

The Palaearctic types of Chrysididae (Insecta, Hymenoptera) deposited in the Linsenmaier collection. Part 6. Parnopini: genus *Parnopes* Latreille; Chrysidini: genus *Euchroeus* Latreille and *Stilbum* Spinola

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Abstract

An illustrated catalogue of the Palaearctic types of *Parnopes* Latreille, 1797, *Euchroeus* Latreille, 1809 and *Stilbum* Spinola, 1806 described by Walter Linsenmaier is presented. In total, Linsenmaier described one species and one subspecies of *Parnopes*, 24 species and 13 subspecies of *Euchroeus* and eight subspecies of *Stilbum*. Of these, two *Parnopes* taxa, 20 *Euchroeus* and four *Stilbum* are from the Palaearctic region. Primary types of these taxa are deposited in the collection of the Natur-Museum in Luzern, Switzerland, with the sole exceptions of the holotype of *Euchroeus* (*Euchroeus*) *eous* ssp. *arabicus* Linsenmaier, 1994a and of *Parnopes indicus* Linsenmaier, 1968 which are deposited in the collection of the Natural History Museum in London (UK). This catalogue includes the list of the described species, photographs of 24 primary types and a synthesis of the recent changes in the taxonomy of *Euchroeus*.

Key words: Chrysidinae, subgenera, catalogue, cuckoo wasps

Introduction

The present article is the sixth contribution dedicated to the Palaearctic types of Chrysididae deposited in Walter Linsenmaier's (1917–2000) collection currently housed at the Natur-Museum in Luzern (NMLU), Switzerland (Rosa *et al.* 2020a, 2022a, 2022b, 2023a, 2025). An introductory overview of the entire collection was previously published (Rosa *et al.* 2015). Earlier illustrated catalogues focused on *Cleptes* Latreille, 1802 (Rosa *et al.* 2020a), *Hedychridium* Abeille de Perrin, 1878, including the subgenus *Prochridium* Linsenmaier, 1968 (Rosa *et al.* 2022a), *Hedychrum* Latreille, 1802 (Rosa *et al.* 2022b), *Omalus* Panzer, 1801, along with the related subgenera *Omalus* s.str., *Holophris* Mocsáry, 1890, *Philoctetes* Abeille de Perrin, 1879, *Chrysellampus* Semenov-Tian-Shanskij, 1932, and *Elampus* Spinola, 1806 (formerly named *Notozus* Förster, 1853 until Linsenmaier 1994) (Rosa *et al.* 2023a), and *Holopyga* Dahlbom, 1845 (Rosa *et al.* 2025).

Linsenmaier's (1959a, 1968, 1969, 1987, 1994, 1997a, 1999) classification of the genus *Parnopes* and *Euchroeus* was based on subgenera, most of which are treated as valid genera in the classification of Kimsey & Bohart (1991). In particular, Linsenmaier (1959a, 1968, 1987, 1994, 1997a, b, 1999) subdivided *Euchroeus* into the following ten subgenera: *Afrospinolia* Linsenmaier, 1968, *Euchroeus* s.str., *Euchroides* [sic!] Nurse, 1904 (correct spelling: *Euchroeoides* Nurse, 1904), *Gaullea* du Buysson, 1910, *Hyalichroeus* Linsenmaier, 1959a (an objectively invalid name given as replacement name for *Spintharis* Dahlbom, 1854 *nec* *Spintharis* Klug, 1845, currently *Spintharosoma* Zimmermann, 1959), *Polyodontus* Radoszkowski, 1877 (an objectively invalid name, *nec* *Polyodontus* Eysenhardt, 1818), *Primeuchroeus* Linsenmaier, 1968, *Prospinolia* Linsenmaier, 1968, *Pseudospinolia* Linsenmaier, 1951 (currently synonym of *Pseudochrysis* Semenow, 1891), *Spinolia* Dahlbom, 1854, *Stilbichrysis* Bischoff, 1910.

Two additional non-Palaearctic taxa were originally described by Linsenmaier as subgenera of *Euchroeus*

Latreille, but were later considered by him as separate genera: *Neochrysis* Linsenmaier, 1959a, elevated to genus rank by Bohart (1966), and *Neospinolia* Linsenmaier, 1968, resurrected from synonymy with *Pseudospinolia* and upgraded to genus rank by Linsenmaier (1997a).

Species described by Linsenmaier (1968) in the genera *Afrospinolia* (currently considered as a synonym of *Stilbichrysis*) and *Primeuchroeus* fall outside the scope of this paper and are not mentioned here as they do not belong to the Palearctic fauna. *Primeuchroeus* is distributed in the Oriental, African and Afrotropical regions, with only a few species known from the easternmost Palearctic (China and Korea). However, recent fossil discoveries demonstrate that *Primeuchroeus* occurred in Europe during the Late Eocene (34–38 million years ago) (Brazidec *et al.* 2024).

Materials and methods

The present catalogue focuses on the Palearctic taxa described by Linsenmaier (1959a, b, 1968, 1969, 1987, 1994, 1997a, 1999) in the genus *Parnopes* Latreille, 1797, *Euchroeus* Latreille, 1809, and *Stilbum* Spinola, 1806 whose types are deposited at NMLU. Linsenmaier's collection comprises approximately 56,750 specimens, including 622 *Parnopes* specimens belonging to 20 species and two subspecies, 1,996 *Euchroeus* (*sensu* Linsenmaier) specimens belonging to 93 species and 22 subspecies, and 1,257 *Stilbum* specimens belonging to six species and nine subspecies. We follow the classification proposed by Linsenmaier in the mentioned works, with notes on type specimens and synonymies, when necessary. Because Linsenmaier's genus concept differs from that of Kimsey & Bohart (1991), including both genera and several subgenera, for each genus listed in this catalogue we provide Linsenmaier's genus diagnosis. As for previous publications on Linsenmaier's types, this catalogue reports all type specimens deposited in his collection, offering a synthesis of Linsenmaier's fragmented work, accompanied by a commentary when needed.

All data observed for primary and secondary types deposited at the collection are reported here. Species are listed alphabetically according to subgenus and species names, with the following data provided: category of the type, number and sex of specimens, and complete label data as they are written or printed on the labels. A single slash (/) indicates information handwritten on the back of the label, while double slashes (//) separate different labels.

As explained by Rosa *et al.* (2015), Linsenmaier often added a colour label (grey or light blue) between the insects or transparent labels and the locality labels. These colour labels, which typically indicate only a generic locality (e.g. Helvetia, Mongolia, etc.), were added by Linsenmaier for decorative purposes and not to provide any relevant information; therefore, they have been omitted from the list of labels associated with the type specimens.

The header type locality is retained for consistency with previous publications on Chrysidae type specimens, as the original type locality is frequently misreported in the literature. This section also provides additional information on the type material. Linsenmaier was often incomplete in listing all type specimens, likely assuming long lists were unnecessary for common and widespread species. For example, in the case of *Stilbum calens zimmermanni*, Linsenmaier provided the known distribution of the species and a list of examined material but designated only the holo- and allotype as part of the type series. However, his collection contains additional specimens labeled as paratypes from the same localities listed under “material examined”. According to a strict application of the ICZN Code and in accordance with museum policy, these specimens must be regarded as true paratypes under Article 72.4.1.1: “For a nominal species or subspecies established before 2000, any evidence, published or unpublished, may be taken into account to determine what specimens constitute the type series”. In such cases, specimens with paratype labels handwritten by Linsenmaier, bearing the same locality labels and year of description as the holo- and allotype specimens, are considered valid paratypes. We follow Linsenmaier (1968, 1987, 1999) for the geographic concept of “Palestine”, defined as the area currently comprising the modern State of Israel, the West Bank, and the Gaza Strip. In this context, “Palestine” is considered as the geographical region in Western Asia, without any reference to the current political claims by the State of Palestine.

The definitions of holotype, neotype, lectotype, etc. are used in accordance with the International Code for Zoological Nomenclature (ICZN 1999, fourth edition).

The following abbreviations are used: AT (allotype); cat. (catalogue); descr. (description); design. (designation);

diagn. (diagnosis); distr. (distribution); fig. (figure); HT (holotype); pag. (page); PLT (paralectotype); PT (paratype); s. str. (*sensu stricto*); tax. (taxonomic discussion); typ. (discussion on type material).

Photographs of Linsenmaier's types were taken with an Olympus OMD E-M1 Mark II photo camera (Olympus Corporation, Shinjuku, Tokyo, Japan) with the Olympus Zuiko 60 mm objective and a Marumi lens (Marumi Optical Co., Tokyo, Japan) for general habitus and a Mitutoyo plan achromatic lens LWD 5× (Mitutoyo Corporation, Kanagawa, Japan); images were stacked with the Helicon© software (Helicon Soft Ltd., Oakland, CA, USA) and then enhanced with Adobe Photoshop© CS6 (Adobe Inc., San Jose, CA, USA).

Acronyms of museums and collections

MCZL—Musée Cantonal de Zoologie, Lausanne (Switzerland)

MHNG—Muséum d'histoire naturelle, Geneve (Switzerland)

MSNM—Museo Civico di Storia Naturale, Milan (Italy)

MTPC—Marc Tussac private collection (Auvillar, France)

NHMUK—Natural History Museum, London (UK)

NHMW—Naturhistorisches Museum, Wien (Austria)

NMLU—Natur-Museum, Luzern (Switzerland)

Results

Genus *Parnopes* Latreille, 1797

Parnopes Latreille, 1797: 126 (no species included); Latreille, 1802: 317. Type species: *Chrysis carnea* Fabricius, 1775 [= *Parnopes grandior* (Pallas, 1771)], by subsequent designation of Latreille, 1802.

Parnopes s. str. is primarily Holarctic and includes 17 valid species worldwide, with six species occurring in the Palaearctic region (Kimsey & Bohart 1991; Rosa *et al.* 2017a). Two of these, *P. glasunowi* Semenow, 1901 and *P. grandior* (Pallas, 1771), are distributed in Europe, along with another unidentified species closely related to *P. unicolor* Gribodo, 1879 (Rosa *et al.* 2023b).

Below, a short diagnosis of *Parnopes* is given to explain the genus concept *sensu* Linsenmaier (1959a, which is different from Kimsey & Bohart (1991), using subgenera and not genera.

Species of *Parnopes* are large and robust, with body lengths ranging from 7.0 to 15.0 mm. The key morphological features for identifying this genus include: a long tongue with elongate galea and glossa; pronotum with transverse anterior carina interrupted medially and projecting sublaterally; tegula large and subovoid; metanotal projection large, apically truncate to trilobite; propodeal angle broadly triangular and apically acute.

Linsenmaier (1959a, 1999) considered Parnopinae as a distinct subfamily including two genera: *Jsadelphus* Semenow, 1901 and *Parnopes* Latreille, 1797, the latter subdivided in the subgenera *Parnopes* s. str. and *Cephaloparnops* Bischoff, 1910. More recently, this group has been considered a tribe of Chrysidinae by other authors (Kimsey & Bohart 1991; Pauli *et al.* 2019).

Palaearctic species and subspecies of *Parnopes* described by Linsenmaier

Parnopes grandior jemenensis Linsenmaier, 1987

Parnopes indicus Linsenmaier, 1968 (HT at NHMUK)

Catalogue of *Parnopes* types described by Linsenmaier deposited in his collection

Parnopes grandior jemenensis Linsenmaier, 1987

(Figs 1A–F)

Parnopes grandior ssp. *jemenensis* Linsenmaier, 1987: 156 (descr.); 1994: 204 (diagn.).

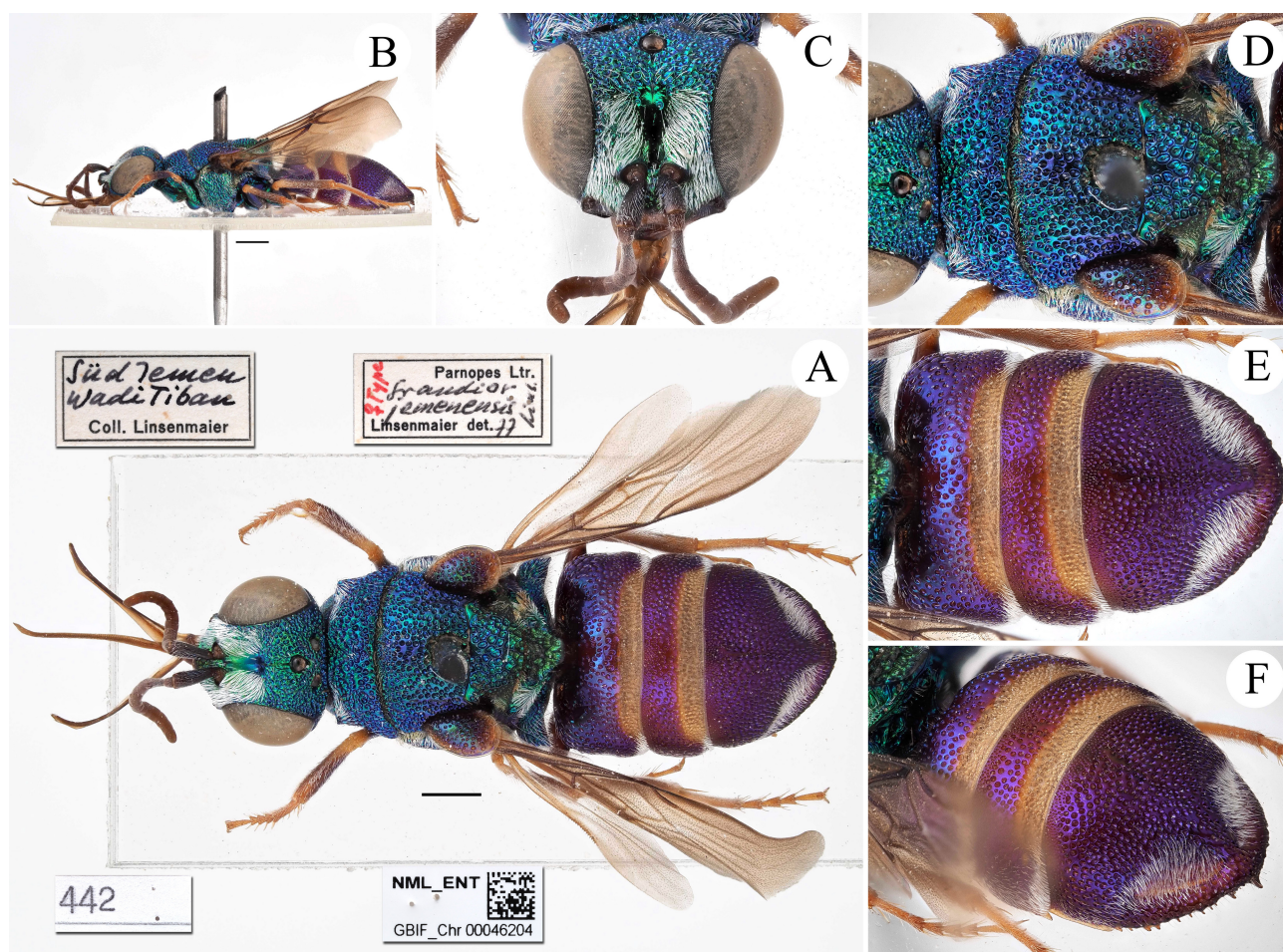


FIGURE 1. *Parnopes grandior jemenensis* Linsenmaier, 1987, holotype, ♀. A) Habitus, dorsal view. B) Habitus, lateral view. C) Head, frontal view. D) Mesosoma, dorsal view. E) Metasoma, dorsal view. F) Metasoma, postero-lateral view. Scale bar 1.0 mm.

Type locality. Yemen: “S. Jemen, Wadi Tiban, ♀ Type Coll. m.”.

Holotype, ♀: Süd Jemen Wadi Tiban Coll. Linsenmaier // ♀ Type *Parnopes* Ltr. *grandior jemenensis* Lins. Linsenmaier det. 77 // 442 // NML_ENT GBIF_Ch00046204.

Parnopes indicus Linsenmaier, 1968

Parnopes indicus Linsenmaier, 1968: 124 (descr.).

Type locality. India: “Indien (T. R. Bell), ohne Ortsangabe, doch wahrscheinlich ein paläarktisches Element [no location specified, but probably a Palearctic element]. ♂ Type, ♀ Allotype und Paratypen im Brit. Museum, Paratypen in Coll. m.”.

Paratypes, 3♂: India T.R. Bell B.M. 1934-394// ♂ Paratype *Parnopes* Ltr. *indicus* Lins. Linsenmaier det. 66 // NML_ENT GBIF_Ch00046244–46246.

Remarks. The type locality of *Parnopes indicus* Linsenmaier, 1968 is uncertain. The collecting labels state only “India T.R. Bell”, but as noted by Linsenmaier (1968), the species appears to be Palearctic rather than Oriental. It is possible that the actual collecting locality was in present-day Pakistan, which at the time of Thomas Reid Bell was still part of India, as also suggested by Rosa *et al.* (2021); for this reason, the species is included in this catalogue. An illustration of the holotype specimen is provided in Rosa *et al.* (2021: fig. 86).

Genus *Euchroeus* Latreille, 1809

Euchroeus Latreille, 1809: 49. Type species: *Chrysis purpurata* Fabricius, 1787: 283 [= *Euchroeus purpuratus* (Fabricius, 1787)], by monotypy.

The genus *Euchroeus sensu* Linsenmaier (1959a, 1968, 1987, 1994, 1997a, b, 1999) is characterized by robust species with large eyes, a narrow scapal basin, elongate mouthparts, an open radial cell, and a similar genital capsule across species with short gonocoxa, stout basally and often with angulate inner margin; the cuspis is broad and frequently strongly lobate. *Euchroeus* is subdivided by Linsenmaier into ten subgenera (see Introduction), and Linsenmaier described new Palaearctic taxa in *Euchroeus s.str.*, *Pseudospinolia* Linsenmaier, 1951 and *Spinolia* Dahlbom, 1854.

The genus *sensu* Linsenmaier includes more than 100 species, 26 in *Euchroeus s.str.*, 33 in *Primeuchroeus*, 20 in *Spinolia*, 17 in *Pseudochrysis* [= *Pseudospinolia*], three in *Stilbichrysis*, and one each in *Gaullea*, *Prospinolia*, *Spintharosoma*. The distribution is primarily Old World, with one *Pseudochrysis* species introduced into the United States. Of these, 60 species occur in the Palaearctic region, 27 in the Australian, 10 in the Afrotropical, four in the Oriental. The single species of *Gaullea* and *Neospinolia* are endemic of the Neotropical region.

Kimsey (1988) and Kimsey & Bohart (1991) considered *Euchroeus* Latreille, 1809 as a synonym of *Chrysis* Linnaeus, 1761 due to a misidentification of the type species *Chrysis purpurata* Fabricius, 1787. They used the name *Brugmoia* Radoszkowski, 1877 as the first available name for this genus. However, the International Commission on Zoological Nomenclature (ICZN 1998, Opinion 1906) set aside the lectotype of *Chrysis purpurata* designated by Kimsey (1988), conserved the name *Euchroeus* Latreille, 1809 on the Official List of Generic Names in Zoology, and conserved the name *Chrysis purpurata* Fabricius, 1787 [currently *Euchroeus purpuratus* (Fabricius, 1787)] on the Official List of Specific Names in Zoology. Consequently, the generic name *Brugmoia* Radoszkowski is to be treated as a synonym of *Euchroeus* Latreille, 1809.

Rosa *et al.* (2017b) proved that the name *Pseudochrysis* Semenow, 1891 has priority over *Pseudospinolia* Linsenmaier, 1951. By applying Art. 67.2.2 (ICZN 1999) and in agreement with the majority of hymenopterologists working on cuckoo wasps, Rosa *et al.* (2017b) recognized that *Chrysura humboldti* Dahlbom, 1845 is the type species of *Pseudochrysis* Semenow, 1891, and proposed the following synonymy: *Pseudospinolia* Linsenmaier, 1951 (type species: *Chrysis uniformis* Dahlbom, 1854) junior subjective synonym of *Pseudochrysis* Semenow, 1891 (type species: *Chrysura humboldti* Dahlbom, 1845). The name *Pseudospinolia* could be resurrected if members of the *P. neglecta* group (which is the oldest species related to *P. uniformis* Dahlbom) will result genetically distinct from members of the *P. humboldti* group.

Palaearctic species and subspecies of *Euchroeus* described by Linsenmaier

- Euchroeus* (*Euchroeus*) *eous arabicus* Linsenmaier, 1994a (NHMUK)
- Euchroeus* (*Euchroeus*) *jordanicus* Linsenmaier, 1968
- Euchroeus* (*Euchroeus*) *moricei bytinskii* Linsenmaier, 1969
- Euchroeus* (*Euchroeus*) *oculatissimus israelicus* Linsenmaier, 1959a
- Euchroeus* (*Euchroeus*) *purpuratus ibericus* Linsenmaier, 1959a
- Euchroeus* (*Euchroeus*) *purpuratus turceyanus* Linsenmaier, 1987
- Euchroeus* (*Pseudospinolia*) *humboldti jerichoensis* Linsenmaier, 1959a
- Euchroeus* (*Pseudospinolia*) *humboldti libanesus* Linsenmaier, 1959a
- Euchroeus* (*Pseudospinolia*) *humboldti sculpturatissimus* Linsenmaier, 1959a
- Euchroeus* (*Pseudospinolia*) *incrassatus paris* Linsenmaier, 1997a
- Euchroeus* (*Pseudospinolia*) *neglectoides* Linsenmaier, 1959a
- Euchroeus* (*Pseudospinolia*) *tricoloricornis* Linsenmaier, 1968
- Euchroeus* (*Spinolia*) *dallatorreanus bicarinatus* Linsenmaier, 1959a
- Euchroeus* (*Spinolia*) *dallatorreanus taurusiacus* Linsenmaier, 1987
- Euchroeus* (*Spinolia*) *hiberus* Linsenmaier, 1987
- Euchroeus* (*Spinolia*) *modicus* Linsenmaier, 1987
- Euchroeus* (*Spinolia*) *pulawskii* Linsenmaier, 1968
- Euchroeus* (*Spinolia*) *rogenhoferi sertavulacus* Linsenmaier, 1987
- Euchroeus* (*Spinolia*) *schlaeflei* Linsenmaier, 1999
- Euchroeus* (*Spinolia*) *schmidti* Linsenmaier, 1987

Catalogue of *Euchroeus* types described by Linsenmaier deposited in his collection

Euchroeus (*Euchroeus*) *jordanicus* Linsenmaier, 1968

(Figs 2A, 3A–F)

Euchroeus (*Euchroeus*) *jordanicus* Linsenmaier, 1968: 46 (descr.); 1969: 355 (distr.).

Type locality. Palestine: “Palästina, ♀ Type, ♂ Allotype von Jericho, leg. Verhoeff, IV.64, in Coll. M.”.

Holotype, ♀: Jordan Plains betw. Jericho and the Dead Sea 7.IV.1964 PMF Verhoeff // ♀ Type *Euchroeus* Ltr. *jordanicus* Lins. Linsenmaier det. 1964 // 223 // NML_ENT GBIF_Chr0013163 (ex type-collection).

Allotype, ♂: Jordan Plains betw. Jericho and the Dead Sea 7.IV.1964 PMF Verhoeff // ♂ Allotype *Euchroeus* Ltr. *jordanicus* Lins. Linsenmaier det. 1964 // NML_ENT GBIF_Chr0013164.

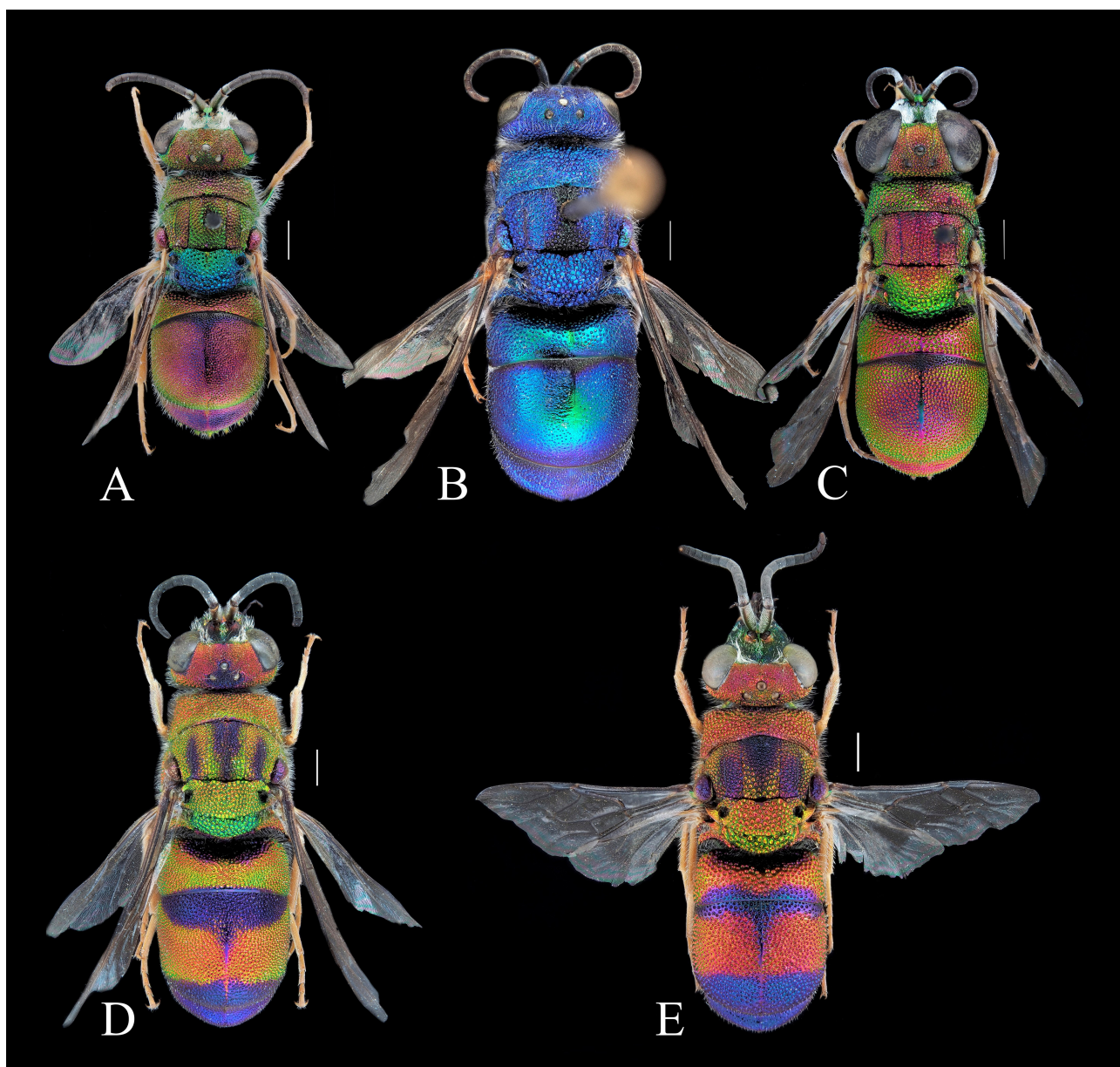


FIGURE 2. *Euchroeus* (*Euchroeus*), dorsal view. A) *E. (E.) jordanicus* Linsenmaier, 1968, holotype, ♀. B) *E. (E.) moricei bytinskii* Linsenmaier, 1969, holotype, ♂. C) *E. (E.) oculatissimus israelicus* Linsenmaier, 1959a, holotype, ♀. D) *E. (E.) purpuratus ibericus* Linsenmaier, 1959a, holotype, ♀. F) *E. (E.) purpuratus turceyanus* Linsenmaier, 1987, holotype, ♀. Scale bar 1.0 mm.

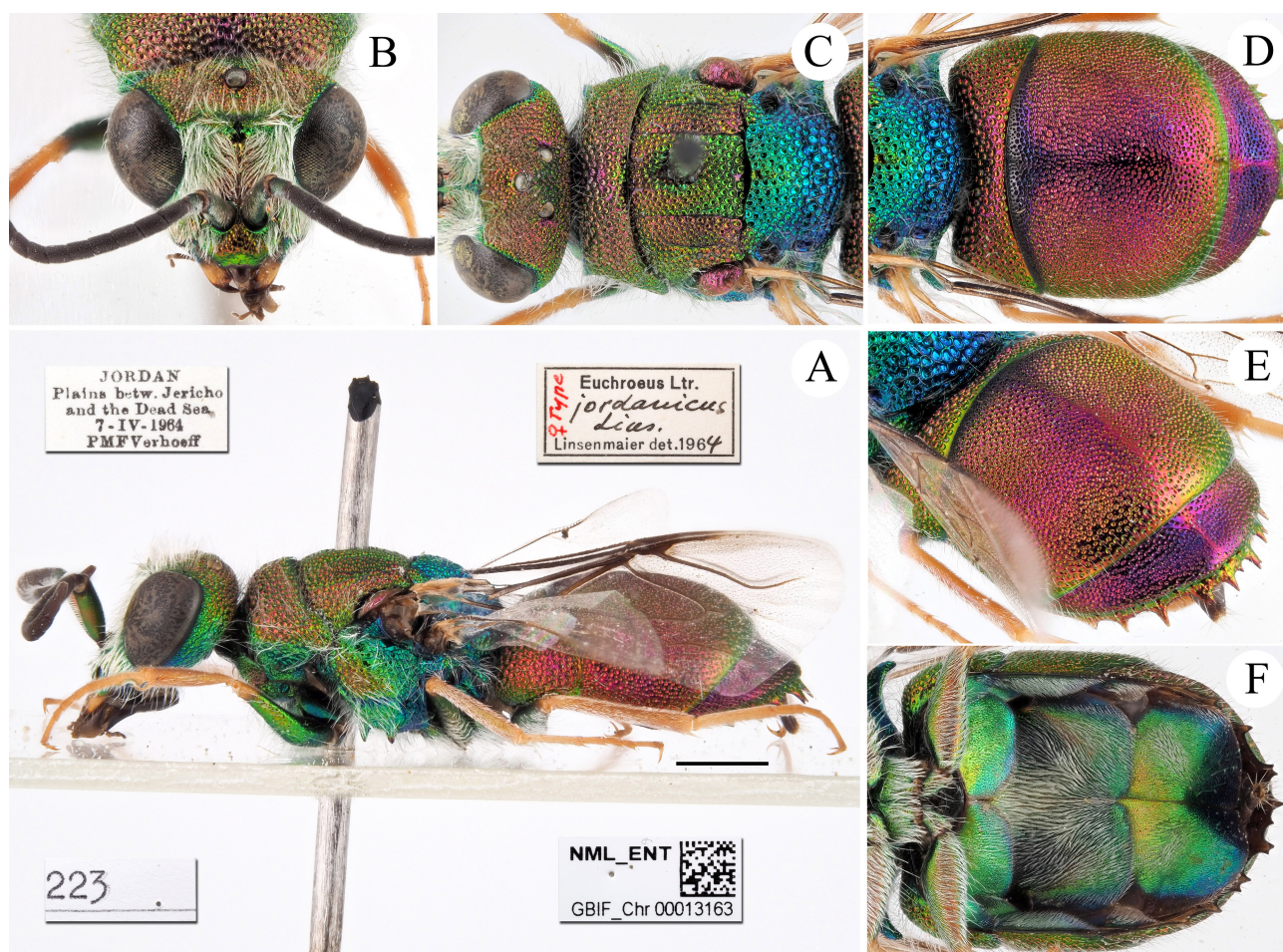


FIGURE 3. *Euchroeus (Euchroeus) jordanicus* Linsenmaier, 1968, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Euchroeus (Euchroeus) moricei bytinskii* Linsenmaier, 1969**
(Figs 2B, 4A–F)

Euchroeus (Euchroeus) moricei ssp. *bytinskii* Linsenmaier, 1969: 355 (distr.), 374 (descr.).

Type locality. Palestine: “Wadi Nafha 8.IV.65 leg. Bytinski-Salz ♂. Type in coll. m. Paratypes; Beersheba IV; En Mor V. in coll. By. S.”.

Holotype, ♂: Israel Wadi Nafah 8.IV.1965 leg. Bytinski-Salz // ♂ Type *Euchroeus* Ltr. *moricei bytinskii* Lins. Linsenmaier det. 1969 // 313 // NML_ENT GBIF_Chr0012891 (ex type-collection).

Remarks. In his original type collection, Linsenmaier labelled as “♀ Allotype” a specimen collected at: Israel 6/4 1964 leg. Kugler // Ein Oudat // ♀ Allotype // ♀ *Euchroeus moricei bytinskii* Lins. det. 81 // NML_ENT GBIF_Chr0012892 (ex type-collection). This specimen does not belong to the type series and was labelled as ‘allotype’ by Linsenmaier in 1981 after the description of the species, therefore this specimen cannot be considered a type.

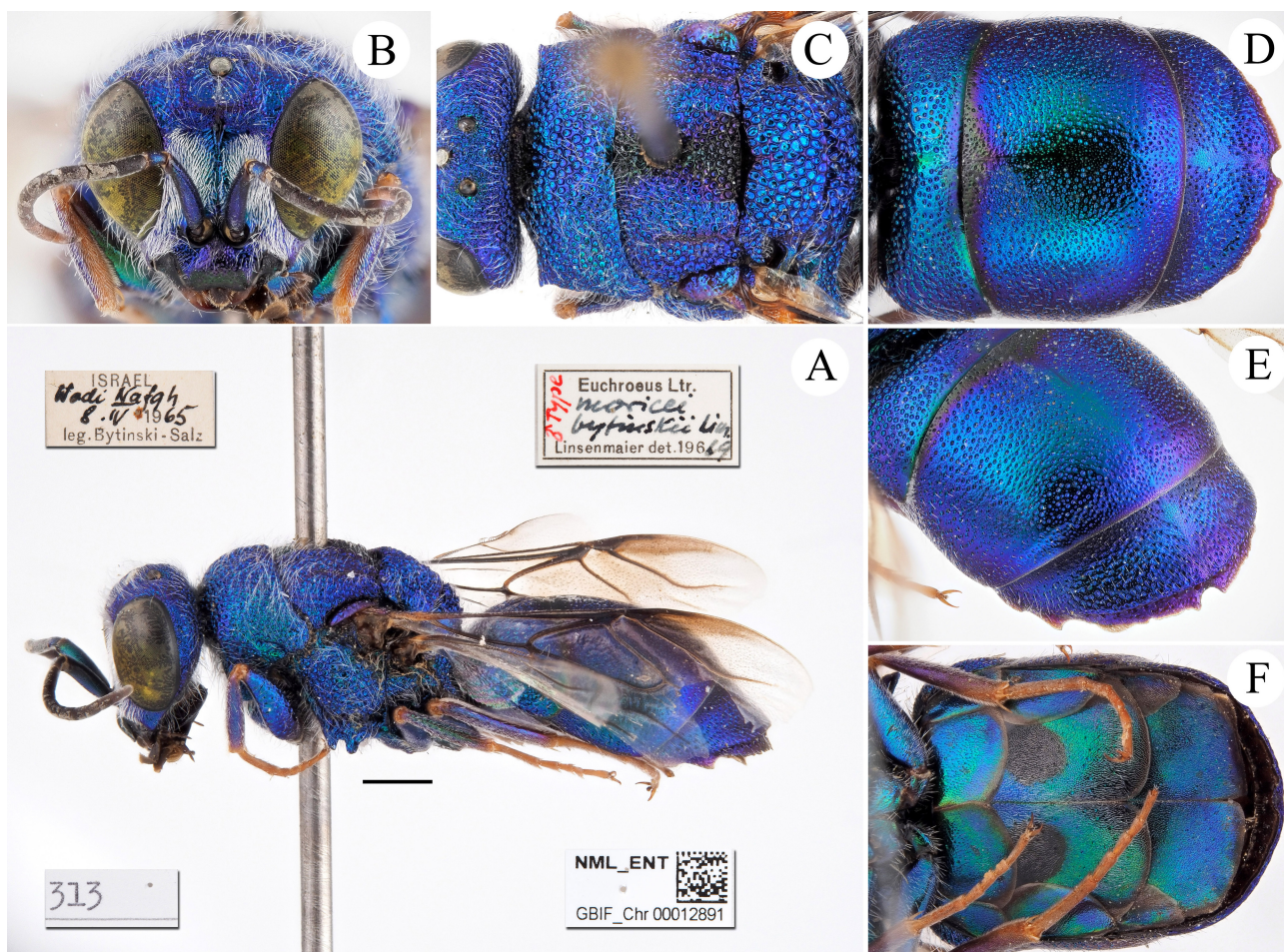


FIGURE 4. *Euchroeus (Euchroeus) moricei bytinskii* Linsenmaier, 1969, holotype, ♂. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Euchroeus (Euchroeus) oculatissimus israelicus* Linsenmaier, 1959a**
(Figs 2C, 5A–F)

Euchroeus (Euchroeus) oculatissimus ssp. *israelicus* Linsenmaier, 1959a: 71 (descr.); 188 (cat.).

Type locality. Palestine: “Palästina, ♀ Type Coll. m., ♀ Paratype Coll. Bytinski-Salz (Beersheba, V.1953, leg. Bytinski-Salz).”.

Holotype, ♀: Beersheba Israel 15.V.1953 Bytinski-Salz // ♀ Type *Euchroeus* Ltr. *oculatissimus israelicus* Lins. Linsenmaier det. 59 // 83 // NML_ENT GBIF_Ch0012905 (ex type-collection).

***Euchroeus (Euchroeus) purpuratus ibericus* Linsenmaier, 1959a**
(Fig 2D, 6A–F)

Euchroeus (Euchroeus) purpuratus ssp. *ibericus* Linsenmaier, 1959a: 73 (descr.); 188 (cat.); 1997a: 291 (fig. 89).

Type locality. Spain: “Spanien, ♀ Type ♂ Allotype (Soria) und Paratypen Coll. m.”.

Holotype, ♀: Spanien Prov. Soria 1100m 12.7.48 Valdeavellano leg. Dr. Marten // ♀ Type *Euchroeus* Ltr. *purpuratus ibericus* Lins. Linsenmaier det. 59 // 84 // NML_ENT GBIF_Ch0013111 (ex type-collection).

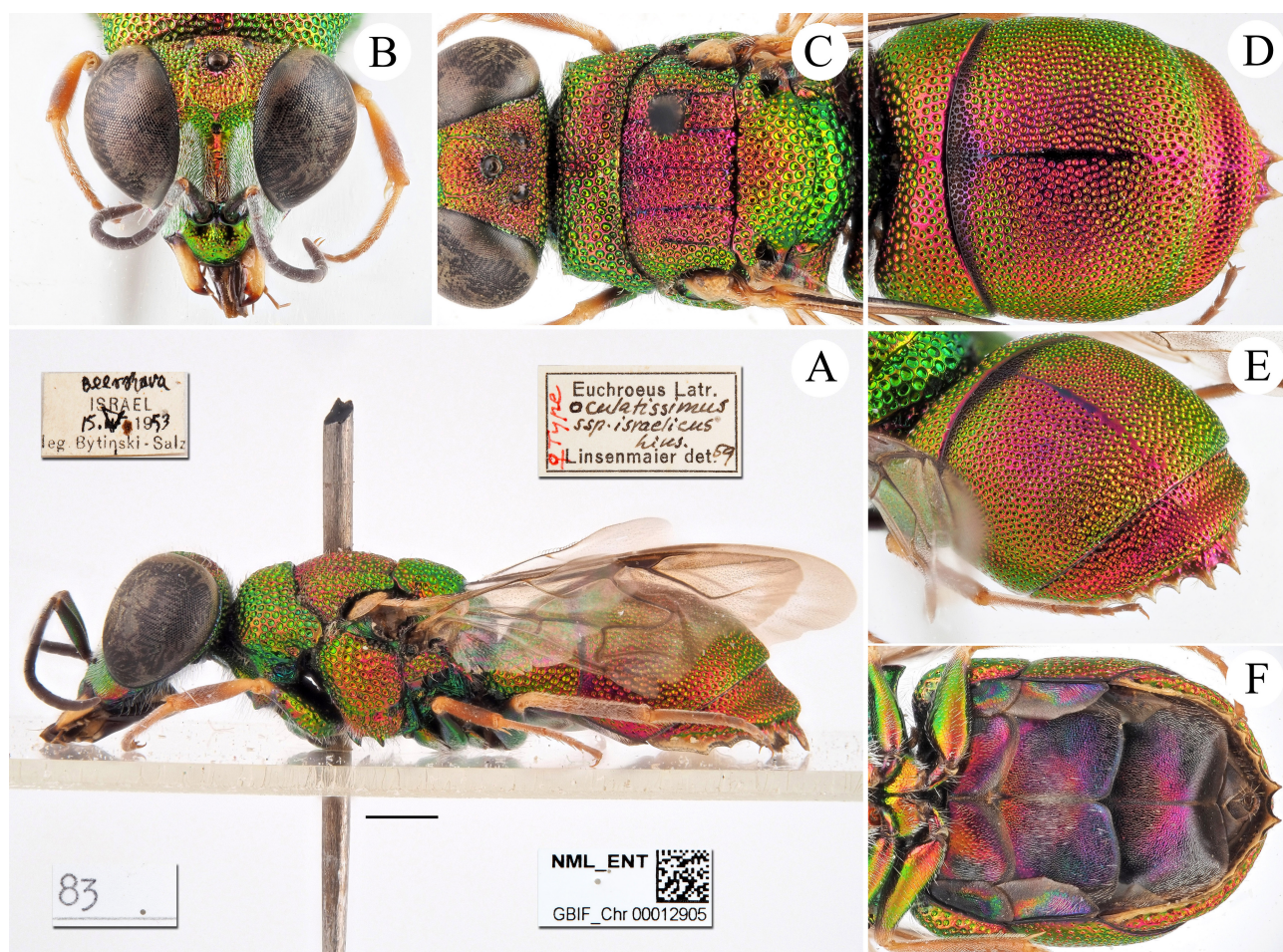


FIGURE 5. *Euchroeus (Euchroeus) oculatissimus israelicus* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Allotype, ♀ and **paratype**, ♂: Soria 11.-13.7.57 Almenar Linsenmaier // ♂ Allotype links *Euchroeus* Ltr. *purpuratus ibericus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0013112 (ex type-collection).

Paratype, ♂: Madrid G. Mercet / 30.5.902 // ♂ Paratype *Euchroeus* Ltr. *purpuratus ibericus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0013113.

***Euchroeus (Euchroeus) purpuratus turceyanus* Linsenmaier, 1987**
(Figs 2E, 7A–F)

Euchroeus (Euchroeus) purpuratus ssp. *turceyanus* Linsenmaier, 1987: 144 (descr.); 1997a: 291 (fig. 91).

Type locality. Turkey: “Turkey, ♀ Type Konya, ♂ Allotype Gürün Coll.m., Paratypen Coll. Schmidt und Coll. m.”.

Holotype, ♀: Turkey Konya 27.VI.69 leg. Linsenmaier // ♀ Type *Euchroeus* Ltr. *purpuratus turceyanus* [sic] Lins. Linsenmaier det. 1969 // 422 // NML_ENT GBIF_Ch0013142 (ex type-collection).

Allotype, ♂: Gürün As. Türk. 6.VI.1970 leg. J. Schmidt // ♂ Allotype *Euchroeus* Ltr. *purpuratus turceyanus* [sic] Lins. Linsenmaier det. 1973 // NML_ENT GBIF_Ch0013143.

Paratypes: 1♀: Gürün As. Türk. 5.VI.1970 leg. J. Schmidt // ♀ Paratype *Euchroeus* Ltr. *purpuratus turceyanus* Lins. Linsenmaier det. 1973 // NML_ENT GBIF_Ch0013139 (ex synoptic-collection); 1♀: Turkey Konya 16.VI.69 leg. Linsenmaier // ♀ Paratype *Euchroeus* Ltr. *purpuratus turceyanus* [sic] Lins. Linsenmaier det. 1969 // NML_

ENT GBIF_Chr0013140; 1♀: Turkey Konya 24.VI.69 leg. Linsenmaier // ♀ Paratype *Euchroeus* Ltr. *purpuratus turceyanus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Chr0013141.

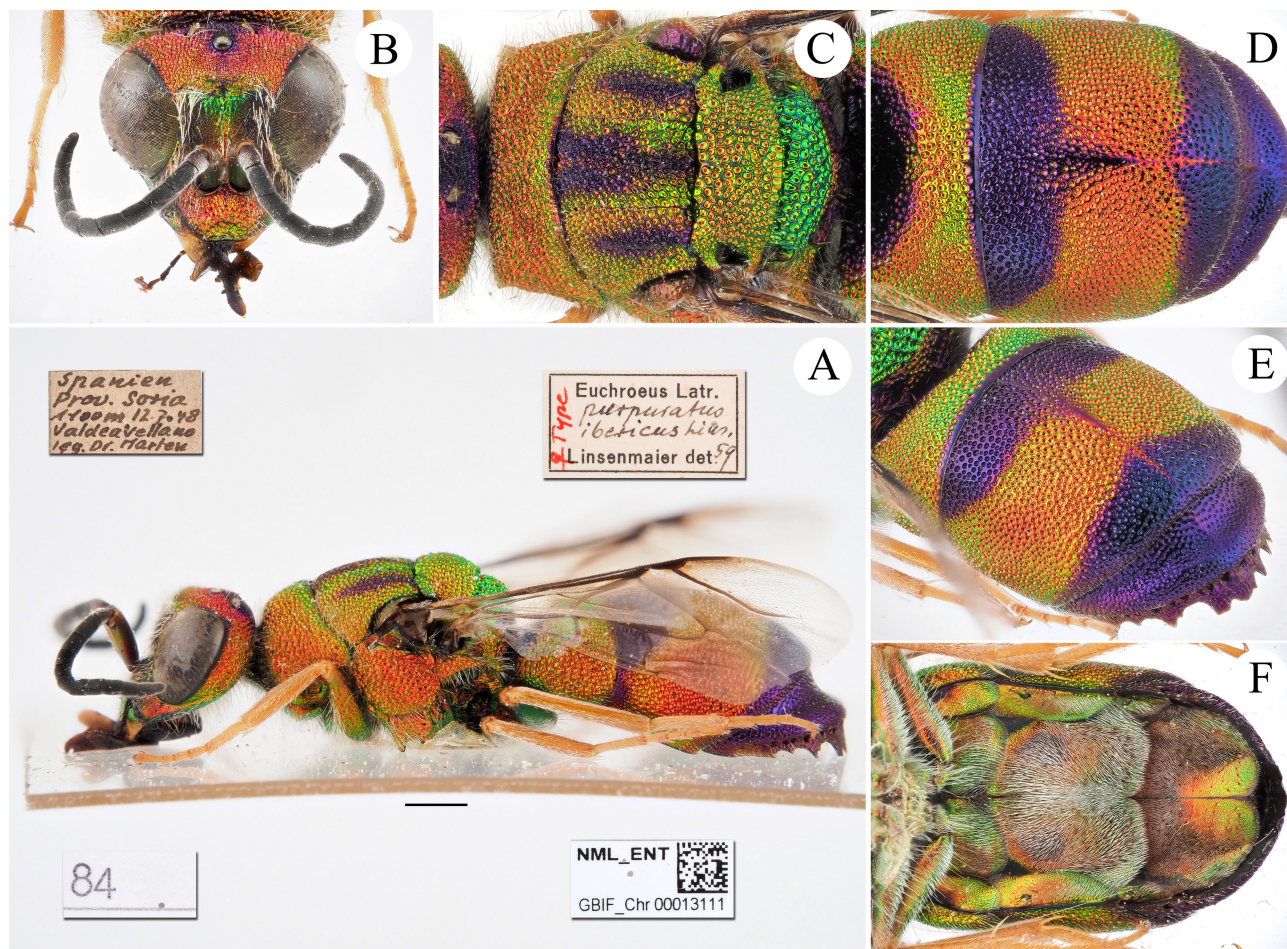


FIGURE 6. *Euchroeus* (*Euchroeus*) *purpuratus ibericus* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Euchroeus* (*Pseudospinolia*) *humboldti jerichoensis* Linsenmaier, 1959a**
(Figs 8A, 10A–F)

Euchroeus (*Pseudospinolia*) *humboldti* ssp. *jerichoensis* Linsenmaier, 1959a: 67 (descr.); 187 (cat.); 1969: 354 (distr.).

Type locality. Palestine: “Palästina, ♂ Type Coll. m. (Jericho, IV.1942, leg. Bytinski-Salz)”.

Holotype, ♂: Jericho Palestine 30.4.1942 Bytinski-Salz // ♂ Type *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *jerichoensis* Lins. Linsenmaier det. 59 // *Pseudospinolia incrassatus* sp. det. Linsenmaier 97 // NML_ENT GBIF_Chr0012489.

***Euchroeus* (*Pseudospinolia*) *humboldti libanesus* Linsenmaier, 1959a**
(Figs 8B, 11A–F)

Euchroeus (*Pseudospinolia*) *humboldti* ssp. *libanesus* Linsenmaier, 1959a: 67 (descr.); 187 (cat.).

Possible synonym of *Euchroeus* (*Pseudospinolia*) *humboldti* (Dahlbom, 1845) according to Linsenmaier (1968: 40).

Type locality. Lebanon: “Libanon. ♀ Type und ♀ Paratype Coll. m. (Kherbet Kanafar Bekaa, VI. 1953, leg. Schmidt).”.

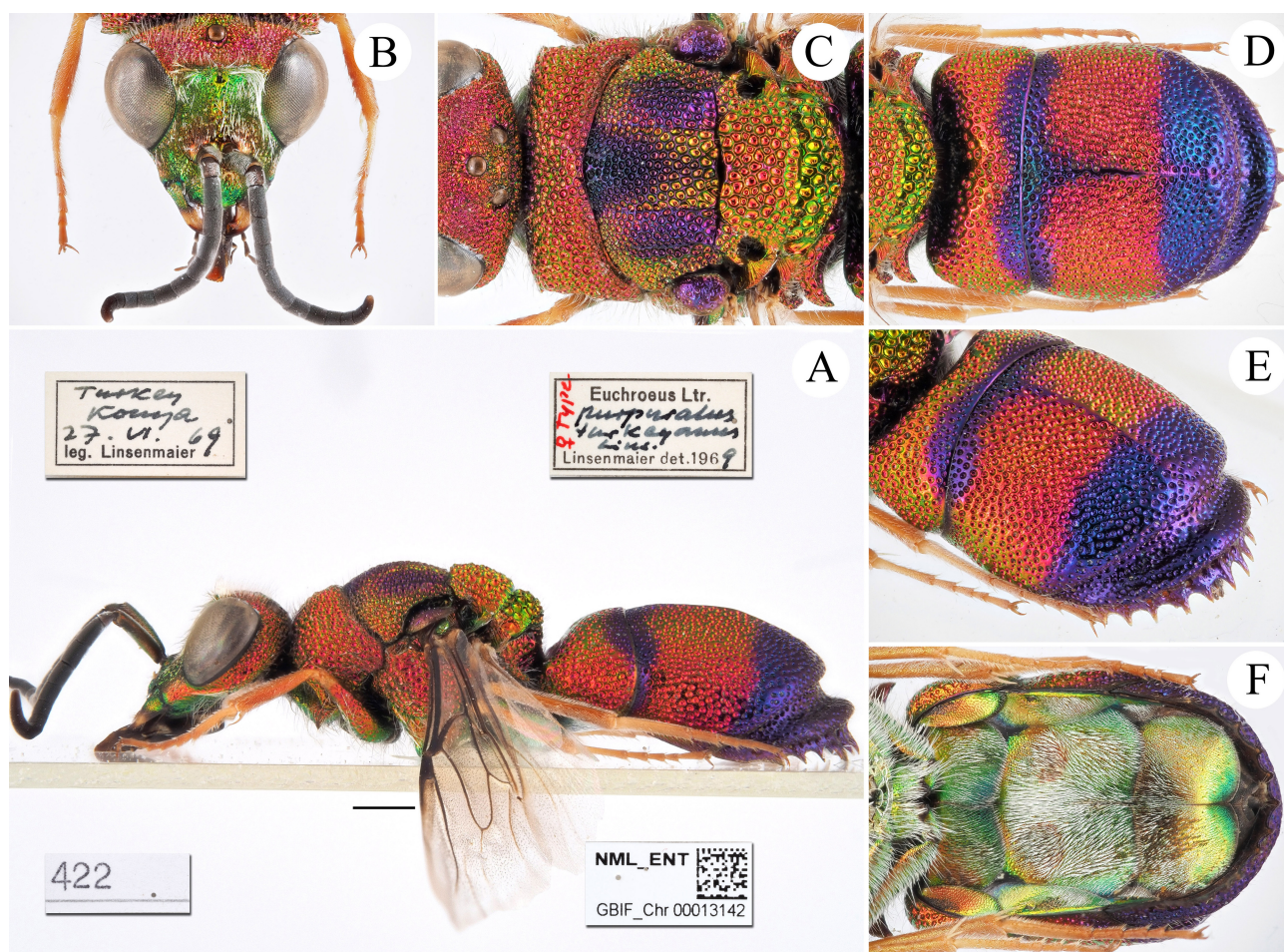


FIGURE 7. *Euchroeus (Euchroeus) purpuratus turceyanus* Linsenmaier, 1987, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Holotype and paratype, ♀: Libanon, Bekaa Nahr Litani, 4 km östl. Kherbet Kanafar Dr. Schmidt 16.VI.53 Coll. Linsenmaier // ♀ Type links *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *libanesus* Lins. Linsenmaier det. 59 Paratype // 80 // NML_ENT GBIF_Ch0012460 (ex type-collection).

Paratype, ♀: Nahr Litani Libanon 16.6.53 D. Schmidt // Bei: *Paravespa grandis* Mor // ♀ Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *libanesus* Lins. Linsenmaier det. 59 // *Pseudospinolia incrassatus* det. Linsenmaier 1997 // NML_ENT GBIF_Ch0012454; NML_ENT GBIF_Ch0012459.

Remarks. In his type collection, Linsenmaier designated a male specimen as ‘allotype’ bearing the labels: Beysehir As. Türk. 18.VI.1966 leg. Josef Schmidt // ♂ Allotype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *libanesus* Lins. Linsenmaier det. 1966 // NML_ENT GBIF_Ch0012461. Later, he also labelled as ‘paratypes’ three males, two of which prepared on the same plastic board and bearing the labels: Turkey Konya Sille 29.VI.69 leg. Linsenmaier // Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *libanesus* Lins. Linsenmaier det. 1974 // *Pseudospinolia incrassatus* Sp. det. Linsenmaier 1997 // NML_ENT GBIF_Ch0012453; 1 ♂: Turkey Beysehir See 30.VI.69 leg. Linsenmaier // Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *libanesus* Lins. Linsenmaier det. 1974 // NML_ENT GBIF_Ch0012455. These specimens were all collected in Turkey after the original description and do not belong to the type series.

***Euchroeus (Pseudospinolia) humboldti sculpturatissimus* Linsenmaier, 1959a**
(Figs 8C, 12A–F)

Euchroeus (Pseudospinolia) humboldti ssp. *sculpturatissimus* Linsenmaier, 1959a: 67 (descr.); 187 (cat.).

Type locality. Cyprus: “Cypern, Type, ♀ Allotype und Paratypen Coll. m.”.

Holotype, ♀: Cypern 18.V.49 Mesayitonia leg. Mavromoustakis Coll. Linsenmaier // ♀ Type *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // 81 // NML_ENT GBIF_Ch0012464 (ex type-collection).

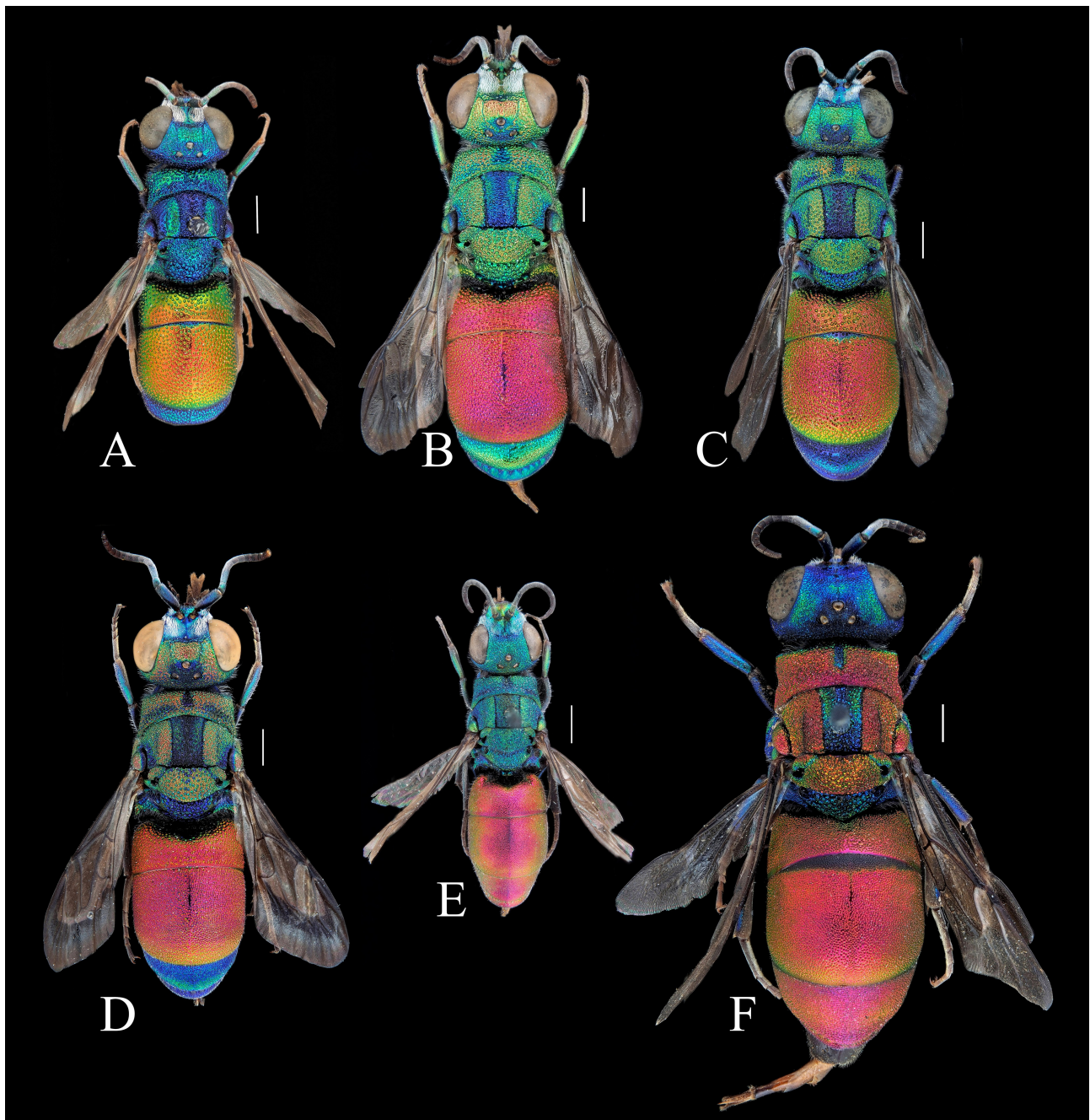


FIGURE 8. *Euchroeus (Pseudospinolia)* and *Euchroeus (Spinolia)*, dorsal view. A) *E. (P.) humboldti jerichoensis* Linsenmaier, 1959a, holotype, ♂. B) *E. (P.) humboldti libanesus* Linsenmaier, 1959a, holotype, ♀. C) *E. (P.) humboldti* ssp. *sculpturatissimus* Linsenmaier, 1959a, holotype, ♀. D) *E. (P.) incrassatus paris* Linsenmaier, 1997a, holotype, ♀. E) *E. (P.) neglectoides* Linsenmaier, 1959a, holotype, ♀. F) *E. (S.) dallatorreanus bicarinatus* Linsenmaier, 1959a, holotype, ♀. Scale bar 1.0 mm.

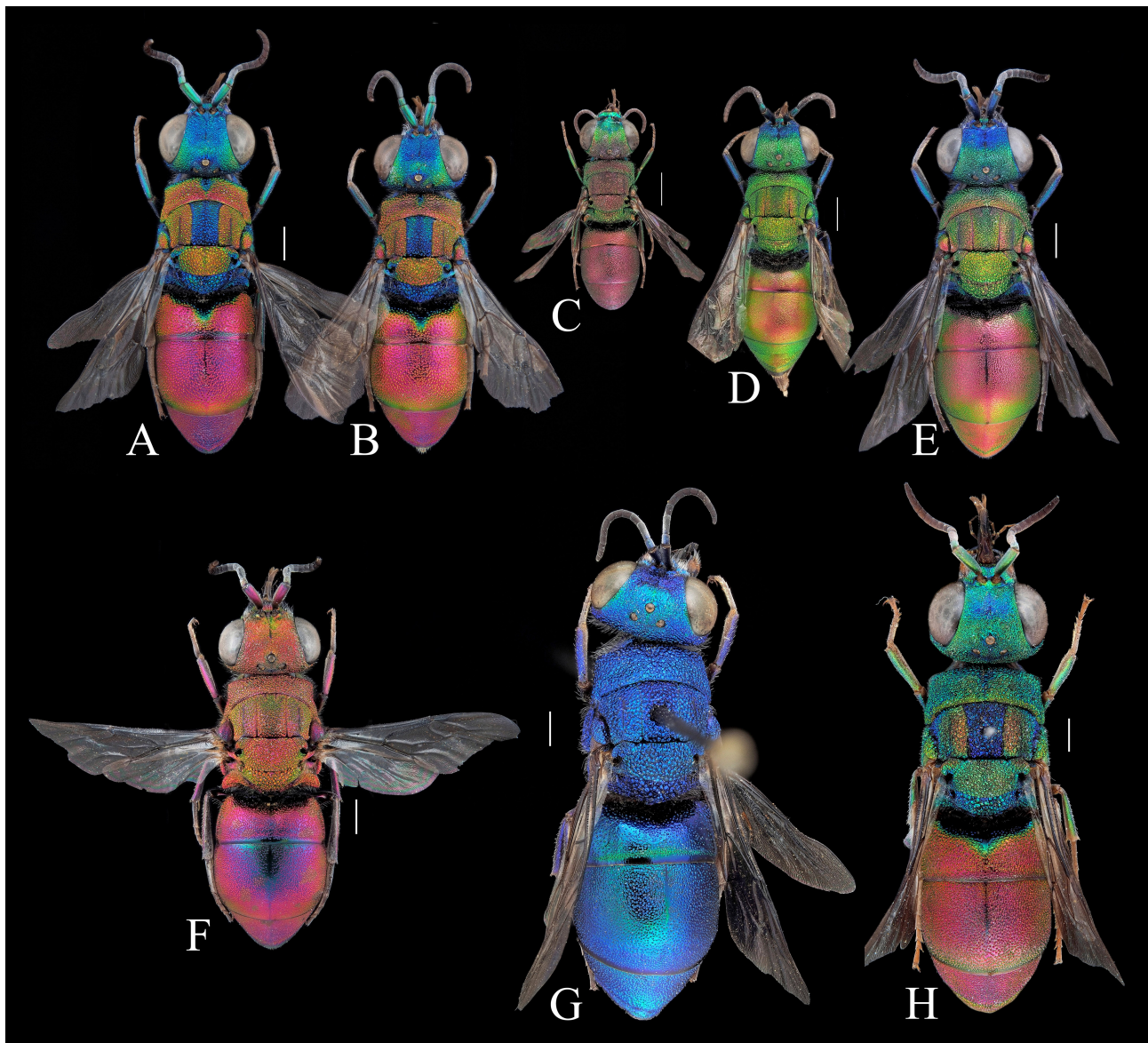


FIGURE 9. *Eucharoeus* (*Spinolia*), dorsal view. A) *E. (S.) dallatorreanus taurusiacus* Linsenmaier, 1987, holotype, ♂. B) *E. (S.) dallatorreanus taurusiacus* Linsenmaier, 1987, paratype, ♀. C) *E. (S.) modicus* Linsenmaier, 1987, holotype, ♀. D) *E. (S.) schlaeflei* Linsenmaier, 1999, holotype, ♀. E) *E. (S.) rogenhoferi sertavulacus* Linsenmaier, 1987, holotype, ♀. F) *E. (S.) hiberus* Linsenmaier, 1987, holotype, ♀. G) *E. (S.) pulawskii* Linsenmaier, 1968, holotype, ♀. H) *E. (S.) schmidtii* Linsenmaier, 1987, holotype, ♀. Scale bar 1.0 mm.

Allotype, ♀: Cypern 13.V.49 Polemedia Hills leg. Mavromoustakis Coll. Linsenmaier // ♂ Allotype *Eucharoeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012465 (ex type-collection).

Paratypes: 1♂, 2♀: Cypern 13.V.49 Polemedia Hills leg. Mavromoustakis Coll. Linsenmaier // ♂, ♀ Paratype(n) *Eucharoeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 (ex synoptic-collection) // NML_ENT GBIF_Ch0012462-12463; 1♂, 1♀: Cypern 2.V.36 Mesayitonia leg. Mavromoustakis Coll. Linsenmaier // ♂, ♀ Paratype(n) *Eucharoeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012466-12467; 1♂: Sphalangiotissa Cyprus 31.3.1941 leg. Mavromoustakis // ♂ Paratype *Eucharoeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012468; 1♀: Cypern 26.VI.51 Asomatos leg. Mavromoustakis Coll. Linsenmaier // ♀ Paratype *Eucharoeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012469; 1♂:

near Limassol Cyprus 27.4.57 leg. Mavromoustakis // ♂ Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012470; 1♂: Cyprus 21.IV.40 Limassol leg. Mavromoustakis Coll. Linsenmaier // ♂ Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012471; 1♂: Cyprus 1.IV.41 Limassol leg. Mavromoustakis Coll. Linsenmaier // ♂ Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012472; 1♀: Cyprus 27.IV.57 near Limassol leg. Mavromoustakis Coll. Linsenmaier // ♀ Paratype *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *sculpturatissimus* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0012473.

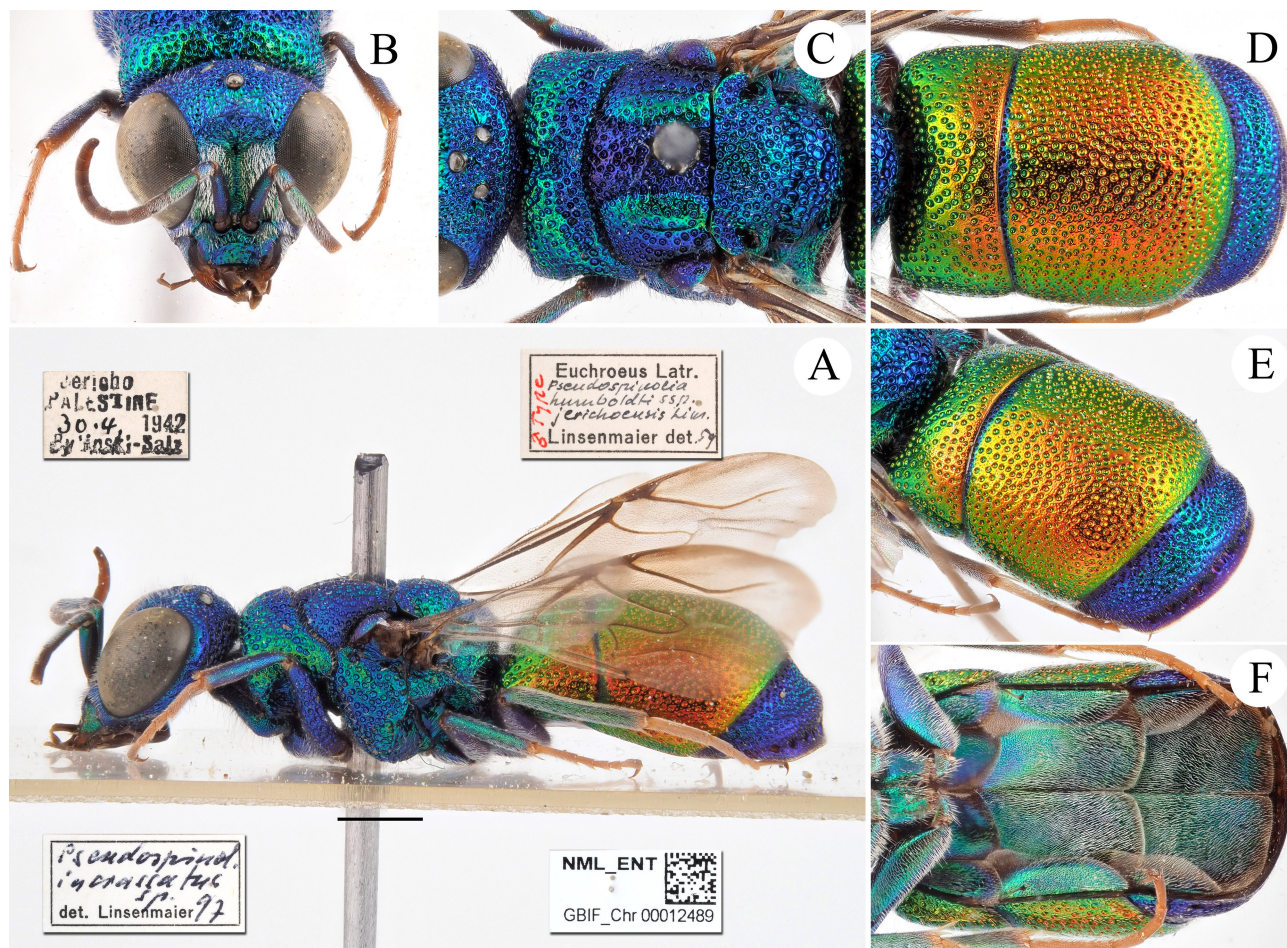


FIGURE 10. *Euchroeus (Pseudospinolia) humboldti jerichoensis* Linsenmaier, 1959a, holotype, ♂. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Euchroeus (Pseudospinolia) incrassatus paris* Linsenmaier, 1997a**
(Figs 8D, 13A–F)

Euchroeus (Pseudospinolia) incrassatus ssp. *paris* Linsenmaier, 1997a: 263 (descr.).

Type locality. France, Greece, Portugal, Spain: “Spanien, S. Frankreich, Portugal, Griechenland. – ♀ Type (Holotypus), ♂ Allotype und 2 ♀ Paratypen Spanien, Gerona, Costa Brava VI.61, Pochon; Coll. m.; Paratypen (Coll. m.): S. Frankreich, Perpignan VI.66, 1♂; Spanien, Granada VI.62, Verges, 2 ♂; Portugal, Lisboa V.49, Verhoeff, 1♂; Griechenland, Lamia 13.V.62, 1 ♀ Coll. Koschwitz”.

Holotype, ♀: Costa Brava Playa de Aro H. Pochon 1-15.6.58 // ♀ Type *Euchroeus* Latr. *Pseudospinolia humboldti* ssp. *paris* Lins. Linsenmaier det. 92 // 469 // NML_ENT GBIF_Ch0012497 (ex type-collection).

Allotype, ♂: Costa Brava Playa de Aro 1-15.6.61 (Sp) leg. H. Pochon // ♂ Type *Pseudosp. incrassatus paris* Lins. Linsenmaier det. 92 // NML_ENT GBIF_Ch0012498.

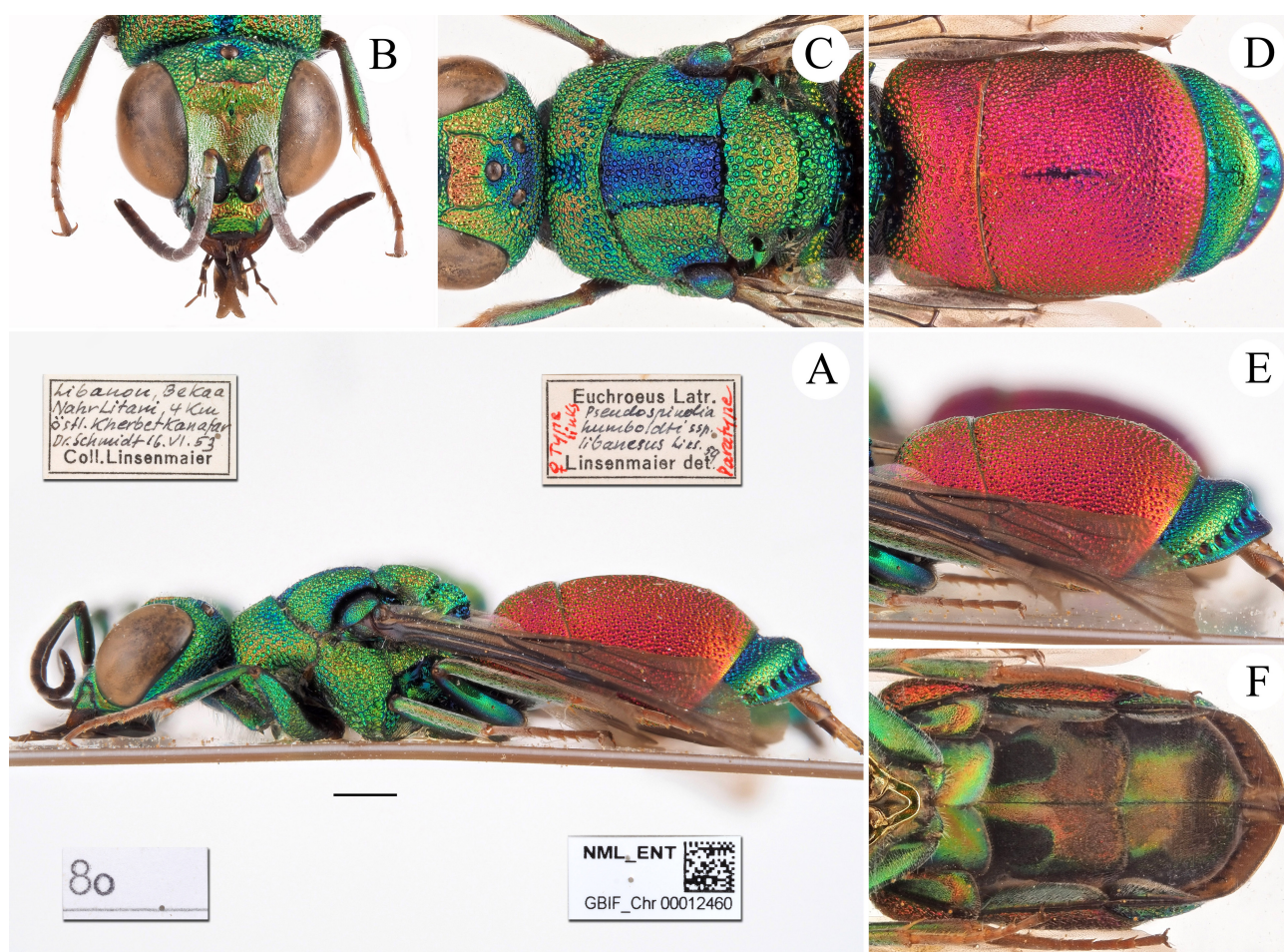


FIGURE 11. *Euchroeus (Pseudospinolia) humboldti libanesus* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Paratypes: 1♂: Gallia Perpignan 15.6.1966 // ♂ Paratype *Pseudosp. incrassatus paris* Linsenmaier det. 92 // NML_ENT GBIF_Ch00012491 (ex synoptic-collection); 1♀: Costa Brava Playa de Aro Pochon VI.59 Coll. Linsenmaier // ♀ Paratype *Pseudosp. incrassatus paris* Lins. Linsenmaier det. 92 // NML_ENT GBIF_Ch00012492 (ex synoptic-collection); 1♀: Granada 17.6.62 F. Varges Coll. Linsenmaier // ♀ Paratype *Pseudosp. incrassatus paris* Lins. Linsenmaier det. 92 // NML_ENT GBIF_Ch00012493; 1♀: Granada 21.5.60 F. Varges Coll. Linsenmaier // ♀ Paratype *Pseudosp. incrassatus paris* Lins. Linsenmaier det. 92 // NML_ENT GBIF_Ch00012494; 1♀: Costa Brava Playa de Aro Pochon VI.59 Coll. Linsenmaier // ♀ Paratype *Pseudosp. incrassatus paris* Lins. Linsenmaier det. 92 // NML_ENT GBIF_Ch00012495; 1♀: Portugal near Lisboa 20.-30.V.1949 P.M.F. Verhoeff // ♀ Paratype *Pseudosp. humboldti ssp. paris* Lins. Linsenmaier det. 91 // NML_ENT GBIF_Ch00012496.

***Euchroeus (Pseudospinolia) neglectoides* Linsenmaier, 1959a**
(Figs 8E, 14A–F)

Euchroeus (Pseudospinolia) neglectoides Linsenmaier, 1959a: 66 (key, descr.); 187 (cat.); 201 (figs 219, 220).

Type locality. Syria: “Syrien, ♀ Type Coll. m. (Homs, 10.V. 1952, leg. Seidenstücker)”.

Holotype, ♀: Syrien 10.5.52 Seidenstücker / Homs // ♀ Type *Euchroeus* Latr. *Pseudospinolia neglectoides* Lins. Linsenmaier det. 59 // 79 // NML_ENT GBIF_Ch00012327 (ex type-collection).

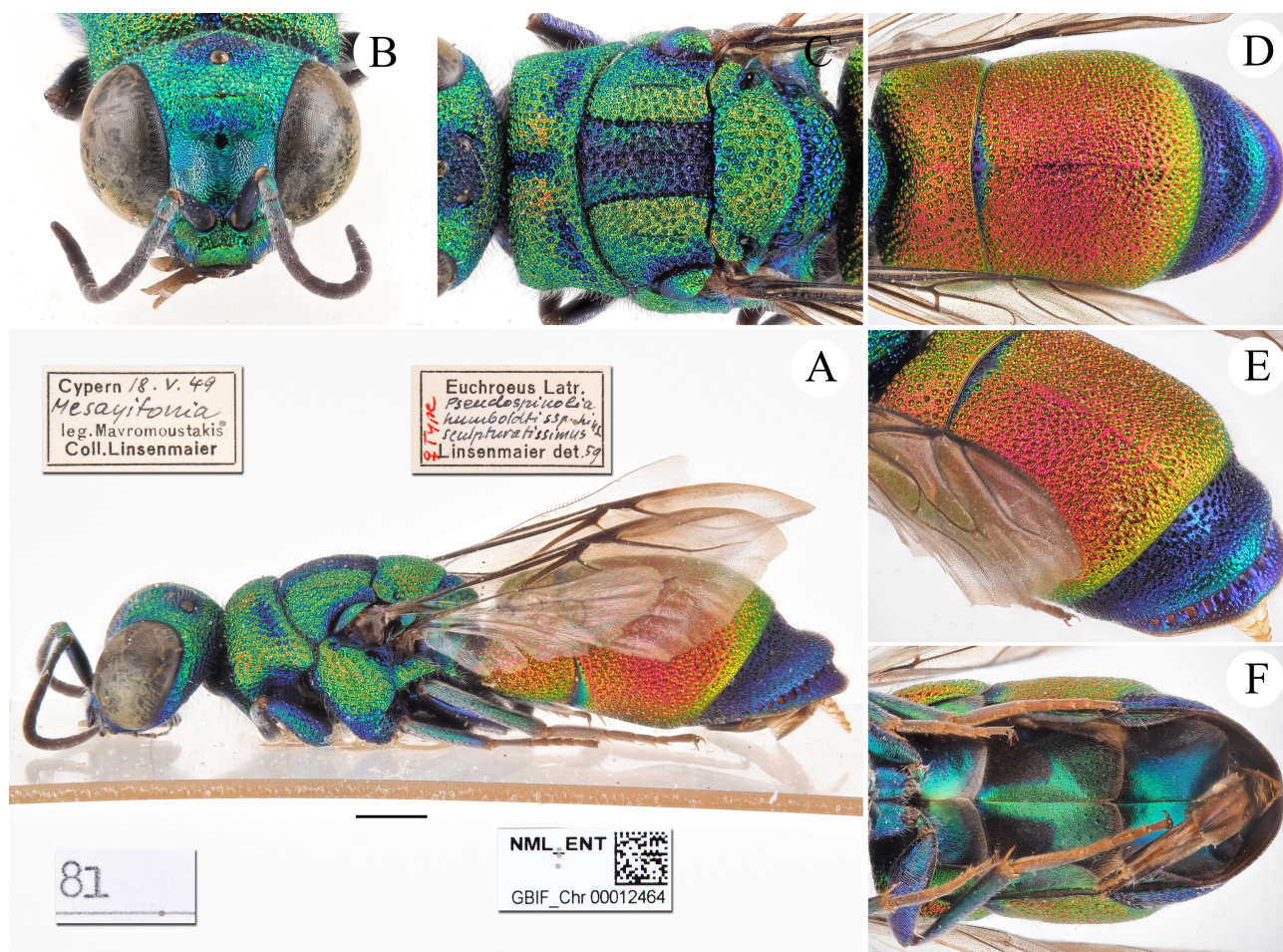


FIGURE 12. *Euchroeus (Pseudospinolia) humboldti sculpturatissimus* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Euchroeus (Pseudospinolia) tricoloricornis* Linsenmaier, 1968**
(Figs 15A–F)

Euchroeus (Pseudospinolia) tricoloricornis Linsenmaier, 1968: 130 (descr.).

Type locality. Turkey: “Klein-Asien, Urfa, V.67, leg. Gusenleitner und Schmidt, ♂ Type in Coll. m., ♂ Paratypen in Coli. Gusenleitner und Coll. Schmidt.”

Holotype, ♀: Urfa 19.5.1967 Türkei leg. J. Gusenleitner // ♂ Type *Euchroeus* Latr. *Pseudospinolia tricoloricornis* Lins. Linsenmaier det. 1968 // 301 // NML_ENT GBIF_Chr0012328 (ex type-collection).

***Euchroeus (Spinolia) dallatorreanus bicarinatus* Linsenmaier, 1959a**
(Figs 8F, 16A–F)

Euchroeus (Spinolia) dallatorreanus ssp. *bicarinatus* Linsenmaier, 1959a: 69 (descr.); 188 (cat.); 1987: 144 (distr.); 1997a (morphology); 1999: 96 (diagn., distr.).

Type locality. Algeria, Morocco, Tunisia: “Marocco, Algerien, Tunesien. ♀ Type (Nemours) ♂ Allotype (Meknès, Marocco), Paratypen Coll. m. und Coll. de Beaumont.”

Holotype, ♀: Algérie Nemours // ♀ Type *Euchroeus* Latr. *Spinolia dallatorreanus* M. *bicarinatus* Lins. Linsenmaier det. 1959 // 82 // NML_ENT GBIF_Chr0012821 (ex type-collection).

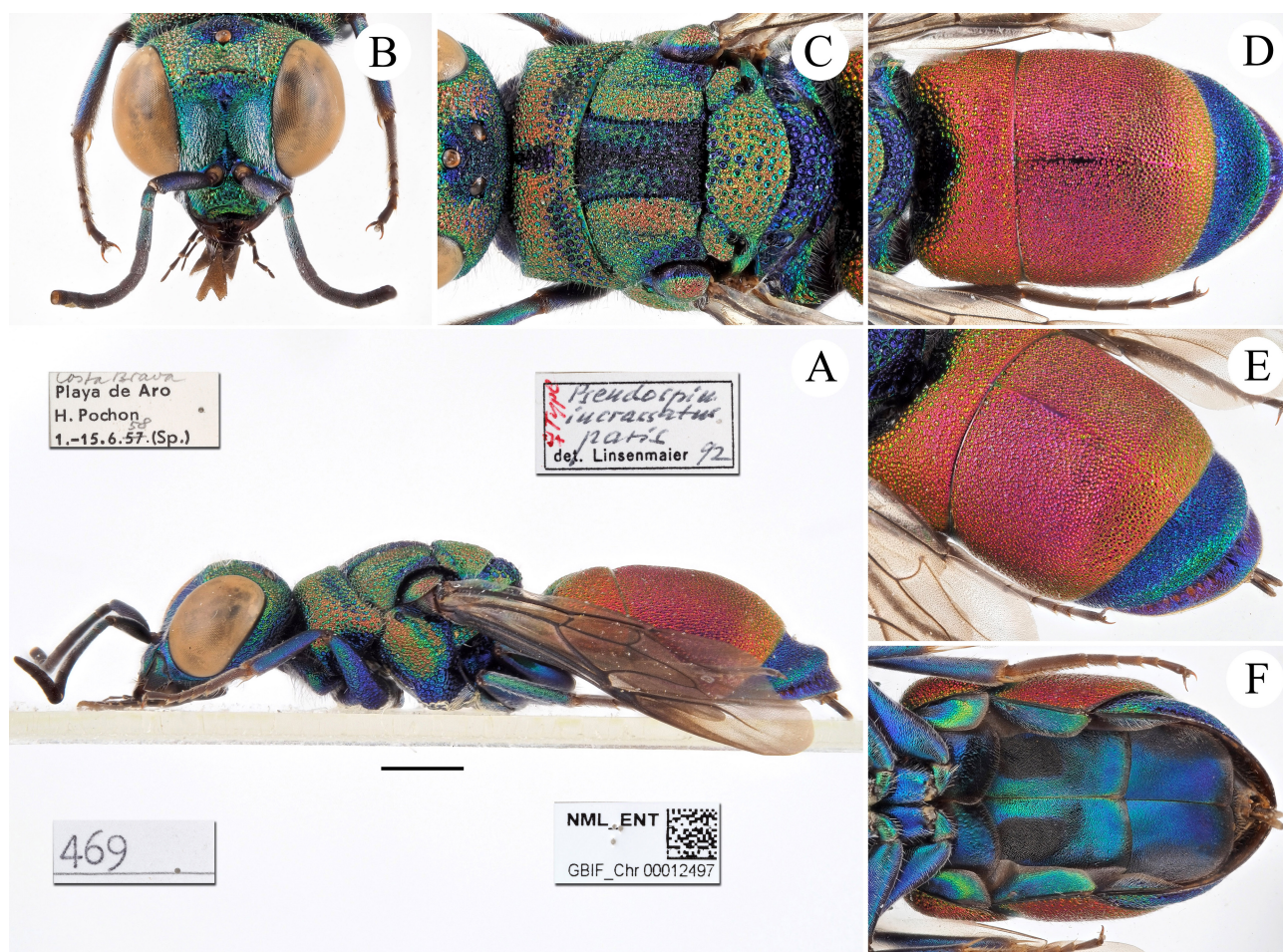


FIGURE 13. *Euchroeus (Pseudospinolia) incrassatus paris* Linsenmaier, 1997a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Allotype, ♂: Meknès 18-22 Juin 18// ♂ Allotype *Euchroeus* Latr. *Spinolia dallatorreanus* M. *bicarinatus* Lins. Linsenmaier det. 1959 // NML_ENT GBIF_Ch0012822 (ex type-collection).

Paratypes: 1 ♀: Maroc Fès 28.-30.VI.1947 J. de Beaumont// ♀ Paratype *Euchroeus* Latr. *Spinolia dallatorreanus* M. *bicarinatus* Lins. Linsenmaier det. 1959 // NML_ENT GBIF_Ch0012816 (ex synoptic-collection); 1 ♀: Meknès 18-22 Juin 18// ♀ Paratype *Euchroeus* Latr. *Spinolia dallatorreanus* M. *bicarinatus* Lins. Linsenmaier det. 1959 // NML_ENT GBIF_Ch0012817.

***Euchroeus (Spinolia) dallatorreanus taurusiacus* Linsenmaier, 1987**
(Figs 9A, B, 17A–F)

Euchroeus (Spinolia) dallatorreanus ssp. *taurusiacus* Linsenmaier, 1987: 144 (descr.).

Type locality. Turkey: “Turkey, weit verbreitet. ♀ Type Konya, ♂ Allotype Amasia, Paratypen Coll. m.”.

Holotype, ♀ and **paratype**, ♀: Turkey Konya 24.VI.69 leg. Linsenmaier // ♀ Type links u. Paratype *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // 421 // NML_ENT GBIF_Ch0012810 (ex type-collection).

Allotype, ♂: Türkei Amasya 18.VII.59 Coll. Linsenmaier // ♂ Allotype *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012811 (ex type-collection).

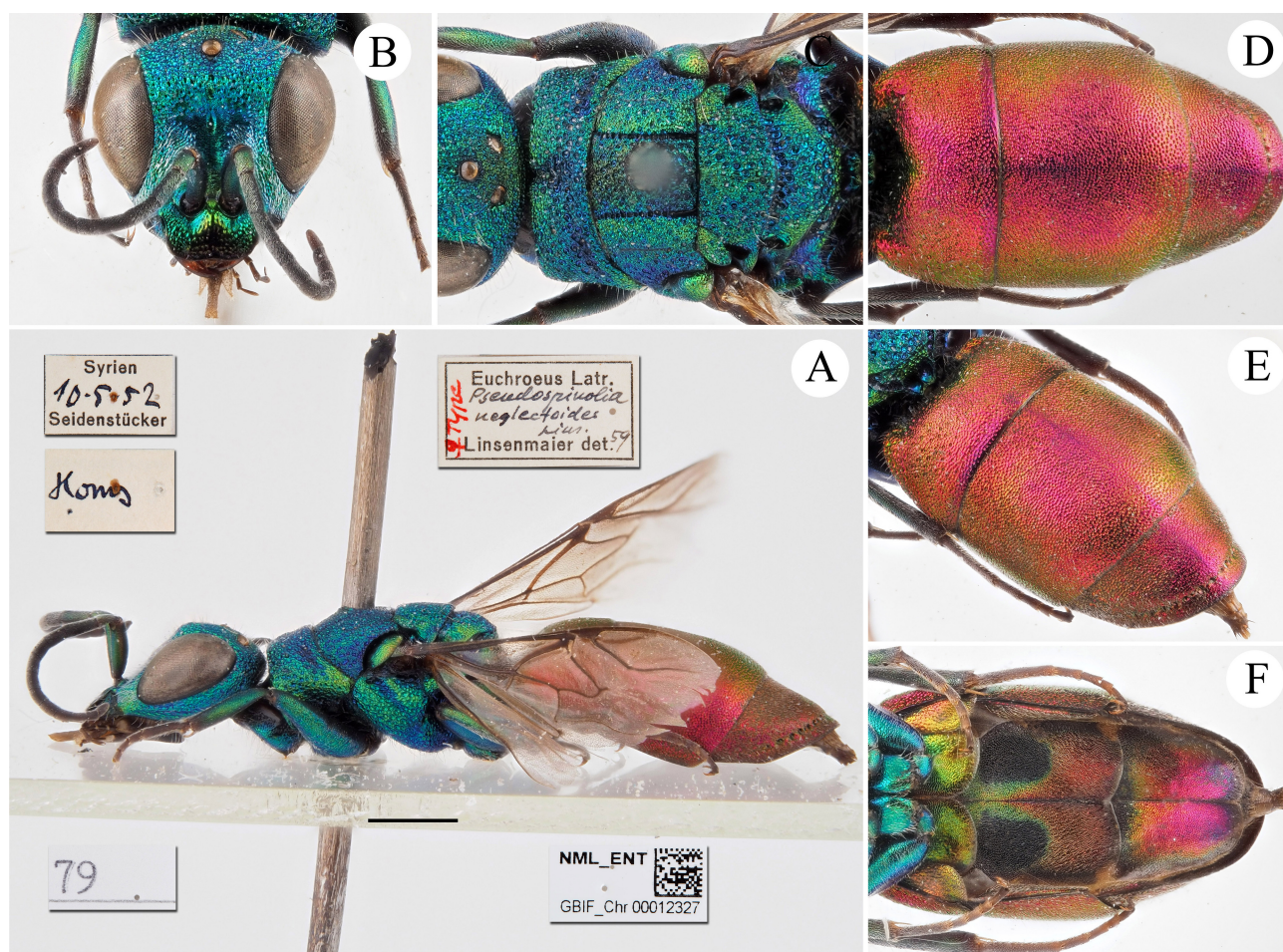


FIGURE 14. *Euchroeus (Pseudospinolia) neglectoides* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Paratypes: 1♀: Turkey Karaman 20.VI.69 leg. Linsenmaier // ♀ Paratype *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012800 (ex synoptic-collection); 2♀: Turkey Konya 22.VI.69 leg. Linsenmaier // ♀ Paratypen *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012806; 2♀: Turkey Konya 24.VI.69 leg. Linsenmaier // ♀ Paratypen *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012807; 1♀: Turkey Sertavul Pass b. 27.VI.69 leg. Linsenmaier // ♀ Paratype *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012808; 1♀: Turkey Isparta 2.VII.69 leg. Linsenmaier // ♀ Paratype *Euchroeus* Latr. *Sp. dallatorreanus taurosiacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012809.

***Euchroeus (Spinolia) hiberus* Linsenmaier, 1987**
(Figs 9F, 18A–F)

Euchroeus (Spinolia) hiberus Linsenmaier, 1987: 138 (fig. 8), 143 (descr.); 1997a: 261 (bio., host of *Onychopterocheilus matritensis* Dusmet).

Type locality. Spain: “Spanien, Sierra Guadarrama, Huesca, ♀ Type Navacerrada (Madrid), VI.1985, ♀ Paratype Barbastro (Huesca) Coll. m., ♀ Paratypen Sierra del Chaparral (Granada), Coll. Perraudin, Coll. m.”.

Holotype, ♀: Spanien Madrid Navacerrada 17.6.85 Linsenmaier // ♀ Type *Euchroeus* Latr. *Spinolia hiberus* Lins. det. Linsenmaier 1985 // 419 // NML_ENT GBIF_Ch0012634 (ex type-collection).

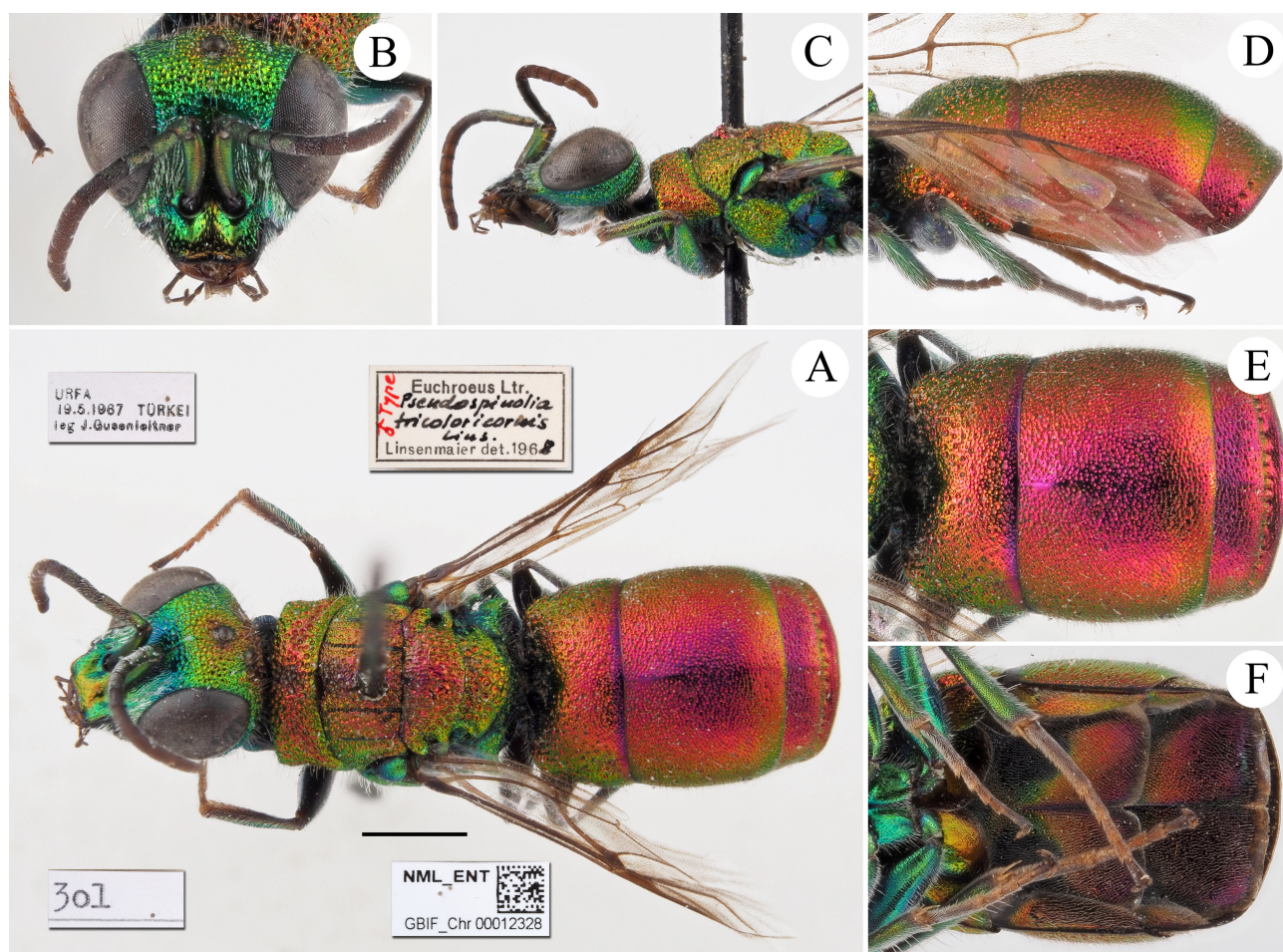


FIGURE 15. *Euchroeus (Pseudospinolia) tricoloricornis* Linsenmaier, 1968, holotype, ♀. A) Habitus, dorsal view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, lateral view. E) Metasoma, dorsal view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Paratypes: 1♀: Spanien, Huesca Barbastro 27.V.86 leg. Linsenmaier // ♀ *Euchroeus* Latr. *Spinolia hiberus* Lins. det. Linsenmaier 1991 // NML_ENT GBIF_Ch0012636 //

2♀: Cerro del Chupa 8.VI.1983 1100m Provinz Granada W. Perraudin // ♀ Paratype *Euchroeus* Latr. *Spinolia hiberus* Lins. det. W. Perraudin // NML_ENT GBIF_Ch0012649-12650; 1♀: Cerro del Chupa 12.VI.1983 1100m Provinz Granada W. Perraudin // ♀ Paratype *Euchroeus* Latr. *Spinolia hiberus* Lins. det. W. Perraudin // NML_ENT GBIF_Ch0012651; 1♀: Cerro del Chupa 28.V.1986 1100m Provinz Granada W. Perraudin // ♀ Paratype *Euchroeus* Latr. *Spinolia hiberus* Lins. det. W. Perraudin // NML_ENT GBIF_Ch0012652; 1♀: Cerro del Chupa 14.VI.1986 1100m coll. W. Perraudin // Prov. Granada coll. W. Perraudin // ♀ *Euchroeus hiberus* Lins. det. W. Perraudin // Paratypus // NML_ENT GBIF_Ch0012653.

***Euchroeus (Spinolia) modicus* Linsenmaier, 1987**
(Figs 9C, 19A–F)

Euchroeus (Spinolia) modicus Linsenmaier, 1987: 138 (fig. 9), 143 (descr.); 1997a: 262 (diagn., distr.), 295 (figs 198–200); 1999: 95 (diagn., distr.).

Type locality. Morocco, Tunisia: “ Maroc, Tunesien, ♀ Type Agadir, ♀ Paratype Tunesien, Matmata, Coll. m. Paratypen Tunesien Coll. Schmidt, Coll. Gusenleitner.”

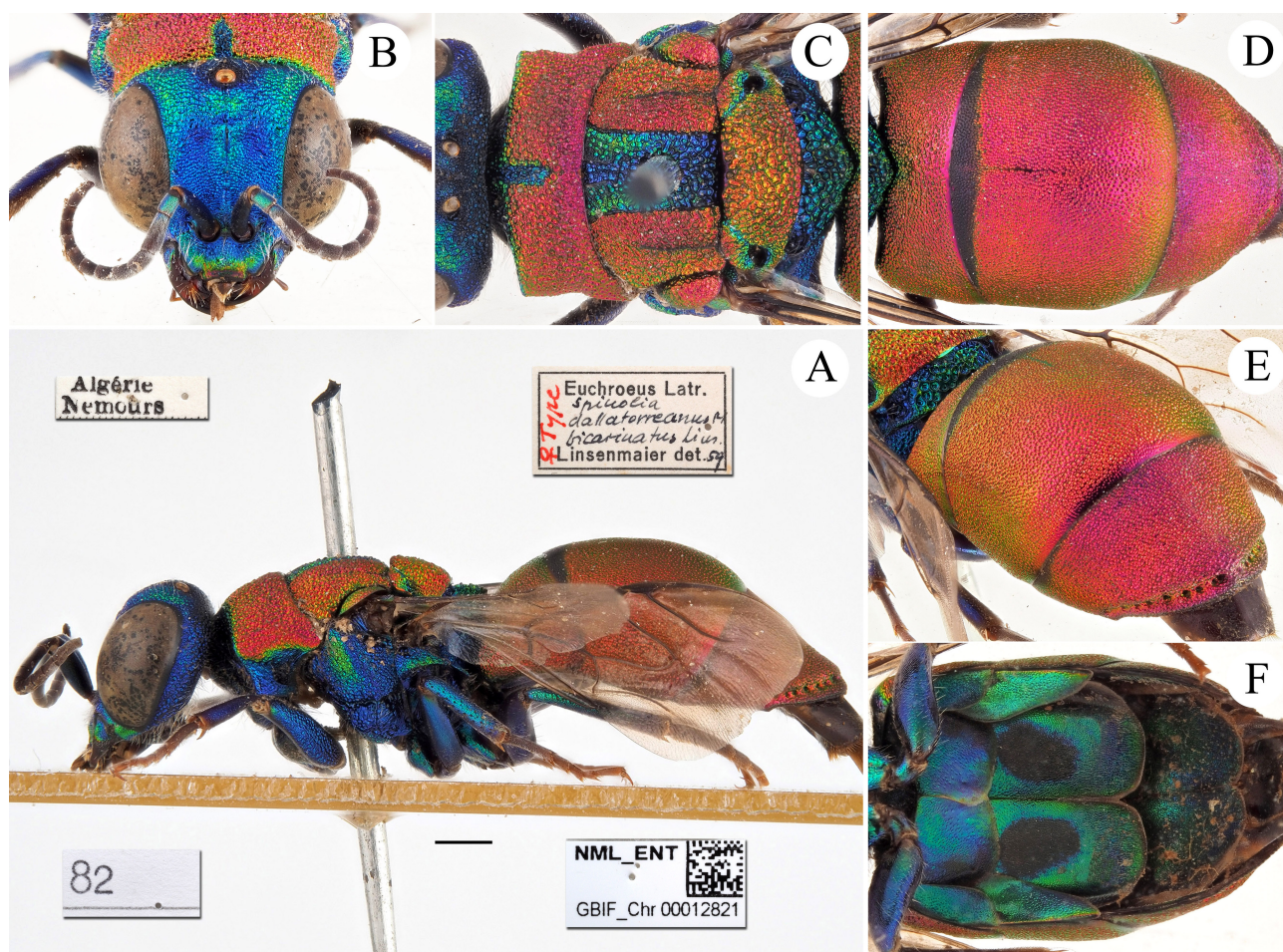


FIGURE 16. *Euchroeus (Spinolia) dallatorreanus bicarinatus* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Holotype, ♀: Maroc 4.V.65 Agadir leg. Linsenmaier // ♀ Type *Euchroeus* Latr. *Spinolia modicus* Lins. Linsenmaier det. 1965 // 420 // NML_ENT GBIF_Ch0012632 (ex type-collection).

Paratype, ♀: Tunesien Matmata 3.V.1978 leg. Jos. Schmidt // ♀ Paratype *Euchroeus* Latr. *Spinolia modicus* Lins. Linsenmaier det. 1977 // NML_ENT GBIF_Ch0012627 (ex synoptic-collection).

Remarks. In the Linsenmaier collection there is another female specimen labelled as paratype by Linsenmaier in 1987 from “Oued Sousse 2.V.1980 30 km Est Agadir W. Perraudin // *Euchroeus* Ltr. *Spinolia modicus* det Linsenmaier in 1987 // NML_ENT GBIF_Ch0012633”. This specimen, although not listed in the type series, could be anyway considered a paratype according to Article 72.4.1.1: “For a nominal species or subspecies established before 2000, any evidence, published or unpublished, may be taken into account to determine what specimens constitute the type series”. The type label handwritten by Linsenmaier in the year of description could be considered as the unpublished evidence that this specimen is truly a paratype.

***Euchroeus (Spinolia) pulawskii* Linsenmaier, 1968** (Figs 9G, 20A–F)

Euchroeus (Spinolia) pulawskii Linsenmaier, 1968: 41 (descr.).

Euchroeus (Spinolia) pulawskyi (sic): Linsenmaier 1987: 144. Incorrect subsequent spelling.

Synonym of *Euchroeus (Spinolia) alconost* Semenov-Tian-Shanskij, 1967 according to Linsenmaier (1987: 144).

Synonym of *Spinolia insignis* (Lucas, 1849) according to Kimsey & Bohart (1991: 551).

Synonym of *Euchroeus (Spinolia) alconost* Semenov-Tian-Shanskij, 1967 according to Linsenmaier (1997a: 262).

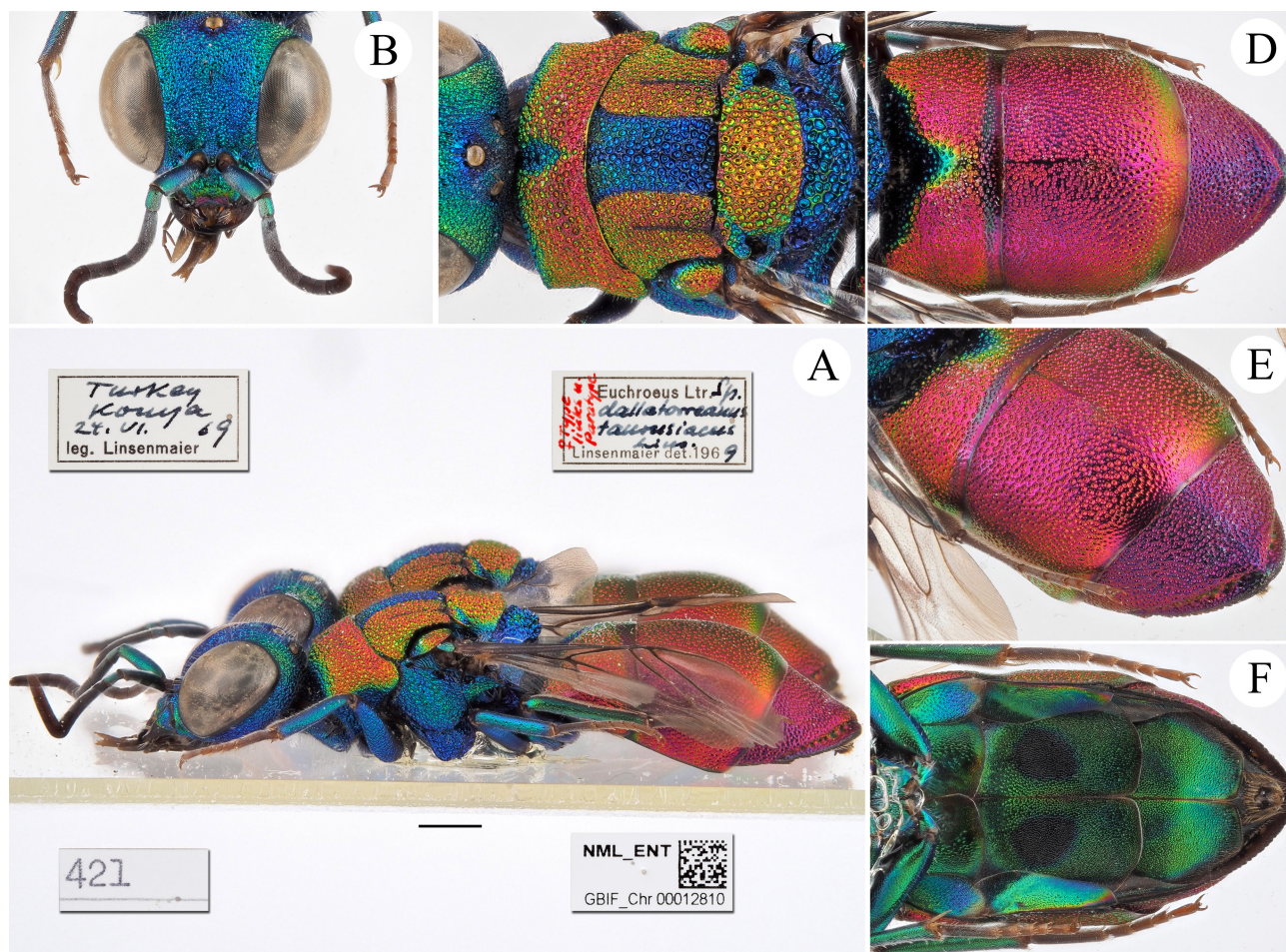


FIGURE 17. *Euchroeus (Spinolia) dallatorreanus taurusiacus* Linsenmaier, 1987, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Type locality. Turkmenistan: “Turkmenien, Tedshen, 26.V.64, leg. Pulawski, ♀ Type, ♀ Paratype, in Coll. m.”.

Holotype, ♀: Turkmenia Tedshen tugai 26.V.1964 leg. W.J. Puławski // ♀ Type *Euchroeus* Ltr. *Spinolia pulawskii* Lins. Linsenmaier det. 1967 // *Euchroeus* Ltr. *Spinoliaalconost* Sem. det. Linsenmaier 1988 // NML_ENT GBIF_Ch0012626 (ex type-collection).

Paratype, ♀: Turkmenia Tedshen tugai 27.V.1964 leg. W.J. Puławski // ♀ Paratype *Euchroeus* Ltr. *Spinolia pulawskii* Lins. Linsenmaier det. 1967 // *Euchroeus* Ltr. *Spinoliaalconost* Sem. det. Linsenmaier 1988 // NML_ENT GBIF_Ch0012625.

Remarks. *Spinolia pulawskii* is a synonym of *Spinoliaalconost* Semenov-Tian-Shanskij, 1967 as stated by Linsenmaier (1997a) and not of *S. insignis* (Lucas, 1849) as stated by Kimsey & Bohart (1991).

***Euchroeus (Spinolia) rogenhoferi sertavulacus* Linsenmaier, 1987**
(Figs 9E, 21A–F)

Euchroeus (Spinolia) rogenhoferi ssp. *sertavulacus* Linsenmaier, 1987: 143 (descr.).

Type locality. Turkey: “Turkey, Sertavulpass und Karaman. ♀ Type und ♀ Paratype Sertavul, Coll. m.”.

Holotype, ♀: Turkey Mut Sertavul Pass 20.VI.69 leg. Linsenmaier // ♀ Type *Euchroeus* Ltr. *Sp. rogenhoferi sertavulacus* Lins. Linsenmaier det. 1969 // 418 a // NML_ENT GBIF_Ch0012657 (ex type-collection).

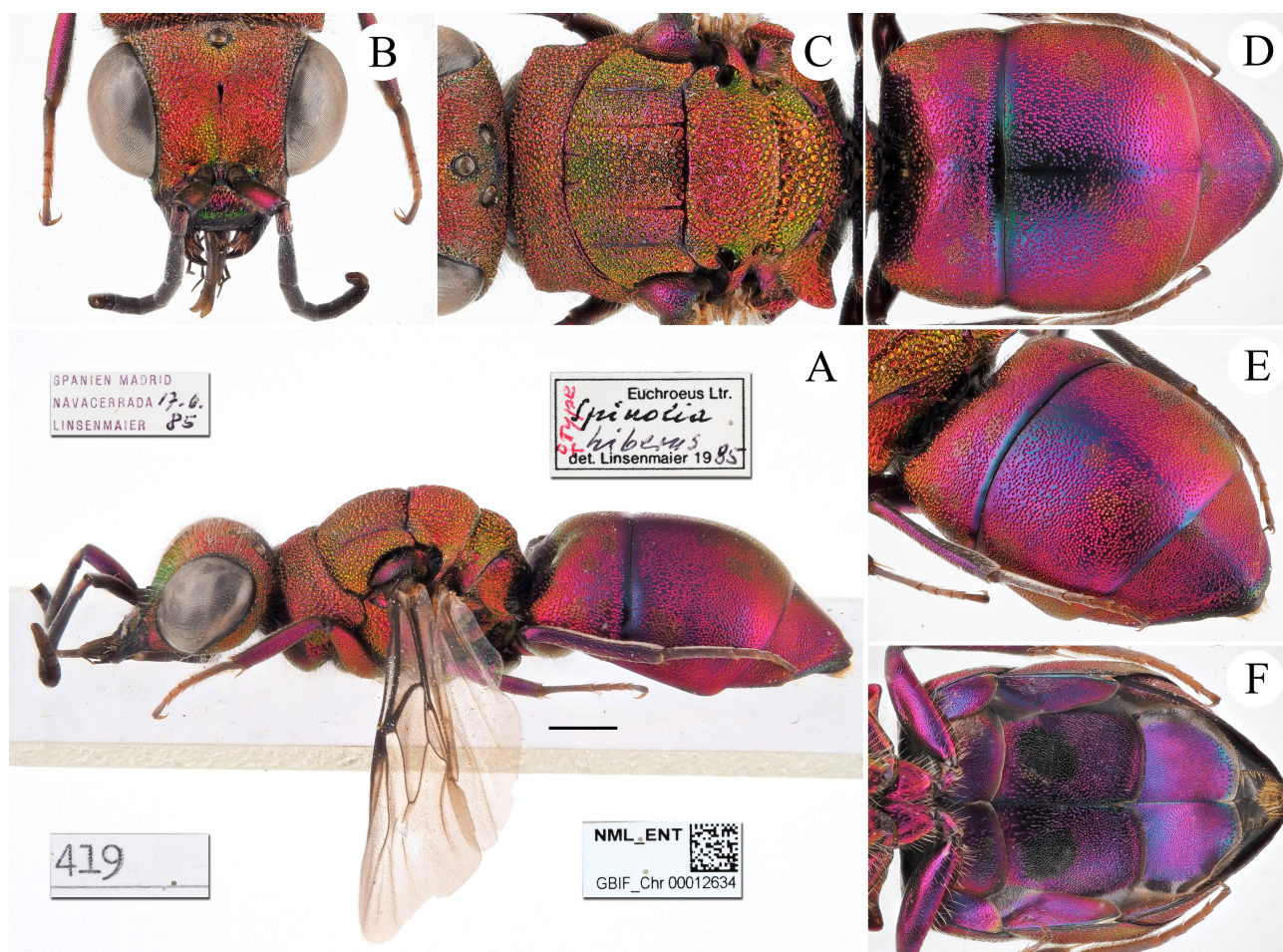


FIGURE 18. *Euchroeus (Spinolia) hiberus* Linsenmaier, 1987, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Paratype, ♀: Turkey Mut Sertavul Pass 20.VI.69 leg. Linsenmaier // ♀ Paratype *Euchroeus* Ltr. *Sp. rogenhoferi sertavulacus* Lins. Linsenmaier det. 1969 // NML_ENT GBIF_Ch0012658.

***Euchroeus (Spinolia) schlaeflei* Linsenmaier, 1999**

(Figs 9D, 22A–F)

Euchroeus (Spinolia) schlaeflei Linsenmaier, 1999: 94 (key), 95 (figs 155, 156, descr.).

Type locality. Jordan, Tunisia: “Jordanien, Madaba 1. V. 1997, W. Schlaefle, ♀ Type (Holotypus) Coll. m. - Tunesien, Djerba Houmt Souk, M. Hauser, ♂ Allotype Coll. m., Djerba 6. IV. 1992, ♀ Paratype leg. u. Coll. J. Gusenleitner”.

Holotype, ♀: Jordanien Madaba 1.5.97 W. Schlaefle Coll. Linsenmaier // ♀ Type *Spinolia schlaeflei* Lins. Linsenmaier det. 1998 // 514 // NML_ENT GBIF_Ch0012713 (ex type-collection).

Allotype, ♀: Tunesien Djerba Houmt Souk 5 km S Richtung Midoun leg.: M. Hauser // ♂ Alloype *Spinolia schlaeflei* Linsenmaier det. 1998 // NML_ENT GBIF_Ch0012714.

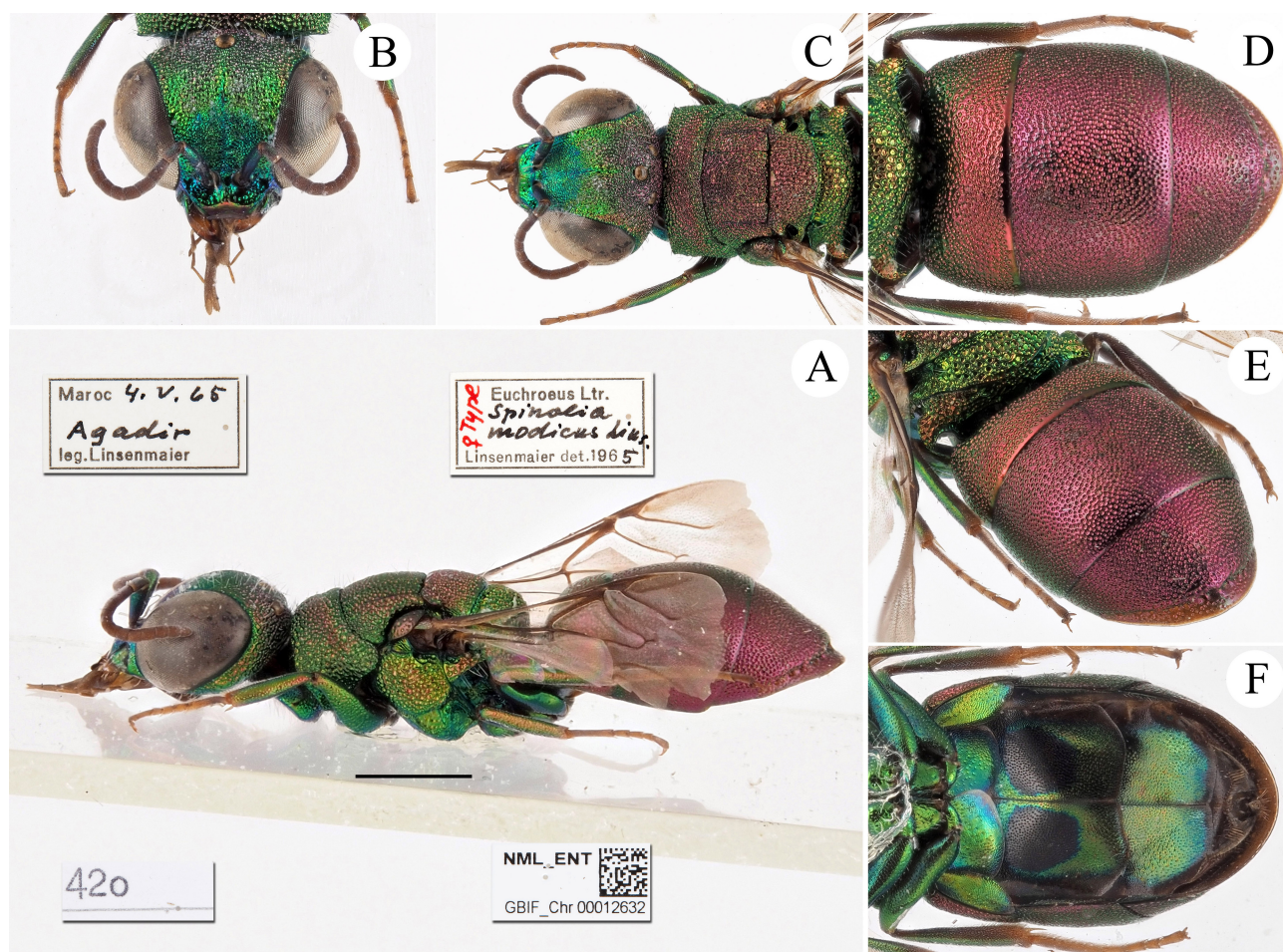


FIGURE 19. *Euchroeus (Spinolia) modicus* Linsenmaier, 1987, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Euchroeus (Spinolia) schmidtii Linsenmaier, 1987

(Figs 9H, 23A–F)

Euchroeus (Spinolia) schmidtii Linsenmaier, 1987: 138 (fig. 9), 143 (descr.).

Type locality. Greece, Turkey: “Griechenland, Peloponnes, Stimfalia (Schmidt) ♀ Type Coll. m. ♀ Paratype Turkey, Ercek-Gölü, Van (Warncke), Coll. Perraudin.”

Holotype, ♀: Stimfalia Greece 17.VII.1971 leg. Jos. Schmidt // ♀ Type *Euchroeus Spinolia schmidtii* Lins. det. Linsenmaier 1973 // 418 // NML_ENT GBIF_Ch0012826 (ex type-collection).

Paratype, ♀: TK Ercek-Gölü/Van 3.8.1983 1900m Warncke // ♀ Paratype *Euchroeus Spinolia schmidtii* det. Linsenmaier 1987 // NML_ENT GBIF_Ch0012825 (ex synoptic-collection).

Other Palaearctic types of *Euchroeus sensu* Linsenmaier housed in the Linsenmaier collection

Euchroeus eous Semenov-Tian-Shanskij, 1912 (PT)

Euchroeus purpuratus mongolicus Tsuneki, 1947 (4 PT)

Euchroeus (Pseudospinolia) gratus maculithorax Perraudin, 1978 (HT, AT)

Genus *Stilbum* Spinola, 1806

Stilbum Spinola, 1806: 9. Type species: *Chrysis calens* Fabricius, 1781 [= *Stilbum calens* (Fabricius, 1781)], by subsequent designation of Latreille, 1810.

The genus *Stilbum* is distributed in the Old World and includes at least eight valid species worldwide, four of which occur in the Palearctic region (Rosa *et al.* 2017a). Species of *Stilbum* are large and robust, with body lengths ranging from 10 to 22.0 mm (occasionally smaller). The key morphological features for identifying this genus include: head and scapal basin narrow, the latter cross-ridged; transverse frontal carina more or less sharp, encircling the anterior ocellus; subantennal space and malar space long (2–4 MOD); forewing marginal cell broadly open; metanotum with an oval cup-shaped projection; mesopleuron with a deep scrobal sulcus, ventrally with teeth; propodeal angle stout, with apical point projecting posteriorly; first tergum sharply angled anterolaterally and short medially; second tergum long, distinctly convex, and medially polished; third tergum with a strong prepit bulge overhanging the pit row; apical rim four-dentate.

Catalogue of *Stilbum* types described by Linsenmaier deposited in his collection

Palearctic species and subspecies of *Stilbum* described by Linsenmaier

Stilbum calens enslini Linsenmaier, 1951

Stilbum calens porosanum Linsenmaier, 1959a

Stilbum calens subcalens Linsenmaier 1951

Stilbum calens zimmermanni Linsenmaier, 1959a

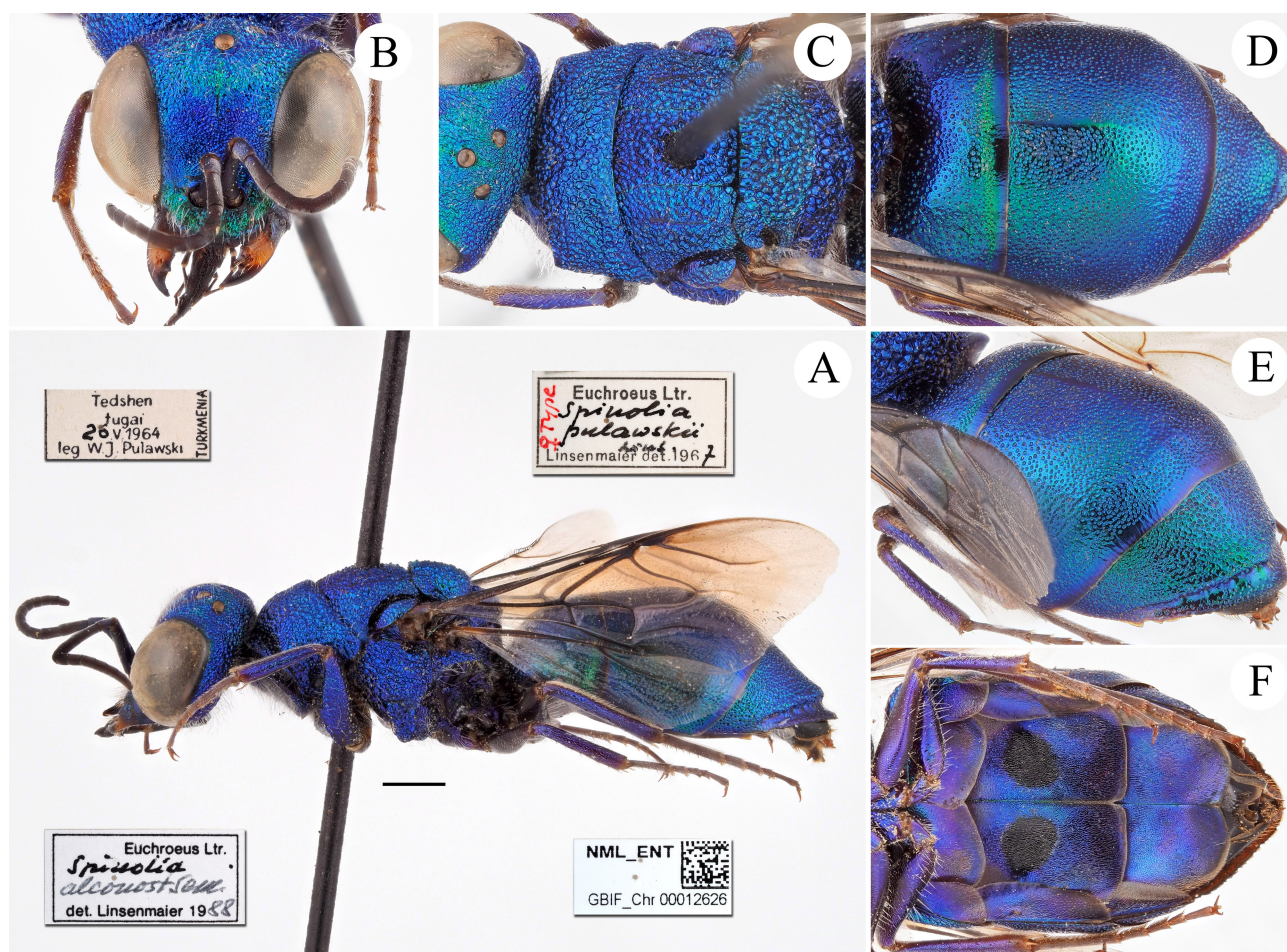


FIGURE 20. *Euchroeus* (*Spinolia*) *pulawskii* Linsenmaier, 1968, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

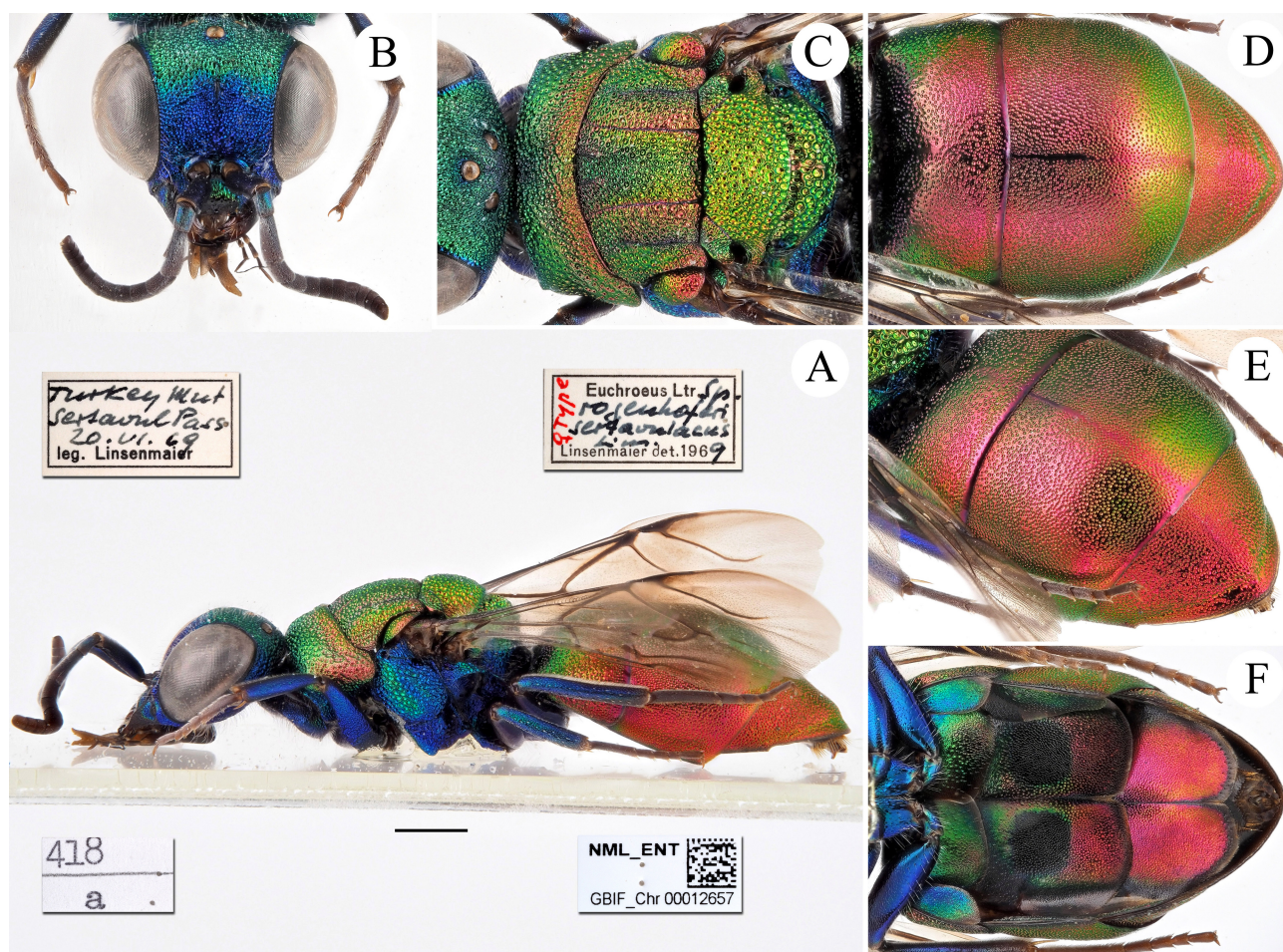


FIGURE 21. *Euchroeus (Spinolia) rogenhoferi sertavulacus* Linsenmaier, 1987, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Stilbum calens enslini Linsenmaier, 1951

(Figs 24A, 25A–F)

Stilbum calens var. *enslini* Linsenmaier, 1951: 90 (descr.); 107 (cat.).

Stilbum calens spp. *enslini*: Linsenmaier 1959a: 182 (diagn., typ.); 193 (cat.).

Type locality. France (Corsica), Italy (Sicily), Northern Africa: “Sizilien, Korsika, Nordafrika. [...] 1 ♂ und 1 ♀ meiner Sammlung (Coll. Dr. Enslin) von Sizilien (Palermo), welche Stücke ich als Type und Allotype bezeichne.”.

Holotype, ♀: Palermo 15.V.21 Fr. Wagner // ♀ Type *Stilbum* Sp. *calens enslini* Lins. Linsenmaier det. 51 // 19 // NML_ENT GBIF_Ch0045073 (ex type-collection).

Allotype, ♂: Palermo 15.V.21 Fr. Wagner // Type *Stilbum* Sp. *calens enslini* Lins. Linsenmaier det. 51 // NML_ENT GBIF_Ch0045074 (ex type-collection).

Remarks. In the original description, Linsenmaier (1951) mentioned paratypes from Corsica and North Africa, without specifying precise localities. Later, Linsenmaier (1959a) considered *enslini* as a subspecies of *Stilbum calens* and reported that the North African paratypes belong to another subspecies, *S. calens subcalens*, while he cited *S. calens enslini* from Corsica only with doubt: “Sizilien, ? Korsika (die von mir 1951 beigezogenen Individuen von Nord-Afrika gehören zu ssp. *subcalens*)». As noted in other cases (Rosa *et al.* 2015), Linsenmaier removed the type labels from the Corsican and North African specimens he studied in 1951, and these specimens can no longer be found in the collection.

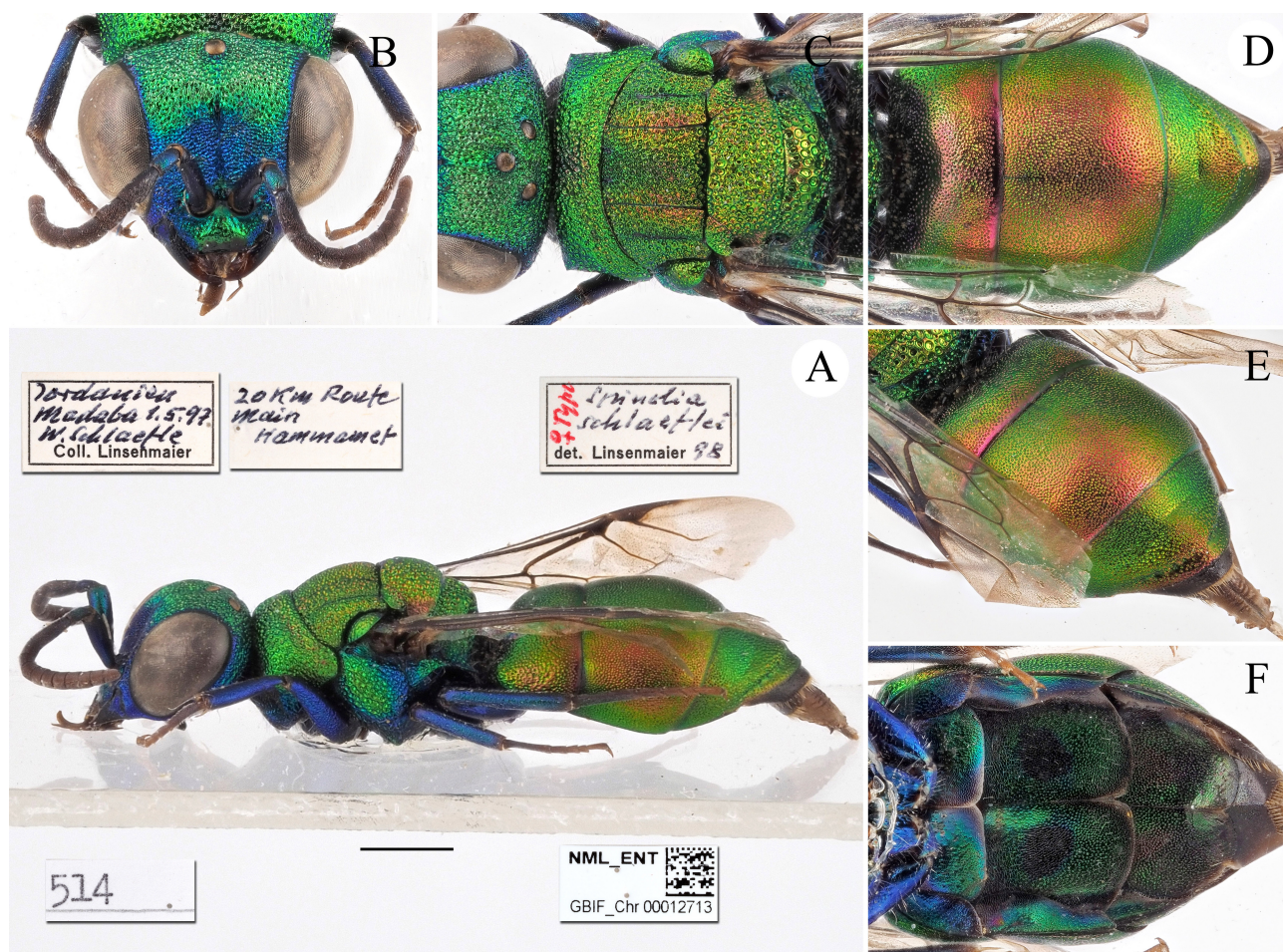


FIGURE 22. *Eucharoeus (Spinolia) schlaeflei* Linsenmaier, 1999, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Stilbum calens porosanum* Linsenmaier, 1959a**
(Figs 24B, 26A–F)

Stilbum calens ssp. *porosanum* Linsenmaier, 1959a: 182 (descr.); 193 (cat.).

Type locality. Greece: “Insel Porös (Griechenland), ♂ Type und Paratype Coll. m.”.

Holotype, ♂: Poros Krüper 96 // ♂ Type *Stilbum* Sp. *calens porosana* [sic] Lins. Linsenmaier det. 59 // 178 // NML_ENT GBIF_Ch0044993 (ex type-collection).

Paratype, ♂: Poros 96 Krüper // ♂ Paratype *Stilbum* Sp. *calens porosana* [sic] Lins. Linsenmaier det. 59 // (ex type-collection) // NML_ENT GBIF_Ch0044991.

***Stilbum calens subcalens* Linsenmaier 1951**
(Figs 24C, 27A–F)

Stilbum calens ab. *subcalens* Mader, 1933: 126 (key, descr.). Invalid name.

Stilbum calens var. *subcalens* Linsenmaier 1951: 90 (descr.); 107 (cat.).

Stilbum calens ssp. *subcalens* Linsenmaier 1959a: 181 (diag., distr.); 193 (cat.); 1968: 123 (distr.); 1969: 371 (distr.).

Synonym of *Stilbum calens wesmaeli* Dahlbom, 1845 according to Linsenmaier (1997a: 287; 1999: 254).

Synonym of *Stilbum calens westermanni* Dahlbom, 1845 according to Rosa & Vårdal (2015: 123).

Synonym of *Stilbum westermanni* Dahlbom, 1845 according to Rosa *et al.* (2023b: 31).

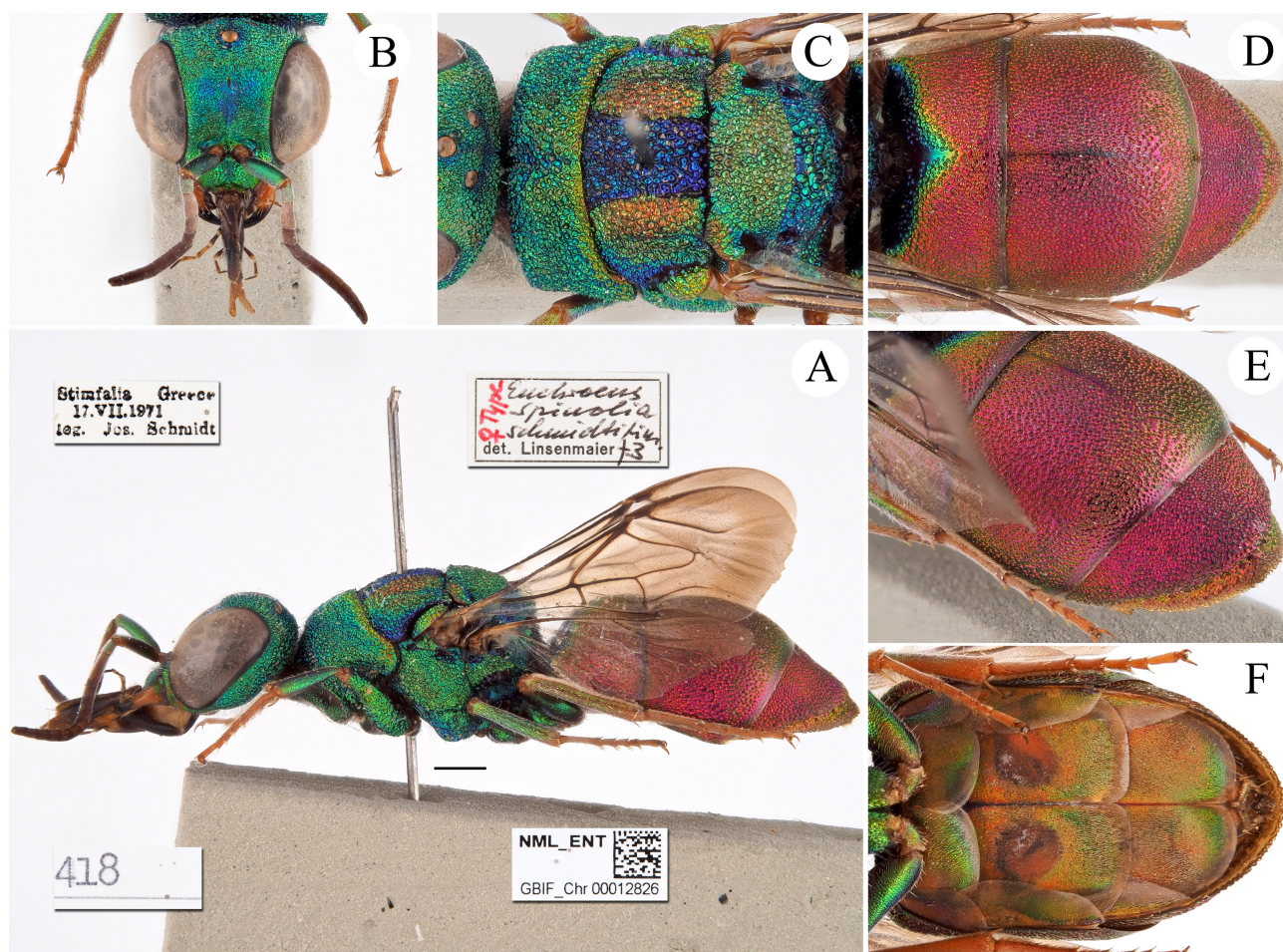


FIGURE 23. *Euchroeus (Spinolia) schmidtii* Linsenmaier, 1987, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Head and mesosoma, dorsal view. D) Metasoma, dorsal view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Type locality. Europe to South-West Asia: “Mittel- und Südeuropa bis Südwestasien”.

Syntypes, 3♂, 1♀: Insel Krk Cro., Mader // Cotypus // *Schischmai* m. [= mihi] // *Stilbum* Sp. *calens subcalens* Mader Linsenmaier det. 59 // NML_ENT GBIF_Ch0045026-45029.

Remarks. Linsenmaier (1951: 90) treated the invalid name *Stilbum cyanurum* ab. *subcalens* Mader, 1933 as a variety of *S. calens*, and later as a subspecies (1959a: 181), thereby making this name available as a species-group name (ICZN 1999, Article 45.6.3). As Linsenmaier was the first author to make the name available, he was considered as the author of *S. subcalens* (ICZN 1999, article 50.3.1) by Rosa *et al.* (2015).

In Linsenmaier’s collection, four specimens collected by Mader on the island of Krk (Croatia) and identified by Linsenmaier as *S. calens subcalens* are present, which we consider syntypes. No specimen collected and identified by Mader as *S. calens subcalens* was found in the NHMW collection (Rosa *et al.* 2020b). Interestingly, these four specimens were identified by Mader as the aberration *Schischmai*, another unavailable name and a colour form of *subcalens*.

In his major revisions, Linsenmaier (1959a: 181 and 1968: 123) used the name *S. calens* ssp. *subcalens* Mader, 1933 for the corresponding subspecies distributed in the Mediterranean basin (Dalmatia, Balcan Contries, Rhodes, Persia, southern Switzerland (Misox), southern France, Spanien, northern Africa (Linsenmaier 1959a), Lebanon (Linsenmaier 1968) and Israel (Linsenmaier 1969)). However, in later publications, Linsenmaier (1997a: 287, 1997b: 134, 1999: 254) adopted the name *S. calens* ssp. *wesmaeli* Dahlbom as the oldest name for this taxon, synonymizing *S. subcalens* and *S. macedonicum* Trautmann, 1926 with *S. calens* ssp. *wesmaeli*.

Most major authors prior to Linsenmaier (1997a) considered *Stilbum wesmaeli* Dahlbom, 1845 as a synonym of *S. cyanurum* (Forster, 1771) (Mocsáry 1889: 190; Dalla Torre 1892: 38; Bischoff 1913: 26; Trautmann 1927: 80).

However, *Stilbum wesmaeli* was not even mentioned by Mader (1933) and Zimmermann (1937) in their revisions of the genus *Stilbum*.

As noted by Rosa & Vårdal (2015), the type and other specimens of *S. wesmaeli* deposited at NHRS are not related to *S. calens* (Fabricius), but belong to a distinct population of *S. cyanurum* (Forster) probably endemic to the island. By contrast, *Stilbum westermanni* is related to *S. calens* Fabricius. Linsenmaier (1997a: 287, 1997b: 134, 1999: 254) confused the two species described by Dahlbom from Rhodes (*wesmaeli* and *westermanni*), and incorrectly proposed the combination *S. calens* ssp. *wesmaeli* instead of *S. calens* ssp. *westermanni*. Recently, Rosa *et al.* (2023b) elevated *S. westermanni* to species rank based on DNA barcoding analyses.

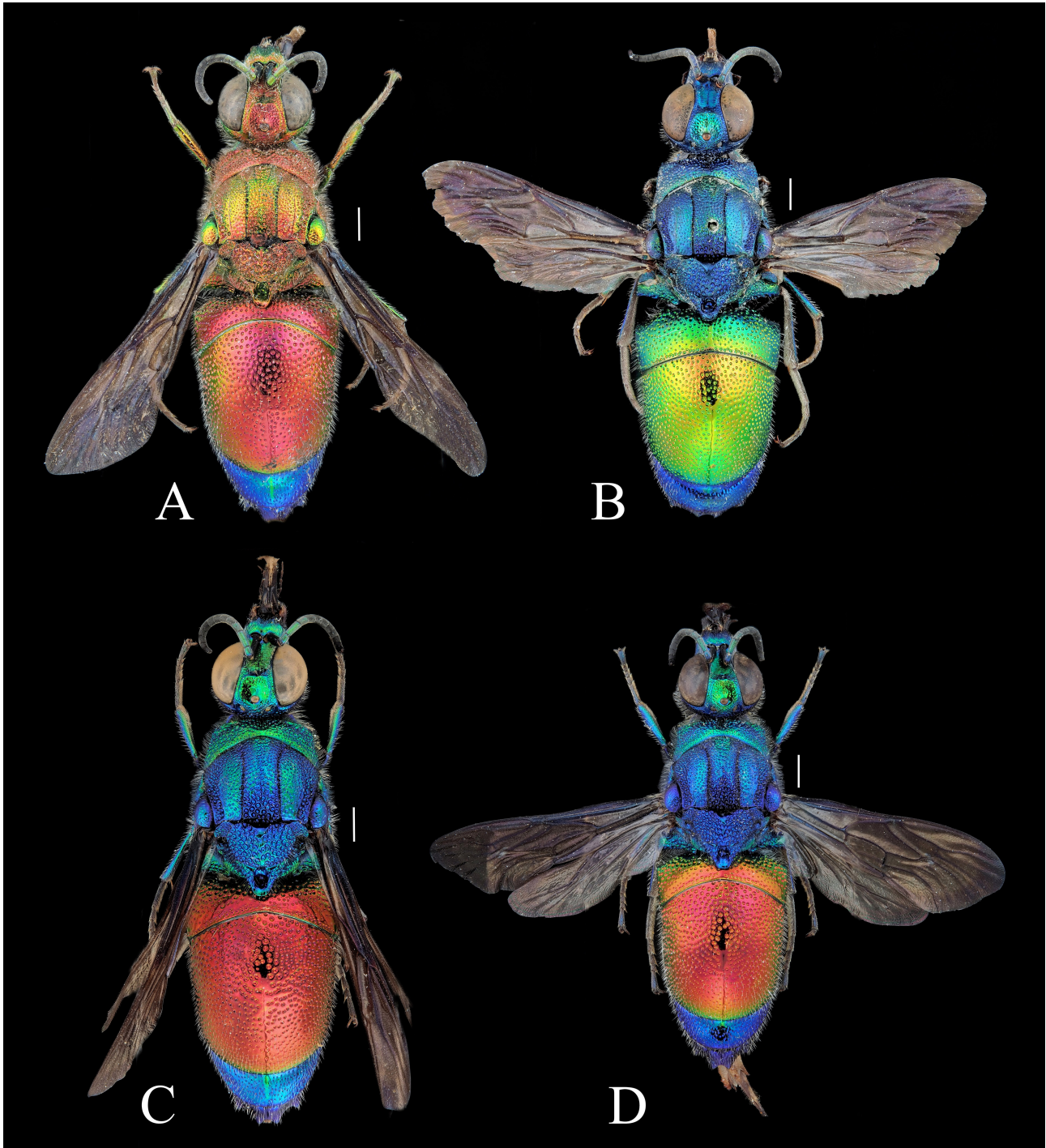


FIGURE 24. *Stilbum*, dorsal view. A) *S. calens enslini* Linsenmaier 1951, holotype, ♀. B) *S. calens* ssp. *porosanum* Linsenmaier, 1959a, holotype, ♂. C) *S. calens subcalens* Linsenmaier 1951, syntype, ♀. D) *S. calens zimmermanni* Linsenmaier, 1959a, holotype, ♀. Scale bar 1.0 mm.

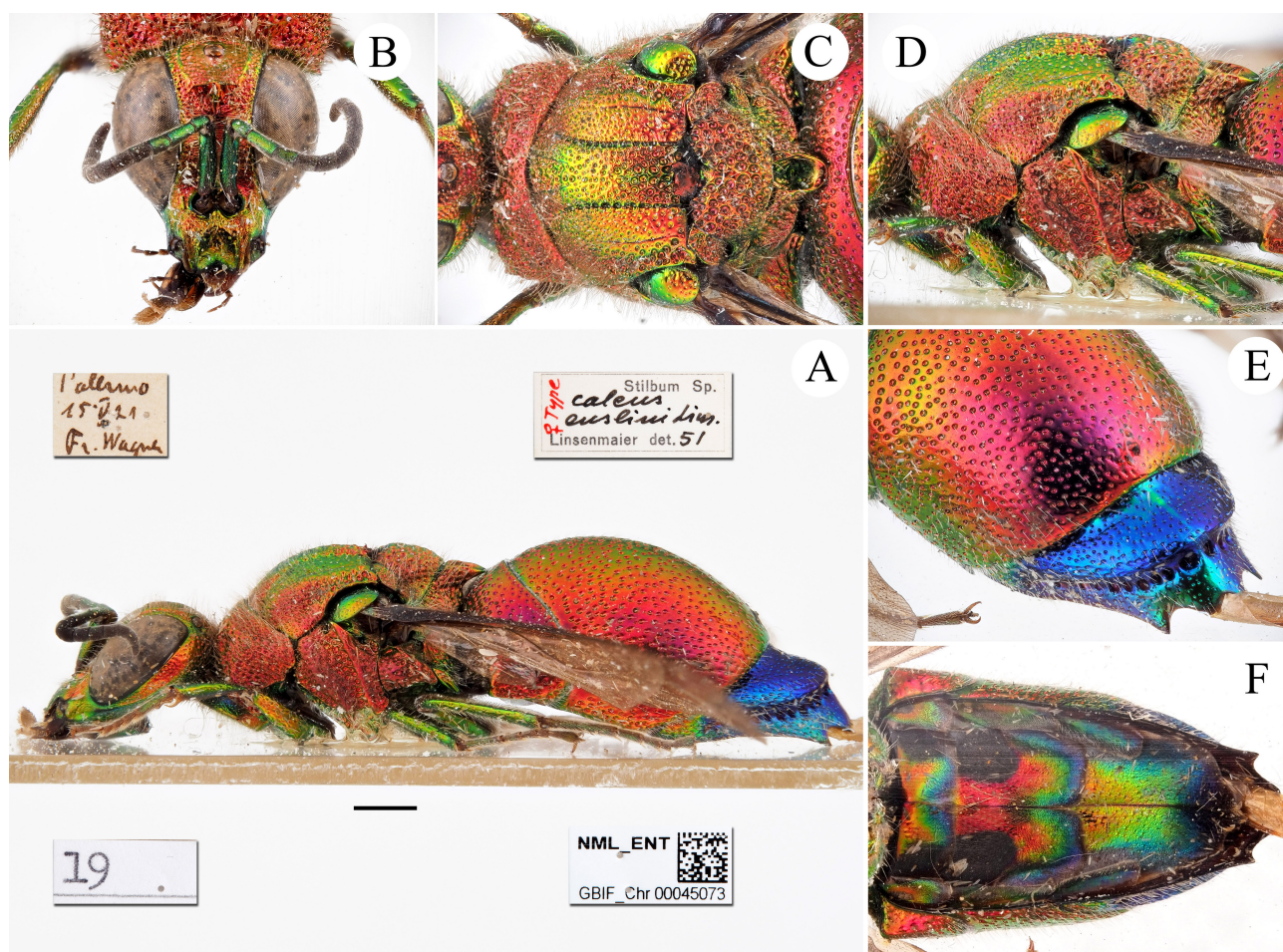


FIGURE 25. *Stilbum calens enslini* Linsenmaier, 1951, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Mesosoma, dorsal view. D) Mesosoma, lateral view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

***Stilbum calens zimmermanni* Linsenmaier, 1959a**
(Figs 24D, 28A–F)

Stilbum calens ssp. *zimmermanni* Linsenmaier, 1959a: 181 (descr.), 193 (cat.), 215 (figs ♀ 657, 658, 663, ♂ 655, 656); 1968: 123 (distr.); 1997b: 132 (diagn.), 133 (unnumbered fig.).

Type locality. South and central Europe: “Süd- und wärmeres Mittel-Europa, meist nicht selten. ♀ Type ♂ Allotype (Wallis) Coll. m.”.

Holotype, ♀: Wallis C 900m 29.6.47 Linsenmaier // ♀ Type *Stilbum* Sp. *calens zimmermanni* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0044989 (ex type-collection).

Allotype, ♂: Wallis C 900m 4.7.51 Linsenmaier // ♂ Allotype *Stilbum* Sp. *calens zimmermanni* Lins. Linsenmaier det. 59 // NML_ENT GBIF_Ch0044990 (ex type-collection).

Paratypes, 1♀: Insel krk Cro., Mader // ♀ Paratype *Stilbum* Sp. *calens zimmermanni* Lins. Linsenmaier det. 59 // *Schischmai* mit goldgr. Seitenfeldern d. Mesonotum // NML_ENT GBIF_Ch0044954; 1♂: Wallis B 550m 23.6.45 Linsenmaier // ♀ Paratype *Stilbum* Sp. *calens zimmermanni* Lins. Linsenmaier det. 59 NML_ENT GBIF_Ch0044902; 1♂ // Val d’Hèrus Wallis 7.52 Linsenmaier // *Stilbum* Sp. *calens zimmermanni* det. Lins // NML_ENT GBIF_Ch0044982.

Remarks. In the Linsenmaier collection there are other 48 specimens identified as *Stilbum calens zimmermanni* by Linsenmaier in 1959. Based on the date and locality of their collection and the identification date, they could be all considered as paratypes as already observed in other series of potential paratypes not properly labelled by

Linsenmaier (Rosa *et al.* 2015). Very likely, Linsenmaier considered irrelevant labelling as types long series of common species. Thirty of these specimens were collected in Switzerland (Wallis), five from Croatia (Dalmatia, Krk Is.), three from North Macedonia (Bitola, Sirkovo), two from Austrian Alps (Tirol); two from Italy (Opicina, Florence); one from Spain (Albarracin); five from France (Var, Callian).

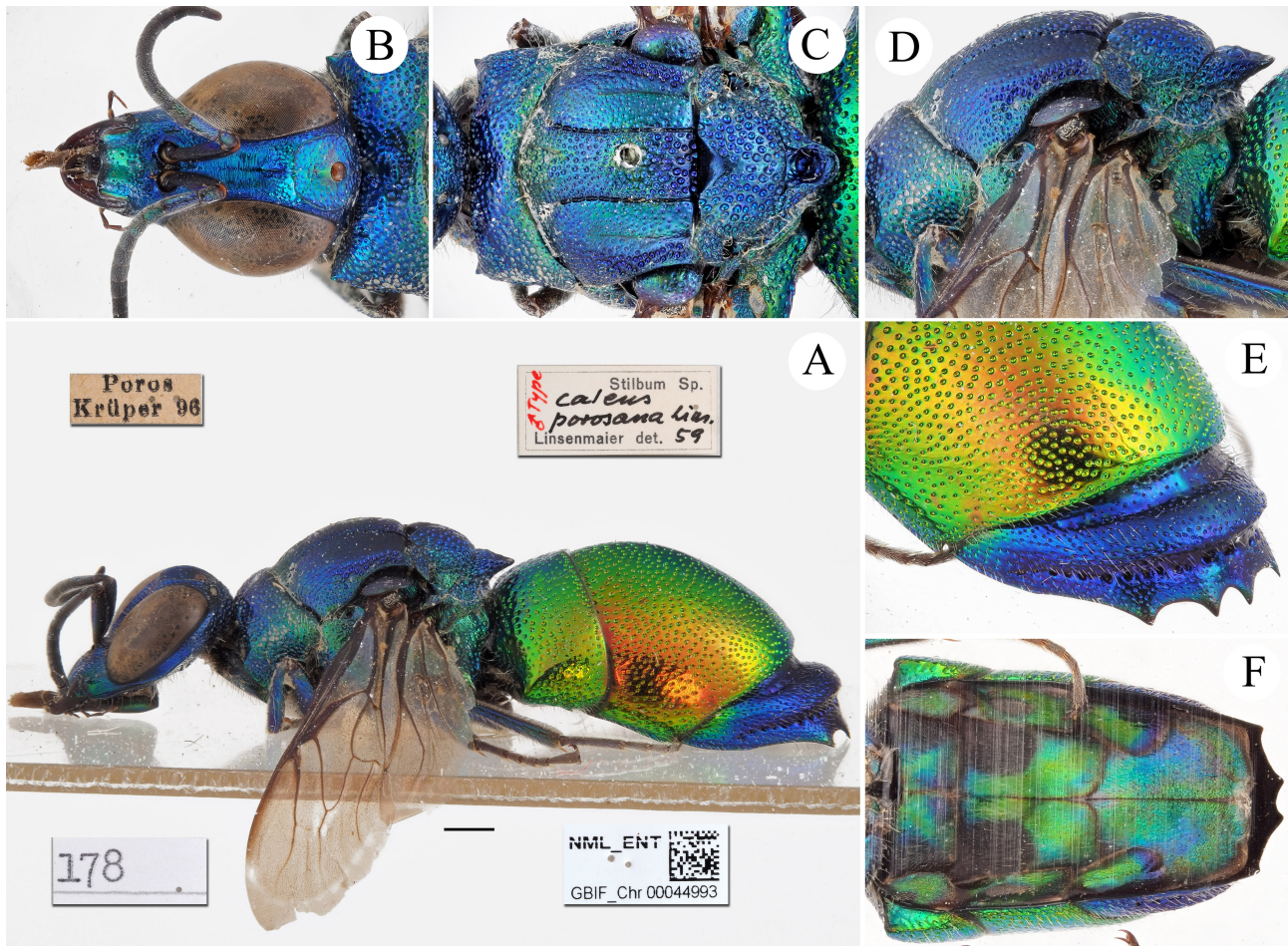


FIGURE 26. *Stilbum calens porosanum* Linsenmaier, 1959a, holotype, ♂. A) Habitus, lateral view. B) Head, frontal view. C) Mesosoma, dorsal view. D) Mesosoma, lateral view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Discussion

In this first part of a catalogue of Chrysidini types described by Linsenmaier, we present the genera *Euchroeus* and *Stilbum* together. Based on the most recent phylogenetic studies, both belong to the ‘*Euchroeus* group’ as given by Niehuis & Wägele (2004) and Pauli *et al.* (2019). The ‘*Euchroeus* group’ and the ‘*Chrysis* group’ represent the two major lineages into which the tribe Chrysidini is divided at its base. At present, both the tribal and generic classification of Chrysidini await comprehensive re-evaluation.

Notes on non-type material

As noted by Rosa *et al.* (2015), Linsenmaier often designated specimens as ‘allotype’ that are not part of the original type-series, but were collected later by himself or by his colleagues. This occurs, for example, in the cases of *Euchroeus* (*Prospolinia*) *theresae* (du Buysson, 1900), and *E. (Euchroeus) hellenicus* (Mocsáry, 1913) for the Palaearctic fauna. Some of these “allotypes” without type status were published in his papers (Linsenmaier 1968, 1987, 1997a). Unfortunately, this practice was also applied to specimens received from various museums, and some of these were erroneously considered as valid types by later authors (e.g., Mingo 1985), even though they lack type status.

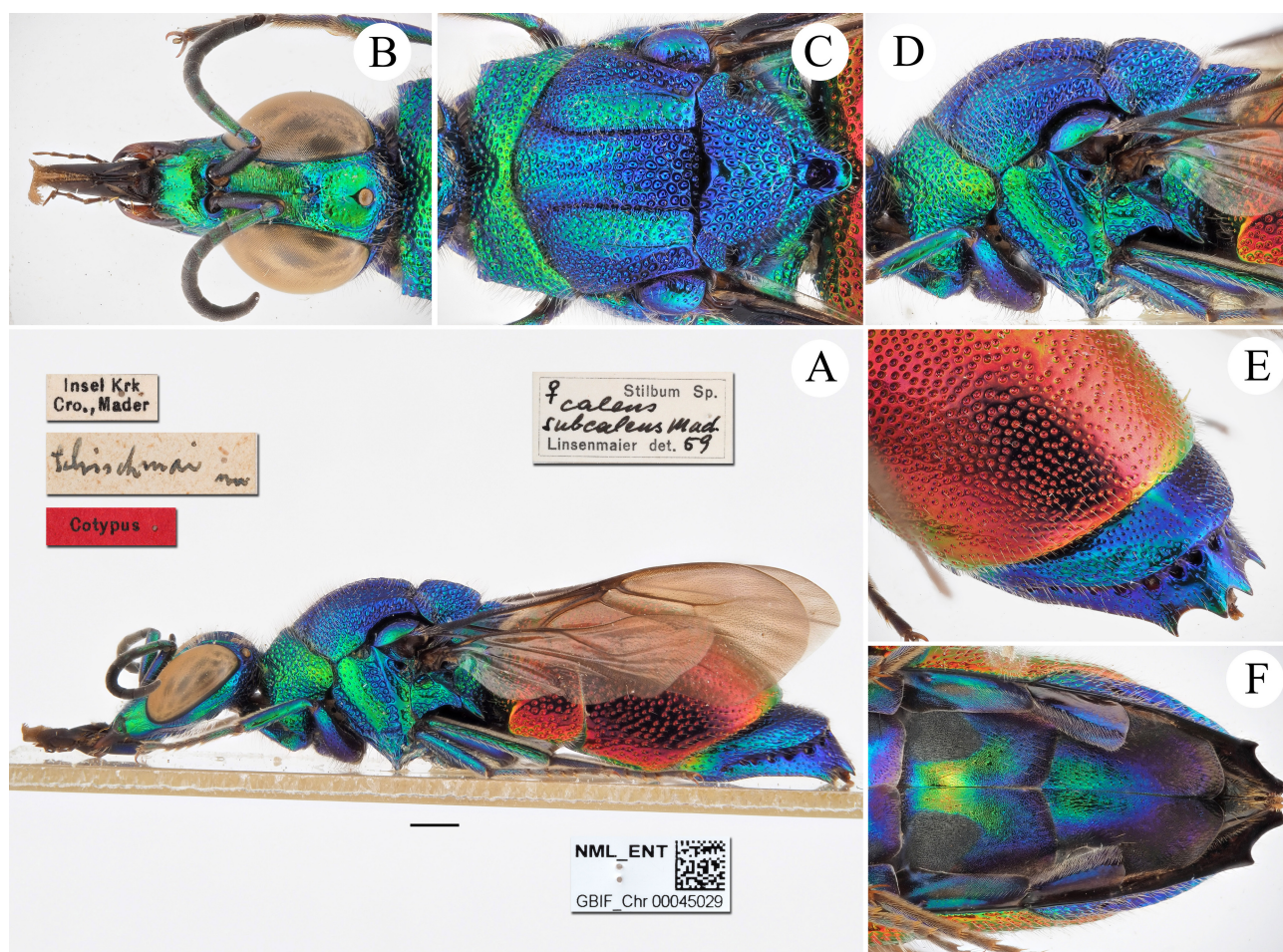


FIGURE 27. *Stilbum calens subcalens* Linsenmaier 1951, syntype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Mesosoma, dorsal view. D) Mesosoma, lateral view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Besides the invalid ‘allotypes’ of *Euchroeus* (*Euchroeus*) *moricei bytinskii* Linsenmaier, 1969 and *Euchroeus* (*Pseudospinolia*) *humboldtii libanesus* Linsenmaier, 1959a already discussed above, Linsenmaier labelled the following specimens as ‘allotype’, and published the designation of the first two:

- *Euchroeus* (*Euchroeus*) *hellenicus* Mocsáry, 1913 (one ♂ labelled as allotype from: Graecia, Pelop. Patras 20. VI.66 leg. Linsenmaier // ♂ Allotype *Euchroeus hellenicus* Mocs. Linsenmaier det 1986 // No Type P. Rosa det. 2010. NML_ENT GBIF_Ch0013148 (ex synoptic-collection).
- *Euchroeus* (*Prospinolia*) *theresae* du Buysson, 1900: ♂ labelled as allotype from: Jordan Plains betw. Jericho and the Dead Sea 7.IV.1964 PMF Verhoeff // ♂ Allotype *Euchroeus Prospinolia theresae* Buysson Linsenmaier det 1964 // No Type P. Rosa det. 2010 NML_ENT GBIF_Ch0012605 (ex synoptic-collection).
- *Euchroeus* (*Spinolia*) *lamprosomus* Dahlbom, 1854: ♂ labelled as allotype from: Türkei Malatya 900m 21.VI.1984 leg. Kl. Warncke // Allotype // *lamprosomus segusianus* Giraud Europa // NML_ENT GBIF_Ch0012830 // No Type det. P. Rosa 2010 (ex synoptic-collection).

The following specimens were labelled as ‘paratype’ by Nikol’skaja or another curator in St. Petersburg, but they do not have type status (see Rosa *et al.* 2017a for the type series):

- *Euchroeus* (*Euchroeus*) *virgo* Semenow, 1891: 1♀ from: Transcaspien Imam-baba W. Koshantschikoff / 12.V.12) // ♀ Paratype *Euchroeus virgo* Sem. // *Euchroeus* Ltr. *singularis* spin. Linsenmaier det 1965 // No Type det. P. Rosa 2010 // NML_ENT GBIF_Ch0012903 (ex synoptic-collection).
- *Parnopes glasunowi* Semenow, 1901: 1♂, 1♀ from: St. Farab env. Bukhara 8.VI.915 Golbek [in cyrillic] // Paratype // No Type det. P. Rosa 2010 // NML_ENT GBIF_Ch0046241-46242 (ex synoptic-collection).

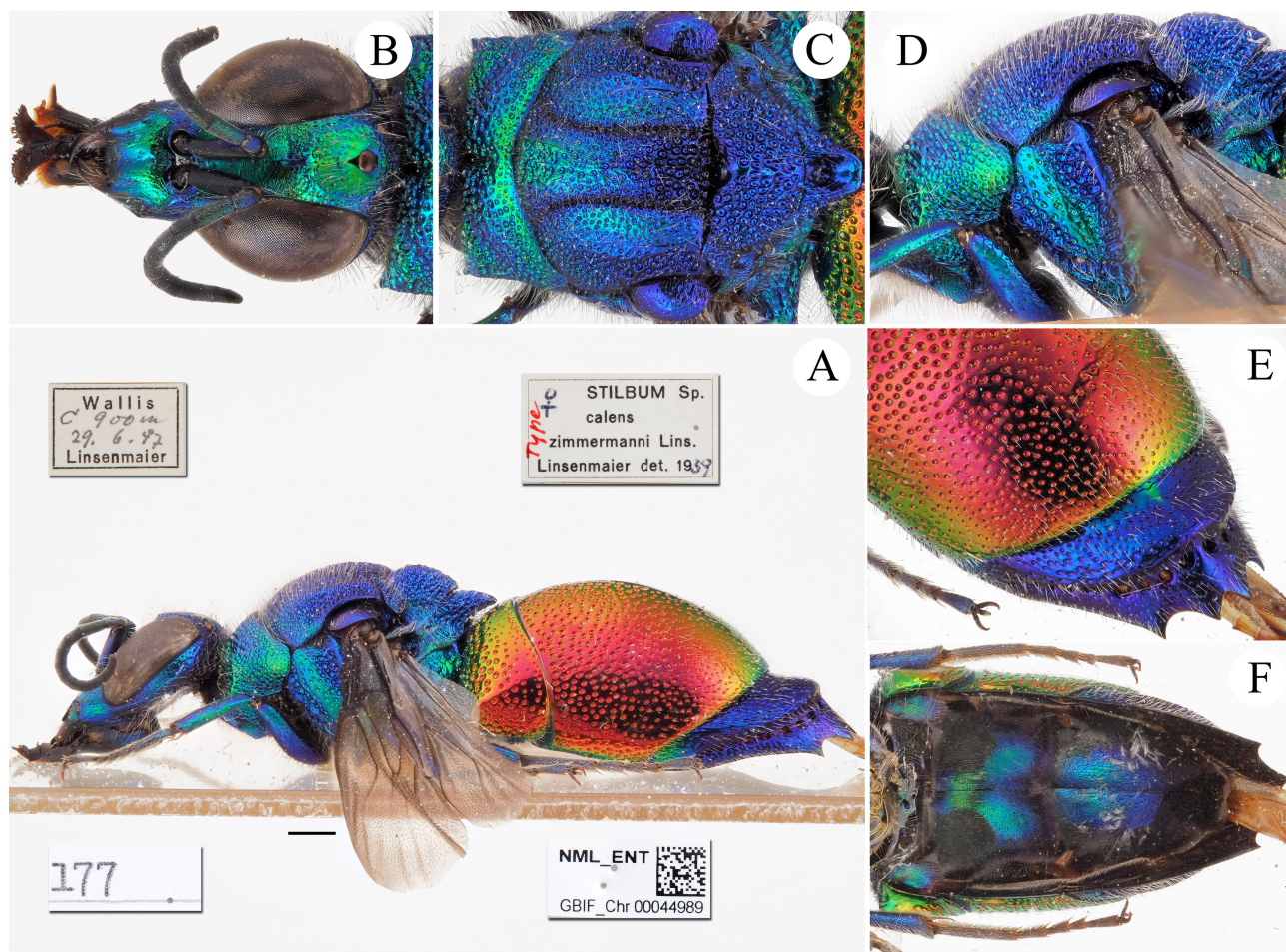


FIGURE 28. *Stilbum calens zimmermanni* Linsenmaier, 1959a, holotype, ♀. A) Habitus, lateral view. B) Head, frontal view. C) Mesosoma, dorsal view. D) Mesosoma, lateral view. E) Metasoma, postero-lateral view. F) Metasoma, ventral view. Scale bar 1.0 mm.

Intraspecific status of Linsenmaier's taxa

It is interesting that 65% (17 of 26) of the taxa described by Linsenmaier (1951, 1959a, 1968, 1987, 1997a, 1999) were introduced as varieties or subspecies. This represents the highest rate of subspecific names among his taxa (even 100% in the case of *Stilbum*). As noted by Rosa *et al.* (2015), Linsenmaier (1951, 1959a, 1959b, 1987, 1997a) in his major revisions of the European fauna described 218 subspecies and 230 species; thus, 48.7% of his new taxa were described as subspecies. This pattern is clearly illustrated in his first publication (Linsenmaier 1951), where he described only one new species but 27 new varieties, twelve of which were later recognized as valid species, and others are likely to be elevated to species rank in the future. The same is true for some taxa of *Euchroeus* and *Stilbum* presented in this catalogue: for example, *Stilbum westermanni* (originally named *Stilbum calens subcalens* and later *S. c. wesmaeli* by Linsenmaier) was elevated to species rank by Rosa *et al.* (2023b) after DNA barcoding. Other cases which are currently under revision are related to the subspecies of *Euchroeus* (*E.*) *purpuratus*. However, results will follow in a further revision of the European species.

Conclusions

Linsenmaier's revisions (1959a, b, 1968, 1969, 1987, 1994, 1997a, 1999) remain the only comprehensive tools for the identification of *Euchroeus* species in the Western Palaearctic region. In fact, he was the only author to provide species-level keys at a supranational scale: Europe and part of western Asia (1959a, 1997a), Arabian Peninsula (1994) and northern Africa (1999). Although Central Asia was excluded from Linsenmaier's revisions, his work

can be complemented by that of Semenov-Tian-Shanskij (summarised by Rosa *et al.* 2017a) to achieve a complete overview of the Palaearctic fauna.

By contrast, the world fauna of the genus *Stilbum* requires further study, as more species than those recognised as valid in the catalogue by Kimsey & Bohart (1991) can be now distinguished both morphologically and genetically (Rosa *et al.* 2023b). A similar situation exists for the genus *Parnopes*, which includes several undescribed species currently under revision (Rosa *et al.* 2023b; PR, unpublished).

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