



REDISCOVERY OF THE THREATENED BUTTERFLY *NYMPHALIS VAUALBUM* IN CROATIA WITH REMARKS ON ITS HISTORICAL FINDINGS

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After more than 40 years, the nymphalid butterfly *Nymphalis vaualbum* was rediscovered in Croatia. A single specimen was found on Mt. Papuk in the spring area of the Dubočanka stream in July 2004. The habitats on Mt. Papuk are suitable for the species' long term survival; therefore the area was proposed as a NATURA 2000 site for this threatened and protected species. As the species has disappeared from many European countries, this recent record is of great importance and emphasizes the need for further field research efforts to confirm resident populations of the species, its distribution area and population status.

Key words: *Nymphalis vaualbum*, False Comma, distribution, new finding, Croatia

Mihoci, I., Krištović, M. & Šašić, M.: Novi nalaz ugroženog leptira *Nymphalis vaualbum* u Hrvatskoj s osvrtom na povijesne nalaze. *Nat. Croat.*, Vol. 21, No. 1., 259–262, 2012, Zagreb.

Nakon više od 40 godina bijela riđa *Nymphalis vaualbum*, danji leptir iz porodice šarenaca, ponovno je pronađen u Hrvatskoj. Jedna jedinka je uhvaćena u izvorišnom dijelu potoka Dubočanke na planini Papuku u srpnju 2004. godine. Kako se procjenjuje da su za ovu ugroženu i zaštićenu vrstu staništa na Papuku povoljna za preživljavanje u Hrvatskoj, područje oko nalazišta je označeno kao dio ekološke mreže NATURA 2000. Budući da je vrsta izumrla u mnogim europskim zemljama, ovaj je nalaz od velike važnosti te su potrebna ciljana terenska istraživanja da se potvrdi stalna populacija i utvrdi recentno rasprostranjenje i status populacije.

Ključne riječi: *Nymphalis vaualbum*, bijela riđa, rasprostranjenost, novi nalaz, Hrvatska

The threat status of the nymphalid butterfly False Comma *Nymphalis vaualbum* (Denis & Schiffermüller, 1775) is considered Least Concern (LC) in Europe and Vulnerable (VU) in the EU27 countries, since in the last ten years the species distribution area has declined up to 46% (VAN SWAAY *et al.*, 2009; VAN SWAAY *et al.*, 2010b). The species is listed in both Annex II and Annex IV of the EU Habitats Directive (ANONYMOUS, 1992; 1996) and is strictly protected in Croatia (NN 70/05; 139/08; 99/09). It is considered Vulnerable in the Croatian Red List (ŠAŠIĆ & KUČINIĆ, 2004). The species is regionally extinct in Austria, Czech Republic, Estonia, Hungary, Slovakia and Slovenia; and native in Albania, Belarus, Bosnia and Herzegovina, Croatia, Montenegro, Romania, Russia, Serbia and Ukraine (VAN SWAAY *et al.*, 2009). According to VAN SWAAY *et al.* (2009) the species frequently forms temporary

populations across Europe outside Russia, with fluctuating abundance and irruptive population dynamics. It is unclear what causes the declines in the European range, which might result from natural fluctuations. Due to its strong flight and pronounced migratory behavior the population status is uncertain in Europe. Larval host plants are definitively not a limiting factor as it utilizes common plant species such as birches (*Betula* spp.), willows (*Salix* spp.), poplars (*Populus* spp.) and elms (*Ulmus* spp.) (VAN SWAAY *et al.*, 2009; VAN SWAAY *et al.*, 2010a).

Occurrence of the False Comma in Croatia has not been confirmed since Moucha's record in Plitivički Ljeskovac in 1964 (MOUCHA, 1966). The distribution area of this species in Croatia, based on past published records (Fig. 1), covers the continental part of the country (BOHATCH, 1892; ABAFI-AIGNER *et al.*, 1896; KOČA, 1901; GRUND 1916a, 1916b; GUŠIĆ, 1917; MLADINOV, 1973; MARČEC, 2008; LORKOVIĆ, 2009) with several disjunct records in the central mountain area on Mt Velebit, in the Plitvice lakes area and on Mt. Lička Plješivica (Fig. 1) (FRANIĆ, 1910; MOUCHA, 1966; LORKOVIĆ, 2009).

As well as published records, there are specimens of the False Comma deposited in several butterfly collections in the CNHM. These are the following (Fig. 1):

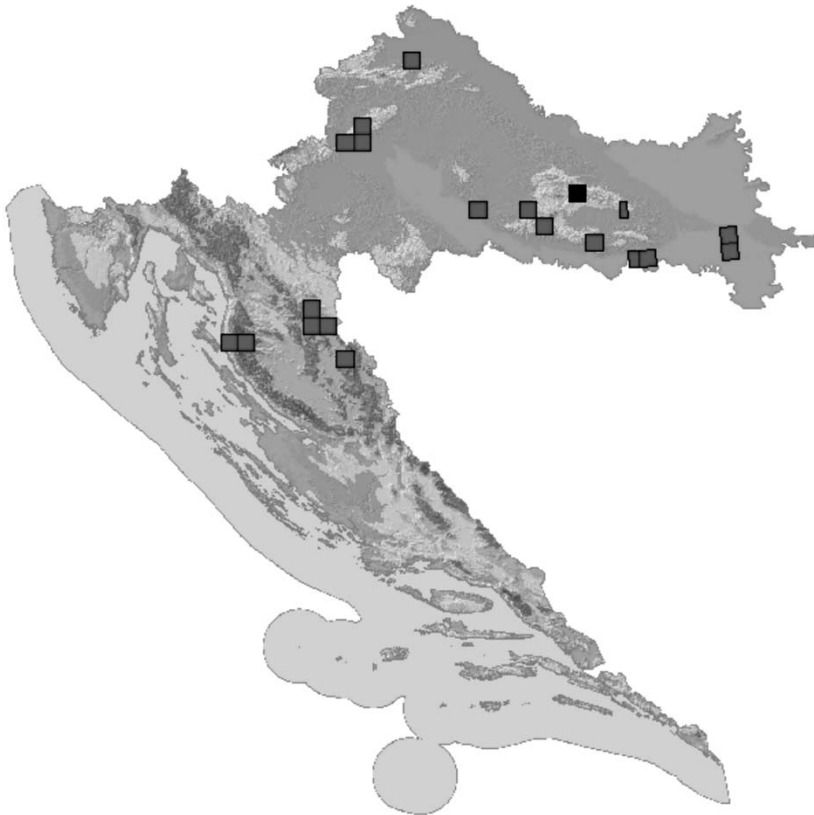


Fig. 1. Distribution map of the False Comma *Nymphalis vaualbum* (Denis & Schiffermüller, 1775) in Croatia (new record: black square).

From the Central Butterfly Collection, CNHM: Inv. No. 2650 Mt. Sljeme, June 20th 1908 (leg. Taborski); Inv. No. 2651 Mt. Sljeme, June 20th 1909 (leg. Taborski); Inv. No. 2652, 2653, 2654 Mt. Sljeme, July 20th 1909 (leg. Taborski); Inv. No. 2656 Pleternica (leg. Koča); Inv. No. 2655 Brod, June 25th 1906 (leg. Taborski).

From the Gušić Collection, CNHM: Inv. No. 837, Bistra, June 21st 1915; Inv. No. 838 Pleternica (Mt. Papuk) 1908; Inv. No. 839 Špoljarić-stan, Bukovac, August 11th 1922 (leg. Gušić).

From the Lorković Collection, CNHM: Kraljičin Zdenac, July 4th & 15th 1915, June 24th 1916, July 8th 1917, August 1st 1919, June 28th 1922, July 1st 1923 (2 spec.), July 7th 1923 (3 spec.), June 27th & 28th 1924; Sljeme, July 15th 1912; Pustodol July 7th 1963; Gojilo, July 1925; Plitvice, June 24th 1923; Karlovića Korita, July 30th 1922 (leg. Lorković).

In Lorković's diary there is an unpublished record for the occurrence of this species on the Kraljičin zdenac – Rudarsko sedlo – Pongračeva lugarnica – Černo-merec (Mt. Medvednica) hiking track from July 25th 1950.

The most recent site is from the observation on Mt. Papuk located in the spring area of the Dubočanka stream (N45°30'18", E17°41'13"), where a single specimen was collected on July 18th 2004 (leg. M. Krištović). Despite the intensive targeted surveys of the other two authors the species was not observed at any historical site, but has been reconfirmed on Mt. Papuk in the past few years. According to habitat types, the Dubočanka locality represents a good area for the species' survival and that was the main reason for proposing the site as the only NATURA 2000 site for this species in Croatia (ŠAŠIĆ & MIHOČI, 2009). However, further surveys have to confirm the permanent residence of the species at this site, in other parts of its historical distribution in Croatia, as well as at new potential sites.

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References

- ABAFI-AIGNER, L., J. PAVEL & F. UHRYK, 1896: Fauna regni Hungariae / III. Arthropoda (Insecta, Lepidoptera), pp. 1–82.
- ANONYMOUS, 1992: Habitat Directive Annexes II and IV. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora. Annex I–VI. Council of the European Communities.
- ANONYMOUS, 1996: Convention on the conservation of European wildlife and natural habitats (Bern/Berne, 19.IX.1979) European Treaty Series/104. (+Appendices I–IV). Council of the European Communities, pp. 2–25.
- BOHATSCH, O., 1892: Beitrage zur Lepidopteren-Fauna Slavoniens. Wiener Entomologischen Vereines **2**, 31–50.
- FRANIĆ, D., 1910: Plitvička jezera i njihova okolica. Tisak kraljevske zemaljske tiskare. Zagreb, p. 251–253.
- GRUND, A., 1916a: Beitrage zur kroatischen Lepidopteren-Fauna Beitrag A. Rhopalocera und Hesperiiidae der Umgebung von Zagreb (Agram). Glasnik hrvatskog prirodoslovnog društva **28**, 95–143.
- GRUND, A., 1916b: Beitrage zur kroatischen Lepidopteren-Fauna. Beitrag B: Rhopalocera und Hesperiiidae aus dem kroatischen Bergdistrict (Gorski kotar), Küstenland und Velebit-Gebirge. Glasnik hrvatskog prirodoslovnog društva **28**, 143–168.
- GUŠIĆ, B., 1917: Ein Beitrag zur Schmetterlingsfauna Kroatiens. Glasnik hrvatskog prirodoslovnog društva **29**, 209–225.

- KOČA, G., 1901: Prilog fauni leptira (Lepidoptera) Hrvatske i Slavonije. Glasnik. Hrv. naravosl. druš. **13** (1–3), 1–67.
- LORKOVIĆ, Z., 2009: The Rhopalocera Fauna of Croatia with Special Respect to the Fauna of Plitvice Lakes. *Entomologia Croatica* **13**, 15–78.
- MARČEC, V., 2008: Dnevni leptiri (Insecta, Rhopalocera) zbirke Franje Koščeca Gradskog muzeja Varaždin i komparacija s današnjim stanjem istraživanog područja. In: VARGOVIĆ, E. & A. BREGOVIĆ (eds.) Franjo Koščec i njegovo djelo 1882.–1968. Zbornik radova sa znanstvenog skupa održanog 13. i 14. studenog 2008. u Varaždinu. Hrvatska akademija znanosti i umjetnosti, Zavod za znanstveni rad u Varaždinu, p. 103–128.
- MLADINOV, L., 1973: Lepidoptera (Rhopalocera) zbirki Hrvatskoga narodnog zoološkog muzeja u Zagrebu. *Hrvatski narodni zoološki muzej* **7**, Zagreb, 125 pp.
- MOUCHA, J., 1966: Zur Kenntnis der Schmetterlingsfauna Jugoslawiens (Lepidoptera). *Entomologische Nachrichten* **10**, 49–53.
- ŠAŠIĆ, M. & M. KUČINIĆ, 2004: The Red Data List of Croatian Butterflies. In: Marković, D. (ed.) Državni zavod za zaštitu prirode, Zagreb, p. 71–74.
- ŠAŠIĆ, M. & I. MIHOCI, 2009: Natura 2000 – Leptiri, Znanstvena analiza vrsta noćnih i danjih leptira s Dodatka II Direktive o zaštiti prirodnih staništa i divlje faune i flore za potrebe izrade prijedloga potencijalnih NATURA 2000 područja. Hrvatski prirodoslovni muzej, pp. 190.
- VAN SWAAY, C., WYNHOFF, I., VEROVNIK, R., WIEMERS, M., LÓPEZ MUNGUIRA, M., MAES, D., SASIC, M., VERSTRAEL, T., WARREN, M. & SETTELE, J., 2009: *Nymphalis vaualbum*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. <www.iucnredlist.org>. Downloaded on 14 June 2011.
- VAN SWAAY, C. A. M., COLLINS, S., DUSEJ, G., MAES, D., MUNGUIRA, M. L., RAKOSY, L., RYRHOLM, N., ŠAŠIĆ, M., SETTELE, J., THOMAS, J., VEROVNIK, R., VERSTRAEL, T., WARREN, M. S., WIEMERS, M. & I. WYNHOFF, 2010a: Do's and don'ts for butterflies of the Habitats Directive. Report VS2010.037, Butterfly Conservation Europe & De Vlinderstichting, Wageningen, pp. 49.
- VAN SWAAY, C., CUTTELOD, A., COLLINS, S., MAES, D., LÓPEZ MUNGUIRA, M., ŠAŠIĆ, M., SETTELE, J., VEROVNIK, R., VERSTRAEL, T., WARREN, M., WIEMERS, M. & I. WYNHOFF, 2010b: European Red List of Butterflies. Luxembourg: Publications Office of the European Union, pp 48.
- VAN SWAAY, C., MAES, D., COLLINS, S., MUNGUIRA, M. L., ŠAŠIĆ, M., SETTELE, J., VEROVNIK, R., WARREN, M., WIEMERS, M., WYNHOFF, I. & A., CUTTELOD, 2011: Applying IUCN criteria to invertebrates: How red is the Red List of European butterflies? *Biological Conservation* **144**, 470–478.

SAŽETAK

Novi nalaz ugroženog leptira *Nymphalis vaualbum* u Hrvatskoj s osvrtom na povijesne nalaze

I. Mihoci, M. Krištović & M. Šašić

Bijela riđa *Nymphalis vaualbum*, leptir iz porodice šarenaca, jedan je od najugroženijih europskih danjih leptira. Bijela riđa je izumrla u mnogim europskim zemljama, Austriji, Češkoj, Estoniji, Mađarskoj, Slovačkoj i Sloveniji, a u Hrvatskoj ju je posljednji puta zabilježio Moucha u Plitvičkom Ljeskovcu 1964. godine. Vrsta je ponovno zabilježena u srpnju 2004. na lokalitetu Dubočanka na Papuku.

Bijela riđa je strogo zaštićena zavičajna svojta u Hrvatskoj, a ugrožena je prvenstveno zbog nestanka prirodnih staništa. Migracijske značajke ove vrste ukazuju na njenu potencijalnu ugroženost uvjetovanu negativnim antropogenim utjecajem. Područje Hrvatske jedno je od granica jugozapadnog dijela areala, što potencira njenu ugroženost.