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A contribution to the fauna of the Nomioidine bees of the Arabian Peninsula (Hymenoptera: Halictidae)

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A b s t r a c t : This paper presents the results of an examination of 1221 specimens of Nomioidinae from 14 institutions and private collections, collected in the Arabian Peninsula. A total of 20 species has been found. Five new species, *Nomioides abudhabiensis* n. sp., *N. riyadhensis* n. sp., *N. scaramozzinoi* n. sp., *N. serotinus* n. sp., and *N. tricinctus* n. sp., are described. Seven species, *Ceylalictus karachensis* (Cockerell, 1911), *Nomioides deceptor* Saunders, 1908, *N. elbanus* Blüthgen, 1934, *N. kenyensis* Pesenko et Pauly, 2005, *N. klausi* Pesenko, 1983, *N. ornatus* Pesenko, 1983, and *N. squamiger* Saunders, 1908, are recorded from the Peninsula for the first time.

مساهمة في دراسة مجموعة النحل الوقواقي في شبه الجزيرة العربية
(Hymenoptera: Halictidae)

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خلاصة: تمثل هذه الدراسة نتائج فحص ١٢٢١ عينة من النحل الواقواقي المحفوظة في ١٤ مركز علمي ومجموعات خاصة جمعت من شبه الجزيرة العربية. تم الحصول على ٢٠ نوعا ، وصفت ٥ أنواع جديدة هي: *Nomioides abudhabiensis* و *N. riyadhensis* و *N. scaramozzinoi* و *N. serotinus* و *N. tricinctus* . كما تم تسجيل ٧ أنواع جديدة لأول مرة من شبه الجزيرة العربية وهي: *Ceylalictus karachensis* و *Nomioides deceptor* و *N. elbanus* و *N. kenyensis* و *N. klausi* و *N. ornatus* و *N. squamiger*.

INTRODUCTION

The subfamily Nomioidinae contains about 90 minute (body length usually 3-5 mm) and usually brightly coloured species with metallic green or blue tint and extensive pale integument markings, confined to the Old World and inhabiting mostly arid and semiarid areas; in Australia it is represented by a single species. The subfamily includes three genera (Pesenko 1993, 2000 a, 2000 b; Michener 2007): *Cellariella* Strand, 1926, endemic to the Afrotropical Region and Madagascar, and two genera widely distributed in warm areas of Africa, Europe and Asia: *Ceylalictus* Strand, 1913 (with three subgenera) and *Nomioides* Schenck, 1867 (with three subgenera).

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The first information on Nomioidinae from the Arabian Peninsula and its adjacent islands was published by Blüthgen (1925), who described *N. socotranus* and recorded *N. rotundiceps* Handlirsch, 1888, from the Island of Socotra. Over a half of century later, in his monograph on the Palaearctic nomioidines, Pesenko (1983) described *N. arabicus* and recorded six other species, *C. punjabensis* (Cameron, 1907), *C. variegatus* (Olivier, 1889), *N. facilis* (Smith, 1853), *N. rotundiceps*, *N. squamiger* Saunders, 1908 [treated as *N. facilis*], and *N. turanicus* Morawitz, 1876, from the south of the Arabian Peninsula, mostly on the basis of material sent for study by the British Museum (Natural History), London. Van der Zanden (1987) recorded additional localities for *N. turanicus* (Yemen: Wadi Rima Tihama) and *C. variegatus* (Aden: Mohur). In the recently published monograph on the African Nomioidinae, Pesenko & Pauly (2005) described *N. micheneri*, in the type series of which there are specimens from the Arabian Peninsula (see below).

In the text below, 20 species of the subfamily Nomioidinae found in the Arabian Peninsula up to the present time are listed together with data on their synonymy, geographic distribution, taxonomic references, and material examined. Five new species are described, *N. abudhabiensis* n. sp., *N. riyadhensis* n. sp., *N. scaramozzinoi* n. sp., *N. serotinus* n. sp., and *N. tricinctus* n. sp. Seven species are recorded from the Peninsula for the first time, *C. karachensis*, *N. deceptor*, *N. elbanus*, *N. kenyensis*, *N. klausi*, *N. ornatus*, and *N. squamiger*.

Identification keys for the species are available in Pesenko (1983, 2004) or Pesenko & Pauly (2005), the new species excepted.

In the present paper, all the available data on the Nomioidinae from the Arabian Peninsula are summarised. A total of 1221 specimens has been studied from 14 institutions and private collections, which are listed below together with their curators and the acronyms used in the text of this paper.

Abbreviations:

ASF	Academy of Natural Sciences, San Francisco, USA; W.J. Pulawski
BAK	Private collection of the late D.B. Baker; Oxford, GB (at present in UKL)
BMNH	British Museum (Natural History), London, GB; G.R. Else
KUH	Private collection of M. Kuhlmann; Münster, Germany
MNB	Museum für Naturkunde an der Humboldt Universität zu Berlin, Germany; F. Koch
MSNP	Museo di Storia Naturale e del Territorio, Universita di Pisa, Calci, Italy; P.L. Scaramozzino
NMB	Naturhistorisches Museum, Basel, Switzerland; M. Brancucci
NMW	Naturhistorisches Museum, Vienna, Austria; M. Fischer
RNHL	Rijksmuseum van Natuurlijke Histoire, Leiden, Netherlands; C. van Achterberg
UCR	University of California, Riverside, USA; S. Frommer
UKL	University of Kansas, Lawrence, USA; M.S. Engel
UUL	Utah State University, Logan, USA; T.L. Griswold
ZISP	Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia; Yu.A. Pesenko
ZMA	Zoölogish Museum, Amsterdam, Netherlands; W. Hogenes

Other acronyms used are:

LML	Biologiezentrum des O.Ö. Landesmuseums, Linz, Austria; J. Gusenleitner
MAC	collection of Ministry of Agriculture, Cairo
MCZC	Museum of Comparative Zoology, Harvard University, Cambridge, USA; J. Carpenter and S.R. Shaw
MNHN	Muséum National d'Histoire Naturelle, Paris, France; J. Casevitz-Weulersse

SYSTEMATIC ACCOUNT

Ceylalictus (*Ceylalictus*) *punjabensis* (Cameron, 1907)

Ceratina punjabensis Cameron, 1907. — *Journal of the Bombay Natural History Society* **17** (4): 1003 [♀, type locality: India, Punjab, Ferozepore (lectotype ♀, BMNH, designated by Pesenko 1983: 182)].

Nomioides exellens Saunders, 1908. — *Transactions of the Royal Entomological Society of London* 1908 (2): 223 [♀♂, type locality: Algeria: Biskra (lectotype ♂, BMNH, designated by Pesenko 1983: 183); synonymised by Pesenko 1983: 183].

Nomioides comberi Cockerell, 1911. — *Annals and Magazine of Natural History* (Ser. 8) 7 (39): 236 [♂, type locality: Pakistan: Karachi (syntypes: 3 ♂, MBL, synonymised by Cockerell 1919: 9)].

Nomioides punjabensis. — Meade-Waldo 1914; *Annals and Magazine of Natural History* (Ser. 8) 14 (83): 403.

Nomioides fasciata. — Dębski 1917; *Bulletin de la Société Royale Entomologique d'Egypte* 10 (1): 31, 32, 46 [non Friese, 1898].

Nomioides punjabensis. — Cockerell 1919; *Philippine Journal of Science* 15 (1): 9.

Nomioides fasciatus. — Alfken 1924; *Denkschriften der Akademie der Wissenschaften in Wien, mathematisch-naturwissenschaftliche Klasse* 99: 250.

Nomioides fasciata var. *punjabensis.* — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 61.

Nomioides fasciata. — Blüthgen 1934a; *Stettiner entomologische Zeitung* 95 (2): 258.

Ceylalictus (Ceylalictus) punjabensis. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 178 (key), 179 (key), 182, Figs 206, 252, 347-349 (comb. n.).

Ceylalictus (Ceylalictus) punjabensis. — Pauly et al. 2002; *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Entomologie* 72: 206, Figs 8, 9, 27.

Ceylalictus (Ceylalictus) punjabensis. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 143 (key), 144 (key), 157-160, Figs 12 *a*-12 *o*; Pl. II: 60-61 (total view), VI: 128-129 (head), VIII: 166 (female propodeum), IX: 175 (male propodeum), X: 184 (female mesoscutum), XIII : 208-209 (male genitalia), XVI : 230 (map).

Specimens examined (34 specimens): Saudi Arabia: 1 ♂, Asir, Wadi Lasaba (Tihama near Quifidha), 20 Dec. 1945, D May Fitzgerald, BMNH; 2 ♀♀, Jidda, 7-9 Apr. 1934, G.L. Bates, BMNH, ZISP. — United Arab Emirates: 2 ♂♂, 3 ♀♀, Dubai, Al Awir, 30 Apr.-21 May 1984, E. Sugden, UUL, ZISP; 5 ♂♂, 9 ♀♀, Dubai, Nakhalai, 21-28 Apr. 1984, E. Sugden, UUL, ZISP. — Oman: 6 ♂♂, Wahiba Sands, Desert W Al-Quabil, 22°31'N 58°41'E, 350 m, 9 Dec. 2003, M. Kuhlmann, KUH; 1 ♂, S. Nizwa, Wadi at road Muscat to Salalah, 22°52'N 57°34'E, 450 m, 10 Dec. 2003, on red *Fabaceae*, M. Kuhlmann, KUH; 1 ♀, 4 ♂♂, Dhofar, Rd 43 Oasis of Ginan bin Nawatish, 18°03'N 53°40'E, 8 Apr. 2001, P.L. Scaramozzino, MSNP.

Distribution: Cape Verde Islands, North Africa, Arabian Peninsula, Israel, Jordan (Wadi Araba, 100 km N Aqaba; first record), southern Iran, southern Afghanistan, Pakistan, northwestern India.

Ceylalictus (*Ceylalictus*) *variegatus* (Olivier, 1789)

Apis variegata Olivier, 1789. — *Encyclopédie méthodique. Histoire naturelle, T. 4, Insectes*: 139 [♀, type locality: ?southern France (holotype ♀, lost)].

Andrena pulchella Jurine, 1807. — *Nouvelle méthode de classer les Hyménoptères et les Diptères. T. 1. Hyménoptères*: 231, Pl. XI. [♀♂, type locality: ?Europe (syntypes, lost); synonymised by Handlirsch 1888: 402].

Hylaeus pulchellus. — Illiger 1807 *Magazin für Insektenkunde* **6**: 58.

Halictus variegatus. — Latreille 1809; *Genera crustaceorum et insectorum secundum ordinem naturalem in familias disposita, iconibus exemplisque plurimis explicata*: 154.

Andrena pulchella. — Spinola 1808; *Insectorum Liguriae species novae aut rariores*: 194.

?*Allodape syrphoides* Walker, 1871. — *A list of Hymenoptera collected by J.K. Lord, esq., in Egypt*: 50 [♀, type locality: "Tajura" [Tadjura, French Somaliland; see Michener, 1975: 235] (syntypes, lost)].

Andrena flavopicta Dours, 1873. — *Revue et Magasin de Zoologie (*Sér. 3) 1: 284. ♀♂, type locality: Algeria (syntypes, MNHN); synonymised by Handlirsch 1888: 403.

Nomioides jucunda Morawitz, 1874. — *Horae Societatis Entomologicae Rossicae* 10 (2 4): 161 [♀, type locality: France, Nice (lectotype ♀, ZISP, designated by Pesenko 1983; synonymised by Handlirsch 1888: 403].

Nomioides variegata. — Handlirsch 1888; *Verhandlungen der zoologish-botanischen Gesellschaft in Wien (Abhandlungen)* 38: 402, Figs 5, 8.

Nomioides fasciatus Friese, 1898. — *Természetrajzi Füzetek* 21 (3 4): 307 [♀♂, type locality: Egypt, Helouan (lectotype ♂, HNB, designated by Pesenko 1983: 180); synonymised by Pesenko 1983: 180].

Nomioides fasciatus var. *intermedius* Alfken, 1924. — *Denkschriften der Akademie der Wissenschaften in Wien, mathematisch-naturwissenschaftliche Klasse* 99: 250 [♂, type locality: Port Sudan (holotype ♂, MNB); synonymised by Blüthgen 1925: 54].

Nomioides variegata var. *simplex* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 51 [♀, type locality: Libya: Bengasi-Guiliana (syntypes, MNB); synonymised by Pesenko 1983: 180].

Nomioides variegata var. *unifasciata* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 53 [♂, no indication of type material].

Nomioides variegata. — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 49; 1930: 768 (key).

Nomioides labiatarum Cockerell, 1931. — *Annals and Magazine of Natural History* (Ser. 10) 7 (38): 204 [♀♂, type locality: Morocco: Asni (holotype ♀, MCZC, examined); synonymised by Blüthgen 1934 a: 255].

Nomioides variegata. — Blüthgen 1934; *Stettiner entomologische Zeitung* 95 (2): 255; 1934 c: 499 (key).

Nomioides variegata var. *nigrita* Blüthgen, 1934. — *Stettiner entomologische Zeitung* 95 (2): 257 [♀, type locality: Turkmenistan, Farab (holotype, ♀, ZISP, examined); synonymised by Pesenko 1983: 181].

Nomioides variegata var. *pseudocerea* Blüthgen, 1934. — *Stettiner entomologische Zeitung* 95 (2): 257 [♀♂, type locality: India, Deesa (syntypes, BMNH); synonymised by Pesenko 1983: 181].

Nomioides variegata var. *nigriventris* Blüthgen, 1934. — *Stettiner entomologische Zeitung* 95 (2): 258 [♂, type locality: Algeria, La Guëtna (holotype ♂, MNB); synonymised by Pesenko 1983: 181].

Nomioides variegata. — Ireland 1935; *Annals of the Transvaal Museum* 17 (1): 107, Fig. 38.

Nomioides variegata. — Móczár 1967; *Fauna hungarica, no. 85. Vol. XII. Hymenoptera III, Pt II. Halictidae*: 107 (key).

Nomioides variegata. — Constantinescu 1974; *Travaux du Museum d'Histoire Naturelle "Grigore-Antipa"* 15: 275, Figs 15-26.

Nomioides variegata. — Osytshnjuk et al. 1978; *A key to insects of the European part of the USSR. Vol. 3. Hymenoptera. Pt 1*: 412 (key).

Ceylalictus (*Ceylalictus*) *variegatus*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 178 (key), 179 (key), 180, Figs 205, 251, 343-346 (comb. n.).

Ceylalictus (*Ceylalictus*) *variegatus*. — Pesenko et al. 2000; *Bees of the family Halictidae (excluding Sphecodes) of Poland: taxonomy, ecology, bionomics*: 145.

Ceylalictus (Ceylalictus) variegatus. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France* (n.s.) 41 (2): 144 (key), 160-164, Figs 13 *a*-13 *n*, 14 *a*-14 *e*; Pl. II: 62-63 (total view), VI: 130-131 (head), XIII: 210-211 (male genitalia), XVI: 231 (map).

Specimens examined (493 specimens): Saudi Arabia: 1 ♂, 1 ♀, Madaen Salih, 26°45'N 38°15'E, 30 Apr. 1946, G.V. Popov, BMNH; 1 ♂, 1 ♀, Jun. 1946, D. Fitzgerald, BMNH; 4 ♂♂, Riyadh, 6 Aug. 1979, A.S. Talhouk, NMB. — Bahrain: 1 ♂, 1 ♀, 26 Sep. 1935, J. Fernondez, BMNH. — United Arab Emirates: 1 ♀, Abu Dhabi Int'l A/P, 2 Apr. 1991, I.L. Hamer, ZISP; 3 ♂♂, 1 ♀, Al Ain (I'Con), 26 Mar. 1993; 1 ♀, 8 Apr. 1993, I.L. Hamer, ZISP; 103 ♂♂, 26 ♀♀, Dubai, Al Awir, 30 Apr.-30 May 1984, E. Sugden, UUL, ZISP; 40 ♂♂, 18 ♀♀, Dubai, Nakhalai, 28 Mar.–28 Apr. 1984, E. Sugden, UUL, ZISP; 1 ♀, Hatta, 20 May 1988; 2 ♀♀, 28 Apr. 1989; 3 ♂♂, 2 ♀♀, 28 Dec. 1990; 5 ♂♂, 5 ♀♀, 23 Aug. 1991; 2 ♂♂, 26 Mar. 1993; 2 ♀♀, 5 Mar. 1993; 5 ♀♀, 10 Apr. 1993; 2 ♂, 6 ♀♀, 14 Apr. 1993, I.L. Hamer, UUL, ZISP. — Yemen: 9 ♂♂, 7 ♀♀, Al Huseini near Lahej, 450 ft. (137 m), 26-29 Nov. 1937, H. Scott & E. Britton, BMNH, ZISP; Khormaksar, s. l., 1 ♂, 13 Mar. 1967, K.M. Guichard, BMNH; 1 ♀, Al Kowd, 13°05'N 45°25'E, 17-21 Jul. 2001; 4 ♀♀, 1 ♂, Sept. 2003, A. van Harten & S. Al Haruri, 4 ♀♀, 1 ♂, RNHL; 2 ♀♀, 1 ♂, Al Kowd, 27 Oct.-15 Nov. 1992; 1 ♀, 18-30 Jan. 1993; 7 ♀♀, Apr. 1993, A. van Harten, 1 ♂; Mar. 2000; 6 ♂♂, May-Jun. 2000; 1 ♀, November 2000; 1 ♂, 4 May 2001; 1 ♂, 1 ♀, Jul.-Sept. 2001, A. van Harten & S. Al Haruri, ZMA; 2 ♀♀, 12 km NW Manakhah, 3.Jul.-21 Aug. 2001, A. van Harten, RNHL; 1 ♀, Lahj, 17.May-15 Jun. 2000, 1 ♂, Jul.-Sept. 2001, A. van Harten & A. Sallam, RNHL; 1 ♀, 2 ♂♂, Al Kadan, 3 Dec. 1997; 5 ♂♂, 7 ♀♀, 17 Feb.-31 Mar. 1998, A. van Harten & H.M. Naser, ZMA; 4 ♂♂, Al Mahrah, 12-14 Nov. 1997, A. Sallam & S.Ba Angood, ZMA; 6 ♂♂, Al Mahrah, Dabin, 11-13 Nov. 1997, A. Sallam & S. Ba Angood, ZMA; 2 ♀♀, Seyun (Saywun), Jun. 2002; 1 ♀, Jul. 2002, A. van Harten & A. Al Zubayri, ZMA; 1 ♀, Al Lahima, 5 Jun.-24 Jul. 2001, A. van Harten, ZMA. — Oman: 1 ♀, Al Wafi, 18 Mar. 1976, K.M. Guichard, BMNH; 1 ♂, Dhofar, Salalah, s. l., 29 Sep. 1977, K.M. Guichard, BMNH; 28 ♂♂, 6 ♀♀, Masirah, RAF Camp, 24 Feb.-19 Apr. 1976, K.M. Guichard, BMNH, ZISP; 1 ♀, Madinat, Qaboos, 28 Feb. 1986, T. Huber, UUL; 2 ♂♂, Qurum, 11 Apr. 1976, K.M. Guichard, BMNH; 9 ♂♂, 1 ♀, Rostaq, 350 m, 21-31 Mar. 1976, K.M. Guichard, BMNH, ZISP; 2 ♀♀, Runais, 28 Feb. 1976, K.M. Guichard, BMNH, ZISP; 2 ♀♀, Samail Gap, 600 m, 29 Feb. 1976, K.M. Guichard, BMNH; 1 ♀, Sur, W Rafsah, 17 Mar. 1976, K.M. Guichard, BMNH; 1 ♂, Al Mazaree, Wadi Dhayqah, 100 m, 23°05'N 58°52'E, on *Aerva javanica*, 6 Dec. 2003, M. Kuhlmann, KUH; 21 ♂♂, S. Nizwa, Wadi Ghul, 22°53'N 57°31'E, 500 m, garden, 16 Dec. 2003, M. Kuhlmann, KUH; 1 ♂, 1 ♀, Sur, 23 km W road to Muscat, Wadi, 22°28'N 59°23'E, 100 m, on red Fabaceae, 7 Dec. 2003, M. Kuhlmann, KUH; 5 ♀♀, 5 ♂♂, Wadi Quitbit Resthouse sewage 2 km S, 19°09'N 54°30'E, 170 m, 15 Dec. 2003, M. Kuhlmann, KUH; 3 ♀♀, 2 ♂♂, Dhofar, E of Uyun Rd to Hajaif, 17°15'N 53°58'E, 3 Apr. 2001, M. Generari & P.L. Scaramozzino, MSNP; 3 ♂♂, Dhofar, road S of Ayun, 750 m, 17°15'N 53°58'E, 26 Sep. 2001, pozzo, F. Strumia, MSNP; 7 ♀♀, 12 ♂♂, Dhofar, Rd43 Oasis of Ginan bin Nawatish, 18°03'N 53°40'E, 8 Apr. 2001, P.L. Scaramozzino, MSNP; 12 ♀♀, 8

♂♂, Dhofar dint., Hajaif, 17°15'N 54°02'E, 25-29 Aug. 2000, Generari & P.L. Scaramozzino, MSNP; 1 ♀, 7 ♂♂, Dhofar, Salalah, 17°00'N 54°07'E, 27-31 Oct. 1999, Scaramozzino, MSNP; 4 ♂♂, Dhofar, Salalah sett., 0-5 m, 17°02'N 54°09'E, 1-4 Apr. 2001, M. Generari & P.L. Scaramozzino, MSNP; 3 ♀♀, 4 ♂♂, Dhofar, Wadi Ashawq, 16°54'N 53°46'E, 60 m, 23 Sep. 2001, on *Boswellia sacra*, M. Generari & P.L. Scaramozzino, MSNP; 1 ♂, Dhofar, Wadi Ashawq, 190 ft (58 m), 16°54'N 53°46'E, 4 Apr. 2001, on *Boswellia sacra*, F. Strumia & P.L. Scaramozzino, MSNP; 1 ♀, Dhofar, third watering place, 440 ft. (134 m), 17°15'N 53°57'E, 7 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP; 3 ♀♀, Dhofar, Well E of Uyun, Rd to Hajaif, 17°15'N 53°58'E, 3 Apr. 2001, M. Generari & P.L. Scaramozzino, MSNP; 1 ♂, Oasis Shisr (= Ubar), 1200 ft., 18°15'N 53°38'E, 3 Sep. 2000, M. Generari & P.L. Scaramozzino; 1 ♂, 8 Apr. 2001, P.L. Scaramozzino, MSNP.

Distribution: North Africa, southern Europe and warm areas of Central Europe to Austria in the north, steppes and deserts of western Asia to northern China, northern India and Mongolia in the east.

Ceylalictus (*Meganomioides*) *karachensis* (Cockerell, 1911)

Nomioides karachensis Cockerell, 1911. — *Annals and Magazine of Natural History* (Ser. 8) 7 (39): 235 [♀, type locality: Pakistan, Karachi (holotype ♀, BMNH, examined)].

Nomioides karachensis. — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 86; 1934a: 263.

Ceylalictus (Meganomioides) karachensis. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 183 (in part, comb. n.), Fig. 207.

Ceylalictus (Meganomioides) karachensis. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 143 (key), 144 (key), 165-167, Figs 16 *a*-16 *n*; Pl. II: 64-65 (total view), V: 121-123 (head), VIII: 165 (female propodeum), IX: 174 (male propodeum), XI: 193 (male genitalia), XVII: 233 (map); tab. 3.

Specimens examined (32 specimens): Oman: 9 ♂♂, Wahiba Sands, 22 km S Al Qabil, 22°22'N 58°38'E, 8 Dec. 2003, W.J. Pulawski, ASF; 22 ♂♂, 1 ♀, Idem, 330 m, 8-9 Dec. 2003, on *Zygophyllum* sp., KUH.

Distribution: Mauritania, Oman (first record), southern Pakistan.

Nomioides (*Erythronomioides*) *socotranus* Blüthgen, 1925

Nomioides socotrana Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 84 [♀♂, type locality: Socotra, Ras Shoab (lectotype ♂, NMW, designated by Pesenko 1983: 177)].

Nomioides (*Erythronomioides*) *socotranus*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 123 (key), 177, Figs 204, 250, 339, 340.

Nomioides (Erythronomioides) socotranus. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 168 (key), 171 (key), 172-173, Figs 17 a-d, Pl. XVII: 234 (map).

Specimens examined: Socotra: 1 ♂ (lectotype), 1 ♀ (paralectotype), Ras Shoab, NMW.

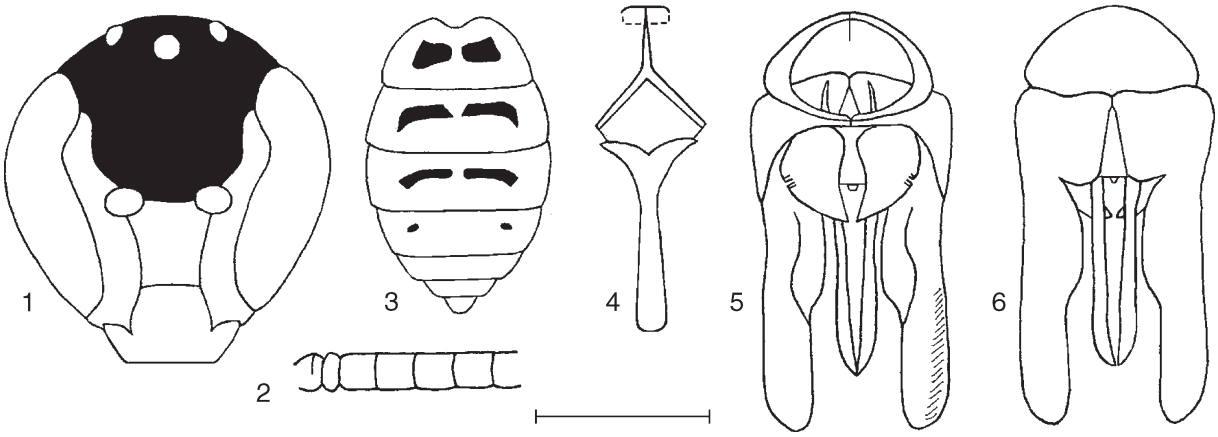
Distribution: Island of Socotra.

Nomioides (*Nomioides*) *abudhabiensis* n. sp. Figs 1-6, Plate 1 a, c

Holotype, ♂, United Arab Emirates, Abu Dhabi, Int'l A/P, 4 Jul. 1986, I.L. Hamer, BAK.

Diagnosis: In its appearance, structure of the genitalia and some other characters of the male, the new species is similar to *N. galeritus* Blüthgen, 1933, which inhabits the southern deserts of Turkmenistan, Uzbekistan, and Tajikistan. It differs from the latter in the following characters: head shorter (height/width ratio 1.07 vs. 1.17-1.2 in *N. galeritus*), tomentose pubescence of head and mesosoma much more dense, dark pattern of metasoma richer, apical lobe of metasomal sternum VIII somewhat widened at apex (narrow and parallel-sided in *N. galeritus*), gonoforceps wider. From another closely similar species, *N. klausi* Pesenko, 1983 (see below), *N. abudhabiensis* differs in the somewhat higher head (height/width ratio 1.0-1.04 in *N. klausi*), shorter middle flagellomeres (their length/diameter ratio 1.0 vs. 1.3 in *N. klausi*), shorter propodeum (dorsal surface of propodeum as long as scutellum, vs. 1.1-1.2 times as long as width of scutellum in *N. klausi*), denser tomentose pubescence of the head and mesosoma, and richer pale pattern on the mesosoma and metasoma.

Description: ♂, structure: Body length 3.5 mm; head egg-shaped in frontal view; its height/width ratio 1.07 (Fig.1); median lobe of clypeus weakly convex, as high as wide (estimated



Figs 1-6: *Nomioides* (*Nomioides*) *abudhabiensis* n. sp., male. **1:** head in frontal view; **2:** flagellomeres 1-5 in lateral view; **3**: metasoma in dorsal view; **4**: metasomal sternum VIII; **5, 6**: genital capsule in ventral and dorsal views.. — The scale line represents 1 mm for the metasoma; 0.5 mm for the head and antenna; 0.25 mm for the metasomal sternum VIII and genital capsule.

as distance between anterior tentorial fossae); clypeus extending two-thirds of its length below eyes; malar space linear; face distinctly depressed at level of antennal sockets; antenna short, nearly reaching only scutellum; middle flagellomeres as long as their diameters (Fig. 2); dorsal surface of propodeum slightly transversely depressed; 0.9 times as long as scutellum; apical lobe of metasomal sternum VIII relatively short, narrow, slightly widened at apex (Fig. 4); gonobase semicircular in dorsal view; gonoforceps relatively wide, straight (Fig. 6), with a single row of short hairs on ventral side along outer margin of distal half (Fig. 5).

Sculpture (mostly concealed by very dense tomentum on head and mesosoma): Dark-coloured part of head and mesosoma, including mesoscutum and metapostnotum, densely and finely granulate, silky matt; scutellum polished, with few punctures; metasomal terga I and II very finely and obscurely granulate, submatt; subsequent terga shinier.

Coloration: Dark-coloured parts of head and mesosoma black, without metallic tints; lower half of face and wide stripes along inner orbits nearly reaching upper margin of eyes (Fig.1), lower half of genal areas and narrow stripes along eyes nearly reaching their upper margin, scapus, pronotum, scutellum, metanotum, mes- and metepimera, legs throughout, basal sclerites of wings, spot on hyaline tegula, and metasoma, except for interrupted fuscous band on terga I-III; all yellowish-white; flagellum rusty-yellow. wing membrane, including pterostigma hyaline; veins light yellow.

Vestiture: Head and mesosoma covered almost throughout with very dense, white tomentum concealing integument; only pronotum, scutellum, metanotum, and anterior half of metapostnotum without tomentum; scutellum and metanotum with few erect long white plumose hairs.

Female unknown.

Nomioides (*Nomioides*) *arabicus* Pesenko, 1983

Nomioides (*Nomioides*) *arabicus* Pesenko, 1983. — *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 128 (key), 167, Figs 241, 321, 322 [♂, type locality: Oman, Qara Hills (holotype ♂, BMNH)].

Specimens examined (2 specimens): Oman: 1 ♂ (holotype), Qara Hills, northern slopes, 670 m, 22 Sep. 1977, K.M. Guichard, BMNH; 1 ♂ (paratype), Tinaf, 650 m, 7 Mar. 1976, K.M. Guichard, BMNH.

Distribution: Oman.

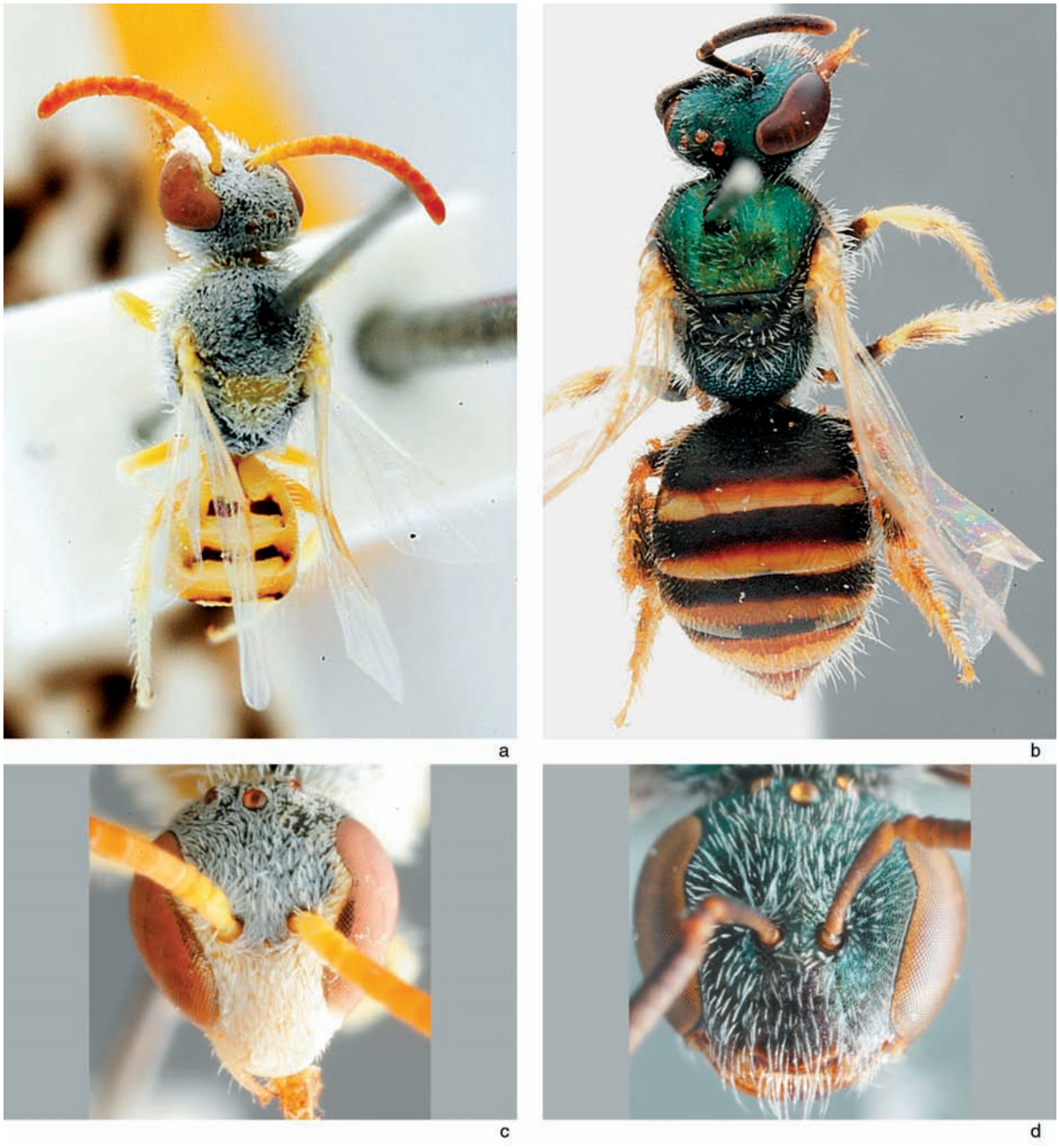


Plate 1: Nomioidinae, dorsal view and head in frontal view. **a, c**: *Nomioides abudhabiensis* n. sp., male. **b, d**: *Nomioides serotinus* n. sp., female.

Nomioides (*Nomioides*) *deceptor* ssp. *deceptor* Saunders, 1908

Nomioides deceptor Saunders, 1908. — *Transactions of the Royal Entomological Society of London* 1908 (2): 223 [♀♂, type locality: Algeria: Biskra (lectotype ♀, BMNH, designated by Pesenko 1983: 135)].

Nomioides minutissima var. *deserticola* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 11 [♂, type locality: Egypt, Khanka (holotype ♂, MAC); synonymised by Pesenko & Pauly 2005: 175].

Nomioides deceptor. — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 11, 16; 1933 b: 23; 1934a: 243.

Nomioides deceptrix. — Blüthgen 1934b; *Bulletin de la Société Royale Entomologique d'Egypte* 18 (1 2): 192.

Nomioides deceptor. — Blüthgen 1937; *Commentationes Biologicae* 6 (11): 3.

Nomioides (Nomioides) minutissimus f. *deceptor*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 134, Figs 170, 171, 209, 210, 256-259.

Nomioides (Nomioides) deceptor. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 169 (key), 171 (key), 175-177, Figs 19 *a*-19 *o,* Pl. III: 76-77 (total view), IV: 99 (mesoscutum), VI: 132-133 (head), IX: 176 (propodeum), X: 185 (mesoscutum), XIV: 218 (male genitalia), XVII : 236 (map).

Specimens examined (12 specimens): Saudi Arabia: 1 ♂, Madain Salih, 26º45'N, 38º15'E, 30 Apr. 1946, G.V. Popov; 1 ♀, D.V. Fitzgerald, BMNH; 1 ♂, Abu Dhabi Int'l A/P, 13 Apr. 1988, I.L. Hamer, BAK; 1 ♀, Al Ain (I'Low), 24 Jun. 1988, I.L. Hamer; ZISP; 3 ♀♀, Dubai, Nakhalai, 15-28 Apr. 1984, E. Sugden, UUL, ZISP; 1 ♀, Madam, 20 Jan. 1993, I.L. Hamer, BAK; 3 ♂♂, Riyadh, 28 Apr. 1980, K.M. Guichard, BMNH; 1 ♀, S. of Riyadh, Al Kharj, 20 Mar. 1980, K.M. Guichard, BMNH.

Distribution: North Africa and Arabian Peninsula (first record).

Nomioides (*Nomioides*) *elbanus* Blüthgen, 1934

Nomioides elbana Blüthgen, 1934. — *Bulletin de la Société Royale Entomologique d'Egypte* 18 (1 2): 200 [♀, type locality: Egypt, Djebel Elba, Seir Arab (holotype ♀, MAC)].

Nomioides (Nomioides) elbanus. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 170 (key), 172 (key), 128, Figs 21 *a*, 21 *b,* Pl. II: 68 (total view), VII: 152 (head), VIII: 168 (propodeum), XVII: 237 (map).

Specimens examined (8 specimens): Saudi Arabia: 1 ♀, Wadi Majarish, below Taif [At Ta'if], 12 Feb. 1983, K.M. Guichard, BMNH; 1 ♀, Fayfa, 200 m, 29 Jan. 1983, K.M. Guichard, BMNH.

Distribution: Algeria, Egypt, Arabian Peninsula (first record).

Nomioides (*Nomioides*) *facilis* (Smith, 1853)

Halictus facilis Smith, 1853. — *Catalogue of hymenopterous insects in the collection of the British Museum. Part I. Andrenidae and Apidae*: 51 [♂, type locality: Malta (holotype ♂, BMNH, examined)].

Nomioides fallax Handlirsch, 1888. — *Verhandlungen der zoologish-botanischen Gesellschaft in Wien (Abhandlungen)* 38: 401, Figs 2, 7 [♀♂, type locality: Bulgaria, "Tultscha" [Dobruja] (lectotype ♀, NMW, designated by Pesenko 1983: 162); synonymised by Blüthgen 1925: 34].

Nomioides callosus Pérez, 1895. — *Espèces nouvelles de mellifères de Barbarie* (*Diagnoses pré1 iminaires*): 56 [♀♂, type localities: northern Italy and Sicily (syntypes: 12 ♀, 1 ♂, MNHN); synonymised by Blüthgen 1925: 34, 38].

Halictus handlirschii Dalla Torre et Friese, 1895. — *Entomologische Nachrichten* 21 (3): 38 [nom. n. for *Nomioides fallax* Handlirsch, 1888 (preoccupied in the genus *Halictus*) non *Halictus fallax* Morawitz, 1874].

Nomioides facilis. — Cockerell 1921; *Annals and Magazine of Natural History* (Ser. 9) 8 (45): 368.

Nomioides facilis. — Blüthgen 1922; *Deutsche entomologische Zeitschrift* 1922 (1): 47; 1925: 34.

Nomioides facilis var. *dusmeti* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 35 [♀, type locality: Spain: Aranuez (holotype: ♀, "in coll. Dusmet, Madrid"); synonymised by Pesenko 1983: 163].

Nomioides facilis var. *bipunctata* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 37 [♂, type locality: Spain: Madrid. (holotype ♂, no indication of depository); synonymised by Pesenko 1983: 163].

Nomioides cruciferarum Cockerell, 1931. — *Annals and Magazine of Natural History* (Ser. 10) 7 (38): 205 [♀♂, type locality: Morocco, Rabat (syntypes 7 ♀, 1 ♂, BMNH, MCZC, 1 ♂ examined); synonymised by Pesenko 1983: 163].

Nomioides facilis. — Blüthgen 1934a; *Stettiner entomologische Zeitung* 95 (2): 247, Fig. 4.

Nomioides fallax. — Blüthgen 1934a; *Stettiner entomologische Zeitung* 95 (2): 247, Fig. 5.

Nomioides facilis. — Constantinescu 1974; *Travaux du Museum d'Histoire Naturelle "Grigore-Antipa"* 15: 273, Figs 11-14.

Nomioides (*Nomioides*) *facilis*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 123 (key to females), 126 (key to males), 134, Figs 170, 171, 209, 210, 256-259.

Nomioides (Nomioides) facilis. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 170 (key), 172 (key), 179-181, Figs 22 *a*-22 *n,* Pl. III: 80-81 (total view), IV: 100 (mesoscutum), VII: 156-157 (head), IX: 178 (propodeum), XI: 188 (mesoscutum), 194-195 (male genitalia), XVIII: 238 (map).

Specimens examined: Oman: 1 ♂, Dhofar, 17°18'N 54°05'E, 31 Aug. 2000, M. Generari & P.L. Scaramozzino, MSNP.

Variation: The male listed above has darker legs and metasoma than in most of the specimens from southern Europe and North Africa.

Distribution: Morocco, Algeria, Tunisia, southern Europe, southern Arabian Peninsula, Island of Socotra, Asia Minor, Iran.

Nomioides (*Nomioides*) *kenyensis* Pesenko & Pauly, 2005

Nomioides (*Nomioides*) *kenyensis* Pesenko & Pauly, 2005. — *Annales de la Société entomologique de France (n.s.)* 41 (2): 170 (key), 172 (key), 183-184, Figs 25 *a*-25 *h,* Pl. IV: 94-95 (total view), VII: 146-147 (head), VIII: 169 (propodeum), XVIII: 241 (map) [♀♂, type locality: Kenya, Samburu Game Reserve (holotype ♂, UKL)].

Specimens examined: United Arab Emirates: 1 ♂, Al Ain (I'Con), 8 Apr. 1993, I.L. Hamer, BAK.

Variation: The male listed above differs from the African males in the somewhat narrower apical lobe of metasomal sternum VIII.

Distribution: Kenya, southern Arabian Peninsula (first record).

Nomioides (*Nomioides*) *klausi* Pesenko, 1983

Nomioides (*Nomioides*) *klausi* Pesenko, 1983. — *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 125 (key), 128 (key), 158, Figs 188, 229, 297, 298 [♀♂, type locality: Iran, Bandar Abbas province, 50 km NW Jask (holotype ♂, LML)].

Nomioides (Nomioides) klausi. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 170 (key), 172 (key), 184-185, Figs 26 *a*-26 *m,* Pl. IV: 96-97 (total view), VII: 148-149 (head), XIV: 178 (male genitalia), XVIII: 242 (map).

Specimens examined (119 specimens): Saudi Arabia, 1 ♂, 16 km W Bahr, Hunayan, 18 Apr. 1979, N. Hedjaz, MNB (erroneously labelled by Pesenko as "*N. galeritus*"); 1 ♂, 3 ♀♀, Abu Arish, 23-29 Mar. 1980, K.M. Guichard, BMNH; 1 ♂, Bahra (Jeddah), 14 Apr. 1980, K.M. Guichard, BMNH. — United Arab Emirates: 3 ♂♂, 3 ♀♀, Abu Dhabi Int'l A/P, 2-3 Apr. 1991, I.L. Hamer, ZISP; 3 ♂♂, 13 ♀♀, Dubai, Al Awir, 30 Apr.-26 May 1984, E. Sugden, UUL, ZISP; 35 ♂♂, 38 ♀♀, Dubai, Nakhalai, 15-30 Apr. 1984, E. Sugden, UUL, ZISP; 1 ♂, Liwa, 23 Mar. 1990, I.L. Hamer, ZISP; 1 ♂, Margham, 13 Apr. 1990, I.L. Hamer, ZISP. — Oman: 1 ♀, Wahiba Sands, 22 km S Al Qabil, 22°22'N 58°38'E, 8 Dec. 2003, W.J. Pulawski, ASF; 8 ♀♀, 7 ♂♂, Idem, 330 m, 9 Dec. 2003, on *Zygophyllum* sp., M. Kuhlmann, KUH.

Variation: Males from the Arabian Peninsula are similar to those from Iran, but differ from the North African males in having the head and mesosoma with sparser tomentose pubescence and the metasoma darker.

Distribution: North Africa, southern Arabian Peninsula (first record), southwestern Iran.

Nomioides (*Nomioides*) *micheneri* Pesenko & Pauly, 2005

Nomioides (*Nomioides*) *micheneri* Pesenko & Pauly, 2005. — *Annales de la Société entomologique de France (n.s.)* 41 (2): 171 (key), 172 (key), 191-193, Figs 30 *a*-30 *p,* Pl. III: 86-87 (total view), VII: 158-159 (head), X: 181 (propodeum), XI: 190 (mesoscutum), XIV: 214 (male genitalia), XIX: 245 (map) [♂♀, type locality: Kenya: 8 mi NE Magadi (holotype ♂, UKL)].

Specimens examined (68 paratypes): United Arab Emirates: 2 ♂♂, Margham, 18 Apr. 1986, I.L. Hamer, BAK, ZISP. — Oman: 1 ♂, Rayy, 18 Apr. 1986, I.L. Hamer, BAK; 1 ♂, 1 ♀, Muscat, Madinat, Qaboos, 28 Feb. 1986, T. Huber, UUL; 3 ♂♂, Muscat to Quriat, Wadi at road, 70 m, 23°32'N 58°31'E, on red Fabaceae, 17 Dec. 2003, M. Kuhlmann, KUH; 10 ♂♂, 1 ♀, S. Nizwa, Wadi Ghul, 22°53'N 57°31'E, 500 m, 10-16 Dec. 2003, garden, M. Kuhlmann, KUH, ZISP; 3 ♀♀, Batinah, Seeb Airport, 23°36'N 58°19'E, 11 Apr. 2001, F. Strumia & P.L. Scaramozzino, MSNP; 2 ♂♂, Oman: Dhofar, Rd 10 verso Al Hayal, wadi, 23°28'N 57°05'E, 10 Jun. 2001, P.L. Scaramozzino, MSNP; 1 ♂, Dhofar, Rd 47 per Sarfait, 1747 ft. (531 m), 16°46'N 53°14'E, 28 Aug. 2000, M. Generari & P.L. Scaramozzino, MSNP. — Yemen: 6 ♂♂, 11 ♀♀, 12 km NW Manakhah, 3 Jul.-21 Aug. 2001; 2 ♂♂, 3 ♀♀, 15 Sep.-22 Oct. 2003, A. van Harten, RNHL; 3 ♀♀, 7 ♂♂, 27 Mar.–5 May 2002; 1 ♀, 2 ♂♂, 6 Jul.-21 Aug. 2002; 3 ♂♂, 21 Aug.-29 Oct. 2002, A. van Harten, ZMA; 1 ♀, Lahj, September 2000; 2 ♂♂, Nov. 2000; 1 ♂♂, Apr. 2001; 1 ♂, May 2001; 1 ♂, Mar.-May 2002, A. van Harten & A. Sallam, RNHL; 1 ♀, Al Kadan, 17 Feb.- 31 Mar. 1998, A. van Harten & H.M. Naser, ZMA; 1 ♀, Al Lahima, 1 Jan. 2001-9 Apr. 2001; 1 ♂, 5.Jun.-24 Jul. 2001, A. van Harten & A.M. Hajer, ZMA; 1 ♀, Jebel Jinaf, 7 000 ft. (2128 m), 7-12 Oct. 1937, H. Scott & E. Britton, ZISP.

Distribution: Egypt, sub-Saharan Africa almost to the Equator, southern Arabian Peninsula.

Nomioides (*Nomioides*) *ornatus* Pesenko, 1983

Nomioides (*Nomioides*) *ornatus* Pesenko, 1983. — *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 124 (key), 127 (key), 150, Figs 184, 226, 287-290 [♀♂, type locality: Turkmenistan, Dzhebel (holotype ♀, ZISP)].

Nomioides (Nomioides) ornatus. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 169 (key), 171 (key), 195-196, Figs 33 *a*-33 *k,* Pl. II: 71 (total view), VI: 142 (head), XIX: 248 (map).

Specimens examined (5 specimens): United Arab Emirates: 2 ♂♂, Abu Dhabi, 16 May 1986, I.L. Hamer, BAK, ZISP; 1 ♂, Abu Dhabi Int'l A/P, 4 Jul. 1986; 1 ♂, 23 Mar. 1987; 1 ♂, 13 Nov. 1988, I.L. Hamer, BAK, ZISP.

Distribution: North Africa, southern Arabian Peninsula (first record), Israel, Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan, northwestern China.

Nomioides* (*Nomioides*) *riyadhensis n. sp. Figs 7, 8

Holotype, ♀, Saudi Arabia, Riyadh, 3 Apr. 1977, W. Büttiker, NMB. — Paratype: 1 ♀, Riyadh, 17 Aug. 1977, W. Büttiker, ZISP.

Diagnosis: With its high head, shiny mesoscutum, and general type of coloration, the new species is a member of the group consisting also of the Middle Asian *N. caspicus* Blüthgen, 1934, *N. pulcherrimus* Blüthgen, 1925, and *N. subornatus* Pesenko, 1983. From these three species, *N. riyadhensis* differs in having much more dense tomentose pubescence on the lower half of the face and on the mesoscutum and in the very short metapostnotum.

Description: ♀, structure: Body length 3.7 mm; head egg-shaped in frontal view; its height/width ratio 1.09 (Fig. 7); median lobe of clypeus convex, 0.9 times as high as wide; clypeus extending two-thirds of its height below eyes; malar space narrow, 0.2 times width of mandible at base; face flattened; metapostnotum flat, triangular-semicircular, with a slight but distinct carina along lateral margins; dorsal surface of propodeum 0.7 times as long as scutellum, passing on to its posterior vertical surface at a distinct angle of nearly 90 .

Sculpture: Clypeus polished, with a few shallow pits; supraclypeal area polished; frons and vertex densely and finely granulate, slightly shiny; mesoscutum, very densely and obscurely punctate, with narrow shiny interspaces; scutellum shiny, with traces of granulation; mes- and metepisterna finely granulate, matt; metapostnotum irregularly reticulate rugulose; metasomal terga I-III matt throughout, subsequent ones slightly shiny.

Coloration: In the holotype, dark-coloured parts of head and mesosoma metallic dull bronze-greenish: upper half of face (Fig. 7), vertex, upper two-thirds of genal areas, entire mesoscutum, most of mes- and metepisterna, propodeum; all remaining surfaces of the body, including antennae, legs and metasoma (Fig. 8), light yellowish-white. In the paratype, dark coloration of body less extensive: upper half of face, vertex, and mesoscutum brighter metallic blue-green; genal areas on upper half and metapostnotum fuscous; wing membrane hyaline, with a slight milky tinge; pterostigma and veins light yellow; posterior areas of terga translucent.

Vestiture: Head and mesosoma covered almost throughout with very dense tomentose pubescence; only clypeus, supraclypeal area, scutellum, and metapostnotum bare.

Male unknown.

Nomioides* (*Nomioides*) *rotundiceps Handlirsch, 1888

Nomioides rotundiceps Handlirsch, 1888. — *Verhandlungen der zoologish-botanischen Gesellschaft in Wien (Abhandlungen)* 38: 405, Fig. 3 [♀, type locality: Egypt, Cairo (syntypes 3 ♀, lost)].

Nomioides rotundiceps. — Dębski 1917; *Bulletin de la Société Royale Entomologique d'Egypte* 10 (1): 30, 32, 35 (♂).

Nomioides rotundiceps. — Alfken 1924; *Denkschriften der Akademie der Wissenschaften in Wien, mathematisch-naturwissenschaftliche Klasse* 99: 250.

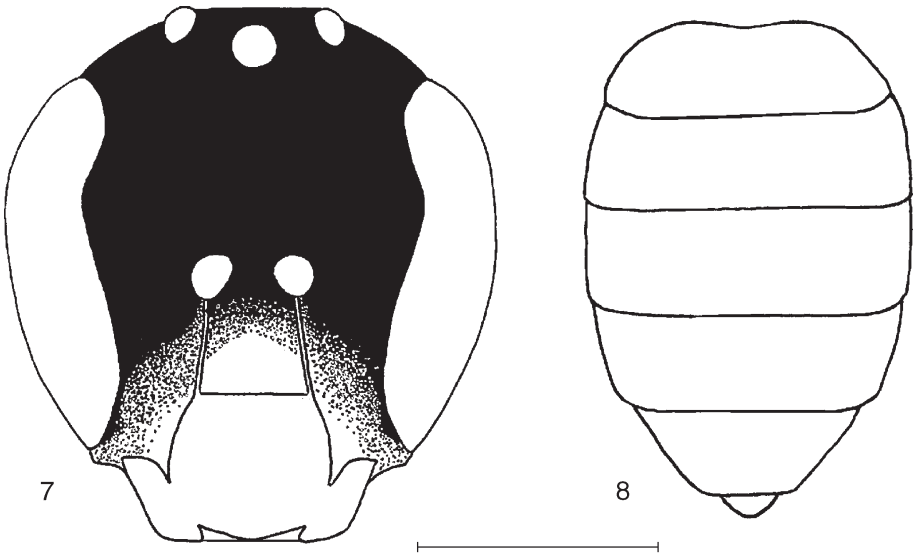
Nomioides rotundiceps var. *viridana* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 31 [♀ (no indication of type material); synonymised by Pesenko (1983: 160)].

Nomioides rotundiceps. — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 29; 1933 a: 124 (key), Fig. 8.

Nomioides persica Blüthgen, 1933. — *Memorie della Società Entomologica Italiana* 12 (1): 124 (key), 125 (key) [♀♂, type locality: Iran, Bampur - Kaskin, (lectotype ♀, ZISP, designated by Pesenko 1983: 160); synonymised by Pesenko (1983: 160)].

Nomioides rotundiceps. — Blüthgen 1934; *Stettiner entomologische Zeitung* 95 (2): 246, 273, Fig. 16, 18, 20.

Nomioides (*Nomioides*) *rotundiceps*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 124 (key), 127 (key), 160, Figs 191, 192, 231, 232, 303-306.



Figs 7, 8: *Nomioides* (*Nomioides*) *riyadhensis* n. sp., female. **7:** head in frontal view; **8:** metasoma in dorsal view. — The scale line represents 1 mm for the metasoma and 0.5 mm for the head.

Nomioides (Nomioides) rotundiceps. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 170 (key), 172 (key), 197-199, Figs 35 a-p, Pl. IV: 92-93 (total view), VII: 144-145 (head), VIII: 170 (propodeum), XIV: 216 (male genitalia), XX: 250 (map).

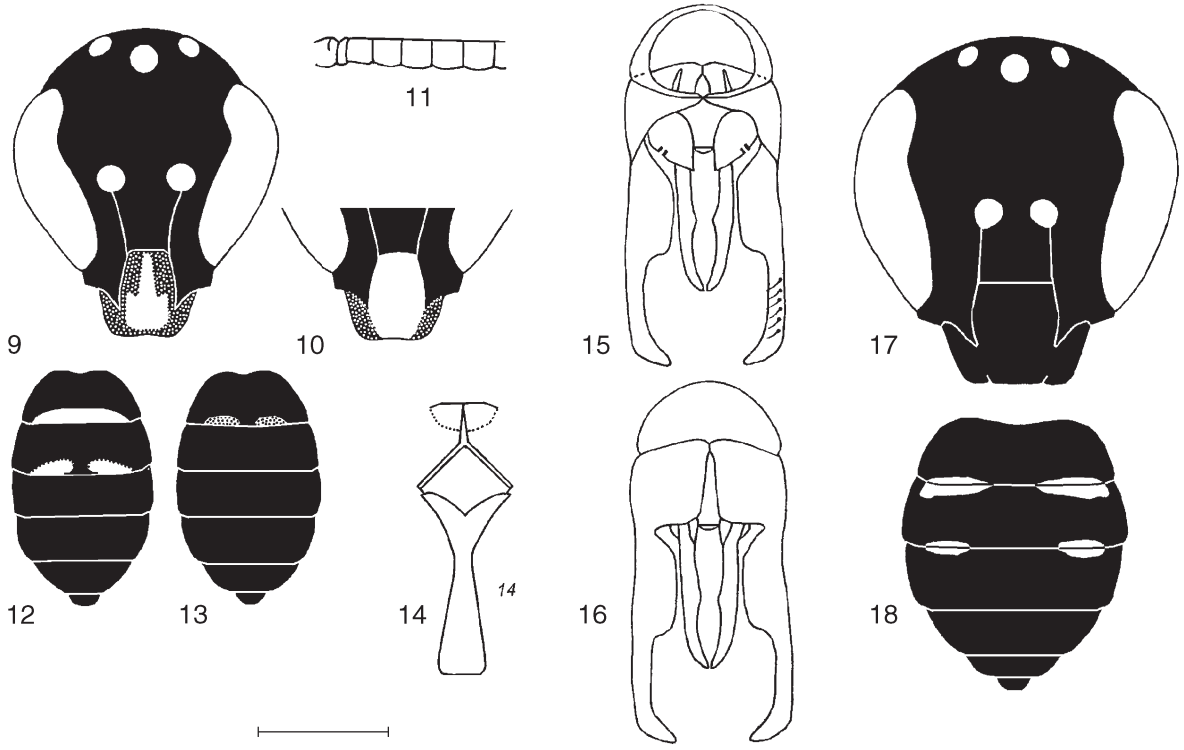
Specimens examined (76 specimens): Saudi Arabia: 5 ♂♂, 2 ♀♀, Lodar, 800 m, 16 May 1967, K.M. Guichard, BMNH, ZISP; 2 ♂♂, 1 ♀, Riyadh, 28 Apr. 1980, K.M. Guichard, BMNH; 2 ♂♂, 1 ♀, Abu Arish, 23-29 Mar. 1980, K.M. Guichard, BMNH; 1 ♂, Wadi Majarish, below Taif, 800 m, 12 Feb. 1983, K.M. Guichard, BMNH. — United Arab Emirates: 1 ♀, Abu Dhabi, 27 Jun. 1986, I.L. Hamer, BAK; 1 ♀, Abu Dhabi Int'l A/P, 8 Nov. 1985; 4 ♀♀, 10 Jun. 1986; 2 ♀♀, 10 Nov. 1986; 1 ♀, 21 Nov. 1986; 1 ♀, 30 Jan. 1987; 1 ♀, 6 Feb. 1987; 1 ♀, 31 Mar. 1987; 1 ♀, 2 Apr. 1993, I.L. Hamer, BAK, ZISP; 1 ♂, 1 ♀, Abu Dhabi, 29 Jul. 1983; 1 ♂, 13 Nov. 1986, J.N.B. Brown, BMNH; 1 ♀, Al Ain (I'Con), 28 Jul. 1986; 2 ♂♂, 8 Apr. 1993, I.L. Hamer; ZISP; 10 ♀♀, Dubai, Al Awir, 2 Apr.-2 May 1984, E. Sugden, UUL, ZISP; 3 ♀♀, Dubai, Nakhalai, 28-31 Mar. 1984, E. Sugden, UUL, ZISP; 1 ♀, Hatta, 23 Aug. 1991; 1 ♀, 24 Apr. 1992; 1 ♀, 5 Mar. 1993, I.L. Hamer, ZISP; 1 ♀, Liwa, 16 Mar. 1984, I.L. Hamer, ZISP; 1 ♀, Margham, 13 Apr. 1990, 1 ♀, I.L. Hamer, ZISP; 4 ♂♂, Swaib, 24 Dec. 1982, I.L. Hamer, ZISP. — Oman: 1 ♂, Sohar, 31 Mar. 1976, K.M. Guichard, BMNH; 1 ♂, Muscat, Qurum, 11 Apr. 1976, K.M. Guichard, BMNH; 1 ♀, Wadi Qaryat, Agr. Stn., 500 m, 5 Mar. 1976, K.M. Guichard, BMNH; 3 ♂♂, S. Nizwa, Wadi Ghul, 22°53'N 57°31'E, 500 m, garden, 10-16 Dec. 2003, M. Kuhlmann, KUH; 1 ♂, Dhofar, Oasis of Ginan bin Nawatish, 18°03'N 53°40'E, 3 Apr. 2001, P.L. Scaramozzino, MSNP. — Yemen: 1 ♂, 1 ♀, Al Huseini near Lahej, 450 ft. (137 m), 26-29 Nov. 1937, H. Scott & E. Britton, BMNH; 1 ♀, Sheikh 'Othman,, 23 Feb. 1962, R. van der Bosch, UCR; 1 ♂, Lahj, 17 May-15 Jun. 2000; 1 ♀, September 2000; 1 ♀, Jul.-Sept. 2001, A. van Harten & A. Sallam, RNHL; 1 ♀, Suq Bani Mansour, 28 Aug.-14 Nov. 2001, A. van Harten, RNHL; 1 ♂, Al Kowd, 27 Oct.-15 Nov. 1992, A. van Harten, ZMA; 1 ♀, Wadi Hadramaut, 23-24 Mar. 1992, M. Knapp, ZMA. — Jordan: 3 ♂♂, Al Mazraq (Mazra), Dead Sea, 16 Apr. 2002, M. Snizek, OLML.

Distribution: North Africa, Israel, Arabian Peninsula, southern Iran.

Nomioides (*Nomioides*) *scaramozzinoi* n. sp. Figs 9-18, Plate 2

Holotype, ♂, Oman, Dhofar, third watering place, 440 ft. (134 m), 17°14'72''N 53°57'38''E, 7 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP. — Paratypes: Oman: 1 ♀, 1 ♂, same same data as holotype, ZISP; 1 ♀, Dhofar, Uyun dint. Pozzo, 2530 ft. (769 m), 17°15'N 53°57'E, 10 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP; 1 ♂, Dhofar, well east of Uyun, Rd to Hajaif, 17°15'N 58°57'E, 3 Apr. 2001, Generari & P.L. Scaramozzino, MSNP.

Diagnosis: This species is close to *N. turanicus* in the sculpture and coloration of the body and in the structure of the male genitalia, differing from the latter in the following characters. In both sexes: body much bigger (body length 4.0 mm in males and 4.3-4.5 mm in females vs. 2.5 mm and usually 3.2-3.5 mm, respectively, in *N. turanicus*), head higher (its height/width ratio 1.15-1.18 in male and 1.06-1.1 in female, vs. 1.05-1.1 and 0.95-1.0, respectively, in *N. turanicus*), median lobe of clypeus higher (its height/width ratio 1.5 in male and 1.2 in female, vs. 1.1-1.2 and 0.6-0.7, respectively, in *N. turanicus*), flagellum and legs much darker; in male: head thinner, pale



Figs 9-18: *Nomioides* (*Nomioides*) *scaramozzinoi* n. sp., male (Figs 9-16) and female (Figs 17, 18). **9, 10, and 17:** head in frontal view; **11**: flagellomeres 1-5 in lateral view; **12, 13, and 18:** metasoma in dorsal view; **14**: metasomal sternum VIII; **15, 16:** genital capsule in ventral and dorsal views. — The scale line represents 1 mm for the metasoma; 0.5 mm for the head and antenna; 0.25 mm for the metasomal sternum VIII and genital capsule.

pattern on head and mesosoma less extensive, sides of mesosoma matt (silky-shiny, in *N. turanicus*), mesoscutum much more sparsely punctate, metapostnotum striate (vs. obscurely granulate on most of surface in *N. turanicus*), dorsal surface of propodeum nearly matt on border with its posterior vertical surface (shiny in *N. turanicus*), metasomal sternum VIII somewhat shorter and wider; in female: face more shiny, propodeum shorter (its dorsal surface 0.8-0.9 times as long as scutellum vs. 1.1-1.2 times in *N. turanicus*), mes- and metapleura and propodeum black, without metallic tints (metallic deep blue or blue green in *N. turanicus*), pubescence of body, including legs, dark fuscous (white throughout except for gold-yellow metabasitarsal penicillus in *N. turanicus*).

Description: ♂, structure: Body length 4 mm; head egg-shaped in frontal view; its height/width ratio 1.15-1.18; median lobe of clypeus flattened, 1.5 times as high as wide; clypeus extending for nearly three-fourths of its length below eyes (Fig. 9); malar space linear; face transversely depressed at level of antennal sockets; antenna relatively short, nearly reaching metanotum or middle of scutellum; middle flagellomeres about as long as their diameters (Fig. 11); lateral borders of metapostnotum marked only by a change in microsculpture; dorsal surface of propodeum strongly concave, about as long as scutellum, passing on to posterior vertical surface at a rounded angle of 110 °; apical lobe of metasomal sternum VIII moderately elongate and narrowed, broadened towards distal end, truncate at apex (Fig. 14); gonobase semicircular in dorsal view; gonoforceps slender, slightly broadened in distal end, rounded at apex (Figs 15, 16).

Sculpture: Clypeus finely punctate, shiny; frons, vertex, genal areas on upper half obscurely densely punctate, finely shagreened on interspaces, silky shiny; mesoscutum and scutellum finely and very sparsely punctate, shiny, interspaces 3-5 and more times diameters of punctures, polished; lateral

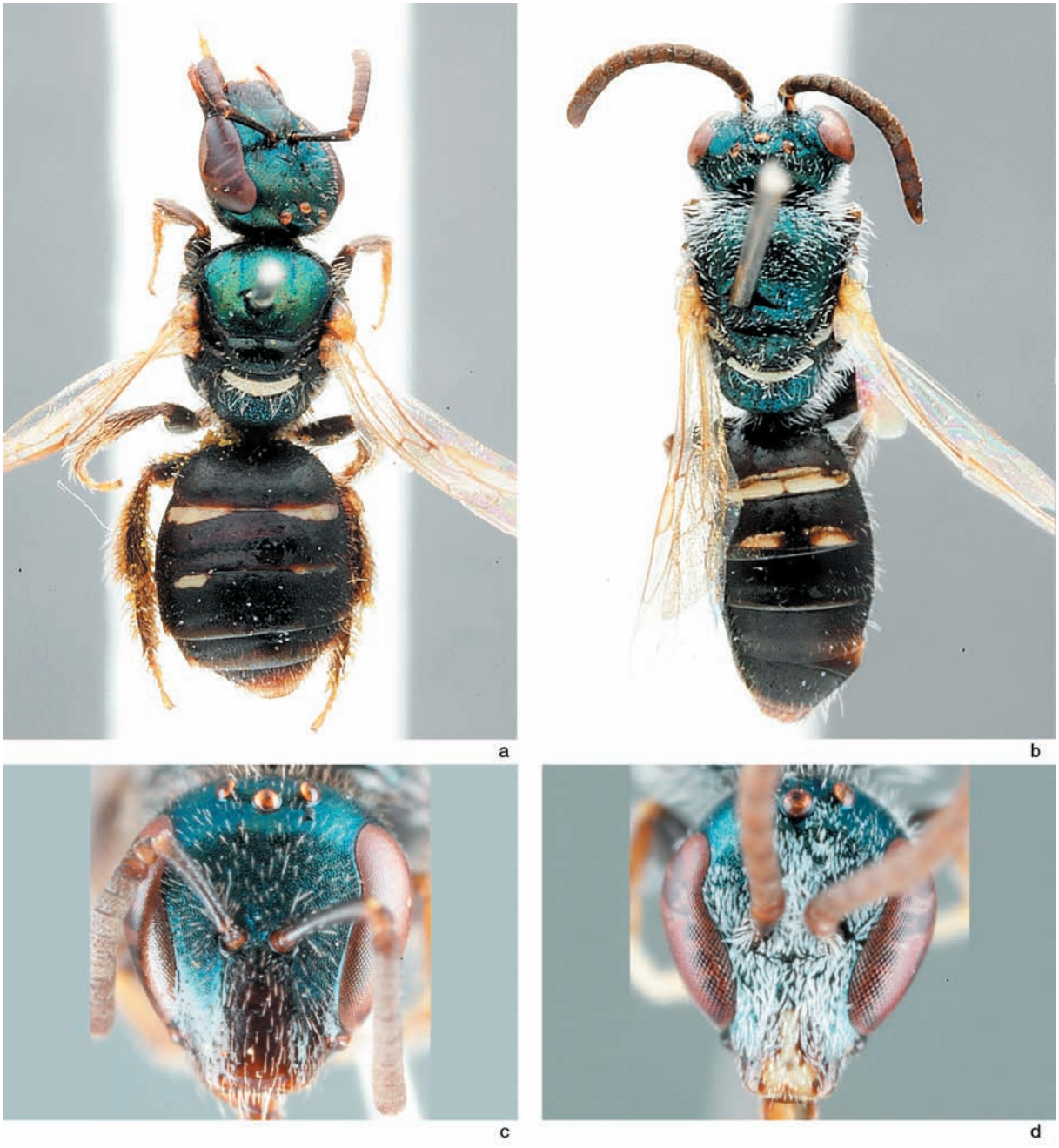


Plate 2: *Nomioides scaramozzinoi* n. sp., dorsal view and head in frontal view. **a, c**: female; **b, d:** male.

surfaces of mesosoma densely and finely granulate, matt; metapostnotum obscurely striate, slightly shiny, finely obscurely granulate before posterior margin; dorsal surface of propodeum nearly matt on border with its posterior vertical surface; the latter coarsely granulose roughened, shiny.

Coloration: Major coloration of head and mesosoma metallic deep blue; pale pattern of body very limited: white only on most of clypeus (Fig. 10) or with an ⊥-shaped pattern (Fig. 9), scutellar crests, sometimes (only in one of two males paratypes) median area of metanotum, spot on anterior part of hyaline tegula, basal sclerites of wings, all tarsi and sometimes (only in one of two males paratypes) fore tibia; labrum, mandibles, malar spaces, and pronotum dark fuscous; flagellum

dark ochre-brown; wing membrane hyaline; veins and pterostigma light yellow to fuscous; metasoma black, without metallic tints; pregradular areas of metasomal tergum II (Fig. 12) or terga II and III (Fig. 13), seen through translucent posterior areas of preceding terga, partly yellow or dark yellow.

Vestiture: Erect pubescence white, short and sparse; longer on metanotum and sides of mesosoma; lower half of face and middle of frons covered with a white tomentum (appressed plumes); metapostnotum entirely glabrous.

♀, structure: Body length usually 4.3-4.5 mm; head egg-shaped in frontal view, its height/width ratio 1.05-1.1; median lobe of clypeus weakly convex, its height/width ratio 1.2; clypeus extending for nearly two-thirds of its length below eyes (Fig. 17); malar space linear; face flattened; metapostnotum flat, semilunar, occupying nearly entire dorsal surface of propodeum, its borders marked by a distinct change in microsculpture; dorsal surface of propodeum 0.8-0.9 times as long as scutellum, passing on to its posterior vertical surface at a distinct angle of about 110 °.

Sculpture: Clypeus polished, with sparse shallow pits throughout (in one paratype) or only on lower two-thirds (in another paratype) and silky-matt and granulate on upper third; frons and vertex obscurely granulate, silky-shiny; mesoscutum uniformly densely punctate, silky-shiny; scutellum sparser and more obscurely punctate, shiny; sides of mesosoma very densely and finely punctate-granulate, matt; metapostnotum uniformly reticulate rugulose, matt; posterior vertical surface of propodeum coarsely roughened, matt.

Coloration: Head on most of surface and mesoscutum metallic deep blue; clypeus, labrum, supraclypeal area, and mandibles dark fuscous, without metallic tints; prothorax, scutellum, mes- and metapleura, propodeum and metasoma black, without metallic tints; antenna ochre-fuscous, legs dark fuscous (except: fore tibia on anterior surface and apical segment of all tarsi dark yellow); pale pattern of body very limited: yellow only on basal sclerites of wings, median area of metanotum and lateral spots on pregradular areas of terga II and III seen through translucent fuscous posterior areas of preceding terga (Fig. 18).

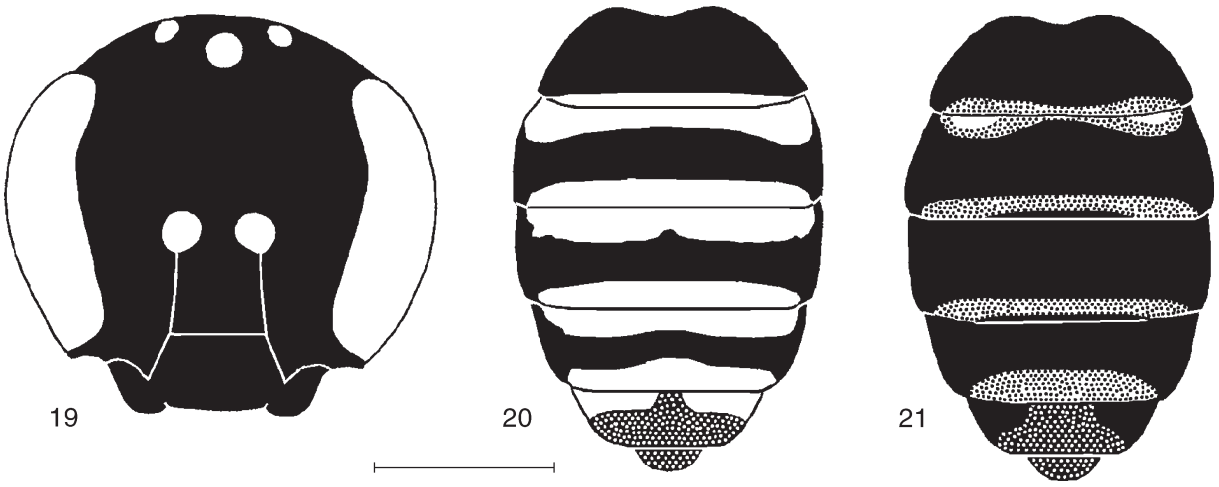
Vestiture: Pubescence of body, including legs dark fuscous, erect plumose; tomentum (appressed plumes) absent; metabasitarsal penicillus dark fuscous.

Nomioides* (*Nomioides*) *serotinus n. sp. Figs 19-21, Plate 1 b, d

Holotype, ♀, Oman, Dhofar, Rd 47 per Sarfait, 16°44'43 N 53°13'65 E, 28 Aug. 2000, 2, M. Generari & P.L. Scaramozzino, MSNP. — Paratypes: Oman: 1 ♀, same data as holotype, ZISP; 2 ♀♀, Dhofar, Darbat, 17°06'N 54°27'E, 2 Nov. 1999, F. Strumia, MSNP, ZISP; 1 ♀, Dhofar, Rd. 47 dint Ajdarawt, 16°47'82 N 53°33'28 E, 3440 ft. (1045 m), 28 Aug. 2000, M. Generari, MSNP; 1 ♀, Dhofar, Uyun dint. Pozzo, 2530 ft. (769 m), 17°14'72 N 53°57'38 E, 10 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP.

Diagnosis: This species is similar to *N. turanicus* and *N. scaramozzinoi* n. sp. in the absence of the pale pattern on the female face. However, this similarity is only a formal agreement as *N. serotinus* differs strongly from these species in the densely granulate and matt face and most of the surface of the mesosoma, in the shorter head, richer pale pattern on the metasoma, and in some other characters. The relationships of the new species and its position within the subgenus cannot be established on the basis of the characters of the female alone. In the key to the Palaearctic species of the genus *Nomioides* (Pesenko, 1983: 122-131), it runs to the couplets for *N. facilis*, *N. hybridus* Blüthgen, 1934, and *N. bluethgeni* Pesenko, 1979; in the key to the African species (Pesenko & Pauly, 2005), to the couplets for *N. maculiventris* (Cameron, 1905) and *N. micheneri*, but it differs from all the five species by the dark face and by many other characters.

Description: ♀, structure: Body length 4.2-4.5 mm; head rounded in frontal view; its height/width ratio 0.92-0.95 (Fig. 19); median lobe of clypeus flat, half as high as wide; clypeus extending for two-thirds of its height below eyes; malar space linear; face flattened; metapostnotum



Figs 19-21: *Nomioides* (*Nomioides*) *serotinus* n. sp., female. **19:** head in frontal view; **20, 21:** metasoma in dorsal view. — The scale line represents 1 mm for the metasoma and 0.5 mm for the head.

flat, trapezoidal, not carinate along lateral and posterior margins; dorsal surface of propodeum as long as scutellum, passing on to its posterior vertical surface at a distinct angle of 110 °.

Sculpture: Clypeus shagreened, matt, with a few shallow rounded pits on all surface or only on lower third; supraclypeal area very finely and densely granulate, matt; frons and vertex silky matt; mesoscutum and scutellum densely granulate, matt; each granula about 0.7 of an eye facet; mes- and metepisterna more finely and densely granulate, matt; metapostnotum uniformly reticulate rugulose to nearly alveolate, shiny; metasomal terga I-III matt throughout, subsequent ones slightly shiny.

Coloration: Head capsule (except for labrum, clypeus and supraclypeal area) and mesosoma (except for pronotum, scutellum and metanotum) metallic dull greenish, without yellow pattern; clypeus and supraclypeal area dark fuscous; labrum, narrow stripe along lower margin of clypeus and mandibles yellowish-brown; pronotum, scutellum and metanotum black, without metallic tints; antennae brown on lower side, dark fuscous on upper side; coxae, trochanters and femora of all legs and most of hind tibia black; fore and middle tibiae and all tarsi yellow, sometimes with dark spots; metasoma black or dark fuscous, with yellow or dark yellow transverse bands of varying widths on pregradular areas of terga II-V (Figs 20, 21); wing membrane hyaline, veins light yellow; posterior areas of terga translucent.

Vestiture: Whitish, plumose, of moderate length and density; tomentose and squamose pubescence absent.

Male unknown.

Nomioides (*Nomioides*) *squamiger* Saunders, 1908

Nomioides squamiger Saunders, 1908. — *Transactions of the Royal Entomological Society of London* 1908 (2): 222 [♀♂. Type locality Algeria, Biskra (lectotype ♀, BMNH, designated by Pesenko, 1983: 163)].

Nomioides squamiger. — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 32; 1934a: 246; 1934 b: 201 (key).

Nomioides (*Nomioides*) *squamiger*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: Figs 197, 237, 313, 314.

Nomioides (Nomioides) squamiger. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 170 (key), 172 (key), 199, Figs 36 *a*-36 *p,* Pl. III: 82-83 (total view), IV: 101 (mesosoma), VII: 153-155 (head), IX: 179 (propodeum), XIV: 212 (male genitalia), XX: 251 (map).

Specimens examined (192 specimens): Saudi Arabia: 1 ♂, Bahra, Jeddah, 14 Apr. 1980, K.M. Guichard, BMNH; 1 ♂, Abyan, 50 m, 21 May 1967, K.M. Guichard (identified by Pesenko, 1983 as *N. facilis*); BMNH; 1 ♂, Jeddah. — Taif, 1200-1800 m, 1 May 1979, N. Hedjaz (identified by Pesenko, 1983 as *N. facilis*), MNB. — Yemen: Lahj, 1 ♂, 1 Apr.-17 May 2000, A.van Harten & A. Sallam, ZMA; 21 ♀♀, 13 ♂♂, Lahj, 17 May-15 Jun. 2000; 5 ♀♀, 15-30 Jun. 2000; 4 ♂♂, 1 ♀, Jul. 2000; 1 ♂, Oct. 2000; 3 ♂♂, Jan. 2001; 3 ♂♂, May 2001; 3 ♂♂, 10 ♀♀, Jul.-Sept. 2001, A.van Harten & A. Sallam, RNHL; 1 ♀, Qa Al Boun, Jul.-Aug.1992, M. Mahyoub, ZMA; 1 ♀, Al Kowd, 27 Oct.-15 Nov. 1992, A. van Harten, ZMA; 1 ♂, Ta'izz, 26-28 May 1998, A. van Harten & A. Ahwad, ZMA; 4 ♀♀, Jebei Jinaf, 7000 ft. (2128 m), 7-12 Oct. 1977, H. Scott and E. Britton, BMNH (identified by Pesenko, 1983 as *N. facilis*). — Oman: 7 ♀♀, Dhofar, Wadi presso Heiron, Range south (Hayrun), 17°03'N 53°21'E, 630 ft. (191 m), 8 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP; 4 ♀♀, Dhofar, Rd Mirbat to Sadh, first watering place, 440 ft (134 m), 17°03'N 54°51'E, 1 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP; 1 ♀, Dhofar, first watering place, 440 (133 m)., 17°03'N 54°51'E, 7 Sep. 2000, M. Generari, MSNP; 1 ♀, Batinah, Al Masnaah dint., 23°45'N 57°39'E, 21 Aug. 2000, M. Generari & P.L. Scaramozzino, MSNP; 1 ♀, Dhofar, strada per Sher, 660 ft. (200 m), 17°03'N 54°11'E, 10 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP; 1 ♀, Dhofar, Wadi Ashawq, 16°54'N 53°46'E, 60 m, 23 Sep. 2001, on *Boswellia sacra*, M. Generari & P.L. Scaramozzino, MSNP; 1 ♀, Dhofar, Rd 48 Wadi Darbat, 17°03'N 54°26'E, 75 ft. (23 m), 9 Sep. 2000, F. Strumia, MSNP; 1 ♀, 18 ♂♂, Dhofar, Mirbat Sadh, first watering place, 440 ft. (133, 76), 17°03'N 54°51'E, 1 Sep. 2000, M. Generari & P.L. Scaramozzino, MSNP. — Socotra: 1 ♀, Habibo Plain, Ras H.M., 31 Apr. 1967, K.M. Guichard, BMNH (identified by Pesenko, 1983 as *N. facilis*).

Distribution: North Africa, Israel, Arabian Peninsula (first record), Island of Socotra (first record).

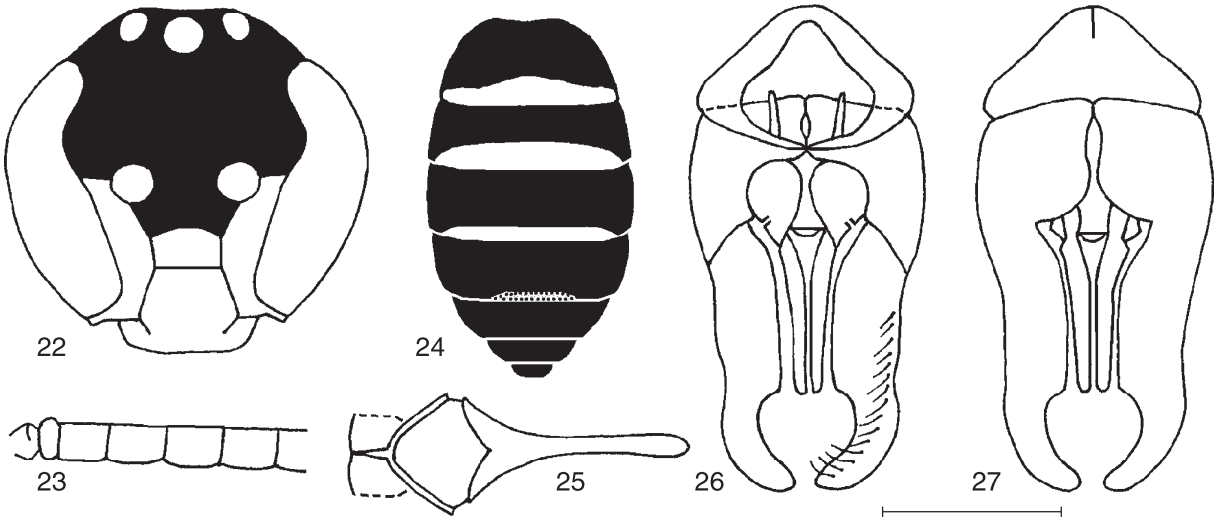
Nomioides* (*Nomioides*) *tricinctus n. sp. Figs 22-28

Holotype, ♂, Oman, S. Nizwa, Wadi Ghul, 22°53'01 N 57°31'08 E, 500 m, 16 Dec. 2003, garden, M. Kuhlmann, ZISP. — Paratype. Oman: 1 ♂, same data as holotype, KUH.

Diagnosis: This species is very similar to *N. micheneri* in all the external characters of the structure, sculpture, coloration and pubescence of the male body. *N. tricinctus* n. sp. differs reliably from the latter species only in the structure of the male genitalia (Figs 26, 27): gonobase triangular in ventral (or dorsal) view vs. semicircular in *N. micheneri*; gonoforceps widely roundly emarginate mesally in distal third vs. sharply narrowed in distal fifth in *N. micheneri* (see Figs 30 *k* and 30 *l* in Pesenko and Pauly 2005). There are also two other slight differences: antenna somewhat longer (middle flagellomeres 1.5 times as long as their diameters vs. 1.3-1.4 times in *N. micheneri*) and propodeum somewhat longer (its dorsal surface as long as scutellum vs. 1.1-1.2 times as long as scutellum in *N. micheneri*).

Description: ♂, structure: Body length 3.4 mm; head rounded in frontal view (Fig. 24); its height/width ratio 0.96; median lobe of clypeus flattened, somewhat higher than wide; clypeus extending for half of its length below eyes; malar space linear; face flattened; antenna relatively long, nearly reaching middle of propodeum; middle flagellomeres 1.5 times as long as their diameters (Fig. 23); metapostnotum slightly transversely depressed, semicircular; its lateral borders marked only by a change in microsculpture; without carina along posterior margin; dorsal surface of propodeum, 1.1-1.2 times as long as scutellum, passing on to posterior vertical surface at a narrowly rounded angle of 100 °; apical lobe of metasomal sternum VIII relatively short, very narrow, parallel-sided, rounded at apex (Fig. 25); gonobase triangular in dorsal view; gonoforceps wide, widely roundly emarginate mesally in distal third (Figs 26, 27).

Sculpture: Clypeus moderately densely punctate throughout, shagreened on interspaces, matt; frons and vertex densely and finely granulate, matt; mesoscutum silky matt, with a uniform microsculpture that is intermediate between obscure granulation and fine, not dense puncturation; each granula somewhat smaller than an eye facet; scutellum shinier, only with traces of granulation; mes- and metepisterna finely granulate, matt; metapostnotum matt, finely granulate, with slight and short striae before anterior margin; dorsal surface of propodeum matt on border with its posterior vertical surface; lateral surfaces of propodeum obscurely finely granulate, silky matt; its posterior vertical surface coarsely roughened, matt.



Figs 22-27: *Nomioides* (*Nomioides*) *tricinctus* n. sp., male. **22**: head in frontal view; **23**: flagellomeres 1-5 in lateral view; **24**: metasoma in dorsal view; **25**: metasomal sternum VIII; **26, 27**: genital capsule in ventral and dorsal views. — The scale line represents 1 mm for the metasoma; 0.5 mm, for the head and antenna; 0.25 mm, for the metasomal sternum VIII and genital capsule.

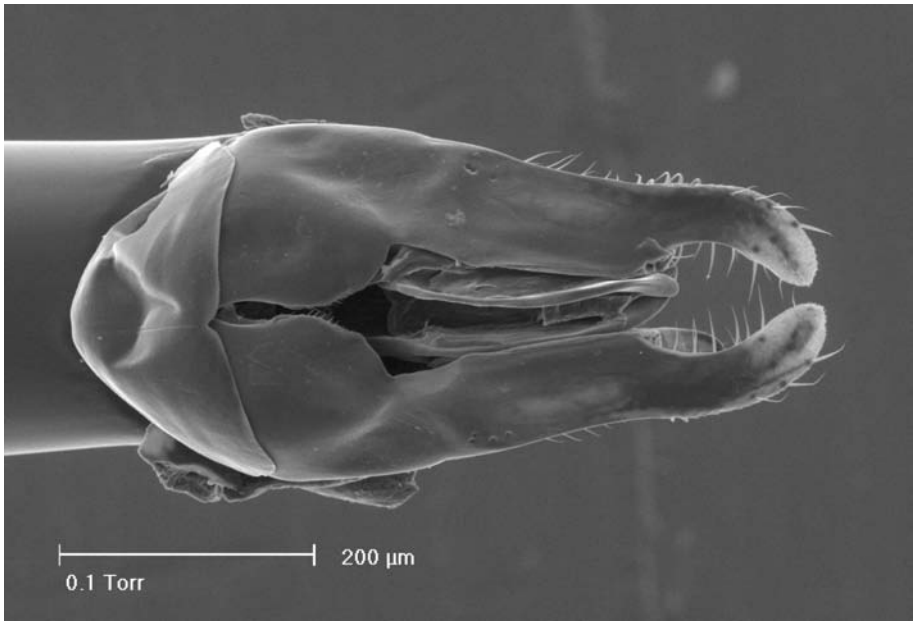


Fig.28: *Nomioides tricinctus* n. sp., male. Genital capsule in dorsal view (SEM).

Coloration: Main coloration of head, mesoscutum and scutellum metallic dull bronze-greenish, of meso- and pleura black, with slight metallic tint; of propodeum metallic dull olive-greenish; of metasoma, black, without metallic tints; labrum, clypeus, supraclypeal area, paraocular area in lower part to the level of the middle of antennal sockets (Fig. 22), mandibles (except for reddish apices), malar spaces, stripe along lower margin of genal areas, scape, pronotal collar and spiracular lobes, median area of metanotum, spot on anterior part of hyaline tegula, basal sclerites of wings, fore and middle coxae and femora, all trochanters, tibiae (except for large black spots on outer and inner surfaces of hind tibia), and tarsi, pregradular areas of metasomal terga II-IV (Fig. 24) seen through translucent posterior areas of preceding terga; all white-yellow; flagellum ochre-yellow on lower side, fuscous on upper side; wing membrane hyaline; veins and pterostigma light yellow.

Vestiture: Head and mesosoma covered with relatively dense erect or inclined white plumose hairs, especially long on lower half of genal areas, metanotum, lateral and ventral surface of mesosoma; face between antennal sockets and genal areas on upper half covered with a rather sparse tomentum; sparse appressed plumes present on mesoscutum; metapostnotum entirely glabrous.

Female unknown.

Nomioides (*Nomioides*) *turanicus* Morawitz, 1876

Nomioides turanica Morawitz, 1876: 214. ♀♂, type locality: Uzbekistan, Samarkand (lectotype ♂, ZISP, designated by Pesenko 1983: 174).

Nomioides turanica. — Handlirsch 1888; *Verhandlungen der zoologish-botanischen Gesellschaft in Wien (Abhandlungen)* 38: 402.

Ceratina egeria Nurse, 1904. — *Journal of the Bombay Natural History Society* 15 (4): 576 [♀♂, type locality: Pakistan, Quetta (syntypes, BMNH); synonymised by Blüthgen 1933 b: 23].

Nomioides storeyi Dębski, 1917. — *Bulletin de la Société Royale Entomologique d'Egypte* 10 (1): 33 [♀, type locality: Egypt, Galiub (holotype ♀, MAC); synonymised by Blüthgen 1925: 19].

Nomioides heluanensis Dębski, 1917. — *Bulletin de la Société Royale Entomologique d'Egypte* 10 (1): 33 [♂, type locality: Egypt, Heluan (holotype ♂, MAC); synonymised by Blüthgen 1925: 18].

Nomioides turanica. — Blüthgen 1925; *Stettiner entomologische Zeitung* 86 (1): 18.

Nomioides turanica var. *maculosa* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 20 [♀, type locality: Iran, Isphagan (syntypes 3 ♀, BMNH); synonymised by Pesenko 1983: 174].

Nomioides turanica var. *nubica* Blüthgen, 1925. — *Stettiner entomologische Zeitung* 86 (1): 20 [♀, type locality: Sudan, Nabardi (holotype ♀, BMNH); synonymised by Pesenko 1983: 174].

Nomioides turanica var. *subvariegata* Blüthgen, 1933. — *Bulletin de la Société Royale Entomologique d'Egypte* 17 (1-3): 23 [♀, type locality: Egypt, Djebel Elba, Wadi Aideb (holotype ♀, MNB); synonymised by Pesenko 1983: 174].

Nomioides turanica. — Blüthgen 1934; *Stettiner entomologische Zeitung* 95 (2): 243, Fig. 3.

Nomioides turanica var. *laeta* Blüthgen, 1934. — *Stettiner entomologische Zeitung* 95 (2): 244 [♀, type locality: Uzbekistan, Karschi (holotype ♀, MNB); synonymised by Pesenko 1983: 174].

Nomioides (*Nomioides*) *turanicus*. — Pesenko 1983; *Fauna of the USSR (N.S., 129). Hymenopterous Insects. Vol. XVII, No. 1*: 125 (key), 130 (key), 174, Figs 203, 248, 333, 334.

Nomioides (Nomioides) turanicus. — Pesenko & Pauly 2005; *Annales de la Société entomologique de France (n.s.)* 41 (2): 40 (key), 43 (key), 201-203, Figs 37 *a-37 j,* Pl. IV: 90-91 (total view), VII: 162-163 (head), XIV: 215 (male genitalia), XX: 252 (map).

Specimens examined (174 specimens): Saudi Arabia: 3 ♂♂, Bahara, 29 Sep. 1976, W. Böttiger, NMB; 1 ♀, environs of Riyadh, vii.1977, W. Böttiger, NMB; 3 ♂♂, 4 ♀♀, Riyadh, 28 Apr. 1980, K.M. Guichard, BMNH. — United Arab Emirates: 1 ♂, Abu Dhabi Int'l A/P, 22 Oct. 1988; 2 ♂♂, 3 Apr. 1991, I.L. Hamer, ZISP; 1 ♂, 30 ♀♀, Dubai, Al Awir, 12-21 Apr. 1984, E. Sugden, UUL, ZISP; 12 ♂♂, 70 ♀♀, Dubai, Nakhalai, 15-28 Apr. 1984, E. Sugden, UUL, ZISP; 1 ♂, Margham, 13 Apr. 1990, I.L. Hamer, ZISP; 2 ♂♂, W. Tizzi, 29 Apr. 1990, I.L. Hamer, ZISP. — Oman: 1 ♀, Muscat, Madinat, Qaboos, 28 Feb. 1986, T. Huber, UUL; 2 ♀♀, Wadi Quaryat, Agr. Stn., 500 m, 5 Mar. 1976, K.M. Guichard, BMNH; 3 ♂♂, Salalah, s. l., 29 Sep. 1977, K.M. Guichard, BMNH, ZISP; 1 ♂, Dhofar, Salalah, BMNH; 6 ♂♂, 2 ♀♀, S. Nizwa, Wadi Ghul, 22°53'N 57°31'E, 500 m, garden, 10-16 Dec. 2003, M. Kuhlmann, KUH; 1 ♂, 1 ♀, Sur, 23 km W road to Muscat, Wadi, 22°28'N 59°23'E, 100 m, on red Fabaceae, December 2003, M. Kuhlmann, KUH; 1 ♀, Dhofar, Hajaif, 17°15'N 54°02'E, 25-29 Aug. 2000, M. Generani & P.L. Scaramozzino, MSNP; 3 ♀♀, 1 ♂, Dhofar, Salalah, 17°02'N 54°09'E, 1-4 Apr. 2001, M. Generari & P.L. Scaramozzino, MSNP; 2 ♀♀, Dhofar, first watering place, 440 ft. (133 m), 17°03' N, 54°51'E, 7 Sep. 2000, M. Generari, MSNP; 3 ♀♀, Dhofar, Salalah, 17°00'N, 54°07'E, 27-31 Oct. 1999, P.L. Scaramozzino, MSNP; 1 ♀, 2 ♂♂, Batinah, As Seeb, 23°35'N, 58°19'E, 11 Apr. 2001, P.L. Scamorazzino & F. Strumia, MSNP; 1 ♀, Dhofar, Seeb between airport and beach, 23°36'N, 58°19'E, 10 Apr. 2001, P.L. Scaramozzino, MSNP. — Yemen: 2 ♀♀, Jebel Jihaf, 7000 ft. (2128 m), 7-12 Oct. 1937, H. Scott & E. Britton, BMNH; 1 ♀, Suq Bani Mansour, 28 Aug.-14 Nov. 2001, A.van Harten, RNHL; 3 ♀♀, Al Kadan, 3 Dec. 1997-17 Feb. 1998; 5 ♀♀, 17 Feb.-31 Mar. 1998, A. van Harten & H.M. Naser, ZMA; 1 ♀, Ma'Bar, 14.23'N 44.21'E, Jul.-Aug.1992, M. Mahyoub, ZMA; 1 ♀, Manakhah 12 km NW, 27 Mar.–5 May 2002; 1 ♀, 6 Jul.-21 Jul. 2002, A. van Harten, ZMA.

Distribution: North Africa, deserts of western Asia to Kyrgyzstan and Pakistan in the east.

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