

# Field report and description of a new individual form of *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* (Coleoptera: Carabidae)

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**Abstract.** A new individual form of *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* (Coleoptera: Carabidae). The author makes a concise field report and describes a new individual form of *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* and some particularities about the nominate species, other individual forms and the habitat in Normandy, France.

**Samenvatting.** De auteur omschrijft kort en bondig de biotoop en beschrijft een nieuwe individuele vorm van *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* (Coleoptera: Carabidae) en een aantal bijzonderheden over de nominatvorm, andere individuele vormen en de habitat in Normandië, Frankrijk.

**Résumé.** L'auteur fait un rapport succinct sur le terrain et décrit une nouvelle forme individuelle de *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* (Coleoptera: Carabidae), ainsi que quelques particularités concernant l'espèce nominative et l'habitat en Normandie, France.

**Keywords:** *Carabus* – *Chrysocarabus* – *auronitens* – *normannensis* – Individual form – Normandy.

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## Introduction

The forests of the French Orne region and the immediate surroundings are home to a race of *Carabus auronitens* Fabricius, 1792 that differs significantly from the typical form, and this counts especially for the female specimens. This natio<sup>1</sup> was named *normannensis* by Sirguy in 1931. Furthermore, natio *normannensis* displays an obvious disposition towards individual colour variations. Other populations which show this high tendency towards hyperchromatism, melanisation, cupreonisation and hypochromatism can be found in the region of Neupré (Liège, Belgium) and in the Finistère and Côtes-du-Nord region in Bretagne (France).



Fig. 1: *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* (natio *normannensis* Sirguy, 1931); France, Normandie, Forêt d'Ecouves, v–vi.2016, leg. & coll. I. Peeters © I. Peeters.

The Ecouves forest extends over 15,000 hectares, in a varied and hilly landscape and culminates at 417 m above sea level, the highest point in Normandy. The forest and satellite woodlands consist mainly of old spruce, pine, oak and beech. My field report is restricted to the eastern parts of the Ecouves forest, where in May and June 2016 I placed pitfalls in four different locations. Those specific biotopes were quite humid and shady,

with a serious amount of undergrowth, as depicted in the photos in figs. 2 and 3.

*Carabus auronitens* can be considered as a rather stenotopical forest species, and within its distribution area it more or less seems to avoid pine and spruce forests, as well as oak forests. In the Orne region, the natio *normannensis* prefers rather humid, deciduous forest where beech trees (*Fagus*) are abundant and the humus layers rich. However, in one of the four investigated areas poplars (*Populus*) are dominant, and in combination with an undergrowth consisting mainly of stinging nettle (*Urtica*). Natio *normannensis* was also found here, in this less typical biotope, and as expected in much smaller numbers in comparison to the three other spots.

In the Orne region, natio *normannensis* becomes active during the first warm days of April, but does not hesitate to disappear again when the temperatures plummet. Despite the fact that it is mainly a nocturnal species, the species typica shows an average of 30–45% diurnal activity during the reproduction period (Thiele & Weber 1968). I encountered two specimens walking around during daytime. Taking all of this into account, it seemed preferable pitfalls should be placed during the peak moments, e.g. mid May to mid June. So on the 5<sup>th</sup> of May I left Belgium to place pitfalls in the eastern part of the Ecouves forest, and I would return on the 6<sup>th</sup> of June to collect them. However, May 2016 turned out to be a rather cold month, especially during the night, when temperatures were almost hitting the freezing point! Fearing the worst, I was very happy to find out that by the end of that month the conditions during the night picked up again.

<sup>1</sup> Natio: a group of individual specimens of the same subspecies which are geographically isolated from one another. Those specimens display a difference in morphological features that separates them from an other natio of that same subspecies.



Figs. 2–3. Habitats in the Forêt d'Ecouves, dept. Ornes, Normandie, France, May 2016, © I. Peeters.

Within the natio *normannensis* range, four principal types of individual forms <sup>2</sup> can be encountered: hyperchromatism, hypochromatism, cupreonisation and melanisation and, in very rare cases, a combination of two or more.

**Hyperchromatism:** excessive pigmentation, ranging from slightly coppery red to an almost dark purple.

**Hypochromatism:** lack of pigmentation, in particular the colour red. The colour of hypochromatic specimens ranges from bright green to darkish blue.

**Cupreonisation:** metallic/bronze overall shine, of genetic origin, ranging from a greenish blue colour up to a dark maroon.

**Melanisation:** two different variations, e.g. holomelanisation (head, pronotum and elytra are very darkened) and hemimelanisation (head and pronotum keep the colour of the species typica, elytra very darkened).

On the 6<sup>th</sup> of June I returned to empty and collect the pitfalls and about 10% of the traps was destroyed by wildlife (foxes, deer, wild boars, ...), as they get drawn by the smell of wine vinegar and salt (attractant). Two of the four habitats yielded a less than expected number of individual forms (less than 4%). However, the presence of individual forms was more abundant at the two other localities, with an average of 18%.

Following individual forms of *Carabus* (*Chrysocarabus*) *auronitens* ssp *auronitens* (natio *normannensis* Sirguy, 1931) were collected by the author between 5.v.2016 and 6.vi.2016 in the Ecouves forest.

<sup>2</sup> Individual form: the result of (a) genetic combination(s) or mutation – mostly caused by inbreeding and/or geographical and meteorological conditions.





- **aurea** Sirguey, 1931: pronotum darkish red, elytra gold/reddish. A rather common form (Fig. 4);

- **viridicollis** Sirguey, 1931: head, pronotum and elytra green. According to Lasalle it's a very rare individual form (Fig. 5);

- **deledicquei** Culot, 1981: substantial melanisation (black) of the pronotum. Rare (Fig. 6);

- **charlottae** Venet, 1926: partial hemimelanisation in combination with hyperchromatism: Head and pronotum red, and a black/red luster on the elytra. Rather rare (Fig. 7);

- **gervaisi** Le Moul, 1913: hemimelanisation, with a black luster on the elytra, but the green shines through. Seems to be rather common (Fig. 8);

- **letaqi** Antoine, 1919: head and pronotum fiery red, and the elytra display a black hemimelanisation. Locally not rare (Fig. 9);

- **bourgini** Balazuc, 1946 × **letaqi** Antoine, 1919: natural hybrid, displaying perfectly black tibiae and femora in combination with hemimelanisation. Not a post-mortem alteration. Thus far the only specimen found by the author (Fig. 10);

- **marginatus** Sirguey, 1931: hemimelanisation. Elytra are black with green edges. This specimen shows a partial hemimelanisation of the elytra. Very rare in the natio *normannensis* (Fig. 11);

- **cauvini** Sirguey, 1931: apparently the equivalent of the ssp. *cupreonitens*, endemic tot the Cérisy forest in the Calvados region. Overall a very rare individual form. This specimen (Fig. 12) displays a combination of cupreonisation and hyperchromatism;

- **cauvini** Sirguey, 1931: cupreonisation. The specimen depicted in Fig. 13 shows a more greenish/coppery shine, whereas the specimen in Fig. 14 is an intermediate form between *cauvini* and *tourteau*;

- **tourteau** Sirguey, 1931 × **bourgini** Balazuc, 1946: cupreonisation. The form *tourteau* is to be considered as an "unclouded" *cauvini*. All over greenish with the distinctive shine of cupreonisation. This specimen also features black tibiae and femora, and is a natural hybrid between the individual forms *tourteau* and *bourgini* (Fig. 15). First specimen found until now by the author.

During the examination of the groundbeetles caught, my eye fell upon a specimen which displayed a very distinct colour aberration (Fig. 16), unmistakably an overall cupreonisation, combined with a perfect and complete hemimelanism of the elytra; the head and pronotum display a greenish/cupreous shine while the elytra are perfectly black.



Fig. 15. *Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* forma *ivani* nova, Holotype, France, Orne, Forêt d'Ecouves, 5.v-6.vi.2016, leg. & coll. I. Peeters, © I. Peeters.

The International Code of Zoological Nomenclature only acknowledges species and subspecies, but does not admit natio, aberration and individual forms. However, it is my humble opinion that a thorough pursuit concerning the nomenclature of individual forms of the genus *Carabus* contributes to the knowledge, taxonomy as well as mutual understanding between carabologists – professionals or amateurs – worldwide. As an illustration to support my idea I would like to bring up the fact that similar specimens (cupreonisation/hemimelanism) are known, and amongst colleagues the term “cauvitacqi” (*cauvini* × *letacqi*) is used to facilitate communication. Therefore I will name this individual form *ivani*, dedicated to my father.

***Carabus* (*Chrysocarabus*) *auronitens* ssp. *auronitens* forma *ivani* nova**

Holotype : 1♂, 23 mm, France, Orne, Forêt d'Ecouves, 5.v-6.vi.2016, leg. & coll. I. Peeters.

### Acknowledgement

A special word of gratitude goes out to my friend P. Stefani, with whom I have already spent some very interesting collection trips, domestic and abroad. I also wish to thank my father, Ivan Peeters, without whom I might not have developed such an interest in nature and wildlife, T. Laurenta for reviewing the English and W. De Prins for the valuable advice.

### Reference

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## Rechtzetting: Gevlamde vlinder (*Endromis versicolora*) (Lepidoptera: Endromidae) toch niet op Oost-Vlaamse soortenlijst

Volgens Sierens *et al.* (2010: 142) bevindt zich in de museumcollectie van het KINA in Gent een vrouwtje van de Gevlamde vlinder (*Endromis versicolora*) uit Berlare (maart 1910). Dit exemplaar werd beschouwd als een bewijs dat de Gevlamde vlinder ooit in Oost-Vlaanderen voorkwam en dit gegeven werd ook als zodanig opgenomen in de nieuwe versie van de *Catalogue of the Lepidoptera of Belgium* (De Prins 2016, te downloaden op [http://www.phegea.org/Documents/CatalogueBelgianLepidoptera\\_2016.pdf](http://www.phegea.org/Documents/CatalogueBelgianLepidoptera_2016.pdf)).

Bij een recent werkbezoek aan de collectie-Malfliet in het KINA merkte Hugo Van Doorslaer terecht op dat het etiket echter niet 'Berlare' als vindplaats vermeldt, maar 'Berlijn' (pers. comm.). De eerdere verwarring was ontstaan omdat het handschrift vrij moeilijk leesbaar was en omdat veruit de meeste exemplaren van de collectie afkomstig zijn uit de onmiddellijke omgeving van Gent en Destelbergen, gelegen op de weg tussen Gent en Berlare. De Gevlamde vlinder dient weer geschrapt te worden van de (historische) Oost-Vlaamse soortenlijst.

Tom Sierens

### Referentie

Sierens T., Sierens D., Van de Kerckhove O., Van Opstaele M. & Kindts B.: De macro-nachtvlinderfauna (Lepidoptera) van Zandig-Vlaanderen tussen Brugge en Gent en van de Scheldepolders in het Meetjesland (1969/1983–2010). — *Phegea* 38(4): 129–142.