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TILIO TOMENTOSAE-QUERCENION PETRAEAE (PÎNZARU ET CANTEMIR 2023) PÎNZARU, SFECLĂ ET CANTEMIR STAT. NOV. HOC LOCO (*QUERCION PETRAEAE* ISSLER 1931) IN THE REPUBLIC OF MOLDOVA

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Abstract: This paper describes the slightly acidic hill forests of *Quercus petraea* (Matt.) Liebl. with *Tilia tomentosa* Mill. from the Republic of Moldova, grouped into 3 associations: *Carpino orientalis-Quercetum petraeae* Pînzaru, Sfeclă et Cantemir, ass. nov. hoc loco, *Tilio tomentosae-Quercetum petraeae* Sârbu 1979 corr. Pînzaru, Sfeclă et Cantemir hoc loco, *Hieracio umbrosi-Quercetum petraeae* Pînzaru, Cantemir, Manic & Popescu 2017 from the suballiance *Tilio tomentosae-Quercion petraeae* (Pînzaru & Cantemir 2023) Pînzaru, Sfeclă et Cantemir, stat. nov. hoc loco. These associations occur on plateaus, in the upper part of the hills, at an altitude of 138-367 m, on yellow sands, devoid of soil, or on virgin brown or gray luvic soils, formed on sandy, loamy-clayey rocks, with the pH value ranging from 4.5 to 6.0. The phytocoenoses of the associations *Carpino orientalis-Quercetum petraeae*, *Hieracio umbrosi-Quercetum petraeae* are rare and it is proposed to include them in the future *List of rare associations in the Republic of Moldova*.

Keywords: distribution range, ecology, phytocoenoses, rare forest associations, sessile oak, silver lime, Republic of Moldova.

Introduction

Forest stands of sessile oak (*Quercus petraea*) with silver lime (*Tilia tomentosa*), or oriental hornbeam (*Carpinus orientalis*) in the Republic of Moldova, in previous publications, they were described using the methods of the Soviet School and grouped into several associations according to the dominant species by GEJDEMAN & al. (1964) and POSTOLACHE (1995). Later, using the methods of the Central-European School [BRAUN-BLANQUET, 1964], some sessile-oak stands were assigned to the associations *Querco–Carpinetum orientalis* [GANCEV, 1961] Csűrös et al. 1968 [LAZU & al. 2007; POSTOLACHE, 2024], while others were attributed to *Hieracio umbrosi–Quercetum petraeae* Pînzaru, Cantemir, Manicé & Popescu, 2017. Next, the sessile oak forests with sliver lime, or oriental hornbeam are grouped in the *Tilio tomentosae-Quercenion petraeae* (Pînzaru et Cantemir 2023) Pînzaru, Sfeclă et Cantemir, stat. nov. hoc loco.

In this paper, on the basis of new phytocoenological investigations, the authors present three associations of sessile-oak stands: *Carpino orientalis-Quercetum petraeae* Pînzaru, Sfeclă et Cantemir, ass. nov., hoc loco; *Tilio tomentosae-Quercetum petraeae* Sârbu 1979 corr.

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Pînzaru, Sfeclă et Cantemir, hoc loco, and *Hieracio umbrosi-Quercetum petraeae* Pînzaru et al. 2017, grouped within the suballiance *Tilio tomentosae-Quercenion petraeae* (Pînzaru et Cantemir 2023) Pănzaru, Sfeclă et Cantemir, stat. nov., hoc loco, in the alliance *Quercion petraeae* Issler 1931, order *Quercetalia pubescenti-petraeae* Klika 1933, class QUERCO-FAGETEA SYLVATICAE Br.-Bl. Et Vlieger in Vlieger 1937.

Material and methods

Floristic and phytosociological surveys were carried out during 1995-2025, from spring and summer where spring data were missing, the symbol 'x' was used in the synoptic table. In total, 74 phytosociological relevés were recorded according to the Central-European School [BRAUN-BLANQUET, 1964]. Relevé was 600 m² [CRISTEA & al. 2004]. Species cover-abundance was estimated on the scale proposed by J. Braun-Blanquet and J. Pavillard (1928); for species occurring in sparse clumps, the cover-abundance entries are underlined in the table.

Floristic nomenclature follows the monograph *Vascular Flora of the Republic of Moldova* (*species list and ecology*) [PÎNZARU, 2023]. State-protected species are indicated according to [Law No. 1538/1998; *Red Book of the Republic of Moldova*, 2015]. For the floristic analysis, we followed [SANDA & al. 1983; SÂRBU & al. 2013]. Mean annual temperature and precipitation were taken from the *Atlas of Climate Resources of the Republic of Moldova* [NEDEALCOV & al. 2013], and soil types from *The Soils of Moldova* [URSU, 2011]. Soil reaction (pH) was determined in situ by the authors using *p*H indicator paper and distilled water (Coralclub pH Test Paper 4.5-7.5). Tree stem diameter was measured at 1.30 m above ground (DBH) with a diameter tape (D-tape), and tree height with a Vertex V hypsometer.

Results and discussions

Forests dominated by sessile oak (*Quercus petraea*) mixed with silver lime (*Tilia tomentosa*) are most widespread on the Central Moldavian Plateau, and are less frequent on the Tigheci Hills, the Dniester Plateau, and the southern part of the North Moldavian Plain. They occur on upper hill slopes and plateaus at 138-360 m, under a temperate-continental climate; mean annual air temperature ranges from 10.5 °C in the south to 9.0 °C in the north, and mean annual precipitation is 500-650 mm. The substrate includes yellow sands with little or no developed soil cover, as well as virgin brown or gray luvic soils, clay-illuviated chernozems, and grey soils developed on sandy to loamy-clayey parent materials, soil *p*H ranges from 4.5 to 6.0.

The association *Querco-Carpinetum orientalis* (Gancev, 1961) Csűrös et al. 1968, also reported by some authors from the Republic of Moldova [LAZU & al. 2007; POSTOLACHE, 2024], is treated as a synonym of the association *Carpinetum orientalis* Rudski apud Horvat 1946 [SANDA & al. 2008; CĂRĂBUȘ & ȘOFLETEA, 2014]. Stands of this association are dominated by *Carpinus orientalis*, accompanied by *Cotinus coggygria*, *Fraxinus ornus* and *Prunus mahaleb*, whereas the phytocoenoses with *Carpinus orientalis* in the Republic of Moldova have the tree layer dominated by *Quercus petraea*, with oriental hornbeam occurring only sporadically in the second canopy layer. For this reason, a new association is proposed: *Carpino orientalis-Quercetum petraeae*, ass. nova.

The new suballiance has many species in common with the suballiance *Carpino-Tilenion* (*tomentosae*) Doniță 1970 prov. cited by its author for the Babadag Plateau (Dihoru et Doniță 1970) but is not valid [Art. 3b].

The xeromesophilous, acidophilous oaks from the north of the Republic of Moldova, grouped in the *alliance Quercion petraeae* Issler 1931, differ from those from the center and south of the republic by the presence of the following characteristic species: *Carex montana*, *Laserpitium latifolium*, *Iris graminea*, *Genista elata*, *Hieracium umbellatum*, *Potentilla alba*, *Pulmonaria mollis*, *Serratula tinctoria*, *Silphiodaucus prutenicus*, *Stachys officinalis*, *Veratrum nigrum,* for which reason a new suballiance is proposed

Suball. ***Tilio tomentosae-Quercenion petraeae*** (Pînzaru et Cantemir 2023) Pînzaru, Sfeclă et Cantemir, stat. nov., hoc loco

Syn.: *Tilio tomentosae-Quercion petraeae* Pînzaru et Cantemir 2023, International Scientific-Practical Conference, 18-19 March 2023, vol. 1, p. 201; *Carpino orientalis–Tilenion tomentosae* Doniță *prov*. in Dihoru & Doniță, 1970 [Art. 3b].

N o m e n c l a t u r a l t y p e: ass. *Hieracio umbrosi-Quercetum petraeae* Pînzaru et al. 2017, *Journal of Plant Development*, **24**: 103-116.

It includes West-Pontic, thermophilic, xeromesophilic, slightly acidophilic forest phytocenoses, found in the hilly area.

Diagnostic species: *Carpinus orientalis*, *Quercus petraea*, *Q. robur* subsp. *pedunculiflora*, *Tilia tomentosa*, *Crataegus pentagyna*, *Allium siculum* subsp. *dioscoridis*, *Coronilla elegans*, *Digitalis grandiflora*, *Doronicum hungaricum*, *Fritillaria montana*, *Galanthus plicatus*, *Hieracium robustum*, *H. sabaudum*, *H. umbrosum*, *Laser trilobum*, *Lathyrus aureus*, *Loranthus europaeus*, *Potentilla micrantha*, *Tulipa biebersteiniana* var. *biebersteiniana*, *Vicia cassubica*.

As a result of the floristic and ecological analysis of the phytocoenoses in the Republic of Moldova, three associations are recognized within this suballiance:

1. ***Carpino orientalis-Quercetum petraeae*** Pînzaru, Sfeclă et Cantemir, ass. nova, hoc loco
2. ***Tilio tomentosae-Quercetum petraeae*** Sârbu 1979 corr. Pînzaru, Sfeclă et Cantemir, hoc loco
    - subass. ***typicum*** Sârbu 1979
    - subass. ***cotinetosum coggygriae*** Sârbu 1979
    - subass. ***cornetosum maris*** (Sârbu 1979) Pînzaru et al., stat. nov. h. l.
3. ***Hieracio umbrosi-Quercetum petraeae*** Pînzaru, Cantemir, Manic et Popescu 2017

1. Ass. *Carpino orientalis-Quercetum petraeae*

Pînzaru, Sfeclă et Cantemir, ass. nova. hoc loco

Syn.: *Fraxineto* (*excelsioris*)-*Quercetum* (*petraeae*) *carpinulosum* (*orientalis*) Gejdeman et al. 1964, *Tipy lesa i lesnye assotziatzii MSSR*: 194; Postolache, 1995. – *Querceto* (*petraeae*)-*Carpinetum* (*orientalis*) *cotinosum* (*coggygriae*) Gejdeman et al. 1964, *work cited*: 195; Postolache 1995. – *Fraxineto* (*excelsioris*)-*Quercetum* (*petraeae*) *carpinuloso* (*orientalis*) *hederosum* (*helicis*) Gejdeman et Simonov 1971, *Izvestia AN MSSR. Ser. biol. i him. nauk*, 1: 83. – *Querco petraeae-Carpinetum orientalis* auct. non (Gancev 1961) Csüros et al. 1968: Lazu et al. 2007; Postolache, 2024.

Typus hoc loco: Tab. 1, rel. 4.
Table synthetic hoc loco: Tab. 1, 25 relevés.

Figure 1. *Carpinus orientalis* Mill. 17.04.2016, Cărbuna commune, Ialoveni district

Characteristic species: *Carpinus orientalis* (Figure 1), *Quercus petraea*.

Constant species: *Acer campestre*, *Allium siculum* subsp. *dioscoridis*, *Anemonoides ranunculoides*, *Arum orientale*, *Asparagus tenuifolius*, *Carex brevicollis*, *Corydalis solida*, *Crataegus monogyna*, *Fraxinus excelsior*, *Geum urbanum*, *Glechoma hirsuta*, *Lathyrus niger*, *Melica uniflora*, *Mercurialis ovata*, *Polygonatum hirtum*, *Scilla bifolia*, *Stellaria holostea*, *Viburnum lantana*.

Chorology and site conditions. The phytocoenoses of the association are distributed on the Central Moldavian Plateau, in Cimișlia District (Zloți village) and Ialoveni District (the communes of Cărbuna, Răzeni, and Suruceni). They adjoin the phytocoenoses of the associations *Iridio variegatae-Quercetum pubescentis* Pînzaru, Cantemir & Belous 2022, *Tilio tomentosae-Quercetum petraeae* Sârbu 1979, corr. hoc loco, and *Carici pilosae-Carpinetum betuli* Neuhausl et Neuhauslova-Novotna 1964. They occur at 150-239 m a.s.l., on hills with various aspects and gentle slopes 5-25(35)°, on grey soils developed over sandy to loamy-clayey parent materials; soil *p*H ranges from 5.0 to 6.0.

Floristic composition and phytocoenotic structure (Table 1: 25 relevés; association no. 1). The floristic composition of the 25 phytosociological relevés comprises 132 vascular plant species, of which: 12 are assigned to the suballiance *Tilio tomentosae-Quercenion petraeae* (Pînzaru et Cantemir 2023) *stat. nov. hoc loco*; 5 to the alliance *Quercion petraeae* Issler 1931; and 27 to the order *Quercetalia pubescenti-petraeae* Klika 1933; 5 – all. *Carpinion betuli* Issler 1931; 29 – ord. *Fagetalia sylvaticae* Passarge 1928; 27 – cl. QUERCO-FAGETEA Br.-Bl. et Vlieger in Vlieger 1937; 6 – cl. CRATAEGO-PRUNETEA Tx. 1962; 5 – cl. TRIFOLIO-GERANIETEA SANGUINEI T. Müller 1962 and 19 to other syntaxa (Aliae).

The tree layer is two-layred. The upper tree layer (A1) is 18-24 m tall with 60-85% canopy cover and is dominated by *Quercus petraea*; stems are 25-40 (-50) cm in diametr, with admixtures of *Fraxinus excelsior* and, locally, *Tilia tomentosa* and *Acer platanoides*. In the lower tree layer (A2), *Carpinus orientalis* occurs sporadically to frequently (7-12 m tall, 7-15 cm in diametr), together with *Acer campestre* and *A. tataricum*; *Sorbus torminalis*, *S. aucuparia*, *S. domestica*, and *Quercus pubescens* are rare.

The shrub layer is unevenly developed, depending on canopy closure and the extent of anthropogenic disturbance; its cover ranges from 10–50% (occasionally up to 70%) and is composed of *Crataegus monogyna*, *Viburnum lantana*, *Euonymus verrucosus*, and *Cotinus coggygria*.

The herb layer in spring, with 40-100% cover, is composed of *Corydalis solida*, *Anemonoides ranunculoides*, *Scilla bifolia*, *Allium siculum* subsp. *dioscoridis*, *Anthriscus longirostris*, *Veronica hederifolia*; sporadically present are *Arum orientale*, *Corydalis cava*, *Corydalis marschalliana*, *Allium ursinum*, *Fritillaria montana*, *Tulipa biebersteiniana* var. *biebersteiniana* or var. *tricolor*, and *Ficaria verna*. In summer, the herb-layer cover generally ranges from 40-80%, with more abundant species including *Aegonychon purpurocaeruleum*, *Poa nemoralis*, *Polygonatum hirtum*, and *Stellaria holostea*; *Asparagus tenuifolius*, *Carex brevicollis*, *Geum urbanum*, *Lathyrus niger*, *Melica uniflora*, and *Mercurialis ovata* occur only sporadically. Species richness per relevé ranges from 28 to 53.

Protected species. Species included in the Red Book of the Republic of Moldova (2015): *Allium siculum* subsp. *dioscoridis* (= *Nectaroscordum bulgaricum*) [Vulnerable (VU)]; *Carpinus orientalis* [Vulnerable (VU)]; *Cephalanthera longifolia* [Vulnerable (VU)]; *Chaerophyllum nodosum* (= *Physocaulis nodosus*) [Critically Endangered (CR)]; *Digitalis lanata* [Critically Endangered (CR)]; *Fritillaria montana* [Vulnerable (VU)]; *Sorbus domestica* [Endangered (EN)]. Species at low risk of extinction [Near Threatened (NT)] (Law No. 1538/1998): *Asparagus tenuifolius*, *Doronicum hungaricum*, *Epipactis helleborine*, *Lilium martagon*, *Tulipa biebersteiniana* var. *biebersteiniana*.

The bioforms spectrum: hemicryptophytes (H) 37.1%; geophytes (G) 21.2%; microphanerophytes (M) 9.8%; nanophanerophytes (N) and annual therophytes (Th) 9.1% each; biennial therophytes (TH) 6.8%; megaphanerophytes (MM) 5.3%; chamaephytes (Ch) and lianas (L) 0.8% each.

The floristic elements spectrum. Eurasian elements (Eua) are most frequent (33.3%), followed by European (Eur) – 16.6% and Central-European (Euc) – 8.3%. Mediterranean (M), Pontic-Mediterranean (PM) and Circumpolar (Circ) elements each account for 5.3%; the remaining elements are represented by 1-4 species.

The spectrum of the edaphic humidity. Xero-mesophilous species (class 2) predominate at 51.5%, versus mesophilous species (class 3) at 48.5%.

Conservation status. At the territorial level, the phytocoenoses are protected within the "Cărbuna" Landscape Reserve and the "Molești–Răzeni" Forest Reserve.

2. Ass. *Tilio tomentosae-Quercetum petraeae*

Sârbu 1979 corr. Pînzaru, Sfeclă et Cantemir, hoc loco (Figure 2)

Syn.: *Tilio tomentosae-Quercetum dalechampii* Sârbu 1979, *Culeg. Șt. Art. Biol., 1. Grăd. Bot. Iași*, 173-176; CHIFU & al. 2006; GAFTA & al. 2008; SANDA & al. 2008; CHIFU & IRIMIA, 2014; INDREICA, 2015; *Tilieto* (*tomentosae*)-*Quercetum* (*petraeae*) *caricosum*

Gejdeman et al. 1964, *work cited*.: p. 144; *Tilieto* (*tomentosae*)-*Carpineto-Quercetum* (*petraeae*) *caricosum* Ghejdeman et al. 1964, *work cited*.: p. 142; *Piptathero virescentis-Quercetum dalechampii* Chifu, Sârbu et Ștefan (1998) 2004.

N o m e n c l a t u r a l t y p e: Sârbu 1979, single Table, rel. no. 2, lectotypus Chifu, Mânzu et Zamfirescu 2006.

Table synthetic h. l.: Tab. 2, 1-18 relevés; Tab. 3 (subass. *cotinetosum coggygriae* Sârbu 1979– rel. no. 19-23; subass. *cornetosum maris* (Sârbu 1979) stat. nov. h.l. – rel. 24-36).

Characteristic species: *Tilia tomentosa*, *Quercus petraea* [= *Q. dalechampii* auct rom., non Ten.].

Constant species: *Acer campestre*, *Carex brevicollis*, *C. pilosa*, *Convallaria majalis*, *Cornus mas*, *Euonymus verrucosus*, *Fraxinus excelsior*, *Geum urbanum*, *Glechoma hirsuta*, *Stellaria holostea*, *Viburnum lantana*.

Chorology and site conditions. The association comprises phytocoenoses of sessile oak with silver lime, typically on the Central Moldavian Plateau, more rarely on the Middle Prut Plain, the Dniester Plateau, and the Tigheci Hills. Its phytocoenoses adjoin those of the associations *Carici pilosae-Carpinetum betuli* Neuhausl et Neuhauslova-Novotna 1964; *Carpino orientalis-Quercetum petraeae* Pînzaru et al. *ass. nov.. hoc loco*, and *Hieracio umbrosi-Quercetum petraeae* Pînzaru et al. 2017. They occur at 138-367 m, on plateaus or the upper parts of hills, on clay-illuviated chernozems or grey soils developed on sandy clays or yellow sands. The slope exposure is diverse, with a predominance of north-western and north-eastern exposures; slopes are 5-15(25)°. Soil *p*H values are: in subass. *typicum*, 5.0–5.5; in subass. *cotinetosum coggygriae*, 5.0-6.0; and in subass. *cornetosum maris*, 5.5-6.0.

Floristic composition and phytocoenotic structure. In 36 phytosociological relevés, 149 vascular plant species were recorded, including 9 character species of the suballiance *Tilio tomentosae-Quercenion petraea* (Pînzaru et Cantemir 2023) Pînzaru, Sfeclă et Cantemir *stat. nov. hoc loco*; 7 of the alliance *Quercion petraeae* Issler 1931; 25 of the order *Quercetalia pubescenti-petraeae* Klika 1933; 9 of the alliance *Carpinion betuli* Issler 1931; 39 of the order *Fagetalia sylvaticae* Pawłowski 1928; 36 of the class *QUERCO-FAGETEA SYLVATICAE* Br.-Bl. et Vlieger in Vlieger 1937; 5 of the class *CRATAEGO-PRUNETEA* Tx. 1962; 5 of the class *TRIFOLIO-GERANIETEA SANGUINEI* T. Müller 1962; and 14 belonging to other syntaxa (Aliae). The vertical structure comprises 2-3 layers. The tree layer is 18-24 m tall with 75-85% canopy cover, dominated by *Quercus petraea* (stem diameter 30-56 cm), accompanied by *Tilia tomentosa*, *Acer campestre*, *A. platanoides*, *Carpinus betulus*, *Fraxinus excelsior*, and *Sorbus torminalis* occur sporadically. The shrub layer is absent or scattered in places, or else well developed and dominated by *Cotinus coggygria* or *Cornus mas*. The herb layer is unevenly developed – sparser in phytocoenoses dominated by *Cotinus coggygria*, which forms large patches at the herb-layer level with cover – abundance 3-5 (scale Braun-Blanquet et Pavillard, 1928) – and better developed in phytocoenoses with *Cornus mas*.

Protected species. Species included in the *Red Book of the Republic of Moldova* (2015): *Allium siculum* subsp. *dioscoridis* (= *Nectaroscordum bulgaricum*) [Vulnerable (VU)]; *Cephalanthera damasonium* [Vulnerable (VU)]; *Epipactis purpurata* [Critically Endangered (CR)]; *Fritillaria montana* [Vulnerable (VU)]; *Galanthus plicatus* [Critically Endangered (CR)]; *Ornithogalum pyrenaicum* [Endangered (EN)]; *Scopolia carniolica* [Vulnerable (VU)]. Species at low risk of extinction [Near Threatened (NT)] (Law No. 1538/1998): *Asparagus tenuifolius*, *Epipactis helleborine*, *Lathyrus venetus*, *Lilium martagon*, *Sorbus torminalis*, *Staphylea pinnata*, *Tulipa biebersteiniana* var. *biebersteiniana*.

The bioforms spectrum: hemicryptophytes (H) predominate at 41.0%, followed by geophytes (G) at 24.1%; nanophanerophytes (N) and annual therophytes (Th) at 7.7% each; megaphanerophytes (MM) at 6.2%; microphanerophytes (M) at 5.6%; biennial therophytes (TH) at 4.9%; epiphytes (Ep) at 1.4%; and chamaephytes (Ch) and lianas (L) at 0.7% each.

The floristic elements spectrum. The Eurasian element (Eua) is dominant – 33.3%, followed by the European (Eur) – 22.7%, Central European (Euc) – 12.5%, Circumpolar (Circ) – 5.5%, Pontic-Mediterranean (PM) – 4.1%, the other floristic elements are present with few species (1-4).

The spectrum of the edaphic humidity: Numerically, mesophilic species predominate (61.2%), followed by xeromesophilic ones (38.8%).

Figure 2. Ass. *Tilio tomentosae-Quercetum petraeae* Sârbu 1979 Pînzaru et al. corr. h. l., 05.06.2025, Malcoci commune, Ialoveni district

Phytocoenotic diversity. The phytocoenoses of this association, from a floristic and ecological point of view, are grouped into 3 sub-associations:

- subass. ***typicum*** Sârbu 1979 (tab. 1, 26 rel.); CHIFU & al., 1996 (tab. 2, 15 rel.); CHIFU & al. 2006 (tab. 27, col. 1a, 68 rel.); CHIFU & IRIMIA, 2014 (tab. 29, col. 8a, 132 rel.)

Table synthetic h. l.: Tab. 2, rel. 1-18

Mesophilous phytocoenoses; shrub layer absent or scattered; in the herb layer, more abundant species include *Corydalis solida*, *Carex pilosa*, *Stellaria holostea*, *Glechoma hirsuta*, and *Convallaria majalis*. Species richness per relevé ranges from 26 to 62.

Local distribution. Chișinău municipality (Dumbrava), Ialoveni (Ulmu), Cantemir Districts (Capaclia and Hănășeni villages), Hîncești (Logănești), Strășeni (Căpriana, Stejăreni), Călărași (Bahmut), Nisporeni (Boldurești), Șoldănești (Olișcani), Rezina (Saharna) and Edineț (Brînzeni);

- subass. ***cotinetosum coggygriae*** Sârbu 1979 (tab. 1, rel. 27-31); CHIFU & al. 2006 (tab. 27, col. 1b, 33 rel.); CHIFU & IRIMIA, 2014 (tab. 29, col. 8c, 33 rel.)

Syn.: *Querco petraeae-carpinetum cotinetosum coggygriae* Horeanu 1981; *Cotino-Quercetum petraeae* Borza 1937 (phantome): POSTOLACHE, 2024; *Quercetum* (*petraeae*) *cotinosum* Gejdeman et al. 1964, *work cited*.: p. 199.

Lectotypus hoc loco: I. Sârbu, 1979, tab. 1, rel. 27

Table synthetic h. l.: Tab. 3, rel. no. 19-23.

Xero-mesophilous phytocoenoses exhibiting a summer water deficit, typically developing on yellow sands. The shrub layer is well developed and dominated by *Cotinus coggygria* with cover-abundance 3-5 (Braun–Blanquet scale). The herb layer is poorly expressed or absent; vernal ephemeroids are practically lacking. In summer, *Convallaria majalis*, *Poa nemoralis*, *Glechoma hirsuta*, *Lathyrus niger*, *Vincetoxicum hirundinaria*, and *Stellaria holostea* occur sporadically or in small patches. Species richness per relevé ranges from 26 to 45.

Local distribution. Ialoveni District (Malcoci) and Hîncești District (Mereșeni);

- *subass.* ***cornetosum maris*** (Sârbu 1979) stat. nova h.l.

Syn.: *Tilio tomentosae-Quercetum dalechampii* Sârbu 1979, facies cu *Cornus mas* (tab. 1, rel. 32-35); *Carpineto-Quercetum* (*petraeae*) *cornosum* Gejdeman et al. 1964, p.p. *work cited*.: p.155; *Quercetum* (*petraeae*) *cornosum* Gejdeman et al. 1964, p.p. *work cited*.: p. 136.

Lectotypus hoc loco: Sârbu 1979, tab. 1, rel. 34,

Table synthetic h. l.: Tab. 3, rel. no. 24-36

They occur on forest chernozem soils of high fertility; the substrate is drier in summer than in spring. The shrub layer is dominated by *Cornus mas*. The herb layer is generally well developed throughout the growing season: in spring, vernal ephemeroids include *Corydalis solida*, *Anemonoides ranunculoides*, *Gagea lutea*, *Scilla bifolia*, *Allium siculum* subsp. *dioscoridis*, and *Allium ursinum* s.l. in summer, the more abundant species are *Carex pilosa*, *Carex brevicollis*, *Mercurialis perennis*, and *Stellaria holostea*. Species richness per relevé ranges from 34 to 65.

Local distribution. Chișinău municipality (Condrița), Ialoveni (Malcoci) and Hincești districts (Drăgușenii Noi, Horodiște, Logănești).

Territorial protection of the association. The phytocenoses of the association are included in the scientific reserves “Codru”, “Plaiul Fagului”, landscape reserves “Dobrușa”, “Saharna”, “Codrii Tigheci”.

3. Ass. *Hieracio umbrosi-Quercetum petraeae*

Pînzaru, Cantemir, Manic et Popescu 2017, *J. Plant Dvelop*. **24**: 103-115

T y p u s: PÎNZARU et al. 2017, Tab. 1, rel. 7

Characteristic species: *Quercus petraea*, *Hieracium umbrosum*.

Chorology and site conditions. The association comprises rare, xero-mesophilous phytocoenoses of sessile oak with shade hawkweed (*Quercus petraea* with *Hieracium umbrosum*), occurring on the Central Moldavian Plateau – in Hîncești District (Mereșeni, Logănești, Lăpușna) and Ialoveni District (Văsieni, Cărbuna). They grow on high hills at 210-360 m a.s.l., on gently inclined slopes (7-25°) with predominantly north-western and south-western aspects, on sandy clays and yellow sands. Soil *p*H ranges from 4.5 to 6.0.

Conservation status. The phytocoenoses of this association are protected in the Logănești Nature Reserve of Medicinal Plant, plot 36, and in the "Hîncești Forest" Landscape Reserve, plot 41 [PÎNZARU & al. 2017].
References: PÎNZARU & al. 2017; PÎNZARU & CANTEMIR, 2021; POSTOLACHE, 2024.

Conclusions

The suballiance *Tilio tomentosae-Quercenion petraeae* (Pînzaru et Cantemir 2023) Pînzaru, Sfeclă et Cantemir, hoc loco comprises West-Pontic, xero-mesophilous to mesophilous, colline associations occurring at 138-367 m a.s.l., on yellow sands and sandy clays, as well as on clay-illuviated chernozems and grey soils; soil pH ranges from 4.5 to 6.0.

Within the Republic of Moldova, three associations are recognized: *Hieracio umbrosi-Quercetum petraeae* Pînzaru, Cantemir, Manic & Popescu 2017; *Carpino orientalis-Quercetum petraeae* Pînzaru, Sfeclă & Cantemir, ass. nova, hoc loco; and *Tilio tomentosae-Quercetum petraeae* Sârbu 1979, corr. hoc loco, the first two associations are rare, and we propose that they be included in the forthcoming *List of Rare Associations of the Republic of Moldova.*

The associations *Carpino orientalis-Quercetum petraeae* Pînzaru, Sfeclă & Cantemir, ass. nova, hoc loco; *Tilio tomentosae-Quercetum petraeae* Sârbu 1979, corr. Pînzaru, Sfeclă & Cantemir, hoc loco; and *Hieracio umbrosi-Quercetum petraeae* Pînzaru et al. 2017 are grouped within the suballiance *Tilio tomentosae-Quercenion petraeae* (Pînzaru et Cantemir 2023) Pînzaru, Sfeclă et Cantemir hoc loco, the alliance *Quercion petraeae* Issler 1931, the order Quercetalia pubescenti-petraeae Klika 1933, the class QUERCO-FAGETEA SYLVATICAE Br.-Bl. et Vlieger in Vlieger 1937.

In the southern Republic of Moldova, forest plantations should employ native, thermophilous and xerophilous species adapted to arid conditions, such as *Carpinus orientalis* Mill., *Quercus pubescens* Willd., *Quercus robur* subsp. *pedunculiflora* (K. Koch) Menitsky, *Fraxinus coriariifolia* Scheele, *Fraxinus ornus* L., *Tilia tomentosa* Moench, *Cerasus mahaleb* (L.) Mill., and *Cotinus coggygria* Scop.; black locust (*Robinia pseudoacacia* L.) should be avoided, as it is currently undergoing dieback.

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Table 1. Ass. *Carpino orientalis-Quercetum petraeae* Pînzaru, Sfeclă et Cantemir ass. nova

Relevé no.	1	2	3	*4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	K
Altitude(m)	211	210	210	210	210	215	216	216	215	212	205	239	204	187	215	236	223	171	152	150	168	210	233	230	201	
Aspect	-	NE	-	N	N	NV	S	S	SE	SE	V	S	NE	NE	N	-	NV	S	SV	NE	NV	NV	NE	V	S	
Slope (°)	-	5	-	20	10	10	5	5	10	5	25	5	5	5	5	-	25	35	25	10	15	10	10	15	15	
Tree layer coverage A1(%)	80	70	75	70	80	70	70	70	70	70	75	80	80	80	80	60	85	60	60	70	65	80	80	60	70	
Tree layer coverage A2(%)	30	35	45	50	10	50	50	45	30	45	50	20	10	10	40	50	50	70	50	60	50	60	35	70	30	
Shrub layer coverage (%)	35	30	50	40	40	45	40	35	40	35	30	15	10	5	2	10	10	10	5	-	3	5	5	35	65	
Spring herbaceous layer coverage (%)	85	85	80	95	80	70	100	100	100	85	60	70	40	20	100	100	40	45	100	100	90	80	90	75	10	
Summer herbaceous layer coverage (%)	80	60	65	80	75	60	55	50	30	35	70	80	60	10	20	20	80	90	45	10	35	55	75	40	45	
Surface of relevé (m²)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Number of species	50	50	49	52	39	53	53	39	48	36	29	28	34	32	40	36	38	30	38	30	44	42	53	36	51	
Plots no.	58	1	7A	7	7	43	42	42	42	40	12	13	17	18	18	15	10	10	22M	22M	22M	22M	22S	44M	40	
Charact. species																										
Carpinus orientalis	1	+	1, 2	1, 2	+	+	+	+	+	1	3	1	+	3	1, 2	3	1	2	2	3	4	3	+	+	+	V
Tilio tomentosae-Quercenion petraeae																										
Allium siculum ssp. dioscoridis	1, 3	1	+	1	+	+	1, 2	-	r	-	r	-	1	-	1, 2	+	-	-	1, 2	2, 3	1, 2	1, 3	r	-	-	IV
Fritillaria montana	r	-	-	-	-	+	1	+	-	+	-	-	-	-	-	-	-	-	+	1	1, 2	+	-	+	-	III
Tulipa biebersteiniana var. biebersteiniana	+	+	+	1	-	1, 2	1, 2	1	+	1	-	-	-	-	-	-	-	-	+	+	+	+	+	-	-	III
Laser trilobum	-	-	r	+	r	+	r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	II
Tilia tomentosa	-	+	+	+	2	+	-	+	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	r	r	II
Doronicum hungaricum	-	-	-	-	-	r	r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Lathyrus aureus	-	-	-	r	r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Vicia pisiformis	-	-	+	r	+	-	-	-	-	-	-	-	-	-	-	-	r	-	-	-	-	-	-	-	-	I
Quercion petraeae																										
Quercus petraea	4	3	4	4	3	3	4	3	3	4	3	4	2	3	3	2	3	2.3	1	2	3	3	2	3	4	V
Sorbus torminalis	r	+	+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	r	-	-	r	+	r	+	-	III
Digitalis lanata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	I
Potentilla micrantha	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	r	-	I
Sorbus aucuparia	-	r	r		r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	r	r	-	I

Quercetalia pubescenti-petraeae																										
Asparagus tenuifolius	+	+	r	r	+	r	r	+	r	-	-	r	r	-	-	r	r	-	-	-	r	-	r	+	r	IV
Glechoma hirsuta	1, 3	-	1	1	-	2	1	-	+	1	1	1	1	+	+	1	1, 3	1	-	-	1, 3	1, 2	-	+	1, 2	IV
Lathyrus niger	r	+	+	+	+	+	+	-	+	+	-	-	-	-	-	-	+	+	-	-	+	+	+	+	+	IV
Mercurialis ovata	-	+	+	1	+	+	+	+	r	+	-	+	-	-	-	+	+	r	+	-	+	r	+	+	-	IV
Aegonichon purpurocaeruleum	2	1, 2	1, 2	1, 2	1, 2	1	1	+	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-	1, 2	1, 3	III
Chaerophyllum nodosum	1	+	-	+	-	+	1	-	-	-	-	-	-	-	+	+	-	-	+	1, 2	-	+	-	+	-	III
Euonymus verrucosus	1	1	1	+	-	2	1	1	-	2	+	+	-	r	-	-	+	r	-	-	-	-	-	-	1	III
Carex muricata	-	+	+	r	+	-	+	-	-	-	r	-	-	-	-	-	-	-	-	-	+	-	-	-	-	II
Cotinus coggygria	+	1	1, 2	1, 2	1, 3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1, 2	II
Ligustrum vulgare	-	-	+	+	+	-	-	-	-	-	+	-	-	r	-	-	r	+	-	-	+	r	-	-	-	II
Tanacetum corymbosum	r	-	+	+	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	II
Symphytum tauricum	+	-	-	-	-	-	+	-	r	+	-	-	-	-	r	+	-	-	-	-	-	-	-	-	-	II
Arabis turrita	-	-	-	+	-	-	-	r	-	-	-	-	-	-	-	-	-	-	-	-	r	-	-	-	-	I
Iris graminea	-	-	-	-	-	r	r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	r	-	I
Piptatherum virescens	-	-	-	-	r	-	-	-	-	-	-	-	-	r	-	-	-	-	-	-	+	-	-	-	1	I
Viola suavis	+	-	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Carpinion betuli																										
Stellaria holostea	2	1, 2	2	3	2	1, 2	2, 4	1	+	1	3	3	1	-	+	1, 2	+	-	1, 3	1, 2	+	2, 3	-	1	-	V
Carex brevicollis	+	+	1	+	1	1	+	-	+	+	-	r	-	-	r	r	+	+	+	+	1, 2	+	+	1, 3	-	V
Carpinus betulus	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	II
Corydalis marschalliana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	1, 2	1, 2	+	1	-	-	II
Isopyrum thalictroides	-	-	-	-	-	-	-	1, 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Fagetalia																										
Anemonoides ranunculoides	1	1	1	1	1	1, 2	1	1	1	1	1	2	-	-	1	1, 2	+	+	+	1	1	+	+	+	-	V
Corydalis solida	2, 3	2	1	3	2	2	2	2, 3	1, 2	1, 2	3	3	1	+	1, 2	1, 2	1, 2	1	1, 2	2, 3	3, 4	3	3, 4	3	-	V
Scilla bifolia	+	+	+	1	+	1	+	+	+	+	+	-	1	1	+	1	+	+	+	+	+	+	+	+	-	V
Euphorbia amygdaloides	r	+	+	r	+	+	+	r	r	-	-	-	-	-	-	-	-	-	-	-	+	-	r	-	-	III
Gagea lutea	+	-	-	-	+	-	+	-	+	+	-	-	-	-	+	+	-	+	+	+	+	+	+	+	-	III
Pulmonaria officinalis	+	r	+	r	+	+	+	+	-	-	-	r	-	-	-	-	+	+	r	-	-	-	+	-	+	III
Acer platanoides	-	+	-	r	+	-	-	r	r	-	-	r	-	-	-	-	-	-	+	-	-	r	+	-	-	II
Allium ursinum	-	-	-	1	-	-	-	1, 2	1, 4	-	-	-	-	-	-	-	-	-	+	-	-	1	+	-	-	II
Bromus ramosus	+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	+	+	+	-	-	II

Corydalis cava	-	+	-	2	1, 2	1, 2	-	+	+	-	-	+	-	-	1, 2	-	-	-	-	-	-	-	-	-	II
Euonymus europaeus	+	-	-	-	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	II
Ficaria verna	-	-	-	-	-	-	-	-	+	-	+	-	-	-	1, 3	-	-	-	1, 2	1, 2	+	1	1, 2	-	+	II
Hedera helix	-	1, 2	-	-	1	-	-	-	+	-	-	-	-	-	-	-	r	-	-	-	+	1	-	-	-	II
Myosotis sparsiflora	-	-	-	-	+	+	+	-	-	-	-	-	+	+	+	+	-	-	-	-	-	-	-	-	+	II
Scrophularia nodosa	r	-	-	r	-	-	r	-	-	r	-	-	-	-	r	r	-	-	-	-	-	-	-	-	-	II
Hordelymus europaeus	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	I
Ranunculus auricomus	-	+	r	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Ulmus glabra	-	-	-	-	-	-	-	-	-	-	-	-	r	-	+	-	-	-	-	-	+	-	-	-	-	I
Querco-Fagetea																										
Acer campestre	+	2	1	1	1	2	2	+	+	1	-	1	+	-	+	+	1	1	1	+	+	+	1	2, 3	1	V
Arum orientale	r	r	-	r	-	r	r	r	r	-	+	-	+	+	+	+	-	r	+	+	+	+	+	+	-	V
Fraxinus excelsior	1	1	1, 2	1	1	1	1	1	1	-	1	1	3	2	1, 2	2	1, 2	1	3	2	1	2	2	2	-	V
Geum urbanum	r	+	+	+	+	+	+	+	r	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+	+	V
Melica uniflora	+	1, 2	2, 3	1	2	1	1	+	+	+	-	-	+	1	+	+	1, 3	+	+	+	+	+	1, 2	-	1	V
Polygonatum hirtum	2, 3	2	2	1, 2	1, 3	1, 3	+	1, 3	+	1, 2	2	+	+	+	+	1, 2	-	+	+	+	1	-	+	+	1	V
Acer tataricum	1	+	-	1	+	1	2	2	+	1	1	1	+	+	-	+	-	-	+	-	r	-	r	1	1	IV
Campanula rapunculoides	+	+	+	+	+	1, 2	1, 2	+	+	1, 2	+	-	-	-	-	+	1, 3	1	-	-	+	-	-	-	+	IV
Dactylis glomerata	-	-	-	+	+	+	+	+	-	-	+	+	+	+	+	-	-	r	+	+	+	+	+	-	-	IV
Poa nemoralis	1	1	-	1	1, 3	-	-	-	-	-	+	+	3	+	r	+	+	+	+	+	1	+	1, 2	-	+	IV
Brachypodium sylvaticum	-	-	-	-	-	-	+	+	r	-	+	+	+	-	+	-	-	-	-	-	+	-	+	+	+	III
Scutellaria altissima	-	1	+	+	1	+	+	-	-	-	+	-	+	+	-	-	+	-	-	-	+	-	+	-	-	III
Viola odorata	-	-	-	-	-	+	-	+	-	-	+	+	+	+	+	+	-	+	1, 2	+	+	+	+	-	+	III
Cerasus avium	-	r	-	r	r	r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	r	+	+	+	II
Chaerophyllum temulum	-	-	+	-		-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	+	+	-	-	II
Lapsana communis	r	-	-	r	-	-	-	-	+	r	r	-	-	r	-	-	-	-	+	+	-	+	+	-	-	II
Ulmus minor	-	+	-	-	-	-	-	-	-	-	-	-	r	-	-	-	+	+	-	-	-	-	-	+	+	II
Convallaria majalis	-	-	-	1, 2	1, 2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	I
Cornus sanguinea	-	-	+	+	-	-	1	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	I
Galium intermedium	-	-	+	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	I
Sedum maximum	r	-	-	-	-	-	+	-	-	r	-	-	-	-	-	-	-	-	-	-	-	-	r	-	r	I
Crataego-Prunetea																										
Crataegus monogyna	+	+	1	1	1	1	1, 2	1	1	+	1	1	-	r	r	+	+	+	+	-	r	r	+	+	1	V
Viburnum lantana	+	+	+	+	+	+	+	1	1	+	+	+	r	-	r	r	+	-	+	-	+	-	+	+	+	V

Cornus mas	1	r	+	1	1	1	-	-	+	-	-	-	-	-	-	-	+	1	-	-	-	-	-	-	3, 4	II
Prunus spinosa	+	-	-	+	-	+	1	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	II
Rhamnus cathartica	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Rosa canina	-	-	-	-	-	+	-	-	r	-	-	-	-	-	-	+	-	-	-	-	-	-	r	-	+	I
Aliae																										
Galium aparine	+	+	+	+	+	+	1	-	1	+	+	1	1	+	+	+	+	+	1, 3	1, 2	-	1, 2	1, 2	1, 2	+	V
Veronica hederifolia	2	-	-	2	1, 2	2	1, 2	1, 2	1	2, 3	+	1	1	1	1, 2	1, 2	1	1	2, 3	1, 2	1	1, 2	1	1, 2	+	V
Anthriscus longirostris	-	+	-	+	-	1, 2	1, 2	1	+	-	-	-	2	+	4, 5	4, 5	+	-	1, 4	2, 3	1	1	2, 4	1, 2	-	IV
Lamium purpureum	2	+	1	2	1, 2	2	2	2, 3	1	1, 3	-	1	-	+	1	1, 2	+	-	-	-	-	-	-	-	+	IV
Alliaria petiolata	2, 3	1	+	+	+	+	1, 2	+	+	-	-	-	+	+	+	r	-	r	-	-	-	-	-	-	+	III
Fallopia dumetorum	+	r	-	-	+	-	-	-	-	-	-	-	+	+	-	r	+	-	-	-	-	+	+	+	+	III
Galium mollugo	-	-	r	r	r	-	-	-	r	r	-	-	-	-	-	-	-	-	-	-	-	-	r	-	-	II
Stellaria media	-	-	-	-	+	-	-	-	-	-	-	-	+	+	1.2	-	-	-	-	-	-	-	-	-	+	II
Ballota nigra var. ruderale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	r	-	-	-	1	-	-	-	-	+	-	I
Chaerophyllum bulbosum	+	-	-	-	-	+	r	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Urtica dioica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	r	-	-	-	+	+	-	-	-	-	-	I
Vicia angustifolia	-	-	r	-	-	-	-	-	r	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	I

Place and date of the relevés: rel. 1-5, Cărbuna commune, Ialoveni district, 16.06.2019; rel. 6-10, Rezeni commune, Ialoveni district, 24.04.2021; rel. 11-12, Cărbuna commune, Ialoveni district, 20.04.2022; rel. 13-14, Cărbuna commune, Ialoveni district, 01.06.2022; rel. 15-16, Cărbuna commune, Ialoveni district, 04.05.2023; rel. 17-18, Zloți village, Cimișlia district, 12.06.22023; rel. 19-24, Zloți village, Cimișlia district, 20.07.2023, 29.03.2024; rel.25, Suruceni commune, Ialoveni district, 20.05.2024, 19.03.2025;

Species recorded only in 1 or 2 surveys: ***Quercetalia pubescenti-petraeae***: Carex montana (rel. nr. 25); Carex tomentosa (25); Cerasus mahaleb (6); Geranium divaricatum (15); Lactuca quercina (6,10); Quercus pubescens (13, 14); Rosa gallica (5, 14); Silene coronaria (7, 23); Silene nutans (16, 25), Sorbus domestica (6); Vincetoxicum hirundinaria (4, 25); ***Fagetalia sylvaticae***: Campanula trachelium (22); Cephalanthera damasonium (5); Granium robertianum (15, 23); Gagea minima (23); Lamium maculatum (14, 15); Mercurialis perennis ((1, 3); Stachys sylvatica 22); Tulipa biebersteiniana var. biebersteiniana (16); Viola mirabilis (4); ***Querco-Fagetea***: Epipactis helleborine (5); Lactuca muralis (1); Lilium martagon (9); Malus sylvestris (7); Polygonatum multiflorum (17); Quercus robur (22); ***Trifolio-Geranietea***: Astragalus glycyphyllos (23, 25); Clinopodium vulgare (25); Potentilla argentea (25); Trifolium alpestre (25); Veronica chamaedrys (25); ***Aliae***: Ajuga laxmannii (25); Ajuga reptans (25); Bromus tectorum (13), Rumex acetosa (23); Hypericum perforatum (23); Senecio vernalis (5, 23); Verbascum nigrum (25).

Table 2. Ass. *Tilio tomentosae-Quercetum petraeae* Sârbu 1979 corr. Pînzaru et al. h. l. subass. *typicum* Sârbu 1979

Relevé no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Altitude (m)	270	282	138	326	195	222	220	219	203	300		270	275	300	305	314	334	367	
Aspect	-	W	SW	W	N	N	N	S	E	NW	NW	NE	NE	NW	NE	-	NE	V	
Slope (°)	-	5	25	10	25	15	10	5	5	15	10	5	5	15	15	-	10	15	
Tree layer coverage (%)	80	85	75	80	75	80	85	75	80	80	85	85	80	80	80	85	80	80	
Schrub layer coverage (%)	30	40	35	5	30	30	30	55	45	5	5	50	15	5	3	3	-	-	
Spring herbaceous layer coverage (%)	x	60	60	35	45	x	x	15	10	15	10	10	10	x	x	80	70	20	K
Summer herbaceous layer coverage (%)	55	90	70	90	60	50	60	85	90	80	90	90	90	90	50	35	90	90	
Relevé surface (m²)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Number of species	57	56	49	36	55	36	31	62	50	49	26	32	30	40	27	38	44	30	
Plots no.	37			37	48	16	17	12	13	12		30L	30K	33	35	51	43	38	
Characteristic species																			
Tilia tomentosa	2	3	1	1	1	1	1	2	2	+	1	2	2	3	+	1	2	1	V
Tilio tomentosae-Quercenion petraeae																			
Tulipa biebersteiniana var. biebersteiniana	-	+	1, 2	-	-	-	-	1, 2	2, 3	-	-	-	-	-	-	-	-	-	II
Allium siculum subsp. dioscoridis	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	1	-	I
Fritillaria montana	-	-	1, 2	-	-	-	-	+	1	-	-	-	-	-	-	-	-	-	I
Galanthus plicatus	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Lathyrus aureus	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	I
Vicia cassubica	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	I
Quercion petraeae																			
Quercus petraea	3	2	4	4	4	3	3	3	3	5	5	3	3	2	4	3	3	3	V
Sorbus torminalis	-	+	r	-	+	+	+	+	r	+	+	-	r	+	r	r	+	-	IV
Pulmonaria mollis	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I
Stachys officinalis	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	I
Quercetalia pubescenti- petraeae																			
Glechoma hirsuta	1	1	1, 2	1, 2	1	1	1	1	3	1	1	+	-	1	1	+	2	2	V
Euonymus verrucosus	+	1	1	+	-	+	+	1	+	+	-	+	+	+	+	-	+	-	IV
Lathyrus niger	+	+	-	+	+	+	-	+	-	-	-	+	+	-	+	-	+	-	III
Aegonychon purpuro-caeruleum	-	-	-	-	3	-	1	1, 2	1	1	-	-	1	1, 2	1	-	-	-	II
Lathyrus vernus	-	+	-	-	+	-	-	-	-	+	-	+	+	+	-	-	-	-	II

Ligustrum vulgare	-	-	1	-	-	1	1	+	+	-	-	-	-	-	-	-	-	-	II
Viola suavis	-	-	+	+	-	+	+	+	-	-	-	-	-	-	-	-	-	+	II
Campanula persicifolia	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	+	I
Carex muricata	-	-	-	+	-	-	-	+	-	-	-	-	-	+	-	-	-	-	I
Melica picta	-	-	-	-	-	+	-	1, 2	+	-	-	-	-	-	-	-	-	-	I
Mercurialis ovata	-	-	2	-	-	2	+	-	-	-	-	-	-	-	-	-	-	-	I
Carpinion																			
Carex brevicollis	-	+	1	1, 2	+	1	1	1	1	1	1	+	1	1	+	2	1, 2	2, 4	V
Carpinus betulus	+	+	+	+	+	1, 2	1, 2	+	+	+	+	-	-	+	1, 2	1, 2	1	+	V
Stellaria holostea	2	1	1, 2	1	+	1, 3	1, 3	2	1, 3	+	2	2, 4	1, 2	+	1, 2	1, 3	1, 3	2	V
Tilia cordata	+	-	-	-	r	-	-	-	-	-	-	-	-	+	+	+	-	-	II
Corydalis marschalliana	-	1, 2	2	x	-	-	-	-	-	+	-	-	-	-	-	-	1, 2	-	I
Isopyrum thalictroides	-	-	2	x	-	-	-	-	-	-	-	-	-	-	-	+	-	-	I
Lathyrus venetus	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	I
Ranunculus auricomus	-	+	-	-	+	-	-	+	+	+	r	-	-	-	-	-	-	-	I
Fagetalia sylvaticae																			
Carex pilosa	1, 2	1	2	2, 4	3	1	1, 2	3, 4	4, 5	3, 4	3, 4	-	2, 4	3, 4	1, 3	-	1	1, 2	V
Acer platanoides	-	1	-	+	r	r	r	+	+	+	r	+	+	+	-	+	+	-	IV
Pulmonaria officinalis	+	+	+	-	+	-	-	+	+	+	r	+	+	+	r	-	+	-	IV
Hedera helix	-	+	-	-	-	1	1	1, 2	1, 2	+	1	-	-	1	1	-	-	+	III
Anemonoides ranunculoides	+	1	1, 2	x	-	x	x	1, 2	1, 2	+	-	+	+	-	-	2	+	x	III
Cardamine bulbifera	-	2	1	-	1	1	-	+	1, 2	+	+	-	-	+	-	1	-	-	III
Corydalis solida	1	1, 2	2	x	2	x	x	2, 3	-	1	-	r	+	-	-	2, 3	1, 2	x	III
Euphorbia amygdaloides	-	r	+	+	+	r	+	+	-	-	r	-	-	+	-	+	-	+	III
Gagea lutea	+	+	+	x	+	x	x	-	+	+	-	-	-	-	-	+	+	x	III
Lamium maculatum	+	+	1	-	-	-	-	r	+	+	-	-	+	-	-	-	+	1, 2	III
Scilla bifolia	+	1	+	x	+	x	x	+	1	+	-	-	+	-	-	1	+	x	III
Allium ursinum	-	1, 2	-	x	-	x	x	+	1	-	+	-	-	-	-	5	2, 3	x	II
Asarum europaeum	-	+	+	-	+	r	-	-	2	-	r	+	-	-	-	+	1	-	II
Carex digitata	-	+	-	-	+	+	-	+	+	+	-	-	-	-	+	-	-	-	II
Corydalis cava	1	-	-	x	1	x	x	1	2, 3	-	-	-	-	-	-	1, 2	-	x	II
Ficaria verna	+	2	1, 2	x	-	x	x	-	+	+	-	-	-	-	-	1, 2	-	x	II
Galium odoratum	-	1, 2	-	_	-	-	-	-	-	+	2	-	-	-	1	+	-	-	II
Mercurialis perennis	-	1, 2	-	+	-	-	-	1	2	-	-	+	-	+	-	3	1	-	II
Stachys sylvatica	+	-	-	+	+	-	-	-	-	-	-	-	-	+	-	-	+	+	II
Staphylea pinnata	-	1	-	+	-	-	-	+	+	+	-	-	+	-	-	-	-	-	II

Viola mirabilis	+	+	-	-	+	-	-	-	-	-	+	+	+	-	-	-	-	-	II
Viola reichenbachiana	+	+	-	-	+	-	-	-	+	-	-	-	-	-	-	+	-	+	II
Aegopodium podagraria	-	+	-	-	-	-	1	-	-	-	-	-	-	-	-	1, 2	-	+	I
Hordelymus europaeus	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	+	+	I
Scrophularia nodosa	-	-	-	+	-	-	-	+	r	-	-	-	-	-	-	-	+	-	I
Querco-Fagetea																			
Acer campestre	+	+	1	+	+	+	+	2	1	+	1	+	1, 2	+	+	+	+	1	V
Geum urbanum	+	+	+	+	+	+	+	+	+	+	r	+	+	+	+	+	+	+	V
Dactylis glomerata	+	+	-	+	+	+	+	+	+	+	-	+	-	+	+	-	+	+	IV
Fraxinus excelsior	-	1	1	+	+	+	-	+	+	-	r	1	1	+	-	+	+	1, 2	IV
Melica uniflora	+	+	-	1	+	-	-	+	-	+	+	+	+	1	1	-	1	1, 2	IV
Polygonatum hirtum	+	1	2	+	+	+	1, 2	-	1	+	1, 2	+	+	-	-	1	+	-	IV
Campanula rapunculoides	+	+	1	-	-	+	+	+	1, 2	+	-	-	+	-	-	+	-	-	III
Polygonatum multiflorum	-	-	1	-	+	+	-	+	+	+	-	-	-	+	+	+	-	-	III
Acer tataricum	+	-	+	-	-	+	+	+	+	-	-	+	+	-	-	-	-	-	II
Arum orientale	-	+	+	-	+	-	+	r	-	-	-	-	-	-	-	+	r	-	II
Cerasus avium	+	-	r	-	-	-	-	-	+	r	-	-	-	-	-	-	+	-	II
Chaerophyllum temulum	+	+	-	+	+	-	-	-	-	+	-	-	-	+	-	-	+	+	II
Convallaria majalis	1	-	2	-	-	+	1	2, 3	-	2, 3	-	-	-	-	1, 2	-	-	-	II
Euonymus europaeus	-	-	-	+	+	+	-	+	-	-	-	+	+	-	-	-	-	r	II
Galium intermedium	+	-	-	2	1	+	-	-	-	1	-	+	-	-	-	-	-	-	II
Poa nemoralis	1, 3	-	-	-	+	+	-	+	-	-	-	+	+	+	+	-	-	-	II
Scutellaria altissima	+	-	-	-	+	+	+	-	-	-	-	+	-	+	-	-	-	+	II
Viola odorata	+	+	-	-	+	-	-	+	+	-	-	+	+	+	-	-	-	-	II
Bromus ramosus	-	-	-	1	-	-	-	-	-	-	-	-	-	+	-	-	+	1, 2	I
Brachypodium sylvaticum	+	-	-	-	+	-	-	+	-	-	-	-	-	-	-	+	-	-	I
Lapsana communis	+	+	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	I
Ulmus minor	+	-	-	-	+	-	-	+	-	+	-	-	-	-	-	-	-	-	I
Cornus sanguinea	+	-	-	-	+	-	-	1	+	-	-	-	-	-	-	-	-	-	I
Geranium robertianum	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	I
Hypericum hirsutum	-	-	-	r	+	-	-	-	-	-	-	-	-	-	-	-	r	-	I
Lamium galeobdolon	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	-	I
Crataego-Prunetea																			
Viburnum lantana	+	+	1	-	+	+	+	+	1	+	+	+	+	+	+	-	-	-	IV

Crataegus monogyna	2	+	1	+	+	+	+	1	+	+	-	-	-	-	-	-	-	-	III
Cornus mas	-	-	+	-	+	r	-	-	+	+	-	+	-	+	1	r	-	-	III
Trifolio-Geranietea																			
Astragalus glycyphyllos	-	-	-	-	r	-	-	+	-	+	-	-	-	-	-	-	-	-	I
Veronica chamaedrys	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	I
Aliae																			
Alliaria petiolata	+	+	-	-	+	-	-	+	+	-	+	+	+	+	-	-	+	2	III
Fallopia dumetorum	+	+	-	-	+	-	-	+	-	-	-	-	-	+	-	-	+	-	II
Galium aparine	-	-	1	1	-	-	-	-	-	-	-	+	-	+	-	-	2, 5	2	II
Veronica hederifolia	+	+	1, 2	-	-	x	x	1	1, 2	+	-	-	-	-	-	1	-	1	II
Stellaria media	-	+	1	-	-	-	-	+	-	-	-	-	-	-	-	1	-	-	I
Anthriscus longirostris	-	+	1	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	I

Place and date of the relevés: rel. 1, Brînzeni commune, Edineț district, 24.07.1993; rel. 2, Bolduresti commune, Nisporeni district, 08.06.1996; rel. 3, Capaclia commune, Cantemir district, 11.04.2009; rel. 4, Stejăreni village, Strășeni district, 25.04.2009; rel. 5, Saharna Nouă commune, Rezina district, 18.05.2009, 20.06.2009; rel. 6-7, Hănășeni village, Cantemir district, 03.07.2009; rel. 8-9, Dunbrava village, Chișinău municipality, 29.09.2017, 17.04.2018; rel 10, Logănești commune, Hîncești district, 24.04.2018; rel. 11, Bahmut commune, Călărași district, 23.04.2021; rel. 12-13, Olișcani commune, Șoldănești district, 14.07.2023, 31.03.2024; rel. 14-15, Ulmu commune, Ialoveni district, 19.07.2023; rel. 16, Căpriana commune, Strășeni district, 15.07.2024; rel. 17-18, Stejăreni village, Strășeni district, 28.07.2025.

Species recorded only in 1 or 2 surveys: ***Quercetalia pubescenti-petraeae***: Vincetoxicum hirundinaria (1, 14); Asparagus tenuifolius (3, 5); Cotinus coggygria (3); Rhamnus tinctoria (1); Silene noctiflora (9); Silene nutans (5); Symphytum tauricum (8); Vicia pisiformis (4, 18); ***Fagetalia sylvaticae***: Acer pseudoplatanus (11); Adoxa moschatellina (3); Ajuga reptans (1); Campanula trachelium (13); Epipactis purpurata (4); Melampyrum polonicum (1); Sanicula europaea (18); Scopolia carniolica (2); Ulmus glabra (2); ***Querco-Fagetea***: Lactuca muralis (2, 4); Lilium martagon (5); Malus sylvestris (2);Ornithogalum pyrenaicum (17); Primula veris (1); Quercus robur (1); Sedum maximum (10); ***Crataego-Prunetea***: Clematis vitalba (3); Prunus spinosa (1, 12); Rosa canina (5); ***Aliae***: Anthriscus sylvestrys (1); Chelidonium majus (2, 3); Erygeron annuus (4); Galeopsis tetrahit (1); Hypericum perforatum (18); Torilis japonica (4, 6); Urtica dioica (1).

Table 3. *Tilio tomentosae-Quercetum petraeae cotinetosum coggygriae* Sârbu 1979; *cornetosum mas* (Sârbu 1979) Pînzaru et al. stat. nov. h. l.

Subass.	*cotinetosum coggygriae*						*cornetosum maris*													
Relevé no.	19	20	21	22	23		24	25	26	27	28	29	30	31	32	33	34	35	36	
Altitude (m)	250	251	240	249	256		306	268	264	256	250	340	314	342	292	313			220	
Aspect	-	-	N	-	S		-	-	-	-	-	SW	SW	SW	SW	W	-	E	NW	
Slope (°)	-	-	40	-	20		-	-	-	-	-	30	25	10	10	10	-	20	10	
Tree layer coverage (%)	80	75	85	75	75	K	70	75	80	75	75	70	70	75	80	80	70	80	80	K
Schrub layer coverage %	80	80	70	70	80		60	50	50	60	70	75	65	60	50	50	50	55	60	
Spring herbaceous layer coverage (%)	-	-	30	30	10		20	80	80	80	50	60	90	x	x	30	35	60	20	
Summer herbaceous layer coverage (%)	30	35	30	35	25		40	40	35	75	60	70	80	65	90	90	90	80	70	
Relevé surface (m²)	600	600	600	600	600		600	600	600	600	600	600	600	600	600	600	600	600	600	
Number of species	45	31	28	33	26		37	44	34	50	36	42	41	34	28	55	42	65	35	
Plots no.	41	48							50			41	42	42	43	52	57	63		
Charact. species ass. species																				
Tilia tomentosa	1	+	3	3	+	V	1	1, 2	1, 2	1, 2	1	1	1, 2	1, 2	1, 2	1, 2	1	1	+	V
Dif. subass.																				
Cotinus coggygria	3, 5	2, 5	2, 4	2, 4	3, 4	V	+	-	-	-	-	-	-	-	-	-	-	-	-	I
Cornus mas	-	-	1	1	1	III	2	3	3	3, 4	3, 4	3, 4	3	3	2	2, 3	2, 3	2	2	V
Carpino orientalis-Tilenion tomentosae																				
Allium siculum subsp. dioscoridis	-	-	-	-	-	-	-	+	-	3	-	-	3	-	-	1	1	2	-	III
Tulipa biebersteiniana var. biebersteiniana	-	-	-	-	-	-	-	2	+	1	-	-	-	-	-	-	-	2	1	II
Lathyrus aureus	-	-	-	r	r	II	+	-	-	-	-	-	-	-	-	-	-	-	-	I
Quercion petraeae																				
Quercus petraea	4	4	2	4	4	V	4	2, 3	3	3	4	2	1, 2	1, 2	3	3	3	4	5	V
Sorbus aucuparia s.l.	r	r	-	-	+	III	+	-	-	-	-	-	-	-	-	-	-	-	-	I
Cruciata glabra	2	-	-	-	-	I	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stachys officinalis	+	-	-	-	-	I	-	-	-	-	-	-	-	-	-	+	-	-	-	I
Loranthus europaeus	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	I
Quercetalia pubescenti-petraeae																				
Glechoma hirsuta	1	1	-	+	2	IV	-	2	1, 2	1, 3	+	1	2, 3	1, 2	1, 2	1	1	1	1	V
Sorbus torminalis	1	1	-	+	2	IV	+	+	+	+	r	-	r	-	r	+	+	+	+	V
Euonymus verrucosus	1	-	+	1	-	III	2	+	+	1	1	-	+	-	-	-	-	+	1	III

Symphytum tauricum	-	-	-	r	-	I	-	-	1, 2	+	+	+	+	+	-	-	+	-	-	III
Viola suavis	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-	-	III
Aegonychon purpurocaeruleum	1, 2	-	-	3	-	II	1	2	-	2	-	-	+	-	-	-	-	-	-	II
Asparagus tenuifolius	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	+	r	-	-	II
Lathyrus vernus	+	+	-	-	-	II	+	-	-	+	-	-	+	-	-	-	-	-	+	II
Carex muricata	+	1	-	-	+	III	-	+	-	+	-	-	-	-	-	+	-	-	-	II
Lathyrus niger	+	1	r	+	+	V	+	-	-	-	-	-	+	-	-	+	-	+	+	II
Melica picta	1, 2	-	-	-	-	I	2	-	-	+	-	-	-	-	-	1	-	-	-	II
Piptatherum virescens	-	-	-	+	+	II	-	1	-	1	+	-	-	-	-	+	-	-	-	II
Vincetoxicum hirundinaria	+	+	-	r	+	IV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carpinion																				
Carex brevicollis	-	-	1	-	2	II	+	1, 3	+	1	+	+	+	1, 2	2	2, 3	-	+	-	V
Stellaria holostea	1	1, 2	r	-	+	IV	2	3	1, 2	2, 3	1, 2	1, 4	2	2, 4	-	1, 3	3, 4	3	+	V
Corydalis marschalliana	-	-	-	-	-	-	1	-	-	1, 2	-	-	1, 2	-	-	1, 3	+	2, 3	+	III
Carpinus betulus	-	-	+	-	+	II	-	+	-	-	-	-	-	-	+	+	-	+	+	II
Isopyrum thalictroides	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	2	3	3	-	II
Tilia cordata	+	-	-	-	1	II	-	-	-	-	-	-	-	-	-	+	+	+	-	II
Lathyrus venetus	-	-	+	-	-	I	-	-	-	-	-	-	-	-	-	-	-	+	-	I
Omphalodes scorpioides	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	I
Fagetalia sylvaticae																				
Anemonoides ranunculoides	-	-	r	+	-	II	1, 2	1, 2	1, 2	1, 2	1	+	+	+	1	+	+	1	+	V
Carex pilosa	-	-	+	1	1	III	2	-	+	3	2	+	+	1, 4	1, 3	1, 3	1	2, 3	1, 3	V
Corydalis solida	-	-	+	r	-	II	-	1	-	1, 2	1	1, 2	1, 2	1	2	1, 2	1	3	1	V
Gagea lutea	-	-	-	-	-	-	+	+	+	+	-	+	+	+	+	+	+	+	-	V
Scilla bifolia	-	-	1	1	-	II	1	1	1	1	1, 2	+	+	+	+	r	+	1	+	V
Hedera helix	-	-	+	1	-	II	1, 2	1, 3	1, 3	1, 2	+	+	-	+	-	1	+	1, 2	1, 2	IV
Lamium maculatum	-	-	+	-	-	I	-	+	-	+	-	+	1	+	+	2	1, 2	1	-	IV
Mercurialis perennis	-	-	-	+	-	I	2	+	1, 2	2	-	+	1	+	-	2	1	2, 3	-	IV
Allium ursinum	-	-	-	-	-	-	-	3	3, 4	+	+	-	1, 4	-	-	+	3	3	-	III
Euphorbia amygdaloides	-	-	-	-	-	-	-	r	-	+	-	+	-	r	-	+	+	+	-	III
Pulmonaria officinalis	+	+	r	+	-	IV	+	r	+	r	-	-	+	-	-	+	-	+	-	III
Acer platanoides	-	-	1	-	-	I	+	-	+	-	-	-	-	-	-	+	-	+	r	II

Asarum europaeum	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	1	+	1	-	II
Cardamine bulbifera	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-	-	2	-	II
Corydalis cava	-	-	-	-	-	-	-	2, 3	1	-	1	-	-	-	-	-	-	-	-	II
Ficaria verna	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	2	3	-	II
Galium odoratum	-	-	+	-	-	I	2	-	-	-	-	-	-	-	-	+	-	1	+	II
Stachys sylvatica	-	-	-	-	-	-	-	-	-	-	-	r	-	-	-	+	+	-	-	I
Querco-Fagetea																				
Convallaria majalis	2	1	1, 2	1, 2	1, 2	V	2	2	1, 2	1, 2	1, 3	+	-	1, 2	-	1	2	2	+	V
Dactylis glomerata	-	-	-	+	-	I	-	+	+	+	+	+	+	+	+	+	+	+	+	V
Fraxinus excelsior	-	r	+	-	-	II	+	1	1	1	1	3	2, 3	2	1	1, 2	1	+	-	V
Geum urbanum	+	-	-	+	-	II	+	+	-	+	+	+	+	+	+	+	+	+	+	V
Acer campestre	1	1	-	-	1, 2	III	1	-	-	+	-	-	+	1	+	+	1	1	1	IV
Melica uniflora	-	-	+	+	+	III	-	+	+	-	+	+	2	+	1, 3	1, 3	+	+	-	IV
Brachypodium sylvaticum	+	-	-	-	-	I														
Bromus ramosus	-	-	-	-	-	-	-	+	r	-	-	+	+	+	+	1, 2	+	-	-	III
Chaerophyllum temulum	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	1	+	+	-	III
Polygonatum hirtum	-	1	-	-	-	I	-	+	+	1, 2	1	+	-	-	-	+	-	1	-	III
Scutellaria altissima	+	+	-	-	+	II	+	+	-	-	1	+	-	+	+	-	+	-	-	III
Viola odorata	+	-	-	+	-	II	-	+	+	+	-	-	-	-	-	+	-	+	+	III
Arum orientale	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	r	-	+	-	II
Campanula rapunculoides	-	-	2, 3	-	+	III	+	-	-	3	1	-	-	-	-	-	+	+	-	II
Poa nemoralis	2	1, 2	+	+	+	V	-	-	-	+	+	-	-	-	-	-	+	-	+	II
Polygonatum multiflorum	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	+	r	II
Geranium robertianum	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	I
Lactuca muralis	-	-	-	+	-	I	-	-	-	-	+	-	-	-	+	+	-	-	-	I
Sedum maximum	+	+	-	-	r	III	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crataego-Prunetea																				
Crataegus monogyna	1	+	-	-	-	II	1	-	-	-	1	+	-	+	-	+	-	+	+	III
Prunus spinosa	+	+	-	-	-	II	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rosa canina	+	+	-	-	-	II	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Viburnum lantana	-	+	+	1, 2	-	III	+	+	+	1	1, 2	+	+	+	-	-	-	+	+	III

Aliae																			
Galium aparine	-	-	+	1	+	III	-	1, 3	+	+	+	1, 2	1	1, 2	1	2, 5	1, 4	2, 3	+	V
Alliaria petiolata	-	-	r	+	-	II	-	+	-	+	+	2, 3	2	1, 3	1, 2	1, 2	-	+	+	IV
Veronica hederifolia	+	+	-	+	-	III	-	1	-	2, 3	2, 3	1	2	-	-	-	+	2	-	III
Anthriscus longirostris	-	-	-	-	-	-	-	-	-	-	+	3	2, 3	-	1, 2	-	-	-	+	II
Falopia dumetorum	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	+	+	-	-	II
Urtica dioica	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	+	-	I

Place and date of the relevés: subass. *cotinetosum coggygriae* - rel. 19-20, Mereșeni commune, Hîncești district, 05.08.2016; rel. 21-23, Malcoci commune, Ialoveni district, 19.03.2025, 02.06.2025; subass. *cornetosum mas* – rel. 24, Logănești commune, Hîncești district, 24.04.2018; rel. 25-26, Condrița commune, Chișinău municipality, 19.03.25, 02.06.2025; rel .27-28, Malcoci commune, Ialoveni district, 19.03.25, 02.06.2025; rel. 29-32, Stejăreni village, Strășeni district, 28.07.2025; rel. 33-35, Horodca village, Hîncești district, 28.07.2025.

Species recorded only in 1 or 2 surveys: subass. *cotinetosum coggygriae*: ***Quercetalia pubescenti-petraeae***: Clematis recta (19); Campanula persicifolia (22, 23); Tanacetum corymbosum (19), Veronica spuria (19); Vicia pisiformis (19); ***Fagetalia sylvaticae***: Carex digitata (21); Scrophularia nodosa (19); ***Querco-Fagetea***: Acer tataricum (20); Galium intermedium (19, 20); Pyrus pyraster (19); ***Trifolio-Geranietea***: Astragalus glycyphyllos (19, 20); Centaurea jacea (19); Clinopodium vulgare (19, 20); Trifolium alpestre (19); ***Aliae***: Hypericum perforatum (19, 220); Stellaria media (22); Torilis japonica (19); subass. *cornetosum maris*: ***Quercetalia pubescenti-petraeae***: Campanula persicifolia (33); Lactuca quercina (27); Ligustrum vulgare (26); ***Fagetalia sylvaticae***: Adoxa moschatellina (35); Aegopodium podagraria (35); Carex digitata (34); Lathraea squamaria (35); Milium effusum (31, 35); Ranunculus auricomus (35); Scrophularia nodosa (35); Staphylea pinnata (33, 34); Ulmus glabra (33); Viola mirabilis (34, 35); Viola reichenbachiana (35, 36); Viscum album (27); ***Querco-Fagetea sylvaticae***: Acer tataricum (35); Cephalanthera damasonium (35); Cornus sanguinea (24); Epipactis helleborine (26, 27);Euonymus europaeus (30, 31); Galium intermedium (24); Lapsana communis (36); Lilium martagon (27, 35); Moehringia trinervia (29, 35); Ornithogalum pyrenaicum (33); Quercus robur (30); Ulmus minor (31);***Trifolio Geranietea***: Astragalus glycyphyllos (27, 28); Veronica chamaedrys (27, 29); ***Aliae***: Chelidonium majus (29, 35); Erigeron annuus (27); Stellaria media (25, 27).