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**PLATYCRANUS (GENISTOCAPSUS) BOREAE SP. NOV. FROM  
SLOVENIA (HEMIPTERA: HETEROPTERA:  
MIRIDAE: ORTHOTYLINAE)**

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**Abstract** – *Platycranus boreae* sp. nov. is described. It was found at the top of Mt. Lipnik in Čičarija, northern Istria, Slovenia, about 800 m above sea level. Its food-plant is *Genista sericea*, which is endemic to the western part of the Balkans. With the exception of *P. (G.) wagneri*, the new species is the smallest member of the subgenus *Genistocapsus*. Very short antennae distinguish it from other completely green species of the subgenus *Genistocapsus*, they are similar only in *P. jurineae*, *P. remanei*, *P. minutus* and *P. orientalis*. It can be distinguished from them by the proportions, measures of some body parts, and the shape of the parameres. The most closely related species seems to be *P. jurineae* from the Ukraine.

**KEY WORDS:** Hemiptera, Heteroptera, Miridae, Orthotylinae, new species, Slovenia

**Izvleček** – *PLATYCRANUS (GENISTOCAPSUS) BOREAE* SP. NOV. IZ SLOVENIJE (HEMIPTERA: HETEROPTERA: MIRIDAE: ORTHOTYLINAE)

Opisana je nova vrsta stenice, *Platycranus boreae* sp. nov. Najdena je bila na vrhu Lipnika v Čičariji, v severni Istri, približno 800 m nad morjem. Njena hranilna rastlina je svilnata košeničica (*Genista sericea*), ki je endemična v zahodnem delu Balkana. Nova vrsta je, razen vrste *P. (G.) wagneri*, najmanjša predstavnica podrodu *Genistocapsus*. Zelo kratke tipalke jo ločijo od ostalih povsem zelenih vrst podrodu *Genistocapsus*, le pri vrstah *P. jurineae*, *P. remanei*, *P. minutus* in *P. orientalis* so podobne. Od njih jo lahko ločimo po telesnih razmerjih, dolžini nekaterih telesnih delov in obliki paramerov. Njej najožje sorodna vrsta je verjetno *P. jurineae* iz Ukrajine.

KLJUČNE BESEDE: Hemiptera, Heteroptera, Miridae, Orthotylinae, nova vrsta, Slovenija

## Introduction

The Karst, or Kras in Slovene, is a calcareous plateau near the Gulf of Trieste, which gave the name to all karst phenomena in the world. It was deforested in early history by people who raised sheep and goats and was long known as a windy, stony desert. Nowadays, the land is largely left unmanaged, so that the region is in the natural process of reforestation. The exposed ridges of the highest peaks in the Karst and Istria, however, show much slower forest growth, if any. They reach something over 1000 m above sea level, not enough to be over the forest limit. But a strong, cold bora wind blows here, especially in winter, causing many tree and bush seedlings to dry up because they cannot get moisture from the frozen ground. Summer droughts add their role to the effect. Endemic grassland fauna, which is found here, is a proof of the permanent existence of grassland refuges on Karst peaks, where some steppe species survived and evolved into distinct species or subspecies.

The meadows on Mt. Vremščica (1027 m) are home to the endemic heteropteran bug *Dimorphocoris saulii*, which is wingless and thus cannot fly. Its foodplants are grasses of the genus *Bromus*. The nearest location where a relative species, *D. servadeii*, was discovered, is Monte Catria in the Italian Apennines, on the other side of the Adriatic sea. The common ancestor of both species probably also lived in the dry northern Adriatic sea bed during the glaciation periods of the Pleistocene, when the steppes were much more widely distributed.

The other endemic heteropteran species is *Halticus henschii* that has a broader living area. It was described from Gorica and lives on Mt. Nanos, Čaven and on the Karst plateau. Its foodplant is *Genista sericea*. Its closest relative, *H. puncticollis*, is distributed from Montenegro and Bosnia and Herzegovina to the east. The records of this species from Italy and Slovenia refer to *H. henschii*.

In addition to these species we discovered *Platycranus boreae* sp. n. recently on Mt. Lipnik (804 m) in Čičarija (northern Istria).

### *Platycranus (Genistocapsus) boreae* sp. nov.

**Holotype:** male, mountain Lipnik above the village Zazid in Čičarija, northern Istria, Slovenia, 800 m, July 7, 2001. 13°58'E, 45°28'N, UTM: VL 13.

**Paratypes:** 1 male, same locality, June 17, 2000; 5 males and 12 females, same locality, July 7, 2001; 1 male and 2 females, same locality, August 2, 2001.

The type material is deposited in the collection of the Slovenian museum of Natural History (PMSL) in Ljubljana (Slovenia).

A small member of the subgenus *Genistocapsus* Wagner 1956. The male is elongated with parallel sides, 3.4 - 3.6 mm long, the female oval, 3.1 - 3.4 mm long (Fig. 1). The body is 3.5 - 3.89 x as long as the pronotum is wide in males, 3.39 - 3.78 x as long in females. Predominantly green, but some parts of the body may be yellow, above all in dried specimens: the head, front part of pronotum and scutellum, outer parts of the base of hemelytra, and antennae. The membrane is smoky gray, membrane veins are yellow. Apical parts of antennae (segments 3 and 4) and tarsal segments 3 are dark brown.

The head is triangular viewed from above, with small eyes in females, shorter with bigger eyes in males. The vertex is bordered by a lightly curved basal ridge, 2.22 - 2.75 x as wide as eye in males, 2.87-3.2 x as wide in females.

Antennae are very short, segment 1 is 0.62 - 0.67 x as long as the vertex is wide in males, 0.52 - 0.54 x as long in females. Segment 2 is 0.96 - 1.04 x as long as the pronotum is wide in males and 0.82 - 0.89 x as long in females.

The rostrum reaches the base of the hind coxae and is widened at the joint of segments 2 and 3, its apical segment is black.

Setae are light and of two types, simple projected ones and flattened scale-like hairs with silvery lustre underneath.

The male genital capsule is as long as wide, with a characteristic triangular impression of the wall dorsally between the genital opening and the base of the capsule (Fig. 5). The impression or fovea has sharp edges and is very evident. At first sight it looks like a part of the genital opening. Right paramere is rhomboid with short apical process (Fig. 2). Left paramere has a long up-curved apical process, which is not seen from all angles of view (Figs. 3 and 4).

### Measurements:

Total length,	♂: 3.4–3.6 mm (3.5 mm on average, holotype: 3.5 mm),	♀: 3.1–3.4 mm (3.2 mm on average).
Head width,	♂: 0.75–0.8 mm,	♀: 0.8 mm.
Pronotum width,	♂: 0.9–0.95 mm,	♀: 0.85–0.9 mm.
Pronotum length,	♂: 0.45–0.5 mm,	♀: 0.4–0.45 mm.
Hemelytra length,	♂: 2.8–3.1 mm,	♀: 2.4–2.6 mm.
Hemelytron width,	♂: 0.5–0.6 mm,	♀: 0.55–0.6 mm.
Antennae length,	♂: 2.3–2.4 mm,	♀: 1.9–2.2 mm.
Antennal segment 1 length,	♂: 0.25–0.3 mm,	♀: 0.25–0.3 mm.
Antennal segment 2 length,	♂: 0.9–0.95 mm,	♀: 0.7–0.8 mm.
Antennal segment 3 length,	♂: 0.8–0.85 mm,	♀: 0.65–0.75 mm.
Antennal segment 4 length,	♂: 0.35–0.4 mm,	♀: 0.35–0.4 mm.
Hind tibia length,	♂: 1.55–1.7 mm,	♀: 1.5–1.6 mm.

**Proportions:**

Total length/head width,	♂: 4.67–4.87,	♀: 3.81–4.25.
Total length/pronotum width,	♂: 3.5–3.89,	♀: 3.39–3.78.
Vertex width/eye width,	♂: 2.22–2.75,	♀: 2.87–3.2.
Antennal segment 1 length/ vertex width,	♂: 0.62–0.67,	♀: 0.52–0.54.
Antennal segment 2 length/ head width,	♂: 1.16–1.29,	♀: 0.92–1.02.
Antennal segment 2 length/ pronotum width,	♂: 0.96–1.04,	♀: 0.82–0.89.
Head width/pronotum width,	♂: 0.79–0.84,	♀: 0.85–0.89.

**Differential diagnosis:** The smallest member of the subgenus *Genistocapsus*, with the exception of *P (G.) wagneri* Carapezza 1997, which is partly black on the dorsal side. The short antennae distinguish it clearly from all other completely green species except *P (G.) jurineae*, *P (G.) remanei*, *P (G.) minutus* and *P (G.) orientalis*.

*P jurineae* Putshkov 1985 from the Ukraine seems to be the most closely related. The shape of its right paramere is sickle-shaped (illustrated in Putshkov 1985), while rhomboid in *P boreae*, but if observed at different angles, the differences are not so great. The male of *P jurineae* is longer, more elongated, the difference in length of males and females is larger. The antennal segments 2 are usually longer than in *P boreae*. *P. jurineae* lives on a different host plant, even belonging to a different family.

*P remanei* Wagner 1955 is longer, its antennal segment 2 is longer and its parameres are shaped differently. It lives in France and Spain. *P minutus* Wagner 1955 is of a similar figure, but has also proportionally longer antennal segments and a shorter rostrum. Its parameres are also different and it lives only in Sierra Nevada in Spain. *P (G.) orientalis* Linnavuori 1965 from Turkey is much more elongated.

The dorsal impression or fovea of the genital capsule is also present in *P jurineae*, but not reported in other species. The long up-curved apical process of the left paramere is similar to *P (G.) jurineae*, *P (G.) concii* Tamanini 1987 and *P wagneri*, but not characteristic for other species.

The only other *Platycranus* species living in Slovenia are *P (G.) metriorrhynchus* Reuter 1883, which is much longer and has much longer antennae, and *P erberi* Fieber 1870, which belongs to the nominate subgenus.

**Tab. 1:** Comparison of some biometrical data among the species of *Platycranus (Genistocapsus)* with short antennae. Data on species other than *P. boreae* are taken from Wagner 1974 and Putshkov 1985. Some additional measurements of *P. jurineae* were kindly provided on three male and five female specimens by I. Kerzhner in St. Petersburg (in parenthesis). The measurements that most clearly distinguish the new species to the others are written in bold.

	Total length in mm		Total length/ pronotum width		Antennal segment 2 length/ pronotum width	
	♂	♀	♂	♀	♂	♀
<i>P. boreae</i>	<b>3.4–3.6</b>	3.1–3.4	<b>3.5–3.89</b>	3.39–3.78	0.96–1.04	<b>0.82–0.89</b>
<i>P. jurineae</i>	3.8–4.4	3.0–3.5 (2.87–3.5)	(4.0–4.26)	(3.19–4.0)	0.95–1.1 (1.08–1.16)	0.95–1.1
<i>P. remanei</i>	4.1–4.6	3.3–4.0	4.2–4.3	3.9	1.20–1.25	1.15–1.20
<i>P. minutus</i>	3.8–4.2	3.5–4.1	4.0	4.0	1.25–1.30	1.15–1.18
<i>P. orientalis</i>	4.5–4.7	3.3–4.0	4.5	4.0–4.2	1.12–1.18	1.05

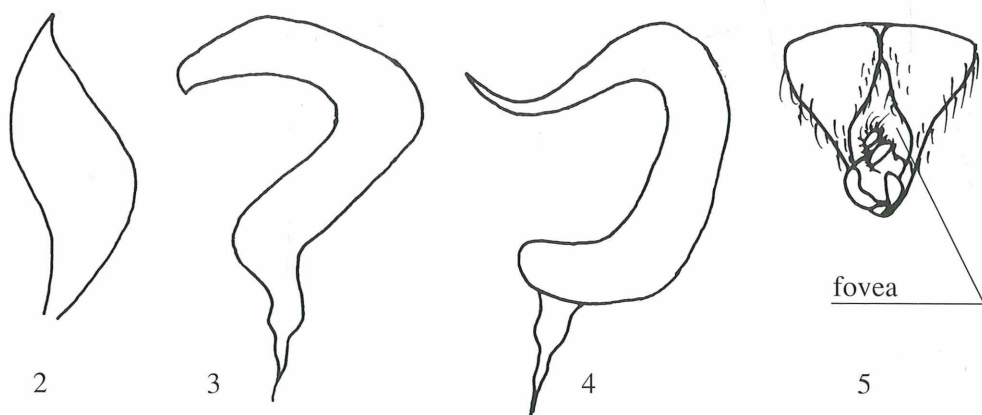
**Ecological remarks:** The new species lives on the plant species *Genista sericea* Wulfen 1788 (Fabaceae), which is endemic to the western part of the Balkans from north-east Italy to Albania (Wraber 1990). Although it is distributed along all mountain ridges in the Karst and Istria, the new species of *Platycranus* has been found only on Lipnik, which was probably an isolated grassland refuge in the past. It is possible, of course, that some new localities of the new species will be found in the future. But on Nanos, Gora, Čaven and Trstelj to the north, *Genista sericea* is populated by another endemic heteropteran species, *Halticus henschii*. This species has been found also on Mt. Lipnik, but is not very numerous there. Both endemic species probably survived and evolved in separate grassland refuges.

*Jurinea mollis* is also present in the habitat of *P. boreae*. This is of interest because the most closely related species, *P. jurineae*, lives on *Jurinea stoechadifolia* in the calcareous region of the Ukrainian steppe. Sometime in the past a transition from *Genista* to *Jurinea* should have happened, and if both plants are present in the same habitat, this is possible. The connection between the Ukrainian steppes and steppe refuges along the Mediterranean coast obviously existed in the past. This can also be illustrated by the record of *Litoxenus tenellus*, a steppe species known before only from Romania, Russia and Ukraine, and found on Mt. Lipnik on June 5, 2001 in the same habitat as *Platycranus boreae*.

*Platycranus boreae* was collected from June (one male specimen) through July, when many males and females were found, to the beginning of August, when two females and a male were found together with several larvae of the second generation.



**Fig. 1:** *Platycranus boreae* sp. n., left male (holotype), right female (paratype).



**Fig. 2-5:** *Platycranus boreae* sp. n., 2: right paramere, 3 and 4: left paramere in different angles, 5: genital capsule.



**Fig. 6:** The habitat of *P. boreae* sp. n., exposed calcareous ridge of Mt. Lipnik.

***Derivatio nominis:*** The new species is named after bora, the strong and cold northern wind (burja in Slovene, borea in Latin), a strong elemental force in the habitat of *P. boreae*, situated on the exposed mountain ridge.

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I am grateful to Andrej Kapla and Matija Gogala, who carried the heavy sweeping machine to the top of Mt. Lipnik, and collected bugs with it. The short *Genista sericea* is very unsuitable for collecting with a net, which is inefficient in the collection of bugs on it. I would also like to thank I. Kerzhner from St. Petersburg for suggestions, the examination of *Platycranus jurineae* specimens, and for sending a pair of *Platycranus jurineae* paratypes.

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