; Feriana; V.1884; E. Bonnet; MNHN-E0-CAELIF14 ♀ 1 ♀; Kasserine, Shebila; 15.IV.2016; M. Mahfoudhi; MNHN-E0-CAELIF7442 ♀ 1 ♀; same data; MNHN-E0-CAELIF7042 ♀ 1 ♀; same data; MNHN-E0-CAELIF7043 ♀ 1 ♀; same data; MNHN-E0-CAELIF7044.

New data for central and southwestern Tunisia. — Kasserine, Shebila.

Habitat. — No observation.

Pamphagus tunetanus Vosseler, 1902 (Fig. 68)
Pamphagus marmonotus 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. — Kerkeniah Island, Sfax (Massa et al. 1993).

Material examined. — Tunisia ♀ ♀; syntype; Djebel (el) Bou Kornien; 9.V.(18)83 (identified as a type of Pamphagus tunetanus Vosseler, 1902 by M. Descamps & Mounassif, 1972 and a type of Acinipe tunetana Chopard, 1943 by M. Descamps, 1972); MNHN-E0-CAELIF22 ♀ 1 ♀; Kasserine, Shebila; 15.IV.2016; M. Mahfoudhi; MNHN-E0-CAELIF4721 ♀ 1 ♀; same data; MNHN-E0-CAELIF4722 ♀ 4 ♀; 1 ♀; same data; INAT ♀ 1 ♀; Kasserine, Mehreza; 26.IV.2016; H. Tlili; MNHN-E0-CAELIF9151 ♀ 1 ♀; same data; INAT.

New data for central and southwestern Tunisia. — Kasserine, Shebila, Mehreza.

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

Genus Paracinipe Descamps & Mounassif, 1972

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

Paracinipe 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 Thalah, Arad, Bir Dellaja, R'dir Tiunit, B. Sidi Ali Ben Hamid, El Guettar, Shkara, Djbera Island (Massa 1996).

Material examined. — Tunisia ♀ ♀; Kebili, Essagui; 28.III.2017; H. Tlili; MNHN-E0-CAELIF4723 ♀ 1 ♀; same data; MNHN-E0-CAELIF4724 ♀ 1 ♀; same data; MNHN-E0-CAELIF7088 ♀ 1 ♀; Gafsa, El Guettar; 30.IV.2017; H. Tlili; MNHN-E0-CAELIF7065.

New data for central and southwestern Tunisia. — Gafsa, El Guettar; 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).
**Paracrinipe saharae** (Pictet & Saussure, 1893) (Fig. 70)

*Pamphagus saharae* Pictet & Saussure, 1893: 293.

*Acinipe saharae* – Kirby 1910: 350.

*Paracrinipe 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, Biskra; 26.IV.1884; E. Bonnet; MNHN-EO-CAELIF2655.**

**NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Type material.**

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

**Subfamily THRINCHINAE Stål, 1876**

*Timethis bieberi*, Fabricius, 1853

**Gryllus cisti** Fabricius, 1787: 237.

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

*Eremobius clavelii* Lucas, 1851: 364.

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

*Timethis pulchripennis* algerica Saussure, 1888: 130.

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

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

*Eremobius clavelii* var. laeviuscula Krauss, 1892a: 149.

*Eremobius clavelii* var. mozabitica Krauss, 1902: 244.

*Timethis cisti barcaeus* Sal fi, 1926: 86.

*Timethis cisti* – Sal fi 1930: 402.

**TYPE SPECIMENS. — 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, 2013); Gafsa (Uvarov 1943; Massa 1994, 2013); Gafsa, Sened, Tamerza (Massa 2013).**

**MATERIAL EXAMINED. — Tunisia • 1 ♂; Gafsa, 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.**

**NEW DATA FOR CENTRAL AND SOUTHWESTERN TUNISIA. — Desert environments (Innes 1929).**

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

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

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**Genus Paraeuryparyphes** La Greca, 1993

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

*Acridium quadridentata* Brisout, 1852: LXVII.

*Acridium quadridentata* – Br isout 1854: LXXII.

*Portheta quadridentata* – Walker 1871: 56.

*Eunapis quadridentatus* – Bonnet & Finot 1885: 341.

*Eunapis numida* Saussure, 1887: 79.

*Eurytaryphantes quadridentatus* – Kirby 1910: 353.

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

**TYPE SPECIMENS. — 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).**
Genus *Tuarega* Uvarov, 1943

*Pyrgomorpha cognata* Krauss, 1877 (Fig. 74)

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

**Type specimens.** — *Senegal* • σ, Ψ; syntypes; Dagana; NMW.

**Distribution.** — North Africa (Chopard 1943; Massa 2009); Sub-Saharan Africa (Mestre & Chiffaud 2006); Southwest Asia (Unal 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; V1929; C. Dumont; MNHN-EO-CAELIF968.

*Algeria* • 1 ♀; Ain Touna; 1929; A. Thery; MNHN-EO-CAELIF9127.

*Mauritania* • 1 ♀; Aftou Faye, Shaya; X.1987; A. Louveaux; MNHN-EO-CAELIF9128.

**New data for central and southwestern Tunisia.** — None.

**Habitat.** — Dry areas (Usmani 2008).

*Pyrgomorpha conica* (Oliver, 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: 7).

*Pyrgomorpha conica* — Bolivar 1904: 452. — Chopard 1943: 338. — Massa & Rizzo 1998: 279.

**Type specimen.** — *France* • Ψ; 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, Bled Segui; Bou Hedma mountain (Massa 1998).

*Pyrgomorpha conica* — Bolivar 1904: 452. — Chopard 1943: 338. — Massa & Rizzo 1998: 279.

**New data for central and southwestern Tunisia.** — Gafsa, Sened, El Guetar, Tozeur, Gafsa; Gabes; Bled Segui; Bou Hedma mountain (Massa 2013).

**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)
Genus *Tenuitarsus* Bolívar, 1904

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

Ommexecha angustum Blanchard, 1836: 624.

Leptosciro angustus – Jacobson & Bianchi 1902: 191.

*Tenuitarsus angustus* – Uvarov 1924: 36.

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

**DISTRIBUTION.** — Morocco (Deffaut & Francoise 2018); Algeria (Zergoun et al. 2019); Libya (Messa 2009); Mauritania, Chad (Mestre & Chiffaud 2006); Egypt (Saussure 1889); Somalia (Chopard 1943); Iraq (Uvarov 1921); 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 • 1 ♂; Coppolani; 25.VIII.1956; C. Runge; 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* Bolivar, 1887

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

T etrix meridionalis Rambur, 1838: 65.

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

*Paratettix meridionalis* – Montrouzier 1855: 111.

*Tetrix meridionalis* – Bolivar 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 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

— 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) ................................................................................................................................................................................ 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 ......................................................... Pamphagidae Burmeister, 1840 ........ 16.

5. Pronotum with a strong crest in the prozona (Fig. 80C); posterior tibia almost arched (Fig. 89A) ........
   .................................................................................................................. Dericorythidae Jacobson, 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 ........................
   .................................................................................................................. Tropidopola cylindrica (Marshall, 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
   carinae 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)
   .................................................................................................................. Acrididae MacLeay, 1821 ........ 15.
   — 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) ................
    .................................................................................................................. Egnatioides Bey-Bienko & Mistschenko, 1951.
    (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 Bolivar, 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 Bolivar, 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) .................... Pantheuryphes La Greca, 1993. (Only one species known in Tunisia, Pantheuryphes 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 and head strongly 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) ............................................................... 26.

22. Size small (9.6-19.3 mm); elytra, wings and tympanum absent .......................... Pamphagus Uvarov, 1929 (only one species known in Tunisia, Pamphagus 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 teguaytum (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 (Forskal, 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 spots (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 Bolivar, 1908 (only one species known in southern Tunisia, Duroniella lucasiai (Bolivar, 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) ......... (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) .................. Tricaxius 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) ........................................
— Median carina with different shape but not tectiform in apical part ........................................ Oedipoda Latreille, 1829 ........ 59.
— Median carina with different shape but not 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) ........................................
— 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 faveolae trapezoidal (Fig. 78E) ........................................ Aiolopus Fieber, 1853 ........ 62.
— Fastigium of vertex above slightly concave, lateral carinula obliterate; fastigial faveolae 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 aeiolopoides (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 ........................................ 42.

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 & Mourassif, 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 millieri 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 (Bolivar, 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 naus (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 (Bolivar, 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 (Bolivar, 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 ................................................................. Docistaurus (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 ................................................................. Docistaurus 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 coeruleus (Krauss, 1893) (Fig. 14).

56. Lateral carena absent; wings colorless ................................. Sphodromerus Stål, 1873.
   — 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 wattenwylitanus (Pantel, 1896) (Fig. 9).

59. Wing brightly colored with pink, with dark fascia .......... Oedipoda miniati Mauritianica Lucas, 1849 (Fig. 44).
— Wing brightly colored with yellowish, with dark fascia .......... Oedipoda fuscicolor fuscoctioca 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 rothschilli Bolivar, 1913 (Fig. 39).

62. Hind wings with a smoky spot at the tip; hind femur thick Aiolopus strepens strepens (Lateille, 1804) (Fig. 33).
— Hind wings without a smoky spot at the tip; hind femur slender ... Aiolopus puisans Defaut, 2005 (Fig. 32).

63. Vertex one and a half times wider than frontal side .......................................................... Helioscirtus capitanus capitanus (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 black 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 praelatus (Herrich-Schäffer, 1838) (Fig. 31).
— Antenna not longer than head and pronotum together; pronotum between first and second sulcus elevated (lateral view), black band on hind wing smaller; arolium between tarsal claws small .......................................................... Acrotylus insularicus insularicus (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 apical) ............................................. 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 Johnson, 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) osii 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 cubital extension towards the base of the hind wing.......................................................... Thalpomena algieriana algieriana (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.
Checklist of grasshoppers in central and southwestern Tunisia

Fig. 79. — Head and pronotum, dorsal view: A, Dociopterus (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, Pygogramma 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 dumontii 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. Tili.

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. Tili.
Fig. 84. — Tegminal cubital vein: **A**, *Hiletthera 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. Tili.
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 mauretanica 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.
A

B

C

D

E

F

G

H

I

J

K

Fig. 88. — Hind leg outer side: A, Pamphagus tunetanus Vosseler, 1902 (female); B, Paracrinipe 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, *Docioctonus (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* Bolivar, 1913 (male); F, *Hyalorhapis calcarata* (Vossele, 1902) (female). Scale bars: 1 mm. Photos: H. Tlili.
Krauss organ
Sternite 2
Sternite 1
Sternite 3
Tergite 2
Tergite 1
Elytra
Pronotum

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.
Furcula

Supranal plate

Cercus

Paraproct

Pallium

Subgenital plate (bilobate)

Subgenital plate (monolobate)

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. Tili.
Fig. 96. — Phallic complex of *Paracinipe foreli* (Pictet & Saussure, 1893), dorsal view (A), lateral view (B). Scale bars: 1 mm. Photos: H. Tili.

Fig. 97. — Phallic complex of *Paracinipe saharae* (Pictet & Saussure, 1891), dorsal view (A), lateral view (B). Scale bars: 1 mm. Photos: H. Tili.
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* (Lucas, 1849), *Chorthippus* (Gypothorbus) *vagus africanus* Nadig, 1981, *Dociciaster* (Dociciaster) *macrocanus* (Thunberg, 1815), *Omocestus* (Omocestus) *lucasi* (Brisout de Barneville, 1850), *Ramburiella* (Ramburiella) *hispanica* (Rambur, 1838), *Acrotylus fischeri* Azam, 1901, *Locusta migratoria* (Linnaeus, 1758), *Oedipoda caerulescens sulfurescens* Suassure, 1884, *Oedipoda fuscovincenta fuscovincenta* Lucas, 1849, *Platypogus platypogus* (Pantel, 1886), *Sphingonotus* (Neophyginotonus) *azurescens* (Rambur, 1838), *Sphingonotus* (Sphinxnotus) *arenarius* (Lucas, 1849), *Sphingonotus* (Sphinxnotus) *eurasius eurasius* (Rossi, 1794) and *Pamphagus cristatus* Descamps & Mounassif, 1972 (Finot 1895; Bolivar 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 coeruleus*, *Dociciaster hibritensis*, *Aliopus pursuantis*, *Hilethera aeolopoides*, *Leptopteris rothschildi*, *Tenuitarsus angustus*;

- One species of the 16 known species from North Tunisia is newly recorded from the south, i.e. *Oedipoda fuscovincenta fuscovincenta*;

- *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 Vosseller (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 mention 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 Vosseller (1902a).

- The presence of *Stenobothrus munda* is also confirmed in Tunisia: it was reported from southern Tunisia by Bolivar (1885) as *Stenobothrus bonneti*, and this was the only citation of this species from North Africa. We collected *Stenobothrus munda* 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 *Tricalis procera*, *Calliptamus deserticola*, *Egnatioides striatus*, *Eremogryllus hammadar*, *Notopleura pygmaea*, *Heteracris adspersa adspersa*, *Heteracris harterti*, *Heteracris minuta*, *Ochridilida gracilis gracilis*, *Ochridilidae harterti harterti*, *Acrotylus patruelis*, *Heliocirsus capitanus capitanus*, *Heliosciuris gracilis*, *Hyalorhipis calcarata*, *Miosciursus Wagneri Wagneri*, *Sphingonotus* (Paraphysungotonotus) *sitovalatus*, *Sphingonotus* (Sphinxnotus) *vesseleri*, *Thalpomena algiriana algiriana*, *Thalpomena coerulescens*, *Tropidopola cylindrica cylindrica*, *Acinope aferanensis*, *Acinope calabria*, *Eurypryphyes sitifensis*, *Finotia spinicollis*, *Puraeupryphyes quadridentatus* and *Pygromorpha 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 albida 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).

Acknowledgements

H. Tlili thanks Dr Philippe Grandcolas, head of “Institut de Systématique, Evolution et Biodiversité” (ISYE), for the possibility to come and work at the MNHN. The Orthoptera Species File Grants support our research in NHMUK (2019, 2020). We also thank Alain Louveaux for constructive comments and his help to check identifications. H. Tlili is indebted to Simon Poulain (CNRS) for facilities on MNHN collections. Our warm thanks also go Dr Ben H. Warren as a native English speaker, for his help improving the manuscript.

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Submitted on 12 May 2020; accepted on 6 August 2020; published on 15 December 2020.