

Some taxonomic and nomenclatural changes within *Orobanche* s.l. (*Orobanchaceae*)

Taxonomické a nomenklatorické změny v rodu *Orobanche* s.l. (*Orobanchaceae*)

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Earlier accepted classification of *Orobanche* L. s.l. into four genera is supplemented. Seven new nomenclatural combinations are proposed in *Myzorrhiza* PHILIPPI and five in *Phelipanche* POMEL. Explanatory notes are added to the proposals of new species names in *Phelipanche*.

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INTRODUCTION

Orobanche L. in its usually accepted circumscription taken over from monographic studies by Beck (e.g. BECK 1930) is a very differentiated unit which can be divided into several distinct and separate groups. These groups are marked by their morphological characters, karyological features, geographic distribution etc., so that it is possible to accept them as natural genera, which are well characterized by complexes of characters and features as well as by their different position in evolutionary lines within *Orobanche* s.l. This indicates them as results of a long-term phylogenetical evolution. The present author came to this classification approach already several years ago at his studies on various taxonomic and nomenclatural problems for the publication series "New names in Phanerogamae" (HOLUB 1977). Four genera were accepted in that classification: *Thalesia*, *Myzorrhiza*, *Phelipanche* and *Orobanche*. The problems of rightfulness of division of *Orobanche* into these further genera were discussed in more detail in the paper from 1977 and the accepted classification was there also sufficiently substantiated (HOLUB 1977). It is therefore unnecessary to repeat here once more the facts referring to justification of that classification. In the following text some supplements or corrections to the earlier accepted classification are given.

NOTES ON GENERIC SEGREGANTS AND THEIR SPECIES

In the present author's classification, *Thalesia* RAFIN. includes only two (or three) species; the generic name used by me in 1977 (HOLUB 1977) has to be changed. According to FARR et al. (1986 : 116) the name *Thalesia* RAFIN. ex BRITTON 1894 (given in the literature usually only as *Thalesia* RAFIN.) must be replaced with a much earlier name *Aphyllon* MITCHELL

1769. The correct names of species belonging here are *Aphyllon uniflorum* (L.) A. GRAY and *A. fasciculatum* (L.) TORREY et A. GRAY in A. GRAY. The problems of taxonomic justification of *Thalesia purpurea* A. A. HELLER have not been solved to date. According to my knowledge, the specific epithet "*purpurea*" has not been transferred under the generic name *Aphyllon* up to this time.

The genus *Myzorhiza* PHILIPPI includes 15–20 species distributed mostly in Pacific parts of North and South America. The genus was originally described on the basis of the only one species from Chile. A greater number of nomenclatural combinations with this generic name was proposed by RYDBERG at the beginning of this century for species occurring in North America (altogether for ten species). In the years 1975–1979, during the work on the publication series "New names in Phanerogamae", a number of proposals of new nomenclatural combinations was prepared for further species of this genus. After interruption (or postponing) of the publication of papers of the series in question these proposals have been left at rest and only now seven new nomenclatural combinations are published in this paper. With exception of RYDBERG (whose conception of generic classificatory unit is in very numerous concrete cases identical with that of the present author), the genus *Myzorhiza* was used by other American botanists only very rarely. More recently also several subspecies were described within this genus; however, my proposals of new nomenclatural combinations given below refer only to species.

At its description in 1874, *Phelipanche* POMEL was delimited as a complex of 12 species (which not in all cases were taxonomically justified). After POMEL the generic name *Phelipanche* was used only nearly hundred years later by SOJÁK (1972) for further 32 species and one subspecies (also here for some taxonomically questionable taxa). Later at the analysis of taxonomic heterogeneity of the genus *Orobanche* L. s.l., the present author added four further species names to this genus (HOLUB 1977) and separately also one combination for *Orobanche bohémica* ČELÁK. (HOLUB 1979). In the course of time it has shown that the number of included taxa (represented by nearly 50 binomes with *Phelipanche*) is not yet fully closed. Some species have been overlooked in the past and some formerly unclear taxa have been taxonomically elucidated. Necessity to typify (or better said to specify taxonomically) earlier names which were not used for a long time or finding of more correct publication dates for certain names result also in some changes of species names within this genus. Altogether five new nomenclatural combinations with the generic name *Phelipanche* POMEL 1874 are proposed in the following section of this paper. Three of them originate from taxonomic reasons (i.e. by transfer from *Orobanche* to *Phelipanche*), two changes follow from nomenclatural reasons (see below). Some further taxonomically unclear taxa exist in the genus but the transfer of their names to *Phelipanche* cannot be responsibly proposed, now.

Among the transferred species of *Orobanche* to *Phelipanche*, *Orobanche astragali* MOUTERDE and *O. ducellieri* MAIRE represent very rare species known probably only from their original collections. According to their descriptions, these two species distinctly belong to *Phelipanche* and at present it is not possible to identify them with any other species from those accepted in this genus. Most recently they are accepted also in Med-Checklist (GREUTER et al. 1989) as separate species.

The name *Orobanche laevis* L. 1753 was a long time (more than two hundred years) not used; sometimes it was designated as a "nomen ambiguum" (cf. CVELEV 1981). According to the sense of requirements of the present Code ICBN this name has to be typified (or at least taxonomically more precisely specified for implementing typification) and unless any special nomenclatural reason would exist for its rejection, it also must be used in the given sense. In its original conception this name included more than one species. LINNAEUS's descriptive phrase „*Orobanche caule simplicissimo laevi staminibus exertis*” is insufficient for its taxonomic elucidation and partly (regarding the character of stamens) also incorrect. No material referring to this name published in 1753 is included in LINNAEUS's herbarium. From prae-Linnean synonymy added by LINNAEUS to his name, analyzed in detail by BECK (1926), is possible to conclude, that LINNAEUS's name included mainly *Orobanche arenaria* BORKH. 1794 and *O. purpurea* JACQ. 1762. It is difficult to decide which of these two species prevailed in LINNAEUS's conception. When protested against the acceptance of *O. laevis* L. in the sense of *O. arenaria* BORKH. (which opinion was adjudged to BECK by SCHINZ et THELLUNG), BECK (1926) wanted to see rather domination of *O. purpurea* JACQ. over *O. arenaria* BORKH. in the protologue of LINNAEUS's name. However, according to the quotation of LINNAEUS's name used in BECK (1930) its identity rather with *O. arenaria* BORKH. than with *O. purpurea* JACQ. follows. Newly the name *O. laevis* L. 1753 was used in the sense of *O. arenaria* BORKH. in Med-Checklist (GREUTER et al. 1989). With regard to the infrequent use of this Linnaean name in earlier times (it was used mostly in the 18th century) and a long period of its being out of use and also with respect of the fact that the name was not used distinctly in one sense by some authors and in an opposite sense by other authors, the renewed use of this name in its restricted conception cannot bring any problems in botanical work, now. The respective taxonomic specification of the name made by GREUTER et al. (1989) should be added to this name as its emendation (restriction or clarification). In this restricted sense the name should also be neotypified. The best solution would be the typification by a specimen of *Orobanche arenaria* BORKH. collected in the vicinity of Montpellier, from where the Linnaean species was described and from where the occurrence of *O. arenaria* is also known (cf. e.g. BECK 1930). The combination *Phelipanche laevis* (L.) HOLUB proposed below and based on *Orobanche laevis* L. 1753 emend. (restr.) GREUTER et al. 1989 replaces the name *Phelipanche arenaria* (BORKH.) POMEL 1874.

On account of study of publication dates, it turned out, that the name *Phelypaea lanuginosa* C. A. MEYER in LEDEB. has priority over *Orobanche caesia* REICHENB. Though the seventh volume of REICHENBACH's work "Iconographia botanica, Plantae criticae" is dated in its title page by the year 1829, the first certain evidence of its edition originates only from the second half of 1831 (cf. STAFLEU et COWAN 1983; KERGUÉLEN 1987; GREUTER et RAUS 1989). The name used by C. A. MEYER appeared in LEDEBOUR's book in the second half of 1830, and this most probably still before November of that year (cf. STAFLEU 1967: 280). Finding of this time priority imposes a change of the usually used name *Orobanche caesia* REICHENB. to *O. lanuginosa* (C. A. MEYER in LEDEB.) KRYLOV 1881 (n.v., cf. CVELEV 1981: 327) vel BECK apud KRYLOV 1881 (cf. NOVOPOKROVSKIJ et CVELEV 1958: 46); cf. etiam BECK 1930: 100; GREUTER et BURDET, Willdenowia 19 : 37, 1989

(isonym). In the present author's classification, it is necessary to propose a new nomenclatural combination with the generic name *Phelipanche* — *Ph. lanuginosa* (C. A. MEYER in LEDEB.) HOLUB, which replaces the name *Ph. caesia* (REICHENB.) SOJÁK 1972.

The species *Orobancha rechingeri* GILLI was described not long ago — in 1966 — on the basis of a collection from Greece; its taxonomic legitimacy and relationships were somewhat unclear at that time. Newer findings of this species in further places in Anatolia (DAVIS et al. 1988) elucidated the status of this taxon and therefore it is reclassified here to the genus *Phelipanche*.

Note: In connection with the generic name *Phelipanche* accepted here it is necessary to draw attention to the possibility that a competition generic name "*Trionychion*" may exist. A study of this problem (also in connection with solution of general problems of indirect indication in nomenclature) by the present author is in progress.

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PROPOSALS OF NEW NOMENCLATURAL COMBINATIONS

Myzorrhiza PHILIPPI

Myzorrhiza comosa (WALP.) HOLUB, comb. nova. — Bas.: *Anoplanganthus comosus* WALPERS Repert. Bot. Syst. 3: 480, Lipsiae 1844. [= *Orobancha grayana* G. BECK 1890].

Myzorrhiza multicaulis (BRANDEGEE) HOLUB, comb. nova. — Bas.: *Orobancha multicaulis* T. S. BRANDEGEE, Univ. California Publ. Bot. 6/12: 361, Berkeley 1916.

Myzorrhiza parishii (JEPSON) HOLUB, comb. nova. — Bas.: *Orobancha californica* C. et S. var. *parishii* JEPSON Manual Fl. Plant. Calif., 952, Berkeley et Los Angeles 1925. — Syn.: *Orobancha parishii* (JEPSON) HECKARD, Madroño 22: 66, Berkeley 1963.

Myzorrhiza tacnaensis (MATTF.) HOLUB, comb. nova. — Bas.: *Orobancha tacnanesis* MATTFELD, Notizbl. Bot. Garten Mus. Berlin-Dahlem 8: 185, 1922.

Myzorrhiza valida (JEPSON) HOLUB, comb. nova. — Bas.: *Orobancha valida* JEPSON, Madroño 1: 255, Berkeley 1929 (vel 1930).

Myzorrhiza vallicola (JEPSON) HOLUB, comb. nova. — Bas.: *Orobancha comosa* HOOK. var. *vallicola* JEPSON Manual Fl. Plant. Calif., 952, Berkeley et Los Angeles 1925. — Syn.: *Orobancha vallicola* (JEPSON) HECKARD, Madroño 22: 64, Berkeley 1973.

Myzorrhiza weberbaueri (MATTF.) HOLUB, comb. nova. — Bas.: *Orobancha weberbaueri* MATTFELD, Notizbl. Bot. Garten Mus. Berlin-Dahlem 8: 183, 1922.

Phelipanche POMEL

Phelipanche astragali (MOUTERDE) HOLUB, comb. nova. — Bas.: *Orobancha astragali* MOUTERDE, Saussurea 4: 23, Genève 1973.

Phelipanche ducellieri (MAIRE) HOLUB, comb. nova. — Bas.: *Orobancha ducellieri* MAIRE, Bull. Soc. Hist. Natur. Afr. Nord 23: 203, Alger 1932.

Phelipanche laevis (L., em. GREUTER et al.) HOLUB, comb. nova. — Bas.: *Orobancha laevis* LINNAEUS Spec. Plant., 632, Holmiae 1753, emend. (restr.) GREUTER et al. Med-Checklist 4: 260, Berlin et Genève 1989. [= *Phelipanche arenaria* (BORKH.) POMEL 1874].

Phelipanche lanuginosa (C. A. MEYER in LEDEB.) HOLUB, comb. nova. — Bas.: *Phelypaea lanuginosa* C. A. MEYER in LEDEBOUR Fl. Alt. 2: 460, Berolini 1830. [= *Phelipanche caesia* (REICHENB.) SOJÁK 1972].

Phelipanche rechingeri (GILLI) HOLUB, comb. nova. — Bas.: *Orobancha rechingeri* GILLI, Österr. Bot. Zeitschr. 113: 214, Wien 1966.

SUMMARY

The broadly circumscribed genus *Orobanche* L. (in the delimitation usually taken over from BECK's monograph published in 1930) includes four natural genera; their correct names are: *Aphyllon* MITCHELL (= *Thalesia* RAFIN. vel RAFIN. ex BRITTON), *Myzorhiza* PHILIPPI, *Phelipanche* POMEL and *Orobanche* L. The North American genus *Aphyllon* includes 2 (–3) species. Further genus *Myzorhiza* is confined to America only and includes 15–20 species distributed mainly in Pacific regions of North and South America. New nomenclatural combinations are proposed for seven species of this genus, all following from the taxonomic transfer of species from *Orobanche* to *Myzorhiza*. The genus *Phelipanche* with its 30–50 species is distributed (similarly as *Orobanche*) in northern regions of the Old World and represents an evolutionarily parallel type to the American genus *Myzorhiza*. Five new nomenclatural combinations are proposed in *Phelipanche*, three of them being taxonomic reclassifications (transfer of species from *Orobanche* to *Phelipanche*). Two remaining changes are caused by nomenclatural reasons. In the case of *Orobanche arenaria* BORKH. 1794 = *Phelipanche arenaria* (BORKH.) POMEL 1874 the earlier and a long time not used but justified name *Orobanche laevis* L. 1753 has to be accepted. In its original taxonomic circumscription especially *O. arenaria* BORKH. and *O. purpurea* JACQ. were included. Taxonomic specification of the name *O. laevis* L. 1753 in the sense of *O. arenaria* BORKH. carried out in Med-Checklist, now, determinates the way of the use of that LINNAEUS's name in future. At the revision of publication dates for *Orobanche caesia* REICHENB. "1829" = *Phelipanche caesia* (REICHENB.) SOJÁK 1972, could be stated, that REICHENBACH's name was published not earlier than in 1831 and that in this case its publication is preceded by publishing the name *Phelypaea lanuginosa* C. A. MEYER in LEDEBOUR 1830 referring to the same taxon.

SOUHRN

Široký rod *Orobanche* L. v pojetí posledního všeobecně přijímaného Beckova zpracování z r. 1930 zahrnuje 4 přirozené rody, jejichž správná jména jsou *Aphyllon* MITCHELL (= *Thalesia* RAFIN. vel RAFIN. ex BRITTON), *Myzorhiza* PHILIPPI, *Phelipanche* POMEL a *Orobanche* L. Severoamerický rod *Aphyllon* obsahuje 2 (–3) druhy. Další čistě americký rod *Myzorhiza* má 15–20 druhů rozšířených hlavně v pacifických oblastech Severní a Jižní Ameriky. Pro 7 druhů tohoto rodu jsou navrženy nové nomenklatorické kombinace, vzniklé taxonomickým převodem druhů z rodu *Orobanche* do rodu *Myzorhiza*. Rod *Phelipanche* s c. 30–50 druhy je rozšířen (stejně jako rod *Orobanche*) v severních oblastech Starého Světa a představuje vývojově paralelní typ vůči americkému rodu *Myzorhiza*. V rodu *Phelipanche* je zde navrženo 5 nových nomenklatorických kombinací, z nichž 3 představují taxonomické reklasifikace (převod druhů z rodu *Orobanche* do rodu *Phelipanche*); všechny tyto případy se vztahují k druhům zastoupeným mimo naše státní území. Dvě zbývající změny jsou vyvolány nomenklatorickými důvody. Obě se týkají zástupců československé květeny, a to *Orobanche arenaria* a *O. caesia*. V případě *Orobanche arenaria* BORKH. 1794 = *Phelipanche arenaria* (BORKH.) POMEL 1874 je nutno užít staré a dlouho nepoužívané, avšak oprávněné jméno *Orobanche laevis* L. 1753, v jehož původní taxonomické naplni jsou hlavně zastoupeny druhy *O. arenaria* BORKH. 1794 a *O. purpurea* JACQ. 1762. Taxonomická specifikace (restrikce) jména *O. laevis* L. 1753 ve smyslu *O. arenaria* BORKH. 1794, provedená nyní v díle Med-Checklist, určuje budoucí způsob užití Linného jména.

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V. Jehlík