

The Ground Beetle Fauna (Coleoptera: Carabidae) of Vlăhița and its Surroundings (Harghita: Romania)

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Fauna de carabide (Coleoptera: Carabidae) din localitatea Vlăhița și împrejurimi (Harghita: România)

Fauna de carabide a localității Vlăhița și împrejurimi (Harghita) a fost investigată în perioada 1992-2000, prin utilizarea capcanelor de sol Barber. Rezultatele noastre, plus literatura de specialitate existentă au desemnat 94 de specii. Rezultatul cel mai spectaculos a fost semnalarea speciei *Carabus marginalis decorus* Seidlitz, 1888, care este o subspecie endemică pentru Transilvania.

Abstract

The ground-beetle (Carabidae) fauna of the Eastern Transylvanian town Vlăhița (Szentegyháza) and its surroundings was investigated between 1992-2000 with singling and pitfall trapping. Our results plus existing literature data show 94 species in the study area. True faunistic curiosity is the find of *Carabus marginalis decorus* Seidlitz, 1888 which is an endemic subspecies of Transylvania (Romania).

Key words: Carabidae, faunistic, Vlăhița area.

Introduction and historical review

The study area (surroundings of town Vlăhița) is situated at the southwestern side of the Harghita Mts., near the eastern edge of the Transylvanian plateau, at a height of 700-900 m. The trapping sites were in the immediate neighbourhood of the town and also at the upper flow of streams Vârghiș (Vargyas) and Homorodu Mic (Kis-Homoród). Various biotopes were studied: streambank, pasture, hayfield, beech forest clearing, hazel-brushwood, beech forest, beech - spruce mixed forest, spruce plantation and old spruce forest.

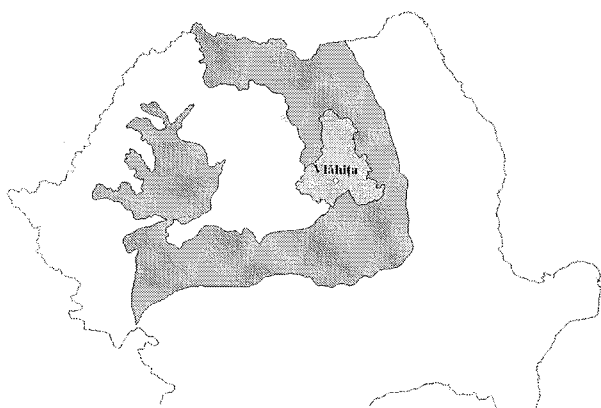


Fig. 1. Localisation of the studied area (map made by Máté Szilárd)

Little can be found about the (Carabidae) fauna of the area in the literature. The first faunistic data can be found in the works of BIELZ (1887, 1907), listed as „Oláhfalú” (today Vlăhița). A little later

DEUBEL published additional species with the locality „Vargyastal” (Valea Vîrghișului). Then KUTHY's (1897) faunistic catalogue has five species from „Oláhfalú”, CSIKI (1907) also published 2 species from here.

The synthetic work of PETRI (1912) about the beetle fauna of Transylvania primarily incorporates the data of BIELZ and DEUBEL from the studied area. After a long pause SCHMIDT (1995) published an additional species from Băile Chirui (Kirulyfürdő), which is in the close vicinity of the Vârghiș valley.

The identification of the material collected by us (ca. 1300 specimens) yielded 73 species of ground beetles. Of the ones listed in the literature (altogether 37 species) we managed to capture 16, the total number of now known species from Vlăhița and surroundings is therefore 94.

Collecting sites and methods

In the period 1992-1995 only sporadic collections were made, mainly by singling, while between 1996-2000 pitfall trapping of various durations was also used alongside singling. The pitfall traps were plastic cups with diluted acetic acid solution as conserving and attracting agent. The traps were placed in 2x3 m quadrats at a distance of 5-6 m from each other, emptied every 2-4 weeks.

Brief description of the collecting sites (fig 2):

- 1. pasture:** regularly grazed degraded grassland, east of the town Vlăhița.
- 2. Laz-forest:** seminatural beech-spruce forest on the left side of stream Homorodu Mic downstream of the town Vlăhița.

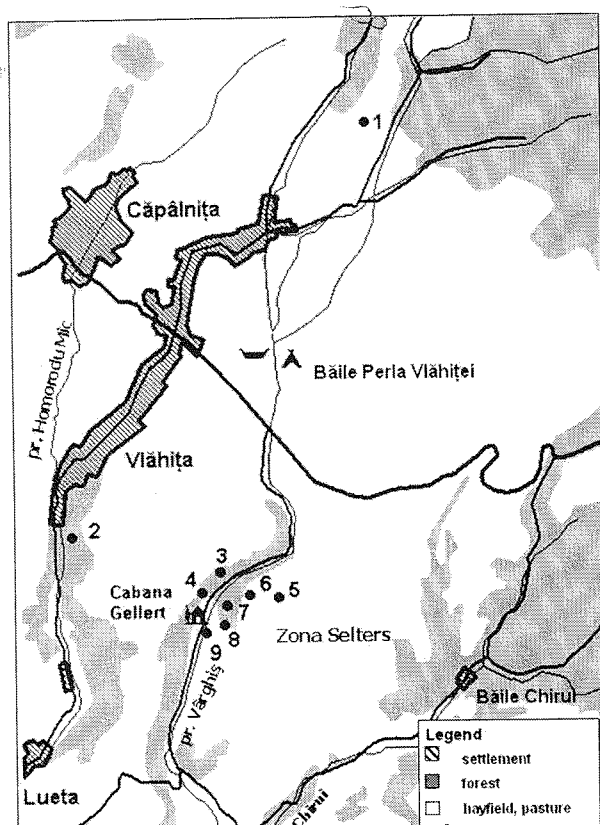


Fig. 2. Placement of the collecting sites in the Vlăhița area (map made by Máté Szilárd)

Vârghiș valley: upper flows of stream Vârghiș: this section is called Selters (Selters), which is situated 3 kms south of Highway 13A connecting Miercurea-Ciuc (Csíkszereda) and Odorheiu-Secuiesc (Székelyudvarhely), 4 kms east of Vlăhița. Various biotopes were sampled here, both on the right and the left bank of the stream:

3. spruce forest: 6,7 hectare of cca. 85 years old east-facing seminatural spruce forest with undergrowth dominated by *Oxalis acetosella* and *Dentaria bulbifera* (830 m).

4. spruce plantation: 5,8 hectare of cca. 27 years old east-facing closed (90% canopy cover) spruce forest without undergrowth. 740-830 m above sea level.

5. hayfield (*Anthyllido-Festucetum rubrae*): annually mowed mesophylous *Festuca rubra* grassland.

6. hazel-brushwood: secondary brushwood of hazel and birch with patches of annually mowed grassland, developed in the place of a clear-cut beech forest.

7. beech forest (*Melico-Fagetum*): 6,9 hectare, cca. 85 years old northeast-facing closed beech forest at 720-840 m above sea level. Undergrowth: 20% above-ground cover dominated by *Asperula odorata* and *Dentaria bulbifera*.

8. beech forest clearing: unmowed small clearing with young beech saplings and hazel at 840 m above sea level.

9. streambank: gravel beds of various size and quality

The species order and the nomenclature in our species list are based on Húrka's book (Húrka 1996). In the list for each species the following data are given: geographical name and altitude of collection site, type of biotope, collecting date, collector's name (abbreviated), and in round brackets, the collection method (abbreviated) and number of specimens.

Abbreviations: collectors' names: MF = Mihály Földvári, IM = István Máthé, JR = József Rudner, AL = Aurel Lie; collection methods: s = singling, pt. = pitfall trap; (n) = number of specimens.

Results

The ground-beetle fauna of Vlăhița and surroundings:

Cicindela (Cicindela) hybrida hybrida Linnaeus, 1758 – „Vargyastal” (DEUBEL in PETRI 1912: 1) as *Cicindela hybrida* var. *riparia* Dejean, 1822.

Leistus (Pogonophorus) rufomarginatus (Duftschmid, 1812)

Valley of stream Vârghiș: Selters (850 m), beech forest clearing, 8-21.IX.1998. IM (pt.1), 18.X.-18.XI.1998. IM (pt.4).

Leistus (Leistus) ferrugineus (Linnaeus, 1758)

Valley of stream Vârghiș: Selters (850 m), hayfield, 21.IX-18.X.1998. IM (pt.1); IX.1999. IM (pt.1).

Leistus (Leistus) piceus alpicola Fuss, 1860

Valley of stream Vârghiș: Selters (850 m), beech forest clearing, 8-21.IX.1998. IM (pt.5).

Notiophilus biguttatus (Fabricius, 1799)

Valley of stream Vârghiș: Selters (850 m), beech forest clearing, 21.IX-18.X.1998. IM (pt.3); spruce forest, 3.V-3.VI.2000. IM (pt.8), 3.VIII-3.IX. 2000. IM (pt.2), 3.IX-9.X.2000. IM (pt.7); spruce plantation, 9.X-21.XI.2000. IM (pt.1).

Notiophilus germinyi Fauvel in Grenier, 1863

Valley of stream Vârghiș: Selters (850 m), hayfield, 8-21.IX.1998. IM (pt.2).

Notiophilus rufipes Curtis, 1829

Valley of stream Vârghiș: Selters (850 m), beech forest clearing, 8-21.IX.1998. IM (pt.1).

Carabus (Morphocarabus) scabriusculus lippii Dejean, 1826 – „Oláhfalú” (KUTHY 1897: 24; PETRI 1912: 8) as *Carabus scabriusculus* var. *Lippi* Dejean, 1826.

Carabus (Archicarabus) montivagus blandus I. Frivaldszki, 1865 – „Vargyastal” (PETRI 1912: 8).

Carabus (Eucarabus) arvensis carpathus Born, 1902

Valley of stream Vârghiş: Selters (850 m), beech forest clearing, 21.IX-18.X.1998. IM (pt.5); skirt of beech forest, IX.1999. IM (pt.1).

Carabus (Eucarabus) ulrichii ulrichii Germar, 1824
Valley of stream Vârghiş: Selters (850 m), beech forest clearing, 8-21.IX.1998. IM (pt.1).

Carabus (Morphocarabus) hampei incompsus Kraatz, 1880
Valley of stream Vârghiş: Selters (850 m), hayfield 3.V-3.VI.2000. IM (pt.5).

Carabus (Morphocarabus) obsoletus uhligi Lapouge, 1908
Valley of stream Vârghiş: Selters (850 m), hayfield, 3.V-3.VI. 2000. IM (pt.1), beech forest, 3.V-3.VI. 2000. IM (pt.10).

Carabus (Autocarabus) cancellatus muehlfeldi Géhin, 1885
Vlăhiţa (1000 m), 03.VI.1998. JR (s.2). Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 28.IX-12.X.1997. IM (pt.1); hayfield, 8-21.IX.1998. IM (pt.19), 21.IX-18.X.1998. IM (pt.2), IX.1999. IM (pt.2); beech forest clearing, 8-21.IX.1998. IM (pt.8), 21.IX-18.X.1998. IM (pt.12), 3.V-3.VI.2000. IM (pt.11); hazel-brushwood, IX.1999. IM (pt.4).

Carabus (Orinocarabus) linnei linnei Panzer, 1813
Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 25.VII-21.VIII.1996. IM (pt.24), 21.VIII-01.IX.1996. IM (pt.6); Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 21-28.IX.1997. IM (pt.8), 12.X-2.XI.1997. IM (pt.1); hayfield, 8-21.IX.1998. IM (pt.19), 21.IX-18.X.1998. IM (pt.2); beech forest clearing, 8-21.IX.1998. IM (pt.14), 21.IX-18.X.1998. IM (pt.1); skirt of beech forest, IX.1999. IM (pt.11); beech forest, 3.V-3.VI.2000. IM (pt.1); spruce forest, 3.V-3.VI.2000. IM (pt.1), 3.VIII-3.IX. 2000. IM (pt.12); spruce plantation, 3.V-3.VI.2000. IM (pt.5), 3.VIII-3.IX. 2000. IM (pt.9).

Carabus (Oreocarabus) glabratus gibbosus Heyden, 1866
Vlăhiţa (850 m): 07.VI.1995. JR (s.1); Vlăhiţa (1000 m), 03.VI.1998. JR (s.1); Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 21.VIII-01.IX.1996. IM (pt.1); Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 21-28.IX.1997. IM (pt.1); beech forest clearing, 8-21.IX.1998. IM (pt.1); spruce plantation, 3.VIII-3.IX.2000. IM (pt.3).

Carabus (Tomocarabus) convexus simplicipennis Dejean, 1826 – „Oláhfalú” (PETRI 1912: 4) as *Carabus convexus* Fabricius, 1775.
Valley of stream Vârghiş: Selters (850 m), beech forest clearing, 21.IX-18.X.1998. IM (pt.1), hayfield, 3.V-3.VI.2000. IM (pt.6), 9.X-21.XI.2000. IM (pt.1).

Carabus (Tomocarabus) marginalis decorus Seidlitz, 1888 – (PANIN 1955: 118; SZÉL 1985: 69; LIE & MÁTHÉ 2000: 18).

Described by Seidlitz as a new species in 1888 in the first volume of Fauna Transylvanica, on p. 14 where species are listed from Răstoliţa (Ratosnya) of Căliman Mts. – and not in 1891 as believed by most authors. This subspecies is an endemism in Transsylvania, also listed by the above mentioned authors from the Vârghiş valley, where it was first collected by Deubel at the end of the XIX. Century. Up to the beginning of the XX. Century the following additional localities became known: Sibiu (Szeben, Hermannstadt) and surroundings: Christian-Sibiu (Kereszténysziget), Porceşti (Kisdiszsnód); Turda (Torda); Gherghiului-Mts. (Gyergyói-havasok); Căliman Mts.: „massiv” Pietros. It seems that nearly 100 years have passed before it was found again in Transsylvania, when in September 1997 it was captured again in the Vârghiş valley.

Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 21-28.IX.1997. IM (pt.1), 28.IX-12.X.1997. IM (pt.1), 12.X-2.XI.1997. IM (pt.1); hayfield, 8-21.IX.1998. IM (pt.6), 21.IX-18.X.1998. IM (pt.9), 18.X-18.XI.1998. IM (pt.1), IX. 1999. IM & LP (pt.152), 3.V-3.VI.2000. IM (pt.6), 3.VIII-3.IX. 2000. IM (pt.30), 3.IX-9.X.2000. IM (pt.15), 9.X-21.XI.2000. IM (pt.2); beech forest clearing, 8-21.IX.1998. IM (pt.2), 21.IX-18.X.1998. IM (pt.4).

Carabus (Chaetocarabus) intricatus intricatus Linnaeus, 1761

Valley of stream Vârghiş: Selters (850 m), spruce forest, 3.V-3.VI.2000. IM (pt.12), 3.IX-9.X.2000. IM (pt.1), 9.X-21.XI.2000. IM (pt.1); spruce plantation, 3.V-3.VI.2000. IM (pt.3), 3.VIII-3.IX. 2000. IM (pt.1), 3.IX-9.X.2000. IM (pt.1).

Carabus (Megodontus) violaceus lucidulus Breuning, 1934 – „Oláhfalú” (BIELEZ 1887: 39) as *Carabus violaceus* var. *cyaneolimbatus* Kraatz, likely to be the same as the taxon we collected.

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 1-25.VII.1996. IM (pt.7), 25.VII-21.VIII.1996. IM (pt.6), 21.VIII-01.IX.1996. IM (pt.9); Valley of stream Vârghiş: Selters (850 m), beech forest clearing, 8-21.IX.1998. IM (pt.7), 21.IX-18.X.1998. IM (pt.3); hayfield, IX.1999. IM (pt.7), 3.V-3.VI.2000. IM (pt.2); skirt of beech forest, IX.1999. IM (pt.1); hazel-brushwood, IX.1999. IM (pt.12); beech forest, 3.V-3.VI.2000. IM (pt.1); spruce forest, 3.V-3.VI.2000. IM (pt.5); spruce plantation, 3.V-3.VI.2000. IM (pt.4), 3.VIII-3.IX. 2000. IM (pt.1), 3.IX-9.X.2000. IM (pt.1).

Carabus (Chrysocarabus) auronitens escheri Palliard, 1825

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 21.VIII-01.IX.1996. IM (pt.2); Valley of

stream Vârghiş: Selters (850 m), spruce plantation, 3.VIII-3.IX. 2000. IM (pt.1).

Carabus (Procrustes) coriaceus rugifer Kraatz, 1877

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 1-25.VII.1996. IM (pt.1), 25.VII-21.VIII.1996. IM (pt.2); Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 21-28.IX.1997. IM (pt.3), 28.IX-12.X.1997. IM (pt.1), 12.X-2.XI.1997. IM (pt.2); hayfield, 21.IX-18.X.1998. IM (pt.1), IX.1999. IM (pt.5), 3.V-3.VI.2000. IM (pt.1), beech forest clearing, 8-21.IX.1998. IM (pt.2), 21.IX-18.X.1998. IM (pt.3); skirt of beech forest, IX.1999. IM (pt.3); beech forest, 3.V-3.VI.2000. IM (pt. 2), 3.VIII-3.IX.2000. IM (pt.5), 3.IX-9.X.2000. IM (pt.10), 9.X-21.XI.2000. IM (pt.2); spruce forest, 3.V-3.VI.2000. IM (pt.2), 3.IX-9.X.2000. IM (pt.2), 9.X-21.XI.2000. IM (pt.2); spruce plantation, 3.VIII-3.IX. 2000. IM (pt.2).

Cychnus caraboides caraboides (Linnaeus, 1758)

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 25.VII-21.VIII.1996. IM (pt.1).

Cychnus semigranosus montanus Winkler, 1939

– „Vargyastal” (DEUBEL in PETRI 1912: 2) as *Cychnus semigranosus* var. *balkanicus* Hopffgarten.

Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 21-28.IX.1997. IM (pt.1).

Dyschirius globosus (Herbst, 1783)

Valley of stream Vârghiş: Selters (850 m), hazel-brushwood, IX.1999. IM (pt.2).

Brosicus cephalotes cephalotes (Linnaeus, 1758)

Vlăhiţa (900 m), Hâmor, from under stone, 03-04.VI.1998. JR (s.2); Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 1-25.VII.1996. IM (pt.1).

Epaphius secalis secalis (Paykull, 1790) – „Oláhfalú” (KUTHY 1897: 30; PETRI 1912: 22).

Valley of stream Vârghiş: Selters (850 m), hayfield, IX.1999. IM (pt.1); hazel-brushwood, IX.1999. IM (pt.1).

Trechus quadristriatus (Schränk, 1781)

Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 28.IX-12.X.1997. IM (pt.1); beech forest clearing, 21.IX-18.X.1998. IM (pt.1), 18.X-18.XI.1998. IM (pt.1); hayfield, 3.VIII-3.IX. 2000. IM (pt.1); beech forest, 3.VIII-3.IX. 2000. IM (pt.2), 9.X-21.XI.2000. IM (pt.2); spruce forest, 9.X-21.XI.2000. IM (pt.3); spruce plantation, 9.X-21.XI.2000. IM (pt.2).

Trechus ormayi Ganglbauer, 1891 – „Vargyastal” (DEUBEL in PETRI 1912: 20).

Pseudanophthalmus transsylvanicus (Csiki, 1902) – „In the valley of stream Vârghiş near the cave of Homoródalmás” (CSIKI 1907: 265; PETRI 1912: 22), as *Anophthalmus Bielzi* var. *transsylvanicus*. Cave Orbán Balázs and cave no. 23 in the ravine of Vârghiş („peştera mare de la Mereşti si peştera 23 din Cheile Vîrghisului”) (DECU 1963: 453). „Vargyas” (HURKA 1977: 178).

Lasiotrechus discus discus (Fabricius, 1801) – „Vargyas” (PETRI 1912) as *Trechus (Lasiotrechus) discus* (Fabricius, 1801).

Bembidion (Chlorodium) pygmaeum (Fabricius, 1792)

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.2).

Bembidion (Metallina) lampros (Herbst, 1784)

Valley of stream Vârghiş: Selters (850 m), 03.VI.1998. JR (s.1); hayfield, 8-21.IX.1998. IM (pt.6), 21.IX-18.X.1998. IM (pt.3), 3.V-3.VI.2000. IM (pt.5), 3.VIII-3.IX. 2000. IM (pt.1); beech forest clearing, 21.IX-18.X.1998. IM (pt.4); spruce plantation, 3.V-3.VI.2000. IM (pt.1).

Bembidion (Metallina) properans (Stephens, 1828)

Valley of stream Vârghiş: Selters (800 m), 03.VI.1998. JR (s.8).

Bembidion (Emphanes) azurescens (Dalla Torre, 1877)

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 04.VIII.1997. MF (s.2).

Bembidion (Leja) articulatum articulatum (Panzer, 1796)

Valley of stream Vârghiş: Selters (800 m), from gravel bank, Selters, 04.VIII.1997. MF (s.7).

Bembidion (Bembidion) quadrimaculatum quadrimaculatum (Linnaeus, 1761)

Vlăhiţa (850 m), 07.VI.1995. JR (s.1); Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.1).

Bembidion (Peryphanes) dalmatinum Dejean, 1831 – „Vargyastal” (DEUBEL in PETRI 1912: 16).

Bembidion (Peryphiolus) monticola monticola (Sturm, 1825) – „Vargyastal” (DEUBEL in PETRI 1912: 16).

Bembidion (Synechostictus) millerianum Heyden, 1883

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.1).

Bembidion (Bembidionetolitzkya) geniculatum Heer, 1837

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.4).

Bembidion (Bembidionetolitzkya) tibiale (Duftschmid, 1812)

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.1).

Bembidion (Bembidionetolitzkya) variicolor (Fabricius, 1803)

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.3).

Bembidion (Ocydromus) decorum decorum (Zenker in Panzer, 1801)

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.16).

Bembidion (Peryphus) subcostatum javurkovae Fassati, 1944

Valley of stream Vârghiş: Selters (800 m), from gravel bank, 03.VI.1998. JR (s.1).

Patrobis atrorufus (Stroem, 1768) – „Oláhfalú” (PETRI 1912: 22) as *Patrobis excavatus* Paykull, 1790.

Stomis pumicatus pumicatus (Panzer, 1796)

Valley of stream Vârghiş: Selters (850 m), beech forest clearing, 21.IX-18.X.1998. IM (pt.1).

Poecilus (Poecilus) lepidus lepidus (Leske, 1785) – „Oláhfalú” (PETRI 1912: 32) as *Pterostichus (Poecilus) lepidus* (Leske, 1785).

Valley of stream Vârghiş: Selters (850 m), hayfield, 8-21.IX.1998. IM (pt.1), 3.V-3.VI.2000. IM (pt.6), 3.VIII-3.IX. 2000. IM (pt.5); hazel-brushwood, IX.1999. IM (pt.1).

Poecilus (Poecilus) versicolor (Sturm, 1824)

Vlăhiţa (800 m), 03.VI.1998. JR (s.1); Valley of stream Vârghiş: Selters (850 m), hayfield, IX.1999. IM (pt.1), 3.V-3.VI.2000. IM (pt.5), 3.VIII-3.IX. 2000. IM (pt.2); hazel-brushwood, IX.1999. IM (pt.9).

Pterostichus (Phonias.) ovoideus (Sturm, 1824) – „Oláhfalú” (PETRI 1912: 33) as *Pterostichus (Argutor) interstinctus* (Sturm, 1824).

Pterostichus (Phonias) strenuus (Panzer, 1797)

Vlăhiţa (850 m), 07.VI.1995. JR (s.1); Valley of stream Vârghiş: Selters (800 m), 03.VI.1998. JR (s.1).

Pterostichus (Melanius) anthracinus anthracinus (Illiger, 1798)

Valley of stream Vârghiş: Selters (800 m), 04.VIII.1997. MF (s.1).

Pterostichus (Bothriopterus) oblongopunctatus oblongopunctatus (Fabricius, 1787)

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest,

1-25.VII.1996. IM (pt.1), 25.VII-21.VIII.1996. IM (pt.1); Valley of stream Vârghiş: Selters (800-850m), 03.VI.1998. JR (s.1); spruce forest, 3.V-3.VI.2000. IM (pt.5), 9.X-21.XI.2000. IM (pt.1); spruce plantation, 3.V-3.VI.2000. IM (pt.8).

Pterostichus (Platysma) niger niger (Schaller, 1783) – „Oláhfalú” (BIELZ in PETRI 1912: 33).

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 1-25.VII.1996. IM (pt.3), 25.VII-21.VIII.1996. IM (pt.1); Valley of stream Vârghiş: Selters (850 m), beech forest clearing, 8-21.IX.1998. IM (pt.1); hayfield, IX.1999. IM (pt.1); hazel-brushwood, IX.1999. IM (pt.12).

Pterostichus (Petrophilus) findeli (Dejean, 1828)

Vlăhiţa (850 m), 07.VI.1995. JR (s.1).

Pterostichus (Feronidius) melas melas (Creutzer, 1799) – „Oláhfalú” (BIELZ in PETRI 1912: 35) as *Pterostichus (Pterostichus) melas* (Creutzer, 1799). The *Pterostichus (Pterostichus) melas var. hungaricus* Dejean, (PETRI 1912: 35) specimens likely belong to *Pterostichus melas melas*.

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 21.VIII-01.IX.1996. IM (pt.2); Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 12.X-2.XI.1997. IM (pt.1), 2-19.XI.1997. IM (pt.1); hayfield, 8-21.IX.1998. IM (pt.2), 21.IX-18.X.1998. IM (pt.2), IX.1999. IM (pt.2) 3.V-3.VI.2000. IM (pt.26), 3.VIII-3.IX. 2000. IM (pt.1), 9.X-21.XI.2000. IM (pt.1); beech forest clearing, 8-21.IX.1998. IM (pt.6), 21.IX-18.X.1998. IM (pt.6), 18.X.-18.XI.1998. IM (pt.1); hazel-brushwood, IX.1999. IM (pt.3); beech forest, 3.V-3.VI.2000. IM (pt.3); spruce plantation, 3.V-3.VI.2000. IM (pt.1).

Abax (Abax) carinatus carinatus (Duftschmid, 1812) – „Oláhfalú” (PETRI 1912: 31).

Valley of stream Vârghiş: Selters (850 m), 03.VI.1998. JR (s.1); hayfield, 8-21.IX.1998. IM (pt.4), IX.1999. IM (pt.2).

Abax (Abax) parallelepipedus (Piller et Mitterpacher, 1783)

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 25.VII-21.VIII.1996. IM (pt.16), 21.VIII-01.IX.1996. IM (pt.4); Valley of stream Vârghiş: Selters (800 m), 03.VI.1998. JR (s.1); hayfield, 3.V-3.VI.2000. IM (pt.8); beech forest, 3.V-3.VI.2000. IM (pt.15), 3.VIII-3.IX. 2000. IM (pt.1); spruce plantation, 3.V-3.VI.2000. IM (pt.4).

Abax (Abax) parallelus (Duftschmid, 1812)

Vlăhiţa (800 m): Laz-forest: mixed beech-spruce forest, 25.VII-21.VIII.1996. IM (pt.1), 21.VIII-01.IX.1996. IM (pt.2), Valley of stream Vârghiş: Selters (850 m), clearing with bushes, 12.X-2.XI.1997. IM (pt.1); hayfield, 8-21.IX.1998. IM (pt.1), 21.IX-18.X.1998. IM (pt.1), IX.1999. IM (pt.2); beech forest clearing,

- 8-21.IX.1998. IM (pt.3), 21.IX-18.X.1998. IM (pt.1), 18.X-18.XI.1998. IM (pt.1); skirt of beech forest, IX.1999. IM (pt.2); hazel-brushwood, IX.1999. IM (pt.4); beech forest, 3.V-3.VI.2000. IM (pt.1); spruce forest, 3.V-3.VI.2000. IM (pt.4), 3.VIII-3.IX. 2000. IM (pt.1), 3.IX-9.X.2000. IM (pt.2), 9.X-21.XI.2000. IM (pt.1); spruce plantation, 3.V-3.VI.2000. IM (pt.7), 3.VIII-3.IX. 2000. IM (pt.7), 3.IX-9.X.2000. IM (pt.4), 9.X-21.XI.2000. IM (pt.2).
- Abax (*Abacopercus*) *schueppeli schueppeli*** (Palliardi, 1825)
Vlăhița (800 m): Laz-forest: mixed beech-spruce forest, 25.VII-21.VIII.1996. IM (pt.1); Valley of stream Vârghiș: Selters (850 m), clearing with bushes, 12.X-2.XI.1997. IM (pt.1); beech forest clearing, 21.IX-18.X.1998. IM (pt.1); skirt of beech forest, IX.1999. IM (pt.2); beech forest, 3.V-3.VI.2000. IM (pt.3).
- Molops piceus piceus*** (Panzer, 1793) – „Oláhfalú” (KUTHY 1897: 34) as *Molops elata* [sic!] (Fabricius, 1801), very likely a misidentification and is indeed *Molops piceus* (Panzer, 1793).
Vlăhița (800 m), 03.VI.1998. JR (s.1); Vlăhița (800 m): Laz-forest: mixed beech-spruce forest, 21.VIII-01.IX.1996. IM (pt.6); Valley of stream Vârghiș: Selters (850 m), ret, 03.VI.1998. JR (s.1); clearing with bushes, 12.X-2.XI.1997. IM (pt.1); hayfield, 18.X-18.XI.1998. IM (pt.1); beech forest clearing, 18.X.-18.XI.1998. IM (pt.1); beech forest, 3.V-3.VI.2000. IM (pt. 1), 3.IX-9.X. IM (pt.1); spruce forest, 3.V-3.VI.2000. IM (pt.4), 9.X-21.XI.2000. IM (pt.2).
- Calathus (*Calathus*) fuscipes fuscipes*** (Goeze, 1777)
Vlăhița, kő alól, 29.VIII.1992. JR (s.1); Valley of stream Vârghiș: Selters (800 m), 04.VIII.1997 MF (s.1), 03.VI.1998. JR (s.2); clearing with bushes (850 m), 28.IX-12.X.1997. IM (pt.1); hayfield, 8-21.IX.1998. IM (pt.10), 21.IX-18.X.1998. IM (pt.10), 18.X-18.XI.1998. IM (pt.4), IX.1999. IM (pt.15), 3.V-3.VI.2000. IM (pt.1), 3.VIII-3.IX. 2000. IM (pt.17), 3.IX-9.X.2000. IM (pt.8); hazel-brushwood, IX.1999. IM (pt.82).
- Calathus (*Neocalathus*) erratus erratus*** (C. R. Sahlberg, 1827) – „Oláhfalú” (BIELZ in PETRI 1912: 37).
Vlăhița (1000 m), spruce forest, from under stone, 29.VIII.1992. JR (s.1).
- Calathus (*Neocalathus*) melanocephalus melanocephalus*** (Linnaeus, 1758)
Vlăhița (1000 m), kő alól, 29.VIII.1992. JR (s.2); Valley of stream Vârghiș: Selters (850 m), clearing with bushes, 2-19.XI.1997. IM (pt.1); hayfield, IX.1999. IM (pt.14), 3.VIII-3.IX. 2000. IM (pt.19), 3.IX-9.X.2000. IM (pt.7), 9.X-21.XI.2000. IM (pt.1); skirt of beech forest, IX.1999. IM (pt.1).
- Olisthopus rotundatus*** (Paykull, 1790) – „Oláhfalú” (BIELZ in PETRI 1912: 37).
- Olisthopus sturmi*** (Duftschmid, 1812) - Vlăhița (KUTHY 1897: 31).
- Synuchus vivalis vivalis*** (Illiger, 1789)
Valley of stream Vârghiș: Selters (850 m), hayfield, 8-21.IX.1998. IM (pt.1); hazel-brushwood, IX.1999. IM (pt.1).
- Platynus (*Platynus*) assimilis*** (Paykull, 1790)
Vlăhița (800 m), from inside town, 03.VI.1998. JR (s.1).
- Agonum duftschmidi*** Schmidt, 1994
Valley of stream Vârghiș: Selters (800 m), 03.VI.1998. JR (s.1).
- Agonum sexpunctatum*** (Linnaeus, 1758) – „Oláhfalú” (BIELZ in PETRI 1912: 38).
Vlăhița (900 m), clearing, 24.V.1994. JR & MF (s.2); Vlăhița (850 m), 07.VI.1995. JR (s.2); Vlăhița (800 m), 03.VI.1998. JR (s.6); Valley of stream Vârghiș: Selters (850 m), 3.V-3.VI.2000. IM (pt.1).
- Agonum viduum*** (Panzer, 1797) – „Oláhfalú” (BIELZ in PETRI 1912: 39).
- Europhilus scitulus*** (Dejean, 1828) – Kérulyfördő (=Kerulyfördő = Băile Chirui) (Schmid 1995: 169).
- Amara (*Amara*) convexior*** Stephens, 1828
Vlăhița (850 m), 07.VI.1995. JR (s.1); Valley of stream Vârghiș: Selters (800-850 m), 03.VI.1998. JR (s.1), hayfield 3.V-3.VI.2000. IM (pt.1).
- Amara (*Amara*) aenea*** (De Geer, 1774)
Vlăhița, 03.VI.1998. JR (s.2); Valley of stream Vârghiș: Selters (850 m), 03.VI.1998. JR (s.1).
- Amara (*Amara*) ovata*** (Fabricius, 1792)
Vlăhița (800 m), 03.VI.1998. JR (s.1).
- Amara (*Amara*) tibialis*** (Paykull, 1798) – „Oláhfalú” (BIELZ in PETRI 1912: 30, CSIKI 1907: 347).
- Amara (*Curtonotus*) aulica*** (Panzer, 1797) – „Vargyastal” (DEUBEL in PETRI 1912: 30).
- Amara (*Amarocelia*) erratica*** (Duftschmid, 1812)
Vlăhița (850 m), 07.VI.1995. JR (s.1).
- Amara (*Percosia*) equestris equestris*** (Duftschmid, 1812)
Valley of stream Vârghiș: Selters (850 m), hayfield, 8-21.IX.1998. IM (pt.1).
- Licinus (*Licinus*) depressus*** (Paykull, 1790)
Valley of stream Vârghiș: Selters (850 m), hayfield, 8-21.IX.1998. IM (pt.6), 21.IX-18.X.1998. IM (pt.7),

18.X-18.XI.1998. IM (pt.9); IX.1999. IM (pt.1), 3.VIII-3.IX.2000. IM (pt.1), 9.X-21.XI.2000. IM (pt.1); beech forest clearing, 21.IX-18.X.1998. IM (pt.4).

Badister (Trimorphus) sodalis (Duftschmid, 1812)
Vlăhița (800 m), 02.VI.1998. JR (s.1).

Anisodactylus (Anisodactylus) signatus (Panzer, 1797)
Vlăhița (750 m), from inside town, 02.VI.1998. JR (s.1).

Stenolophus teutonius (Schränk, 1781)
Vlăhița (800 m), 02.VI.1998. JR (s.1).

Pseudoophonus (Pseudoophonus) rufipes (De Geer, 1774)
Vlăhița (1000 m), montane pasture, 24.V.1994. JR & MF (s.); Vlăhița (750 m), from inside town, 03.VI.1998. JR (s.1); Vlăhița (800 m): Laz-forest: mixed beech-spruce forest, 21.VIII-01.IX.1996. IM (pt.1); Valley of stream Vârghiș: Selters (800-850 m), 04.VIII.1997. MF (s.1); hayfield, 3.VIII-3.IX.2000. IM (pt.2).

Ophonus (Metophonus) nitidulus Stephens, 1828 – „Oláhfalú” (BIELZ in PETRI 1912: 25) as *Ophonus (Tachyophonus) punctatulus* (Duftschmid, 1812) (KUTHY 1897: 36) as *Ophonus punctatulus* (Duftschmid, 1812).

Harpalus (Harpalus) rubripes (Duftschmid, 1812) – „Oláhfalú” (PETRI 1912: 26).

Harpalus (Harpalus) affinis (Schränk, 1781) – „Oláhfalú” (PETRI 1912: 25) as *Harpalus aeneus* var. *limbopunctatus* Fuss, 1858.
Vlăhița (850 m), 07.VI.1995. JR (s.2); Vlăhița (750m), from inside town, 02.VI.1998. JR (s.3); Valley of stream Vârghiș: Selters (800 m), 04.VIII.1997. MF (s.2).

Harpalus (Harpalus) latus (Linnaeus, 1758) – „Oláhfalú” (PETRI 1912: 26) as *Harpalus (Amblystus) latus* (Linnaeus, 1758).
Valley of stream Vârghiș: Selters (850 m), hazel-brushwood, IX.1999. IM (pt.1); hayfield, 3.V-3.VI.2000. IM (pt.5); 3.VIII-3.IX. 2000. IM (pt.2).

Harpalus (Harpalus) progrediens Schaubberger, 1922
Vlăhița, 03.VI.1998. JR (s.1).

Dromius fenestratus (Fabricius, 1794)
Vlăhița (800 m): Laz-forest, 09.IV.1997. IM (s.1).

Syntomus truncatellus (Linnaeus, 1761)
Vlăhița (850 m), 07.VI.1995. JR (s.1), Valley of stream Vârghiș: Selters (850 m), 3.V-3.VI.2000. IM (pt.1).

Syntomus pallipes (Dejean, 1825) – (BIELZ in PETRI 1912: 40) as *Metabletus pallipes* (Dejean, 1825).

Cymindis (Cymindis) cingulata (Fourcroy, 1785) – „Oláhfalú” (BIELZ in PETRI 1912: 41)
Valley of stream Vârghiș: Selters (850 m), hayfield, 8-21.IX.1998. IM (pt.1).

Cymindis (Cymindis) humeralis (Fourcroy, 1785) – „Oláhfalú” (BIELZ in PETRI 1912: 41)
Vlăhița (800 m), montane pasture, from under tree, 24.V.1994. JR & MF (s.1); Valley of stream Vârghiș: Selters (850 m), beech forest clearing, 21.IX-18.X.1998. IM (pt.1); hayfield, IX.1999. IM (pt.2), 3.VIII-3.IX. 2000. IM (pt.2); hazel-brushwood, IX.1999. IM (pt.1).

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REFERENCES

- BIELZ, E. Albert 1887. Die Erforschung der Käferfauna Siebenbürgens bis zum Schlusse des Jahres 1886. Verh. Mitt. Siebenbürg. Ver. Naturwiss. Hermannstadt, **37**: 27-114.
- BIELZ, E. Albert 1896. Die Vermehrung der Käferfauna Siebenbürgens. Verh. Mitt. Siebenbürg. Ver. Naturwiss. Hermannstadt, **45**: 52-55.
- CSIKI, E. 1907. Magyarország Bogárfaunája. Vezérfonal a magyar szent korona országainak területén előforduló bogarak megismerésére. 1. kötet. 4. füzet. – Budapest, 241-352.
- CSIKI, E. 1946. Die Käferfauna des Karpaten-Beckens. 1. Band. Allgemeiner Teil und Caraboidea. – In: A. Tasnádi-Kubacska (ed.): Naturwissenschaftliche Monographien 4., Budapest, pp. 798.
- DECU, V. G., 1963. L'origine et la répartition des Coptéroptères troglobies Bathysciinae (Catopidae) et Trechinae (Trechidae) des grottes de la R. P. Roumaine, suivant la conception de Jeannel. – Lucrarile Institutului de Speologie „Emil Racovita”, **1-2** [1962-1963]: 437-460.
- KUTHY, D. 1897. Ordo. Coleoptera. – In: A Magyar Birodalom Állatvilága (Fauna Regni Hungariae) Királyi Magyar Természettudományi Társulat, Budapest, pp. 213.
- FREUDE, H. 1976. Familie: Carabidae (Laufkäfer) – In: Freude H., Harde K. W. & Lohse G. A. (eds): Die Käfer Mitteleuropas 2, Goecke & Evers Verlag, Krefeld, pp. 302.
- HÜRKA, K. 1977. Revision der Arten-Gruppe von *Pseudanophthalmus bielzi* Seidlitz (Coleoptera, Carabidae). – Acta Entomologica Musei Nationalis Pragae, **39**: 159-185.
- HÜRKA, K. 1996. Carabidae of the Czech and Slovak Republics – Kabourek, Zlin, pp. 566.
- LIE P., MÁTHÉ I. (2000): *Carabus (Callistocarabus) marginalis decorus* Seidlitz, 1891 wurde in Transsilvania (Siebenbürgen) – Rumänien – nach fast hundert Jahren wieder aufgefunden – Galathea,

- 16(1): 18 - 30.
- PANIN, S. 1955. Familia Carabidae (gen. *Cychnus* Fabricius și gen. *Carabus* Coleoptera Linné) — In: Fauna Republicii Populare Romîne, Insecta, Volumul 10. Fascicula 2, pp. 148. + pls. 19.
- PETRI, K. 1912. Siebenbürgens Käferfauna auf Grund ihrer Erforschung bis zum Jahre 1911. — Hermannstadt, 1-9. + 376 pp.
- SCHMIDT, J. 1995. Zur Synonymie und Verbreitung einiger paläarktischen Arten des Tribus Platynini (Insecta: Coleoptera: Carabidae). — Entomologische Abhandlungen Staatliches Museum für Tierkunde Dresden, 56(8): 161-170.
- SEIDLITZ, G. 1888. Fauna Transsylvanica. Die Käfer (Coleoptera) Siebenbürgens. I. und II. Lieferung. — Königsberg, pp. I-XL, 1-48 [Gattungen], 1-240. + pl. 1.
- SZÉL, Gy. 1985: A *Carabus*-génus Kárpát-medencében élő fajainak elterjedése és alfaji tagozódása (Coleoptera: Carabidae) - Thesis (manuscript), Budapest, pp. 77.

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