

Short description: vegetation of carbonate screes that occurs at the highest altitudes of the central-southern Apennines and is typical of the criorotemperate thermotype.

All: Aquilegion bertolonii (Tomaselli 1994) Biondi & Allegrezza stat. nov. hoc loco

Corresponding name: Aquilegion bertolonii Tomaselli 1994 (Tomaselli 1994: 41)

Holotypus: Herachleo-Valerianetum montanae Tomaselli 1988 (Tomaselli 1988: rel. 2, tab. 4).

Diagnostic taxa: Aquilegia bertolonii Schott, Galium palaeoitalicum Ehrend., Pimpinella tragium Vill. subsp. lithophila (Schischk.) Tutin.

Short description: vegetation of carbonate screes in the Apuan Alps that occurs in the supratemperate thermotype.

34 Cl.: ARTEMISIETEA VULGARIS Lohmeyer, Preising & Tüxen ex Von Rochow 1951

Ord.: Podospermo laciniati-elytrigietalia athericae Biondi, Allegrezza & Pesaresi ord. novo hoc loco

Holotypus: Podospermo laciniati-elytrigion athericae Pirone 1995 [Syn.: Podospermo laciniati-elytrigion athericae (Pirone 1995) Biondi & Pesaresi 2004 (Pirone 1995: 225; Biondi & Pesaresi 2004: 161)].

Diagnostic taxa: Artemisia caerulea L. subsp. cretacea (Fiori) Brilli-Catt. & Gubellini, Artemisia caerulea L. subsp. caerulea, Scorzonera cana (C.A. Mey.) O. Hoffm., Elytrigia atherica (Link) Kerguelen, Podospermum laciniatum (L.) DC., Plantago maritima L.

Short description: Pioneer paucispecific hemi-cryptophytic and chamaephytic halophilous-to-halotolerant plant communities of badlands. They mainly occur in the temperate macrobioclimate Submediterranean variant from lower supratemperate to lower mesotemperate thermotypes, and in the upper mesomediterranean thermotypic horizon of the Mediterranean macrobioclimate. This order occurs in the northern-central Italian badlands, extending as far south as the Molise region.

Further comments: this new order highlights the floristic and ecological autonomy of subhalophilous argillaceous and argillaceous–pelitic badlands affected by rapid soil erosion.

39 Cl.: STELLARIETEA MEDIAE Tüxen, Lohmeyer & Preising ex Von Rochow 1951

39b Subcl.: CHENOPODIO-STELLARIENEA Rivas Goday 1956

Ord.: URTICO-SCROPHULARIETALIA PEREGRINAE Brullo ex Biondi, Blasi, Casavecchia & Gasparri ord. novo hoc loco

Validated name: Urtico-Scrophularietalia peregrinae Brullo in Brullo & Marcenò 1985 nom. inval. (art. 17).

Lectotypus: Veronico-Urticion urentis Brullo in Brullo & Marcenò 1985 (Brullo & Marcenò 1985: 50).

Diagnostic taxa: Galium aparine L., Urtica membranacea Poir. ex Savigny, Parietaria judaica L., Fumaria capreolata L., Scrophularia peregrina L.

Short description: ephemeral nitrophilous vegetation of tall therophytes and geophytes that grow on humid and deep soils, in shadowy habitats, in thermomediterranean and mesomediterranean thermotypes.

40 Cl.: GALIO APARINES-URTICETEA DIOICA Passarge ex Kopecký 1969

40.1 *Ord.:* GALIO APARINES-ALLIARIETALIA PETIOLATAE Oberdorfer ex Görs & Müller 1969

All: Parietario judaicae-Arion italici Biondi, Casavecchia & Gasparri all. nova hoc loco

Holotypus: Parietario judaicae-Aretum italici Biondi, Casavecchia & Gasparri ass. nova hoc loco

Diagnostic taxa: Arum italicum Miller, Urtica dioica L., Symphytum tuberosum L., Allium neapolitanum Cyr., Parietaria judaica L.

Short description: perennial herbaceous edge communities dominated by mesophilous and sciaphilous geophytes and hemi-cryptophytes. They grow on deep and humid soils that are rich in organic matter, owing to their prevalently anthropogenic origin, in the Mediterranean macrobioclimate, particularly in the thermo- to mesomediterranean thermotypes, while their optimum in the Temperate macrobioclimate is found in the Submediterranean variant of the mesotemperate thermotype.

Ass.: Parietario judaicae-Aretum italici Biondi, Casavecchia & Gasparri ass. nova hoc loco

Holotypus: rel. 1 in Table I in this article.

Diagnostic taxa: Arum italicum Miller, Parietaria judaica L., Allium neapolitanum Cyr.

43 Cl.: MULGEDIO ALPINI-ACONITETEA VARIEGATA Hadač & Klika in Klika & Hadač 1944

43.1 *Ord.:* ADENOSTYLETALIA ALLIARIAE Br.-Bl. 1931

Table I. *Parietario judaicae-Aretum italici* Biondi, Casavecchia & Gasparri ass. nova (*holotypus*: rel. 1).

No. of relevé	1*	2	3	4	5	6	Pres.
Exp.	SE	WNW	W	-	-	SSW	
Slope (°)	50	15	20	-	-	25	
Surface (m ²)	20	60	30	50	15	60	
Coverage (%)	100	100	100	100	100	100	
Charact. species of the ass.							
<i>Arum italicum</i> Miller	4.5	4.5	2.3	4.4	5.5	5.5	6
<i>Parietaria judaica</i> L.	2.2	1.2	1.2	3.3	2.3	3.4	6
<i>Allium neapolitanum</i> Cyr.	1.2	3.4	3.3	.	.	.	3
Charact. species of the upper units							
<i>Galium aparine</i> L.	3.3	+2	.	.	+	.	3
<i>Lamium maculatum</i> L.	+	+	.	.	.	.	2
<i>Urtica dioica</i> L.	1.2	.	.	1.2	.	.	2
<i>Silene vulgaris</i> (Moench) Garcke	+2	.	.	.	.	.	1
Other species							
<i>Rubus ulmifolius</i> Schott	+2	+	.	1.2	+	1.2	5
<i>Theligonum cynocrambe</i> L.	.	2.3	1.2	.	.	1.2	3
<i>Rubia peregrina</i> L.	.	+	.	.	+	1.2	3
<i>Mercurialis annua</i> L.	2.2	.	.	+	.	.	2
<i>Sinapis alba</i> L.	.	+	.	+	.	.	2
<i>Asparagus acutifolius</i> L.	.	+	.	.	+	.	2
<i>Clematis vitalba</i> L.	.	.	.	+	+	.	2
<i>Sambucus nigra</i> L.	2.2	.	.	.	.	.	1
<i>Brachypodium sylvaticum</i> (Hudson) Beauv.	1.2	.	.	.	.	.	1
<i>Ulmus minor</i> Miller	+2	.	.	.	.	.	1
<i>Quercus pubescens</i> Willd. (pl)	+2	.	.	.	.	.	1
<i>Cornus sanguinea</i> L.	+	.	.	.	.	.	1
<i>Oryzopsis miliacea</i> (L.) Asch. et Sch. ssp. <i>thomasi</i> (Duby) Pign.	.	1.2	.	.	.	.	1
<i>Hedera helix</i> L.	.	+	.	.	.	.	1
<i>Arisarum vulgare</i> Targ.-Tozz.	.	.	3.4	.	.	.	1
<i>Sambucus nigra</i> L. pl.	.	.	.	+	.	.	1

Note: Rel. 1: Recanati, 03.02.2013; Rel. 2: Polverigi, 07.12.2012; rel. 3: Ancona, 09.01.2014; Rel. 4: Marcelli di Numana, 04.01.2003; Rel. 5: Numana, 04.01.2003; rel. 6: Selva di Gallignano, 28.11.2012.

Subord. ADENOSTYLENALIA ALPINAE Biondi & Allegrezza *subord. novo* hoc loco

Holotypus: *Adenostylion alpinae* Castelli et al. ex Castelli, Biondi & Ballelli all. nova *hoc loco*

Diagnostic taxa: *Adenostyles alpina* (L.) Bluff et Fingerh. [= *A. glabra* (Mill.) DC.].

Short description: communities of megaforbs that are characteristic of the supratemperate thermotype of the Apennines and part of the Balkan Peninsula. This new suborder is the geographic vicariance of the alpine vegetation dominated by *Adenostyles alliaria*.

All.: *Adenostylion alpinae* Castelli et al. ex Castelli, Biondi & Ballelli all. nova *hoc loco*

Validated name: *Adenostylion glabrae* Castelli, Biondi & Ballelli 2001 *nom. inval.* (art. 2b, 8).

Holotypus: *Valeriano tripteris-Adenostyletum glabrae* Castelli, Biondi & Ballelli 2001 (Castelli et al. 2001: rel. 54, tab. 8).

Diagnostic taxa: *Valeriana tripteris* L., *Adenostyles alpina* (L.) Bluff et Fingerh. [= *A. glabra* (Mill.) DC.], *Hieracium murorum* L. [= *H. sylvaticum* (L.) L.].

Short description: communities of megaforbs that grow in the supratemperate thermotype of the Apennines, on constantly humid, rocky-earthly, north-facing, mountainsides.

All.: *Aconition neapolitani* Biondi & Allegrezza all. nova *hoc loco*

Holotypus: *Ranunculo lanuginosi-Aconitetum neapolitani* Allegrezza 2003 (Allegrezza 2003: rel. 3, tab. 43).

Diagnostic taxa: *Aconitum lycoctonum* L. emend. Koelle subsp. *neapolitanum* (Ten.) Nyman, *Geranium nodosum* L., *Cardamine kitaibelii* Bech., *Ranunculus lanuginosus* L.

Short description: communities of megaforbs dominated by *Aconitum lycoctonum* subsp. *neapolitanum* that grow in the supratemperate thermotype of the Apennines. They develop on deep, humid soils in shallow lands, at the edges of beech woods and maple woods.

44 Cl.: TRIFOLIO MEDII-GERANIETEA SANGUINEI Müller 1962

44.1 Ord.: ORIGANETALIA VULGARIS Müller 1962