

## PART II – ANIMAL BIOLOGY

THE CUCKOO-BEE *NOMADA PLEUROSTICTA* HERRICH-SCHÄFFER 1839  
(HYMENOPTERA: APIDAE) A NEW RECORD FOR THE ROMANIAN FAUNA

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## ABSTRACT

*Nomada pleurosticta* H. Sch., a cleptoparasite in the nest of the mining bee *Andrena polita* Sm. is for the first time recorded in the Romanian fauna. With this species, the cuckoo-bee genus *Nomada* in Romania counts 77 species.

**Key words:** *Nomada pleurosticta*, cuckoo-bee, new record, Romania

## Introduction

The bee genus *Nomada* comprises over 800 described species, being the most diversified group of cuckoo bees worldwide (Michez *et al.*, 2019). In Europe, the genus numbers 208 species (Smit, 2018).

The genus includes small and medium wasps-like bees (4-17 mm) with reduced hairs and variable colour patterns such as black, yellow, white and red (Michez *et al.*, 2019). Many species have large intraspecific colour variability and thus are problematic to identify.

This genus is largely distributed almost all over the globe, being more diversified in the Holarctic region, Mediterranean basin being particular rich in species (Smit, 2018; Michez *et al.*, 2019).

The bees of this genus never build their own nests, but are brood parasites of the ground nesting solitary bees mainly from genus *Andrena* (Andrenidae), but also from bee genera *Lasioglossum* (Halictidae), *Panurgus* (Andrenidae), *Melitta* (Melittidae) and *Eucera* (Apidae) (Michez *et al.*, 2019).

In Romania, the genus *Nomada* counts 76 species (Ban-Calefariu, 2009; Smit, 2018; Tomozii, 2020).

*Nomada pleurosticta* H. Sch. is a cleptoparasite in the nest of the mining bee *Andrena polita* (Westrich, 1989). The species prefers habitats such as xero-thermophilous grasslands, ruderal sites, woodland edge, quarries, sandy and clay pits. *Nomada pleurosticta* has one generation, flying from June to August (Scheuchl & Willner, 2016). The species is distributed from North Africa (Tunis),

Iberian Peninsula (Spain), Central, South and Southeast Europe to Caucasus, in the north Asia (Siberia), in south to Middle East (Iran, Turkey) (Scheuchl & Willner, 2016; Smit, 2018; Ascher & Pickering, 2020).

In this note, the cuckoo-bee *Nomada pleurosticta* H. Sch. is presented as the 77<sup>th</sup> species of the genus *Nomada* recorded in Romania, along with a description of the captured specimen and distribution data of its host, *Andrena polita* Sm.

## Material and methods

The examined specimen belongs to the personal collection of the author. The keys used for identification of the species belong to Osytshnjuk (1978) and Smit (2018). The photos of the habitus and structures were made using an Olympus C-5060 Wide Zoom camera adapted to an Olympus SZ61 stereomicroscope. The quality of several images was improved using Helicon Focus software.

Terminology used to describe the external morphology of the male specimen follows Michener (2000) and Smit (2018).

Abbreviations: T- tergum; St. – sternum

## Results and discussions

Examined material:

Fânețele Seculare Ponoare - Bosanci Nature Reserve [N47°34'22", E26°15'28"], Suceava County, 10.07.2020, 1 ♂, on *Senecio erucifolius*, leg. B. Tomozii.

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### Diagnosis of the male

Size: 9,5 mm

Head black, with yellow coloration on the apical part of the clypeus (like a narrow stripe), on malar areas, and basal half of the mandibles (3).

Labrum black with a very narrow, impunctate area at base. In the middle with a visible, pointed tooth. A small, red, narrow spot is found between the tooth and the base of labrum; the apical part of labrum also reddish (4).

Mandibles simple, with a small tooth on the outer surface (5).

Scape and pedicel black (last one deepened into the top of the first one), flagellum segments reddish with dorsal surface black, which is fading gradually to the last segments. First flagellar segment is shorter than the second one (6). The inferior part of flagellar segments 3-4 roundly prominent, segments 5-8 with small pointed tubercles (7).

Mesoscutum and scutellum with strong and close punctation, the interspaces narrow and shiny. Scutellum gibbous. Thorax black, pronotal lobes and tegulae reddish. Axillae narrow reddish. Thorax with silvery hairs, longer on scutellum, mesepisternum and propodeum.

Terga with dense punctation, excepting the basal half and lateral apical part of T1, which almost lack of puncture and the marginal zones of T1-T6. On the middle of the apical half of T1 the punctures are superficial and less dense comparing with the rest of terga. Abdomen red, with black coloration as follows: T1 basally half, T2 basally with 2 lateral spots, T4-6 with black basal stripes (1,2). The sternites red, with black coloration basally.

Legs red, all femora, middle and hind tibiae partially with black coloration. Inferior part of hind femora covered with dense, white hairs (9).

T7 broad, visible punctate, notched apically (8).

Gonostylus is narrowing to the apex, where is visible pointed, slightly curved inwards (10, 11). St. 7 and St. 8 as in Figs. 12, 13.

The cuckoo-bee *Nomada pleurosticta* has never been mentioned in the main papers published with regard to this genus in Romania (Móczár & Schwarz, 1968; Ban-Calefariu, 2006, 2009), nor in the recently published paper of Smit (2018) regarding the European *Nomada*.

A male specimen of *Nomada pleurosticta* was collected from the Ponoare-Bosanci Nature Reserve in July 2020. Two males of *Andrena polita* (Fig. 14-15), the host of *Nomada pleurosticta*, were also collected in June 2019 on *Inula britannica*. The mining bee *Andrena polita* lives in various habitats, both in dry and wet regions, although it seems to

prefer relatively moist areas (Osytshnjuk, 2005; Radchenko, 2015). The collection locality, Ponoare - Bosanci Nature Reserve, is characterized by a dry climate, specific to Ponto Sarmatic steppes, with a vegetation mosaic due to a divers landscape, mainly with xero-thermophilous vegetation, but also with xero-mesophilous and mesophilous vegetation and in less extent with hygrophilous one (Morariu, 1965).

The distribution data of *Andrena polita* in Romania shows that this species occurs in all regions of the country. In comparison with its host, *Nomada pleurosticta* might have a more localized presence (Fig.16).

*Nomada pleurosticta* is a Near Threatened (NT) species in IUCN Red List (2014). The finding of this species in Ponoare - Bosanci Nature Reserve might be evidence of its still well preserved habitats that serve as a refuge for a diverse wild bee fauna, which require further research.

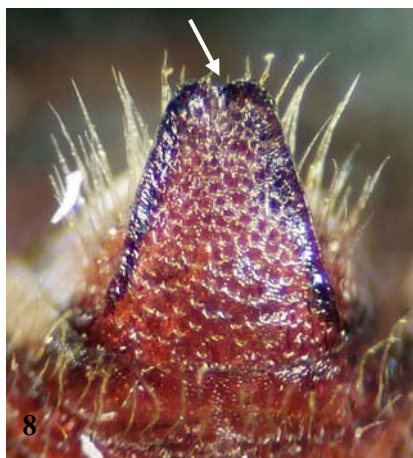
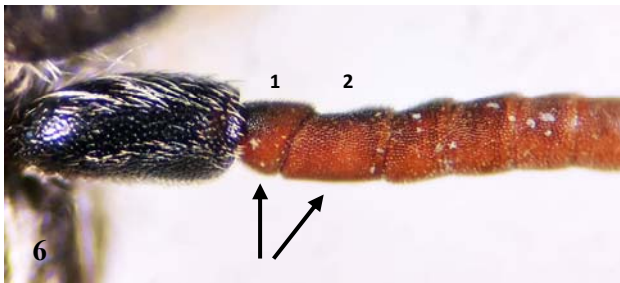
### Acknowledgements

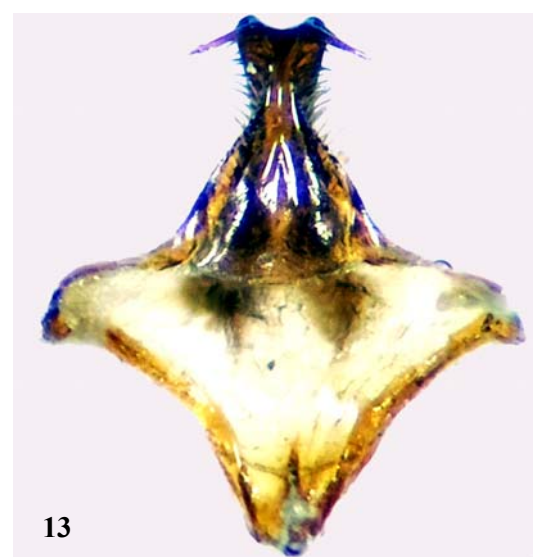
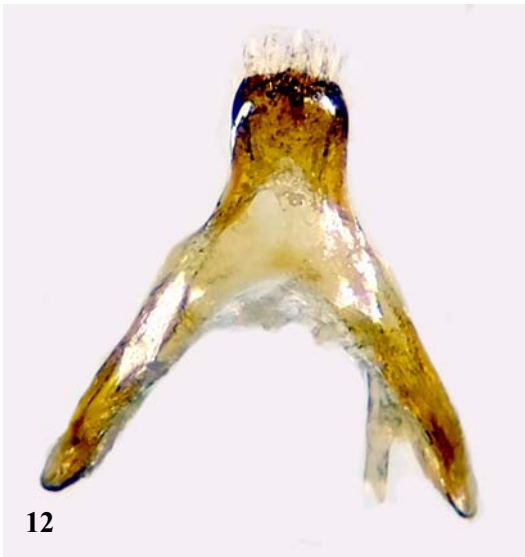
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**Figs. 1-2: *Nomada pleurosticta* H. Sch. male habitus:** 1.dorsal view; 2. lateral view  
**Figs. 3-13: Diagnostic characters:** 3. Head (frontal view); 4. Labrul (dorso-lateral view); 5. Left mandible (dorsal view); 6. First flagellar segments (lateral view); 7. Antennal flagellum (lateral view); 8. Tergum 7 (dorsal view); 9. Hind femora (ventral view); 10. Genitalia (dorsal view); 11. Genitalia (ventral view); 12. Sternum 7; 13. Sternum 8.



Figs. 14-15: *Andrena polita* Sm. male habitus  
14.dorsal view; 15. lateral view

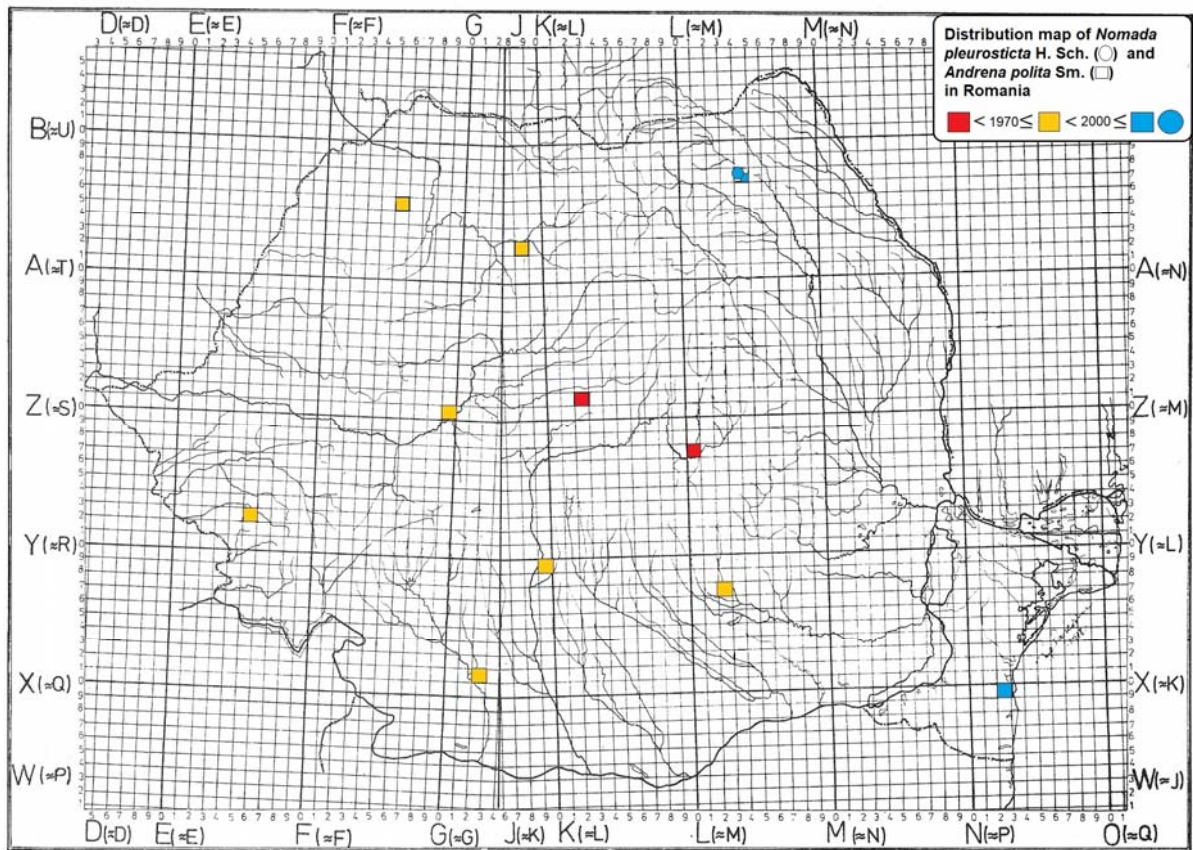


Fig. 16 - Distribution map of *Nomada pleurosticta* H. Sch. (circle symbol)  
and of its host, *Andrena polita* Sm. (square symbol) in Romania