

FAUNISTIC RECORDS FROM THE CZECH REPUBLIC – 380

Hymenoptera: Aculeata:

Chrysidoidea: Chrysididae

Chrysis clarinicornis Linsenmaier, 1951. Bohemia occ.: Prunéřov (5545), coal ash deposit, 22.viii.2010, 1 ♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., P. Tyrner det., coll. J. Straka; Tušimice (5646), coal ash deposit, 2 ♀♀, 22.viii.2010, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., J. Straka et P. Tyrner det., coll. J. Straka; Bohemia bor. occ.: former military area between Podbořany and Vroutek (5845), 22.vii.2011, 1 ♂, at pine forest margin on flowering *Daucus carota*, P. Tyrner lgt., det. et coll.; Bohemia bor.: Martiněves (5250), 5.vi.2004, 1 ♂, L. Blažej lgt., P. Tyrner det. et coll.; Bohemia centr.: Neratovice (5753), 19.v.1976, 1 ♂, J. Brestovanský lgt., P. Tyrner det. et coll.; Milovice env. (5755), 30.v.2001, 1 ♂, A. Mikyška lgt., M. Halada det. et coll.; Hradčany, Báň Nature Park (5857), 30.vi.2010, 1 ♀, P. Tyrner det., P. Bogusch lgt. et coll.; Bohemia mer.: České Budějovice env. (7052), 27.vii.2005, 1 ♀, M. Halada lgt., det. et coll.; Bohemia or.: Čeperka (5860), sandy area under power line, 26.5.2012, 1 ♀, M. Mikát lgt., P. Tyrner det., coll. P. Bogusch; Moravia mer.: Pouzdřany env. (7065), 20.v.1981, 1 ♂, Z. Karas lgt., J. v. d. Smissen det., coll. M. Halada; Čejč (7067), v.1953, 1 ♂, M. Kocourek lgt., J. v. d. Smissen det., coll. M. Halada; Kobylí (7067), 15.viii.1981, 1 ♂, M. Kocourek lgt., J. v. d. Smissen det., coll. M. Halada; Podyjí National Park (NP), Havraníky env., Havranické vřesoviště heathland (7161–7162), vii.2013, 2 ♀♀, vii.2014, 1 ♂, extracted from hollow stems of *Solidago gigantea*, J. Straka, M. Mikát et K. Černá lgt., J. Straka det. et coll.; Podyjí NP, Šobes (7162), 3.5.-2.6. 2003, 1 ♀, yellow pan traps, M. Barták & Š. Kubík lgt. P. Tyrner det., coll. P. Bogusch; Pálava-soutěska, Mikulov env. (7165), 1 ♂, 28.v.2013, J. Straka et students lgt., P. Tyrner det., coll. J. Straka; Vrbovec env., Ječmenišť Nature Reserve (NR) (7262), 8.vii.2014, 1 ♂, yellow pan traps, M. Halada lgt., 12.vii.2014, 1 ♂, B. Halada lgt., M. Halada det. et coll. Widely distributed species in south and central Europe from Spain and Italy to Poland (Niehuis 2001, Rosa 2006, Smissen 2010). Only a single specimen of this species, from Bohemia, was previously known from the Czech Republic (Straka et al. 2008). New species for Moravia and confirmed occurrence in Bohemia.

Chrysis comta Förster, 1853. Moravia mer.: Pouzdřany env. (7065), 10.vi.1966, 3 ♂♂, 2 ♀♀, Z. Karas lgt., M. Halada det. et coll.; Lednice env., alluvial forest margin (7266), 8.–14. vii.2006, 1 ♀, window trap, Š. Vodka lgt., P. Tyrner det., coll. P. Bogusch. This species was previously regarded as a synonym of *C. ignita* Linnaeus, 1758. Smissen (2010) resurrected it from synonymy. Widespread species in south and central Europe and the Near East (Rosa et al. 2004, Rosa 2006). Tyrner et al. (2010) published first records of this species from Bohemia. New species for Moravia.

Chrysis corusca Valkeila, 1971. Bohemia centr.: Pacov (5954), 19.vii.1991, 1 ♂, P. Starý lgt., J. v. d. Smissen det.; Bohemia mer.: Strýčice (6951), 6.vii.2011, 1 ♀, M. Halada lgt. et det.;

Hluboká nad Vltavou (6952), vii.1978, 1 ♀, M. Halada lgt. et det.; Hůry (6953), 28.vi.2004, 1 ♂, Z. Haladová lgt., M. Halada det.; Třeboň env., Rožumberský pond bank (6954), 24.vii.2006, 2 ♀♀, M. Halada lgt., J. v. d. Smissen & M. Halada det.; České Budějovice env. (7052), 25.v.2007, 1 ♀, M. Halada lgt. et det.; Kamenný Újezd (7052), 8.vi.1988, 1 ♂, M. Halada lgt., J. v. d. Smissen det.; Dobrá Voda u Českých Budějovic (7053), 15.v.2013, 1 ♂, Z. Haladová lgt., 17.vi.2012, 3 ♀♀, ix.2013, 1 ♀, 8.vi.2014, 2 ♀♀, M. Halada lgt. et det.; Chlum u Třeboně (7055), 13.vi.1960, 1 ♂, J. Niedl lgt., J.v.d. Smissen det., coll. P. Tyrner, 8.viii.1960, 1 ♀, 21.vi.1962, 2 ♂♂, J. Niedl lgt., vii.1980, 1 ♀, viii.1985, 3 ♂♂, 1 ♀, 2.viii.1984, 1 ♀, 13.vi.1992, 1 ♂, 5.ix.1992, 1 ♀, all M. Halada lgt., all J. v. d. Smissen det., 13.vii.2003, 1 ♀, M. Halada lgt. et det.; Majdalena (7055), 15.vi.1996, 2 ♂♂, 1 ♀, J. v. d. Smissen det.; Český Krumlov env., Vyšný (7151), 5.x.2009, 1 ♂, M. Halada lgt. et det.; Suchdol nad Lužnicí (7155), 7.vii.2001, 1 ♀, M. Halada lgt., J. v. d. Smissen det., 18.vii.1991, 2 ♂♂, M. Halada lgt., 10.vii.1991, 1 ♂, 28.vii.1991, 1 ♂, 7.vii.2001, 1 ♂, M. Halada lgt., J. v. d. Smissen & M. Halada det.; Moravia centr.: Kroměříž (6770), 27.iv.2012, 2 ♀♀, J. Stavinoha lgt., P. Tyrner det., coll. M. Říha; Moravia mer.: Ochoz u Brna (6766), Lysá Mt., Říčky valley, 15.x.2006, 1 ♀, D. Hauck lgt., P. Tyrner det. et coll.; Podyjí NP, Havraníky env. (7161–7162), 7.vi.2011, 1 ♂, 12.vi.2013, 1 ♀, M. Halada lgt. et det.; Břeclav, Pohansko (7267), 16.vii.2013, 1 ♀, P. Tyrner det., M. Říha lgt. et coll.; all coll. M. Halada, if not otherwise indicated. Occurrence of this species is reported from Austria, Great Britain, France, Germany, Lithuania, Portugal, Spain, Sweden, Switzerland (Rosa et al. 2004, Rosa 2006, Smissen 2010). New species for the Czech Republic.

Chrysis gribodoi gribodoi Abeille de Perrin, 1877. Moravia mer.: Velká Klajdovka Nature Reserve (6766), Brno-Líšeň, 2.vii.2013, 1 ♂, M. Říha lgt. et coll., P. Tyrner det. Straka et al. (2004) published *Chrysis gribodoi spilota* Linsenmaier, 1959 from the Czech Republic (Bohemia) for the first time. Until now, it was known only from Switzerland (Wallis) and northern Italy (Linsenmaier 1997). The nominotypical subspecies is known mainly from South Europe (Linsenmaier 1997). New species for Moravia.

Chrysis mediadentata Linsenmaier, 1951. Moravia mer.: Podyjí NP, Havraníky env. (7161–7162), 1.vi.2014, 11 ♂♂, 2 ♀♀, M. Halada & Z. Haladová lgt., M. Halada det. et coll.; Lednice env., alluvial forest margin (7266), 22.–29.v.2006, 1 ♂, window trap, Š. Vodka lgt., P. Tyrner det., coll. P. Bogusch. This species was previously recorded as a synonym of *C. ignita* Linnaeus, 1758. Smissen (2010) resurrected it from synonymy. Widespread species all over Europe, but with poorly known distribution (Rosa et al. 2004, Rosa 2006). Tyrner & Krásenský (2014) published the first records of this species from Bohemia. New species for Moravia.

Chrysis solida Haupt, 1956. Moravia mer.: Pouzdřany env. (7065), 10.v.1981, 1 ♂, J. Halada lgt.; Čejč (7067), 28.v.1997, 1 ♂, M. Kocourek lgt.; Kobyly (7067), 8.vii.1972, 1 ♂, M. Kocourek lgt., all J. v. d. Smissen det., coll. M. Halada. Tyrner & Krásenský (2014) published the first record of this species for the Czech Republic, from Northwest Bohemia. Common species, distributed all over Europe, including the southern half of Fennoscandia but absent from most of the Mediterranean region (Rosa et al. 2004). New species for Moravia.

Chrysis subcoriacea Linsenmaier, 1959. Bohemia bor.: České středohoří, Trabice hill (5450), 3.vi.1984, 1 ♀, P. Tyrner lgt., det. et coll.; Bohemia mer.: Prachatic env., Husinec

(6949), 14.vi.1985, 1 ♂, M. Halada lgt., J. v. d. Smissen det.; Hluboká nad Vltavou (6952), 28.viii.1984, 1 ♂, M. Halada lgt., J. v. d. Smissen det.; České Budějovice env. (7052), 21.v.1996, 1 ♂, Z. Kletečka lgt., M. Halada det., 20.vi.2005, 1 ♂, M. Halada lgt., J. v. d. Smissen det., 27.vii.2005, 2 ♂♂, Z. Haladová lgt., M. Halada det.; Chlum u Třeboně (7055), 16.vi.1962, 1 ♂, J. Niedl lgt., 26.vii.1978, 1 ♂, 30.v.1992, 1 ♂, M. Halada lgt., det. et coll.; Český Krumlov env., Vyšný (7151), 1.vi.2002, 1 ♀, M. Halada lgt., det. et coll., 2.v.2003, 1 ♂, 23.v.1989, 2 ♂♂, Z. Čaňová & M. Halada lgt., J. v. d. Smissen det.; Holubov (7151), 23.v.1990, 2 ♂♂, M. Halada lgt., det. et coll.; Kamenný Újezd (7152), 1.vii.1991, 1 ♂, 6.vii.1991, 1 ♂, M. Halada lgt., J. v. d. Smissen det.; Suchdol nad Lužnicí (7155), 18.vii.1991, 1 ♂, 1.viii.1993, 1 ♂, M. Halada lgt., J. v. d. Smissen det., all coll. M. Halada; Moravia bor.: Skřípov (6173), 6.–9.viii.2005, 1 ♀, spruce thicket, Malaise trap, J. Holuša lgt., P. Tyrner det. et coll.; Moravia mer.: Moravia mer.: Bzenec (7069), 28.vi.2003, 1 ♀, J. Erhart lgt., J. v. d. Smissen det.; Podyjí NP, Havraníky (7162), 7.v.2007, 1 ♀, P. Bogusch lgt., P. Tyrner det. et coll., 11.vii.2013, 1 ♀, Z. Haladová lgt., M. Halada det. et coll.; Lednice (7166), 24.v.1981, 1 ♀, M. Říha lgt., P. Tyrner det. et coll.; Ladná (7167), 16.vi.1984, 1 ♀, on fallen tree trunk, P. Tyrner lgt., det. et coll.; Vrbovec env., Ječmenišťe NR (7262), 24.v.2003, 2 ♂♂, J. v. d. Smissen det., coll. M. Halada. The species is distributed all over Europe including the northern part (including all of Scandinavia) (Rosa et al. 2004, Rosa 2006, Smissen 2010). New species for the Czech Republic.

Chrysis valida Mocsáry, 1912. Moravia mer.: Jestřabice (6968), 20.v.2012, 1 ♂, J. Stavinoha lgt., P. Tyrner det., coll. M. Říha. All previous records of *C. valida* from the Czech Republic (Tyrner 2007) were based on misidentification of specimens of the *C. ignita* group. The current record is the first reliable one from the Czech Republic. The male specimen conforms very well to the key and figures given by Smissen (2010). *Chrysis valida* is a rare species, which occurs very locally in Europe (Linsenmaier 1959). First verified record of the species from the Czech Republic.

Elampus pyrosomus (Förster, 1853). Moravia mer.: Podyjí NP, Havraníky env., Havranické vřesoviště heathland (7161–7162), 7.vii.2014, 1 ♀, yellow pan traps, M. Halada lgt., det. et coll. In Europe, this species is known from Austria, Czech Republic, Hungary, Romania, Slovakia and Ukraine (Rosa et al. 2004). Straka (2005a) ranked this species as regionally extinct from the Czech Republic. Confirmed recent occurrence in the Czech Republic.

Vespoidea: Pompilidae

Arachnospila westerlundi (Morawitz, 1893). Bohemia centr.: Nymburk env., Písty, Písečný přesyp u Píst Nature Reserve (5855–5856), sand dune, 1.vii.2012, 1 ♂, 1.viii.2012, 3 ♀♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt.; Bukovina nad Labem env. (5860), coal ash deposit from power station, 4.vii.2009, 1 ♀, 1.viii.2012, 1 ♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt.; Chvaletice (5958), ash deposit from ore mining, 1.vii.2012, 1 ♀, pitfall traps, R. Tropek, O. Čížek & I. Černá lgt.; Semín (5959), sandpit, 1.vii.2012, 2 ♀♀, pitfall traps, 1.viii.2012, 2 ♀♀, R. Tropek, O. Čížek & I. Černá lgt.; Pardubice env., Veská (5961), sand dune, 1.vii.2012, 1 ♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., all J. Straka det. et coll. Very rare Eurosiberian species, known from Austria, the Czech Republic, Germany, northern Italy, the Netherlands, Poland, northern Russia and Sweden in Europe

(Smitsen 1996). This species is known from the Czech Republic only from three specimens collected more than a hundred years ago in Bohemia (Wolf 1971, Straka 2007), therefore the species was considered regionally extinct (Straka 2005b). Confirmed recent occurrence in the Czech Republic.

Cryptocheilus variabilis (Rossi, 1790). Moravia mer.: Bratčice env. (6965), sandpit, 4.ix.2014, 1 ♀, P. Bogusch lgt., det. et coll. Rare species of sandy sites with main distribution in southern Europe, reaching into central Europe. In the Czech Republic known from Moravia from four localities, but only from old records (Wolf 1971) and for this reason considered regionally extinct in the Czech Republic (Straka 2005b). Confirmed recent occurrence in the Czech Republic.

Dipogon vechti Day, 1979. Bohemia bor.: Jetřichovice env. (5151), burned forest 17.–25.vi.2009, 3 ♀♀; 9.–18.vii.2009, 1 ♀; coloured pan traps, L. Blažej lgt., 3.–7.vii.2013, 4 ♀♀, coloured pan traps, P. Heneberg lgt., coll. P. Bogusch & L. Blažej, P. Bogusch det.; Bohemia mer.: Třeboňsko Protected Landscape Area (PLA), Bukové kopce NR, Klikov env. (7055), 16.vi.2012, 1 ♀, 4.vi.2014, 1 ♂, 1 ♀ M. Halada lgt., J. Straka & M. Halada det. et coll. This species is known from Bohemia only from a single specimen collected about a hundred years ago (Straka 2007) and two old records are known from Moravia (Wolf 1971). The species has been considered regionally extinct in the Czech Republic (Straka 2005b). Confirmed recent occurrence in the Czech Republic.

Episyrion arrogans (Smith, 1873). Moravia mer.: Mohelno env., Mohelenská hadcová step National Nature Reserve (NNR) (6862–6863), steppe, 3.viii.2014, 1 ♂, coloured pan trap, O. Čížek & P. Marhoul lgt., P. Bogusch det. et coll.; Moravia mer.: Podyjí NP, Havraníky env., Šobes vineyard (7162), 20.vi.2012, 1 ♀; Lednice env. (7266), 24.v.2012, 1 ♂, both J. Straka lgt., det. et coll. Rare species of loess and shifting sands, which is considered critically endangered in the Czech Republic (Straka 2005b). Although its continued occurrence had been assumed, there were no recent published records. Confirmed recent occurrence in the Czech Republic.

Evagetes littoralis (Wesmael, 1851). Bohemia bor. occ.: Starý lom (5545), coal ash deposit from Prunéřov power station, 5.–6.vi.2010, 2 ♂♂, 30.–31.vi.2010, 1 ♂, 1 ♀, 20.–22.viii.2010, 1 ♂, yellow pan traps; Bohemia bor.: Počeradý (5548), coal ash deposit from power station, 6.–7.vi.2010, 1 ♂, 20.–22.viii.2010, 1 ♀, yellow pan traps; Tušimice (5646), coal ash deposit from power station, 25.–26.vi.2010, 1 ♀, yellow pan traps, all R. Tropek, O. Čížek & I. Černá lgt., J. Straka det. et coll.; Bohemia centr.: Slaný-Kvíč env. (5750), road slope, 6.–9.vi.2013, 1 ♂, 10.–12.viii.2013, 1 ♂, coloured pan traps, P. Heneberg lgt., J. Straka det., coll. P. Bogusch; Chvalatice env. (5958), coal ash deposit from power station, 13.–15.vi.2009, 2 ♀♀, 2.–4.vii.2009, 1 ♂, 30.vii.–1.viii.2009, 2 ♂♂, yellow pan traps, R. Tropek & I. Černá lgt., J. Straka det. et coll.; Bohemia mer.: Třeboňsko PLA, Chlum u Třeboně, (7055), vii.1995, 1 ♀, M. Halada lgt., J. Straka det. et coll. *Evagetes littoralis* has been considered regionally extinct in the Czech Republic (Straka 2005b), however, the species seems to be relatively widespread or common on coal ash deposits in various areas of the Czech Republic. The species probably persists on these artificial biotopes, which may serve as refugia (Tropek et al. 2013, 2014). Confirmed recent occurrence in the Czech Republic.

Evagetes piliferus Smissen, 2003. Moravia mer.: Bratčice env. (6965), sandpit, 4.ix.2014, 1 ♀, P. Bogusch lgt., det. et coll. Species recently described from specimens collected in Greece (Smissen 2003), found also in Záhorie PLA in Slovakia near the border with the Czech Republic (Smetana et al. 2010) and in central Hungary (Örkeny, 16.viii.2000, 1 ♀, yellow pan traps, J. Straka lgt., det. et coll.). Based on the co-occurrence of *E. piliferus* with *Telostegus inermis* (Brullé, 1832) and the spread of both species in Central Europe (Macek et al. 2010), we can assume that *E. piliferus* may be a parasite of *T. inermis*, though this requires confirmation. New species for the Czech Republic.

Evagetes sahlbergi (Morawitz, 1893). Moravia mer.: Mohelno env., steppe 3 km E of Mohelenská hadcová step NNR (6863), 31.vii.2014, 1 ♀, coloured pan trap, O. Čížek & P. Marhoul lgt., P. Bogusch det. et coll. Species occurs in central Europe, the Alps and Pyrenees (Wolf 1971). Vepřek (2006) and Straka (2007) published the first records from Bohemia; Bogusch et al. (2014) recorded its very abundant occurrence at burned sites in the forests of České Švýcarsko NP. These authors also supposed *Arachnospila hedickei* (Haupt, 1929) to be a host for this species, but this hypothesis needs to be confirmed by direct observation. New species for Moravia.

Apoidea: Sphecidae

Isodontia mexicana (Saussure, 1867). Moravia mer.: Brno-Královo pole (6765), 15.viii.2013, 1 ♀, 4.–8.viii.2014, 2 ♂♂, 1 ♀, 3.–8.ix.2014, 1 ♀, all P. Průdek lgt.; Brno-centrum, Žerotínovo náměstí (6865), 19.ix.2014, 1 ♀, M. Němec lgt., all Martin Říha det. et coll.; 1.5 km SSW of Hrušovany u Brna (6965), 7.vi.2014, 1 ♀, M. Říha observ. This is an invasive North American species, which was accidentally introduced to France in the 1980s and probably also to Iraq in the 1990s. The species spread over the Mediterranean region, reached Central Europe and continues to spread northward and eastward in Europe. Its geographical expansion is reviewed by Četković et al. (2012), including the current status in central Europe. In Europe, the species is currently recorded from Austria, Belgium, Croatia, France, Germany, Hungary, Italy, Serbia, Slovenia, Spain and Switzerland (Četković et al. 2012). New genus and species for the Czech Republic.

Apoidea: Crabronidae

Passaloecus vandeli Ribaut, 1952. Moravia mer.: Mohelno env., steppe 3 km W from Mohelenská hadcová step NNR (6862–6863), 3.viii.2014, 1 ♀, 31.vii.2014, 2 ♀♀, coloured pan trap, O. Čížek & P. Marhoul lgt., P. Bogusch det. et coll.; Podyjí NP, Havraníky env., Šobes vineyard (7162), 1.vii.2012, 1 ♀, J. Straka lgt., det. et coll. This species is reported from Austria, Bulgaria, Croatia, France, Germany, Hungary, Italy and Switzerland (Barbier & Noyes 2004, Józán 2011), its occurrence in Slovakia was recently confirmed (Slovakia occ.: Nové Mesto nad Váhom env., Turecký vrch NR (7273), 1 ♀, 3.vii.–9.viii.2008, coloured pan traps, P. Deván lgt., J. Straka lgt. et coll.; Slovakia mer.: Kováčov env., Burda NNR (8178), 15.ix.2011, 1 ♀, Malaise trap, O. Majzlan lgt., P. Bogusch det. et coll.). New species for the Czech Republic.

Apoidea: Megachilidae

Dioxys cincta (Jurine, 1807). Bohemia bor.: Bílina env., Štrbice (5449), sand quarry, 19.vi.2012, 1 ♀, yellow pan trap, P. Janšta lgt., J. Straka det. et coll.; Bohemia centr.: Praha-Žižkov, freight railway station (5952), 27.vi.2014, 1 ♀, yellow pan trap, J. Straka lgt., det. et coll. This species occurs in south Europe, north to Slovakia and the Czech Republic (Banaszak & Romasenko 1998). In the Czech Republic, *D. cincta* was known only from Moravia (Straka et al. 2007) and is considered critically endangered there (Straka 2005c). New species for Bohemia.

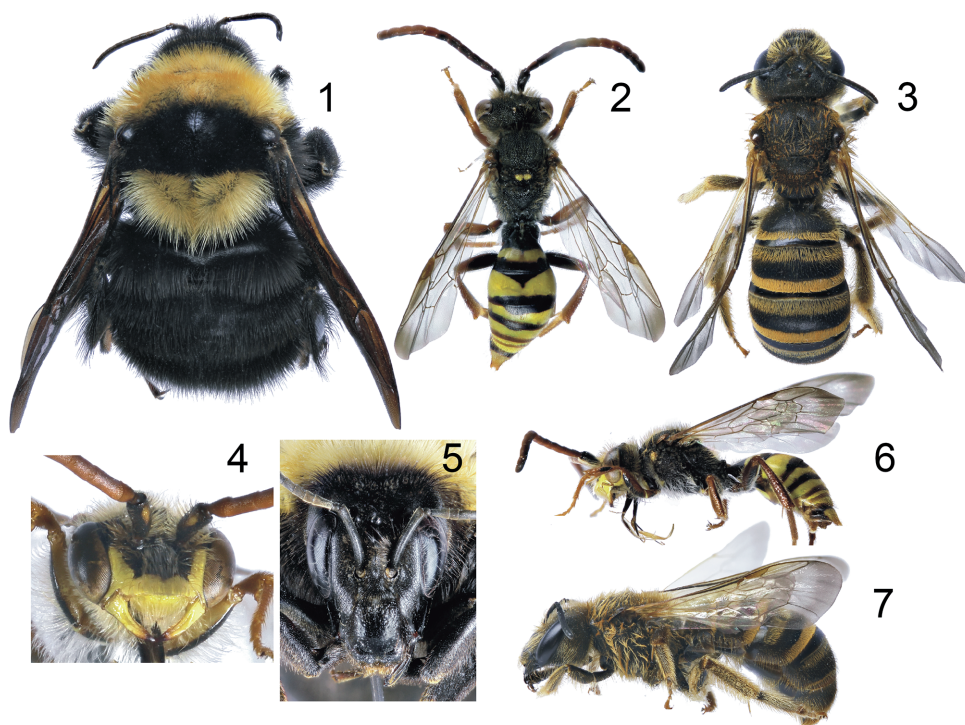
Megachile flabellipes Pérez, 1895. Moravia mer.: Pálava PLA, Svatý Kopeček (7165), 15.vi.2011, 1 ♀, P. Bogusch lgt., det. et coll. Species with occurrence in south and east Europe (Amiet et al. 2004), known from the Czech Republic only from historic records from Moravia (Straka et al. 2007). Although no recent records are known, the species was classified as critically endangered in the Red List (Straka 2005c). Confirmed recent occurrence in the Czech Republic.

Osmia gallarum Spinola, 1808. Bohemia centr.: Hradčany, Báň Nature Monument (NM) (5857), 15.viii.2013, 1 ♀, P. Bogusch lgt., det. et coll.; Moravia mer.: Podyjí NP, Podmolí env., Liščí skála (7161), 28.–30.vi.2001, coloured pan traps, M. Barták & Š. Kubík lgt., P. Bogusch det. et coll. Species occurring in south and central Europe and North Africa, known mostly from warm hilly slopes in submontane regions (Banaszak & Romasenko 1998, Amiet et al. 2004). Historic records from Moravia, and not included in the Red List of the Czech Republic (Straka 2005c). Confirmed recent occurrence in Moravia and new species for Bohemia.

Apoidea: Apidae

Bombus argillaceus (Scopoli, 1763). Moravia mer.: Pálava PLA, Pavlov env., Děvín Mt. (7165), rocky steppe, 27.v.2014, 1 queen, L. Macháčková lgt., J. Straka det. et coll. Species of *Bombus* with wide distribution, from Iran and Israel to France and from Crete and Italy to Slovakia (Rasmont & Iserbyt 2013). Šima et al. (2014) present detailed information about the history and recent occurrence of *B. argillaceus* in Slovakia, the northern border of its range, and discuss a single record of *B. argillaceus* in the vicinity of Prague in Bohemia in the Czech Republic (Ptáček 2008). The newly collected specimens support the natural expansion of *B. argillaceus* predicted by mathematical climate models (Rasmont et al. 2015). New species for Moravia and confirmed occurrence in the Czech Republic.

Bombus haematurus Kriechbaumer, 1870. Moravia mer.: Pálava PLA, Pavlov env., Soutěska (7165), 28.v.2013, 1 ♂, 3 workers, 1 queen, swept from *Symphytum officinale* and *Lamium album*, J. Straka et excursion students lgt., J. Straka det. et coll.; ditto, 25.v.2014, 1 ♂, swept from *Stachys sylvatica*, P. Bogusch lgt., det. et coll. After the rapid expansion of this east-Mediterranean species in Austria, Hungary and Slovakia in the past 20–30 years (Šima & Smetana 2009), the arrival of *B. haematurus* in south Moravia was also expected (Macek et al. 2010). These expectations are now confirmed. Recent records also confirm expectations of the continuing spread of the species in Europe, predicted by mathematical climate models (Rasmont et al. 2015). New species for the Czech Republic.



Figs 1–7. 1, 5, *Bombus argillaceus*, queen, from Pálava PLA (body length 20 mm); 2, 4, 6, *Nomada mutica*, ♂, from Lysá nad Labem (body length 8 mm); 3, 7, *Halictus scabiosae*, ♀, from Praha, Prokopské údolí (body length 14 mm). Obr. 1–7. 1, 5, *Bombus argillaceus*, královna, z lokality CHKO Pálava (délka těla 20 mm); 2, 4, 6, *Nomada mutica*, ♂, z lokality Lysá nad Labem (délka těla 8 mm); 3, 7, *Halictus scabiosae*, ♀, z lokality Praha, Prokopské údolí (délka těla 14 mm).

Eucera pollinosa Smith, 1854. Moravia. mer.: Bzenec env., Bzenec-Přívov (7069), sandpit, 28.vi.2012, 1 ♀, M. Halada lgt., J. Straka det. et coll.; Podyjí NP, Havraníky env., Havranické vřesoviště heathland (7162), 6.vi.2012, 1 ♀, Mi. Mikát lgt., J. Straka det. et coll. Ponto-Mediterranean species, which was known from south Moravia in the Czech Republic (Macek et al. 2010). Although, the species is considered critically endangered in the Czech Republic (Straka 2005c), there were no recent records (Macek et al. 2010). Confirmed recent occurrence of the species in the Czech Republic.

Nomada femoralis Morawitz, 1869. Bohemia mer.: Mladošovice env. (6749), abandoned sandpit, 11.–12.vi.2011, coloured pan traps, P. Heneberg lgt., P. Bogusch det. et coll. Rare species with only a few records from central Europe; main area of distribution in the Mediterranean (Amiet et al. 2007). Considered to be extinct in the Czech Republic (Straka 2005c). Confirmed occurrence in the Czech Republic.

Nomada minuscula Noskiewicz, 1930. Bohemia bor. occ.: Počeradý (5548), coal ash deposit from power station, 23.v.2010, 2 ♂♂, 2 ♀♀, 7.vi.2010, 1 ♀, yellow pan traps, R. Tro-

pek, O. Čížek & I. Černá lgt., J. Straka det. et coll.; Tušimice (5646), coal ash deposit from power station, 6.vi.2010, 2 ♀♀, 26.vi.2010, 1 ♀, 22.viii.2010, 1 ♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., J. Straka det. et coll.; Moravia mer.: Tasovice (7162), sandpit, 30.vii.2008, 3 ♀♀, yellow pan traps, J. Farkač, J. Straka & V. Vrabec lgt., J. Straka det. et coll. This species occurs in south and southeast Europe, reaching Germany and Poland in the north (Scheuchl 2000). In the Czech Republic, the species was known only from old records from Moravia (Straka et al. 2007). Straka (2005c) considered this species to be regionally extinct in the Czech Republic. New species for Bohemia and confirmed occurrence in Moravia.

Nomada mutabilis Morawitz, 1870. Bohemia bor.: Počeradý (5548), coal ash deposit from power station, 23.v.2010, 1 ♂, 7.vi.2010, 1 ♂, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., J. Straka det. et coll. This species has been reported as regionally extinct in the Czech Republic (Straka et al. 2005c). However, *N. mutabilis* has recently been reported from Moravia (Bogusch et al. 2009). Confirmed occurrence in Bohemia.

Nomada mutica Morawitz, 1872. Bohemia centr.: 2 km E from Lysá nad Labem (5755-5855), 16.iv.2014, 2 ♂♂, 1 ♀, coloured pan traps, J. Straka lgt., det. et coll. This very rare species is recorded from Austria, Belgium, Czech Republic, France, Germany, Italy, northwest Russia, Slovakia, Slovenia, Spain, Switzerland and the Netherlands (Polaszek & Noyes 2004). In the Czech Republic, the species has been considered regionally extinct (Straka 2005c). Confirmed occurrence in the Czech Republic.

Nomada piccioliana Magretti, 1883. Moravia mer.: Pálava PLA, Dolní Věstonice (7165), 19.iv.2014, 1 ♂, 3 ♀♀, 19.–24.iv.2014, 3 ♂♂, 3 ♀♀, coloured pan traps; Znojmo env., Jaroslavič (7263), 2.v.2004, 1 ♂, all J. Straka lgt., det. et coll. This species is known from all of Southern, and warmer areas of Central and Western Europe (Polaszek & Noyes 2004, Ascher & Pickering 2014). In the Czech Republic, the species was considered regionally extinct (Straka 2005c). Confirmed occurrence in the Czech Republic.

Nomada stoeckherti Pittioni, 1951. Moravia mer.: Tasovice (7162), sandpit, 24.iv.–8.v.2014, 1 ♂, 1 ♀, coloured pan traps, J. Straka lgt., det. et coll. The species is known only from Austria, Slovakia and Turkey (Polaszek & Noyes 2004, Ascher & Pickering 2014). New species for the Czech Republic.

Apoidea: Andrenidae

Andrena batava Pérez, 1902. Bohemia occ.: Hradec u Kadaně (5645), pasture, 19.–27. iv.2014, 2 ♀♀, coloured pan traps, J. Straka lgt., det. et coll.; Moravia mer.: Bzenec env., Vojenské cvičiště NM (7069), abandoned military training area, 15.iv.2013, 3 ♂♂, P. Bogusch lgt. et det., coll. P. Bogusch & J. Straka; Poštorná, Boří Les railway station (7267), 5.iv.2008, 1 ♀, J. Batelka et J. Straka lgt., J. Straka det. et coll., ditto 2.iv.2011, 3 ♂♂, P. Bogusch lgt., det. et coll.; Tasovice env. (7162), sandpit, 20.–24.iv.2014, 1 ♀, J. Straka lgt., det. et coll.; Pálava PLA, Dolní Věstonice (7165), 30.iii.2008, 1 ♀, J. Straka lgt., det. et coll. Species synonymized with *A. apicata* Smith, 1847 (Gusenleitner & Schwarz 2002), however, well recognizable from this species both in morphology and ecology (Schmid-Egger & Scheuchl 1997, Straka et al. 2007). Kocourek (1966) recorded it from several findings both from

Bohemia and Moravia. The species has been considered regionally extinct (Straka 2005c). Confirmed occurrence in the Czech Republic.

Andrena nigriceps (Kirby, 1802). Bohemia occ.: Starý lom, coal ash deposit from power station Pruněřov (5545), 25.–26.vi.2010, 1 ♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., J. Straka det. et coll.; Lomnice u Sokolova env., Erika (5741), sandpit, 25.vii.2014, 2 ♀♀, yellow pan traps, J. Matějů lgt., J. Straka det. et coll. This species is widely distributed in Europe, from the Mediterranean to Norway and Finland (Polaszek & Noyes 2004). In the Czech Republic, the species was considered regionally extinct (Straka 2005c) although it was not rare in the first half of 20th century (Kocourek 1966). Confirmed occurrence in the Czech Republic.

Andrena rufula Schmiedeknecht, 1883. Moravia mer.: Pálava PLA, Pavlov env., Děvín Mt. (7165), 5.iv.2008, 2 ♂♂, coloured pan traps, J. Batelka & J. Straka lgt., J. Straka det. et coll.; Pálava PLA, Dolní Věstonice env. (7165), 19.–24.iv.2014, 1 ♂, coloured pan traps, J. Straka lgt., det. et coll. This sub-Mediterranean species is known from Austria, France, Greece, Hungary, Italy, Poland, Slovakia, Slovenia, Spain and Switzerland (Ascher & Pickering 2014). New species for the Czech Republic.

Andrena tscheki Morawitz, 1872. Bohemia centr.: Český kras PLA, Tetín env., Koda NNR (6050), limestone steppe, 15.iv.2013, 2 ♂♂, J. Straka lgt., det. et coll. Very rare species in the Czech Republic. The species is recently known only from a few localities in southern Moravia and is considered critically endangered (Straka 2005c). It was also known from Bohemia in the past, but has not been collected for more than fifty years (Kocourek 1966). Confirmed occurrence in Bohemia.

Apoidea: Colletidae

Hylaeus kahri Förster, 1871. Moravia mer.: Podyjí NP, Havraníky env., Havranické vřesoviště heathland (7161–7162), vii.2013, 4 ♂♂, 2 ♀♀, vii.2014, 1 ♀, extracted from hollow stems of *Solidago gigantea*, J. Straka, M. Mikát & K. Černá lgt., J. Straka det. et coll. This Mediterranean species is expanding to new areas. The first records for the Czech Republic were published from Kokořínsko PLA (Straka et al. 2007). Although this species has been known from Slovakia for a long time (Přidal 2001), and from Bohemia for more than ten years, no specimen was reported for Moravia. New species for Moravia.

Hylaeus pfankuchi (Alfken, 1919). Bohemia bor.: Česká Lípa env., Jestřebí (5353), peat-bog, 16.–18.viii.2011, 1 ♀, yellow pan traps, J. Farkač, J. Straka & V. Vrabec lgt., J. Straka det. et coll. Rare Eurosiberian species of wetlands, known from France to Japan and north to Sweden (Macek et al. 2010). This species was formerly known only from Moravia (Straka et al. 2007) and was considered extinct in the Czech Republic (Straka 2005c). New species for Bohemia and confirmed occurrence in the Czech Republic.

Apoidea: Halictidae

Ceylalictus variegatus (Olivier, 1789). Bohemia centr.: Bukovina nad Labem env. (5860), coal ash deposit from power station, 2.–4.vii.2009, 1 ♀, yellow pan trap, R. Tropek & I. Černá



Fig. 8. Photo from a series of photographs documenting *Halictus scabiosae* in Praha-Holešovice (Czech Republic). Photographed on 26.v.2014 by Hana Kříženecká.

Obr. 8. Jedna ze série dokumentačních fotografií druhu *Halictus scabiosae* v Praze-Holešovicích. Fotografovala Hana Kříženecká 26. května 2014.

Igt., J. Straka det., coll. P. Bogusch. Widely distributed species known from sandy areas of Africa south to Kenya, Cameroon and Senegal, Asia east to Mongolia, China and India and Europe, north to warm parts of central Europe (Pesenko & Pauly 2005). In the Czech Republic, the species was only known from the aeolian sands of southern Moravia (Straka et al. 2007, Macek et al. 2010). New species for Bohemia.

Halictus smaragdulus Vachal, 1895. Bohemia centr.: Chvaletice env. (5958), coal ash deposit from power station, 30.vii.–1.viii.2009, 1 ♀, yellow pan trap, R. Tropek & I. Černá Igt., J. Straka det. et coll.; Moravia mer.: Hodonice env. (7162), sandpit, 30.vii.2008, 1 ♀, yellow pan traps, J. Farkač, J. Straka & V. Vrabec Igt., J. Straka det. et coll. Mediterranean species known from Spain to Turkey and Israel and north to Austria, Slovakia and southern Moravia in the Czech Republic (Ebmer 1988, Straka et al. 2007). The species was considered regionally extinct in the Czech Republic (Straka 2005c). New species for Bohemia and confirmed occurrence in Moravia.

Halictus scabiosae Rossi, 1790. Bohemia occ.: Lomnice u Sokolova env., Erika (5741), sandpit, 20.viii.2014, 1 ♂, 2 ♀♀, yellow pan traps, J. Matějů Igt., J. Straka det. et coll.; Bohemia bor.: Louny env. (5648), road slope, 8.–16.viii.2013, 1 ♀, coloured pan trap, P. Heneberg Igt.,

P. Bogusch det. et coll.; Bohemia centr.: Praha-Dejvice, Baba NR (5852), 28.viii.2014, 1 ♂, H. Kříženecká photographed the specimen, J. Straka det.; Praha-Malešice (5952), vii.2013, 1 ♀, H. Kříženecká photographed the specimen, J. Straka det.; Praha-Holešovice (5952), 26.v.2014, 1 ♀, H. Kříženecká photographed the specimen, J. Straka det.; Praha-Hlubočepy, Prokopské údolí NR (5952), 11.viii.2014, 2 ♀♀, J. Straka lgt., det. et coll.; Milešov env. (6451), metal mines, 11.–14.vi.2013, 1 ♀; coloured pan trap, P. Heneberg lgt., P. Bogusch det. et coll. This is one of several sub-Mediterranean species that are extending their distribution northwards. The species is common around the Mediterranean, north to Hungary and Slovakia (Macek et al. 2010). The first specimens for the Czech Republic were collected in 2004 in south Moravia (Straka et al. 2007), where it has recently been locally common. New species for Bohemia.

Lasioglossum bluethgeni Ebmer, 1971. Moravia mer.: Pálava PLA, Klentnice env. (7165), limestone steppe, 19.–24.iv.2014, 1 ♀, coloured pan traps, J. Straka lgt., det. et coll. *Lasioglossum bluethgeni* is ponto-Mediterranean species known from western Asia, and in Europe from the Balkan Peninsula north to Hungary and west to France (Ebmer 1971, Amiet et al. 2001). The species was only known from old records from Moravia (Straka et al. 2007) and was considered regionally extinct (Straka 2005c). Confirmed recent occurrence in the Czech Republic.

Lasioglossum mesosclerum (Pérez, 1903). Moravia mer.: Unkovice env. (6965), sand-pit, 7.–8.vii.2011, 1 ♂, coloured pan traps, P. Heneberg lgt., P. Bogusch det. et coll. Species occurring in south Europe from Spain to Greece, Ukraine and Russia, also found in Asia Minor, Caucasus and the Middle-East (Ebmer 1988). In the Czech Republic known only from several old records from Moravia (Straka et al. 2007) and considered regionally extinct (Straka 2005c). Confirmed occurrence in the Czech Republic.

Lasioglossum marginellum (Schenck, 1853). Bohemia bor.: Vrškaň env. (5546), soil deposit, v.2002, ♀, yellow pan traps, J. Farkaš lgt., J. Straka det. et coll.; Moravia mer.: Mohelno env., steppe 3 km W of Mohelenská hadcová step NNR (6862-63), 9.vi.2014, 1 ♀, coloured pan trap, O. Čížek & P. Marhoul lgt., P. Bogusch det. et coll.; Bratčice env. (6965), sandpit, 20.viii.2011, 1 ♂, P. Bogusch lgt., det. et coll.; Znojmo env., Jaroslavice (7263), 28.iv.2006, 1 ♀, J. Straka lgt., det. et coll. ponto-Mediterranean species associated with open habitats, occurring from France to Germany and east to the Balkans (Polaszek & Noyes 2004). It is also known from Turkey and European Russia (Ebmer 1997). The species is recorded historically from Bohemia and Moravia in the Czech Republic. It was omitted from the Red List in error. There are no recent records for this species. Confirmed occurrence in the Czech Republic.

Sphecodes cristatus Hagens, 1882. Bohemia bor.: Počerady (5548), coal ash deposit from power station, 23.v.2010, 1 ♀, yellow pan traps, R. Tropek, O. Čížek & I. Černá lgt., J. Straka det. et coll.; Bohemia or.: Hradec Králové, Na Plachtě NM (5861), 14.viii.2012, 1 ♀, D. Benda lgt. et coll., J. Straka det. Eurosiberian species known from all of Europe, except the British Isles and the Balkan Peninsula, east to Turkey, Tajikistan and Mongolia (Bogusch & Straka 2012). In the Czech Republic, the species was known from south Moravia (Straka et al. 2007). It was considered critically endangered (Straka 2005c), although there were no recent records. New species for Bohemia and confirmed occurrence in the Czech Republic.

Sphecodes intermedius Blüthgen, 1923. Moravia mer.: Bratčice env. (6965), sandpit, 29.v.2011, 1 ♀, P. Bogusch lgt., J. Straka det. et coll.; Vrbovec env., Ječmeniště NR (7262), 20.vii.2002, 1 ♀, collector unknown, P. Bogusch det., coll. M. Schwarz. This species is known from the Czech Republic, Slovakia, Hungary, Spain, Russia, and Turkey, Caucasus, Kazakhstan, Turkmenistan, Tajikistan, and Algeria (Warncke 1992). It was not collected in the Czech Republic for long time, and for this reason was considered regionally extinct (Straka 2005c). Recently, Bogusch & Straka (2012) confirmed its occurrence in the Czech Republic, but recent records were published without collecting details. Here we provide specific data on the recent records from the Czech Republic.

Sphecodes nomioidis Pesenko, 1979. Moravia mer.: Pouzdřany env., Pouzdřanská step NR (7065), 24.iv.2006, 1 ♀; Bzenec env., Bzenec-přívóz, (7069), 31.v.2002, 1 ♀; Pálava PLA, Dolní Věstonice env. (7165), 19.iv.2014, 1 ♀, coloured pan traps; Podyjí NP, Havraníky env., Šobes vineyard (7261), 1.v.2004, 1 ♀; Znojmo env., Jaroslavice (7263), 28.iv.2004, 2 ♀♀; Poštorná, Boří Les railway station (7267), 25.vi.2006, 1 ♀, all J. Straka lgt., det. et coll. This species was previously confused with *S. marginatus* Hagens, 1882. Bogusch & Straka (2012) resurrected it from the synonymy and explained its status and morphological and geographical differences from *S. marginatus*. *Sphecodes nomioidis* seems to be a ponto-Mediterranean species. New species for the Czech Republic.

AMIET F., HERRMANN M., MÜLLER A. & NEUMEYER R. 2001: *Hymenoptera Apidae. 3. Teil: Gattungen Halictus, Lasioglossum. Fauna Helvetica* 8. Centre Suisse de Cartographie de la Faune et Schweizerische Entomologische Gesellschaft, Luzern, 158 pp. – AMIET F., HERRMANN M., MÜLLER A. & NEUMEYER R. 2004: *Hymenoptera Apidae. 4 Teil: Gattungen Anthidium, Chelostoma, Coelioxys, Dioxys, Heriades, Lithurgus, Megachile, Osmia, Stelis. Fauna Helvetica* 9. Centre Suisse de Cartographie de la Faune & Schweizerische Entomologische Gesellschaft, Luzern, 273 pp. – AMIET F., HERRMANN M., MÜLLER A. & NEUMEYER R. 2007: *Hymenoptera Apidae. 5. Teil: Gattungen Ammobates, Ammobatooides, Anthophora, Biastes, Ceratina, Dasypoda, Epeoloides, Epeolus, Eucera, Macropis, Melecta, Melitta, Nomada, Pasites, Tetralonia, Thyreus, Xylocopa. Fauna Helvetica* 20. Centre Suisse de Cartographie de la Faune, Neuchâtel, 356 pp. – ASCHER J. S. & PICKERING J. 2014: Discover Life bee species guide and world checklist (Hymenoptera: Apoidea: Anthophila). http://www.discoverlife.org/mp/20q?guide=Apoidea_species (accessed 23 September 2014). – BANASZAK J. & ROMASENKO L. 1998: *Megachilid bees of Europe (Hymenoptera, Apoidea, Megachilidae)*. Pedagogical University of Bydgoszcz, Bydgoszcz, 239 pp. – BARBIER Y. & NOYES J. 2004: *Fauna Europaea: Hymenoptera: Crabronidae*. Fauna Europaea version 1.0. <http://www.faunaeur.org> (accessed 22 September 2014). – BOGUSCH P., VEPŘEK D., UDRŽAL R., DVORÁK L. & STRAKA J. 2009: Faunistic records from the Czech Republic – 283. Hymenoptera: Apocrita. *Klapalekiana* 45: 247–254. – BOGUSCH P. & STRAKA J. 2012: Review and identification of the cuckoo bees of central Europe (Hymenoptera: Halictidae: Sphecodes). *Zootaxa* 3311: 1–41. – BOGUSCH P., BLAŽEJ L., TRÝZNA M. & HENEBERG P. 2015: Forgotten role of fires in Central European forests: critical importance of early postfire successional stages for bees and wasps (Hymenoptera: Aculeata). *European Journal of Forest Research* 134: 153–166. – ČETKOVIĆ A., ČUBRILOVIĆ B., PLEČAŠ M., POPOVIĆ A., SAVIĆ D. & STANISLAVLJEVI L. 2012: First records of the invasive American wasp *Isodontia mexicana* (Hymenoptera: Sphecidae) in Serbia. *Acta Entomologica Serbica* 17: 63–72. – EBMER A. W. 1971: Die Bienen des Genus *Halictus* Latr. s. l. in Grossraum von Linz (Hymenoptera, Apidae). Teil III. *Naturkundliches Jahrbuch der Stadt Linz* 1971: 63–156. – EBMER A. W. 1988: Kritische Liste der nicht-parasitischen Halictidae Österreichs mit Berücksichtigung aller mitteleuropäischen Arten (Insecta: Hymenoptera: Apoidea: Halictidae). *Linzer Biologische Beiträge* 20: 527–711. – EBMER A. W. 1997: Hymenopterologische Notizen aus Österreich – 7 (Insecta: Hymenoptera: Apoidea). *Linzer Biologische Beiträge* 29: 45–62. – JÓZAN Z. 2011: Checklist of Hungarian Sphecidae and Apidae species (Hymenoptera, Sphecidae and Apidae). *Natura Somogyiensis* 19: 177–200. – KOCOUREK M. 1966: Prodrómus der Hymenopteren der Tschechoslowakei. Pars 9 – Apoidea – Andrena. *Acta Faunistica Entomologica Musei Nationalis Pragae* 12 (Supplementum 2): 1–122. – LINSSENMAIER W. 1959: Revision der Familie Chrysididae (Hyme-

noptera) und erster Nachtrag. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* **32**: 1–240. – LINSENMAIER W. 1997: Die Goldwespen der Schweiz. *Veröffentlichungen aus der Natur-Museum Luzern* **9**: 5–139.

– MACEK J., STRAKA J., BOGUSCH P., DVOŘÁK L., BEZDĚČKA P. & TYRNER P. 2010: *Blanokřídli České republiky I. – Žahadlovi*. [Hymenoptera of the Czech Republic I. The Aculeata]. Academia, Praha, 524 pp. (in Czech).

– MITROIU E., POLASZEK A. & NOYES J. 2004: *Fauna Europaea: Hymenoptera: Megachilidae*. Fauna Europaea version 1.0. <http://www.faunaeur.org> (accessed 22 September 2014). – NIEHUIS O. 2001: Chrysididae. Pp. 119–123. In: DATHE H. H., TAEGER A. & BLANK S. (eds): *Entomofauna Germanica*. Band 4. *Entomologische Nachrichten und Berichte, Beiheft* **7**: 1–180. – PESENKO Y. A. & PAULY A. 2005: Monograph of the bees of the subfamily Nomiodinae (Hymenoptera: Halictidae) of Africa (excluding Madagascar). *Annales de la Société Entomologique de France (Nouvelle Series)* **41**: 129–236. – POLASZEK A. & NOYES J. 2004: *Fauna Europaea: Hymenoptera: Apidae*. Fauna Europaea version 1.0. <http://www.faunaeur.org> (accessed 22 September 2014). – PŘIDAL A. 2001: Komentovaný seznam včel České republiky a Slovenska – 1. část hedvábnicovití (Hymenoptera: Apoidea, Colletidae). (Annotated checklist of the bees from the Czech Republic and Slovakia – 1st part (Hymenoptera: Apoidea, Colletidae)). *Sborník Přírodovědného Klubu v Uherském Hradišti* **6**: 139–163 (in Czech, English summary). – PTÁČEK V. 2008: *Chov čmeláků v laboratoři*. [Rearing bumble bees in laboratory]. Tribun EU s.r.o., Brno, 175 pp. (in Czech, English summary). – RASMONT P. & ISERBYT I. 2013: *Atlas of the European bees: genus Bombus*. 3rd edition. STEP Project, Atlas Hymenoptera, Mons, Gembloux. <http://www.zoologie.umh.ac.be/hymenoptera/> – RASMONT P., FRANZEN M., LECOCQ T., HARPKE A., CASTRO L., CEDERBERG B., DVOŘÁK L., FITZPATRICK Ú., GONSETH Y., HAUBRUGE E., MAHÉ G., MANINO A., NEUMAYER J., ØDEGAARD F., PAUKUNEN J., PAWLKOWSKI T., REEMER M., ROBERTS S. P. M., STRAKA J. & SCHWEIGER O. 2015: *Climatic risk and distribution atlas of European bumblebees*. Pensoft, Sofia, 236 pp.

– ROSA P. 2006: *I Crisidi della Valle d'Aosta. Monografia n. 6*. Museo Regionale di Scienze Naturali S. Pierre-Valle D'Aosta, Aosta, 360 pp. – ROSA P., SOON V. & NOYES J. 2004: *Fauna Europaea: Hymenoptera: Chrysididae*. Fauna Europaea version 1.0. <http://www.faunaeur.org> (accessed 22 September 2014). – SCHEUCHL E. 2000: *Illustrierte Bestimmungstabellen der Wildbienen Deutschlands und Österreichs. Band I: Anthophoridae*. 2. erweiterte Auflage. Preisinger KG, Landshut, xxxi + 158 pp. – SCHMID-EGGER C. & SCHEUCHL E. 1997: *Illustrierte Bestimmungstabellen der Wildbienen Deutschlands und Österreichs und Berücksichtigung der Arten der Schweiz. Band III Andrenidae*. Velden, Eigenverlag, 180 pp. – SMETANA V., ROLLER L., BENEŠ K., BOGUSCH P., DVOŘÁK L., HOLÝ K., KARAS Z., MACEK J., STRAKA J., ŠIMA P., TYRNER P., VEPŘEK D. & ZEMAN V. 2010: Blanokřídlovce (Hymenoptera) na vybraných lokalitách Borskej nížiny. (Hymenoptera of selected localities in the Borská nížina lowland). *Acta Musei Tekovensis Levice* **8**: 78–111 (in Slovak, English abstract). – SMISSEN J. van der 1996: Zur Kenntnis einzelner Arachnospila-Weibchen – mit Bestimmungsschlüssel für die geringbehaarten, kammdorntragenden Weibchen der Gattung Arachnospila Kincaid, 1900 (Hymenoptera: Pompilidae). *Drosera* **1996**: 73–102. – SMISSEN J. van der 2003: Revision der europäischen und türkischen Arten der Gattung Evagetes Lepelletier 1845 unter Berücksichtigung der Geäderabweichungen. Mit zweisprachigem Schlüssel zur determination (Hymenoptera: Pompilidae). *Verhandlungen der Vereins für Naturwissenschaftliche Heimatforschung zu Hamburg e. V.* **42**: 1–253. – SMISSEN J. van der 2010: Schlüssel zur determination der Goldwespen der engeren ignita-Gruppe (Hymenoptera Aculeata: Chrysididae). *Verhandlungen der Vereins für Naturwissenschaftliche Heimatforschung zu Hamburg e. V.* **43**: 4–184. – STRAKA J. 2005a: Chrysidioidea – zlatěnky. Pp. 380–383. In: FARKAČ J., KRÁL D. & ŠKORPÍK M. (eds): *Červený seznam ohrožených druhů České republiky. Bezobratlí. List of threatened species in the Czech Republic. Invertebrates*. Agentura ochrany přírody a krajiny ČR, Praha, 760 pp. (in Czech and English). – STRAKA J. 2005b: Vespoidea – vosy. Pp. 387–391. In: FARKAČ J., KRÁL D. & ŠKORPÍK M. (eds): *Červený seznam ohrožených druhů České republiky. Bezobratlí. List of threatened species in the Czech Republic. Invertebrates*. Agentura ochrany přírody a krajiny ČR, Praha, 760 pp. (in Czech and English). – STRAKA J. 2005c: Apoidea (včely). Pp. 392–405. In: FARKAČ J., KRÁL D. & ŠKORPÍK M. (eds): *Červený seznam ohrožených druhů České republiky. Bezobratlí. List of threatened species in the Czech Republic. Invertebrates*. Agentura ochrany přírody a krajiny ČR, Praha, 760 pp. (in Czech and English). – STRAKA J. 2007: Vespoidea: Pompilidae (hrabalky). Pp. 111–131. In: BOGUSCH P., STRAKA J. & KMENT P. (eds): Annotated checklist of the Aculeata (Hymenoptera) of the Czech Republic and Slovakia. Komentovaný seznam žahadlových blanokřídlych (Hymenoptera: Aculeata) České republiky a Slovenska. *Acta Entomologica Musei Nationalis Pragae, Supplementum* **11**: 1–300 (in English and Czech). – STRAKA J., BOGUSCH P., TYRNER P. & VEPŘEK D. 2004: New important faunistic records of Hymenoptera (Chrysidioidea, Apoidea, Vespoidea) from the Czech Republic. *Klapalekiana* **40**: 143–153. – STRAKA J., BOGUSCH P. & PŘIDAL A. 2007: Apoidea: Apiformes (včely). Pp. 241–299. In: BOGUSCH P., STRAKA J. & KMENT P. (eds): Annotated checklist of the Aculeata (Hymenoptera) of the Czech Republic and Slovakia.

Komentovaný seznam žahadlových blanokřídlých (Hymenoptera: Aculeata) České republiky a Slovenska. *Acta Entomologica Musei Nationalis Pragae*, **Supplementum 11**: 1–300 (in English and Czech). – STRAKA J., JANŠTA P., FARKAČ J. & VRABEC V. 2008: Faunistic records from the Czech Republic – 268. Hymenoptera: Apo-crita. *Klapalekiana* **44**: 299–301. – ŠIMA P. & SMETANA V. 2009: Current distribution of the bumble bee *Bombus haematurus* (Hymenoptera: Apidae, Bombini) in Slovakia. *Klapalekiana* **45**: 209–212. – ŠIMA P., SMETANA V. & ČÍŽEK J. 2014: Records of *Bombus* (Megabombus) argillaceus (Hymenoptera: Apidae: Bombini) from Slovakia and notes on the record from the Czech Republic. *Klapalekiana* **50**: 101–106. – TROPEK R., CERNA I., STRAKA J., CIZEK O. & KONVICKA M. 2013: Is coal combustion the last chance for vanishing insects of inland drift sand dunes in Europe? *Biological Conservation* **162**: 60–64. – TROPEK R., CERNA I., STRAKA J., KADLEC T., PECH P., TICHANEK F. & SEBEK P. 2014: Restoration management of fly ash deposits crucially influence their conservation potential for terrestrial arthropods. *Ecological Engineering* **73**: 45–52. – TYRNER P. 2007: Chrysidoidea: Chrysididae (zlatěnkovití). Pp. 41–63. In: BOGUSCH P., STRAKA J. & KMENT P. (eds): Annotated checklist of the Aculeata (Hymenoptera) of the Czech Republic and Slovakia. Komentovaný seznam žahadlových blanokřídlých (Hymenoptera: Aculeata) České republiky a Slovenska. *Acta Entomologica Musei Nationalis Pragae*, **Supplementum 11**: 1–300 (in English and Czech). – TYRNER P., KEJVAL Z. & ERHART J. 2010: Žahadloví blanokřídlí západních Čech – 1. Zlatěnký (Hymenoptera: Chrysididae). (Aculeate hymenoptera of western Bohemia – 1. Golden wasps (Hymenoptera: Chrysididae)). *Západočeské Entomologické Listy* **1**: 42–58 (in Czech, English abstract). – TYRNER P. & KRÁSENSKÝ P. 2014: Nové poznatky o zlatěnkách Mostecká a České republiky. (New knowledge on Chrysididae from the Most district and the Czech Republic (Hymenoptera, Chrysididae)). *Sborník Oblastního Muzea v Mostě, Řada Přírodovědná* **35/36**: 49–52 (in Czech, English abstract). – VEPŘEK D. 2006: Blanokřídlí (Hymenoptera) skupin Chrysidoidea-Chrysididae, Vespoidea, Apoidea-Spheciformes. (Hymenoptera Chrysidoidea-Chrysididae, Vespoidea, Apoidea-Spheciformes). *Bohemia Centralis* **27**: 501–514 (in Czech, English abstract). – WARNCKE K. 1992: Die Westpaläarktischen Arten der Bienengattung Sphecodes Latr. (Hymenoptera, Apidae, Halictinae). *Bericht der Naturforschenden Gessellschaft Augsburg* **52**: 9–64. – WOLF H. 1971: Prodrum insectorum Bohemoslovakiae. Hymenoptera, Pars 10 – Pompiloidea. *Acta Faunistica Entomologica Musei Nationalis Pragae* **14**: 3–76.

Jakub STRAKA, Department of Zoology, Charles University in Prague, Viničná 7,
CZ-128 43 Praha 2, Czech Republic; e-mail: jakub.straka@aculeataresearch.com

Petr BOGUSCH, Department of Biology, University of Hradec Králové,
Rokitanského 62, CZ-500 03 Hradec Králové, Czech Republic;
e-mail: bogusch.petr@gmail.com

Pavel TYRNER, Tylova 2073, CZ-436 01 Litvínov, Czech Republic;
e-mail: ptyrner@seznam.cz

Martin ŘÍHA, Department of Zoology, Fishery, Hydrobiology and Apidology,
Faculty of Agronomy, Mendel University in Brno, Zemědělská 1, CZ-613 00 Brno,
Czech Republic; e-mail: marrih@seznam.cz

Daniel BENDA, Department of Zoology, Charles University in Prague, Viničná 7,
CZ-128 43 Praha 2, Czech Republic; e-mail: benda.daniel@email.cz

Oldřich ČÍŽEK, Hutur o.s., J. Purkyně 1616, CZ-500 02 Hradec Králové;
Czech Republic; e-mail: sam_buh@yahoo.com

Marek HALADA, M. Horákové 74, CZ-370 12 České Budějovice, Czech Republic;
e-mail: marekhalada@seznam.cz

Lenka MACHÁČKOVÁ, Department of Zoology, Charles University in Prague,
Viničná 7, CZ-128 43 Praha 2, Czech Republic & Department of Entomology, National

Museum in Prague, Cirkusová 1740, CZ-193 00 Praha 9-Horní Počernice, Czech Republic;
e-mail: machackovalenka.jbc@seznam.cz

Pavel MARHOUL, Beleco, Slezská 125, CZ-130 00 Praha 3, Czech Republic;
e-mail: pavel.marhoul@beleco.cz

Robert TROPEK, Department of Ecology, Charles University in Prague,
Viničná 7, CZ-128 43 Praha 2, Czech Republic & Institute of Entomology, Biology Centre,
Czech Academy of Science, Branišovská 31, CZ-370 05 České Budějovice,
Czech Republic; email: robert.tropek@gmail.com