

The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae)*

*pdf-file, made by the final draft, the original paper may include some minor changes.

Sex symbols : (£) = femelle; (\$) = mâle

Abstract

Eight *Eoferreola* species of the Mediterranean area and central Asia are revised: **Eoferreola anatolica** Priesner, 1973 - **Eoferreola cyrenaica** (Guiglia, 1941): (*Paraferreola facilis* Priesner, 1966 new synonym; *Paraferreola anomala f. croceicornis* Priesner; new synonym) - **Eoferreola distincta** (Smith, 1855): (*Ferreola distincta* Smith, 1855: 169 new combination; *Ferreola syraensis* Radoszkowski, 1889 new synonym; *Eoferreola schmidti* Priesner, 1973; new synonym, *Eoferreola manticata f. cinerata* Priesner, 1973 new synonym; *Salius grandis* Radoszkowski 1887, new synonym) - **Eoferreola erythraea** (Pallas, 1773): (*Ferreola sirdariensis* Radoszkowski, 1889: new synonym) - **Eoferreola manticata** (Pallas 1771): *Salius Hellmanni* Eversmann, 1849 new synonym. - **Eoferreola mixta** (Tournier, 1895) - **Eoferreola neftae** Schmid-Egger new species from north Africa - **Eoferreola rhombica** (Christ 1791). Most of the species are represented by different color forms. A key to species identification is presented. The following species do not belong to *Eoferreola*: *Paraferreola simplex* Haupt, 1962 = **Apareia simplex** (Haupt, 1962), new synonym; *Ferreola pici* Tournier, 1895 = **Ferreola algira** Lepeletier 1845, new synonym.

Acht *Eoferreola*-Arten aus dem Mittelmeerraum und Zentralasien werden revidiert: **Eoferreola anatolica** Priesner, 1973 - **Eoferreola cyrenaica** (Guiglia, 1941): (*Paraferreola facilis* Priesner, 1966, neues Synonym; *Paraferreola anomala f. croceicornis* Priesner; neues Synonym) - **Eoferreola distincta** (Smith, 1855): (*Ferreola distincta* Smith, 1855: 169 neue Kombination; *Ferreola syraensis* Radoszkowski, 1889 neues Synonym; *Eoferreola schmidti* Priesner, 1973; neues Synonym, *Eoferreola manticata f. cinerata* Priesner, 1973 neues Synonym; *Salius grandis* Radoszkowski 1887, neues Synonym) - **Eoferreola erythraea** (Pallas, 1773): (*Ferreola sirdariensis* Radoszkowski, 1889: neues Synonym) - **Eoferreola manticata** (Pallas 1771): *Salius Hellmanni* Eversmann, 1849 neues Synonym. - **Eoferreola mixta** (Tournier, 1895) - **Eoferreola neftae** Schmid-Egger, neue Art aus Nordafrika - **Eoferreola rhombica** (Christ 1791). Die meisten Arten treten in mehreren Farbformen auf. Ein Schlüssel für alle Taxa wurde erstellt. Die folgenden Arten gehören nicht zu *Eoferreola*: *Paraferreola simplex* Haupt, 1962 = **Apareia simplex** (Haupt, 1962), neues Synonym; *Ferreola pici* Tournier, 1895 = **Ferreola algira** Lepeletier 1845, neues Synonym.

Introduction

The genus name *Eoferreola* appeared for the first time in the year 1935 when Arnold created it as subgenus of *Paraferreola* Susterka, 1913 for *Anoplius soleanus* Cameron, 1905 from South Africa. Arnold based his subspecies on the form of the propodeum which is rounded and not with lateral edges as in other species of the genus. Arnold placed *Anoplius melanostoma* Cameron and *spilopus* Cameron in

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Paraferreola s. str., 1905 which represent two sexes of the same species (*A. spilopus* is a new synonym of *A. melanostoma*).

The name *Paraferreola* was proposed by Susterer in 1913 to distinguish *Ferreola* Smith and auct. which was created by Lepeletier in 1845 (type species: *Ferreola algira* Lepeletier). *Paraferreola* united at this time a series of species described by Pallas, Radoszkowski, Tournier, Eversmann, Christ and Smith (cf. Haupt, 1927) in different families and genera as *Sphex*, *Pompilus*, *Ferreola* and *Salius*. Susterer designated *Sphex ursus* of Fabricius, 1793 as type. Schulz discovered unfortunately after examining the type in 1912 that it is a male of a Mutillidae and underscored that *Paraferreola* is not suited as genus name in Pompilidae. Haupt (1927) emphasized this fact but nevertheless kept the name and designated as type species *Paraferreola rhombica* Christ.

Because of this, Pate (1946) created the subgenus *Tea* to regroup the *Paraferreola* of authors, nec. Susterer, with the type species *Sphex rhombica* Christ, 1791. Wahis (1970) discussed the case and concluded that *Eoferreola* must replace *Tea*, because it was the older name (has priority).

The mediterranean species of *Eoferreola* were never revised nor really examined until now. Most former authors (Haupt 1927, Priesner 1966, Wolf 1972) did not recognize suited characters for species recognition. So the male sternal depressions of *E. distincta* and other species was never mentioned in the literature before. The present revision proposes characters for species distinction, recognizes and characterizes species and clarifies the taxonomic situation of all described *Eoferreola* taxa in the treated area.

Sources of material

Species from the following institutions and private collections were examined (abbreviations use are given):

Institutions:

BERLIN: Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (F. Koch).

BRUXELLES: Institut royal des Sciences naturelles de Belgique, Bruxelles, Belgique.

GEMBLoux: Faculté universitaire des Sciences agronomiques, Gembloux, Belgique (C. Gaspar).

GENOVA: Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy (V. Raineri).

HALLE: Zoologisch Institut, Halle/Saale, Germany (M. Dorn).

LAUSANNE: Musée Zoologique, Lausanne, Switzerland (M. Sartori).

LONDON: Natural History Museum, London, U.K. (before M.C. Day, at present Miss S. Lewis)

LINZ: Oberösterreichisches Landesmuseum, Linz, Austria (F. Gusenleitner).

MONS: Université de Mons-Hainaut, Mons, Belgique. (P. Rasmont)

MONTPELLIER: Institut national de Recherche agronomique, France (C. Cocquempot).

MÜNCHEN: Zoologische Staatssammlung, München, Germany.

PARIS: Muséum national d'Histoire naturelle, Paris, France (Mme J. Weulersse) (coll. H. Barbier, Cleu, DeGaulle, Benoist, Bernard, Bitsch, Dufis, Fertou, Giraud, Hamon, Marion, Pérez, Roth, Sichel, Vachal, Vaaloger).

STUTTGART: Staatliches Museum für Naturkunde, Stuttgart, Germany (T. Osten).

TORINO: Museo ed Istituto di Zoologia Sistemática della Università di Torino, Torino, Italy (A. Rolando).

TROYES: Musée d'Histoire naturelle de la ville de Troyes, France (coll. Malde).

VERSAILLES: Institut national de Recherche agronomique, Versailles, France.

WIEN: Naturhistorisches Museum, Wien, Austria (M. Fischer).

Private collections:

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Adamski: A. Adamski, Chateaudun, France.
Arens: W. Arens, Bad Hersfeld, Germany.
Delmas: R. Delmas, Montpellier, France.
Hartmann: P. Hartmann, Bayreuth, Germany.
Hauser: M. Hauser, University of Illinois, Urbana, U.S.A.
Fonfria: R. Fonfria, Eygalières, France.
Gros: E. Gros, Chierry, France.
Lefeber: V. Lefeber, Maastricht, Netherlands.
Merz: B. Merz, Genève, Switzerland.
Mochi: A. Mochi, Roma, Italy.
Niehuis: O. Niehuis, Marburg, Germany.
Noblecourt: T. Nobelcourt, Antugnac, France.
Pedrero: J.J.F. Pedrero, Salamanca, Spain.
Ponel: P. Ponel, Marseille, France.
Schmid-Egger: C. Schmid-Egger, Berlin, Germany.
Wahis: R. Wahis, in Faculté des Sciences agronomiques, Gembloux, Belgique.
Wiering: J.E. Wiering, Bergen, Netherlands
Windschnurer: N. Windschnurer, Karlsruhe, Germany.
Wolf: H. Wolf, Plettenberg, Germany.

Key to species of *Eoferreola*

OOL = distance between lateral ocellus and eye, POL = distance between lateral ocellus

Males

1. Sternites III-IV (often also V) with large longitudinal depressions. Depressions laterally with bulge or edge (fig. xx). 2.
- Sternites III-V flat, lacking depressions. 4.
2. Depressions on sternites III-IV laterally rounded or with rectangular edge (fig. xx). Flagellomeres all black. 13-18 mm. Southern Italy, Greece and Syria to central Asia.
Tibia III and propodeum all black. Wings darkened. **distincta (Smith)**
- Depressions on sternite IV (or on sternite III-V) laterally with narrow triangular projection (fig. xx). Flagellomeres reddish. 6-13 mm. Israel to Morocco. 3.
3. Tibia II often and III apically with yellow spot. Pronotum with lateral whitish yellow band. Wings hyaline. Flagellomeres orange reddish. 6-8 mm. Israel to Morocco, Mali. **cyrenaica (Guiglia)**

- Tibia and pronotum black. Wings brownish darkened. Flagellomeres darker as in *cyrenaica*. 11-13 mm. Morocco to Egypt.
neftae Schmid-Egger new species
- 4. Wings hyaline. Setae on head and propodeum whitish silvery. Sternite VIII narrow. Small species, 6-11 mm. Western and central Palaearctis.
manticata (Pallas)
- Wings at least at apex darkened, sometimes with metallic reflexions, opaque. Setae on propodeum and head dark or pale, but not silvery white. Sternite VIII larger. Large species, 9-19 mm.
5.
- 5. Distribution: Morocco to Algeria. Wings regular brownish darkened. 13-19 mm.
mixta (Tournier)
- Distribution: Southern Europe to Israel and central Asia. Wings different. 9-19 mm.
6.
- 6. Setae on propodeum dark brown or black. Wings regular brownish darkened, sometimes with darker zone along outer edge. Pubescence on frons dark. 11-13 mm. Southern Europe to central Asia, Israel.
anatolica Priesner
- Setae on propodeum light brown or pale. Wings with small darkened zone along outer edge. Remaining surface of wings grayish, pale. Pubescence on frons different.
7.
- 7. Pubescence on frons dark brown. Tergite II always with red band. 9-11 mm. Europe.
rhombica (Christ)
- Pubescence on frons dark pale. Tergite II black or with red band. 11-13 mm. Turkey to central Asia.
erythraea (Pallas)

Females

The female of *E. neftae* Schmid-Egger new species is unknown.

- 1. Tergite II (sometimes also tergite I) with red band or two lateral red spots. Propodeum red.
2.
- Tergites black. Propodeum black or red.
3.
- 2. Pronotum black. Europe.
rhombica (Christ)

- Pronotum red. Turkey to central Asia. **erythraea (Pallas)**

- 3. Apical margin of mesosternum (epiphysse) with long triangular elongation (visible between coxae II, fig. xx). 16-26 mm. Algeria, Italy, Greece and Syria to central Asia.
Vertex behind eye short, half as long as flagellomere X. Flagellomere I as long as POL + OOL (fig. xx). Propodeum red in European and Turkish specimens. **distincta (Smith)**

- Apical margin of mesosternum rounded or with shorter elongation (fig. xx). **4.**

- 4. Frons and entire surface of thorax red. Vertex behind eye half as long as flagellomere X. 12-15 mm. Tunisia to Morocco.
Flagellomere I 3,3x as long as apical width, 1,3x as long as flagellomere II. **manticata f. tournieri (Tournier)**

- At least propodeum or mesonotum and scutellum black. Vertex variable. **5.**

- 5. Head, pronotum, mesonotum and scutellum light red (or with red marks), propodeum black.
Flagellomere I as long as POL + OOL. 12 mm. North Africa, Israel, Mali.
Vertex behind eyes short, as long as diameter of anterior ocellus. **cyrenaica (Guiglia)**

- Different color pattern. Mesonotum and scutellum black, head and pronotum variable. If smaller than 15 mm, flagellomere I shorter.
At *E. manticata*, flagellomere I is appr. 3-3,8x as long as apical width and 1,3x as long as flagellomere II (fig. xx). **6.**

- 6. Pronotum and propodeum red. **7.**

- Pronotum black, propodeum red or black. **8.**

- 7. 15-20 mm. Vertex behind eye as long as flagellomere X. Tunisia to Morocco. **mixta (Tournier)**

- 7-15 mm. Vertex behind eye short, half as long as Flagellomere X. Eastern and south-eastern Europa, Turkey, Central Asia. **manticata f. manticata (Pallas)**

- 8. Whole body black. Korsica, Greece, eastern and southern Mediterranean area to Central Asia. **manticata f. batrachiorum (D. Torre)**

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- Propodeum red.

9.

9. Large species, 15-20 mm. Vertex behind eye as long as flagellomere X. Southern Europe to central Asia, Israel.

anatolica Priesner

- Smaller species, 7-15 mm. Vertex behind eye short, half as long as flagellomere X. Southern Europe to Turkey and Azerbaydzahn.

manticata f. lichtensteini (Tournier)

***Eoferreola* Arnold**

Eoferreola Arnold 1935: 442

Paraferreola Susterka, 1913: 181, 200

Tea Pate 1946: 109

***Eoferreola anatolica* Priesner, 1973**

Tea caucasica (Radoszkowski); Priesner, 1967: 56 £ Turkey: Mut, Pamukkale (syn. Priesner, 1973).

Eoferreola anatolica Priesner, 1973: 109-110 £ Turkey (holotype £, coll. Priesner; Wien) examined.

Eoferreola syraensis (Radoszkowski); Wolf, 1998: 341 £\$ Kazakstan (incorrect identification) examined.

Diagnosis and discussion: The female of *E. anatolica* has a red propodeum and black tergites, whereas the morphologically similar *rhombica* and *erythraea* have tergites touched by red. *E. anatolica* is similar in color pattern to *manticata* f. *lichtensteini*. *E. manticata* has narrow temples (half as long as length of flagellomere X), whereas the temples of *anatolica* are larger (as long as length of flagellomere X). The male of *anatolica* is similar to those of *rhombica* and *erythraea*. It is only recognizable by its darker wings and black propodeal setae. In most cases *rhombica* is smaller than *anatolica*, but the distinction of all three species in south-east Europe and Turkey remains problematic. The similar *erythraea* has always pale propodeal setae and pale pubescence on the frons.

It is possible that *anatolica* is only a color form of *rhombica*. Some males from southern France have typical "*anatolica*" characters, but large females with black tergites have never been found in this area. But we treat *anatolica* as a valid species for the moment (see discussion at *rhombica*).

Priesner (1966: 146) mentioned a dark colored and 12 mm long male from Israel which he suspects to be the true male of *E. anomala*. This male was not found among the specimens from Tel Aviv; but the collection includes another completely dark colored *anatolica* male from Israel which measures also 12 mm. This male was identified as *grandis* by Priesner. Probably the mentioned "*E. anomala*" male sensu Priesner belongs also to *anatolica*.

Female: Length 17-20 mm. Black, propodeum red. Wings brownish clouded, lateral margin of wings darker than its surface. Temples and flagellomeres similar to *rhombica*. Flagellomere I as long as OOL + 0,5 POL. Temples long, as long as length of flagellomere X. Apical border of metasternum rounded. On the specimen from Madrid sides of propodeum are partly black and inner orbits and upper margin of eye are reddish.

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Male: Length 11-15 mm. Black, tergite II with large red band (in basal two-thirds II. Erect setae of head brown, setae of propodeum nearly black with brownish gleam. Wings dark brownish clouded, lateral margin darker than its surface. Sternites flat, without depressions. A male from Israel has complete black abdomen with very weak red spots on tergite.

Distribution: Southern Europe to central Asia, Israel.

Type records (types)

Eoferreola anatolica Priesner: "As.Türk. Meram bei Konya 1.vi.1968 leg. Jos.Schmidt" "Holotypus" (red handwritten label) £ (Wien) - idem £ 18.vi.1968 "Paratype" (red printed label) (Wien).

Records (others)

CROATIA: Dalmatia, Hvar \$ 19.vi.1962 (Jos.Schmidt, "*thoracica* Rossi" det Priesner) (Wien).

FRANCE: Aude: Treilles £ 14.vii.1986 sur *Eryngium campestre* (J.Hamon leg; Wahis) - La Clape \$ 12.vii.1985 (H.Chevin; Wahis) - Gard: Nîmes \$ viii.1948 (Paris).

GREECE: Peloponnes, Lechaion, (Korinth) \$ 28.v.1996 "*E. thoracica* det Arens" (Arens).

ISRAEL: Palestine, Bir ?Rechus (handwritten label) \$ 1.v.?? ("*grandis* Rd. det. Priesner" - Tel Aviv).

KAZAKHSTAN: Matai desert 78,6°-46° 2£ 1\$ 23-25.vi.1995 (*Eoferreola syraensis* Rad.£, dt.H.Wolf 1997, Linz); Aksaj, Alma Ata env. £ 30.v.1974 (Karel Denes, *Eoferreola manticata* Pallas £ dt. H.Wolf 1997; Linz) - 10km E. Djambul £ 31.v.1994 (M. Halada, "*Eoferreola syraensis* (Rad) £", dt.Wolf 1997; Linz) - £ 70km SE Lepay, 20km SE Kokterek 400m NN, 46°01'N 79°42'E, 13.vi.2001 (Hauser).

KIRGIZIE: Tash Arik 11km E. Talas \$ 4.vii.1992 (M.Halada, "*Eoferreola syraensis* (Rad) \$" dt.Wolf, 1997; Linz).

MAZEDONIA: Elsani b. Ohrid £ 17.vii.1965 (W.Aigner; Linz).

RUSSIA: Kulp £ 1901 (*Paraferreola caucasica* Rad. £, det. Haupt 1925, Halle).

SPAIN: Madrid £ (*Paraferreola rhombica* det Maidl £ Wien) - Avila: Angostura £ \$ 8.vii.1985 (J.J.Pedrero; Wahis) - Avila: Hoyos del Espino \$ 9.vii.1985 (J.J.Pedrero; Wahis) - Andalusia:Granada \$ 1-7.vi.1925 (Zerny; Wien).

TURKEY: Kars, 20 km W Sahrihamis, 2200 m, \$ 6.viii.1979 leg Warncke (Schmid-Egger) - Sille bei Konya, As.Türk. £ 17.v.198 leg. Jos. Schmidt (red label: "Paratypus" "*Paratypus Eoferreola anatolica* Priesner, "R. Wahis" (Wien) - Aciöl, Cardak env. \$ 7.vii.1993 (Mi Halada, "*Eoferreola syraensis* (Rad) \$" dt.Wolf, 1997; Linz) - Kaiseri: Pinarbasi 1150m. £ 18.vi.1987, 1500m. 2\$ 25.vi.1987 (R.Hensen; Wahis) - Van: 30km N. Baskale 2700m. \$ 11.vii.1987 (R.Hensen; Wahis) - Senyurt, Erzurum 2300m. £ 22.viii.1991 (E.Yildirim; Wahis) - Konya: 30km S. Of Aksehir £ 24.vi.1998 (J.Halada, "*Eoferreola syraensis* Rad.£ dt.H.Wolf 1998"; Linz) - Bitlis, Nemrut Dag 2000m. 2\$ 16.viii.1991 (M.Halada, "*Eoferreola rhombica* Christ. \$ dt.H.Wolf 1997"; Linz) - Camardi, Nigde 1800m. \$ 10.viii.1991 (M.Halada, "*Eoferreola rhombica* Christ. \$ dt.H.Wolf 1997"; Linz) - Aciöl, Cardak env. \$ 7.vii.1993 (Mi.Halada, "*Eoferreola syraensis* Rad.£ dt.H.Wolf 1997"; Linz) - Agri env. £ \$ 27.vi.1993 (Mi.Halada "*Eoferreola syraensis* Rad.£ dt.H.Wolf 1997"; Linz).

TURKMENISTAN: Kopet-Dag Kizil Arvat 50km S. Chajagala £ 17.v.1993 (M.Halada, "*Eoferreola manticata* Pallas £ dt. H.Wolf 1997"; Linz).

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Remark: A \$ from Berlin cited par Haupt (1927: 280) labelled "*Sphex caesonius* Pall. ." (old handwritten label), "5715" (inventory number) "*Paraferreola erythrea* Pall. £" (handwritten label from Haupt) belongs also to *E. anatolica*.

***Eoferreola cyrenaica* (Guiglia, 1941)**

Paraferreola cyrenaica Guiglia, 1941: 173-174, fig.5 (1.2.3.) £ Lybia: Giado (holotype £; Genova) examined.

Paraferreola facilis Priesner, 1966: 146-147 £ Israel: Nahariya (holotype £; Bitinski-Salz) examined, **new synonym.**

Paraferreola anomala; Priesner, 1955: 185 £ Egypt: Ikingi (holotype £; Alfieri, ?Caire).

Paraferreola anomala Haupt; Priesner, 1966: 145-146 £\$ (£ paratype and \$ allotype examined).

Paraferreola anomala f. croceicornis Priesner, 1966: 146: Abu Kebir; Djermak (2 \$ types; Bitinski-Salz) examined, **new synonym.**

Diagnosis and discussion: The female is characterized by its long flagellomere I (as long as OOL + POL, fig. xx), its short temples and its unique color pattern. The upper part of the head and thorax to the postscutellum are red. The unknown female of *neftae* might be similar to *cyrenaica* because of the morphological similarity of the males.

The male of *cyrenaica* is unique in the mediterranean area characterized by its sternal depressions, its pale marks on the pronotum and on the tibia III; and its light red flagellomeres. Both other species with sternal depressions have a dark pronotum and tibia, the flagellomeres are black in *distincta* and dark reddish in *neftae*.

Female: Length 11-16 mm. Red are: Inner margin of eyes, upper part of head (area around ocelli dark), pronotum, mesonotum, scutellum and central spot on postscutellum. Extension of color variable. Color varies between dark red and light orange red. Tergites I-III might have narrow and indistinct red bands. Wings dark brown with metallic reflections. Flagellomere I as long as OOL + POL, somewhat shorter in large specimens. Temples narrow, as long as twice midocellus diameter. Apical border of metasternum rounded.

Male: Length 8-11 mm. Flagellomeres light reddish. Pronotum with apical pale yellow band, shortly interrupted in the middle, not reaching lateral pronotal lobes. Tergite II reddish (sometimes dark reddish), tergite III black or dark reddish, tergite VII pale yellow. Apical third of tibia II sometimes and tibia III always pale yellow touched. Wings something darkened. Sternite III-V with medial triangular depression in apical half (depression on sternite IV as long as visible part of sternite). Depression IV laterally with triangular projection, as tall as midocellus diameter. Depression on remaining sternites without or with small projections.

Records (types):

Paraferreola cyrenaica Guiglia: the type £ is in a good state. "Libia occ. Museo Libico Chiaclo VII.38 leg. Geo. Kruger" (printed and handwritten) "*Paraferreola* n.sp. £ Haupt det.1941" "Museo Civico di Genova" (printed) "*cyrenaica* Guig." (red handwritten label) "Typus" (printed with red letters) "R. Wahis rv.1999 Holotype *Paraferreola cyrenaica* £ Guiglia, 1941 = *Eoferreola cyrenaica* (Guiglia,1941)".

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Paraferreola croceicornis Priesner: "Israel, Abu Kabir 11.VI.1961 leg. Bytinski-Salz" "v. *croceicornis* m. Typus det.H.Priesner" "Typus \$" (red handwritten label) "Holotypus coll.Bytinski-Salz" (pink printed label); "Israel Djermah 1000m. 22.V.1962" "Paratype" (red printed label) "v. *croceicornis* m. \$ det. H. Priesner" (Wien).

Paraferreola facilis Priesner: "Israel, Naharia 20.V.1962 leg.Bytinski-Salz" *Paraferreola facilis* Pr." (handwritten label) "*facilis* m. £ det. H. Priesner" (handwritten label) "Holotype" (red handwritten label) "Holotypus ex coll.Bytinski-Salz" (pink printed label).

Records (others)

ISRAEL: Tel Aviv \$ 7.vi.1969 leg. ByS" "v. *croceicornis* Pr. \$ det.H.Priesner" (Linz) - 5km SSE Sede Boqer Wadi N'Aqev £ 12.v.1996 (Schmid-Egger).

JORDAN: 15km S. Aqaba £ 3.iv.1989 (leg.J.Gusenleitner; Wolf).

MALI: Bassin du Moyen-Niger, Goundam £\$ ix.1909 (R. Chudeau; "*Balanoderes* aff. *praepotens* Kohl, L.Berland det. 51"; Paris).

MOROCCO: Marrakech, Ouirgane 100m. 31°08'N - 8°05'W \$ 30.v.-9.vi.1996, £ 29.vi.-5.vii.1996, £ 24-30.vii.1996 (Malaise traps, leg. C. Kassebeer; Wahis) - Marokko, Anti-Atlas, SO Agadir SO Ait Baha \$ 26.v.1995 (Schmid-Egger) – 10km E Guelmin \$ 5.v.1995 (Linz).

***Eoferreola distincta* (Smith, 1855) new combination**

Ferreola distincta Smith, 1855: 169 **new combination** £ Albania (£ holotype n° 19.481; London) examined. **Remark:** The replacement name *albanorum* proposed by Dalla Torre was not used because the different taxa included by the author as homonym belong to different genera (CIN, 4ème édition 1999, article 59.3). The name *distincta* Smith was never used since his creation, but does not agree with the condition of the International Code (CIN 23.g.1.1 et 23.g.1.2) and has to be used instead of the name *syraensis* from Radoszkowski.

Ferreola syraensis Radoszkowski, 1889: 474 £ Syria (£ holotype; Berlin, examined. **New synonym**).

Pompilus syraensis; Dalla Torre, 1897: 326 (catalogue, new combination).

Pompilus albanorum; Dalla Torre, 1897: 270 replaced *Ferreola distincta* Smith, 1855, nec *Anoplius distinctus* Lepeletier 1845, nec *Pompilus distinctus* Smith, 1868, in *Pompilus*.

Paraferreola syraensis; Haupt, 1927: 272-273 £\$ (key), 274-275 fig.136 (Algeria to Sicily, Greece, Turkey and Syria to Armenia).

Paraferreola syraensis; Haupt, 1962: 67 £ (key; Algeria to Sicily, Greece, "Kleinasien" (=Turkey) and Syria to Armenia).

Eoferreola schmidti Priesner, 1973: 109-110 £ Turkey (£ holotype; Wien) examined, **new synonym**.

Eoferreola manticata f. *cinerata* Priesner, 1973: 109-110 £ Turkey (£ holotype; Wien) examined, **new synonym**.

Eoferreola syraensis (Radoszkowski); Wahis 1998: 154 \$ Turkey.

Diagnosis and discussion: *E. distincta* is characterized by the triangular prolonged apical margin of the mesosternum ("epiphyse", visible between coxae II). This character is unique within the treated species of *Eoferreola*. The female is also characterized by the prolonged flagellomere I which is as long as the distance between the eye and the opposite lateral ocellus (= POL+OOL). It shares the prolonged flagellomere with *cyrenaica*, whereas it is shorter in all other species treated here. The male of *distincta* has depressions on sternites III-IV which are laterally rounded or with a rectangular edge (fig. xx). *E.*

cyrenaica and *E. neftae* from north Africa and Israel also have depressions on the sternites, but these are laterally bounded by a prominent triangular edge. *E. distincta* is a large species (females up to 26 mm) which occur in a red colored and in a black form (see below).

Females: Length 16-26 mm. Pronotum red or black, remaining body black. Wings darkly clouded, with narrow apical margin darker than remaining wing surface. Flagellomere I as long as united OOL + POL. Temples narrow, as long as threefold diameter of midocellus. Apical margin of mesosternum prolonged.

Variation: The typical form has an orange-red propodeum and dark clouded wings. It occurs in south east Europe, Syria and Algeria (*syraensis* Radoszkowski type, sensu Haupt & Priesner). In Turkey occurs a form with a paler pubescence in lower face and pronotum (*cinerata* Priesner type). A red colored specimen with a silver pubescence on pronotum and dark clouded wings had been described as *schmidti* Priesner. Females from central Asia, Rhodos (Greece) and the eastern mediterranean area have a completely black body, dark pubescence and very dark clouded wings: *Sphex melanidus* Pallas (nomen ineditum) type, *grandis* Rad. sensu Haupt et Wolf. A female from Iran has also a completely black body, but a pale pubescence on body.

Male: Length 13-18 mm. Black, tergite II has a large basal band (as wide as $\frac{3}{4}$ of tergal length). The band can be reduced to lateral spots, or tergite II is completely black. Head and parts of thorax covered with a brownish pubescence. Long setae on head and mesonotum pale brownish, darker brownish on propodeal dorsum.

Variation: Specimens with red colored tergite II occur in Greece and Turkey. Males from eastern Turkey have a darker pubescence and two red spots on tergite II. A form, probably also from Turkey (?Tauria) has silvery pubescence on the face, the pronotum and the propodeum. The tergite II has a dark red band on the basal half, the wings are hyaline without a dark margin (*muricatus* Pallas, *grandis* Rad. sensu Haupt). The taxon *syraensis* Rad. (dt. Haupt.) from Turkey also has a silvery pubescence, the band on tergite II is very dark red and the wings are dark clouded. Completely black colored males with dark pubescence and dark clouded wings occur in Syria and Central Asia (*grandis* Rad. sensu Wolf.)

Geographic Distribution: Greece, Turkey to Iran and Central Asia, Algeria and eastern Mediterranean area. Algeria is represented by a single old record. It is far from the main distribution and seems doubtful.

Records (types)

Ferreola distincta Smith: Type B.M. 19.481 "*distincta* Type Sm" (Smith handwritten), "Holotype £ *Ferreola distincta* Sm. dt M.C. Day 1976"; only propodeum red, metapostnotum very narrow, furrow on propodeum distinct.

Paraferreola grandis Radoszkowski: "*muricatus* n. Sph.mur.Pall" "Tauria Pall" (old handwritten label) "Tauria Pall" (blue handwritten label) "5720" (printed) "*Paraferreola grandis* \$ Rad." (handwritten by Haupt) "Zool.Mus.Berlin" (printed). State: Apical part of flagellomeres broken, left leg I broken, pubescence of face and propodeum silvery, apical half of tergite II dark red, apical half of tergite VI and VII completely yellow, part of flagellomeres below reddish, wings hyaline with dark apical zone, apical sternites with large medial depressions.

Paraferreola syraensis Rad. 6£ 1\$, a type from Berlin was examined: "Syra" "*syraensis*" "*Pomp.syraensis* Radoszk" "*Paraferreola syraensis* Rad. £, dt. Haupt" (Berlin).

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Eoferreola cinerata Priesner. £ Turkei, Urfa £ 1.vi.1988 (leg. J.Gusenleitner) "Holotypus" (red handwritten label), "*cinerata*" (white handwritten label, from Priesner) "*Eoferreola syraensis* (Rad.) £, H.Wolf det. 1982" " (Wien).

Eoferreola schmidti Priesner. £ Turkey, Sille near Konya 17.vi.1968 leg. Schmidt [Holotypus] [*schmidti* n. sp.] labels from Priesner (Wien).

Records (others, propodeum and tergite II red)

?ALGERIA: Algier £ (coll. H. Rhd, "*Paraferreola syraensis* Rad. £, handwritten by Haupt"; Berlin).

EGYPT: £ Egypt, Leb? or Zelb? 16.vi.1856 „*Paraferreola syraensis* det. Maidl“ (Wien).

GREECE: Glifa £ vii.1983 (C.Dutru; coll.Hamon) - Graecia, Loutraki £ 2.vi.1964 (K.Kusdas, "*syraensis* Rad. £ det. H.Priesner"; Linz) - Graecia, Altkorinth £ 5.vi.1963 (J.Gusenleitner, "*syraensis* Rad. £ det. H.Priesner"; Linz) - Graecia, Altkorinth, Pelopon. £ 24.v.1964 (J.Schmidt, "*syraensis* Rad. £ det. H.Priesner"; Linz) - Egeo, Rodi \$ v.1939 (Dr. R.Meyer, "*Paraferreola syraensis* Rad. \$, dt. Haupt 1940"; Halle) - £ 7.vi.1996 Kap Tenaro (Arens) - £ 26.v.1997 Neapoli (Palaok.) (Arens) - \$ 9.vi.1996 Epidauros, Limeria (Arens) - \$ 4.vi.1996 Sparta, Menelaion (Arens) - \$ 25.vi.1996 Maninea, Arkadia (Arens) - \$ 15.vi.1995 Stymphalia (Arens) - \$ 21.vi.1995 Olympia, Alfios-Tal (Arens) - \$ 23.vi.1998 Chekali (Arens)- £ 23.vi.1998 between Tasiliko and Thea (Arens) - £ 29.v.1997 Argos, Larissa (Arens) - £ 18.vi.1996 antik Samikon (Arens) - £ Zante, (leg) Schmiedeknecht „*Paraferreola syraensis* det. Maidl“ (Wien) - £ Karpathos, Pigadia 12-20.vi. leg. Wettstein „*syraensis* det. Wolf 1954“ (Wien) - £ Katara-Pass, Westseite 1100 m NN18.vii.1989 („*Eoferreola syraensis* det. Wolf 1997“ (Linz) - GREECE, CRETE: £ Iraklio 10.vi.1996 leg. Scaramozzino (Torino).

ITALY: £ \$ Sicilia, (leg.) Grohmann „£ *Paraferreola syraensis* det. Maidl“ (Wien). - "Sicilien" "5692" 3£ (Schulz, with label "*posticatus*" (nomen nudum), (*Paraferreola syraensis* Rad. £, with handwriting from Haupt, Berlin).

KAZAKHSTAN: Matai-desert 78°6'-46° 2£ 1\$ 23-25.vi.1995 (J.Halada, "*Eoferreola syraensis* (Rad) £\$" dt. Wolf 1997; Linz) - 10km E. Djambul £ 31.v.1994 (Ma Halada, "*Eoferreola syraensis* (Rad) £" dt. Wolf 1997; Linz).

KIRGIZIA: Tash-Arik 11km E. Talas \$ 4.vii.1992 (M.Halada, "*Eoferreola syraensis* (Rad) \$" dt. Wolf 1997; Linz).

TURKEY: Aciöl, Cardak env. \$ 7.vii.1993 (Mi Halada, "*Eoferreola syraensis* (Rad) \$" dt. Wolf 1997; Linz) – Erzurum, Tortum 1700m. \$ 16.vii.1987 (R.Hensen; Wahis) - W.Turkey, SSO Milas, Camkoy-Sek 37°7'7"N - 27°53'3"E 2£ 22.vi.1998 (leg. Niehuis & Schulmeister).

UZBEKISTAN: \$ Samarkand, 35 km sev, Aman Kutan, 30.vi.1981 leg. Kokourek „*Eoferreola rhombica* Christ. det. Wolf 1997“ (LINZ).

Without location: £ "Dahlb.viciit 1845" "*P.Sal.stygius* nob.£ *P.posticatus* Kl" (old handwritten label); (Wien).

Transition forms (£\$)

GREECE, RHODOS: £\$ 6.1971 Insel Rhodos leg. Zimmermann (Schmid-Egger) (£: propodeum with two small reddish black spots, \$: tergite II with two lateral red spots touching each other).

Black forms (£\$)

IRAN: Khuzestan, Haft Tapeh 300km N. Di Abadan, Rive Fiume Dez £ 29.vi-1.vii.1965 (Giordani Soika, Mavromoustakis; coll.Wolf).

KAZAKHSTAN: Djambul env. (60km) Makbal, Kirgis.chrebet \$ 4.vi.1980 (Dr. Z.Padr, "*Eoferreola grandis* Rad. \$, det. H.Wolf 1997"; Linz).

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

? Caspisches Meer Pall. 3£ "5695" one \$ with old label '*melanidus* n. *Sph.melan.* Pall.', "*Paraferreola grandis* Rad. £", handwriting of de Haupt; Berlin). - Transcaspien £ (Staudinger V., £ "*Paraferreola grandis* Rad. £", handwriting of de Haupt; Berlin).

SYRIA: Syria mer. Anata 50km SE Suwayda 2£ 2\$ 20-21.v.1996 (Mi Halada, *Eoferreola grandis* Rad. £\$, dt. H.Wolf 1997; Linz).

(\$) with transparent wings without dark apical area.

IRAN: Pass E. Neyriz/Fars 2060m. \$ 18.v.1978 (Klaus Warncke; Wolf).

TURKEY: Tauria Pall. \$ "*muricatus* n. *Sph. mur.* Pall" (old label) "5720" "*Paraferreola grandis* Rad. \$", handwriting of Haupt; Berlin) - "Asia min" \$ "coll.H. Khd" "*Paraferreola grandis* Rad. \$", handwriting of Haupt; Berlin).

***Eoferreola erythraea* (Pallas, 1773)**

Sphex erythraea Pallas, 1773: 729, n° 85.

Sphex erythraea Pallas; Christ, 1791: 263.

Ferreola sirdariensis Radoszkowski, 1889: 476, \$ Syr-Daria ("Kazakstan) (holotype \$; Berlin, examined),
new synonym

Sphex erythraeus Pallas; Dalla Torre, 1897: 421 (catalogue).

Pompilus sirdariensis (Radoszkowski); Dalla Torre, 1897: 323 (catalogue).

Paraferreola erythraea (Pallas); Haupt, 1927: 272-273 (key), £\$ fig. 140, Caspi Sea, Kirghisia).

Paraferreola erythraea (Pallas); Schmiedeknecht, 1930: 624 £\$

Paraferreola erythraea (Pallas); Haupt, 1962: 68 £ (key; Transcaspiya, Iran; occurrence in Europe doubtful)

Paraferreola caucasica (Radoszkowski); Haupt, 1962: 67 £ (key; Armenia to Transcaspiya, Syr-Darja).

Diagnosis and discussion: The female of *erythraea* is characterized by its color pattern. Head, pronotum, propodeum and tergite II are rich light red in color. Otherwise the species is morphologically similar to *rhombica*. The male of *erythraea* has a silver pubescence on the head and the propodeum, whereas the similar *rhombica* and *anatolica* males have a distinctly darker body pubescence. The males of *erythraea* from Central Asia have a red colored tergite II. Females of *erythraea* have only been found in Central Asia. We also examined some males with distinct silver propodeal pubescence from Turkey which – in our opinion – belong to *erythraea*. These males have a dark red or completely black tergite II. In the same region also occur *rhombica* males which pose the question of how to distinguish males of both taxa in the eastern Mediterranean because *rhombica* males of southern origin show a tendency to paler body pubescence. It is possible that *erythraea* is only an extensive red colored form of *rhombica* from western and central Asia.

For the moment we will treat both taxa as valid species, as defined above. The problem needs further research, especially females from Turkey should be examined. The state of *anatolica* should also be examined in this context. The females and males are morphologically identical to *rhombica* and *erythraea*. The differences in color pattern in the females and the color of propodeal setae in the males might also reflect geographic variation.

Female: Length 10-18 mm. Head touched with red: Clypeus, inner orbits of eyes, vertex, area between scapus and clypeus. Flagellum reddish at underside. Pronotum completely red, lateral and hind margin sometimes dark. Propodeum red, sometimes also upper metapleural area. Tergite I and II with large lateral

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spots, sometimes connected. Base of tergite I and apical margin of tergite I and II black. Temples as long as 0,7-1 length of flagellomere X. Flagellomere I as long as OOL + 0,5 POL.

Variation: The females differ in size. The red color might be less extensive on the head and the upper metapleural area. Also length of temples is variable.

Male: Length 12mm. Colored like *E. rhombica*, pronotum and propodeum covered with a fine silvery pubescence. Long setae on frons are dark. Males from Turkey have dark tergites.

Geographic Distribution: Central Asia and Turkey. Records from Syria and Romania are doubtful. Syria was a misinterpretation of the type locality of *sirdariensis*, Sir-Daria, in Kazakhstan ("Syrien, Darien", interpreted by Haupt).

Records (types)

KAZAKSTAN: "Sir-Daria" (red label with cyrillic letters), "*Sirdariensis* Rd", "Type", "*Pomp.sirdariensis* Radoszkowski Type", "Syrien, Darien" (all labels handwritten), "*Paraferreola caucasica* \$ Rad" (handwritten label by Haupt) (Berlin).

Records (others)

DAGHESTAN: Tuprozsk £ 9.vii.1961, \$ 30.vi.1961 (Mavromoustakis; Gembloux) - Caspisches Meer Pall. 2£ "5689", ("*Paraferreola erythraea* Pall. £, dt. Haupt"; Berlin).

KIRGIZIA: Kirghisia 2£ (coll.Pérez; Paris) - 2£ (Staudinger V., "*Paraferreola erythraea* Pall. £, dt. Haupt"; Berlin).

RUSSIA: 1£ Uralsk, leg. M. Bartel „*erythraea* det. Maidl“ (Wien)

? JORDANIE: "Isal" "5688" "*thoracicus* n. *Sph.thor.* Pr" £ ("*Paraferreola erythraea* Pall. £, dt. Haupt"; Berlin). This species was probably mentioned by Haupt (1927: 280) from Italy, because he confused the location ("Ital" instead of "Isal").

? ROMANIA: 2£ „Tultscha“ (= Tulcea), leg. Mann, „*erythraea* det. Maidl“ (Wien). A further £ from Wien, leg. Mann 1851, has an unreadable label.

?? 1£ „Moradox“ handwritten without further information „*erythraea* det. Maidl“ (Wien)

Black forms:

TURKEY: Hatay 14km N. Yayladag, Kislak \$ 23.vii.1998 at *Eryngium creticum* (Schmid-Egger).

TURKMENIA: Aschabad env. \$ 15.v.1993 (M.Halada; Linz).

Remark: The male of *E. erythrea* in Haupt (1927) from Woltersdorf (near Berlin/Germany) belongs to *E. rhombica* (examined, Berlin).

***Eoferreola manticata* (Pallas 1771)**

Sphex manticata Pallas, 1771: 473 n°72

Pompilus fasciatus Eversmann, 1849: 374 \$

Pompilus variabilis Eversmann, 1849: 376, nec Rossius.

Salix Hellmanni Eversmann, 1849: 378 \$ RUSSIA: Sarepta (\$ lectotype; Berlin) examined and here designated, **new synonym**.

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Salius micans Radoszkowski, 1877: 12, pl.vi, fig. 7 \$ nec £ (?date; 26, tab.v, fig. 20) corrected, because the two sexes are described separately. £\$ Turkestan: Kizil-kum Desert (\$ holotype; Berlin), examined.

Ferreola Hellmani (Eversmann); Radoszkowski 1889: 475, figs 17a-c (\$ new combination)

Ferreola micans (Radoszkowski); Radoszkowski 1889: 477 (new combination)

Ferreola caucasica Radoszkowski, 1889: 474 £ Caucase (£ holotype; ?)

Ferreola rossica Radoszkowski, 1889: 475 £ Russia: Saratow, Orenburg (£ holotype(s); Berlin) examined.

Ferreola thoracica Morawitz 1891: 186 \$

Ferreola Hellmani (sic) (Eversmann); Radoszkowski 1893 (= *Salius Hellmanni* Eversmann)

Ferreola Tournieri Tournier, 1895: 7 new combination £ Algeria: Oran (lectotype £; Genève) examined and designated.

Ferreola Lichtensteini Tournier, 1895: xi £ FRANCE: Montpellier (holotype; Genève)

Pompilus helmannii (sic) (Eversmann); Dalla Torre 1897: (catalogue; new combination)

Pompilus micans (Radoszkowski); Dalla Torre 1897: 301 (catalogue; new combination)

Pompilus causicolus Dalla Torre, 1897: 279 (catalogue; replacement name for *Ferreola caucasica* Rad., 1888: 474 nec 472; in *Pompilus*).

Pompilus lichtensteinianus Dalla Torre, 1897: 298 (catalogue; replacement name for *Ferreola lichtensteini* Tournier, 1895 nec *Pompilus lichtensteini* Tournier, 1889, in *Pompilus*). It is a completely black form: Dalla Torre proposed the name *lichtensteinianus* as replacement name for *Ferreola Lichtensteini* Tournier 1895 nec *Pompilus Lichtensteini* Tournier 1889. The name *lichtensteini* fits well on an *Eoferreola*, whereas the second applies on an *Agenioideus* (= *ciliatus* Lepeletier, cf. J.de Beaumont, 1970). The replacement name is not allowed to be used (CIN article 59.3).

Pompilus manticatus (Pallas); Dalla Torre, 1897: 300 (catalogue; new combination)

Pompilus rossicus (Radoszkowski); Dalla Torre, 1897: 316 (catalogue; new combination)

Pompilus tournieri (Tournier); Dalla Torre, 1897: 327 (catalogue; new combination)

Ferreola lichtensteini (Tournier); Berland, 1925: 275-276 (fauna)

Paraferreola manticata (Pallas); Haupt, 1927: 272-273 (key), 277-279, Morocco: Tanger to Sicily, East Russia).

Paraferreola caucasica (Radoszkowski); Haupt, 1927: 272-273 (key), 275-276 £\$ Armenia, to Transcaspia, ?Algeria, southern France).

Paraferreola hellmani (sic) (Eversmann); Haupt, 1927: 273 (key), 276, fig. 137 \$ Transcaspia to Turkestan; = *micans* Rad.)

Paraferreola manticata (Pallas); Nadig & Nadig, 1935: 12 £\$ Morocco

Paraferreola manticata f. *pici* (Tournier); Nadig & Nadig, 1935: 12 £ Morocco - Moczar, 1956

Paraferreola lichtensteini Morel, Nouvel & Ribaut, 1956: 341 France: Canet plage.

Paraferreola lichtensteini Nouvel & Ribaut, 1957 (1956): 566-567 France: Canet plage; description of \$.

Paraferreola lichtensteini Nouvel & Ribaut, 1958: 20 \$ France: Pyrénées-Orientales.

Paraferreola manticata (Pallas); Wolf, 1960: 9 £ Italy: Lazio.

Paraferreola manticata Radoszkowski (sic); Haupt, 1962: 67-68 £ (key; S.Europe to east Russia)

Paraferreola anomala Haupt, 1962: £ 67 (key), \$ 68-69 Israel: Jerusalem (holotype £; Halle) examined.

Tea manticata (Pallas); Wahis 1963: 194 £\$ Jugoslawia, Krk.

Paraferreola claripennis Priesner, 1966: 146 \$ Israel (no location).

Tea manticata (Pallas); Priesner, 1968: 170 £\$ Austria, at Apiaceae: *Falcaria*

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Tea manticata iberoturanica Wolf 1968 (nomen nudum) £ Nord-Afghanistan, also S. Spain, Morocco, Turkmenien SSR.

Tea (Eoferreola) manticata manticata (Pallas); Wolf, 1970: 399 £ Italy: Liguria, Genova.

Eoferreola (Tea) manticata manticata (Pallas); Wahis, 1970: 719 £ Yougoslavie: île Korcula.

Tea manticata lichtensteini (Tournier); Wolf, 1970: 10 £ Portugal, Spanien.

Eoferreola manticata (Pallas); Wolf, 1971 £ Slowakei.

Eoferreola manticata manticata (Pallas); Wolf, 1972: 85-86 (key), 87 £\$ Central and southern Europe, north Africa).

Eoferreola manticata lichtensteini (Tournier); Wolf, 1972: 85-86 (key), 87 £\$ Southern France, south-west Europe, central Asia (= *caucasica* s.auct.)

Eoferreola manticata manticata (Pallas); Priesner, 1973: 110 (key)

Eoferreola manticata lichtensteini Priesner, 1973: 110 £ (key).

Eoferreola manticata (Pallas); Priesner, 1982: 311 £ Austria.- Franz 1982 - Madl 1990

Eoferreola manticata (Pallas); Wolf, 1993: 1007 catalogue and Austrian species.

Eoferreola manticata (Pallas); Lelej, 1995: 260 £\$ key, Russian Far East.

Eoferreola hellmani (sic) (Eversmann); Wolf, 1995: 890 \$ Turkmenistan.

Eoferreola manticata (Pallas); Wolf, 1998: 340 £\$ Kazachstan, Turkmenistan.

Eoferreola anomala (Haupt); Wolf, 1998: 325 £ Jordanie.

Eoferreola nigra (Radoszkowski); Wolf, 1998: 341 £ Kazakstan, Uzbekistan (wrong identification).

Eoferreola manticata (Pallas); Wahis, 1998: 154 \$ Turkey.

Paraferreola manticata f. moroccoana Haupt (in coll.) 2£ 1\$ à Berlin, examined; Tanger and Spain.

Ferreola picis Tournier placed by Haupt 1927 as a synonym of *manticata* - a position which other authors followed – is a real *Ferreola* (de Beaumont 1970: 258). Wahis examined and designated a female in the Paris collection which was originally labelled by Tournier as lectotypus. It belongs to *Ferreola algira* Lepeletier, 1845.

The name *iberoturanica* Wolf (1970) which was also used for a black form of *manticata* was probably incorrectly referred to *Eoferreola* by the author. He used it for *Paraferreola progressiva* Haupt (nomen nudum) which belongs to the genus *Apareia* Haupt (com. n.). We could not verify the identity of the taxon because we could not see the type: *Paraferreola progressiva* Haupt, in Nadig & Nadig, 1935: 12 (nomen nudum) £\$ Morocco: Ifrane, Casablanca (holotype £; Zurich) examined. = *Apareia simplex* Haupt, 1962 - *Tea manticata iberoturanica* Wolf i.l.; Wolf, 1968: 234 (nomen nudum) £ Nord-Afghanistan. Distribution: S.Spain, Morocco, Turkmenistan. - *Tea manticata iberoturanica* Wolf, 1970: 399, 412 £\$ Morocco: Rabat; Afghanistan (holotype £, coll. Wolf) not examined; put in synonymy with *Paraferreola progressiva* Haupt i.l. which belongs to the genus *Apareia* (= *Psammoderes*).

“*E. anomala*” from Israel is a black form of *E. manticata*, first described as *Pompilus niger* (= *Ferreola nigra*) by Radoszkowski. The females and males of „*anomala*“ in the type series from Tel Aviv show the typical characters of *manticata*. Priesner (1966) mentioned a black colored male in the coll. Tel Aviv which he suspected to be the male of *E. anomala*. This specimen is probably a black colored *E. anatolica* (see above). *Ferreola nigra* Radoszkowski 1888 is preoccupied by *Ferreola nigra* Marquet 1879 (= *Homonotus sanguinolentus* Fabricius), the replacement name *batrachiorum* of Dalla Torre, little known and never used before, is nevertheless valid and replaces automatically the *anomala* Haupt 1962 preoccupied by Priesner 1955.

Diagnosis: The female is characterised by its small size (smaller than 15 mm) and its typical color pattern which distinguishes the species from neighbouring species, depending on geographical area. The abdomen is always black which distinguish it from the abdominal red-colored *E. rhombica* and related forms in northern Africa. A similar species is *E. cyrenaica* which has a relatively long flagellomere I (4x as long as apical width, 1,5x as long as flagellomere II) and a typical color pattern (head and thorax touched with red except propodeum) whereas *E. manticata* has a shorter flagellomere I (maximum length: 3,8x as apical width, 1,3x as long as flagellomere II) and a different pattern (completely black, forma *batrachiorum*, or with head and thorax including propodeum touched by red: form *tournieri*). The vertex behind the eyes is larger in *E. manticata* as in *E. cyrenaica*.

The male is characterised by its pale and translucent wings and silvery body setae. It has smooth sternites, which separates it from the *E. croceicornis*-species group with impressions on the sternites.

Discussion: The females of *manticata* show a remarkable geographical and individual variation in color. But we could not find any constant morphological character which justified splitting it into subspecies or different species, although each form has its distinct regional distribution. Therefore, we treat all color forms as forms of *E. manticata*. Color characters alone do not justify treating them as different species because color changes (from black to red) are a common, but not totally understood phenomenon in Pompilidae, probably depending on climate and temperature. The forms from southern Europe have reduced extent of red color on the abdomen in comparison to the central European forms. The f. *batrachiorum*, described from Israel, but also occurring in Korsica, is the most extreme black colored form. The most reddish colored f. *tournieri* Tournier however is described from north west Africa and is an exception to this rule.

Males are not distinguishable. They show a slight individual variation which do not covary with female color patterns. Males from the eastern Mediterranean often have pale spots on the pronotum.

Female: Length (7-) 11-12 (-14) mm. Black with variable red marks at head and thorax. Temples short, half as long as flagellomere X. Flagellomere I 3-3,8x as long as apical width, 1,3x as long as flagellomere II. Wings evenly darkened.

Variation: Females have been described as various subspecies or species, based after the pattern of red color on body. We treat all these taxa as forms of *manticata*. The following distinct forms are noteworthy:

***E. manticata* f. *manticata* Pallas:** Vertex and upper outer margin of eyes with narrow red band. Pronotum and propodeum red, apical point of scutellum and metanotum touched with red. Pronotal lobes and apical margin or half of pronotum and head might be black (transition characters to *manticata* f. *lichtensteini*). The f. *manticata* occurs from Central Europe to Greece and Central Asia. It is a form of temperate climate areas.

***E. manticata* f. *lichtensteini* Tournier:** (= *lichtensteinianus* Dalla Torre, 1897 see above): Black, propodeum red. This form occurs in south-west Europe, southern Italy, Turkey and Azerbeidshan. It replaces f. *manticata* in mediterranean climate areas in Europe and Turkey.

***E. manticata* f. *batrachiorum* (Dalla Torre)** [= *nigra* (Radoszkowski 1877); *iberituranica* (Wolf, 1970), *algojola* (Wolf, 1979); *anomala* (Haupt, 1962)]. It is a completely black form, which occurs in Korsica, Sardegna, northAfrica, the eastern mediterranean area and Central Asia. The *E. anomala* described from Israel and Egypt has also a short flagellomere I and long vertex. It belongs to *E. manticata* and is a *new synonym* of the latter.

E. manticata* f. *tournieri Tournier (= *pici* sensu auct. nec Tournier): Vertex, face above scapus and outer margin of eyes red, frons sometimes darkened. Collar, pronotum, mesonotum, scutellum and propodeum completely red. Metanotum and metapostnotum with central red spot. Underside of basal flagellomeres reddish. One specimen has a dark margin at base of mesonotum. The f. *tournieri* occurs in northwest Africa from Tunisia to Morocco. A single and doubtful record comes from Sicily.

Male: Length 8-11 mm. Black, tergite II in most specimens with dark red band in basal two thirds. Erect setae and pubescence on head and propodeum silvery. Wings uniformly pale translucent.

Variation: Some specimens of Israel, described as *E. manticata* f. *claripennis* Priesner, have a whitish yellow band on apical margin of pronotum and such marks on tegulae and pronotal lobes. These specimens have also reddish marks on underside of flagellomeres. Most specimens of the south east mediterranean area belong to the form *claripennis*, but also some single specimens from other origins show this typical character. We treat *claripennis* only as a color of form *E. manticata*. *E. claripennis* is a new synonym.

Specimens from Kazakhstan sometimes have tergite II completely black. Also, the extent and color of pubescence on thorax show some variability from silvery whitish to brown in specimens in the eastern mediterranean and central asian area.

Geographic distribution: Mediterranean area to central Asia, northern to southern Switzerland and Hungary.

Records (types)

Sphex manticata Pallas - Volga Pall. "*manticata* Ins.mant.Pall" (green label) "5690"; Berlin. examined.

Ferreola rossica Radoszkowski - Russland, Orenburg 2£ "*Pomp.rossicus* Radoszk. Type"

"*Paraferreola manticata* Pall.£, dt.Haupt"; Berlin, examined, lectotype and paralectotype here designated .

Salius micans Radoszkowski -Turkestan \$ "*Pomp.micans* Radoszk. Type" "*Paraferreola hellmani* Ev. \$, dt. Haupt; Berlin)

Salius niger Radoszkowski - Ashabad "*nigrita*" "*Ferreola grandis* Rad. £, dt.Haupt"; Berlin

Ferreola Tournieri Tournier – Algeria. Oran £ lectotype; Genève, here designated

Paraferreola anomala Haupt: Israel "Jerusalem Palestine 23.viii.1941 Bytinski-Salz" "Holo-type" (red handwritten label by Haupt), "*Paraferreola anomala* Hpt £ Haupt det. 1952" (Halle). examined.

Records (others, males are associated with female forms):

***E. manticata* f. *manticata*:**

BULGARIA: Nessebar £ 1-14.viii.1982 (Z.Padr; Linz) - Slancev Brjac 4£ 25\$ 28.vi-14.vii.1971, 1\$ 16-18.vi.1977(Z.Padr; Linz) - Slincev Brjac 14\$ 20.vii-5.viii.1965 (Z.Padr, Linz) - (Prov.Burgas) Aitos 2\$ 14.viii.1956, 1\$ 23.viii.1956 (Pulawski; Wahis).

FRANCE: Var: Pq de Giens 3\$ 26.vi.1949 (P. Veyret; Wahis) - Saint-Raphaël \$ 2.viii.1931 (F. Bernard; Paris) - La Clape \$ 21.vi.1974 (Chevin; Versailles) - Aude: Leucate, Mouret plage \$ 2.viii.1975, \$ 15.ix.1986, 2\$ 19.ix.1988 sur *Echinophora* (J.Hamon; Wahis) - Aveyron: Saint-Affrique \$ (E.Rabaud; Paris).

GREECE: 8£ 24\$ 1991-1996 Cap Tenaro (Mani), Olympia, Ochromenos, Mantinea, Epidauros, Amouliani, Midea, Stymphalia, Antritsena, \$: 19.-6.-5.ix., £ 9.vi.-25.vi. (Arens) - £ Rhodos, Erber 1868 „*Paraferre. manticata* f. *mixta* det Maidl“ (Wien) - £ Pargos 21.vi.1995 leg. Scaramozzino (Torino) - - £ \$ Epidauros 10.vi.1995 leg. Scaramozzino (Torino) - £ \$ Kiparissia 10.vi.1995 leg.

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

- Scaramozzino (Torino) - £ N-Corfu, Acharavi 13.v.1995 leg. Schwarz (Schmid-Egger) - \$ Amolinai 1.-19.ix.1994 (Hartmann) - £ Santorini, Pargos 14.v.1992 (Stuttgart).
- HUNGARIA: £ „Ungarn 1883, Kohl“ „*laesus* Mocs. det. Mocsary“ (Wien) - £ Simontornya 30.vi.1930 leg. Pillich. (Wien).
- ITALY: £ Valle d'Aosta, 6 km W Aosta, St. Pierre 800m 4.viii.1995 (Schmid-Egger) - £ Valle d'Aosta, 10 km W Aosta, Fossaz 900m, 8.vii.1995 (Schmid-Egger) - £ Oradica Pisa, Tomente Ragone 26.VII.1995 leg. Strumia (Schmid-Egger) - SICILY: "5691" 2£ (Schulz, "*Paraferreola manticata* Pallas £, dt. Haupt; Berlin) – Etna, Nicolosi £ 30.vii.1956 (Tel Aviv).
- KASAKHSTAN: £ 70 km SE Lepay, 20km SE Kokterek 400m NN, 46°01'N 79°42'E, 13.vi.2001 (Hauser).
- KROATIA: 3£ 2\$ Insel Krk (1£ ZMÜ, Wien) - £ 16.ix.1964 Pula (ZMÜ) - £ Spalato, Gasparini (det?) 1885 (Wien) - £ Insel Veglia, Istr. Mader leg. „*laesus* Mocs. det Kohl“ (Wien) - £ Rijeka, Jadranova 18.viii.1991 (Windschnurer) - Krk Island, Punat 2\$ 18.vii.1973 (R.Wahis; Wahis) - Nordl.Adria, Insel Kerk, Rudina £ 10-20.vi.1937 (leg.Stocklein; Wahis) - Insel Krk \$ (Mader; Wahis); Ile Krk, Punat \$ 18.vii.1973 (Wahis).
- SERBIA: Del.Pescara, Jasenovo \$ 1.vii.1981 (Wahis).
- SLOVENIA: Malacky, Slov. £ 17.viii.1955 (J.Palasek, na kvetu *Eryngium campestre* L.; Linz) - Sturovo 3\$ 1-15.viii.1961, 1\$ 12.viii.1961, 2\$ 25.vii.1962, £ 27.vii.1962, (Z.Padr; Linz).
- SPAIN: Zaragoza, Bujaraloz \$ 23.vii.1967 (Wahis) - Tarragona, Delta Ebro, Platjon de la Marquesa \$ 24.v.1999 (réc. & coll. J.E.Wiering) - Prov. D'Avila, Navalperal \$ vii.1904 (Escalera; Paris).
- TURKEY: Diyarbakir 650m. \$ 9.viii.1985 (R.Hensen; Wahis) - (Mardin) Mardin 1000m. \$ 2.vii.1987 (R.Hensen; Wahis) - Isparta env. \$ 23.vi.1998 (J.Halada, "*Eoferreola syraensis* Rad.\$, dt. Wolf 1998; Linz).
- UKRAINE: £ Sarepta F. Kohl 1883 „*dimidiatus* Fabricius det Kohl“ „*Paraferr. manticata f. mixta* det Maidl“ (Wien).
- ?former USSR: £ Pyra, Simony „*dimidiatus* v.d.L non Fabricius det Kohl“ „*Paraferr. manticata f. mixta* det Maidl“ (Wien) - £ Transcaspica „*micans* R. det. Radoszk.“ (Wien).

E. manticata f. tournieri

- ALGERIA: Massif des Aures SG29 1700m. £ 17.vi.1981 sur *Euphorbia* (J.M.Maldes; Wahis) - Oran, route D91 2£ 25.x.1959 (J.Barbier; Paris & Wahis) - Oran route D18 1£ 3\$ 6.viii.1960, \$ 17.vi.1961, \$ 1.vii.1961 2\$ 6.viii.1961 (J.Barbier; Paris & Wahis) - Mascara £ 9.vii.1929 (*Paraferreola manticata pici* Tourn.£, dt., Wolf, 1960; Paris) - Djebel Belezma, Col de Telmet 1700m. £\$ 16.vi.1981 at *Ferula* (J. Maldes) - Aures, St Gag 1700m. £ 17.vi.1981 at *Euphorbia* (J. Maldes) - Toukal, Ouarsenis £ (J. de Gaulle; Paris) - Taguin \$ 1895 - £ Setif (leg.?) Kohl 1883 „*algira* Costa non Lep. det Kohl“, „*Paraferr. manticata* det. Maidl“ (Wien).
- MORROCO: Casablanca £ 1-15.viii.1918 (R. Benoist; Paris) - (Casablanca) DarBouAzza 33°28'30"N-7°48'16"W 90m £ 1.vi.1994 sur *Eryngium amethystinum*, Wahis) - (Tetuan) Oued Lalou, Tizrharine 35°24'11"N-5°07'23"W 2\$ 30.v.1994 (Wahis) - (Nador) Oulad Youssef el Kbir, 50m. steppe dunaire rase 35°5'38"N-2°28'11"W £\$ 24.v.1994 (R.Wahis-M.Terzo, at *Hernaria fontanesi*; Wahis) - Grand Atlas, Ijoukak £ 9.v.1947 (J.de Beaumont; Lausanne) - Moyen Atlas, Ifrane 2\$ 24 et 27.vi.1947 (J.de Beaumont; Lausanne) - Marrakech, Oued Tensift \$ 17.v.1947, 2\$ 16.v.1947 (J.de Beaumont; Lausanne) - Fès 1£ 2\$ 28-30.v.1947 (J.de Beaumont; Lausanne) - Agadir £ 12.vi.1947 (J.de Beaumont; Lausanne) - (Casablanca) Ain Diab £ 18.iv.1947 (J.de Beaumont; Lausanne) - Port Lyautey, Mehdiya \$ 23.v.1947, \$ 1.vii.1947 (J.de Beaumont; Lausanne) - Tiznit, Sidi Moussa £ 21.iv.1947 (J.de Beaumont; Lausanne) - 40km S. Quercif \$ 15-17.v.1995 (Ma Halada; Linz) - El

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Menzel, 30km E. Sefrou £ 29.v.1995 (Ma Halada; Linz) - Melilla, Yebel Surugié £ 12.x.1947 (Pardo Alcaide; Wahis).

TUNISIA: Mohamedia £ \$ 16.ix.1982 (*Ferreola pici* Tourn. £\$, dt.Wolf 1982 (Tussac, J. Bitsch) - £ 40 km W Jendouba, Ain Soltane, Feidija, 25.vi.1994 (Schmid-Egger) - £ Tunis, Mai, d. Graeffe „*algira* Costa non Lep. det. Kohl“, „*Paraferreola manticata* det. Maidl“ (Wien).

ITALY, SICILY: £ Grohm. (without date or further comment), „*algira* Costa non Lep. det Kohl“, „*Paraferreola manticata* det. Maidl“ (Wien).

E. manticata f. *lichtensteini*

AZERBAIJAN, S Baku, Altyagach 1200m, 40°50'N 48°50'E (Hauser)

FRANCE: Var- Le Muy £ 26.vii.1969, £ 29.vii.1969, £ 16.viii.1970, £ 28.vii.1972 (Gros; Wahis) - Var- Sainte-Maxime 4£ 18, 23, 24 et 25.ix.1972 (Gros, Wahis) - Var- Toulon £ 5.viii.1951 (J.Barbier; Wahis) - Var- Fréjus £ 17.ix.1929, £ ix.1936 (F.Bernard; Paris) - Var: Nans-les-Pins, 430m. £ 1.viii.1988 (P.Ponel) - Marseille (F.Ancey, "*Ferreola distincta* Sm.?"; Wahis) - Avignon £ "*Paraferreola lichtensteini* Tourn £, dt.Wolf 1960"; Paris) - Var- Gonfaron, cimetière 220m. £ 20.vii.1991 sur *Eryngium campestre* (Y.Barbier; Wahis) - Var Gonfaron "Le Bastet" 25.ix.1972 (E.Gros; Wahis) - Var: La Môle £ viii.1986 (Adamski) - Aude: Leucate village, garrigue £ 27.vii.1974, £ 13.vii.1986 sur *Eryngium campestre* (Hamon; Paris) - Saint-Guillaume-le-Désert £ sans date (Delmas; Montpellier); Avignon 3£ (coll.Roth; Paris) - Morières £ 2.ix.1898 (coll.Roth; Paris) - Gard: Bellegarde £ 25.vii.1951 (J.David; Paris) - Bouquet £ 29.vii.1962 (Petit); Bouches-du-Rhône: Eygalières £ 12.viii.1989, £ 8.vi.1990 (Fonfria) - Vaucluse: Le Baucet £ 6.viii.1972 (Fonfria) - Sauveterre £ 17.vii.1971 (Marion) - Miramas £ 3.vi.1894 (E.Roth; Paris) - Lozère: Causse Méjean, Hure-la-Parade £ 21.viii.1987 (Ponel) - Pyrénées-Orientales: Le Barcares, Lido plage £ 24.vii.1987 sur *Eryngium campestre* (J. Hamon) - Ardèche: Bois de Paï olive £ 18.vi.1985 (J.Maldes) - Hérault: Montpellier £ (Sichel; Paris) - Mérimol £ 10.vii.xx (coll.Roth; Paris) - Perrier £ 6.viii.1897 (J.Hamon), £ 6.viii.1990 (Brunhes).

GREECE: £ 6.1967 Umgebung Rhodos (München) – Kreta., Lassithi, Hochebene £ 17.vi.1993 (J.Tiefenthaler, Linz).

ITALY: £ Noli 20.vi.1961 leg. Schmidt „*lichtensteini* Tourn.“ label from Priesner (Wien).

KAZACHSTAN: Dzambul env. (60km) Makbal Kirgis.crhebet 2£ 4.vi.1980 (Linz; Wahis) - Aksaj, Alma-Ata env. £ 30.v.1974 (Karel Denes, Linz) - Dzambul env., Kara Tau Prusmyk Ujuk, 1000m. £ 3.vi.1980 (Z.Padr, Linz).

PORTUGAL: Estramadura, Peniche 5-15m. £ 22.viii.1984 (P.van Ooijen; Wahis) - Sagres £ 18.vi.1985 (Gros).

SPAIN: £ C.B. Toroella 7.ix.1973 (Schmid-Egger) - 2£ 4\$ Prov. Salamanca, Villar de la Yegua, Vado de la Vina 24.vi.1995 leg. Tschornsig, Malaise-trap (Stuttgart, Schmid-Egger) - 3\$ Prov. Salamanca, Aldea del Obsipo 28.vi.1995 leg. Tschornsig, Malaisetrapp (Stuttgart, Schmid-Egger). - Barcelona, San Pol de Mar £ 26.v.1969 (Wahis) - Valencia, Cullera £ 7.vii.1969 (Wahis).

TURKEY: (Konya) Beysehir 1150m. £ 18.vi.1987 (R.Hensen; Wahis) - Senyurt, Erzurum 2300m. £ 22.viii.1991 (E.Yildirim; Wahis) - Konya 30km S. of Aksehir £ 24.vi.1998 (J.Halada, "*Eoferreola syraensis* Rad. £, dt.Wolf 1998; Linz) - NO Camardi/Nigde 1800m. £ 10.viii.1991 (M.Halada, "*Eoferreola manticata* Pall. £, dt.Wolf 1997; Linz) - Zelve/Nevsehir 1100m. £ 25.viii.1991 (Halada, "*Eoferreola manticata* Pall. £, dt.Wolf 1997; Linz) - (Elasig) Nue-Ufer dingöl 1500m. 38°56'N-40°40'E £ 31.v.1985 (Rousch; Linz) - 3£ Meram bei Konya, 14.VI.1968, Sille bei Konya 17.VI.1968, Konya NW 15.VI.1968, leg. Schmidt, leg. Kusdas „*lichtensteini* m. det. Priesner“

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

(Wien) - 2\$ Bitlis, Nemrut Dag 16.viii.1991 leg. Halada (LINZ) - \$ Prov. Hakkari, Sat. Dag., Shagulut, SW Yüksekova 4.viii.1982 (Schmid-Egger).

TURKMENIA: Kopet-Dag Kial-Arvat 50km S. Chajagala £ 17.v.1993 (M.Halada, Linz).

E. manticata f. batrachiorum

DAGHESTAN: Tuprozk £ 17.vii.1961 (Wahis).

EGYPT: Borg-el-Arab £ 4.v.1955 (H.Priesner, "*anomala* Hpt, dt.Priesner; Wien).

FRANCE, KORSICA: Bonifacio £ 7.viii.1895, £ 20.viii.1895, £ 26.v.1896, £ 11.x.1898, £ 19.viii.1899, £ 10.x.1900, £ 20.vi.1903, £ 28.vi.1903, £ 9.vii.1904, £ 26.vi.1904, £ 12.vii.1905, £ 29.vi.1907, £ 17.vi.1909, £ 8.ix.1909 (Ferton; Paris, Wahis) - Santa Manza £ 23.vii.1905 (Ferton; Paris) - Algajola, dunes £ 1-11.vii.1979 (H.Wolf; Wahis) - Pietralba, ruisseau de Lagani, 350m. £ 8.vii.1993 sur *Eryngium campestre* (Wahis) - Calvi, La Figarella £ 13-14.vii.1993 (bac jaune, Wahis) - £ 12.vii.1993 sur *Mentha pulegium* (E. Druart - Mons) - Feliceto D.113, 100m. £ 13.vii.1993 sur *Eryngium campestre* (E.Druart; Mons). - Bonifacio \$ 14.vii.1895 \$ 29.viii.1895, \$ 12.ix.1895, \$ 4.vi.1896, \$ 2.ix.1899, (Ferton; Paris) - \$ vi.1921 with cocon and note "larve trouvée en juin 1921 sur un jeune \$ d' *Eresus niger*, éclos à Paris en ix.1921 (Berland Paris) - Olcani, Bocca di San Giovanni 900m. \$ 4.vi.1985 sur *Euphorbia characias* (R.Wahis; Wahis) - Algaiola, dunes \$ 1-11.vii.1979 (H.Wolf; Wahis).

IRAN: \$ Paß Z Neyriz/Para 2060m, m 18.V.1978 leg Warncke (Schmid-Egger)

ISRAEL: \$ Palestine, Bir Rechina 24.vi. leg. Bytinski-Salz „*claripennis* Pr.“ label from Priesner (Wien) - £ Jerusalem 8.viii.1940 leg. Bytinski-Salz „*claripennis* Pr.“ (Wien) - £ Jerusalem, Palestine 23. Aug. 1941 leg Bytinsky Salz (*Paraferreola anomala* Hpt. det Haupt 1952) (red label: typus) (red label: Holotype) – £ 20. Jun. 1943 Jerusalem (*Paraferreola anomala* Hpt. det Haupt 1952) (blue label: paratypus) (red label: Syntype) – £ 16. Oct. 1946 Tiberias (*Paraferreola anomala* Hpt. det Haupt 1952) (blue label: paratypus) – 2 \$s Jerusalem, 27. Aug. 1941, 5. July 1940, 4. oct. 1941 (*Paraferreola anomala* Hpt. det Haupt 1952) (first \$: blue label: paratypus; second \$: red label: Allotype; third \$: *anomala* det Priesner) – \$ Nahal, Qumeran 9. April 1986 (*E. manticata* det Wolf 1980) (all specimens from Tel Aviv) - Nablus \$ 30.v.1970 (Bytinski-Salz, *Eoferreola anomala* Haupt \$, dt.Wolf 1982; Wahis) - Palestine: Jerusalem \$ 6.vi.1986 "*Paraferreola anomala* Hpt \$, dt.Haupt 1952; Halle). - Wade Audja £ 12.vii.1970 (Bytinski-Salz; "*Eoferreola anomala* Haupt" dt.Wolf 1982; Wahis).

JORDANIA: Wadi es Sir 31°57'N-35°49'E £ 10.viii.1986 (R.Hensen; Wahis) - north Shuna £ 29-30.iv.1996 "*Eoferreola anomala* Hpt £, dt.Wolf 1997"(Ma Halada; Linz).

KAZACHSTAN: \$ Chagir 42,2N, 68,8E 6.v.1994 leg. Denes (LINZ) - Dzambul env. (60km) Makbal Kirgis.erhebet 2£ 4.vi.1980 (Z.Padr, "*Eoferreola manticata nigra* Guss. £, dt.Wolf 1997; Linz; Wahis): 10km E.Djambul £ 31.v.1994 (Ma Halada, "*Eoferreola manticata nigra* Guss. £, dt.Wolf 1997"; Linz).

LEBANON: Libano, Bekaa, Kab Elias 4\$ 15.vi.1953 (A.Mochi; Wahis) - Libano, Bekaa, Litani \$ 28.vi.1953 (A.Mochi; Wahis).

MOROCCO: Port Lyautey Mehdia 2£ 23.v.1947 (J.de Beaumont; Lausanne) - Rabat £ 16.vi.1962 (W.Schläfle; *Eoferreola manticata alcajola* m, £; dt.Wolf 1982, Wahis) - Ifrane £ 26.vi.1947 (J.de Beaumont; Lausanne).

SYRIA: 50km s. Homs £ 24.v.1996 (Ma Halada; "*Eoferreola anomala* Hpt £, dt.Wolf 1997; Linz) - 40km NE Damascus £ 22.v.1996 (Ma Halada, "*Eoferreola anomala* Hpt £, dt.Wolf 1997"; Linz) - Anata, 50km SE Suwayda £ 20-21.vi.1996 (Mi Halada, "*Eoferreola manticata nigra* Guss. £" dt.Wolf 1997; Linz) -Hijjaneh d.Damasco 2\$ 13.v.1955 (A.Mochi; Wahis) - Meaze \$ 2.vi.1954 (A.Mochi; Wahis).

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

TADZHIKISTAN: \$ Tadzhih SSSR, Ramit 27.vii.1979 leg. Pulawski (Schmid-Egger).

UZBEKISTAN: Samarkand, 35km Aman Kutan £ 30.vi.1981 (Kocourek Mir, "*Eoferreola manticata nigra* Guss. £, dt. Wolf 1997; Linz).

***Eoferreola mixta* (Tournier, 1895)**

Ferreola mixta Tournier, 1895: xii \$ Algeria: Oran (lectotype \$; Genève) examined and designated .
Pompilus pharmaceuta Dalla Torre, 1897: 310 (catalogue; replacement name for *Ferreola mixta* Tournier, 1895 nec *Sphex mixtus* Fabricius, 1798; *Pompilus mixtus* Radoszkowski, 1881, in *Pompilus*). *Sphex mixtus* Fabricius is a *Poecilopompilus* and *Pompilus mixtus* Radoszkowski (from Angola) belongs probably to *Hemipepsis* (material was destroyed). There is no reason to use the replacement name *pharmaceuta* Dalla Torre.

Paraferreola manticata forma mixta (Tournier); Haupt, 1927: 272-273 (key) £\$ fig.139)

Paraferreola dentifer Haupt, in Nadig & Nadig 1935: 12 £\$ Morocco: Casablanca (nomen nudum)

Tea mixta (Tournier); Wolf, 1970: 11 £ Morocco: Ixmoart.

Paraferreola manticata forma moroccana Haupt (in coll.) £ Morocco (nomen ineditum)

Diagnosis and Discussion: The female of *E. mixta* is characterized by its color pattern. The apical part of the head, the pronotum and the propodeum are red, the remaining body is black. *E. manticata* is smaller (less than 15 mm) with the markedly red colored form *tournieri* occurring in north Africa; the latter also has a red mesonotum and scutellum. *E. cyrenaica* from north Africa has a black propodeum, the remaining thorax is tinged by red. *E. mixta* is morphologically similar to *E. rhombica*. It is possible that *mixta* is only a form or subspecies of *rhombica* or of *anatolica*. For the moment we will treat the taxon *mixta* from north Africa as a valid species, defined by color pattern and distribution. See also the discussion of *rhombica*.

The male of *mixta* is characterized by dark wings, large size (more than 13 mm) and flat sternites. The male of *E. manticata* has pale and translucent wings, the remaining species in north Africa have sternal depressions.

Female: Length 16-20 mm. Black. Red are: back edge of head, spot at inner margin of eyes, flagellomeres, pronotum, propodeum, tarsi. Red color on head and tarsi might be reduced. Morphology similar to *rhombica* and *anatolica*. Wings clouded with narrow darker apical zone. In one specimen tergite II shows a very indistinct reddish lateral zone.

Male: Length 13-17 mm. Black, tergite II with red band (in basal two thirds). Setae on head and mesonotum pale brown, on propodeum black with brownish gleam (as in *anatolica*). Wings as in female.

Geographic distribution: Algeria, Morocco, Tunisia.

Records (types)

MOROCCO: Tanger 2£ (Quedenfeld; blue printed label) "Type" (red), "*Paraferreola manticata f. moroccocana* Hpt. £, dt. Haupt; Berlin (with old handwritten note "Diese Art ist identisch mit der von Dahlbom als *dimidiata* F. beschriebenen, hat aber nicht mit dem *dimidiatus* des Fabricius zu tun. Sie ist auch identisch mit der *Ferreola algira* Lucas, nicht aber mit der seltenen *algira* Lep.") - moroccoco \$ (Quedenfeld blue printed label) "Type" (red), "*Paraferreola manticata f. moroccocana* Hpt. \$, dt. Haupt; Berlin) -

Records (others)

ALGERIA: Djebel Belzma, col de Telmet 1700m. £ 16.vi.1981 sur *Ferula* (J.M.Maldes; Wahis) - Maafa £\$ 2.vi.1952 (*Paraferreola mixta* Tourn., dt. Wolf 1960; Paris) - Mecheria £\$ 20.v.1895 (J.de Gaulle 1919; Paris) - Prov.d'Alger, Taguin \$ 1898 (de Vauloger; Paris) - Saida, 5km N de Mecheria 2\$ 7.iv.1983 (Leys & Hurk; Wahis) - Algier 2£, (leg?) Kohl 1883 (Wien) - Oran £\$ 1895 leg. Schmiedeknecht (Wien) - Salef, (leg.?) Kohl 1883 (Wien).

MOROCCO: Fes 6£ 4\$ 28-30.vi.1947 (J.de Beaumont; Wahis) - Moyen Atlas, Ifrane £ 23. vi.1947, £ 2\$ 24.vi.1947, £\$ 26.vi.1947, £ 2\$ 27.vii.1947 (J.de Beaumont; Lausanne, Wahis) - Port Lyautey, Mehdiá \$ 26.v.1947 (J.de Beaumont; Lausanne) - Misschliffen 2019m. £ 13.vii.1961 (Wahis) - Casablanca \$ 5.vii.1932 (Ad.Nadig; *Paraferreola dentifer* Hpt \$, dt. Haupt 1934; Halle) - 1\$ idem ("*Eoferreola mixta* Tourn. \$, dt. Wolf 1982", Halle) - Ifrane £ 18-21.vii.1931 (Ad.Nadig, "*Eoferreola mixta* Tourn. \$, dt. Wolf 1982"; Halle) - M.Atlas, Ifrane \$ 30.vi.1988 (J.Schmidt, "*Eoferreola rhombica* Christ \$, dt. H.Wolf 1988"; Linz).

TUNISIA: Tunis \$ (no further data on label, probably before 1900) (Wien).

All specimens from Wien are similar labelled: "*dimidiatus* det Kohl", "*Paraferreola manticata mixta* Tournier, det Maidl".

***Eoferreola neftae* Schmid-Egger new species**

Diagnosis and discussion: The male of *E. neftae* is characterized by its sternal emarginations, reddish flagellomeres, darkened wings, black pronotum and tibia III. Sternal depressions IV have bounding triangular projections, the space in between is rectangular and longer than wide. The similar *E. cyrenaica* has withish-yellow spots on the pronotum and the tibia III, the space between the lateral edges on sternite IV is squarish or distally broader than basally. *E. syraensis* has black flagellomeres, the sternal emarginations IV are laterally rounded or with a bulge.

The sternal emarginations distinguish the species as a member of the *E. syraensis* group, together with *E. cyrenaica*. The form of the lateral projection of sternites suggests a close relationship between *E. neftae* and *E. cyrenaica*, whereas *E. syraensis* might be the sister species of both. But only a detailed character study can clarify the phylogenetic relationship between the *Eoferreola* species.

Male: Length 11-12,5 mm. Black, flagellomeres dark orange reddish. Flagellomere I darker than remaining flagellomeres. Inner margin of eye with small yellow spot. Mandibule with dark-reddish spot. Tergite II, tergite III and sternite II with large dark-reddish bands, band on tergite II extended to whole length of tergite, band on tergite III only in basal half of tergite. Face above clypeus with dense adjecting silvery pubescence and long erect setae on frons. Setae above ocelli as long as flagellomere X. Pronotum with coarse and short adjecting silvery pubescence and some long erect setae. Scutellum laterally, metanotum and propodeum above and apically-laterally covered with long and dense wool-like silvery pubescence.

Flagellomeres and face fig. xxx. Sternite III with small emargination in apical third, laterally with small bulge-like projections. Sternite IV with emargination on whole length (on visible part of sternite), laterally with large triangular edge-like projection. Projection as tall as ocellar diameter, nearly parallel, includes a long rectangular space. Sternite V with large, but indistinct emargination at surface, apical edge wide U-form emarginated. Apical edge of sternite VI deeply U-form emarginated. Sternite VII fig. xx. Wings brown darkened.

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Female: unknown.

Habitat: In Tunisia, the species was found in a small palm-oasis next to the Oasis Nefta north of Chott el Jerid. The males were caught by net-sweeping on flowering *Daucus carota*.

Etymology: The species is named after the type locality Oasis Nefta.

Geographic distribution: From Morocco to Egypt. All locations belong to the northern subsaharian border.

Records (types)

TUNISA: Oasis 15km W. Nefta 33°50'N / 07°43'E \$ holotype, 2\$ paratypes 8.vi.2000 (leg. Schmid-Egger; holotype in Gembloux, paratypes in coll. Schmid-Egger).

ALGERIA: Sahara, Laghouat \$ paratype 3-4.vi.1898 (Lameere; Bruxelles).

MOROCCO: Figuig, Oued ed Defla 32°35'07"N - 1°51'16"W, 1180m. \$ paratype 30.v.1996, sur Retama retam Webb. (M.Terzo; Wahis).

EGYPT: North Coast, 20-25km W. Marsa Matruh \$ 27.v.1993 (A.Mochi; Wahis). This specimen is larger than the specimens from northwest Africa.

***Eoferreola rhombica* (Christ 1791)**

Sphex rhombica Christ, 1791: 269

Pompilus coccineus Fabricius, 1804: 191

Pompilus coccineus (Fabricius); Vander Linden, 1827: 343

Pompilus thoracicus (Rossius); Vander Linden, 1827: 333

Pompilus basalis Herrich-Schaeffer, 1830: 117 \$

Pompilus coccineus (Fabricius); Dahlbom, 1845: 448

Pompilus thoracicus (Rossius); Dahlbom, 1845: 450.

Anoplius coccineus (Fabricius); Lepeletier, 1845: 461 £

Pompilus tropicus Linné; Wiessmann, 1849: 11 \$

Pompilus basalis Herrich-Schaeffer; Schenck, 1857: 240 \$

Pompilus thoracicus (Rossius); Marquet, 1879: 174

Pompilus thoracicus (sic) (Rossius); Costa, 1887: 79

Ferreola thoracica (Rossius); Radoszkowski 1889: 477 Italy, France, Orenbourg, Astrakkan, Irkutsk.

Ferreola thoracica (Rossius); Morawitz, 1891: 186 £

Ferreola coccinea (Fabricius); Tournier, 1895: xii £\$ (key, Suisse: Valais, Genève; France)

Pompilus basalis (Herrich-Schaeffer); Dalla Torre, 1897: 276 (catalogue; comb.nov.)

Pompilus ursus (Fabricius); Dalla Torre, 1897: 330 (catalogue)

Pompilus thoracicus (Rossius); Schenck, 1907:

Pompilus thoracicus (Rossius); Schmiedeknecht, 1907: 263 £, 269 \$

Pompilus basalis Herrich-Schaeffer; Schmiedeknecht, 1907: 270 \$

Ferreola coccinea (Fabricius); Nielsen, 1907: 49

Ferreola thoracica (Fabricius); Berland, 1925: 274-275, fig.546

Paraferreola rhombica (Christ); Haupt, 1927: 272-273 (key), 280-281

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

- Paraferreola rhombica* forma *thoracica* Rossi; Haupt, 1927: 272-273 (key), 282-283 £, fig. 141, Southern Russia, Balkan, Italy, Austria, Germany and southern France) - Olberg 1959: 90,95,230 (biologie)
- Paraferreola rhombica* (Christ); Schmiedeknecht, 1930: 625 £\$.
- Eoferreola rhombica* (Christ); Grandi, 1957: 336, ph.23 £\$ Parco Nazionale d'Abruzzo, chasse *Eresus niger*; Emilia.
- Paraferreola rhombica* (Christ); Nouvel & Ribaut, 1957(1956): 567 \$ France: Marne; distinction from *P. lichtensteini*.
- Paraferreola rhombica* (Christ); Wolf 1960: 9 £\$ Italy: Col di Tenda, Monti Sibillini.
- Paraferreola rhombica* (Christ); Haupt, 1962: 68 £ (key)
- Tea rhombica* (Christ); Wolf, 1966: 48,51 \$ Turkey: Ankara, Tüs Gölü; silver pubescence very strong, \$ from Tüs Gölü with yellow pronotal band.
- Tea (Eoferreola) rhombica* (Christ); Gauss, 1966: 67 £ Umgebung Heidelberg.
- Eoferreola rhombica* (Christ); Simon-Thomas, 1966: £\$ Vendée: Les Granges.
- Tea (Eoferreola) rhombica* (Christ); Gauss, 1967: 539.
- Tea rhombica* (Christ); Priesner 1968: 169-170 £\$ Austria, at Apiaceae: *Falcaria*.
- Tea (Eoferreola) rhombica* (Christ); Wolf, 1970: 399 £\$ Italy: Marche, Sardinia.
- Eoferreola rhombica* (Christ); Wolf, 1971: 31 £\$ Bohemia, Moravia, Slovakia.
- Eoferreola rhombica* (Christ); Wolf, 1972: 85, figs 205-207 (key), 86 £\$ Switzerland, central and southern Europe.
- Eoferreola rhombica* (Christ); Wolf, 1975: 31 (ssp. £\$ Daghestan)
- Tea rhombica* (Christ); Wolf, 1978: 72 \$ Corse: Ajaccio, carte 1.
- Eoferreola rhombica* (Christ); Tobias, 1978: 138-139 £\$ (key)
- Eoferreola rhombica* (Christ); Priesner, 1982: 311 £\$ Austria, at Apiaceae: *Falcaria* and *Daucus*.
- Eoferreola rhombica* (Christ); Schmidt & Westrich 1982: \$ Rotenfels, at *Eryngium*.
- Eoferreola rhombica* (Christ); Westrich & Schmidt, 1985: 109 (red date book, Baden-Württemberg)
- Eoferreola rhombica* (Christ); Schmidt & Westrich 1987
- Eoferreola rhombica* (Christ); Oehlke & Wolf 1987: 346 £\$ Germany (DDR).
- Eoferreola rhombica* (Christ); Madl, 1990: 21 £ Austria.
- Eoferreola rhombica* (Christ); Schmid-Egger & Wolf, 1992: 342 Baden-Württemberg.
- Eoferreola rhombica* (Christ); Lelej, 1995: 260 £\$ key, Russian Far East.
- Eoferreola rhombica* (Christ); Wolf, 1998: 341 \$ Uzbekistan.
- Eoferreola rhombica* (Christ); Dijksterhuis, 1999: 49 Neatherland: Veluwe; hunted *Eresus sandaliatus*
- Eoferreola rhombica* (Christ); Raemakers & van Helsdingen, 1999.
- Eoferreola rhombica* (Christ); Walter 1999: Live cycle of host *Eresus cinnaberinus*.

Diagnosis: The female of *E. rhombica* is characterized by its color pattern which is unique among the *Eoferreola* species considered here. Propodeum and band on tergite I and II are red (tergite I might be black in specimens from southeast Europe), the remaining thorax is black. The species varies in size. Specimens from central Europe measure between 11 and 15 mm, whereas specimens from Croatia, southern Italy and Greece can reach 22 mm maximum. We suspect that the smaller central European specimens belong to the same species as the larger specimens because we could not find any morphological differences. The size increases steadily from Germany and Austria to Greece; it is not possible to find a clear limit to separate two taxa. In addition, variation in the presence of the red band occurs across this geographic range.

The males have flat sternites (*distincta*, *neftae* and *cyrenaica* with sternal impressions), moderately darkened wings with a darker apical border (pale and translucent in *manticata*, completely darkened in

mixta and *anatolica*) and pale setae on the propodeum (darker setae in *anatolia* and silvery white setae in *erythraea*).

Discussion: The taxa *anatolica* and *erythraea* from southern Europe and palaeartic Asia and *mixta* from northwest Africa are morphologically identical to *rhombica*. Females differ in color pattern and in size, males in color of wings and color of propodeal setae. It is possible that all taxa belong to one widespread species which varies geographically in color. For the moment we treat all taxa as distinct species as defined below. Due to the variability of the color of propodeal setae, the distinction of the males in southeast Europe and Turkey remains a problem. Xxx Perhaps size is an adaption to different sized prey spiders.

Female: Length 9-22 mm. Black with brownish pubescence. Propodeum red, tergite I and II with lateral red spots, often connected to a band. Spots on tergite I sometimes reduced or tergite I black. Base and apical margin of tergite I and apical margin of tergite II black. Temples as long as flagellomere II. Flagellomere I as long as OOL + 0,5 POL. Apical margin of mesosternum see fig. xx. Wings I and II slightly clouded with dark greyish apical zone outside of venation zone, in mediterranean species wing more or less regular dark.

Variation: The species varies considerable in size. Specimens from central Europe measures 9-15 mm, these from the Balcans 15-22 mm. A specimen from southern Italy (Gargano) is also 20 mm, whereas some specimens from Sicily are only 13-14 mm. The red color on tergite I is reduced in large specimens from Greece (tergite I with two small red spots) and southern Italy (tergite I black).

Male: Length 10-13 mm. Black, basal 2/3 of tergite II red. Sternite VIII in smaller species narrower with keel on basal half, in larger specimens broader with indistinct keel. Erect setae of head light brown (sometimes darker), of propodeum greyish white or pale brownish white. Wings I and II pale greyish transparent, with clouded zone on apex and apical margin of wings.

Variation: The males are very homogenous. Colour of setae varies from pale to darker brown, but it is always paler as in *syraensis* or *anatolica*.

Geographic Distribution: Central and southern Europe, north to 52,5° N latitude (Berlin).

Records:

SWITZERLAND: Valais, Martigny £ 23.VI.1959 leg. de Beaumont (Wahis) - Martigny \$ 11.viii.1934 leg. Matthey (Wahis) - Wallis, Mattertal, Törbel 4\$ 10.viii.1994 „*E. rhombica* det Wolf“ (Hartmann) - Wallis, Baltschieder-Chumme \$ 23.v.1997 (Merz).

SPAIN: Navalpera, Pro. Avila, \$ VII. 1904 leg. Escalera (Wahis).

ITALY: Sicila £ 1858 leg Mann „*thoracica* det Kohl“, „*coccineus* det Kohl“, „*Paraf. rhombica* det Maidl“ (Wien), Gargano, Mattluata £ 13.vi.1992, length 20mm, tergite I black (Schmid-Egger); Piémont: Oulx £ viii.1937 (Benoist; Paris).

GERMANY: Woltersdorf (near Berlin) \$ 24.vi.1855 (Berlin); Haupt (1927) as *erythraea* - Rheinland-Pfalz, Schloßböckelheim £ 31.v.1996 (Schmid-Egger) - Thüringen, Kyffhäuser, Bad Frankenhausen \$ 6.viii.1998 leg. Burger (Schmid-Egger).

FRANCE: Elsaß, Bollenberg bei Rouffach £ 23.vii.1985 leg. Mertens (Schmid-Egger) - Ht. Alpes, Aiguilles, Le Lombard 44° 47' 8"N / 06° 51' 6"E 1800 m £ \$ 21.vii.1998 (Niehuis) - Aude: Salvezines \$ 20.viii.1993 (Noblecourt) - Aude: La Clape \$ 28.vi.1982 (Dufis), 7\$ 21.vi.1974, 3\$ 23.vi.1974 (Versailles) - Aude: Preixan \$ 10.vii.1959 (Dufis) - Lozère: Causse Mejean, col de Perjuret 1028m.

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

£ 6.viii.1991 (Maldes) - Alpes-maritimes: Saint-Etienne-de-Tinée £ 12.vii.1987 (Cocquempot) - Isère: Marcieu 880m. £ 10.viii.1991 (Hamon) - Basses-Alpes: Saint-André-les-Alpes 900m. \$ 24.vii.1991 sur *Thapsia villosa* (réc.J. Barbier; Mons) - Ardèche: Col de l'Escrinet 787m. £ 8.vii.1986 (Wahis) - Pyrénées-orientales: Eyne 1600m. 4\$ 3,6,10,11.vii.1983 (C.Z.Zwakhals; Lefebvre) - Dorres lez Angustrine 1400m. 2£ 2.viii.1967 (Jeuniaux; Liège) -; Alpes-de-Haute-Provence: Peyresq 1548m. £ 31.vii.1967, £ 28.viii.1967, 3£ 16.viii.1968, £ 18.viii.1968, £ 30.vii.1975, \$ 13.vii.1985, £ 17.vii. 1985 (Gembloux) - Basses-Alpes: Beauvezer £ 11.viii.1967 (Wahis) - Annot \$ 12.viii.1967 sur *Pastinaca* (Gembloux) - d'Annot-au-Fugeret \$ 2.viii.1967 sur *Peucedanum cervaria* (Gembloux) - \$ 15.viii.1968 (Gembloux) - Saint-Michel-Peyresq £ 25.viii.1968 sur *Peucedanum cervaria* (Gembloux) - d'A; Aveyron: Saint-Affrique 3£ 1\$ 9.vii.1961 sur *Sedum album* (Wahis) - Lapanouse-de-Cenon \$ 10.vii.1961 sur *Daucus* (Wahis) - Hérault: Béziers £ (Bruxelles) - Fontainebleau £ 5.viii.1946 (Benoist; Paris); Lozère: Col de Bonnecombe, 1300m. \$ 7.viii.1994

AUSTRIA: Winden, Burgenland £ 15.vii.1963 leg. Priesner (Wien) - Oberweiden £ leg. Mader (Wien) - Eichkogel, Mödling \$ 15.vii.(19)15, „*rhombrica* det Maidl“ (Wien).

HUNGARY: Simontornya, Hung. occ. £ 26.vi.1928 (Wien), Simontornya \$ 11. July 1928 (Tel Aviv).

GREECE: Peleponnes, Patras, Panaheikon-Gebirge 1600-1950m 2\$ 11.vii.1996 (Arens) - Kalogria (Achaia) £ 21.vi.1995 „*thoracica* det Wolf“ (Arens) length: 20mm, tergite I with two very small red spots.

?? Horn £ 29.vi.(18)68; „*rhombrica* det Wolf 1964“, (Wien); ?? Piesting (leg.?) Tschek 2£ 1.viii. (18)69; „*ursus* det Kohl“, „*coccineus* det Kohl“, „*thoracica* det. Kohl“, „*rhombrica* det Maidl“.

Unclear Taxa

***Eoferreola thoracica* (Rossius, 1794)**

The identity of *E. thoracica* is not clear at all, because the taxon was confused with most other *Eoferreola* species. The type could not be examined.

Sphex thoracica (Rossi, 1794: 118)

Ferreola thoracica Costa, 1881, 40, tab.viii, fig.3

Pompilus variabilis Eversmann, 1849: 377 var \$

Ferreola thoracica (Rossi); Radoszkowski, 1889: 477, Italy, France, Orenbourg, Astrakkan, Irkutsk.

Tea(*Eoferreola*) *thoracica* (Rossi); Wolf, 1970: 399 £\$ Italy: Toscane, Marche, Lazio.

Eoferreola thoracica (Rossi); Wolf, 1972: 85 (key), 86 £ Oberitalyn, S. et SE de l'Europe.

Tea thoracica (Rossi); Wolf, 1970: 11 \$ Spanien: Navalperal.

Tea (*Eoferreola*) *thoracica* (Rossi); Wolf 1970: 399 £\$ Italy: Toscane, Marche, Lazio. - Wolf 1971

Eoferreola thoracica (Rossi); Wolf 1972: 85-86 (key), 86 £\$ Oberitalien, S.and S.E. Europe.

Not *Eoferreola*

Paraferreola simplex Haupt, 1962 = ***Apareia simplex*** (Haupt,1962), **new synonym.** £\$ Morocco: Beni Mallal (holotype £; Halle) examined.

Ferreola pici Tournier, 1895: XII £ nec auct. = ***Ferreola algira*** Lepeletier 1845, **new synonym.** £ Algeria: Oran (lectotype £; Paris) examined and here designated.

Wahis, R. & C. Schmid-Egger (2002): The genus *Eoferreola* Arnold, 1935 in the Palaearctis with description of a new species (Hymenoptera: Pompilidae). Notes faunistiques de Gembloux 46: 39-73.

Tea manticata iberoturanica Wolf, 1970: 399, 412. £\$ Morocco: Rabat; Afghanistan (holotype £, H. Wolf); set in synonymy with *Paraferreola progressiva* Haupt i.l. which belongs to the genus *Apareia* (= *Psammoderes*); the value of this taxon must to be verified by examining the type. *Ferreola Komarowii* Radoszkowski, 1889: 476-477. £ Transcaspie (?£ holotype; Berlin). *Ceropales komarowii* Radoszkowski, 1889 (= *Pseudopompilus humboldti* Dahlbom 1845) type \$; Berlin examined.

Taxa not mentioned

Eoferreola (Tea) filiantennata Wolf & Moczar, 1972: 243-244, \$ Mongolia (holotype \$, Budapest), not examined.

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