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Specific botanical epithets indicating practical application or impact

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Abstract

The article discusses a small group of specific botanical epithets that indicate plants' practical application or impact on the environment. As a part of one larger research on the specific epithets in Botany, this article analyzes the used word-forming methods as well as the particular meaning of the included epithets. The lexemes are alphabetically arranged and accompanied by short etymological notes. The binomial names containing each lexeme are listed after it. The specific epithets discussed in the current research are a valuable source of information about the place and importance of different botanical species in human life and activity through the ages.

Keywords: Latin; Botany: Specific epithets; Practical application; Impact

1. Introduction

The present article is a part of a larger study examining the forms and informative aspects of specific epithets within binomial botanical denominations. The study is based on the „Conspectus of the Bulgarian vascular flora. Distribution maps and floristic elements ", fourth revised and updated edition [1].

The article analyzes a particular group of specific epithets indicating practical application, healing effect, particular impact of the plant on humans, animals, or the environment. It is focused on epithets, expressed with adjectives that take the gender, number, and case of the generic name, i.e agree with the generic name. The epithets, expressed with different forms – a noun in the nominative, a noun in the genitive, or two single hyphenated words, are included in other sections of the larger research.

The epithets are ordered alphabetically and are represented with their basic forms. The binomial names containing each particular epithet are listed after it.

The epithets who's meaning unambiguously demonstrates their practical application like *esculentus*, *officinalis*, *saxifragus*, *tinctorius*, *viminalis* predominate. This is especially evident regarding the plants considered as medicinal herbs – besides the most popular specific epithet *officinalis*, many examples illustrating the particular medicinal use of the plant are found – *cardiacus*, *cervicarius*, *dysentericus*, *eupatorius*, *torminalis,* etc. In a couple of cases, the specific epithet directs straight to different zoological species on which the plant has an impact – *avicularis*, *caninus*, *cynanchicus*, *lycoctonus*, *ovinus*.

It must be noted also the presence of epithets with estimative meaning, metaphorically used – *nobilis* (famous, noble, superb), *victorialis* (victorious, perceived as a symbol of victory), *matronalis* (belonging to a married woman), *sceleratus* (criminal, harmful), *chironius* (pertaining to the centaur Chiron). In a few cases, the specific epithet can be interpreted differently and accordingly included in another group of epithets: *coccifer* – "bearing berries" (*coccum, i n* "berry"), or

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"colouring in scarlet" (*coccum, i n* "scarlet dye"); *blattarius* – "like a cockroach" (*blatta, ae f* "cockroach": because of the stalks reminiscent of cockroach antennae) or "cockroach repellent".

2. Morphemic structure

According to the morphemic composition, the adjectives could be divided to:

2.1. Primary adjectives – 1

2.2. Derivative adjectives – 25

The affixes used to form derivative adjectives are represented in the next table:

Suffix	Connotation	Examples
ab-	from, away from	*abortivus* (abortive, provoking abortion)
-aceus	for adjectives derived from nouns and meaning "made of" or "similar to"	*oleraceus* (used as an edible vegetable)
-aris / -alis	relation, cross-reference to an object	*avicularis* (relating to the birds) *officinalis* (curative, medicinal) *torminalis* (able to soothe colics)
-arius	"pertaining to" – the suffix indicates someone that operates or trades the object, signified by the basic noun	*cervicarius* (relating to the neck) *vulnerarius* (healing wounds)
-atus	"supplied with" – for adjectives derived from nouns indicating the possession of a thing or a quality	*sceleratus* (harmful)
dys-	"bad", "disturbed", "difficult", "abnormal"	*dysentericus* (dysenteric)
-entus	"abounding", "full of" – for adjectives derived from nouns	*esculentus* (edible)
-icus	"belonging to"; "derived from"; "connected with"	*catharticus* (purgative)
-ilis	for adjectives derived from verbs or past participles	*sterilis* (barren)
in-	"not", "without"	*innoxius* (harmless)
-inus	"of or pertaining to" – for adjectives derived from nouns; usually indicates position, possession, or origin	*caninus* (pertaining to the dogs) *ovinus* (sheep's)
-ius	the suffix is added to a noun to form a derivative adjective meaning "made of" or "belonging to" that noun	*eupatorius* (good for the liver) *tinctorius* (dyer's)
-ivus	the suffix is added to the passive perfect participial stem of verbs to form a deverbal adjective meaning "doing" or "related to doing"	*abortivus* (abortive, provoking abortion)

2.3. Compound adjectives – 9

The epithets, composed of two roots indicate either a particular use of the plant (*aucuparius* – "bird catcher", *papyrifer* – "paper carrier", *eupatorius* – "good for the liver", *holosteus* – " whole bone") or point to certain species on which the plant has a specific impact (*lycoctonus* – "wolf killer", *saxifragus* – "breaking rocks).

3. List of epithets

3.1. Abortivus, a, um

Miscarried, with missing or malformed parts [3]; abortive, incomplete, or provoking an abortion [4]. The adjective derives from the verb *aborior, abortus sum, aboriri* "perish, die".

Limodorum abortivum (Violet limodore, Violet bird's-nest orchid). The plant was thought capable of provoking abortion.

3.2. Aucuparius, a, um

Bird catcher (*avis, is f* "bird" and *capio,capere* "catch") [4].

Sorbus aucuparria (Rowan, Mountain-ash). The specific epithet describes the use of this plant as bait for fowling because its fruits are appetizing for the small migratory birds [4].

3.3. Avicularis, e

Literally: relating to small birds (*avicula, ae f* – diminutive from avis "bird'): because the seeds of these plants are eaten by birds [3, 4].

Polygonum aviculare (Common knotgrass, Prostrate knotweed, Birdweed)

3.4. Baccifer, era, erum

Bearing berries (*bacca, ae f* "berry" and *fero, ferre* "carry, bear") [2].

Cucubalus baccifer (Berry-bearing catchfly)

3.5. Blattarius, a, um

The adjective derives from the Latin *blatta, ae f* "cockroach" because is similar to a cockroach or drives away the cockroaches [3, 4].

Verbascum blattaria (Moth mullein)

NB! A probable mistake in the agreement – it should be *blattarium* because the generic name *Verbascum* is neuter gender.

Another hypothesis – the specific epithet is actually the generic name *Blattaria* in the nominative, therefore it should be thought of as an epithet–apposition.

3.6. Caninus, a, um

Pertaining to the dogs: common as dogs or loved by dogs, or used to treat dogs (*canis, is mf* "dog") [4].

Agrostis canina (Velvet bentgrass, Velvet bent)

Elymus caninus (Bearded couch, Bearded wheatgrass)

Rosa canina (Dog rose). According to an ancient tradition, quoted by Pliny, the roots of the Dog rose were used in the treatment of a rabid dog bite [4].

Scrophularia canina (Dog figwort)

Viola canina (Heath dog-violet)

3.7. Cardiacus, a, um

The adjective derives from the Greek *καρδία* "heart" referring to the medicinal use of the plant: good for the heart [4].

Leonurus cardiaca (Motherwort, Throw-wort, Lion's ear). The herb has sedative, anticonvulsant and antiarrhythmic effects, experimentally proven. It has a certain cardiotonic effect, which is expressed in slowing the heart rate and increasing the strength of the heartbeat.

3.8. Catarius, a, um

Pertaining to cats (from late Latin *catta, ae f* "cat") who are attracted to these plants [4].

Nepeta cataria (Catnip, Catswort, Catmint). The plant *Nepeta cataria* and some other species within the genus *Nepeta* have a strong influence on the cats and are used as a recreational substance for pet cats. This herb is also a popular ingredient in different herbal teas and is valued for its sedative and relaxant properties.

3.9. Catharticus, a, um

Purgative, cathartic (from the Greek *καθαρτικός* "cleansing, purging") [3, 4]; if ingested, liable to damage the gut.

Linum catharticum (Purging flax, Fairy flax)

Rhamnus cathartica (Common buckthorn, Purging buckthorn)

3.10. Cervicarius, a, um

Pertaining to the neck (*cervix, icis f* "neck").

Campanula cervicaria (Bristly bellflower). The specific epithet is probably due to the use of the plant to relieve pains in the neck area.

3.11. Chironius, a, um

Pertaining to the centaur Chiron, initiator of the medical art of healing with herbs. He instructed, according to Greek mythology, Jason and Achilles the medicinal use of plants [3].

Opopanax hironium (Hercules' all-heal)

3.12. Coccifer, era, erum

a) bearing berries (*coccum, i n* "berry") [2]; **b)** colouring in red (*coccum, i n* "carmine, red dye") [2].

Quercus coccifera (Kermes oak). This small evergreen oak is a host plant of the insect *Kermes ilicis*, from which is obtained deep red dye.

3.13. Cynanchicus, a, um

Relating to quinsy. The specific epithet originates from the Greek *συνάγχη* "angina, acute inflammation of the throat with suffocation", and is connected with the former medicinal use of the plant as capable of curing this disease. Another hypothesis makes the word derive from *κύων, κυνός* "dog", concerning canine cough and *ἄγχω* "suffocate" (thence the epithet refers to herbs, poisonous for dogs) [4].

Asperula cynanchica (Squinancywort, Squincywort)

3.14. Dysentericus, a, um

Dysenteric (from the Greek *δυσ-* "bad, difficult' and *ἔντερον* "intestine"): referring to the plant's ability to cause or treat dysentery [4].

Pulicaria dysenterica (Common fleabane)

3.15. Esculentus, a, um

Edible, being fit to eat (*esca, ae f* "food, eating") [2].

Phytolacca esculenta (Indian pokeweed)

3.16. Eupatorius, a, um

The adjective derives from the Greek *ἐῦ* "true, well", and from *ἦπαρ, ἤπᾰτος* "liver" thence: which is good for the liver [4].

Agrimonia eupatoria (Common agrimony, Sticklewort). The drug from Common agrimony regulates liver and gallbladder functions and also has a diaphoretic and diuretic effect. However, the main medicinal property is associated with the treatment of inflammatory processes in the throat and oral cavity – chronic pharyngitis, angina, laryngitis, bronchitis, cough, etc.

3.17. Holosteus, a, um

A compound adjective formed from the Greek *ὅλος* 'whole, all" and from ὀστέον "bone", literally "whole bone" [3, 4].

Stellaria hollostea (Addersmeat, Greater stitchwort). A probable reference to the fact that in ancient times the fragile stems of the plant were recommended in the treatment of fractures [4].

3.18. Hospitus, a, um

Hospitable, harboring, friendly (for animals or epiphytic plants) [4]. The adjective derives from the Latin *hospes, itis m* "host; guest, visitor" [2].

Polygala hospita (*synonym of* Polygala supina *subsp*. hospita)

3.19. Innoxius, a, um

Harmless, innocuous (*in*- "not, without" and noxius "noxious, hurtful") [2].

Datura innoxia (Downy thorn-apple, Pricklyburr). The specific epithet refers to the fruits that do not have thorns but obtuse tubercles; in fact, this plant is very poisonous with a high concentration of alkaloids in all its parts [4].

3.20. Lycoctonus, a, um

A compound adjective formed from the Greek *λύκος* "wolf" and *κτείνω* "kill" thence the literal meaning "wolf killer", a reference to the toxicity of these plants [3, 4].

Aconitum lycoctonum (Northern wolfsbane)

3.21. Matronalis, e

Belonging to a married woman (*matrona, ae f* "married woman, wife") [2].

Hesperis matronalis (Dame's rocket, Dame's-violet, Night-scented gillyflower). The specific epithet refers to the custom of the Roman women to decorate their hair with wreaths of this plant [4].

3.22. Nobilis, e

Noble, notable, famous, excellent (because of the healing properties of the plants) [4].

Achillea nobilis (Noble yarrow)

Hepatica nobilis (Liverleaf)

Verbascum nobile (Noble mullein)

3.23. Officinalis, e

Used in a pharmacological sense: curative (a derivative adjective from *officina, ae f* "workshop"). The adjective is often used as a part of the scientific name of a species pertaining to a plant or herb traditionally sold in pharmacies, readily available without special preparation, and considered to have medicinal properties [5].

Althaea officinalis (Marsh-mallow)

Anchusa officinalis (Common bugloss, Alkanet)

Asparagus officinalis (Garden asparagus, Sparrow grass)

Betonica officinalis (Common hedgenettle, Wood betony, Bishop's wort)

Cynoglossum officinale (Houndstongue, Houndstooth, Dog's tongue, Gypsy flower)

Fumaria officinalis (Common fumitory, Drug fumitory, Earth smoke)

Galega officinalis (Goat's-rue, French lilac, Italian fitch, Professor-weed)

Gratiola officinalis (Common hedgehyssop)

Hyssopus officinalis (Hyssop)

Laurocerasus officinalis (*synonym of* Prunus laurocerasus – Cherry laurel, Common laurel, English laurel)

Lithospermum officinale (Common gromwell, European stoneseed)

Melilotus officinalis (Yellow sweet clover, Yellow melilot, Ribbed melilot, Common melilot)

Melissa officinalis (Lemon balm, Common balm, Balm mint)

Nasturtium officinale (Watercress, Yellowcress)

Parietaria officinalis (Eastern pellitory-of-the-wall, Upright pellitory, Lichwort)

Peucedanum officinale (Hog's fennel, Sulphurweed)

Pulmonaria officinalis (Lungwort, Common lungwort, Mary's tears, Our Lady's milk drops)

Salvia officinalis (Garden sage, Common sage)

Sanguisorba officinalis (Great burnet)

Saponaria officinalis (Common soapwort, Bouncing-bet)

Sisymbrium officinale (Hedge mustard)

Symphytum officinale (Common comfrey, True comfrey)

Taraxacum officinale (Common dandelion)

Valeriana officinalis (Garden valerian)

Verbena officinalis (Common vervain, Common verbena)

Veronica officinalis (Heath speedwell, Common gypsyweed, Common speedwell)

3.24. Oleraceus, a, um

Used as an edible vegetable, esculent ((*h)olus, eris n* "vegetable, greens") [2].
Allium oleraceum (Field garlic)
Cirsium oleraceum (Cabbage thistle, Siberian thistle)
Portulaca oleracea (Common purslane, ~~Verdolaga~~, Little hogweed, Pursley)
Sonchus oleraceus (Common sowthistle, Smooth sow thistle, Hare's colwort)

3.25. Ovinus, a, um

Ovine, sheep's (*ovis, is f* "sheep"): probably because plants are used as fodder for sheep [4].

Centaurea ovina (*Accepted name*; literally: Sheep knapweed)

3.26. Papyrifer, era, erum

Bearing paper (*papyrus, i f* "paper" and *fero, ferre* "carry, bear"): for plants suitable for the production of paper [3], [4].

Broussonetia papyrifera (Paper mulberry)

3.27. Saxifragus, a, um

Breaking rocks (*saxum, i n* "crag, large stone" and *frango, frangere* "break"): for plants that wreck stones, since they often grow on rocks and their roots penetrate even in small cracks and destroy the stones [4].

Minuartia saxifraga (*Accepted name*; literally: Saxifrage sandwort)

Petrorhagia saxifraga (Tunic flower, Coat flower). The genus name (from the Greek *πέτρα* "rock, crag" and *ῥηγνῦμι* burst, rupture) duplicates the specific epithet meaning, and is a reference to the growth environment of plants of this genus, in the cracks of rocks and interstices between stones [4].

Pimpinella saxifraga (Burnet-saxifrage, Solidstem burnet saxifrage)

Silene saxifraga (Saxifrage catchfly)

3.28. Sceleratus, a, um

Criminal, harmful, evil; hurtful (Perfect passive participle of *scelero, scelerare* "pollute, defile, contaminate") [2].

Ranunculus sceleratus (Celery-leaved buttercup, Cursed crowfoot). The specific epithet is a reference to the fact that sap of this plant causes ulceration [3].

3.29. Sterilis, e

Sterile, infertile, barren. The adjective derives from the Greek *στεῖρος* sterile, infertile: for the infertile appearance of the fruiting bodies [4].

Avena sterilis (Animated oat, Sterile oat)

Bromus sterilis (Barren brome, Poverty brome, Sterile brome)

Centaurea sterilis (*Accepted name*; literally: Sterile knapweed)

Poa sterilis (*Accepted name*; literally: Sterile meadow-grass)

3.30. Temulentus, a, um

Drunken (*temetum, i n* – an intoxicating drink, especially strong wine). The epithet could be interpreted metaphorically because plants sway strongly in the wind like a drunkard or because the ingestion of their parts causes poisoning with symptoms similar to alcoholic intoxication [4].

Chaerophyllum temulentum (Rough chervil)

Lolium temulentum (Darnel ryegrass, Poison darnel, Cockle)

3.31. Tinctorius, a, um – no dash

Tinctorial, used for dyeing (*tingo, tingere* "dye, tinge"). The epithet indicates a plant used in dyeing fabrics or having a sap that can stain [3], [4].

Alkanna tinctoria (Dyer's alkanet, Alkanet, Dyers' bugloss). The plant root produces a fine red colouring material, which has been used as a dye since antiquity – to give colour to wines and alcoholic tinctures, vegetable oils, varnishes, and dyeing wood.

Anthemis tinctoria (Golden marguerite, Yellow chamomile, Oxeye chamomile). The plant was commonly used as a fabric dye with a deep yellow tint.

Asperula tinctoria (Dyer's woodruff). The root was used in antiquity to make a red dye for clothing.

Chrozophora tinctoria (Dyer's croton). The plant produces a blue-purple colourant substance obtained from the fruit, specifically its dry outer coat. The colorant could also obtain from the sap contained in the plant smashed leaves.

Genista tinctoria (Dyer's greenweed, Dyer's broom). The plant has been used from antiquity for producing a yellow dye.

Isatis tinctoria (Woad, Dyer's woad, Glastum). The plant name 'woad" is also the name of a blue dye produced from the leaves of the plant. It was an important source of blue dye since ancient times and was cultivated throughout Europe, especially in Western and Southern regions.

Serratula tinctoria (Dyer's plumeless saw-wort, Saw-wort). A source of a yellow dye.

3.32. Torminalis, e

Able to soothe colics [3], [4]. The adjective derives from the Latin *tormina, um n* "intestinal colic".

Sorbus torminalis (Wild service tree, Checker tree). Formerly the fruits were used in the treatment of colitis [4].

3.33. Victorialis, e

Victorious (*victoria, ae f* "victory") [2], metaphorically: protecting.

Allium victoriale (Victory onion, Alpine leek, Alpine broad-leaf allium). The name *Victorialis mas* was used in medieval and renaissance medicine and attributed magical and medicinal virtues to this species that was worn as a protective talisman by Bohemian miners [3], [4].

3.34. Viminalis, e

Having long slender flexible shoots that can be used for knitting baskets, osier (*vimen, inis n* "shoot, twig") [3], [4].

Salix viminalis (Basket willow, Common osier)

3.35. Vulnerarius, a, um

Curative [2]; believed to be able to heal wounds (*vulnus, eris n* "wound").

Anthyllis vulneraria (Common kidneyvetch, Kidney vetch, Woundwort). The plant was recommended for kidney problems [3].

4. Conclusion

The specific epithets included in the current article represent a limited part of the rich informative "database" provided by the Latin binomial plant names. They are few in number compared to the epithets denoting a shape, resemblance, or area of spread of the different plant species, but provide valuable information about the application and importance of the respective species in everyday life, the impact they have on humans, animals, and nature.

The analysis of the epithets in this group traces the development of the knowledge about the species themselves, reveals practices and activities, some of which nowadays seem strange, but has been relevant at the time of formation of the binomial name.

The Latin epithets that are based mainly on literature data of ancient authors, widen and deepen acquaintance with the particular species. Providing additional aspects, they build its complete, exhaustive description. That is why a good knowledge of the meaning and connotation of Latin names is an important element in exploring and learning the objects these names designate.

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