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TAXONOMICAL AND CHOROLOGICAL NOTES 6 (71–74)

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Abstract: The present part of the series of miscellaneous new records provides new chorological data of one lichen-forming fungus and three vascular plants. One basidiolichen species (*Multiclavula mucida*) is reported for the first time from the territory of Romania as native and one (*Oenothera oehlkersii*) from Hungary as a garden escape. One species (*Dryopteris affinis*) is new for the Bakony Mts and one is confirmed for the Great Hungarian Plain (*Danthonia decumbens*).

Key words: Clavulinaceae, Dryopteridaceae, Hungary, Onagraceae, Poaceae, Romania

INTRODUCTION

This paper is the sixth part of the series launched in *Studia botanica hungarica* focusing on the new chorological records, nomenclature, and taxonomy of plant species from algae to vascular plants and fungi (Barina *et al.* 2015, Csiky *et al.* 2017, Mesterházy *et al.* 2017, Papp *et al.* 2016, Takács *et al.* 2016).

MATERIAL AND METHODS

Nomenclature of vascular plants follows Király (2009) and The Plant List (2013).

Codes of the Central European flora mapping grid are in square brackets. Coding of forest lots has been based on www.erdoterkep.nebih.gov.hu.

Coordinates if not recorded by GPS devices are in square brackets. Abbreviations of herbaria follow THIERS (2017).

NEW RECORDS WITH ANNOTATIONS

Lichen-forming fungi

(71) ***Multiclavula mucida*** (Pers.) R. H. Petersen (Clavulinaceae)

Romania. Mureş County, Lunca Bradului (Palotailva), steep siliceous rocky ridges in Mureş valley at the southwestern border of the Călimani Mts (Eastern Carpathians), *ca* 1.1 km ENE of Neagra, on heavily wet stump of a fallen coniferous tree, 46.969478° N, 25.170562° E, *ca* 725 m; leg. L. Lőkös, H. Höhn and E. Szurdoki, 26.09.2017 [BP 96315].

Multiclavula mucida is a conspicuous, easily recognisable, crustose, basidiolichen species (Fig. 1). Its thallus consists of tiny granules forming a thin, bright green (when wet) or greyish (dry) layer on the surface of the substrate. Fruitbodies are ascending, small, 1–2 cm tall, cylindrical, club-shaped, simple or rarely branched, straight or curved, whitish or pale crème or ochre colour. The 4–6 basidiospores are produced by the basidia at the darker brownish, pointed tips of the basidiomata.

Multiclavula mucida has been reported from several countries in Europe, but only with a few records from most of the places. From the Carpathian region it is known from Poland (KOŚCIELNIAK *et al.* 2016), Slovakia (GUTTOVÁ

Fig. 1. *Multiclavula mucida*, thallus and fruit-bodies (Photo: E. Szurdoki).

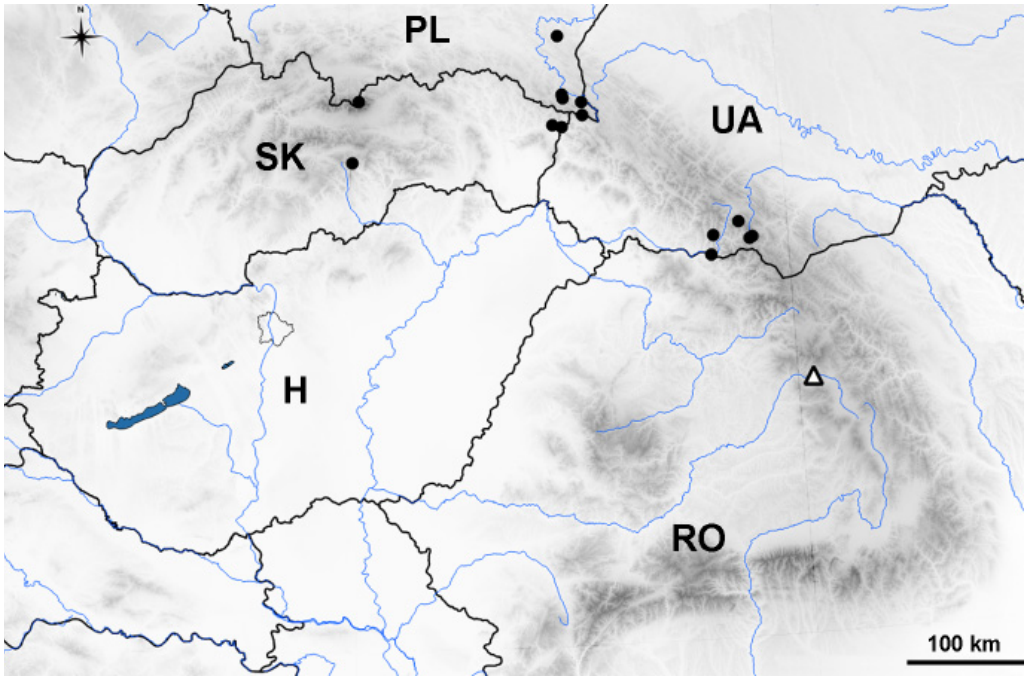

Fig. 2. Known occurrences of *Multiclavula mucida* in the Carpathian Mts (dots) and the new locality (triangle) (Guttová and Palice 1999, Holec 2008, Kościelniak *et al.* 2016, Pilát 1940, Vondrák *et al.* 2010) (H = Hungary, PL = Poland, RO = Romania, SK = Slovakia, UA = Ukraine).

and Palice 1999) and Ukraine (Holec 2008, Pilát 1940, Vondrák *et al.* 2010) (Fig. 2). It is considered as the first Romanian record (cf. Ciurchea 2004, Eliade 1965), which is *ca* 130 km far from the closest known localities in the Ukrainian Carpathians (Maramaros Mts). This occurrence has already been announced recently in a poster presentation without exact locality information (Lőkös *et al.* 2018).

L. Lőkös, E. Szurdoki, M. Höhn, P. Ábrán and K. Buczkó

Pteridophyta

(72) ***Dryopteris affinis*** (Lowe) Fraser-Jenk. (Dryopteridaceae)

Hungary, Győr-Moson-Sopron County, Bakonyalja: Fenyőfő, North from the village, in a *Pinus sylvetris* dominated forest (plantation), at the edge, close to the forest road, 47° 21' 5.46" N, 17° 45' 32.73" E, 267 m [8672.2]; leg. Csiky J. and Csikyné R. É., 11.05.2018, det. Csiky J. (photo-documented) (Fig. 3).

This native and expansive fern was thought to be rare with some occurrences in the Transdanubian half of the country in the last century (Farkas 1999). Nowadays (Bartha *et al.* 2015) it is widespread in West and South Transdanubia, but small populations are also known in the Gerecse Mts (Barina 2006), Buda

Mts (Csiky and Somlyay 2005) and in the Eastern half of Hungary (Mátra, Nyírség). It is new for the Bakony Mts (Vesprimense).

Fig. 3. *Dryopteris affinis* at Fenyőfő (Photo: J. Csiky).

With its single, but strong specimen on the edge of the so called "Fenyőfői Ősfenyves" it contributes to the local list of mountain species, which prefer moist and shady habitats, typical for conifer forests and plantations in Hungary. Associated herb species within 1 m^2 are ruderal taxa and/or plants preferring nutrient rich soils: *Anthriscus cerefolium*, *Chelidonium majus*, *Dryopteris filix-mas, D. carthusiana, Geranium lucidum, Poa pratensis, Rubus caesius, Rubus* sp., *Urtica dioica*.

J. Csiky

Vascular plants

(73) ***Danthonia decumbens*** (L.) DC. [syn.: *Sieglingia decumbens* (L.) Bernh.] (Poaceae)

Hungary, Great Hungarian Plain (Nagyalföld), Dél-Nyírség micro-region, Vámospércs: Villongó, N 47.53319°, E 21.95055°, 132 m, leg. G. Matus, R. Balogh, I. Rácz, F. Báthori, 08.08.2017, det. G. Matus [8497.4], in moist sandy grassland, DE-Soo-45642, BP HNHM-TRA 00012375; – Monostorpályi: Monostorpályi-legelő, N47.41197°, E21.77720°, 111 m; det. G. Matus, R. Balogh, 14.06.2018, in mesic meadow [8596.4]; – Létavértes: Létai-legelő, a) N of 108/B forest lot, N47.44091°, E21.91176°, 118 m, 30.06.2017, leg. G. Matus, R. Balogh, K. Varga, Cs. Farkas, det. G. Matus [8597.3] and b) NE of 108/A forest lot, N47.44459°, E21.91787°, 118 m, leg. G. Matus, R. Balogh, det. R. Balogh, 06.07.2017 [8597.4], both in shallow depressions among sand dunes, DE-Soo-45643, BP HNHM-TRA 12373.

The common heath grass is native to Europe, the Azores and the Madeira Islands, North Africa (Morocco, Algeria, and Tunisia) and parts of western Asia (Turkey, Georgia). After introduction it is naturalized in some temperate regions of Australia, New Zealand, and North (USA) and South America (Chile) but rarely reported as invasive (Alfonso 2010, Mallett 2005, *https://www.cabi.org/isc/datasheet/113791).* In Hungary, where the acidophilous subsp. *decumbens* is present (Soó 1973), it is widespread in West Hungary and present in Bakonyalja and the Vértes Mts. In South Hungary it is present in Belső-Somogy (on acidic sand) and the Mecsek Mts (Csiky *et al.* 2014). It also occurs in the Visegrád Mts and in all those regions of the North Hungarian Mountain Range where acidic bedrocks are present (Csiky 1999, Simon 1992, Soó and Kárpáti 1968). In contrast, in lowlands, only sporadic records are known from the southern edge of the Small Hungarian Plain (Vitnyéd, Csapod, Röjtökmuzsaj) as well as Drávamenti-síkság (Endrőc, Csiky 2005). In the Great Hungarian Plain (Alföld) no data had been reported till the early 1980s (Boros 1932, Soó 1973, Soó and Kárpáti 1968).

The species was first collected in the Great Hungarian Plain in the Nyírség, a sandy region split between Hungary and Romania, by Z. Siroki at Vámospércs (HU) [8497.4] in 1984–1985 (Simon 1992, as *DE–siroki–011668–01672.jpg* in Takács *et al.* 2015). No record has been published yet from the Romanian part of the region (Karácsonyi 1995). Records close to those in the Nyírség were documented in the Mátra Mts, the Bükk Mts, Bükkalja and the Zemplén Mts (HU)

and the Oaş (Avas) Mts (RO) (Bartha *et al.* 2015, Karácsonyi 1995, Matus *et al.* ined., Schmotzer 2015, Valkó *et al.* 2009, 2010, Vojtkó 2001). Later it was also found near Bagamér (Daru-hegyek = Malom-gát [8597.2], Matus and Papp 2001) and was rediscovered at the original site (Vámospércs: Villongó [8497.4]) in 2002 (Király *et al.* 2011, Matus and Papp 2003, *DE-soo-03431.jpg* in Takács *et al.* 2014). The original sheets of the floristic survey for the 8497.4 and 8597.2 grids compiled by G. Matus and M. Papp were not used in the construction of *Atlas Florae Hungariae*. Bartha *et al.* (2015) did not publish the presence of the common heath grass from the Nyírség since they did not record the species during remapping neither reviewed the available literature. In 2017 and 2018 we confirmed the presence of the species near the original site of Vámospércs and recorded it from three further grid cells near Monostorpályi and Létavértes. Further occurrences in the Nyírség along the Kék-Kálló stream (HU) as well as in the Romanian part of the Nyírség (Cimpia Nirului) are likely in similar habitats as near the Ér brook. Some newly collected specimens have been deposited at BP and DE, respectively.

The species in Hungary is known as typical of acidic mountain meadows as well as heathlands. It is considered as Nardetalia species present most often in *Nardo-Festucetum ovinae* and in acidic fen and marsh meadows *Junco–Molinietum*, *Deschampsietum cespitosae* as well as in fens (*Carici echinatae-Sphagnetum*, *Caricetum davallianae*) and several other grassland and forest communities such as *Thymo-Festucetum ovinae*, *Quercetum paetraeae-cerris*, *Aulocomnio-Pinetum sylvestris*, *Festucetum pratensis*, *Lolio-Cynosuretum*, *Genisto pilosae-Festucetum ovinae*, *Festucetum rubrae* (Simon 1992, Soó 1973).

All Nyírség habitats proved to be temporarily moist acidic grasslands and meadows in shallow dune slacks on calcium-free, acidic sand. Soil traits at Létavértes a) are as follows at the 0–10 cm layer, pH(KCl): 4.2, organic material (m/m)%: 4.7, P_2O_5 (mg/kg): 73, K_2O (mg/kg): 185.

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(74) ***Oenothera oehlkersii*** Kappus ex Rostański (Onagraceae)

Hungary, Veszprém county, Balatonkenese, "Kikötő street" 47° 01' 54.4" N 18° 06' 14.4" E, a few specimens in a ruderal place; leg.: D. Schmidt, 04.07.2015 (8974.4), photodocumented (Fig. 4).

Oenothera oehlkersii is a presumed hybrid between *Oe. glazioviana* and *Oe. suaveolens*, which is originated in Europe (Rostański *et al.* 2010). Its main characteristics are the yellowish green flower bud and the stigma which hangs out of the flower (longer than the petals). The stigma of *Oe. suaveolens* is significantly shorter, however, it is much less glandular but white hairy, and the flowers are smaller than *Oe. oehlkersii*. *Oe. glazioviana* has got red stripped flower bud and sepal, furthermore the colour of the stem and the rachis is also red. In contrast,

Fig. 4. *Oenothera oehlkersii* at Balatonkenese (Photo: D. Schmidt).

in the inflorescence of *Oe. oehlkersii* reddish colour cannot be found. Based on these specific diagnostic characters, this tall and big-flowered plant is more easily recognisable than other taxa in the *Oenothera* series of the genus.

The newly discovered occurrence has been located near Lake Balaton, in the recreation area of Balatonkenese, at the roadside of Kikötő street in a weed association. The population consisted of only three or four specimens, all rich branched and with a number of flowers. Based on the photos, the correctness of the determination had been confirmed by Michael Hassler and Helmut Kiesewetter (members of "GEFD-Arbeitsgruppe Oenothera" in Germany). Rostański (1995) described it as a cultivated plant, which escapes very rarely. In Balatonkenese, it grows close to the gardens, but clearly in a wild plant community. None of the parents were observed in the broader verge of the location. According to Rostański *et al.* (2010) it occurs in the wild in eight European countries, mostly in the western part of the continent. In Central Europe it is known only in Slovakia and Poland (Wolanin and Woźniak 2011). Neither in the critical revision and synthesis of the Hungarian *Oenothera* species published by Rostański (1966), nor in the relevant checklist of neophytes (Balogh *et al.* 2004) no mention of *Oe. oehlkersii* can be found, therefore *Oe. oehlkersii* is a new alien species in the flora of Hungary.

D. Schmidt

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Összefoglaló: A sorozat jelen részében egy zuzmó és három edényes növény új adatait közöljük. Egy őshonos, bazídiumos zuzmófajt (*Multiclavula mucida*) elsőként közlünk Románia területéről, egy kerti szökevényt (*Oenothera oehlkersii*) pedig Magyarország területéről. Egy fajt újként jelzünk a Bakony (*Dryopteris affinis*) területéről, egy (*Danthonia decumbens*) előfordulását pedig megerősítjük a Nyírség területén.

REFERENCES

Alfonso, Y. (2010): *Danthonia decumbens. AusGrass2.* – In: Simon, B. K. and Alfonso, Y. (eds): AusGrass2 http://ausgrass2.myspecies.info/content/danthonia-decumbens

Balogh, L., Dancza, I. and Király, G. (2004): *A magyarországi neofitonok időszerű jegyzéke és besorolásuk inváziós szempontból.* – In: Mihály, B. and Botta-Dukát, Z. (eds): Biológiai inváziók Magyarországon. Özönnövények. TermészetBÚVÁR Alapítvány Kiadó, Budapest, pp. 61–92.

Barina, Z. (2006): *A Gerecse hegység flórája.* – Rosalia, Magyar Természettudományi Múzeum–Duna–Ipoly Nemzeti Park Igazgatóság, Budapest, 612 pp.

Barina, Z., Benedek, L., Boros, L., Dima, B., Folcz, Á., Király, G., Koszka, A., Malatinszky, Á., Papp, D., Pifkó, D. and Papp, V. (2015): Taxonomical and chorological notes 1 (1–19). – *Studia bot. hung.* **46**(2): 205–221. https://doi.org/10.17110/studbot.2015.46.2.205

Bartha, D., Király, G., Schmidt, D., Tiborcz, V., Barina, Z., Csiky, J., Jakab, G., Lesku, B., Schmotzer, A., Vidéki, R., Vojtkó, A. and Zólyomi, Sz. (eds) (2015): *Magyarország edényes növényfajainak elterjedési atlasza. Distribution atlas of vascular plants of Hungary.* – University of West Hungary Press, Sopron, 329 pp.

Boros, Á. (1932): *A Nyírség flórája és növényföldrajza.* – Tisza István Tudományos Társaság Honismertető Bizottságának Kiadványai VIII., Debrecen, 208 pp.

Ciurchea, M. (2004): *Determinatorul lichenilor din România.* – Editura BIT, Iaşi, 488 pp.

Csiky, J. (1999): Adatok a Karancs és a Medves flórájához. – *Kitaibelia* **4**(1): 37–43.

Csiky, J. (2005): Adatok Magyarország flórájához és vegetációjához. – *Kitaibelia* **10**(1): 138–153.

Csiky, J. and Somlyay, L. (2005): A Dryopteris affinis (Löwe) Freser-Jenkins előfordulása a Budai-hegységben. – *Kitaibelia* **10**: 201.

Csiky, J., Erzberger, P., Kovács, D. and Deme, J. (2014): Short notes 5. Campylopus pyriformis (Schultz) Brid. in the Western Mecsek Mts (South Transdanubia, Hungary). – *Kitaibelia* **19**(2): 365–370.

Csiky, J., Kováts, D., Deme, J., Takács, A., Óvári, M., Molnár V., A., Malatinszky, Á., Nagy, J. and Barina, Z. (2017): Taxonomical and chorological notes 4 (38–58). – *Studia bot. hung.* **48**(1): 133–144. https://doi.org/10.17110/studbot.2017.48.1.133

Eliade, E. (1965): Conspectul Macromicetelor din România. – *Acta Bot. Horti Lucr. Grăd. Bot. Bucureşti* **1964–1965**: 185–324.

Farkas, S. (ed.) (1999): *Magyarország védett növényei.* – Mezőgazda Kiadó, Budapest, 419 pp.

Guttová, A. and Palice, Z. (1999): *Lisajníky Národného parku Muránska planina I. Hrdzavá dolina.* [*Lichens of National Park Muránska planina I. The Hrdzavá dolina Valley*]. – In: Uhrin, M. (ed.): Vyskum a Ochrana Príody Muránskej Planiny 2. Revúca, pp. 35–47.

Holec, J. (2008): Interesting macrofungi from the Eastern Carpathians, Ukraine and their value as bioindicators of primeval and near-natural forests. – *Mycol. Balcan.* **5**: 55–67.

Karácsonyi, C. (1995): *Flora şi vegetaţia judeţului Satu Mare.* – Edit. Muzului Sătmărean, Szatmárnémeti, 181 pp.

Király, G. (ed.) (2009): *Új magyar füvészkönyv. Magyarország hajtásos növényei. Határozókulcsok*. – Aggteleki Nemzeti Park Igazgatóság, Jósvafő, 616 pp.

Király, G., Virók, V. and Molnár V., A. (eds) (2011): *Új magyar füvészkönyv. Magyarország hajtásos növényei. Ábrák.* – Aggteleki Nemzeti Park Igazgatóság, Jósvafő, 676 pp.

Kościelniak, R., Betleja, L. and Baran, D. (2016): Multiclavula mucida – an epixylic lichen of natural forests in south-eastern Poland. [Multiclavula mucida – epiksyliczny porost naturalnych lasów w Polsce południowo-wschodniej]. – *Roczniki Bieszczadzkie* **24**: 47–52.

Lőkös, L., Szurdoki, E., Höhn, M., Ábrán, P. and Buczkó, K. (2018): A *Multiclavula mucida első adata Romániából. (The first record of Multiclavula mucida from Romania).* – In: Molnár, V. A., Sonkoly, J. and Takács, A. (eds): Programme and abstracts, 12th International Conference, Advances in research on the flora and vegetation of the Carpato-Pannonian region, Debreceni Egyetem, TTK, Növénytani Tanszék, Debrecen, p. 78.

Mallett, K. (2005): *Flora of Australia Volume 44B: Poaceae 3.* – CSIRO Publishing / Australian Biological Resources Study (ABRS), Melbourne, Australia, 486 pp.

Matus, G. and Papp, M. (2001): Újabb adatok a bagaméri Daruhegyek (Dél-Nyírség) flórájához. – *Kitaibelia* **6**(2): 363–369.

Matus, G. and Papp, M. (2003): Adatok Hajdúsámson és Vámospércs környékének (Dél-Nyírség) flórájához. – *Kitaibelia* **8**(1): 99–112.

Mesterházy, A., Matus, G., Király, G., Szűcs, P., Török, P., Valkó, O., Pelles, G., Papp, V. G., Virók, V., Nemcsok, Z., Rigó, A., Hohla, M. and Barina, Z. (2017): Taxonomical and chorological notes 5 (59–70). – *Studia bot. hung.* **48**(2): 263–275. https://doi.org/10.17110/studbot.2017.48.2.263

Papp, V., Király, G., Koscsó, J., Malatinszky, Á., Nagy, T., Takács, A. and Dima, B. (2016): Taxonomical and chorological notes 2. – *Studia bot. hung.* **47**(1): 179–191. https://doi.org/10.17110/studbot.2016.47.1.179

Pilát, A. (1940): Hymenomycetes Carpatorum orientalium. – *Sborn. Národn. Mus. Praze* **2**(3): 37–80.

Rostański, K. (1966): Die Arten der Gattung Oenothera L. in Ungarn. – *Acta Bot. Acad. Sci. Hung.* **12**(3–4): 337–349.

Rostański, K. (1995): The occurrence of the Oenothera species in the Polish and Czech Sudetes and in the Polish and Slovak Carpathians. – *Thaiszia* **5**: 21–25.

Rostański, K., Rostański, A., Gerold-Śmietańska, I. and Wąsowicz, P. (2010): *Evening-Primroses (Oenothera) occurring in Europe*. – W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków, 157 pp.

Simon, T. (1992): *A magyarországi edényes flóra határozója*. – Tankönyvkiadó Vállalat, Budapest, 892 pp.

Schmotzer, A. (2015): Ceratocephala testiculata (Crantz) Roth and further data to the flora of the foothills of Bükk Mts. ('Bükkalja', NE Hungary). – *Kitaibelia* **20**(1): 81–142. https://doi.org/10.17542/kit.20.81

Soó, R. (1973): *A magyar flóra és vegetáció rendszertani-növényföldrajzi kézikönyve 5*. (*Synopsis systematico-geobotanica florae vegetationisque Hungariae V.*) – Akadémiai Kiadó, Budapest, 387 pp.

Soó, R. and Kárpáti, Z. (1968): *Növényhatározó II.* – Tankönyvkiadó, Budapest, 846 pp.

Takács, A., Baráth, K., Csiky, J., Csikyné, R. É., Király, G., Nagy, T., Papp, V., Schmidt, D., Tamási, B. and Barina, Z. (2016): Taxonomical and chorological notes 3 (28–37). – *Studia bot. hung.* **47**(2): 345–357. https://doi.org/10.17110/studbot.2016.47.2.345

Takács, A., Nagy, T., Fekete, R., Lovas-Kiss, Á., Ljubka, T., Löki, V., Lisztes-Szabó, Zs. and Molnár V., A. (2014): A Debreceni Egyetem Herbáriuma (DE) I.: A „Soó Rezső Herbárium". – *Kitaibelia* **20**(1): 15–22.

Takács, A., Süveges, K, Ljubka, T., Löki, V., Lisztes-Szabó, Zs. and Molnár V., A. (2015): A Debreceni Egyetem Herbáriuma (DE) II.: A „Siroki Zoltán Herbárium". – *Kitaibelia* **20**(1): 15–22. https://doi.org/10.17542/kit.20.15

The Plant List (2013): Version 1.1. – Published on the Internet, http://www.theplantlist.org/ [accessed on 07 November 2017].

Thiers, B. M. (2017): *Index Herbariorum: A global directory of public herbaria and associated staff.* – New York Botanical Garden's Virtual Herbarium. http://sweetgum.nybg.org/ih/ [accessed on 05 November 2017]

Valkó, O., Török, P., Tóthmérész, B. and Matus, G. (2010): Restoration potential in seed banks of acidic fen and dry-mesophilous meadows: can restoration be based on local seed banks? – *Restoration Ecol.* **19**(101): 9–15. https://doi.org/10.1111/j.1526-100x.2010.00679.x

Valkó, O., Török, P., Vida, E., Arany, I., Tóthmérész, B. and Matus, G. (2009): A magkészlet szerepe két hegyi kaszálórét közösség helyreállításában. – *Term.véd. Közlem.* **15**: 147–159.

Vojtkó, A. (2001) (ed.): *A Bükk hegység flórája*. – Sorbus 2001 Kiadó, Eger, 340 pp.

Vondrák, J., Palice, Z., Khodosovtsev, A. and Postoyolkin, S. (2010): Additions to the diversity of rare or overlooked lichens and lichenicolous fungi in Ukrainian Carpathians. – *Chornomors'k. bot. zhurnal* **6**: 6–34.

Wolanin, M. and Woźniak, M. (2011): Oenothera oehlkersii Kappus ex Rostanski – a new evening-primrose species in Polish flora. – *Biodiv. Res. Conserv.* **23**: 57–58. https://doi.org/10.2478/v10119-011-0015-9