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Zlate ose vrste *Chrysura cuprea* odlagajo jajčeca v gnezda čebel, ki gnezdiijo v polžjih hišicah. /
Cuckoo wasps Chrysura cuprea lay eggs in the nests of bees breeding in snail shells.

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Zlate ose Slovenije (Hymenoptera: Chrysididae)

Cuckoo wasps of Slovenia (Hymenoptera: Chrysididae)

Andrej GOGALA¹

UDK(UDC)595.79(497.4)

Izveček

Zlate ose (Chrysididae) so parazitoidi ali kleptoparaziti drugih kožekrilcev. Podan je prvi seznam zlatih os Slovenije, pripravljen na podlagi primerkov v muzejskih zbirkah Prirodoslovnega muzeja Slovenije in Notranjskega muzeja Postojna, objavljenih podatkov ter v nekaj primerih tudi fotografij. Tri vrste so bile opazovane pri gnezdih možnih gostiteljev. Navedenih je 84 vrst zlatih os, najdenih na ozemlju Slovenije. Vrsta *Cleptes putoni* Buysson je bila za Slovenijo v preteklosti zabeležena pomotoma.

Ključne besede: Hymenoptera, Chrysididae, favna, Slovenija

Abstract

Cuckoo wasps (Chrysididae) are parasitoids or cleptoparasites of other hymenopterans. The first list of cuckoo wasps of Slovenia is presented herewith, prepared on the basis of specimens in museum collections of the Slovenian Museum of Natural History and the Notranjska Museum Postojna, published records and, in a few cases, photographs. Three species were observed at the nest of possible hosts. 84 species of cuckoo wasps have been found in the territory of Slovenia. The species *Cleptes putoni* Buysson had been erroneously attributed to Slovenia in the past.

Key words: Hymenoptera, Chrysididae, fauna, Slovenia

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Uvod

Zlate ose (Chrysididae) so zaradi značilnih svetlečih se strukturnih barv, od modre in zelene do rdeče, bakrene in zlate, med najlepšimi kožekrilci. Njihove ličinke so parazitoidi ali kleptoparaziti v gnezdih drugih želatih kožekrilcev, kokonih rastlinskih os ali metuljev iz družine Limacodidae. Zlate ose najpogosteje najdemo na krajih, kjer gnezdijo njihovi gostitelji. To je lahko star odmrl les ali tla, v katerih so gnezdilni rovi gostiteljskih vrst. Populacije zlatih os so odvisne od številčnosti in stalnosti populacij njihovih gostiteljev, ti pa v zadnjih desetletjih pospešeno izginjajo iz naše narave. Vedno manj je namreč cvetočih travniških združb, ki se bodisi zaraščajo z gozdom bodisi intenzivno obdelujejo ali urbanizirajo. Ose in čebele s tem izgubljajo vire hrane, težje pa najdejo tudi primerne kraje za gnezdenje. Muzejske zbirke so dragoceni vir podatkov o favni, ki izginja. Popis vrst, ki so živele v času večje raznovrstnosti, nam daje vpogled v nekdanje stanje življenjskih združb.

V literaturi ni veliko objavljenih podatkov o zlatih osah v Sloveniji. IOANNES ANTONIUS SCOPOLI je v svoje delo *Entomologia Carniolica* (1763) vključil tri vrste zlatih os, Linnéjevo *Chrysis ignita* in dve vrsti, ki ju je sam opisal, *Hedychrum nobile* in *Pseudomalus violaceus*. Vse tri je Scopoli vključil v rod *Sphex*. Ker se njegova zbirka ni ohranila, ne moremo preveriti, ali je današnja interpretacija njegovih vrst pravilna. *Sphex nobilis* bi bil lahko tudi *Hedychrum niemelai*, *Sphex violacea* pa po skopem opisu katera izmed vrst rodu *Omalus*. Le za to vrsto Scopoli navaja kraj najdbe, okolico Trsta. Na Krasu, torej v okolici Trsta, sta bili najdeni vrsti *Omalus aeneus* in *Omalus biaccinctus*, vrsta *Pseudomalus violaceus* pa ni znana iz Slovenije. GRÄFFE (1895) je objavil seznam zlatih os Trsta in njegove okolice, a vsa omenjena najdišča so na italijanski strani meje. Podatke iz zbirke Hrvaškega narodnega zoološkega muzeja v Zagrebu je leta 1955 objavil Vatroslav Vogrin. V tej zbirki so primerki A. Tauberta in E. Jaegra, objavil pa je tudi podatke iz zbirke A. Hentscha iz Krapine, ki je bila v lasti Zavoda za zaščito bilja v

Introduction

Cuckoo wasps (Chrysididae) are among the most beautiful hymenopterans due to their characteristic glittering structural colours, from blue and green to red, copper and gold. Their larvae are parasitoids or cleptoparasites in the nests of other aculeate hymenopterans, cocoons of sawflies or Limacodid moths. Cuckoo wasps can most often be found in places where their hosts nest. These can be old dead wood or ground where nest burrows are situated. Populations of cuckoo wasps are dependent on the abundance and continuity of their host populations. These, however, have been rapidly disappearing from our nature in the last few decades. Blooming grassland communities are either overgrown with trees, intensively farmed or urbanized. Wasps and bees are thereby losing food sources and can hardly find suitable places for nesting. Museum collections are a source of information about the disappearing fauna, and the census of the species, which lived at the time of greater diversity, gives us an insight into the former state of biotic communities.

In the literature, not much data published on cuckoo wasps in Slovenia can be found. IOANNES ANTONIUS SCOPOLI included three species of cuckoo wasps in his work *Entomologia Carniolica* (1763), Linné's *Chrysis ignita* and two species described by himself, i.e. *Hedychrum nobile* and *Pseudomalus violaceus*. Scopoli included all three species in the genus *Sphex*. Since his collection is lost, we cannot verify whether today's interpretation of his species is correct. *Sphex nobilis* could also be *Hedychrum niemelai*, and *Sphex violacea*, according to the brief description, a species of the genus *Omalus*. Only for this species Scopoli stated the finding place, the surroundings of Trieste. In the Karst, therefore near Trieste, *Omalus aeneus* and *Omalus biaccinctus* were found, while *Pseudomalus violaceus* is not known from Slovenia. GRÄFFE (1895) published a list of Chrysidids of Trieste and its surroundings, but all localities mentioned are located on the Italian side of the border. Data from the collection of the Cro. Nation. Zool. Museum in Zagreb were published by Vatroslav Vogrin in 1955. In

Zagrebu. V Prirodoslovnem muzeju Slovenije v Ljubljani hranijo zbirko Evgena Jaegra, v kateri so tudi primerki A. Tauberta iz Subotice, ki je nekaj primerkov zbral v slovenskih Alpah. Dr. Evgen Jaeger (1892–1959) je lovil predvsem v okolici Podčetrtek, kjer je bil zdravnik. Drugi večji vir podatkov je moja lastna zbirka, v kateri so predvsem primerki iz okolice Ljubljane in s Krasa, večinoma zbrani v devetdesetih letih. Tretji vir so primerki iz zbirke Slavka Polaka iz Notranjskega muzeja v Postojni. Nekaj primerkov so zbrali še Mate Hafner, Savo Brelih, Vincenc Furlan in Stanislav Gomboc. *Fauna Europaea* (ROSA in SOON 2012) našteva 30 vrst za Slovenijo, večinoma na podlagi primerkov v Linsenmaierjevi zbirki, ki jo hranijo v Natur-Museumu v Luzernu (NMLS) (ROSA, BERNASCONI & WYNIĞER 2015). Natančne podatke o teh primerkih je prijazno posredoval Paolo Rosa in so objavljeni v tem prispevku. Primerki štirih vrst so shranjeni v Museo Civico di Storia Naturale v Milanu (ROSA 2005). WIŚNIOWSKI (2015) je pojavljanje 14 vrst v Sloveniji povzel po spletni bazi *Fauna Europaea*.

Material in metode

Za pripravo prvega seznama zlatih os, najdenih v Sloveniji, sem zbral objavljene podatke in pregledal zbirko Evgena Jaegra, osrednjo zbirko kořekrilcev v Prirodoslovnem muzeju Slovenije (obe zbirki Prirodoslovnega muzeja Slovenije v Ljubljani, PMSL) in primerke iz zbirke Slavka Polaka (Notranjski muzej Postojna, NMPO). Primerki niso bili določeni, ali pa je bilo treba določitev preveriti, saj so bile v zadnjih letih narejene revizije mnogih skupin vrst. Izšli so tudi boljši določevalni ključi, ki pa so večinoma geografsko omejeni in ne vključujejo vseh

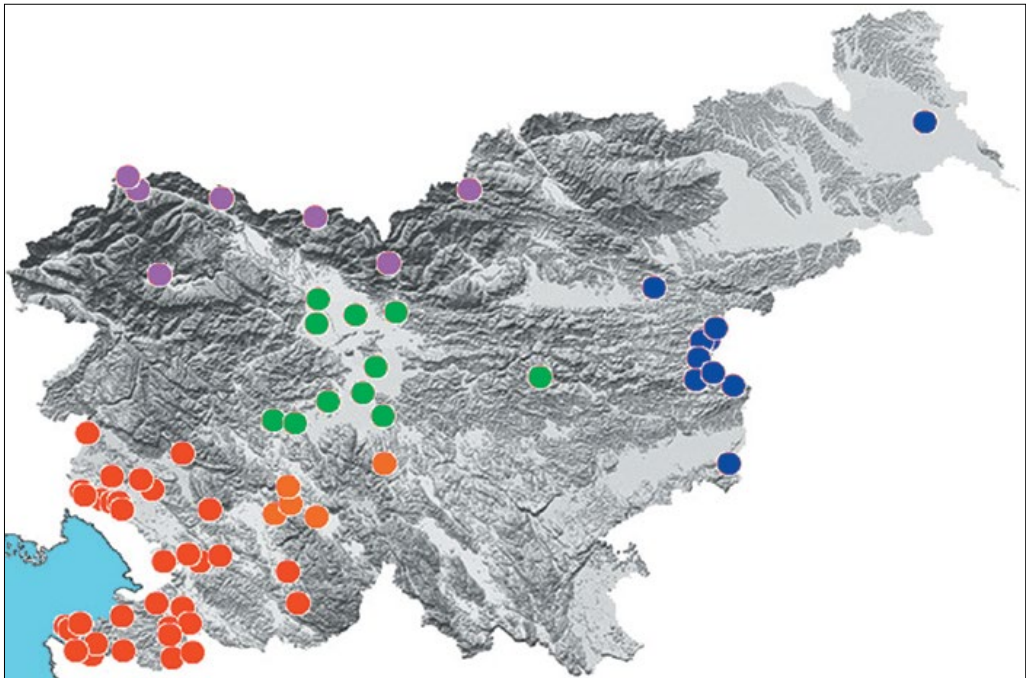
this collection, specimens of A. Taubert and E. Jaeger are present, and he also published data from the collection of A. Hentsch from Krapina, which was owned by the Institute for the Protection of Plants in Zagreb. The Natural History Museum of Slovenia in Ljubljana keeps a collection of Evgen Jaeger, which also contains specimens collected by A. Taubert from Subotica, among others a few specimens collected in the Slovenian Alps. Dr Evgen Jaeger (1892 - 1959) was collecting primarily in the area of Podčetrtek, where he worked as physician. The second major source of information is my own collection, consisting mainly of specimens from the surroundings of Ljubljana and the Kras (Karst), mostly collected in the 1990s. The third source of data are specimens from the collection of Slavko Polak from the Notranjska Museum in Postojna. Some specimens were collected also by Mate Hafner, Savo Brelih, Vincenc Furlan and Stanislav Gomboc. 30 species were listed for Slovenia in *Fauna Europaea* (ROSA & SOON 2012), based primarily on specimens in the Linsenmaier collection, kept in the Natur-Museum Luzern (NMLS) (ROSA, BERNASCONI & WYNIĞER 2015). Precise data on these specimens were kindly provided by Paolo Rosa and are published herewith. Specimens of four species are deposited in the Museo Civico di Storia Naturale di Milano (ROSA 2005). WIŚNIOWSKI (2015) indicated the presence of 14 species in Slovenia from the online database *Fauna Europaea*.

Materials and methods

For the preparation of the first list of cuckoo wasps found in Slovenia, I have collected the published data and examined the collection of Evgen Jaeger, the central Hymenoptera collection of the Natural History Museum of Slovenia (both collections of the Slovenian Museum of Natural History in Ljubljana, PMSL) and specimens from the collection of Slavko Polak (Notranjska Museum Postojna, NMPO). Specimens were not determined yet or it was necessary to check the determinations, as revisions of many groups of species were done in recent years. Better identification keys were published,

možnih vrst (npr. ROSA 2006, PAUKKUNEN et al. 2015). Rodovna in višja klasifikacija, vključno s skupinami vrst, sledi delu avtorjev KIMSEY in BOHART (1991). V tem delu so določevalni ključi do skupin vrst. Za mnoge skupine je primerna določevalna literatura še vedno LINSSENMAIER (1959), za posamezne rodove pa tudi MÓCZÁR (1964, 1997, 1998), ARENS (2001, 2004, 2010) in druga. Primerki so suhi, nalepljeni na listke ali na iglah. Če so bile za določitev potrebne genitalije, so bile izvlečene in prilepljene na listek. Posamezne primerke vrst sem fotografiral in objavljene fotografije izboljšujejo predstavitev skupine. Kraji, kjer so bili primerki zbrani, so v petih fitogeografskih območjih Slovenije (slika 1). Na nekaterih listkih podatki o lokaliteti vključujejo koordinate polja velikosti 10 x 10 km v mreži

but are mostly geographically limited and do not include all possible species (e.g. ROSA 2006, PAUKKUNEN et al. 2015). Generic and higher classification with the groups of species follows KIMSEY & BOHART (1991). In this work, the identification keys to the species groups are provided. For many groups, the usable determination literature is still LINSSENMAIER (1959), for individual genera also MÓCZÁR (1964, 1997, 1998), ARENS (2001, 2004, 2010) and others. Specimens are dried, glued onto cards or on the needles. When genitalia were needed for identification, they were extracted and glued onto a card. Individual specimens of most species were photographed to improve the presentation of the group. Places where the specimens were collected are located in five phytogeographical regions of Slovenia (Fig. 1). On some labels, data on locality include



Slika 1: Kraji, kjer so bili zbrani primerki zlatih os (Chrysididae) v Sloveniji, ležijo v petih fitogeografskih območjih. Barva oznak najdišč v submediteranskem območju je rdeča, v dinarskem območju oranžna, v predalpskem zelena, v alpskem vijolična in v subpanonskem območju modra.

Fig. 1: Places where cuckoo wasp (Chrysididae) specimens were collected in Slovenia are located in five phytogeographical regions. Sites in the sub-Mediterranean region are marked in red, the Dinaric region in orange, the pre-Alpine region in green, the Alpine region in violet and in the sub-Pannonian region in blue.

UTM. E. Jaeger je pri svojih primerkih najdišča žal označil le s kraticami. O njihovem pomenu lahko v mnogih primerih le uganemo.

Biologija

Poznana je biologija le manjšega dela vrst zlatih os in še ta je večinoma omejena na poznavanje gostiteljev. Tudi ti podatki so pogosto dvomljivi, saj pojavljanje vrste ob gnezdu možnega gostitelja ni vedno dokaz njune povezanosti. Pogosto gnezdi tesno skupaj tudi več različnih vrst. Zlate ose so zajedavci, ki večinoma povzročijo smrt svojega gostitelja. Imenujemo jih parazitoidi. Nekatere ličinke zlatih os poleg ličinke gostitelja pojedjo tudi pripravljeno zalogo hrane v gnezdu in so tako tudi kleptoparaziti. Predstavnice poddružine Cleptinae zajedajo dorasle ličinke rastlinskih os grizlic in listaric (Diprionidae in Tenthredinidae). Njihove kokone iščejo med odpadlim listjem ali rahlo prstjo na tleh, zato jih je težko najti. V kokon zgrizejo luknjo in odložijo jajčece. Vrste iz poddružin Amiseginae in Loboscelidiinae, ki v Evropi ne živijo, zajedajo jajca paličnjakov (Phasmatidae). Predstavnice najštevilnejše poddružine Chrysidinae pa

coordinates of a 10 x 10 km field in the Universal Transverse Mercator (UTM) grid. E. Jaeger labelled localities of his specimens, unfortunately, only with the initials. Their meaning can thus only be guessed in many cases.

Biology

Biology of only a small portion of cuckoo wasp species is known, and even this is mostly limited to the knowledge of the host. These data are often questionable, since the occurrence of the species near a nest of the potential host is not always evidence of their relationship. Quite often, several different species nest close together. Cuckoo wasps are parasites that usually cause the death of their hosts and are called parasitoids. Some cuckoo wasp larvae eat the provisions in the nest in addition to the host larva and are, therefore, cleptoparasites as well. Representatives of the subfamily Cleptinae parasitise grown larvae of the sawflies (Diprionidae and Tenthredinidae). They search for their cocoons among fallen leaves or in loose soil on the ground, so they are hard to find. They gnaw a hole through the cocoon and lay an egg in it. Species of the subfamilies Amiseginae and Loboscelidiinae that do not live in Europe, parasitise eggs of the



Slika 2: Levo zlata osa *Chrysura laevigata*, desno rdečedlaka dišavka (*Osmia rufohirta*) v svojem gnezdu, hišici polža *Pomatias elegans*. Brje pri Komnu, julija 1989.

Fig. 2: Left: cuckoo wasp *Chrysura laevigata*; right: *Osmia rufohirta* bee in its nest, *Pomatias elegans* snail shell. Brje pri Komnu, July 1989.



Slika 3: Levo zlata osa vrste *Chrysura refulgens*, desno samec čebele smolarke (*Rhodanthidium septemdentatum*) v polžji hišici iz rodu *Cepaea*. Brje pri Komnu, junija 1992.

Fig. 3: Left: cuckoo wasp *Chrysura refulgens*; right: *Rhodanthidium septemdentatum* bee male in *Cepaea* snail shell. Brje pri Komnu, June 1992.

so zajedavci v gnezdih samotarsko živečih želatih os in čebel iz družin Vespidae (ose lončarke – Eumeninae in medene ose – Masarinae), Crabronidae (ose grebače) in Megachilidae (čebele znoske). Ti gostitelji se lahko branijo z želom, vendar so zlate ose dobro zaščitene s trdnim hitinskim skeletom na hrbtu. V nevarnosti se zvijejo v kroglico in z zadkom pokrijejo občutljive predele okrog nog in opne med členki. Jajčece odložijo na ličinko gostiteljice ali kamorkoli v gnezdu. Ličinka zlate ose lahko napade ličinko gostiteljice šele tedaj, ko ta doraste, ali pa jo napade takoj in se nato prehranjuje tudi s pripravljeno zalogo hrane, ujetimi žuželkami, pajki ali mešanico peloda in medičine (KIMSEY in BOHART 1991). Samice vrst *Omalus aeneus*, *O. biaccinctus* in *Pseudomalus auratus* odlagajo jajčeca v žive listne uši, preden jih gostitelji odnesejo v svoja gnezda, in v gnezda gostiteljev ne vstopajo (PAUKKUNEN et al. 2015).

Sam sem opazoval nekaj vrst zlatih os ob gnezdih njihovih gostiteljev. To ni nedvomen dokaz o identiteti gostitelja, a če potrjuje že objavljene ugotovitve, je dodaten dokaz o njihovi pravilnosti. Ob gnezdu čebele rdečedlake dišavke (*Osmia rufohirta*) v prazni polžji hišici vrste *Pomatias elegans* sem opazoval zlato oso vrste *Chrysura laevigata*.

walking sticks (Phasmatidae). Representatives of the most numerous subfamily Chrysidinae are parasites in the nests of solitary aculeate wasps and bees of the families Vespidae (potter wasps - Eumeninae and honey wasps - Masarinae), Crabronidae and Megachilidae. These hosts may defend themselves with a sting, but cuckoo wasps are well protected with a hard chitin skeleton on the back. In danger they roll into a ball and cover sensitive areas around their legs and intersegmental membranes with the abdomen. Egg is deposited on the host larva or anywhere in the nest. Cuckoo wasp larva can attack the host larva only when it grows up, or attacks it immediately and then consumes its food provisions, the captured insects, spiders, or a mixture of pollen and nectar (KIMSEY & BOHART 1991). *Omalus aeneus*, *O. biaccinctus* and *Pseudomalus auratus* females lay eggs in the living aphids before the host wasps take them to their nests and do not enter the nests of their hosts (PAUKKUNEN et al. 2015).

I've observed some species of cuckoo wasps at the nests of their hosts. This is not an undeniable proof of the identity of the host, but if it confirms the already published findings, it is a further proof of their accuracy. At the nest of the bee *Osmia rufohirta* in an empty snail shell of *Pomatias elegans*, I observed cuckoo



Slika 4: Levo zlata osa vrste *Chrysis terminata*, desno osa zidarka (*Ancistrocerus nigricornis*) z blatom za gradnjo pri vhodu v svoje gnezdo. Brje pri Komnu, maja 1989.

Fig. 4: Left: cuckoo wasp *Chrysis terminata*; right: *Ancistrocerus nigricornis* potter wasp with mud for construction at the entrance to its nest. Brje pri Komnu, May 1989.

Vrsto *Chrysura refulgens* sem opazoval pri gnezdu čebele smolarke vrste *Rhodanthidium septemdentatum*, vrsto *Chrysis terminata* pa ob gnezdu ose zidarke vrste *Ancistrocerus nigricornis*, ki gnezdi v rovih v odmrlem lesu.

wasp *Chrysura laevigata*. I observed *Chrysura refulgens* at the nest of *Rhodanthidium septemdentatum* bee and *Chrysis terminata* at the nest of *Ancistrocerus nigricornis* that nests in larval galleries in dead wood.

Seznam vrst / List of species

Cleptinae

Cleptes Latreille, 1802

Cleptes nitidulus group

Cleptes nitidulus (Fabricius, 1793)

Sorško polje, 9. 8. 1931, 1♀, M. Hafner leg., PMSL

Gostitelji: *Aneugmenus* sp., ki živi na praproti (ARENS 2014), *Caliroa cerasi* (MORGAN 1984), *Nematus ribesii* (KIMSEY & BOHART 1991) (Tenthredinidae)
 Palearktična vrsta. Najdena v predalpskem območju Slovenije.

Hosts: *Aneugmenus* sp. living on ferns (ARENS 2014), *Caliroa cerasi* (MORGAN 1984), *Nematus ribesii* (KIMSEY & BOHART 1991) (Tenthredinidae)
 Palearctic species. Collected in the pre-Alpine region of Slovenia.

Cleptes scutellaris Mocsáry, 1889

MÓCZÁR 1997: Piran, J. Heinrich leg.
 ROSA & SOON, 2012: Slovenia

Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

West Palearctic species. Collected in the sub-Mediterranean region of Slovenia.

Cleptes splendidus (Fabricius, 1794)

Cleptes consimilis Buysson, 1887

MÓCZÁR 1997: Portorož, J. Heinrich leg. (pomotoma pripisano Hrvaški / erroneously attributed to Croatia)

Gostitelji: Tenthredinidae (AGNOLI & ROSA 2016). Pogosto najdena na praproti, s katero se verjetno hranijo gostitelji (ARENS 2014)
 Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: Tenthredinidae (AGNOLI & ROSA 2016). Often found on ferns where their hosts probably feed (ARENS 2014)
 West Palearctic species. Collected in the sub-Mediterranean region of Slovenia.

Cleptes semiauratus group

Cleptes semiauratus (Linnaeus, 1761)

Cleptes pallipes Lepeletier, 1806

Ljubljana, okolica, 21. 6. 1930, 1♂, M. Hafner leg., PMSL

Podčetrtek, OL - Olimje, 15. 6. 1942, 1♂, E. Jaeger leg., PMSL

Postojna, VL36, 1983, 1♂, VL37, 14. 8. 1985, 2♂, S. Polak leg., NMPO (Slika/Fig. 5)

Gostitelji: *Endelomyia aethiops*,
Nematus ribesii in *Pristiphora incisa*
(Tenthredinidae) (PAUKKUNEN et al. 2015)
Palearktična vrsta. Najdena v subpanonskem,
predalpskem in dinarskem območju
Slovenije.

Hosts: *Endelomyia aethiops*, *Nematus ribesii*
and *Pristiphora incisa* (Tenthredinidae)
(PAUKKUNEN et al. 2015)

Palaearctic species. Collected in the sub-
Pannonian, pre-Alpine and Dinaric regions
of Slovenia.

Cleptes striatipleuris Rosa, Forshage, Paukkunen & Soon, 2015

Podčetrtek, PL - Pristava pri Lesičnem?, 2. 6. 1938, 1♂, E. Jaeger leg., PMSL

Postojna, VL37, 3. 7. 1985, 2♂, S. Polak leg., NMPO

Gostitelji: *Nematus* spp., *Pristiphora* spp.
(Tenthredinidae) (KIMSEY in BOHART 1991)
Palearktična vrsta. Najdena v subpanonskem
in dinarskem območju Slovenije. Nekdaj
znana kot *C. semiauratus*, ko pa je postalo
jasno, da je to sinonim vrste *C. pallipes*, so
jo ROSA, FORSHAGE, PAUKKUNEN in SOON
(2015) opisali kot novo vrsto.

Hosts: *Nematus* spp., *Pristiphora* spp.
(Tenthredinidae) (KIMSEY & BOHART 1991)
Palaearctic species. Collected in the sub-
Pannonian and Dinaric regions of Slovenia.
Previously known as *C. semiauratus*,
but when found to be synonymous
with *C. pallipes*, ROSA, FORSHAGE,
PAUKKUNEN & SOON (2015) described it as
a new species.



Slika 5: *Cleptes semiauratus*, samec iz Postojne, zbirka NMPO

Fig. 5: *Cleptes semiauratus* male from Postojna, coll. NMPO

Chrysidinae

Elampini

Omalus Panzer, 1801

Omalus aeneus (Fabricius, 1787)

Podčetrtek, NW – SZ/NW, 19. 6. 1937, 1♂, TR - Trebče?, 30. 6. 1946, 1♀, E. Jaeger leg., PMSL
Gorjansko, UL97, 7. 6. 1992, 1♀, A. Gogala leg., PMSL (slika/Fig. 6)
Koritnice, VL45, 30. 8. 2006, 1♀, S. Polak leg., NMPO

Gostitelji: *Passaloecus* spp., *Pemphredon* spp. in *Psenulus pallipes* (Crabronidae), ki plenijo listne uši (PAUKKUNEN et al. 2015)
Palearktična vrsta. Najdena v subpanonskem in submediteranskem območju Slovenije.

Hosts: *Passaloecus* spp., *Pemphredon* spp. and *Psenulus pallipes* (Crabronidae) which prey on aphids (PAUKKUNEN et al. 2015)
Palaeartic species. Collected in the sub-Pannonian and sub-Mediterranean regions of Slovenia.

Omalus biaccinctus (du Buysson, 1892)

Hrpelje, Prešnica, VL14, 6. 7. 1998, 1♀, S. Breljih leg., PMSL

Gostitelji: *Passaloecus* spp. (Crabronidae) (PAUKKUNEN et al. 2015)
Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: *Passaloecus* spp. (Crabronidae) (PAUKKUNEN et al. 2015)
West Palaeartic species. Collected in the sub-Mediterranean region of Slovenia.



Slika 6: *Omalus aeneus*, samica iz Gorjanskega, zbirka PMSL

Fig. 6: *Omalus aeneus* female from Gorjansko, coll. PMSL

***Omalus puncticollis* (Mocsáry, 1887)**

Podčetrtek, GB - Gubno?, 29. 8. 1942, 1♀, TRO - Olimje, Trobevnik, 22. 8. 1943, 1♀, E. Jaeger leg., PMSL

Lesično, Zagorski potok, WM30, 9. 8. 1990, 1♀, S. Polak leg., NMPO

Log, Lukovica, VL59, 10. 8. 1990, 1♀, A. Gogala leg., PMSL

Zaplana, VL39, 23. 7. 1999, 1♀, A. Gogala leg., PMSL (slika/Fig. 7)

Gostitelji: *Passaloecus* spp. (Crabronidae)
(PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v predalpskem in subpanonskem območju Slovenije.

Hosts: *Passaloecus* spp. (Crabronidae)
(PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the pre-Alpine and sub-Pannonian regions of Slovenia.

***Pseudomalus* Ashmead, 1902**

***Pseudomalus auratus* (Linnaeus, 1758)**

ROSA in SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Gradišče pri Vipavi, 20. 5. 1958, 1♂, Demelt leg., NMLS

Podčetrtek, NO – SV/NE, 8. 9. 1943, 1♀, SOT - Sotla, 22. 8. 1946, 1♂, E. Jaeger leg., PMSL

Lavrica, Ljubljansko barje, VL69, 8. 6. 1991, 1♀, V. Furlan leg., PMSL

Log, Lukovica, VL59, 3. 7. 1992, 1♀, 19. 8. 1992, 1♀, A. Gogala leg., PMSL

Brje pri Komnu, VL07, 6. 9. 1992, 1♂, A. Gogala leg., PMSL

Kregolišče, VL07, 10. 7. 1993, 1♀, A. Gogala leg., PMSL

Dragonja, Stena, UL93, 26. 5. 1994, 1♀, A. Gogala leg., PMSL (slika/Fig. 8)

Koper, Škocjanski zatok, Bonifika, 29. 5. 2012, 1♀, S. Polak leg., NMPO

Gostitelji: *Passaloecus* spp., *Pemphredon* spp. in *Diodontus tristis* (Crabronidae), ki plenijo listne uši (ROSA 2006, PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v predalpskem, subpanonskem in submediteranskem območju Slovenije

Hosts: *Passaloecus* spp., *Pemphredon* spp. and *Diodontus tristis* (Crabronidae) which prey on aphids (ROSA 2006, PAUKKUNEN et al. 2015)

Palaearctic species. Collected in the pre-Alpine, sub-Pannonian and sub-Mediterranean regions of Slovenia.

***Pseudomalus pusillus* (Fabricius, 1804)**

Podčetrtek, LP - Lopaca?, 21. 6. 1938, 1♂, B. - Bistrica ob Sotli?, 13. 7. 1938, 1♂, PL - Pristava pri Lesičnem?, 3. 8. 1938, 1♂, PS - Polje ob Sotli?, 19. 8. 1938, 1♀, 30. 8. 1938, 1♂, E. Jaeger leg., PMSL

Gostitelji: *Passaloecus eremita*, *P. insignis* in *Pemphredon lethifer* (Crabronidae)
(PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v subpanonskem območju Slovenije.

Hosts: *Passaloecus eremita*, *P. insignis* and *Pemphredon lethifer* (Crabronidae)
(PAUKKUNEN et al. 2015)

Palaearctic species. Collected in the sub-Pannonian region of Slovenia.



Slika 7: *Omalus puncticollis*, samica iz Zaplane, zbirka PMSL

Fig. 7: *Omalus puncticollis* female from Zaplana, coll. PMSL



Slika 8: *Pseudomalus auratus*, samica iz Dragonje, zbirka PMSL

Fig. 8: *Pseudomalus auratus* female from Dragonja, coll. PMSL



Slika 9: *Elampus constrictus*, samica iz Podčetrška, zbirka PMSL

Fig. 9: *Elampus constrictus* female from Podčetrtek, coll. PMSL



Slika 10: *Elampus constrictus*, tretji tergiti samice iz Podčetrška, zbirka PMSL

Fig. 10: *Elampus constrictus*, third tergum of a female from Podčetrtek, coll. PMSL

Elampus Spinola, 1806

Elampus constrictus (Förster, 1853)

Podčetrtek, WK, 17. 8. 1938, 1♀ (slika/Fig. 10), AP, 7. 7. 1945, 1♀ (slika/Fig. 9), E. Jaeger leg., PMSL

Gostitelji: *Mimesa bicolor*, *M. equestris* in *M. lutaria* (Crabronidae) (PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v subpanonskem območju Slovenije

Hosts: *Mimesa bicolor*, *M. equestris* and *M. lutaria* (Crabronidae) (PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-Pannonian region of Slovenia.

Holopyga Dahlbom, 1845

Holopyga fervida group

Holopyga fervida (Fabricius, 1781)

Podčetrtek, BG - Babna Gora?, 8. 6. 1938, 1♂, PL - Pristava pri Lesičnem?, 30. 6. 1938, 1♂, E. Jaeger leg., PMSL

Sp. Branica, Čipnje, VL07, 18. 7. 1991, 1♀, A. Gogala leg., PMSL (slika/Fig. 11)

Zahodnopalearktična vrsta. Najdena v submediteranskem in subpanonskem območju Slovenije. Spolno dvolična vrsta.

West Palaeartic species. Collected in the sub-Mediterranean and sub-Pannonian regions of Slovenia. Sexually dimorphic species.



Slika 11: *Holopyga fervida*, samica iz Sp. Branice, zbirka PMSL

Fig. 11: *Holopyga fervida* female from Sp. Branica, coll. PMSL

Holopyga lucida group

Holopyga austrialis Linsenmaier, 1959

Log, Lukovica, VL59, 11. 6. 1992, 1♀ (slika/Fig. 12), 15. 6. 1992, 1♂, A. Gogala leg., PMSL

Srednjeevropska in srednjeazijska vrsta.

Najdena v predalpskem območju Slovenije.

Spolno dvoalična vrsta.

Central European and Central Asian species.

Collected in the pre-Alpine region of

Slovenia. Sexually dimorphic species.

Holopyga chrysonota (Förster, 1853)

VOGRIN 1955: Kranjska Gora, 6., coll. Taubert

Podčetrtek, PL - Pristava pri Lesičnem?, 5. 7. 1938, 1♂, E. Jaeger leg., PMSL (slika/Fig. 13)

Gostitelji: morda *Cerceris quadrifasciata*,

Bembecinus tridens, *Dinetus pictus* ali

Tachysphex spp.: *T. unicolor*, *T. nitidus*

(Crabronidae) (ARENS 2014)

Zahodnopalearktična vrsta. Najdena v

alpskem in subpanonskem območju

Slovenije.

Hosts: possibly *Cerceris quadrifasciata*,

Bembecinus tridens, *Dinetus pictus* or

Tachysphex spp.: *T. unicolor*, *T. nitidus*

(Crabronidae) (ARENS 2014)

West Palaearctic species. Collected in the

Alpine and sub-Pannonian regions of

Slovenia.



Slika 12: *Holopyga austrialis*, samica iz Lukovice, zbirka PMSL

Fig. 12: *Holopyga austrialis* female from Lukovica, coll. PMSL



Slika 13: *Holopyga chrysonota*, samec iz Podčetrтка, zbirka PMSL

Fig. 13: *Holopyga chrysonota* male from Podčetrtek, coll. PMSL



Slika 14: *Holopyga ignicollis*, samec iz Cerknice, zbirka NMPO

Fig. 14: *Holopyga ignicollis* male from Cerknica, coll. NMPO

Holopyga generosa (Förster, 1853)

ROSA & SOON 2012: Slovenia

Istria: Strugnano (= Strunjan), 2♂1♀, Madera leg., NMLS

Gostitelj: *Astata boops* (Crabronidae) (VEENENDAAL 2012, PAUKKUNEN et al. 2015). Samice odlagajo jajčeca v ličinke stenic, preden jih gostitelji odnesejo v gnezdo (VEENENDAAL 2012).

Palearktična vrsta. Najdena v submediteranskem območju Slovenije.

Host: *Astata boops* (Crabronidae)

(VEENENDAAL 2012, PAUKKUNEN et al. 2015). Females lay eggs in nymphs of Heteroptera before they are taken to the nest by the host (VEENENDAAL 2012).

Palaearctic species. Collected in the sub-Mediterranean region of Slovenia.

Holopyga ignicollis Dahlbom, 1854

ROSA & SOON 2012: Slovenia

Istria: Strugnano (= Strunjan), 1♂, Madera leg., NMLS

Cerknica, Gorica, VL56, 22. 6. 2004, 1♂, S. Polak leg., NMPO (slika/Fig. 14)

Gostitelji: morda *Mimumesa unicolor*, *Cerceris quadrifasciata* ali ose grebače, ki gnezdijo v robidinih steblih (Crabronidae) (ARENS 2014)

Zahodnopalearktična vrsta. Najdena v dinarskem in submediteranskem območju Slovenije. Spolno dvočlana vrsta.

Hosts: possibly *Mimumesa unicolor*, *Cerceris quadrifasciata* or crabronid wasps nesting in *Rubus* stems (Crabronidae) (ARENS 2014)

West Palaearctic species. Collected in the Dinaric and sub-Mediterranean regions of Slovenia. Sexually dimorphic species.



Slika 15: *Holopyga inflammata*, samec z Nanosa, zbirka PMSL

Fig. 15: *Holopyga inflammata* male from Nanos, coll. PMSL

Holopyga inflammata (Förster, 1853)

Nanos: Sv. Hieronim, VL27, 25. 7. 1992, 1♂, A. Gogala leg., PMSL (slika/Fig. 15)

Gostitelji: morda ose grebače, ki gnezdiyo v robidinih steblih (Crabronidae) (ARENS 2014, po ROSA 2006)

Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: possibly crabronid wasps nesting in *Rubus* stems (Crabronidae) (ARENS 2014, after ROSA 2006)

West Palearctic species. Collected in the sub-Mediterranean region of Slovenia.

Holopyga jurinei Chevrier, 1862

ROSA & SOON 2012: Slovenia

Istria: Strugnano (= Strunjan), 6. 1931, 1♂, Madera leg., NMLS

Severnomediteranska vrsta. Najdena v submediteranskem območju Slovenije.

North Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.

Hedychrum Latreille, 1802***Hedychrum gerstaeckeri*** Chevrier, 1869

ROSA 2005: Zurk, Senosecchia (= Senožeče), 7. 1927, 1 ex., Stolfa legit, 30. 8. 1929, 1 ex., Stolfa legit

ROSA & SOON 2012: Slovenia; WIŚNIOWSKI 2015: Slovenia

Istria: Strugnano (= Strunjan), 6. 1931, 4♂, Madera leg., NMLS

Podčetrtek, OL - Olimje, 15. 7. 1945, 2♀, 2. 9. 1945, 1♂, E. Jaeger leg., PMSL

Gorjansko, UL97, 20. 6. 1992, 1♀, A. Gogala leg., PMSL

Sp. Brnik, VM62, 10. 8. 1993, 1♀, A. Gogala leg., PMSL

Koštabona, Škrline, VL03, 29. 6. 1993, 2♂, A. Gogala leg., PMSL (slika/Fig. 16)

Škocjan, VL25, 16. 6. 1993, 1♀, A. Gogala leg., PMSL

Log, Lukovica, VL59, 12. 9. 1993, 1♂, A. Gogala leg., PMSL

Ljubljana, Črnuče, VM60, 11. 8. 1993, 1♂, Jarški prod, 20. 8. 2007, 1♂, A. Gogala leg., PMSL

Cerknica, Dol. Jezero, VL56, 7. 7. 2010, 1♂, A. Gogala leg., PMSL

Gostitelji: *Cerceris sabulosa* (ROSA 2006), *C. rybyensis* in *C. ruficornis* (Crabronidae) (PAUKKUNEN et al. 2015). V Sloveniji je *Cerceris sabulosa* bolj pogosta kot sorodna *C. rybyensis* (GOGALA 2011).

Palearktična vrsta. Najdena v predalpskem, dinarskem, subpanonskem in submediteranskem območju Slovenije.

Hosts: *Cerceris sabulosa* (ROSA 2006), *C. rybyensis* and *C. ruficornis* (Crabronidae) (PAUKKUNEN et al. 2015).

In Slovenia, *Cerceris sabulosa* is more common than closely related *C. rybyensis* (GOGALA 2011).

Palearctic species. Collected in the pre-Alpine, Dinaric, sub-Pannonian and sub-Mediterranean regions of Slovenia.



Slika 16: *Hedychrum gerstaeckeri*, samec iz Koštabone, zbirka PMSL

Fig. 16: *Hedychrum gerstaeckeri* male from Koštabona, coll. PMSL



Slika 17: *Hedychrum niemelai*, samica iz Črnuč, zbirka PMSL

Fig. 17: *Hedychrum niemelai* female from Črnuče, coll. PMSL

Hedychrum niemelai Linsenmaier, 1959

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Istria: Strugnano (= Strunjan), 6. 1931, 2♂, Madera leg., NMLS

Istria: Pirano (= Piran), 6. 1928, 2♂2♀, Madera Linsenmaier (paratypes), NMLS

Dobova, Mihalovec, WL58, 18. 7. 1994, 1♀, 23. 8. 1994, 1♂, A. Gogala leg., PMSL

Strunjan, UL94, 27. 6. 1995, 1♀, A. Gogala leg., PMSL

Ljubljana, Črnuče, VM60, 31. 8. 1995, 1♀, A. Gogala leg., PMSL (slika/Fig. 17)

Gostitelji: *Cerceris arenaria*, *C. ruficornis* (ROSA 2006), *C. quadrifasciata*, *C. quinquefasciata*, morda tudi druge vrste rodu *Cerceris* (Crabronidae) (PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v subpanonskem, predalpskem in submediteranskem območju Slovenije. Spolno dvolična vrsta.

Hosts: *Cerceris arenaria*, *C. ruficornis* (ROSA 2006), *C. quadrifasciata*, *C. quinquefasciata*, possibly also other *Cerceris* species (Crabronidae) (PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-Pannonian, pre-Alpine and sub-Mediterranean regions of Slovenia. Sexually dimorphic species.

Hedychrum nobile (Scopoli, 1763)

SCOPOLI 1763: Carniola

VOGRIN 1955: Kamnik, 6. 8., Podčetrtek, 28. 7., coll. Taubert

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Istria: Strugnano (= Strunjan), 6. 1931, 1♂, Madera leg., NMLS

Podčetrtek, N – S/N, 7. 7. 1939, 1♂, NO – SV/NE, 11. 6. 1945, 2♂, E. Jaeger leg., PMSL

Podčetrtek, OL - Olimlje, 15. 7. 1945, 1♀, 2. 9. 1945, 1♀, E. Jaeger leg., PMSL

Virštanj, WM41, 8. 7. 1993, 1♀, A. Gogala leg., PMSL

Sp. Brnik, VM62, 9. 7. 1993, 1♀, A. Gogala leg., PMSL (slika/Fig. 18)

Brje pri Komnu, VL07, 18. 8. 1991, 1♂, A. Gogala leg., PMSL

Dragonja, Stena, UL93, 1. 9. 1993, 1♂, A. Gogala leg., PMSL

Strunjan, UL94, 3. 7. 1994, 2♂, A. Gogala leg., PMSL

Gostitelji: *Cerceris arenaria*, *C. rybyensis*, morda tudi druge vrste rodu *Cerceris* in *Gorytes quinquecinctus* (Crabronidae) (ROSA 2006, PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v subpanonskem, predalpskem in submediteranskem območju Slovenije. Spolno dvolična vrsta.

Hosts: *Cerceris arenaria*, *C. rybyensis*, possibly also other *Cerceris* species and *Gorytes quinquecinctus* (Crabronidae) (ROSA 2006, PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-Pannonian, pre-Alpine and sub-Mediterranean regions of Slovenia. Sexually dimorphic species.

Hedychrum rutilans Dahlbom, 1854

Dobova, Mihalovec, WL58, 23. 8. 1994, 1♀, A. Gogala leg., PMSL (slika/Fig. 19)

Gostitelj: *Philanthus triangulum*, *P. coronatus* (Crabronidae) (ROSA 2006, PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v subpanonskem območju Slovenije.

Host: *Philanthus triangulum*, *P. coronatus* (Crabronidae) (ROSA 2006, PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-Pannonian region of Slovenia.



Slika 18: *Hedychrum nobile*, samica iz Sp. Brnika, zbirka PMSL

Fig. 18: *Hedychrum nobile* female from Sp. Brnik, coll. PMSL



Slika 19: *Hedychrum rutilans*, samica iz Mihalovca, zbirka PMSL

Fig. 19: *Hedychrum rutilans* female from Mihalovec, coll. PMSL

Hedychridium Abeille de Perrin, 1878*Hedychridium ardens* group*Hedychridium ardens* (Coquebert, 1801)

Podčetrtek, NO – SV/NE, 1. 6. 1946, 1♂, E. Jaeger leg., PMSL (slika/Fig. 20)

Gostiteljji: *Tachysphex* spp., *Diodontus tristis*,
Oxybelus bipunctatus (Crabronidae)
(ROSA 2006, PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v subpanonskem
območju Slovenije.

Hosts: *Tachysphex* spp., *Diodontus tristis*,
Oxybelus bipunctatus (Crabronidae)
(ROSA 2006, PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-
Pannonian region of Slovenia.

Hedychridium coriaceum (Dahlbom, 1854)

ROSA 2005: Clanez (= Klanec pri Kozini), 6. 1938, 1 ex., C. Mancini legit

ROSA & SOON 2012: Slovenia; WIŚNIOWSKI 2015: Slovenia

Podčetrtek, TOP – Toplice/Thermae, 17. 8. 1945, 1♀, NO – SV/NE, 2. 7. 1946, 1♀, E. Jaeger leg.,
PMSL (slika/Fig. 21)

Gostiteljji: *Lindenius albilabris*, morda
tudi *Oxybelus uniglumis* (Crabronidae)
(PAUKKUNEN et al. 2015), *Tachysphex*
panzeri (ROSA 2006)

Palearktična vrsta. Najdena v subpanonskem
in submediteranskem območju Slovenije.

Hosts: *Lindenius albilabris*, possibly also
Oxybelus uniglumis (Crabronidae)
(PAUKKUNEN et al. 2015), *Tachysphex*
panzeri (ROSA 2006)

Palaeartic species. Collected in the sub-
Pannonian and sub-Mediterranean regions
of Slovenia.

Hedychridium femoratum (Dahlbom, 1854)

Podčetrtek, NK, 28. 6. 1938, 1♀ (slika/Fig. 22), PS - Polje ob Sotli?, 27. 9. 1938, 4♂, E. Jaeger
leg., PMSL

Gostiteljji: *Dryudella stigma*, morda
tudi *D. tricolor* ali *Miscophus* spp.
(Crabronidae) (SCHMID-EGGER 1995,
ARENS 2014). *Dryudella tricolor* in
Miscophus bicolor sta znani iz Podčetrтка
(GOGALA 2011).

Zahodnopalearktična vrsta. Najdena v
subpanonskem območju Slovenije.

Hosts: *Dryudella stigma*, possibly
also *D. tricolor* or *Miscophus* spp.
(Crabronidae) (SCHMID-EGGER 1995,
ARENS 2014). *Dryudella tricolor* and
Miscophus bicolor are known from
Podčetrtek (GOGALA 2011).

West Palaeartic species. Collected in the sub-
Pannonian region of Slovenia.



Slika 20: *Hedychridium ardens*, samec iz Podčetrтка, zbirka PMSL

Fig. 20: *Hedychridium ardens* male from Podčetrtek, coll. PMSL



Slika 21: *Hedychridium coriaceum*, samica iz Podčetrтка, zbirka PMSL

Fig. 21: *Hedychridium coriaceum* female from Podčetrtek, coll. PMSL



Slika 22: *Hedychridium femoratum*, samica iz Podčetrтка, zbirka PMSL

Fig. 22: *Hedychridium femoratum* female from Podčetrtek, coll. PMSL



Slika 23: *Hedychridium jucundum*, samec iz Kregolišča, zbirka PMSL

Fig. 23: *Hedychridium jucundum* male from Kregolišče, coll. PMSL

***Hedychridium jucundum* Mocsáry, 1889**

Kregolišče, VL07, 16. 6. 1992, 1♂, A. Gogala leg., PMSL (slika/Fig. 23)

Gostitelj: verjetno *Bembecinus tridens*
(Crabronidae) (AGNOLI & ROSA 2016, po
GIORDANI SOIKA 1932)

Južnoevropska vrsta. Najdena v
submediteranskem območju Slovenije.

Host: probably *Bembecinus tridens*
(Crabronidae) (AGNOLI & ROSA 2016, after
GIORDANI SOIKA 1932)

South European species. Collected in the sub-
Mediterranean region of Slovenia.

***Hedychridium krajniki* Balthasar, 1946**

Hedychridium stoeckherti Linsenmaier, 1959
Zimmermann 1960: Podčetrtek

Gostitelj: verjetno *Oxybelus* sp.
(LINSENMAIER 1968) ali *Lindenius*
pygmaeus (Crabronidae) (ARENS 2014)

Južnoevropska vrsta. Najdena v
subpanonskem območju Slovenije.

Host: probably *Oxybelus* sp.
(LINSENMAIER 1968) or *Lindenius*
pygmaeus (Crabronidae) (ARENS 2014)

South European species. Collected in the sub-
Pannonian region of Slovenia.

***Hedychridium zelleri* (Dahlbom, 1845)**

Podčetrtek, PS - Polje ob Sotli?, 22. 9. 1938, 1♂, E. Jaeger leg., PMSL

Gostitelji: *Miscophus* spp., morda tudi
Diodontus tristis in *D. minutus*
(Crabronidae) (PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v
subpanonskem območju Slovenije.

Hosts: *Miscophus* spp., possibly also
Diodontus tristis and *D. minutus*
(Crabronidae) (PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the sub-
Pannonian region of Slovenia.

***Hedychridium roseum* group**

***Hedychridium captaureum* Trautmann & Trautmann, 1919**

Log, Lukovica, VL59, 11. 7. 1991, 1♀, A. Gogala leg., PMSL (slika/Fig. 24)

Gostitelji: *Astata minor* (Crabronidae)
(PAUKKUNEN et al. 2015), verjetno tudi
A. boops in *Dryudella stigma* (ROSA 2006)
Zahodnopalearktična vrsta. Po ARENS (2010)
podvrsta vrste *H. chloropygum* Buysson,
1888. Najdena v predalpskem območju
Slovenije.

Hosts: *Astata minor* (Crabronidae)
(PAUKKUNEN et al. 2015), probably
also *A. boops* and *Dryudella stigma*
(ROSA 2006)

West Palaearctic species. According to ARENS
(2010) subspecies of *H. chloropygum*
Buysson, 1888. Collected in the pre-Alpine
region of Slovenia.

***Hedychridium roseum* (Rossi, 1790)**

ROSA 2005: Senosecchia (= Senožeče), 2. 9. 1929, 1 ex., Stolfa legit

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Podčetrtek, 28. 7. 1938, 1♂, PT, 26. 9. 1938, 2♀, E. Jaeger leg., PMSL

Gostitelji: predvsem *Astata boops*, verjetno tudi *A. rufipes*, *Dryudella stigma*, *Tachysphex pompiliiformis* in *Harpactus* spp. (Crabronidae) (ROSA 2006, PAUKKUNEN et al. 2015)

Palaearktična vrsta. Najdena v subpanonskem in submediteranskem območju Slovenije. Subpanonsko območje je edino, kjer je bila *Astata boops* pogosta (GOGALA 2011).

E. Jaeger je vrsto našel tudi na hrvaški strani Sotle.

Hosts: primarily *Astata boops*, probably also *A. rufipes*, *Dryudella stigma*, *Tachysphex pompiliiformis* and *Harpactus* spp. (Crabronidae) (ROSA 2006, PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-Pannonian and sub-Mediterranean regions of Slovenia. Sub-Pannonian region is the only one where *Astata boops* was common (GOGALA 2011).

E. Jaeger collected *H. roseum* also on Croatian side of the Sotla river:

Podčetrtek, MIL – Miljana (Hr/Cro), 25. 8. 1946, 1♀, E. Jaeger leg., PMSL (slika/Fig. 25)

***Hedychridium valesiense* Linsenmaier, 1959**

Log, Lukovica, VL59, 9. 8. 1990, 1♂, 20. 7. 1991, 1♂, 30. 6. 1992, 2♀ (Slika/Fig. 26), 18. 7. 1992, 2♂ (Slika/Fig. 27), 22. 6. 1993, 1♂ (Slika/Fig. 28), A. Gogala leg., PMSL

Koštabona, Škrline, VL03, 29. 6. 1993, 1♂, A. Gogala leg., PMSL

Podpeč, VL14, 24. 8. 1991, 1♀, A. Gogala leg., PMSL

Koritnice, VL45, 24. 7. 1993, 1♀, S. Polak leg., NMPO

Gostitelj: verjetno *Astata minor* (Crabronidae) (ARENS 2010). To je najpogostejša vrsta rodu *Astata* v osrednji in zahodni Sloveniji, pojavlja se tudi na krajih, kjer sta bili najdeni *H. valesiense* in *H. caputaureum* (GOGALA 2011).

Zahodnopalaearktična vrsta. Najdena v predalpskem in submediteranskem območju Slovenije. Spolno dvolična vrsta. Samice imajo oranžen nekovinski zadek kot *H. roseum* in *H. caputaureum*, samci pa imajo tergite kovinsko rdeče obarvane. Za določitev vrste je treba pregledati samčeve spolne organe.

Host: probably *Astata minor* (Crabronidae) (ARENS 2010). This is the commonest *Astata* species in Central and West Slovenia, present also in places where *H. valesiense* and *H. caputaureum* were found (GOGALA 2011).

West Palaeartic species. Collected in the pre-Alpine and sub-Mediterranean regions of Slovenia. Sexually dimorphic species. Females have orange non-metallic abdomen like *H. roseum* and *H. caputaureum*, while males have metallic red coloured terga. Examination of male genitalia is needed to identify the species.



Slika 24: *Hedychridium caputaureum*, samica iz Lukovice, zbirka PMSL

Fig. 24: *Hedychridium caputaureum* female from Lukovica, coll. PMSL



Slika 25: *Hedychridium roseum*, samica iz Miljane, zbirka PMSL

Fig. 25: *Hedychridium roseum* female from Miljana, coll. PMSL



Slika 26: *Hedychridium valesiense*, samica iz Lukovice, zbirka PMSL
Fig. 26: *Hedychridium valesiense* female from Lukovica, coll. PMSL



Slika 27: *Hedychridium valesiense*, samec iz Lukovice, zbirka PMSL
Fig. 27: *Hedychridium valesiense* male from Lukovica, coll. PMSL



Slika 28: *Hedychridium valesiense*, genitalije samca iz Lukovice, zbirka PMSL

Fig. 28: *Hedychridium valesiense*, genitals of a male from Lukovica, coll. PMSL

Chrysidini

Chrysur Dahlbom, 1845

Chrysur *candens* group

Chrysur *candens* (Germar, 1817)

ROSA & SOON 2012: Slovenia

Portorož, 23. 5. - 3. 6. 1960, 1♀, J. Heinrich leg., NMLS

Brje pri Komnu, VL07, 10. 5. 1992, 1♀, 29. 4. 1994, 1♀, A. Gogala leg., PMSL (slika/Fig. 29)

Gostitelj: verjetno *Tachysphex nitidus* (Crabronidae) (BERLAND & BERNARD 1938, po TRAUTMANN 1927). Dve drugi črni vrsti rodu *Tachysphex* sta bili najdeni na istem kraju kot *C. candens* v Sloveniji: *T. tarsinus* (Lepeletier) in *T. unicolor* (Panzer) (GOGALA 2011).

Južnoevropska vrsta. Najdena v submediteranskem območju Slovenije.

Host: probably *Tachysphex nitidus* (Crabronidae) (BERLAND & BERNARD 1938, after TRAUTMANN 1927). Two other black *Tachysphex* species were found at the same locality as *C. candens* in Slovenia: *T. tarsinus* (Lepeletier) and *T. unicolor* (Panzer) (GOGALA 2011).

South European species. Collected in the sub-Mediterranean region of Slovenia.



Slika 29: *Chrysur* *candens*, samica iz Brij, zbirka PMSL

Fig. 29: *Chrysur* *candens* female from Brje, coll. PMSL

Chrysura austriaca group

Chrysura ignifrons Brullé, 1833

ROSA & SOON 2012: Slovenia

Portorož, 23. 5. - 3. 6. 1960, 1♀, J. Heinrich leg., NMLS

Koritnice, VL45, 6. 6. 1988, 1♀, 9. 7. 1988, 1♀, S. Polak leg., NMPO

Ilirska Bistrica, Štanga, VL44, 22. 7. 1992, 1♀, A. Gogala leg., PMSL (slika/Fig. 30)

Sela na Krasu, UL97, 30. 4. 1995, 1♂, A. Gogala leg., PMSL

Gostitelji: *Hoplitis jheringii* in

H. anthocopoides (Megachilidae)

(AGNOLI in ROSA 2016). Ti dve vrsti sta zelo redki (*H. jheringii*) ali pa ju sploh ni (*H. anthocopoides*) na krajih, kjer je bila v Sloveniji najdena *C. ignifrons*. A na teh krajih živi druga vrsta rodu *Hoplitis* s. str., ki prav tako gradi izpostavljena gnezda iz peska v skalnih vdolbinah: *Hoplitis pallicornis* (Friese) (GOGALA 2014).

Mediterranska vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: *Hoplitis jheringii* and *H. anthocopoides* (Megachilidae) (AGNOLI & ROSA 2016).

These two species are very rare (*H. jheringii*) or absent (*H. anthocopoides*) in places where *C. ignifrons* was found in Slovenia. But another *Hoplitis* s. str. species, which also builds exposed nests made of sand in hollows in rocks, occurs in these places: *Hoplitis pallicornis* (Friese) (GOGALA 2014).

Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.



Slika 30: *Chrysura ignifrons*, samica s Štange, zbirka PMSL

Fig. 30: *Chrysura ignifrons* female from Štanga, coll. PMSL

Chrysura cuprea group

Chrysura cuprea (Rossi, 1790)

Slavnik, 1028 m, VL14, 9. 6. 1979, 1♀, V. Furlan leg., PMSL

Lipica, VL15, 19. 5. 1979, 1♂, V. Furlan leg., PMSL

Divača, VL16, 30. 5. 1982, 1♀, V. Furlan leg., PMSL

Škofi, VL07, 1. 6. 1991, 1♀, A. Gogala leg., PMSL

Brje pri Komnu, VL07, 16. 6. 1992, 1♀, A. Gogala leg., PMSL (Slika/Fig. 31), 14. 5. 2011, photo
A. Gogala

Gostitelji: *Osmia rufohirta*, *O. spinulosa*,
O. andrenoides, *O. versicolor*, *O. bicolor* in
O. aurulenta (Megachilidae), ki gnezdijo
v praznih polžjih hišicah (BERLAND in
BERNARD 1938, KUNZ 1994, ROSA 2006)

Evropsko-mediteranska vrsta. Najdena v
submediteranskem območju Slovenije.

Hosts: *Osmia rufohirta*, *O. spinulosa*,
O. andrenoides, *O. versicolor*, *O. bicolor*
and *O. aurulenta* (Megachilidae) which
nest in empty snail shells (BERLAND &
BERNARD 1938, KUNZ 1994, ROSA 2006)

Europeo-Mediterranean species. Collected in
the sub-Mediterranean region of Slovenia.



Slika 31: *Chrysura cuprea*, samica iz Brij, zbirka PMSL.

Fig. 31: *Chrysura cuprea* female from Brje, coll. PMSL.

Chrysura dichroa group

Chrysura dichroa (Dahlbom, 1854)

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Istria: Portorož, 6. 1970, 1♂, NMLS

Kastelec, Osp, VL14, 30. 4. 1995, 1♀2♂, S. Polak leg., NMPO

Brje pri Komnu, VL07, 2. 6. 1991, 1♂, 16. 5. 1992, 2♀, A. Gogala leg., PMSL (Slika/Fig. 32, 35)

Padna, UL93, 16. 5. 1995, 1♂, A. Gogala leg., PMSL

Gostitelji: *Osmia rufohirta* in druge vrste rodu *Osmia* (Megachilidae), ki gnezdijo v praznih polžjih hišicah (PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: *Osmia rufohirta* and other *Osmia* species (Megachilidae) which nest in empty snail shells (PAUKKUNEN et al. 2015)

West Palearctic species. Collected in the sub-Mediterranean region of Slovenia.

Chrysura filiformis (Mocsáry, 1889)

Podčetrtek, NO – SV/NE, 1. 6. 1946, 1♀, 2. 7. 1946, 1♀, E. Jaeger leg., PMSL (slika/Fig. 33)

Vzhodnomediterranska vrsta. Najdena v subpanonskem območju Slovenije. Majhna in zelo vitka vrsta. Gostitelj ni znan, a če je čebela iz družine Megachilidae, pridejo v poštev vrste rodov *Chelostoma* in *Heriades*, ki imajo podobno telesno obliko.

East Mediterranean species. Collected in the sub-Pannonian region of Slovenia. Small and very slender species. Host is not known, but if it is a megachilid bee, species of *Chelostoma* and *Heriades* come into consideration due to similar body shape.



Slika 32: *Chrysura dichroa*, samica iz Brij, zbirka PMSL

Fig. 32: *Chrysura dichroa* female from Brje, coll. PMSL

Slika 33: *Chrysur*
filiformis, samica iz
Podčetrška, zbirka PMSL

Fig. 33: *Chrysur*
filiformis female from
Podčetrtek, coll. PMSL



Slika 34: *Chrysur*
laevigata, samica iz Brij,
zbirka PMSL.

Fig. 34: *Chrysur*
laevigata female from
Brje, coll. PMSL



Chrysura laevigata (Abeille, 1879)

Podčetrtek, GOL – Golobinjek ob Sotli?, 20. 6. 1943, 1♀, E. Jaeger leg., PMSL

Brje pri Komnu, VL07, 8. 7. 1991, 1♀, A. Gogala leg., PMSL (Slika/Fig. 34, 35), 9. 7. 1989, 1♀,
photo A. Gogala

Koritnice, VL45, 5. 7. 2004, 1♀, S. Polak leg., NMPO

Gostitelj: *Osmia caerulescens*

(MARTYNOVA 2014), morda tudi *Osmia rufohirta* (Megachilidae) (lastno opazovanje). Samica je bila opazovana in fotografirana pri gnezdu v hišici polža *Pomatias elegans*.

Zahodnopalearktična vrsta. Najdena v submediteranskem in subpanonskem območju Slovenije. Pogosto prezrta zaradi podobnosti z vrsto *C. dichroa*. LINSENMAIER (1959) piše: »Dosedanja srednjeevropska *dichroa* obstaja v dveh vrstah s skoraj enako razširjenostjo ...« A če je vrsto *C. dichroa*, tako kot *C. cuprea* in *C. trimaculata*, najti le na apnenčastih tleh (KUNZ 1994), *C. laevigata* morda ni tako ozko omejena, saj je bila najdena tudi v dolini Sotle. Vrsto *C. laevigata* zlahka ločimo od *C. dichroa* po daljših licih in drugačni obliki tretjega tergita pri samici (ARENS 2001).

Host: *Osmia caerulescens*

(MARTYNOVA 2014), possibly also *Osmia rufohirta* (Megachilidae) (own observation). A female was observed and photographed at the nest in a *Pomatias elegans* shell.

West Palaearctic species. Collected in the sub-Mediterranean and sub-Pannonian regions of Slovenia. Often overlooked due to similarity with *C. dichroa*. LINSENMAIER (1959) wrote: »Die bisherige mitteleuropäische *dichroa* existiert in zwei Spezies, die fast gleiche Verbreitung haben ...« But while *C. dichroa*, as well as *C. cuprea* and *C. trimaculata*, is found only on calcareous ground (KUNZ 1994), *C. laevigata* may not be as strictly limited as it was found also in the Sotla valley. *C. laevigata* can be distinguished from *C. dichroa* easily by the longer malar space and different shape of the third tergum in a female (ARENS 2001).



Slika 35: Glava samic vrst *Chrysura dichroa* (levo) in *Chrysura laevigata* (desno).

Fig. 35: Heads of *Chrysura dichroa* (left) and *Chrysura laevigata* (right) females.

Chrysura radians group***Chrysura radians*** (Harris, 1776)

Podčetrtek, N – S/N, 4. 6. 1939, 1♂, E. Jaeger leg., PMSL
 Planinsko polje, VL47, 12. 8. 1993, 1♀, S. Polak leg., NMPO
 Slavnik, VL14, 9. 7. 1995, 1♀, A. Gogala leg., PMSL (slika/Fig. 36)

Gostitelji: *Hoplitis adunca*, *H. anthocopoides*,
Osmia leaiana, *O. caerulescens*,
O. niveata, *O. melanogaster* (Megachilidae)
 (ROSA 2006, PAUKKUNEN et al. 2015)

Palaearktična vrsta. Najdena v subpanonskem,
 dinarskem in submediteranskem območju
 Slovenije.

Hosts: *Hoplitis adunca*, *H. anthocopoides*,
Osmia leaiana, *O. caerulescens*,
O. niveata, *O. melanogaster* (Megachilidae)
 (ROSA 2006, PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-
 Pannonian, Dinaric and sub-Mediterranean
 regions of Slovenia.

Chrysura refulgens (Spinola, 1806)

VOGRIN 1955: Kranj, 8
 Brje pri Komnu, VL07, 28. 5. 1989, 1♀, 10. 5. 1992, 2♂, 16. 6. 1992, 1♀, A. Gogala leg., PMSL
 (Slika/Fig. 37), 7. 6. 1992, 1♀, photo A. Gogala

Gostitelji: *Rhodanthidium septemdentatum*
 (lastno opazovanje), *Megachile*
 (*Chalicodoma*) spp., *Osmia bicolor*
 (Megachilidae) (AGNOLI in ROSA 2016)

Mediteranska vrsta. Najdena v
 submediteranskem območju Slovenije,
 Vogrinov podatek je iz predalpskega
 območja.

Hosts: *Rhodanthidium septemdentatum* (own
 observation), *Megachile* (*Chalicodoma*)
 spp., *Osmia bicolor* (Megachilidae)
 (AGNOLI & ROSA 2016)

Mediterranean species. Collected in the sub-
 Mediterranean region of Slovenia, Vogrin's
 record is from the pre-Alpine region.

Chrysura trimaculata (Förster, 1853)

Brje pri Komnu, VL07, 12. 4. 1992, 1♂, 10. 5. 1992, 1♀, 12. 3. 1995, 1♂, A. Gogala leg., PMSL
 Vonarje, WM41, 8. 6. 1996, 1♀, A. Gogala leg., PMSL (slika/Fig. 38)

Gostitelji: *Osmia bicolor*, *O. aurulenta* in
 druge vrste rodu *Osmia* (Megachilidae),
 ki gnezdijo v praznih polžjih hišicah
 (PAUKKUNEN et al. 2015)

Zahodnopalaearktična vrsta. Najdena v
 submediteranskem in subpanonskem
 območju Slovenije.

Hosts: *Osmia bicolor*, *O. aurulenta* and other
Osmia species (Megachilidae) which
 nest in empty snail shells (PAUKKUNEN et
 al. 2015)

West Palaeartic species. Collected in the sub-
 Mediterranean and sub-Pannonian regions
 of Slovenia.



Slika 36: *Chrysura radians*, samica s Slavnika, zbirka PMSL

Fig. 36: *Chrysura radians* female from Slavnik, coll. PMSL



Slika 37: *Chrysura refulgens*, samec iz Brij, zbirka PMSL

Fig. 37: *Chrysura refulgens* male from Brje, coll. PMSL



Slika 38: *Chrysurina trimaculata*, samica iz Vonarij, zbirka PMSL

Fig. 38: *Chrysurina trimaculata* female from Vonarje, coll. PMSL

Trichrysis Lichtenstein, 1876

Trichrysis cyanea (Linnaeus, 1758)

ROSA & SOON 2012: Slovenia; WIŚNIOWSKI 2015: Slovenia
 Podčetrtek, N – S/N, 30. 8. 1941, 1♀, E. Jaeger leg., PMSL
 Koritnice, VL45, 3. 6. 1988, 1♀, 10. 5. 1991, 1♀, 3. 10. 2004, 2♀, S. Polak leg., NMPO
 Brje pri Komnu, VL07, 15. 7. 1990, 1♀, 6. 9. 1992, 1♀, A. Gogala leg., PMSL (slika/Fig. 39)
 Kurešček, VL68, 6. 6. 1992, 1♂, A. Gogala leg., PMSL
 Košuta: Pl. Šija, VM44, 5. 8. 1994, 1♂, A. Gogala leg., PMSL
 Vremščica, VL26, 11. 9. 2008, 1♀, photo A. Gogala

Gostitelji: *Trypoxylon* spp., *Pison atrum*,
Psenulus pallipes, *Pemphredon* spp.,
Passaloecus spp. (Crabronidae)
 (ROSA 2006), *Auplopus carbonarius* in
Dipogon spp. (Pompilidae), ki gnezdiijo
 v rovih v odmrlem lesu (PAUKKUNEN et
 al. 2015)

Palearktična vrsta. Najdena v alpskem,
 dinarskem, subpanonskem in
 submediteranskem območju Slovenije.

Hosts: *Trypoxylon* spp., *Pison atrum*, *Psenulus*
pallipes, *Pemphredon* spp., *Passaloecus*
 spp. (Crabronidae) (ROSA 2006),
Auplopus carbonarius and *Dipogon* spp.
 (Pompilidae) which nest in cavities in dead
 wood (PAUKKUNEN et al. 2015)
 Palearctic species. Collected in the Alpine,
 Dinaric, sub-Pannonian and sub-
 Mediterranean regions of Slovenia.



Slika 39: *Trichrysis cyanea*, samica iz Brij, zbirka PMSL

Fig. 39: *Trichrysis cyanea* female from Brje, coll. PMSL

Chrysis Linnaeus, 1761

Chrysis varidens group

Chrysis gracillima Förster, 1853

Podčetrtek, N – S/N, 7. 7. 1939, 1♀, E. Jaeger leg., PMSL (slika/Fig. 40)

Gostitelji: *Pseudomicrodynerus parvulus*,
Microdynerus spp. (Vespidae), morda
tudi *Trypoxylon clavicerum* (Crabronidae)
(ROSA 2006, PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v
subpanonskem območju Slovenije.

Hosts: *Pseudomicrodynerus parvulus*,
Microdynerus spp. (Vespidae), possibly
also *Trypoxylon clavicerum* (Crabronidae)
(ROSA 2006, PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the sub-
Pannonian region of Slovenia.

***Chrysis jucunda* Mocsáry, 1889**

ROSA & SOON 2012: Slovenia

Piran, 1. - 15. 6. 1963, 3♂, J. Heinrich leg., NMLS

Portorož, 23. 5. - 3. 6. 1960, 1♂, J. Heinrich leg., NMLS

Lukovec, Golec, VL07, 4. 6. 2005, photo A. Gogala (slika/Fig. 41)

Vzhodnomeditranska vrsta. Najdena v submediteranskem območju Slovenije. Fotografirana na socvetju mehkodlakave jurjevine (*Jurinea mollis*) ob kupu kamenja. V zbirki E. Jaeger je primerek z otoka Hvara na Hrvaškem (*C. jucunda* je pogosta v Dalmaciji in na kvarnerskih otokih).

East Mediterranean species. Collected in the sub-Mediterranean region of Slovenia. Photographed on an inflorescence of *Jurinea mollis* near a pile of rocks.

E. Jaeger's collection contains a specimen from the Hvar Island, Croatia (*C. jucunda* is common in Dalmatia and on the Kvarner islands):

Hvar Island: Stari Grad, 1. – 7. 6. 1935, 1♂, E. Jaeger leg., PMSL (slika/Fig. 42)

***Chrysis ragusae* De Stefani, 1888**

ROSA & SOON 2012: Slovenia

Portorož, 23. 5. - 3. 6. 1960, 1♀, J. Heinrich leg., NMLS

Severnomediteranska vrsta. Najdena v submediteranskem območju Slovenije.

North Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.

Slika 40: *Chrysis gracillima*, samica iz Podčetrtek, zbirka PMSL

Fig. 40: *Chrysis gracillima* female from Podčetrtek, coll. PMSL





Slika 41: *Chrysis jucunda* na socvetju mehkodlakave jurjevine (*Jurinea mollis*), Golec

Fig. 41: *Chrysis jucunda* on an inflorescence of *Jurinea mollis*, Golec



Slika 42: *Chrysis jucunda*, samec z otoka Hvara, zbirka PMSL

Fig. 42: *Chrysis jucunda* male from Hvar Island, coll. PMSL

Chrysis subsinuata group***Chrysis subsinuata*** Marquet, 1879*Chrysis subsinuata fallax* Mocsáry, 1882

Rosa & Soon 2012: Slovenia

Istria: Strunjan (= Strunjan), 6. 1931, 1♂, Madera leg., NMLS

Evropsko-mediteranska vrsta. Najdena v submediteranskem območju Slovenije.

Europeo-Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.

Chrysis succincta group***Chrysis auriceps*** Mader, 1936

Brje pri Komnu, VL07, 16. 6. 1992, 1♀, 20. 6. 1993, 1♀, A. Gogala leg., PMSL (slika/Fig. 43)

Mediteranska vrsta. Najdena v submediteranskem območju Slovenije.

Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.

Chrysis germari Wesmael, 1839

Brje pri Komnu, VL07, 17. 7. 1991, 1♀, 16. 6. 1992, 2♂, A. Gogala leg., PMSL

Gorjansko, UL97, 7. 6. 1992, 1♂, A. Gogala leg., PMSL

Kregolišče, VL07, 16. 6. 1992, 1♀, A. Gogala leg., PMSL (slika/Fig. 44)

Gostitelj: *Euodynerus dantici* (Vespidae) (BERLAND in BERNARD 1938)Host: *Euodynerus dantici* (Vespidae) (BERLAND & BERNARD 1938).

Mediteranska vrsta. Najdena v submediteranskem območju Slovenije

Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.

Chrysis illigeri Wesmael, 1839*Chrysis helleni* Linsenmaier, 1959

Podčetrtek, OL - Olimje, 15. 7. 1945, 1♂, E. Jaeger leg., PMSL

Kranjska Gora, 14. 7. 1921, 1♂, A. Taubert leg., PMSL

Log, Lukovica, VL59, 21. 6. 1991, 1♂, 28. 5. 1993, 2♀1♂, A. Gogala leg., PMSL (slika/Fig. 45)

Gostitelj: *Tachysphex pompiliformis* (Crabronidae) (PAUKKUNEN et al. 2015)Host: *Tachysphex pompiliformis* (Crabronidae) (PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v predalpskem, alpskem in subpanonskem območju Slovenije.

West Palaearctic species. Collected in the pre-Alpine, Alpine and sub-Pannonian regions of Slovenia.

Chrysis leachii Shuckard, 1837

Podčetrtek, NW – SZ/NW, 7. 6. 1945, 1♂ (slika/Fig. 46), TOP – Toplice/Spa, 27. 8. 1945, 1♀, E.
Jaeger leg., PMSL

Koritnice, VL45, 1. 7. 1988, 1♂, 17. 9. 1995, 1♀, S. Polak leg., NMPO

Gostitelji: verjetno *Diodontus minutus*,
Miscophus bicolor in *Tracheliodes*
quinquenotatus (Crabronidae), ki gnezdijo
v tleh (ROSA 2006, PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v
subpanonskem in submediteranskem
območju Slovenije.

Hosts: probably *Diodontus minutus*,
Miscophus bicolor and *Tracheliodes*
quinquenotatus (Crabronidae) which nest
in the ground (ROSA 2006, PAUKKUNEN et
al. 2015)

West Palaearctic species. Collected in the sub-
Pannonian and sub-Mediterranean regions
of Slovenia.



Slika 43: *Chrysis auriceps*, samica iz Brij, zbirka PMSL

Fig. 43: *Chrysis auriceps* female from Brje, coll. PMSL



Slika 44: *Chrysis germari*, samica iz Kregolišča, zbirka PMSL

Fig. 44: *Chrysis germari* female from Kregolišče, coll. PMSL



Slika 45: *Chrysis illigeri*, samec iz Lukovice, zbirka PMSL

Fig. 45: *Chrysis illigeri* male from Lukovica, coll. PMSL



Slika 46: *Chrysis leachii*,
samec iz Podčetrтка,
zbirka PMSL

Fig. 46: *Chrysis leachii*
male from Podčetrtek,
coll. PMSL

Chrysis pulchella group

Chrysis calimorpha Mocsáry, 1882

ROSA & SOON 2012: Slovenia; WIŚNIOWSKI 2015: Slovenia
Postumia (= Postojna), 7. 1934, 1♂, Dr. Meyer leg., NMLS

Južnoevropska vrsta. Najdena v dinarskem
območju Slovenije.

South European species. Collected in the
Dinaric region of Slovenia.

Chrysis pulchella Spinola, 1808

ROSA & SOON 2012: Slovenia
Portorož, 23. 5. - 3. 6. 1960, 1♂, J. Heinrich leg., NMLS

Severnomediteranska vrsta. Najdena v
submediteranskem območju Slovenije.

North Mediterranean species. Collected in the
sub-Mediterranean region of Slovenia.

Chrysis aestiva group

Chrysis interjecta Buysson, 1895

Brje pri Komnu, VL07, 8. 7. 1991, 1♀, A. Gogala leg., PMSL (slika/Fig. 47)

Gostitelj: *Pseudoanthidium nanum*
(Megachilidae) (LINSENMAIER 1959)

Meditranska vrsta. Najdena v
submediteranskem območju Slovenije.

Host: *Pseudoanthidium nanum*
(Megachilidae) (LINSENMAIER 1959)

Mediterranean species. Collected in the sub-
Mediterranean region of Slovenia.



Slika 47: *Chrysis interjecta*, samica iz Brij, zbirka PMSL

Fig. 47: *Chrysis interjecta* female from Brje, coll. PMSL

Chrysis comparata group

Chrysis analis Spinola, 1808

Koritnice, VL45, 23. 6. 1992, 1♂, S. Polak leg., NMPO (slika/Fig. 48)

Kras: Gorjansko, UL97, 15. 7. 2005, 1♀, S. Polak leg., NMPO

Gostitelji: *Anthidium* spp., *Rhodanthidium caturigense*, *Osmia andrenoides* (Megachilidae) (BERLAND in BERNARD 1938)

Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: *Anthidium* spp., *Rhodanthidium caturigense*, *Osmia andrenoides* (Megachilidae) (BERLAND & BERNARD 1938)

West Palearctic species. Collected in the sub-Mediterranean region of Slovenia.

Chrysis chryso stigma Mocsáry, 1889

ROSA & SOON 2012: Slovenia

Portorož, 23. 5. - 3. 6. 1960, 1♂, 24. 7. - 5. 8. 1961, 2♀, J. Heinrich leg., 28. 7. 1961, 1♀, Jos.

Heinrich W. Perraudin, NMLS

Piran, 1. - 15. 6. 1963, 2♀, J. Heinrich leg., NMLS

Gorjansko, UL97, 17. 5. 1992, 1♂, 7. 6. 1992, 1♀1♂, A. Gogala leg., PMSL (slika/Fig. 49)

Brje pri Komnu, VL07, 16. 6. 1992, 1♂, A. Gogala leg., PMSL

Koštabona, Škrline, 29. 6. 1993, 1♀, A. Gogala leg., PMSL

Ljubljana, Črnuče, VM60, 15. 6. 1995, 1♂, A. Gogala leg., PMSL

Mediterska vrsta. Najdena v submediteranskem in predalpskem območju Slovenije.

Mediterranean species. Collected in the sub-Mediterranean and pre-Alpine regions of Slovenia.



Slika 48: *Chrysis analis*, samec iz Koritnic, zbirka NMPO

Fig. 48: *Chrysis analis* male from Koritnice, coll. NMPO

Chrysis comparata Lepeletier, 1806

Ljubljana, VM60, 19. 6. 1992, 1♀, S. Polak leg., NMPO
Slovenija: Istra, 7. 8. 1993, 1♂, V. Furlan leg., PMSL

Gostitelj: *Anthidium manicatum*
(Megachilidae) (LINSENMAIER 1959)
Zahodnopalearktična vrsta. Najdena v
predalpskem in submediteranskem
območju Slovenije.

Host: *Anthidium manicatum* (Megachilidae)
(LINSENMAIER 1959)
West Palaearctic species. Collected in the
pre-Alpine and sub-Mediterranean regions
of Slovenia.

Chrysis marginata Mocsáry, 1889

Chrysis marginata aliunda Linsenmaier, 1959
Hrastovlje, VL14, 13. 6. 1992, 1♂, A. Gogala leg., PMSL
Tublje pri Komnu, VL07, 17. 6. 1992, 1♂, A. Gogala leg., PMSL (slika/fig. 50)
Gorjansko, UL97, 14. 8. 1994, 1♀, A. Gogala leg., PMSL

Vzhodnomediterranska in srednjeazijska vrsta.
Najdena v submediteranskem območju
Slovenije.

East Mediterranean and Central Asian
species. Collected in the sub-
Mediterranean region of Slovenia.

Slika 49: *Chrysis chryso stigma*, samec iz Gorjanskega, zbirka PMSL

Fig. 49: *Chrysis chryso stigma* male from Gorjansko, coll. PMSL



***Chrysis scutellaris* Fabricius, 1794**

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Istria: Portorož, 6. 1970, 1♂, F. Parré leg., NMLS

Podčetrtek, L - Lesično?, 20. 8. 1937, 1♀, SL - Sv. Lovrenc?, 23. 6. 1943, 1♂, 16. 9. 1943, 1♀, E.

Jaeger leg., PMSL

Brje pri Komnu, VL07, 29. 9. 1990, 1♀ (slika/Fig. 51), 23. 8. 1992, 1♂, A. Gogala leg., PMSL, 6. 9. 2009, photo A. Gogala

Sočerga, Veli Badin, VL13, 14. 6. 1991, 1♀, 27. 6. 1995, 1♂, A. Gogala leg., PMSL

Gostitelji: verjetno *Megachile leachella* in
Pseudoanthidium nanum (Megachilidae)
(PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v
submediteranskem in subpanonskem
območju Slovenije.

Hosts: probably *Megachile leachella* and
Pseudoanthidium nanum (Megachilidae)
(PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the sub-
Mediterranean and sub-Pannonian regions
of Slovenia.



Slika 50: *Chrysis marginata*, samec iz Tubelj, zbirka PMSL

Fig. 50: *Chrysis marginata* male from Tublje, coll. PMSL



Slika 51: *Chrysis scutellaris*, samica iz Brij, zbirka PMSL

Fig. 51: *Chrysis scutellaris* female from Brje, coll. PMSL

Chrysis splendidula group

Chrysis rutilans Olivier, 1790

Podčetrtek, NO – SV/NE, 8. 9. 1948, 1♀, E. Jaeger leg., PMSL

Brje pri Komnu, VL07, 2. 6. 1991, 1♂, A. Gogala leg., PMSL (slika/Fig. 52)

Trstelj, UL97, 27. 8. 2000, 1♀, A. Gogala leg., PMSL

Gostitelji: *Gymnomerus laevipes*,
Ancistrocerus spp., *Katamenes flavigularis*,
Microdynerus spp., *Allodynerus rossii*
in *Stenodynerus* spp. (Vespidae),
Trypoxylon spp. (Crabronidae) (ROSA 2006,
PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v
submediteranskem in subpanonskem
območju Slovenije.

Hosts: *Gymnomerus laevipes*, *Ancistrocerus*
spp., *Katamenes flavigularis*, *Microdynerus*
spp., *Allodynerus rossii* and *Stenodynerus*
spp. (Vespidae), *Trypoxylon* spp.
(Crabronidae) (ROSA 2006, PAUKKUNEN et
al. 2015)

Palaeartic species. Collected in the sub-
Mediterranean and sub-Pannonian regions
of Slovenia.



Slika 52: *Chrysis rutilans*, samec iz Brij, zbirka PMSL

Fig. 52: *Chrysis rutilans* male from Brje, coll. PMSL

Chrysis viridula group

Chrysis cingulicornis Förster, 1853

ROSA & SOON 2012: Slovenia

Portorož, 12. - 18. 7. 1959, 1♂1♀, 23. 5. - 3. 6. 1960, 1♀, 24. 7. - 5. 8. 1961, 1♀, J. Heinrich leg., NMLS

Vzhodnomediterranska vrsta. Najdena v submediteranskem območju Slovenije.

East Mediterranean species. Collected in the sub-Mediterranean region of Slovenia.

Chrysis viridula Linnaeus, 1761

Kranjska Gora, 10. 7. 1926, 1♀, A. Taubert leg., PMSL (slika/Fig. 53)

Gostitelji: *Odynerus spinipes*, *O. reniformis* in *O. melanocephalus* (Vespidae) (PAUKKUNEN et al. 2015), *Odynerus alpinus* visoko v Alpah (LINSENMAIER 1959)

Palaearktična vrsta. Najdena v alpskem območju Slovenije.

Hosts: *Odynerus spinipes*, *O. reniformis* and *O. melanocephalus* (Vespidae) (PAUKKUNEN et al. 2015), *Odynerus alpinus* high in the Alps (LINSENMAIER 1959)

Palaeartic species. Collected in the Alpine region of Slovenia.



Slika 53: *Chrysis viridula*, samica iz Kranjske Gore, zbirka PMSL

Fig. 53: *Chrysis viridula* female from Kranjska Gora, coll. PMSL

Chrysis inaequalis group

Chrysis inaequalis Dahlbom, 1845

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Podčetrtek, N – S/N, 13. 7. 1939, 1♀, E. Jaeger leg., PMSL

Brje pri Komnu, VL07, 23. 6. 1991, 1♂, 10. 9. 1995, 1♂, A. Gogala leg., PMSL (slika/Fig. 54)

Gostitelji: *Eumenes pomiformis*, *E. coarctatus*,
Odynerus sp. (Vespidae) (ROSA 2006,
AGNOLI in ROSA 2016)

Palearktična vrsta. Najdena v
submediteranskem in subpanonskem
območju Slovenije.

Hosts: *Eumenes pomiformis*, *E. coarctatus*,
Odynerus sp. (Vespidae) (ROSA 2006,
AGNOLI & ROSA 2016)

Palaeartic species. Collected in the sub-
Mediterranean and sub-Pannonian regions
of Slovenia.



Slika 54: *Chrysis inaequalis*, samec iz Brij, zbirka PMSL

Fig. 54: *Chrysis inaequalis* male from Brje, coll. PMSL

Chrysis graelsii group

Chrysis graelsii Guèrin, 1842

Podčetrtek, PS - Polje ob Sotli?, 27. 9. 1938, 1♂, E. Jaeger leg., PMSL (slika/Fig. 55)

Gostitelji: *Euodynerus notatus*, verjetno tudi *E. quadrifasciatus* in *E. disconotatus* (Vespidae) (PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v subpanonskem območju Slovenije.

Hosts: *Euodynerus notatus*, probably also *E. quadrifasciatus* and *E. disconotatus* (Vespidae) (PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the sub-Pannonian region of Slovenia.



Slika 55: *Chrysis graelsii*, samec iz Podčetrтка, zbirka PMSL

Fig. 55: *Chrysis graelsii* male from Podčetrtek, coll. PMSL

Chrysis ignita group

Chrysis angustula Schenck, 1856

Korensko sedlo, VM05, 1. 7. 1994, 1♀, A. Gogala leg., PMSL (slika/Fig. 56)

Gostitelji: *Symmorphus bifasciatus*,
S. sinuatus, *S. debilitatus* (Vespidae)
(ROSA 2006, PAUKKUNEN et al. 2015),
Ancistrocerus trifasciatus (MORGAN, 1984)

Palearktična vrsta. Najdena v alpskem
območju Slovenije.

Hosts: *Symmorphus bifasciatus*, *S. sinuatus*,
S. debilitatus (Vespidae) (ROSA 2006,
PAUKKUNEN et al. 2015), *Ancistrocerus*
trifasciatus (MORGAN, 1984)

Palaeartic species. Collected in the Alpine
region of Slovenia.

Chrysis clarinicollis Linsenmaier, 1951

Koper, Škocjanski zatok, Bonifika, 6. 4. 2012, 1♂, S. Polak leg., NMPO (slika/Fig. 57)

Gostitelji: morda *Ancistrocerus oviventris* in
A. scoticus (Vespidae) (PAUKKUNEN et al.
2015, po PETIT 1987)

Zahodnopalearktična vrsta. Najdena v
submediteranskem območju Slovenije.

Hosts: possibly *Ancistrocerus oviventris* and
A. scoticus (Vespidae) (PAUKKUNEN et al.
2015, after PETIT 1987)

West Palaeartic species. Collected in the sub-
Mediterranean region of Slovenia.



Slika 56: *Chrysis angustula*, samica s Korenskega sedla, zbirka PMSL

Fig. 56: *Chrysis angustula* female from Korensko sedlo, coll. PMSL



Slika 57: *Chrysis clarinicornis*, samec iz Kopra, zbirka NMPO

Fig. 57: *Chrysis clarinicornis* male from Koper, coll. NMPO



Slika 58: *Chrysis corusca*, samica s Planine Vogar, zbirka PMSL

Fig. 58: *Chrysis corusca* female from Planina Vogar, coll. PMSL.

Chrysis corusca Valkeila, 1971

Bohinj, Pl. Vogar, 5. 7. 1938, 1♀, 26. 7. 1940, 1♀, M. Hafner leg., PMSL (slika/Fig. 58)

Gostitelj: *Symmorphus gracilis* (Vespidae)
(PAUKKUNEN et al. 2015, po PÄRN et al. 2014)

Zahodnopalearktična vrsta. Najdena v alpskem območju Slovenije.

Host: *Symmorphus gracilis* (Vespidae)

(PAUKKUNEN et al. 2015, after PÄRN et al. 2014)

West Palaearctic species. Collected in the Alpine region of Slovenia.

Chrysis fulgida Linnaeus, 1761

Ljubljana, 8. 1944, 1♀, M. Hafner leg., PMSL

Gostitelji: *Symmorphus allobrogus*,
S. bifasciatus, *S. crassicornis*, *S. murarius*,
morda tudi *Ancistrocerus parietum* in
Odynerus spinipes (Vespidae) (ROSA 2006,
PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v predalpskem območju Slovenije.

Hosts: *Symmorphus allobrogus*, *S. bifasciatus*,
S. crassicornis, *S. murarius*, possibly also
Ancistrocerus parietum and *Odynerus spinipes*
(Vespidae) (ROSA 2006,
PAUKKUNEN et al. 2015)

Palaearctic species. Collected in the pre-Alpine region of Slovenia.

Chrysis ignita Linnaeus, 1758

SCOPOLI 1763: Carniola

VOGRIN 1955: Podpeca, 23. 7., Kranj, Kamnik, 19. 7.

Koritnice, VL45, 21. 6. 1986, 2♀, 2. 1. 1988, 1♀, S. Polak leg., NMPO (slika/Fig. 59)

Gostitelj: verjetno *Ancistrocerus parietum*
(Vespidae) (PAUKKUNEN et al. 2015).
Mnogi navedeni gostitelji se lahko
nanašajo na druge vrste skupine *C. ignita*
(ROSA 2006).

Palearktična vrsta. Zanesljivi podatki so iz submediteranskega območja Slovenije. Starejši podatki v literaturi lahko pripadajo drugim vrstam skupine *Chrysis ignita*.

Host: probably *Ancistrocerus parietum*
(Vespidae) (PAUKKUNEN et al. 2015). Many reported hosts may refer to other species of the *C. ignita* group (ROSA 2006).

Palaearctic species. Reliable records are from the sub-Mediterranean region of Slovenia. Older records in the literature could refer to other species of the *Chrysis ignita* group.

Chrysis impressa Schenck, 1856

Bohinj, Pl. Vogar, 25. 7. 1940, 1♀, M. Hafner leg., PMSL (slika/Fig. 60)

Gostitelji: *Ancistrocerus claripennis*,
A. parietinus in *A. trifasciatus* (Vespidae)
(PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v alpskem območju Slovenije.

Hosts: *Ancistrocerus claripennis*,
A. parietinus and *A. trifasciatus* (Vespidae)
(PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the Alpine region of Slovenia.

***Chrysis indigotea* Dufour-Perris, 1840**

Podčetrtek, OL - Olimje, 15. 6. 1942, 1♀, E. Jaeger leg., PMSL

Gostitelji: morda *Gymnomerus laevipes* (Vespidae) ali *Ectemnius rubicola* (Crabronidae) (PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v subpanonskem območju Slovenije.

Drugi primerek v zbirki E. Jaegera je s hrvaške strani reke Sotle.

Hosts: possibly *Gymnomerus laevipes* (Vespidae) or *Ectemnius rubicola* (Crabronidae) (PAUKKUNEN et al. 2015)

West Palearctic species. Collected in the sub-Pannonian region of Slovenia.

Another specimen in E. Jaeger's collection is from Croatian side of the Sotla river.

Podčetrtek, MIL – Miljana (Hr/Cro), 2. 6. 1946, 1♀, E. Jaeger leg., PMSL (slika/Fig. 61)

Slika 59: *Chrysis ignita*, samica iz Koritnic, zbirka NMPO

Fig. 59: *Chrysis ignita* female from Koritnice, coll. NMPO



Slika 60: *Chrysis impressa*, samica s Planine Vogar, zbirka PMSL

Fig. 60: *Chrysis impressa* female from Planina Vogar, coll. PMSL



Chrysis mediata Linsenmaier, 1951

ROSA 2005: Senosecchia (=Senožeče), 15. 7. 1928, 1♀1♂, E. Stolf leg.

ROSA & SOON 2012: Slovenia; WIŚNIOWSKI 2015: Slovenia

Kranjska Gora, 30. 7. 1978, 1♂, F. Parré leg., NMLS

Podčetrtek, TR - Trebče?, 18. 8. 1946, 1♀, E. Jaeger leg., PMSL

Podčetrtek, OL - Olimje, 2. 9. 1945, 1♂, E. Jaeger leg., PMSL

Ponikva, WM13, 6. 7. 1994, 1♀, M. Gogala leg., PMSL (slika/Fig. 62)

Gostitelji: *Odynerus spinipes* in *O. reniformis*
(Vespidae) (PAUKKUNEN et al. 2015)

Zahodnopalearktična vrsta. Najdena v
subpanonskem, submediteranskem in
alpskem območju Slovenije.

Hosts: *Odynerus spinipes* and *O. reniformis*
(Vespidae) (PAUKKUNEN et al. 2015)

West Palaearctic species. Collected in the sub-
Pannonian, sub-Mediterranean and Alpine
regions of Slovenia.

Chrysis obtusidens Dufour & Perris, 1840

ROSA & SOON 2012: Slovenia; WIŚNIOWSKI 2015: Slovenia

Podkoren, 12. 8. 1978, 1♀, F. Parré leg., NMLS

Prade, 19. 6. 1924, Dr. Ad. Nadig leg., NMLS

Gostitelji: *Symmorphus bifasciatus* (Vespidae)
(LINSENMAIER 1959), morda tudi
Trypoxylon spp. (Crabronidae) (AGNOLI in
ROSA 2016, po DUFOUR in PERRIS 1840)

Evropska vrsta. Najdena v alpskem in
submediteranskem območju Slovenije.

Hosts: *Symmorphus bifasciatus* (Vespidae)
(LINSENMAIER 1959), possibly also
Trypoxylon spp. (Crabronidae) (AGNOLI &
ROSA 2016, after DUFOUR & PERRIS 1840)

European species. Collected in the Alpine and
sub-Mediterranean regions of Slovenia.



Slika 61: *Chrysis indigotea*, samica iz Miljane, zbirka PMSL

Fig. 61: *Chrysis indigotea* female from Miljana, coll. PMSL



Slika 62: *Chrysis mediata*, samica iz Ponikve, zbirka PMSL

Fig. 62: *Chrysis mediata* female from Ponikva, coll. PMSL

***Chrysis pseudobrevitarsis* Linsenmaier, 1951**

Gančani, WM96, 9. 6. 1992, 1♂, S. Gomboc leg., PMSL

Gostitelji: *Euodynerus notatus* in druge ose lončarke (Vespidae, Eumeninae) (PAUKKUNEN et al. 2015), *Ancistrocerus antilope* (MORGAN 1984)
 Palearktična vrsta. Najdena v subpanonskem območju Slovenije.

Hosts: *Euodynerus notatus* and other eumenine wasps (Vespidae) (PAUKKUNEN et al. 2015), *Ancistrocerus antilope* (MORGAN 1984)
 Palearctic species. Collected in the sub-Pannonian region of Slovenia.

***Chrysis ruddii* Shuckart, 1837**

Brje pri Komnu, VL07, 1. 6. 1991, 1♀, 9. 6. 1991, 1♀, A. Gogala leg., PMSL
 Rakitovec, VL13, 3. 6. 1992, 2♀, A. Gogala leg., PMSL (slika/Fig. 63)

Gostitelji: *Ancistrocerus oviventris*, *A. parietum*, *A. scoticus* (Vespidae) (ROSA 2006, PAUKKUNEN et al. 2015), morda tudi *Hoplitis adunca* (Megachilidae) (BERLAND & BERNARD 1938)
 Zahodnopalearktična vrsta. Najdena v submediteranskem območju Slovenije.

Hosts: *Ancistrocerus oviventris*, *A. parietum*, *A. scoticus* (Vespidae) (ROSA 2006, PAUKKUNEN et al. 2015), possibly also *Hoplitis adunca* (Megachilidae) (BERLAND & BERNARD 1938)
 West Palearctic species. Collected in the sub-Mediterranean region of Slovenia.



Slika 63: *Chrysis ruddii*, samica iz Rakitovca, zbirka PMSL

Fig. 63: *Chrysis ruddii* female from Rakitovec, coll. PMSL

***Chrysis rutiliventris* Abeille, 1879**

Podčetrtek, TOP – Toplice/Thermae, 27.8. 1945, 1♀, E. Jaeger leg., PMSL

Podčetrtek, OL - Olimje, 15. 7. 1945, 1♀, E. Jaeger leg., PMSL

Planina Sveti Križ (= Planina pod Golico), 26. 7. 1925, 1♂, A. Taubert leg., PMSL

Kamniška Bistrica, VM63, 29. 7. 1993, 1♂, A. Gogala leg., PMSL (slika/Fig. 64)

Gostitelji: verjetno *Ancistrocerus oviventris* in *A. scoticus* (Vespidae) (MORGAN 1984)

Palearktična vrsta. Najdena v alpskem in subpanonskem območju Slovenije.

Hosts: probably *Ancistrocerus oviventris* and *A. scoticus* (Vespidae) (MORGAN 1984)

Palaeartic species. Collected in the Alpine and sub-Pannonian regions of Slovenia.

***Chrysis schencki* Linsenmaier, 1968**

ROSA & SOON 2012: Slovenia; WIŚNIEWSKI 2015: Slovenia

Kranjska Gora, 30. 7. 1978, 1♀, F. Parré leg., NMLS

Gostitelji: *Ancistrocerus trifasciatus*, morda tudi *A. gazella* in *A. nigricornis* (Vespidae) (PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v alpskem območju Slovenije.

Hosts: *Ancistrocerus trifasciatus*, possibly also *A. gazella* and *A. nigricornis* (Vespidae) (PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the Alpine region of Slovenia.

Slika 64: *Chrysis rutiliventris*, samec iz Kamniške Bistrice, zbirka PMSL

Fig. 64: *Chrysis rutiliventris* male from Kamniška Bistrica, coll. PMSL



Slika 65: *Chrysis solida*, samica s Planine Vogar, zbirka PMSL

Fig. 65: *Chrysis solida* female from Planina Vogar, coll. PMSL



***Chrysis solida* Haupt, 1956**

Postojna, VL36, 1983, 1♀, S. Polak leg., NMPO

Bohinj, Pl. Vogar, VM12, 7. 7. 1995, 1♀, A. Gogala leg., PMSL (slika/Fig. 65)

Gostitelji: *Ancistrocerus trifasciatus* in druge ose lončarke (Vespidae, Eumeninae), ki gnezdi v rovih v odmrlem lesu (PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v alpskem in dinarskem območju Slovenije.

Hosts: *Ancistrocerus trifasciatus* and other eumenine wasps (Vespidae) nesting in cavities in dead wood (PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the Alpine and Dinaric regions of Slovenia.

***Chrysis subcoriacea* Linsenmaier, 1959**

Brje pri Komnu, VL07, 13. 5. 1990, 1♀, A. Gogala leg., PMSL (slika/Fig. 66)

Gostitelj: morda *Ancistrocerus trifasciatus* (Vespidae) (PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v submediteranskem območju Slovenije.

Host: possibly *Ancistrocerus trifasciatus* (Vespidae) (PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the sub-Mediterranean region of Slovenia.



Slika 66: *Chrysis subcoriacea*, samica iz Brij, zbirka PMSL

Fig. 66: *Chrysis subcoriacea* female from Brje, coll. PMSL

***Chrysis terminata* Dahlbom, 1854**

Podčetrtek, NW – SZ/NW, 12. 7. 1939, 1♀, N – S/N, 13. 7. 1939, 1♂, SOT - Sotla, 20. 4. 1946, 1♀, E. Jaeger leg., PMSL
 Koritnice, VL45, 1. 5. 1997, 1♀, 9. 3. 1998, 1♀, S. Polak leg., NMPO
 Rakov Škocjan, VL47, 15. 7. 2005, 1♀, S. Polak leg., NMPO
 Brestovica pri Komnu, UL97, 2. 5. 1990, 1♀, A. Gogala leg., PMSL
 Brje pri Komnu, VL07, 1. 5. 1990, 1♀, 24. 3. 1991, 1♀, A. Gogala leg., PMSL (slika/Fig. 67), 5. 5. 1989, 1♀, photo A. Gogala
 Log, Lukovica, VL59, 29. 4. 1991, 1♀, A. Gogala leg., PMSL
 Ljubljana, 29. 4. 1975, 1♀, 12. 5. 1975, 1♀, V. Furlan leg., PMSL
 Vrhnika, 2. 5. 1975, 1♀, V. Furlan leg., PMSL
 Mali Kum, WM00, 26. 7. 1996, 1♀, A. Gogala leg., PMSL

Gostitelj: *Ancistrocerus nigricornis* (Vespidae), ki gnezdi v rovih v odmrem lesu (PAUKKUNEN et al. 2015, lastno opazovanje)

Zahodnopalearktična vrsta. Najdena v predalpskem, subpanonskem, dinarskem in submediteranskem območju Slovenije.

Host: *Ancistrocerus nigricornis* (Vespidae) which nests in cavities in dead wood (PAUKKUNEN et al. 2015, own observation)
 West Palearctic species. Collected in the pre-Alpine, sub-Pannonian, Dinaric and sub-Mediterranean regions of Slovenia.



Slika 67: *Chrysis terminata*, samica iz Brij, zbirka PMSL

Fig. 67: *Chrysis terminata* female from Brje, coll. PMSL

Spintharina Semenov, 1892

Spintharina versicolor (Spinola, 1808)

Koritnice, VL45,1. 7. 1988, 1♂, S. Polak leg., NMPO

Brje pri Komnu, VL07, 20. 6. 1993, 1♀, A. Gogala leg., PMSL

Brestovica pri Komnu, UL97, 22. 5. 1994, 1♂, A. Gogala leg., PMSL (slika/Fig. 68)

Sinji vrh, VL18, 30. 6. 1994, 1♂, A. Gogala leg., PMSL

Gostitelj: *Celonites abbreviatus* (Vespidae,
Masarinae) (LINSENMAIER 1959,
ERLANDSSON 1974)

Mediterska vrsta. Najdena v
submediteranskem območju Slovenije.

Host: *Celonites abbreviatus* (Vespidae,
Masarinae) (LINSENMAIER 1959,
ERLANDSSON 1974)

Mediterranean species. Collected in the sub-
Mediterranean region of Slovenia.



Slika 68: *Spintharina versicolor*, samec iz Brestovice, zbirka PMSL

Fig. 68: *Spintharina versicolor* male from Brestovica, coll. PMSL

Pseudospinolia Linsenmaier, 1951

Pseudospinolia neglecta (Shuckard, 1837)

Log, Lukovica, VL59, 13. 5. 1991, 1♂, 5. 6. 1993, 1♂, A. Gogala leg., PMSL (slika/Fig. 69)

Gostitelji: *Odynerus spinipes*, *O. reniformis*,
Ancistrocerus parietum, *Gymnomerus*
laevipes (Vespidae) (ROSA 2006,
PAUKKUNEN et al. 2015)

Palearktična vrsta. Najdena v predalpskem
območju Slovenije.

Hosts: *Odynerus spinipes*, *O. reniformis*,
Ancistrocerus parietum, *Gymnomerus*
laevipes (Vespidae) (ROSA 2006,
PAUKKUNEN et al. 2015)

Palaeartic species. Collected in the
pre-Alpine region of Slovenia.



Slika 69: *Pseudospinolia neglecta*, samec iz Lukovice, zbirka PMSL

Fig. 69: *Pseudospinolia neglecta* male from Lukovica, coll. PMSL

Spinolia Dahlbom, 1854

Spinolia dallatorreana (Mocsáry, 1896)

ROSA & SOON 2012: Slovenia

Piran, 1. - 15. VI. 1963, 1♂, J. Heinrich leg., NMLS

Podčetrtek, B. - Bistrica ob Sotli?, 13. 7. 1938, 1♂, E. Jaeger leg., PMSL (slika/Fig. 70)

Gostitelj: *Hemipterochilus bembeciformis*
(Vespidae) (LINSENMAIER 1959)

Vzhodnomediterranska vrsta. Najdena v
subpanonskem in submediteranskem
območju Slovenije.

Host: *Hemipterochilus bembeciformis*
(Vespidae) (LINSENMAIER 1959)

East Mediterranean species. Collected in the
sub-Pannonian and sub-Mediterranean
regions of Slovenia.

Spinolia lamprosoma (Förster, 1853)

Strunjan, UL94, 22. 6. 1994, 1♂, A. Gogala leg., PMSL (slika/Fig. 71)

Gostitelj: *Paragymnomerus spiricornis*
(Vespidae) (LINSENMAIER 1959), a ta
podatek pripada tesno sorodni vrsti *S.*
segusiana

Vzhodnomediterranska vrsta,
zahodnomediterranska oblika je
obravnavana kot ločena vrsta *S. segusiana*.
Najdena v submediteranskem območju
Slovenije.

Host: *Paragymnomerus spiricornis* (Vespidae)
(LINSENMAIER 1959), but this record refers
to the closely related *S. segusiana*

East Mediterranean species, the West
Mediterranean form is treated as a distinct
species *S. segusiana*. Collected in the sub-
Mediterranean region of Slovenia.



Slika 70: *Spinolia dallatorreana*, samec iz Bistrice ob Sotli (?), zbirka PMSL

Fig. 70: *Spinolia dallatorreana* male from Bistrica ob Sotli (?), coll. PMSL



Slika 71: *Spinolia lamprosoma*, samec iz Strunjana, zbirka PMSL

Fig. 71: *Spinolia lamprosoma* male from Strunjan, coll. PMSL

Stilbum Spinola, 1806

Stilbum calens Fabricius, 1781

Stilbum calens zimmermanni Linsenmaier, 1959

ROSA & SOON 2012: Slovenia

Brje pri Komnu, VL07, 18. 7. 1993, 1♀, A. Gogala leg., PMSL (slika/Fig. 72)

Sečovlje, Fontanigge, UL93, 10. 7. 1994, 1♂, A. Gogala leg., PMSL

Gorjansko, UL97, 22. 8. 2010, 1♀, photo A. Gogala

Gostitelj: *Megachile (Chalicodoma)* sp.
(Megachilidae) (AGNOLI in ROSA 2016, po
INVREA 1922)

Južnoevropska in srednjeazijska vrsta.
Najdena v submediteranskem območju
Slovenije.

Host: *Megachile (Chalicodoma)* sp.
(Megachilidae) (AGNOLI & ROSA 2016,
after INVREA 1922)

South European and Central Asian species.
Collected in the sub-Mediterranean region
of Slovenia.

Stilbum cyanurum (Forster, 1771)

VOGRIN 1955: Gorica, coll. A. Hentsch

ROSA & SOON 2012: Slovenia

Solkan, Šmaver, UL99, 22. 6. 2011, photo J. Kamin

Gostitelji: ose in čebele, ki gradijo izpostavljena gnezda iz blata: *Delta unguiculatum*, *Katamenes arbustorum* (Vespidae), *Sceliphron* spp. (Sphecidae) in *Megachile (Chalicodoma)* spp. (Megachilidae) (AGNOLI in ROSA 2016)
Kozmopolitska vrsta Starega sveta. Najdena v submediteranskem območju Slovenije.
Primerek iz Hrvaške je v zbirki E. Jaegera.

Hosts: wasps and bees which build exposed mud nests: *Delta unguiculatum*, *Katamenes arbustorum* (Vespidae), *Sceliphron* spp. (Sphecidae) and *Megachile (Chalicodoma)* spp. (Megachilidae) (AGNOLI & ROSA 2016)
Old World cosmopolitan species. Collected in the sub-Mediterranean region of Slovenia.
A specimen from Croatia is in the E. Jaeger collection:

Hr/Cro: Bakar, 10. 7. 1910, 1♂, A. Taubert leg., PMSL (slika/fig. 73)



Slika 72: *Stilbum calens*, samica iz Brij, zbirka PMSL

Fig. 72: *Stilbum calens* female from Brje, coll. PMSL



Slika 73: *Stilbum cyanurum*, samec iz Bakra, Hrvaška, zbirka PMSL

Fig. 73: *Stilbum cyanurum* male from Bakar, Croatia, coll. PMSL

Vrsta umaknjena s seznama / Species omitted from the list

Cleptes putoni Buysson, 1886

ROSA & SOON 2012: Slovenia

MÓCZÁR (1998) je to vrsto zabeležil za Slovenijo, vendar je najdišče Krapina na Hrvaškem.

MÓCZÁR (1998) recorded this species for Slovenia, but the locality Krapina is situated in Croatia.

Zaključki

Za ozemlje Slovenije je navedenih 84 vrst zlatih os (Chrysididae). Med njimi je nekaj redkih vrst, kot so na primer vzhodnomediterranske *Chrysura filiformis*, *Chrysis jucunda* in *Spinolia lamprosoma*. Vrsta *Cleptes putoni* Buysson je bila v preteklosti pomotoma zabeležena za Slovenijo. Največ vrst je bilo zbranih na Krasu in v okolici Podčetrтка v Posotelju, kar je posledica večje dejavnosti raziskovalcev na teh območjih. Slovenska favna zlatih os je neenakomerno in preslabo preiskana. Veliko vrst, znanih v sosednjih državah, lahko pričakujemo tudi v Sloveniji. Evropska favna zlatih os šteje 484 vrst (ROSA, LIVORY in BALDOCK 2015).

Zahvale

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Conclusions

84 species of cuckoo wasps (Chrysididae) were found in the territory of Slovenia. Among them are some rare species, such as East Mediterranean *Chrysura filiformis*, *Chrysis jucunda* and *Spinolia lamprosoma*. The species *Cleptes putoni* Buysson had been erroneously attributed to Slovenia in the past. Most species were collected in the Karst and in the surroundings of Podčetrtek in Posotelje – the result of greater activities by researchers in these areas. Slovenian fauna of cuckoo wasps is unevenly and inadequately investigated. Many species known in neighbouring countries are expected in Slovenia as well. The European fauna includes 484 species (ROSA, LIVORY & BALDOCK 2015).

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