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Usnea plicata and *U. prostrata* (*Lichenes, Usneaceae*) in Europe

Usnea plicata i *U. prostrata* (*Lichenes, Usneaceae*) w Europie

During my studies on the documentation of *Usnea* in our herbarium (LBL-L) I had an opportunity to examine a number of specimens whose localities are quoted in *Lichenum generis Usnea* (1), including the taxonomic types (holotypes, syntypes, isotypes or lectotypes). This allowed me to see the variability of this genus and in this way to estimate the systematic value of the taxons described.

After a thorough analysis of a rich collection I find it difficult to have an explanation for some of the latest concepts including the one put forward by Clauzade and Roux, especially in the case of *Usnea plicata*, which was exposed while degrading some other very clear species, e.g. *Usnea prostrata* Vain., *U. rugulosa* Vain., *U. foveata* Vain.

Leaving out morphological and anatomic differences between *U. prostrata* and *U. plicata*, the combination suggested by Clauzade and Roux gives rise to some doubts because of taxonomic ambiguities with *U. plicata* which have not been solved so far.

One can disagree with the concepts raised by Motyka about the species of the kind of *Usnea*. Nevertheless, one can not ignore his efforts in looking for the types of *U. plicata* or his attempts to preserve the designations of Linneus. Motyka did not confirm the type of *U. plicata* in Linneus' herbarium (Clauzade and Roux do not mention finding it). He did not find the type of *Lichen plicatus* in Weber or *Usnea plicata* in Wigger. He suggested that the specimen in Acharius' herbarium should be considered as the type. He did not give the exact site, but he only pointed

to the region (*Suecia meridionalis et media, possibile Sudermania*). On the basis of the specimen in Acharius, Motyka worked out a diagnosis for *U. plicata*. He limited its distribution to one site in Sudermany, on the basis of the specimen collected by Johansson. He kept the name *U. plicata* and he arranged its authors in accordance with priority principles. If we do not accept Motyka's concept and if we do not treat as the neotype the specimen in Acharius' herbarium pointed out by the monographer as the type, then we still do not know anything about *U. plicata*. If we accept Motyka's concept, then we must consider him the author of combination or emendation and include in *U. prostrata* only the specimens referring to the diagnosis in the monograph of *Usnea*. If the type were found in the collections of the researchers mentioned above, what is its relation to the type pointed out by Motyka? No matter which concept we are going to adopt, *Lichen plicatus* L. will remain a mystery until the holotype is found.

On our part, we are prepared to treat the name *plicata* as *nom. conserv.*, commonly used for over 200 years and to recognize the species *Usnea plicata* **(L.) Wigg. ex Mot.** which has been limited by Motyka (1).

Independently of the way of treating *U. plicata*, we find it difficult to put up with degradation of a number of species described by Vainio, a keen researcher into lichens. The species of *Usnea* mentioned above and distinguished by Vainio are good and clear species, easy to distinguish even by the beginning lichenologists.

U. prostrata Vain. is peculiar among them. It was described by Vainio on the basis of the specimens from Finland (Ob., Simo, Sürünkangs). Motyka (1) observed that the type of *U. prostrata* was not well matched and he wrote: "typus Vainio est specimen miserable, male evolutum", and *U. prostrata* proper is an imposing plant. The specimens from different areas of Europe which the author is acquainted with reach the length of 30–50 cm.

A fragment of the holotype of *U. prostrata* examined by me corresponds to the diagnosis. It has clearly segmented twigs, protruding segments, thicknened at the edges, clearly with few longitudinal and oblique wrinkles and secondary twigs which are creased in places. The medulla is coloured from KOH yellow at first and then orange, and orange from PFDA. Most of the numerous specimens of *U. prostrata* that I know are barren plants. I observed no soralia. Distinct species properties make it possible to distinguish poorly shaped specimens.

The species of *U. prostrata* is closely related to *U. maxima*. The reaction with KOH makes it easier to distinguish those two species. It is sometimes

mistaken for *U. rugulosa* because of the wrinkles occurring on some twigs, but this species has quite a different habitat and specific bark ornamentation. On the other hand, we see no relationship between *U. plicata* and *U. prostrata.*

U. prostrata is a Central European species. Its range in the east is a little greater than that of the beech-tree. It is also an epiphytic species, growing on tree trunks, more often on tree branches, in the oldest tree stands in natural forests. It mostly grows in coniferous forests. Its singular localities are found in the Scandinavian Peninsula, Roztocze in the Lublin region, and it is commonly found in the Białowieża Forest, the Carpathian Mountains and the Balkan Peninsula, always on well shaped and big thalluses. It usually grows in a considerable group of specimens where it occupies a habitat. At present it is on the red list of dying out species in Poland.

Considerable intra-species variability of *U. prostrata* refers to the thickness of twigs, size of the segments and especially to bark ornamentation. Apart from the typical variety we distinguish var. *glabratula* Bystr. which is characterized by smooth and shiny bark and regular segmentation of order one twigs.

Distribution. In the collection of *Usnea* we found a double of Havaas from Norway (Ins. Tysnesso) collected on mossy rocks, which is the only site from the rock bedding. The others are epiphytic plants. In the analysed materials published by Motyka (1) only two specimens of Borkowski from Czarnohora (ad pedes the Pożyżewska Mt), which we identified as *U. prostrata* Mot. and one of the specimens from Bosnia (prope Fojnica, leg. Schwarz), which we marked as *U. scabrata* Nyl. Others which are found in our collection are quoted in the specification of sites with the number in the collection.

The following abbreviations were used: B — Bystrek, M — Motyka, R — Rydzak, S — Sulma.

Var. *prostrata. Thallus irregulariter articulatus, articulis teretes sat crebre foveolatim, fere semper distincte rugosi, rugulis obliquis, interdum subreticulatim dispositis, papillis breviusculis, obtusis, breviter cylindricis. Varietas typica.*

Thallus with irregular, cylindrical, foveolate articules, with oblique or longitudinal wrinkles, and few irregularly distributed small papillae. It corresponds to the description of the species (Motyka 1). A typical variety of the species.

Specimens examined: FINLAND: Ob. Simo, Sorünkangs, 1915 Räsänen (locus class.).

NORWAY: Ins. Tysnessö, ad saxa muscosa, alt 750 m, Havaas (for. *saxicola*, 2.92).

SWEDEN: Nerike, Posta, in *Betula*, 1908 Sernander (3.92). Balvik, Svarta sn. *Picea abies*, 1929 Johansson (4.92). Gestrikland, Hille, Iggön, *Picea*, 1930 Ahlner (for. cum pseudocyph. 5.92). Säljemar, Mjolkstan, 1931 Ahlner (6.92). Nederkalix sn: Storön, 1930, G. Nilsson (7.92). Angermania, Hemösand, 1983 Almquist (57.92).

POLAND: the Tatra Mts: ad cort. et ramos *Picea* in *Piceeto*: Polana Smreczyńska: 1924, 1925, 1927 M (8.92), 1948 M (9.92 et 12.92), Smreczyński Staw, 1951 R (10.92), 1959 B (11.92), Hala Pyszna, 1958 B (13.92), 1959 B (15.92), Hala Pisana, 1923 M (28.92), Hala Ornak, 1951 R (16.92 for.), Stoły, 1951 R (17.92), Kamienista, 1959 B (18.92) Iwaniacka Przełęcz, 1957 B (19.92) et 1958 B (22.92), ad viam turisticam Dolina Staroroboclańska—Iwaniacka Przełęcz, 1951 R (20.92), 1961 B (21.92) et Hala Ornak—Iwaniacka Przełęcz, 1949 M (23.92), Wantule, 1951 R (24.92), Dol. Tomanowa 1951 R (26.92 for.), Stare Kościelisko, *Fraxinus* 1923 M (27.92), Siwiańskie Turnie, 1951 R (29.92), Polana Chochołowska Wyżnia, 1961 B (30.92) Dolina Jarząbcza, 1961 B (31.92), Dolina Kondratowa: Pośredni Goryczkowy Wierch, 1925 M (32.92), 1959 M (33.92). Dolina Stawów Gąsienicowych, 1923 M (34.92) et 1949 M (35.92), 1958 B (36.92), Dolina Waksmundzka, 1949 Waksmundzki (37.92), 1951 R (41.92), Łysa Polana, 1960 B (38.92), Dolina Roztoki, 1959 et 1964 B (39 et 40.92), in iugo inter Mnich et Ostry Szczyt, 1929 M (42.92), Kotlina Morskiego Oka: Żabie, *Pinus cembra*, 1929 M (45.92), *Picea*, 1947 et 1949 M (43 et 48.92), 1955 Tatarkiewicz (49.92), Polana Włosienica, 1959 B (46 et 47.92), Nowa Roztoka, 1958 Tatarkiewicz (49.92).

The Western Bieszczady Mts.: Polana pod Moczarnym on the Solinka, *Fagus*, 1955 Glanc (50.92)

Roztocze: Susiec, Rebizanty, Paary, *Abies* in *Abieteto* 1959 et 1960 B (51 et 52.92), Obrocz, *Abies*, 1951 R (53.92).

The Białowieża Forest: Nat. Park, *Picea* 1964 B (54.92), *Piceeto-Pinetum: Pinus* et *Picea, Tilio-Carpinetum: Carpinus, Quercus*: 1948–1951 R (55–61.92), *Quercus* 1964 B (61.92).

UKRAINE: The Eastern Carpathians: the Czarnohora Mts, the Pożyżewska Mt., *Picea* 1934 M (63.92), the Maryszewska Mt., 1934 M (75.92), the Pod Dancerzem Mt., 1934 M (63.92), the Czywczyńskie Mts: Mt.: Zadnia Staja, 1520 m, Seliguł, Stefulec, Mały Kaminiec Prełuczny, Ladeskuł, Mokry: Dolina Czeremoszu, Dolina Popadyńca: *Picea* et *Fagus* 1934 S (63–72.92), the Central Gorgany Mts: Małachów, 1939 S (73.92), Taupiszyrka, 1140 m Borkowski (74.92).

AUSTRIA: ad ramos *Picearum* in decl. montis Dürrenstein, 1500 m, 1917 Suza (76.92), Carinthia, Maltatal, Klemfererlam, 1800, *Larix*, 1931 Frey (88.92), Velden, *Picea*, Klijstra (77.92) Geitaler Alpen, Nagsfeld, *Larix*, 1959 Grummann (78.92).

SWITZERLAND: Haslital, Zaun pr. Meyringen, 1400 m, *Acer* et *Abies* 1928 Frey (79.92), Mitteland, Grunigel pr. Bern, 1640, *Pinus cembra* et *P. montana*, 1935 Frey (80.92 for.) La Gittaz pr. Ste Croix, 1250 m, 1931 Meylan (81.92 for. acced. ad *U. maxima*).

Var. *glabratula* **Bystr. nova var.** Holotypus LBL-L, 87.92) Locus class.: Ukraina, Carpati or., Czarnohora, in decl. montis Pożyżewska, ad *Picea* in *Piceeto*, 1934 Motyka.

Thallus pendulus, parce dichotome ramosus, distincte sat crebre articulatus, articuli vulgo non discretis, apice constrictibus, crebre foveolatim, cortex nitidus vel indistincte rugosis, papillae nunc nulli, nunc interdum praesente, minutis.

Thallus elongated, pendant, rarely forked, distinctly and densely segmen-

ted, segments indistinct, apices constrict, densely foveolate, bark smooth or slightly rugulose, papillae tiny and scarce.

Specimens examined: AUSTRIA: Hautes Alpes, Ste Julien, Beachene, Foret de Durbonnas, 1950 Frey (89.92).

SWITZERLAND: Chasseron. La Racher, 1350 m *Abies*, 1930 Meylan (89.92).

YUGOSLAVIA: Bosnia, prope Fojnica, leg. Schwartz (85.92).

UKRAINE: the Eastern Carpathians, the Gorgany Mts, the Małachów Mt., 1939 S (86.92), Czarnohora, the Pożyżewska Mt. (locus class.).

Var. *glabratula* Bystr., is a variety from the distributional group of the Carpathian-Balkan-Alpine species. It grows in high parts of the mountains in primeval coniferous forests.

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STRESZCZENIE

Diagnozę *U. plicata* (L.) Wigg. opracował Motyka na podstawie okazu z zielnika Achariusa, ponieważ brak było typu *Lichen plicatus* w zielniku Linneusza. W ten sposób urealnił jeden z pięciu gatunków *Usnea* opisanych przez Linneusza. Jest więc Motyka jednym ze współautorów gatunku *U. plicata* (L.) Wigg. ex Mot. Jeśli tej kombinacji jednak nie przyjmiemy (jak to uczynili Clauzade i Roux), ponieważ brak typu *Lichen plicatus* także u Webera, to *U. plicata* pozostanie w dalszym ciągu gatunkiem zagadkowym.

Niezależnie od tego, czy uznamy jeszcze kilka innych gatunków *Usnea*, w tym *U. prostrata* Vain., włączenie ich do *U. plicata* w randze odmian nie ma najmniejszego uzasadnienia.

Analizę wartości *U. prostrata* Vain. oparłem na badaniach licznych okazów sponad 80 stanowisk z całego zasięgu gatunku, na materiałach zgromadzonych w zielniku Zakładu Systematyki Roślin UMCS (LBL-L), w tym na okazach identyfikowanych przez Motykę i cytowanych w wykazie stanowisk w monografii *Usnea*. Wszystkie oglądane przeze mnie okazy odpowiadają diagnozie. Wykazują niewielką zmienność dotyczącą wielkości plech, grubości gałązek i brodawek na powierzchni kory. Oprócz odmiany typowej (var. *prostrata*) wyróżniam **var.** *glabratula* **nova var.**, charakteryzującą się między innymi wyjątkowo gładką korą.

U. prostrata jest gatunkiem środkowoeuropejskim, nadrzewnym, rosnącym często w znacznej liczbie okazów w najstarszych drzewostanach w lasach naturalnych. Obecnie w Polsce jest na czerwonej liście gatunków ginących.