

The uses of *Betula pendula* Roth among Hungarian Csángós and Székelys in Transylvania, Romania

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Abstract

The aim of this work is to evaluate the ethnobotanical and ethnopharmacological use of *Betula pendula* Roth in various regions of Transylvania, in East and Central Romania. Silver birch is an important pioneer species in the country, which has traditionally been used in ethnomedicine, households and various customs. Among the ethnic groups, 55 informants from the Csángós and 68 from the Székelys were interviewed in six villages during field studies occurring between 2007 and 2012. Informants were asked questions about the medical and non-medical applications of *B. pendula*, focusing on the use of the leaf and woody parts in tools and customs, and on the collection and use of birch sap with its temporal change in local ethnomedicinal knowledge. Differences related to the use of birch among the studied areas were observed. The folk remedies prepared from the sap (“virics”) and leaves were documented in local customs, with similar symbolic roles assigned to birch used in other countries. Sap collection was performed during interviews and by manual means. Four special section types on the trunk were presented, and data concerning the nutritional and ethnomedicinal use of the sap was recorded. Both the significance and use of birch sap have drastically decreased in Transylvania due to the appearance of new phytotherapeutical sources and to social changes caused by migration of young people. We found that this phenomenon is gradually leading to the disappearance traditional harvesting techniques, frequency of use and ethnomedicinal knowledge concerning *B. pendula* in the studied regions.

Keywords: silver birch; ethnobotany; medicinal plant; traditional knowledge; birch sap; virics

Introduction

The silver or white birch (*Betula pendula* Roth), which belongs to the Betulaceae family, is well known as a pioneer species tolerant to cold, and which is prevalent mainly in the boreal zone in Europe [1], Asia and North Africa [2],

with a wide ecological amplitude, preferring moist acidic and airy soil [3,4]. Since the Paleolithic Age, the species has been well known for its use as timber, in household tools and in traditional medicine [5,6], and as a magic element in various cultures [7–9].

The word nyír (birch) is one of the oldest (5000–6000 years old) Hungarian words in historical linguistics, originating in the Ural Mountains. From this region, the ancient elements of the use of *B. pendula* have been brought to the Carpathian basin by migration of Hungarians [10]. Silver birch is linked to special names for different regions in Hungary (such as “Nyírség”) based on its presence in the local vegetation. Several settlements were also named after the surrounding birch forest in Transylvania, such as “Nyíres”, “Nyírfás” [11], “Nyírszeg”, “Nyírkert”, “Gyakornyír” and “Marosnyír” [12]. In these regions, the traditional Hungarian use of silver birch has remained in the archaic

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(not current) knowledge of the people, even more so than in Hungary.

The “European Pharmacopoeia VII” [13] includes only the leaf (*Betulae folium*) as the official drug part of *B. pendula* (in Romanian: “mesteacăn”), but the leaf, the bark (*B. cortex*), the bud and its essential oil (*B. gemma*, *B. gemmae aetheroleum*) are also commonly used in the official phytotherapy nowadays [14]. However, the official “Romanian Pharmacopoeia X” [15] has no current data on the species, but the leaf and the bark are applied in the traditional ethnomedicinal system in the country [16]. According to the earlier reported data on the traditional use of birch, this species plays a significant role in the everyday life of local people in Transylvania. The trunk and woody parts have been used in handicraft tools, as firewood and construction elements [11,12,17]. The leaf and bark have been known as colorant substances in decoctions, for dyeing linen and wool to yellow, green, brown or grey [11,18,19]. Specifically, the bark has been applied for tanning leathers, for making saltboxes and baskets, and for use as postcard substitutes during World War I [12,20]. In addition, leafy branches have been collected as a protective symbol against lightning [21], and to ornament the portals of churches and houses during weddings, and in front of the houses of unwed young women in May [11].

The birch sap (“succus”) circulating in the woody parts before the foliage state from March to May has been described in the European ethnomedicine [22], complete with analyses of some compounds [23–25], but without official data in the present phytotherapy. The sweet sap is called “nyírvíz” (literally birch water), “virics” or “mezge”, and has been documented as an ethnomedicinal remedy for various human diseases [6,10,26–30] and in ethnoveterinary medicine [31–33], as well as in hair cosmetics [31–34]. Birch water was fermented or boiled in houses for cooking virics [35], and consumed as wine, beer, syrup or vinegar, and as a soft drink in the region in springtime [14,36–38]. The traditional

extraction of sap, namely “viricselés”, has been described in only a few reports in Transylvania [11,31,36,39,40]. In the 18th–19th century, the birch sap was sold in barrels as an important product in the Transylvanian markets and served as a significant source of income for the local people [31].

In the present study, the main goal was to collect and document the contemporary and evanescent local practices concerning silver birch in some isolated Transylvanian villages, and to compare these data with the traditional uses of the species in the past. The fieldwork concentrated on the harvesting, use and role of the leaf, trunk and bark, and mostly on the traditional collection method and usage of birch sap.

Material and methods

Research area and population

Selection of the study areas in Transylvania were based on the prevalence of birch-woods, on the availability of pharmacy, medical and veterinary service, and on the living knowledge of the multiple uses of birch among local people. Silver birch is common in low-level humid areas in the mountains all over the country or in the vicinity of turf-moors, especially in secondary succession or near the woodland line. It can be observed mainly after the deforestation of *Picea abies* (L.) Karst. and *Fagus sylvatica* L. [41,42].

Transylvania is a multicultural part of Romania. For centuries, it has been inhabited by various ethnic groups (mainly Hungarian, German and Romanian speaking). The selected Hungarian speaking Székely and Csángó areas represent ethnic, cultural and linguistic islands according to Hammer et al. [43], living in close relationship with the forests and natural surroundings. The selected six villages in the four major areas, namely Űz-valley, Gyimes-valley, Homoród-valley and Erdővidék (Fig. 1) are isolated from major settlements (Tab. 1).

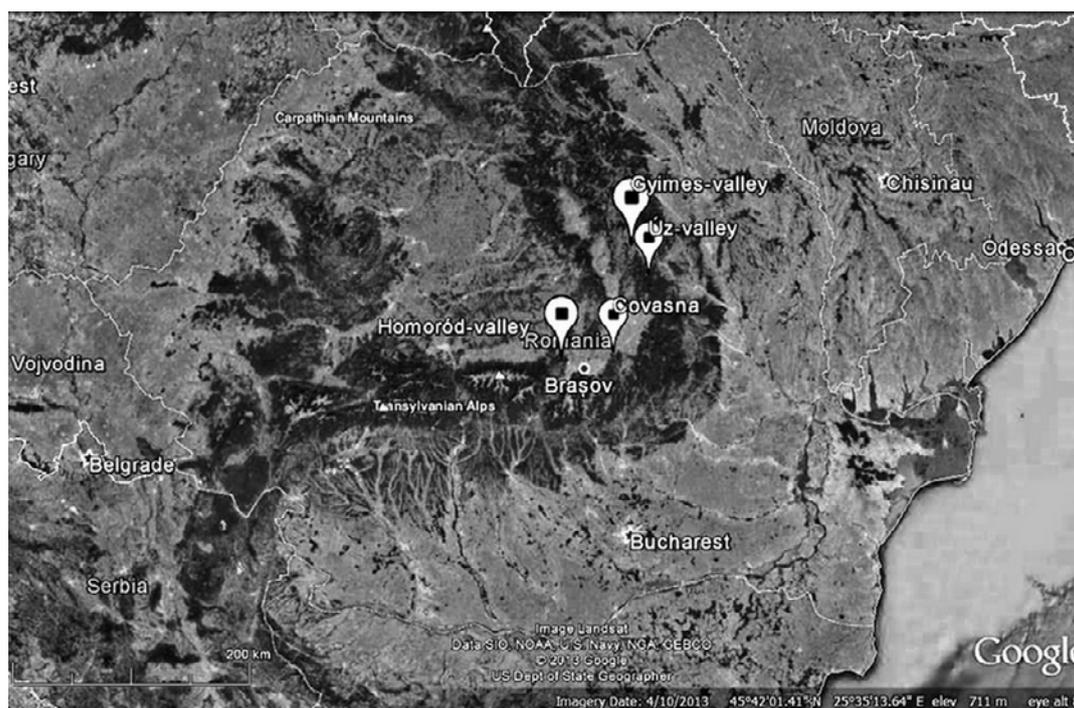


Fig. 1 Map of study areas (Google Earth 5.0, <http://earth.google.com>)

Tab. 1 Study area in Transylvania.

Study area	Latitude	Longitude	Informants/ Inhabitants		Confession	Medical service	Veterinary practice		Pharmacy
			Inhabitants	Confession			practice	Pharmacy	
1. Gyimesfelsőlök	46°31'44"	25°57'33"	17/650	Catholic		+	+	+	
2. Csinód	46°18'38"	26°03'53"	18/200	Catholic		-	-	-	
3. Egerszék	46°20'38"	26°04'24"	20/100	Catholic		-	-	-	
4. Lövéte	46°16'27"	25°29'15"	35/2900	Catholic	from a neighbouring settlement		+	+	
5. Homoród-karácsonyfalva	46°11'0"	25°25'51"	15/450	Unitarian	from a neighbouring settlement		-	-	
6. Nagybacon	46°5'22"	25°41'29"	18/1932	Catholic		+	+	+	

Ethnic groups of the study areas. Csángós: Gyimes-valley (1), Úz-valley (2, 3); Székelys: Homoród-valley (4, 5), Erdővidék in Covasna county (6).

Local people use Hungarian as their native language in each village. In the Csángós' region in Úz-valley and Gyimes-valley, local people are subsistence farmers supplementing their income by making local dairy products and homespun clothes, and in special cases, folk costumes. In the case of acute health problems, people in Csinód (in Romanian: Cinod) and Egerszék (Egershec) of Úz-valley take a long trip to the major villages, which are provided with an own pharmacy and primary healthcare. In Gyimesfelsőlök (Lunca de Sus) in Gyimes-valley in eastern Romania, the ancestral knowledge about the native flora is represented by unique magico-mythological methods and several local folk customs in the Csángós' ethnomedicine [38]. In Székely region in southern Transylvania, Homoród-valley consists of several villages along the river Kis-Homoród. Among them, in Lövéte (Lueta), people work in agriculture and in the industry of the neighboring settlements. The *Viscum* Pharmacy was established in the village in 2008 with many drugs and remedies providing a daily service for the people.

Also, along the river Kis-Homoród, inhabitants of Homoródkarácsonyfalva (Crăciunel) are employed as handworkers, and work in agriculture, livestock farming and apiculture. Specialists acquired wide experience about plants, based on their observations and on inherited data, too.

Inhabitants of Nagybacon (Bătani Mari) in Erdővidék work mainly in industry. The ethnomedicinal elements are completed by methods of official medicine in this village nowadays.

Ethnobotanical collection

Informants from randomly selected households in the study communities were interviewed in the summers of 2007–2011 and in the spring of 2012, using semi-structured and unstructured interviews [44], handwritten notes and photos throughout collecting fieldtrips in the mountains. The interviews were conducted with one person at a time. In questionnaires, the visited 123 informants (Tab. 1) aged between 14 and 99 years (the ratio of female/male informants was 2:1), were asked to list the harvesting methods and time, as well as the uses of the leaf, woody parts and bark of silver birch. The medicinal uses of the plant parts contained some records arising from official sources (e.g. books, journals),

which were separated from the traditional data by questions aimed at the source of the knowledge. Only the medicinal data and the use in tools and customs mentioned by more than 75% of the informants were documented in this work.

With respect to the traditional collection of the sap, appropriate details were represented orally in summers in all studied regions, and manually on the trunk of the trees presented by 8 villagers (4 men from both Lövéte and Homoródkarácsonyfalva) throughout fieldtrips in April prior to the foliage period. The documentation of the process comprised the slit form, the height and form of the cut, and the collected quantity, storage and uses of the sap. In addition, people were interviewed about the role of the species in household tools and local ceremonies, and their uses as timber and firewood for non-medicinal purposes. The original quotations of the people were written in italics between inverted commas according to the folk terminology of Csángós and Székelys. Voucher specimens collected in each village were deposited at the Department of Pharmacognosy of the University of Pécs, Hungary.

Results

Birch leaf and bark use in ethnomedicine

In all regions, the ethnomedicinal use of silver birch was mentioned mostly by women, related to their activities focusing principally on the households. Among the parts of birch, in preparations of the leaf and the bark regional variations were observed (Tab. 2). The fresh or dry leaf was used by itself or blended with other species in various home remedies applied internally and externally, too. In the Csángós' region in Gyimes-valley and Úz-valley, the fresh collected leaves were applied as a diaphoretic foment spread on the bedding. People put their painful legs into a sac for the night or into trousers filled with birch leaves during the day, or they lie among them in bed to treat mostly rheumatism, generally four or five times daily for some hours, or all night. In addition, informants consider that this treatment is inadequate for sensitive patients, because "it can drain the strength from the muscles", causing asthenia and fatigue. In Homoród-valley in Lövéte and Homoródkarácsonyfalva,

Tab. 2 Traditional use of *Betula pendula* Roth in the studied villages and previous reports in Transylvania, and in other European countries.

	Parts used and application forms in the studied Transylvanian villages	Previous reports in Transylvania	Data from other European countries
Medicinal use	<p>Leaf: for cold as a foment; for rheumatism and arthritis as a bath and foment (Gy) and in bed or in a sack as a foment; as a diuretic (Cs, L, H); for varicose veins in trousers and for waist pain as a foment; for kidney stones with <i>Alnus glutinosa</i>, <i>Origanum vulgare</i> and <i>Equisetum arvense</i> as a tea; for swollen legs with <i>Achillea millefolium</i> and <i>Lysimachia nummularia</i> for wounds (wound healing) chilblain, heart and liver disease; for flatulence as a tea (L), for renal pain as tea or bath (Cs); for sweating of the legs (L, H, N).</p> <p>Bark: for wounds (N).</p> <p>Sap: as a refreshing beverage earlier (Gy, H, N); for kidney disease (Cs, H); for gall stones (E); as an appetite stimulant, for stomach and liver disease; for colds (E, L); for chilblain as a foment (L).</p>	<p>Leaf: decoctions containing only birch leaves [18,49,50]; for rheumatism as a foment in bed and sack [11,45–48]; for stroke with garlic and for cold as a tea [47]; as a diaphoretic [61].</p> <p>Bark: in veterinary practice for diarrhoea and dysentery [61].</p> <p>Sap: drained from the trunk in spring [26,31,36,81]; sold in the markets [31]; vermifuge; as a milk-rennet drug in cheese [26,27]; for colds [11,12]; for anaemia [82]; for constipation and pneumonia; for a fungal skin disease called semereg or ebsemereg [12,28,29]; for abscess and pimples [30]; for herpes called ebsömöreg [8]; as a vermifuge [36,59,82].</p> <p>Tar: for psoriasis and eczema as liniment, tincture and soap [59,60].</p>	<p>Leaf: mostly in single remedies; among ancient data: for wounds [7]; for painful body parts [51,52]; as diuretic tea (Pieroni, unpublished) [55,56,62]; as a cholagogue, for gout, rheumatism, cold [55,56,62], fever and detoxication [55,56]; to treat urinary tract infections [54–56] and kidney stone [54]; in veterinary for diarrhoea in cows, for arthritis in suint [62].</p> <p>Branches: internally: rain, which has gone through a birch tree, is collected and drunk to treat kidney stones and prostatitis; externally: beaten on the affected part to treat bruises [83].</p> <p>Bark: for hemorrhoids (Pieroni, unpublished); for cold, fever, rheumatism and purifying blood [55,56]; as a diuretic; for urinary tract infections [55–58]; externally: burned, the vapours are exposed to the skin to treat skin inflammations (Pieroni, unpublished).</p> <p>Sap: drained from the trunk in spring [63,64]; as a milk-rennet drug in cheese [77,78]; for children with milk in the teething period, for sores on the lower legs of humans [65].</p>
Use in household tools	<p>Branches (Gy, Cs, E, L, H, N) and trunk (H) for broom; trunk in shaft, carriage and as firewood (L), and in tools (H).</p>	<p>Branches: for broom [11,46].</p>	<p>Branches: for broom [7,79], in torches [7].</p>
Use in customs	<p>Leafy branches: from Csíksomlyó blessed at Whitsunday and burnt during a storm for protection (Gy, Cs, E, H), blessed at Easter and Whitsunday, as an ornament at weddings and on May 1st for maidens (L, H), thrown in the fire during prayer (Cs).</p>	<p>Leafy branches: erected on May 1st for maidens [11].</p>	<p>Leafy branches: used in wreath ornaments; apotropaic role against witches and bad spirits [7]; sacred and magic tree in rituals [6,7]; to make magistrates' beams "that everyone fears" [7]; erected on May 1st as a gift for unwed young women [7,72] (Pieroni, unpublished data); used in herbal wreaths [84].</p>
Other uses	<p>Leaf: for hair loss (Gy, L), and for dyeing as a decoction (Gy, N).</p>	<p>Leaf: for dyeing as a decoction [11,53].</p> <p>Sap: for sunspots [31], as a hair colorant with sugar [31–33], as a hair conditioner [34], as a beverage, wine, beer, syrup or vinegar [16,18,36–38].</p>	<p>Leaf: as a surrogate of tobacco [6], for hair loss and dandruff [54].</p> <p>Sap: as a hair conditioner [85], for hair growth as rubber recently [65]; eventually sugar and raisins are added to the fresh sap, and fermented in a cool and dark place for two months – the resulting liquid is drunk and considered very "healthy" (Pieroni, unpublished); as a beverage, wine, beer, syrup [65–74] and vinegar [65–76], earlier as a fresh or fermented drink with malt and wax, wine, syrup, vinegar and confectionery; in cosmetics in lotions and shampoos; the fresh or pasteurized beverage with lemon juice, sugar and raisins; sold in shops nowadays [65].</p>

Cs – Csinód; E – Egerszék; Gy – Gyimesfelsőlök; H – Homoródkarácsonyfalva; L – Lövete; N – Nagybacon.

besides the independent application of the leaves, there were also reports of the use of birch leaves in combination with other taxa, such as with the herb of “egérfarkú fű” (*Achillea millefolium* L.), “piculavirág” (*Lysimachia nummularia* L.), “ezerjófű” (*Origanum vulgare* L.) and “surlófű” (*Equisetum arvense* L.), and with the leaf of “egörfa” [*Alnus glutinosa* (L.) Gaertn.] for different ailments. In Nagybacon, the fresh leaves were applied to promote heavy sweating of the legs, in the same way as in Homoród. Application of the bark was mentioned only in Nagybacon, applied to wounds as an anti-inflammatory drug, used mostly in captivity during World War II (Tab. 2).

Collection and use of birch sap

In contrast to the role of women as the main healers, men have knowledge about the growth habits, distribution and phenology of silver birch in the region. On a regional scale in Transylvania, special data were recorded on birch water (virics) and on the collecting method of the sap (viricselés). Besides the interviewed women who had no skills and knowledge about the collection, only 8 men could present the methods. The frequency of the extraction and the use of the sap is declining continuously in these days, because its consumption is replaced mostly by various refreshing beverages available in shops, and similar healing effects are achieved through the use of official remedies described in books.

In this process, young trees are bored or slit 3–4 times on average in the same spring, at about a height of one meter and mostly on the shady side of the mildly curved trunks, or on the lateral branches close to the trunk.

In Gyimes-valley, the trunk was bored in the lower part of the tree, and then an iron or copper tube was inserted in the hole, allowing the sap to flow into a jar or a pottery called “csipor”. In Űz-valley, the virics was extracted by the section or boring of the trunk after breaking the thick branches.

In Székely regions, young trees were slit at the base or at the height of about one and a half meters by an axe or knife called a bicsok, resulting in the outflow of the sap from various sections. In Homoród-valley, altogether four section types were described during the collection, according to the recorded oral and manual presentations in forests (Fig. 2). Firstly, the bark can be slit in the form of “T” or “∨”, 1 centimeter deep, and 15 centimeters long vertically and horizontally (Fig. 2a–b). Then the extreme parts of the slit were bent up or down beside the central section, allowing the sap to leak into a jar with the help of a funnel. In the next type, the trunk was incised in a V-form “windowy” in two directions transversally (Fig. 1c), where the sap was let out through the bottom peak of the slit, in the same way as documented in Űz-valley (Fig. 3).

In the last section type, the sap can accumulate in a deep hole, namely “lik”, “göbű” or “hajk” (their preparations are called göbüzés and hajkolás), similarly to the oral data in Gyimes-valley (Fig. 2d, Fig. 4). From these holes, the sap can be drained through a hollow plant stem as in the case of *Phragmites* taxa, or collected in a jar (Fig. 5) with or without a funnel made from birch bark.

Based on the age of the tree and weather conditions, virics was observed in older trees visible as drops at the beginning of the spring, and as a continuous flow in the younger ones

in the main period of the season, yielding 3–4 deciliters, sometimes 1–2 liters of fluid daily in three described section types (Fig. 2a–c), and about one deciliter in göbű (Fig. 2d). After collection, the scar of the holes and sections were smeared with mud or clay to “heal” the trunk of the tree.

The collected sap can be stored in a cool cellar or in a fridge in covered jars for two weeks, and used before it becomes cloudy. According to the informants in Homoród-valley, its consumption is healthy during the whole summer, although the excessive use leads to headache. Most common uses of virics include a drink with curative power internally, and a foment externally in all studied villages (Tab. 2).

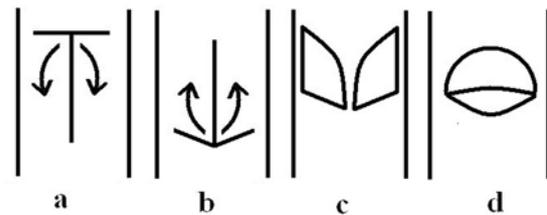


Fig. 2 Section types of the collection of birch sap on the trunk. a “T” type. b “∨” type. Arrows show the direction of the bending of the bark. c V-form type. d Göbű.



Fig. 3 V-form section in the collection of sap.



Fig. 4 Göbü in the collection of sap.



Fig. 5 Collection of sap.

Silver birch in household tools

Similarly to the collection of birch sap, the use of other plant parts in tools (or tool construction) was presented mostly by men (Tab. 2). In Homoród-valley, the trunk and the thick branches were used as popular firewood because of the easily ignitable bark with high calorific value, and in household tools, such as in wooden forks, shafts, shovels or axes. It was especially common in two types of broom; about 15 thin and long wattles were bound by a ring called “káva” made from the bark pelt of “magyarófa” (*Corylus avellana* L.) in the first type (Fig. 6), and short twigs were tied on a thick lateral branch called “csutakseprű” in the second one (Fig. 7). About 30–40 years ago, brooms were sold for various industries, presenting a significant livelihood activity for the local people.

Silver birch in customs

The use of *B. pendula* in local ceremonies and customs was listed both by women and men in each village. Csángós of Gyimes walk round the house with a birch broom three times at the night of St. George day (April 24th), to avoid reptiles getting into the house. During daytime, Csángó people of Úz-valley have stored the birch broom in the corner behind the door, but exclusively in the court at night as a rigorous custom in the region.

The blessing of the leafy branches is considered as a widespread traditional ceremony in Transylvania. People go

on pilgrimage to Csíksomlyó at Whitsunday, praying to the Blessed Virgin at the famous catholic church of the settlement. During this trip, birch branches are blessed and taken home to say the Lord's Prayer and Ave Maria according to the number leaves on the branches. Moreover, in Csángós' regions, the blessed branches are thrown and burnt in the fire as protection from a storm, accompanied by a prayer repeated three times and by a special magic formula used as a protective symbol.

In the Transylvanian ceremonies, the leafy branches of silver birch, called “zödág” (green branch), play an important role in the ornamentation of crucifixes at roadsides, bridges and houses in weddings, and churches on the Lord's Day, at Christmas time and during confirmation. In the Homoród-valley, two branches are placed on both sides of the doorway of wedding-houses, ornamented by a bouquet for the bride, and by a jar of wine for the bridegroom. In winter, wedding-houses are decorated with the branches of spruces instead of birch. On May 1st, 2–5 meter long birch branches are erected by young men in front of the houses of unwed young women as a special gift for a week.

Discussion

The parts of silver birch were documented in various application forms in home treatments, tools and customs in

the studied Csángó and Székely villages, and the data were compared with earlier records in Transylvania and some records from other European countries.

Leaf decoctions were documented not only as a single remedy, but also blended with other taxa, in contrast to the earlier Transylvanian data or records in other countries (Tab. 2). Among the ethnomedicinal use of the leaves for rheumatism, they were used in trousers, and in bed or sacks similarly to earlier data obtained in Transylvania [9,45–50], and to its use as an analgesic in Poland [51,52]. However, while the use of leaf decoctions for dyeing and for hair loss in Transylvania was reported recently and earlier [9,53], as well as in Montenegro [54], the current data for flatulence and for sweating of the legs were not found in literature sources (Tab. 2). The external use of bark for skin disorders was also recorded in Albania and Macedonia (Pieroni, unpublished), while its internal use was mentioned in Bosnia and Herzegovina and in Kosovo [55–58]. In our work, no data were recorded on the use of the tar (*Betulae pix*), in contrast to earlier reports in the country [59,60]. For diarrhoea in veterinary practice, the decoction of the bark was mentioned earlier in Transylvania [61], while the use of the leaf for the same purpose was also reported in Italy [62].

The harvesting of birch water was described in several previous reports in Transylvania, and in Germany and Russia [63,64]. In the 18th–19th century, birch sap (virics) was harvested regularly and sold in the markets, playing an important role in the livelihood of the rural classes [31]. Nowadays, traditional collection of birch sap called *viricseles* appears as an underrepresented and evanescent

phenomenon, including mostly oral and little manual demonstration of the detailed method. During the collection, four special section types of the trunk were documented in the studied Transylvanian areas. The birch water was used in itself or with milk [65], both externally and internally (Tab. 2). It was also used as a beverage, as wine and beer, similarly to some earlier reports in the country [14,36]. As a novel data, informants have mentioned headache due to the excessive use of the sap in Homoród. The previous record for its use as vinegar (Tab. 2) was also found in Sweden, Estonia, Poland, Slovakia, Ukraine, Russia, Britain and Ireland [65–78], without any record of this documented in our field work. The significance of silver birch as a milk-rennet plant was recorded only in previous reports in the country [26,27], and in the Netherlands and Finland [77,78].

Among the uses of the leafy branches in tools, the preparation of brooms was commonly documented in each settlement (Tab. 2) similarly to some earlier records [5,9,61,79]. The common use of the woody parts as firewood was also recorded because of the easily ignitable bark of the species, while its use as a torch was reported in other countries [5]. In addition, branches were used in special protective rituals in the studied Csángós' areas on St. George's day (April 24th), and in ceremonies such as *zódág* in the Székelys region, corresponding to the previous work in Kalotaszeg [11], and to earlier data from Netherlands, Germany, Belgium, north-eastern Italy, Central Europe and South Western Balkans [5,80] (Pieroni, unpublished data). These customs can be described as a disappearing phenomenon in Transylvania nowadays.



Fig. 6 First type of brooms from birch branches.



Fig. 7 Second type of brooms (csutak) from birch branches.

The blessed leafy branches are used at Whitsunday or in weddings in the studied settlements, which are ornamented with a bouquet or a jar in Homoród, and with wreaths in the Russian folklore. The protective role of the branches against bad weather (storms) was recorded mostly in the Csángó region, while against bad spirits in Russia and Sweden [7].

Conclusions

Although the traditional knowledge documented in this data is based on the memories of the ancestors and on the personal experiences of the people, a relatively low proportion of the traditional knowledge about *B. pendula* was observed among the studied ethnic groups of Csángós and Székelys from an agricultural, ethnobotanical and ethnopharmacological point of view. In addition to the existing data concerning the use of the leaves and woody parts, the use of the tar was observed as a disappeared element. Our findings add new values about birch water (virics) to the observations described earlier, but this also indicates that its consumption and multiple use has been progressively lost, similarly to the old harvesting methods in Transylvania and all over in Romania.

The ethnobotanical and ethnomedicinal data display a declining tendency in the region from day to day, largely influenced by migration trends and the employment of youth far from their ancestral lands. Moreover, the increasingly frequent use of phytotherapeutic books and other outside sources also influences the traditional knowledge of people, which is incorporated in the daily medical practices of people. Consequently, collection fieldtrips in the ethnobotanically unexplored and isolated regions of Transylvania are of primary importance nowadays, and should focus on the maintenance of ancestral harvesting techniques and ethnomedicinal elements. Such studies can also be useful for informing future phytotherapeutical research on key local ethnomedicinal resources, such as birch sap.

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Authors' contributions

The following declarations about authors' contributions to the research have been made: initiation of the work, field work and the first version of the paper: NP; literature survey: NP, DC, TM, KC, AP; participation in the writing process: DC, AH, TM, CLQ; helping to evaluate the results and discussion: AP.

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