

Nomenclatural Adjustments in the Yugoslavian Flora II. Pteridophytes and Dicotyledons

Nomenklatorické a taxonomické změny v jugoslávské flóře
II. Pteridophyta a Dicotyledonae

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On basis of biosystematic investigations mainly on the flora of Slovenia (Yugoslavia), three new families are named: *Thalictraceae*, *Coptaceae* and *Saniculaceae*. One new generic name is validated: *Cernohorskya*, for a former section of *Arenaria*. Four older generic names are resurrected: *Alsine* L., *Caulopsis* FOURR., *Someraueria* HOPPE and *Trochocephalus* (MERT. et KOCH) OPIZ. In addition, ninety eight new combinations and emendations at the species and lower levels are validated for the genera *Asplenium*, *Cernohorskya*, *Someraueria*, *Alsine*, *Papaver*, *Biscutella*, *Caulopsis*, *Rubus*, *Geum*, *Alchemilla*, *Vicia*, *Rhodax*, *Trochocephalus*, *Colymbada*, *Jacea* and *Stenactis*.

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When the biological species concept and the evolutionary concept of genera and higher categories are applied to the classification of plants of a flora region not so studied previously, it is to be expected that some adjustments in classification will be required, followed by some changes in nomenclature of the taxa concerned. These changes will either require lumping of taxa that have been too narrowly defined by authors of manuals, or their splitting into less comprehensive units, and frequently it may be found necessary to move some taxa between genera or even families.

While investigating the cytotaxonomical composition of the Yugoslavian flora, with a particular emphasis on the plants of Slovenia as the first step (LÖVE, LÖVE et SUŠNIK 1974a), we have compiled and computerized a floristic checklist and chromosome number atlas of the Slovenian flora, which is available from the authors as a printout at cost price but kept by them on a computer tape and a card index (LÖVE et LÖVE 1974b). The advantage of such a tape and printout as compared with the printed book lies in the fact that it can be updated annually either in its entirety or by aid of printouts of additions and changes, at the same time as the tape simplifies various kinds of studies of the flora and its composition by aid of the computer; but when the study has ended, the material can be easily printed in book form. The taxonomical and chorological part of this compilation is based on available recent floras and flora lists including the area (MAYER 1952, MARTINČIČ et SUŠNIK 1969, JANČEN 1956—1967, TUTIN et al. 1964—1972, EHRENDORFER et al. 1967, HESS, LANDOLT et HIRZEL 1967—1972) and other taxonomical information on the plants in question. The extensive cytological data, however, were gathered from all kinds of publications that were located especially by aid of the chromosome lists by TISCHLER (1915, 1927, 1931, 1935,

1936, 1938, 1950), GAISER (1926, 1930a, b, 1933), LÖVE et LÖVE (1942, 1948, 1961b), DELAY (1951), DARLINGTON et JANAKI-AMMAL (1945), DARLINGTON et WYLIE (1955), CAVE et al. (1958—1965), ORNDUFF et al. (1966—1969), MOORE et al. (1970—1973), and by an extensive card register of chromosome numbers and a reprint collection compiled by us during the past three decades. A special effort has been made to arrive at a uniform classification of different groups based on the cytological and morphological-chorological data as evaluated on basis of the evolutionary concepts which are thoroughly discussed by MAYR (1942, 1963, 1970), LÖVE Á. (1964, 1965), LÖVE et LÖVE (1961b, 1974a), LÖVE, LÖVE et KAPOOR (1971), and LÖVE, LÖVE et SUŠNIK (1974a). Therefore, we regard as varieties closely related and interfertile populations, which differ in minor morphological characters as compared to the species to which they belong and occupy relatively small areas which may or may not be geographically or ecologically isolated, whereas the subspecies differ from the variety by comprising it and by occupying relatively large areas which are partially or completely isolated geographically or ecologically or both. Varieties and subspecies are potentially capable of interbreeding without appreciable reduction in fertility; they are respectively minor and major geographical races corresponding to the minor and major races of the human species. For apomictic populations, which partially or completely lack the sexual process, we advocate the modification of this system proposed by LÖVE Á. (1960), in which the special categories agamovariety and agamospecies replace the variety and subspecies of the sexual species, although we are aware of that these groups may not be biologically equivalent. The species category, however, is defined by its inability of real interbreeding with other such taxa because of internal hereditary barriers or because of their lack of even potential miscibility. The natural genus, in our opinion, is an important evolutionary cluster of related species which have evolved by linear branching from a generic prototype and are therefore characterized by a single basic chromosome number and the same chromosome morphology and by incompatibility towards other such clusters; it follows that dysploid changes in basic number, or drastic changes in the morphology of the chromosomes in whatever way these may have been produced, are indicative of generic status and not of the category of subgenus, since we regard that group only as a convenient morphological subdivision of a large genus and not necessarily as an incipient generic evolution. Morphological distinctions must, of course, be used for the identification of populations at any level of classification, and strict adherence to the Code of nomenclature secures that their names can be established as exactly as possible.

As could be expected from previous studies of a similar kind, only a few of the several thousand taxa included in the Slovenian atlas were found to be in need of some nomenclatural rearrangement as compared to recent floristic publications from the area, although several taxa were shown to require some redefinition for which names not commonly used for this flora could be reestablished. Some adjustments for the monocotyledons have already been proposed by LÖVE, LÖVE et SUŠNIK (1974b), whereas those needed for the pteridophytes and dicotyledons are validated in the present paper. It must be mentioned that several other changes in classification are indicated in the atlas, but they must wait until more investigations have confirmed our suspicions. Also, this paper includes some changes of the

nomenclature of related taxa from other regions because we found it convenient to mention them at this time rather than to publish them separately.

Some of the observations here reported have been made as a part of a cooperative program on the cytotaxonomy of the Yugoslavian flora, supported during two summers by a Foreign Currency Grant from the Smithsonian Institution in Washington, D. C.

Asplenium

Since the rare Alpique diploid of the *A. ruta-muraria* complex described by LOVIS et REICHSTEIN (1964) certainly is reproductively isolated from the common tetraploid species simply because of the difference in chromosome number, a subspecific status for it is hardly logical from the point of view of evolutionary concepts. Also, it has recently been shown, by BOUHARMONT (1972), who studied the meiosis of triploid hybrids and of an autotetraploid induced by apospory, that the tetraploid *A. ruta-muraria* has not been formed by a simple chromosome doubling of the diploid *dolomiticum*, although he concludes that the former could be an autotetraploid derived from intraspecific hybridization, or, in the terminology of LÖVE et LÖVE (1949), an hemiautoploid, a phenomenon very common among natural polyploids (LÖVE et LÖVE 1949, 1971, LÖVE Å. 1964). Because the diploid and polyploid are identifiable by aid of macroscopic and microscopic methods and occupy ecologically and geographically somewhat distinct areas, it is but logical that the former be accepted also as a species in its own right; its new status is then:

Asplenium dolomiticum (LOVIS et REICHSTEIN) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Asplenium ruta-muraria* L. subsp. *dolomiticum* LOVIS et REICHSTEIN, Brit. Fern Gaz. 9 : 143, 1964.

Although LOVIS (1955) concluded that the diploid and tetraploid taxa then known from within the *Asplenium trichomanes* complex “display the fundamental characteristics of two distinct natural species“, no typification of the Linnaean species or naming of the other were proposed. When MEYER (1962) gave names to the two taxa, he selected to call them subsp. *bivalens* and subsp. *quadrivalens*, also without typification. In connection with the preparation of the critical flora by ROTHMALER (1963), the first proofs, which were widely circulated privately (cf. LOVIS 1964), included these two subspecies under the new names subsp. *trichomanes* and subsp. *lovisii*, but through influence from the present writers, these were changed in the printed book to the species names *A. trichomanes* and *A. lovisii*, the former being typified by the diploid taxon, because ROTHMALER, as expressed in letters to us, correctly assumed that this was the plant best known by LINNAEUS; the latter species was never described because of the untimely death of the author. Later, FUCHS (1963) reversed this typification and gave the name *A. trichomaniforme* to the diploid, but since this was a later homonym, Soó (1963) replaced this name with the epithet *A. linnaei*, adding the explanatory comment “(*A. trichomanes* auct. p. p. non L. herb.)”. LOVIS (1964) accepted the typification proposed by ROTHMALER (1963) and rejected those by FUCHS (1963) and Soó (1963) on basis of the certainly correct remark by STEARN (1961), with reference to the Linnaean herbarium, that “. . . the specimens present cannot always be accepted as nomenclatural types; indeed it would be highly misleading to accept uncritically a certain specimen in the Linnaean

Herbarium as a type . . .". LOVIS (1964) also felt, quite reasonably, that since the diploid plant is common in Scandinavia and was likely better known to LINNAEUS than the tetraploid, which he also included in his species by reference to publications from more southern lands, this would be a strong support for accepting the diploid as the type for the Linnaean species, as thought also ROTHMALER.

Although LOVIS (1964) included as a synonym of *A. trichomanes* the species *A. melanocaulon* WILLD., the holotype of which he found to be unequivocally diploid, he apparently overlooked the fact, that when WILLDENOW (1809) described this species, he left the now restricted Linnaean species as being identical with the more southern taxon, which he himself knew better, and thus automatically typified *A. trichomanes* with the tetraploid, as did FUCHS (1963) and Soó (1963). According to the Code, therefore, the name *A. trichomanes* L. must be retained for the tetraploid subsp. *quadrivalens*, whereas the subsp. *bivalens* is identical with *A. melanocaulon*, contrary to the reasoning of LOVIS (1964).

It is a logical consequence of this typification, that the more recently discovered diploid subsp. *inexpectans* described as a race of *A. trichomanes* by LOVIS (1964) be transferred to the other species:

Asplenium melanocaulon WILLD. subsp. *inexpectans* (LOVIS) LÖVE et LÖVE, comb. nova. — Bas.: *Asplenium trichomanes* L. subsp. *inexpectans* LOVIS, Brit. Fern Gaz. 9 : 155, 1964.

It ought to be mentioned that the northern diploid subsp. *melanocaulon* is known as a fairly uniform taxon occurring only or at least mainly on non-calcareous rocks, whereas the more southern diploid subsp. *inexpectans* seems to be a variable plant of limestone rocks. No available evidence indicates that these two subspecies would not be completely interfertile. It is, however, conceivable that the widely distributed tetraploid *A. trichomanes* s. str. might owe its great success to having been formed as an hemiautoploid (cf. LÖVE et LÖVE 1949) from hybrids between these conspecific subspecies.

Cernohorskya

It is evident from morphological and cytological observations of the genus *Arenaria* L. as circumscribed and subdivided by MCNEILL (1962), that all the subgenera accepted by him are assemblages which might be more correctly regarded as genera in their own right, as previously proposed by other authors. However, even within his subgenus *Arenaria*, which he divides into several sections and series, there is a considerable heterogeneity, at least some of which is not only morphologically but also evolutionarily conditioned as shown by differences in basic chromosome number and chromosome morphology.

In the case of the section *Grandiflorae* MCNEILL it is claimed by MCNEILL (1962) that it is closely related to his section *Rariflorae*. It is not apparent on what morphological grounds this is based, but the fact that the species cytologically known from the latter section are characterized by the basic number $x = 10$, which also is typical of *Arenaria* s. str., whereas the section *Grandiflorae* has $x = 11$, reduces considerably the significance of this claim. In order to lessen the heterogeneity of the genus *Arenaria* caused by the inclusion in it of the section *Grandiflorae*, we propose that the latter be separated from it under the new generic name:

Cernohorskya LÖVE et LÖVE, gen. nov., based on *Arenaria* subgen. *Arenaria* sect. *Grandiflorae* McNEILL, Not. Roy. Bot. Gard. Edinburgh 24 : 112, 1962.

The type species of the genus is *Cernohorskya grandiflora* (L.) LÖVE et LÖVE.

The generic name is selected in honor of Professor Zdeněk Černohorský of Praha, an ardent student of Central European and Icelandic phytogeography and taxonomy and one of the outstanding specialists in plant anatomy and lichenology.

The new genus comprises two complexes, distributed in southwestern and Central Europe and in the eastern Mediterranean. Although it is possible that cytogenetical and taxonomical experiments may later show that they are better grouped as subspecies of two biological species only, our present knowledge indicates that they are correctly classified as independent species for which we propose the following new combinations:

Cernohorskya grandiflora (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria grandiflora* LINNAEUS, Syst. Pl., Ed. 10, p. 1034, 1759.

Cernohorskya bourgaeana (COSS.) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria bourgaeana* COSSON ex WILLKOMM, Linnaea 40 : 117, 1876.

Cernohorskya incrassata (LGE.) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria incrassata* LANGE, Pl. Nov. Hisp. 1 : 3, Tab. 4, Fig. 2, 1864.

Cernohorskya kotschyana (FENZL) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria kotschyana* FENZL, Russegg, Reise 2 : 930, 1843.

Cernohorskya tmolea (BOISS.) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria tmolea* BOISSIER, Diagn., Ser. 1, 8, p. 101, 1842.

Cernohorskya triflora (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria triflora* LINNAEUS, Mantissa, p. 240, 1771.

Only the first-mentioned species is met with in Slovenia.

Somerauera

The genus *Somerauera* HOPPE, as understood by the present authors, is characterized by the basic chromosome number $x = 9$, in addition to very distinctive morphology, and comprises the series *Grigneensis* MATTF., *Arctioidae* (FENZL) MATTF., *Lanceolatae*, and *Dianthifoliae* MATTF. of the section *Lanceolatae* (FENZL) GRAEBNER of the subgenus *Minuartia* of the genus *Minuartia* as modified by McNEILL (1962). The strict subgenus *Minuartia* is characterized by the basic numbers $x = 12$ and 13 . The type of the genus *Somerauera* is *S. arctioides* HOPPE, or, since this name is invalid because it was not accepted by its author (cf. BECHERER 1956),

Somerauera cherlerioides (HOPPE) LÖVE et LÖVE, comb. nova. — Bas.: *Siebera cherlerioides* HOPPE, Flora 2 : 24, 1819.

Other species included in the genus are:

Somerauera acuminata (TURRILL) LÖVE et LÖVE, comb. nova. — Bas.: *Minuartia acuminata* TURRILL, Kew Bull. 1929 : 225, 1929.

Somerauera cerastiifolia (RAM.) LÖVE et LÖVE, comb. nova. — Bas.: *Arenaria cerastiifolia* RAMOND in LAMARCK et DECANDOLLE, Fl. Franc. 4 : 783, 1805.

Somerauera dianthifolia (BOISS.) LÖVE et LÖVE, comb. nova. — Bas.: *Alsine dianthifolia* BOISSIER, Diagn., Ser. 1, 8, p. 99, 1849.

Somerauera grigneensis (REICHENB.) LÖVE et LÖVE, comb. nova. — Bas.: *Triphane grigneensis* REICHENBACH, Ic. Deutsche Ausg. 3 : 88, 1842–43.

Somerauera pestalozzae (BOISS.) LÖVE et LÖVE, comb. nova. — Bas.: *Alsine pestalozzae* BOISSIER, Diagn., Ser. 1, 8, p. 99, 1849.

Somerauera rupestris (SCOP.) LÖVE et LÖVE, comb. nova. — Bas.: *Stellaria rupestris* SCOPOLI, Fl. Carn., Ed. 2, 1 : 317, Tab. 18, Fig. 1, 1772.

In Slovenia, the genus is represented only by *S. cherlerioides* and *S. rupestris*, the latter being originally described from this region.

Alsine

As pointed out by McNEILL (1962), the generic name *Alsine* L. must fall into disuse as being confused so long as *Stellaria media* (L.) VILL. is regarded as congeneric with *S. holostea* L., which is the type species of *Stellaria* L. Since *S. media*, or *Alsine media* L., the type species of *Alsine* L. s. str., however, undoubtedly is misplaced in the genus *Stellaria*, morphologically and, especially, cytologically with its basic chromosome number $x = 10$ or 11 , as compared with $x = 13$ of *Stellaria* s. str., we find it wise to resuscitate the Linnaean genus *Alsine* in its strict meaning and include in it the type species and its close relatives. The only nomenclatural change necessary for the species of the flora of Slovenia is the following transfer:

Alsine neglecta (WEIHE) LÖVE et LÖVE, comb. nova. — Bas.: *Stellaria neglecta* WEIHE in BLUFF et FINGERHUT, Comp. Fl. Germ. 1 : 560, 1825.

A similarly well founded division of the related genus *Cerastium* has been proposed on purely morphological grounds by REICHENBACH (1841, cf. IKONNIKOV 1973), separating the genus *Dichodon* (BARTL.) REICHENB. to accommodate the species *C. cerastoides* and its relatives with the basic chromosome number $x = 19$ as contrasted to *Cerastium* s. str. which so restricted includes only species with the basic number $x = 9$. The same conclusion was reached by BOVIN (1966) who proposed for this taxon the generic name *Provencheria*, unaware of REICHENBACH's older name.

Thalictraceae and *Coptaceae*

Much recent evidence from embryology and chemotaxonomy apparently supports the proposal by LANGLET (1932) and GREGORY (1941) for the division of the collective *Ranunculaceae* into smaller but evolutionarily more distinct groups at the higher levels. Since we feel it is insufficient to distinguish only the *Paeoniaceae* and *Helleboraceae* from the traditional *Ranunculaceae*, we propose that two more families be recognized on basis of their morphological and cytological differences which clearly set them apart evolutionarily from each other and from other groups of the collective family. For these families we propose the following new names:

Thalictraceae LÖVE et LÖVE, fam. nova, based on *Ranunculaceae* tribe *Thalictrae* GREGORY, Transact. Amer. Phil. Soc., Ser. N., 31/5 : 492, 1941, and on *Thalictrum* LINNAEUS, Gen. Pl., Ed. 1, p. 164, 1737.

Coptaceae LÖVE et LÖVE, fam. nova, based on *Ranunculaceae* tribe *Coptideae* GREGORY, Transact. Amer. Phil. Soc., Ser. N., 31/5 : 492, 1941, and on *Coptis* SALISBURY, Trans. Linn. Soc. 8 : 305, 1807.

The latter family is not met with in Europe, but includes only the small American-Asiatic genus *Coptis* and the monotypic eastern North American genus *Zanthorhiza*, whereas in the European area the family *Thalictraceae* comprises the genera *Anemonella*, *Aquilegia*, *Isopyrum*, and *Thalictrum*.

Papaver

We regard it as wise to keep the species *Papaver alpinum* L. in a sense wide enough to accommodate, at subspecific and varietal levels, all the diploid taxa

of the southern Eurasiatic mountains and the *P. pygmaeum* RYDB., since they are apparently somewhat geographically and ecologically isolated races only of the same widespread but interfertile gene pool (cf. LÖVE D. 1969, MEUSEL et al. 1965), as are also the octoploids and decaploids of the arctic gene pools of the complex (cf. LÖVE Á. 1962, KNABEN et HYLANDER 1970). Some of these diploid taxa are obviously major geographical races and thus ought to be accepted as subspecies, within which have developed some minor or local races, which are to be given varietal names only. That seems to be the case with the taxon of the Julian Alps and the northern Apennines (MAYER 1960), which we name:

Papaver alpinum L. subsp. *sendtneri* (KERNER) SCHINZ et KELLER var. *julicum* (E. MAYER et MERXMÜLLER) LÖVE et LÖVE, stat. nov. — Bas.: *Papaver julicum* E. MAYER et MERXMÜLLER in MAYER E. in Ad Annum Horti Bot. Labacensis Solemnem, p. 28, 1960.

Biscutella

It is our opinion that the so-called *Biscutella laevigata* L. complex, which MACHATSCHKI-LAURICH (1926) and GUINEA et HEYWOOD (1964) regarded as a series of subspecies and varieties of a single species, is more correctly classified as a tetraploid species and a diploid species, each including some morphologically and geographically distinguishable and interfertile subspecies and varieties. The tetraploid complex is identical with the Linnaean species *B. laevigata* s. str. and its entire variability seems to be classifiable as the two subspecies *laevigata* and *lucida* (DC.) MACH.-LAUR. The oldest valid specific name for the diploid complex, however, is apparently *B. longifolia* VILL., since this taxon has recently been found to be diploid (DELAY 1971), so it was obviously a mistake when GUINEA et HEYWOOD (1964) regarded that taxon to be synonymous with the tetraploid subsp. *laevigata*. At least twelve subspecies are required to accommodate the morphologically and geographically recognizable races of the diploid group, i. e. subsp. *longifolia* and the following:

Biscutella longifolia VILL. subsp. *angustifolia* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* L. subsp. *longifolia* (VILL.) ROUY et FOUC. var. *angustifolia* MACHATSCHKI-LAURICH, Bot. Arch., Königsberg, 13 : 65, 1926; *Biscutella laevigata* L. subsp. *angustifolia* (MACH.-LAUR.) HEYWOOD.

Biscutella longifolia VILL. subsp. *austriaca* (JORDAN) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella austriaca* JORDAN, Diagn. 1 : 293, 1864; *Biscutella laevigata* L. subsp. *austriaca* (JORDAN) MACH.-LAUR.

Biscutella longifolia VILL. subsp. *gracilis* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* L. subsp. *gracilis* MACHATSCHKI-LAURICH, Bot. Arch., Königsberg, 13 : 69, 1926.

Biscutella longifolia VILL. subsp. *guestphalica* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* L. subsp. *guestphalica* MACHATSCHKI-LAURICH, Bot. Arch., Königsberg, 13 : 70, 1926.

Biscutella longifolia VILL. subsp. *illyrica* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* L. subsp. *illyrica* MACHATSCHKI-LAURICH, Bot. Arch., Königsberg, 13 : 67, 1926.

Biscutella longifolia VILL. subsp. *kernerii* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* L. subsp. *kernerii* MACHATSCHKI-LAURICH, Bot. Arch., Königsberg, 13 : 68, 1926.

Biscutella longifolia VILL. subsp. *montenegrina* (ROHLENA) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* L. var. *montenegrina* ROHLENA, Sitz.-Ber. Böhm. Ges. Wiss. 1903 : 17, 1903; *Biscutella laevigata* subsp. *montenegrina* ROHLENA ex GUINEA et HEYWOOD.

Biscutella longifolia VILL. subsp. *subaphylla* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.:

Biscutella laevigata L. subsp. *subaphylla* MACHATSCHKI-LAURICH, Arch. Bot., Königsberg, 13 : 70, 1926.

Biscutella longifolia VILL. subsp. *tenuifolia* (BLUFF et FINGERH.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella ambigua* DC. β *tenuifolia* BLUFF et FINGERH., Comp. Fl. Germ. 2 : 43, 1825; *Biscutella laevigata* L. subsp. *tenuifolia* (BLUFF et FINGERH.) MACH.-LAUR.

Biscutella longifolia VILL. subsp. *tirolensis* (MACH.-LAUR.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella laevigata* subsp. *longifolia* (VILL.) ROUY et FOUC. var. *tirolensis* MACH.-LAUR., Arch. Bot., Königsberg, 13 : 65, 1926; *Biscutella laevigata* L. subsp. *tirolensis* (MACH.-LAUR.) HEYWOOD.

Biscutella longifolia VILL. subsp. *varia* (DUM.) LÖVE et LÖVE, comb. nova. — Bas.: *Biscutella varia* DUMORTIER, Fl. Belg., p. 118, 1827; *Biscutella laevigata* L. subsp. *varia* (DUM.) ROUY et FOUC.

Only four of these taxa are known to occur in Slovenia, i.e. *B. laevigata* subsp. *laevigata*, *B. longifolia* subsp. *angustifolia*, *B. longifolia* subsp. *gracilis*, and *B. longifolia* subsp. *tirolensis*.

Caulopsis

Since the taxon commonly named either *Turritis pauciflora* GRIMM or *Arabis pauciflora* (GRIMM) GARCKE is known to be characterized by the basic chromosome number $x = 7$, its inclusion in either *Arabis* s. str. ($x = 8$) or *Turritis* s. str. ($x = 6$) is clearly out of step with evolutionary classification, at the same time as it is well distinguished from both genera. We propose the resuscitation of the generic name *Caulopsis* FOURR. as described by FOURREAU (1869) to accomodate this species, and thus avoid to add heterogeneity to either of the other two genera. In that genus the name of this taxon should be:

Caulopsis pauciflora (GRIMM) LÖVE et LÖVE, comb. nova. — Bas.: *Turritis pauciflora* GRIMM, Nov. Acta Nat. Cur. 3 : 348, 1767.

Rubus

Following the categorization proposed by LÖVE Á. (1960), the Slovenian taxa of the apomictic complexes of *Rubus fruticosus* L. need to be validated as agamospecies and agamovarieties. We want to emphasize that although some authors may prefer to regard these categories as equivalent to sexual subspecies and varieties, they are probably not comparable, for various reasons.

Rubus fruticosus L. agsp. *bifrons* (VEST) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus bifrons* VEST ex TRATTINICK, Rosac. Monogr. 3 : 28, 1823.

Rubus fruticosus L. agsp. *boraeanus* (GENEV.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus boraeanus* GENEVIER, Mém. Soc. Acad., Angers, 8 : 87, 1860.

Rubus fruticosus L. agsp. *boraeanus* (GENEV.) LÖVE et LÖVE agvar. *styriacus* (HALACSY) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus styriacus* HALACSY, Oesterr. Bot. Zeitschr. 40 : 432, 1890.

Rubus fruticosus L. agsp. *candicans* (WEIHE) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus candicans* WEIHE ex REICHENBACH, Fl. Germ. Excurs., p. 601, 1832.

Rubus fruticosus L. agsp. *chloocladus* (W. C. R. WATSON) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus chloocladus* W. C. R. WATSON, Watsonia 3 : 288, 1956.

Rubus fruticosus L. agsp. *chloocladus* (W. C. R. WATSON) LÖVE et LÖVE agvar. *vestii* (FOCKE) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus vestii* FOCKE, Syn. Rub. Germ., p. 155, 1877.

Rubus fruticosus L. agsp. *discolor* (WEIHE et NEES) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus discolor* WEIHE et NEES, Rubi Germ., p. 30, 1824.

Rubus fruticosus L. agsp. *gremlii* (FOCKE) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus gremlii* FOCKE, Syn. Rub. Germ., p. 266, 1877.

Rubus fruticosus L. agsp. *hirtus* (WALDST. et KIT.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus hirtus* WALDSTEIN et KITAIKEL, Pl. Rar. Hung. 2 : 150, 1803–1804.

Rubus fruticosus L. agsp. *macrophyllus* (WEIHE et NEES) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus macrophyllus* WEIHE et NEES, Rubi Germ., p. 35, 1824.

Rubus fruticosus L. agsp. *suberectus* (ANDERSS.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus suberectus* ANDERSSON in SMITH, Trans. Linn. Soc. 11 : 218, 1815.

Rubus fruticosus L. agsp. *suberectus* (ANDERSS.) LÖVE et LÖVE agvar. *gracensis* (W. MAURER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus gracensis* W. MAURER in HEGI, III. Fl. Mitteleur., Ed. 2, 4 : 315, 1965.

Rubus fruticosus L. agsp. *sulcatus* (VEST) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus sulcatus* VEST ex TRATTINICK, Rosac. Monogr. 3 : 42, 1823.

Rubus fruticosus L. agsp. *thyrsanthus* (FÖCKE) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus thyrsanthus* FÖCKE, Syn. Rub. Germ., p. 168, 1877.

Rubus fruticosus L. agsp. *villicaulis* (KOEHLER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Rubus villicaulis* KOEHLER ex WEIHE et NEES, Rubi Germ., p. 30, 1824.

Geum

Since numerous genetical experiments support the observations of earlier taxonomists as to the easiness with which the hexaploid taxa *Geum rivale* L. and *Geum urbanum* L. hybridize to form completely fertile swarms of intermediates, there remains no logical reason to keep them as separate species. Their case is similar to that of *Silene vulgaris* and *S. maritimum* (cf. LÖVE et LÖVE 1961a, b) and of the dioecious *Melandrium* (cf. LÖVE D. 1944), and, still more, to that of the main human races which differ in hundreds of characters and were originally also formed through selection by geographical or ecological separation which does not necessarily create reproductive isolation. It is possible and indeed likely, that some other hexaploid taxa of the genus *Geum* will also be found to belong to this complex gene pool and to have been classified at a too high level; however, since experimental evidence still is lacking for other than these two main taxa, a reduction of others to a lower rank may be postponed.

Geum rivale L. subsp. *urbanum* (L.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Geum urbanum* LINNAEUS, Sp. Pl., p. 501, 1753.

Alchemilla

As in the case of the agamospermous microspecies of *Rubus*, the similar but certainly much older and more stabilized taxa of *Alchemilla* L. are better regarded as agamospecies of a few distinct complexes which seem to be morphologically definable in a way similar to sexual biological species. In many cases, these taxa have already been given a subspecific status, which we then find convenient to transfer to the agamospecific status without a change in authorship, whereas a few such taxa from Slovenia still need to be validated in this category.

In this connection we would like to mention that we refrain from trying to classify the numerous microspecies of *Hieracium*, *Pilosella*, *Ranunculus* sect. *Auricomis*, and *Taraxacum* into a similar system, mainly because it is our impression that their great majority is made up of more or less ephemeral and recent agamohybrids, which may or may not stabilize by aid of natural selection.

Alchemilla fissa GUENTH. et SCHUMMEL agsp. *fallax* (BUSER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla fallax* BUSER, Ber. Schweiz. Bot. Ges. 4 : 65, 1894.

Alchemilla fissa GUENTH. et SCHUMMEL agsp. *gracillima* (ROTHM.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla gracillima* ROTHMALER, Feddes Repert. Beih. 100 : 87, 1938.

Alchemilla fissa GUENTH. et SCHUMMEL agsp. *incisa* (BUSER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla incisa* BUSER in MAGNIER, Serin. Fl. Select., 11 : 255, 1892.

Alchemilla fissa GUENTH. et SCHUMMEL agsp. *pyrenaica* (DUFOUR) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla pyrenaica* DUFOUR, Ann. Gén. Sci. Phys., Bruxelles, 8 : 228, 1821.

Alchemilla hybrida L. emend. MILL. agsp. *exigua* (BUSER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla exigua* BUSER ex PAULIN, Jahresber. Staatsgymn. Laibach 1907 : 11, 1907.

Alchemilla hybrida L. emend. MILL. agsp. *illyrica* (ROTHM.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla illyrica* ROTHMAIER, Feddes Repert. 66 : 227, 1962.

Alchemilla vulgaris L. agsp. *strigosula* (BUSER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla strigosula* BUSER, Bull. Herb. Boiss. 1, App. 2, p. 24, 1893.

Alchemilla vulgaris L. agsp. *tirolensis* (BUSER) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Alchemilla tirolensis* BUSER ex DALLA TORRE et SARTHEIN, Fl. Tirol 6, 2 : 536, 1909.

Vicia

The species *Vicia oreophila* of the *Vicia cracca* complex, which was described by ŽERTOVÁ (1962), is a typical mountain race, which is most correctly regarded as a subspecies only of the tetraploid lowland species, as is evident from the more recent study by ČHRTKOVÁ-ŽERTOVÁ (1973). As such we name it:

Vicia cracca L. subsp. *oreophila* (ŽERTOVÁ) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Vicia oreophila* ŽERTOVÁ, Novit. Bot. Horti Bot. Univ. Carol. Prag. 1962 : 51, 1962

The diploid taxa, frequently reported under the name *Vicia cracca*, apparently belong to another biological species, one of the lowland races of which is identical with *V. kitaibeliana* REICHENB. It is possible that some other names may later have been applied to other diploid races of this complex, but since all such taxa are very likely to belong to the same diploid biological species, it is in conformity with the Code to widen the limit of the species that was originally described as restricted to the Pannonian lowland so that it will include also other lowland diploids and the diploid montane race mentioned without name by ČHRTKOVÁ-ŽERTOVÁ (1973); for these races valid names at the subspecific and varietal levels are likely to be available.

Rhodax

Although we agree with HOLUB (1970) in separating the genus *Rhodax* SPACH from *Helianthemum* MILL. (cf. also LÖVE et KJELLQUIST 1964), our concepts of species in this group seem to differ somewhat. Therefore the need for the following new combinations:

Rhodax italicus (L.) HOLUB subsp. *alpestris* (JACQ.) LÖVE et LÖVE, comb. nova. — Bas.: *Cistus alpestris* JACQUIN, Enum. Stirp. Vindob., p. 93, 1762.

Rhodax italicus (L.) HOLUB subsp. *rupifragus* (KERNER) LÖVE et LÖVE, comb. nova. — Bas.: *Helianthemum rupifragum* KERNER, Oesterr. Bot. Zeitschr. 18 : 18, 1868.

Saniculaceae

The subfamilies of the traditional *Umbelliferae* described by DRUDE (1899) are entities of equal and considerable distinction, that may even be less closely related than indicated by previous classifications. They are not only morphologically, anatomically, and chemically distinct, but still more so cytologically as shown by chromosome size and form and basic numbers. We find it illogical to separate only one of the groups from the family at that level, as was done for *Hydrocotylaceae* by HYLANDER (1945). Therefore, LÖVE et LÖVE (1961b and later) have recognized the groups *Apiaceae*, *Hydrocoty-*

laceae and *Saniculaceae* as families in their own right, without a formal validation of the last one until now:

Saniculaceae LÖVE et LÖVE, based on *Umbelliferae* subfam. *Saniculoideae* DRUDE in Pflanzenfam. 3, 8 : 135, 1898. Type genus *Sanicula* L.

Trochocephalus

The genus *Scabiosa* L. as traditionally delimited (COULTER 1824) includes the three sections *Scabiosa* (= *Sclerostemma* KOCH), *Vidua* COULT., and *Asterocephalus* COULT., but BOBROV (1957) added the section *Prismakena* BOBR. for mainly recently described species from eastern Asia. The two first and two last sections are morphologically very distinct, both in vegetative and flower characteristics (EHRENDORFER 1964a, b); hybrids are known between species within each two of these sectional pairs, whereas no reports are known of hybrids between *Scabiosa* and *Vidua* on the one hand and *Asterocephalus* and *Prismakena* on the other. This fact has found its explanation in the observation that whereas the basic chromosome number of the two first-mentioned sections is $x = 8$, it is $x = 9$ in the two latter ones.

From the evolutionary points of view, it is evident that only the sections *Scabiosa* and *Vidua* ought to remain in the genus *Scabiosa* in its restricted sense, whereas the almost two scores of taxa of the other two sections should constitute a genus in its own right. For such a restricted genus the name *Asterocephalus* has been proposed (LAGASCA 1816), but since the typification of the oldest usage of that name at that level, by ZINN (1757), apparently renders it fully synonymous with *Scabiosa* L. s. str. (DANDY 1967), this name is not available at the generic level.

The only valid generic name seems to be *Trochocephalus* (MERT. et KOCH) OPIZ, as published by OPIZ in BERCHTOLD et OPIZ, Ökon. — Techn. Fl. Böhmens 2/1, p. 222—223, 1838 (cf. POUZAR 1964), which was based on *Scabiosa* Rotte *Trochocephalus* MERT. et KOCH, in J. C. RÖHLING, Deutschlands Flora, p. 756, 1823. Its type species is *T. graminifolius* (L.) OPIZ, which is based on *Scabiosa graminifolia* L. No other species has been transferred to this genus, but other taxa which seem to belong to it are:

subgenus *Trochocephalus* (= *Scabiosa* sect. *Asterocephalus* COULT.)

Trochocephalus aleppicus (COULT.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa aleppica* COULTER, Mém. Dips., p. 35, 1824.

Trochocephalus alpestris (KAR. et KIR.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa alpestris* KARELIN et KIRILOV, Bull. Soc. Bot. Moscou 15 : 536, 1842.

Trochocephalus argenteus (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa argentea* LINNAEUS, Sp. Pl., p. 100, 1753.

Trochocephalus argenteus (L.) LÖVE et LÖVE subsp. *wulfenii* (REICHENB.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Asterocephalus wulfenii* REICHENB., Fl. Germ. Excurs., p. 194, 1830—1832.

Trochocephalus austro-altaicus (BOBR.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa austro-altaica* BOBROV, Fl. SSSR 24, Add. 23 : 457, 1957.

Trochocephalus candollii (WALL.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa candollii* WALLICH in DECANDOLLE, Prodr. 4 : 654, 1830.

Trochocephalus caucasicus (M. B.) LÖVE and LÖVE, comb. nova. — Bas.: *Scabiosa caucasicus* M. v. BIEBERSTEIN, Fl. Taur.-Cauc. 1 : 98, 1808.

Trochocephalus crenatus (CYR.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa crenata* CYRILLO, Pl. Rar. Neap. 1 : 11, 1788.

Trochocephalus creticus (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa cretica* LINNAEUS, Sp. Pl., p. 145, 1753.

Trochocephalus gumbeticus (BOISS.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa gumbetica* BOISSIER, Fl. Orient. 3 : 137, 1875.

- Trochocephalus isetensis* (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa isetensis* LINNAEUS, Mant. 1 : 37, 1767.
- Trochocephalus lyratus* (FORSSK.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa lyrata* FORSSKÅL, Fl. Aegypt.-Arab., p. 203, 1775.
- Trochocephalus micranthus* (DESF.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa micrantha* DESFONTAINES, Ann. Mus. Paris 11 : 167, 1808.
- Trochocephalus monspeliensis* (JACQ.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa monspeliensis* JACQUIN, Misc. 2 : 320, 1781.
- Trochocephalus olgae* (ALBOV) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa olgae* ALBOV, Bull. Herb. Boiss. 2 : 453, 1894.
- Trochocephalus olivieri* (COULT.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa olivieri* COULTER, Mém. Dips., p. 36, 1824.
- Trochocephalus palaestinus* (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa palaestina* LINNAEUS, Mant. 1 : 37, 1767.
- Trochocephalus pectinatus* (LAG.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa pectinata* LAGASCA, Elench. Pl. Matr., p. 33, 1803.
- Trochocephalus persicus* (BOISS.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa persica* BOISSIER, Diagn. 1, Ser. 10, p. 81, 1849.
- Trochocephalus proliferus* (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa prolifera* LINNAEUS, Sp. Pl., p. 144, 1753.
- Trochocephalus rotatus* (M. B.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa rotata* M. v. BIEBERSTEIN, Fl. Taur.-Cauc. 3 : 102, 1819.
- Trochocephalus soongoricus* (SCHRENK) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa soongorica* SCHRENK, Enum. Pl. Nov. 1 : 55, 1841.
- Trochocephalus stellatus* (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa stellata* LINNAEUS, Sp. Pl., p. 144, 1753.
- Trochocephalus ucranicus* (L.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa ucranica* LINNAEUS, Sp. Pl., Ed. 2, p. 144, 1762.
- subgenus *Prismakena* (BOBR.) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Scabiosa* sect. *Prismakena* BOBROV, Fl. SSSR 24, Add. 23 : 457, 1957.
- Trochocephalus austromongolicus* (HURUSAWA) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa austromongolica* HURUSAWA, Bot. Mag. Tokyo 62 : 45, 1949.
- Trochocephalus comosus* (FISCH.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa comosa* FISCHER ex ROEMER et SCHULTES, Syst. 3 : 84, 1818.
- Trochocephalus hairalensis* (NAKAI) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa hairalensis* NAKAI, Journ. Jap. Bot. 19 : 273, 1943.
- Trochocephalus hopeiensis* (NAKAI) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa hopeiensis* NAKAI, Journ. Jap. Bot. 16 : 69, 1940.
- Trochocephalus japonicus* (MIQ.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa japonica* MIQUEL, Ann. Mus. Bot. Lugd. Bat. 3 : 113, 1867.
- Trochocephalus lacerifolius* (HAYATA) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa lacerifolia* HAYATA, Bot. Mag. Tokyo 20 : 16, 1906.
- Trochocephalus lachnophyllus* (KITAG.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa lachnophylla* KITAGAWA in NAKAI, HONDA et KITAGAWA, Contr. Cogn. Fl. Mansh., p. 33, 1935.
- Trochocephalus mairei* (LEVEILLÉ) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa mairei* LEVEILLÉ, Feddes Repert. 12 : 535, 1913.
- Trochocephalus mansanensis* (NAKAI) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa mansanensis* NAKAI, Journ. Jap. Bot. 19 : 270, 1943.
- Trochocephalus superbus* (GRÜN.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa superba* GRÜNING, Feddes Repert. 12 : 310, 1913.
- Trochocephalus togashianus* (HURUSAWA) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa togashiana* HURUSAWA, Bot. Mag. Tokyo 62 : 43, 1949.
- Trochocephalus tschiliensis* (GRÜN.) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa tschiliensis* GRÜNING, Feddes Repert. 12 : 311, 1913.
- Trochocephalus zuikoensis* (NAKAI) LÖVE et LÖVE, comb. nova. — Bas.: *Scabiosa zuikoensis* NAKAI, Journ. Jap. Bot. 19 : 274, 1943.

Centaurea s. lat.

The following are names of Slovenian plants needing validation when the collective genus *Centaurea* is divided into more natural genera, as advocated by several recent authors (cf. HOLUB 1972, 1973).

Colymbada dichroantha (KERNER) HOLUB subsp. *alpigena* (PAULIN) LÖVE et LÖVE, stat. nov. et comb. nova. — Bas.: *Centaurea alpigena* PAULIN, Carniola, Ser. N., 8 : 104, 1917.

Colymbada scabiosa (L.) HOLUB subsp. *fritschii* (HAYEK) LÖVE et LÖVE, comb. nova. — Bas.: *Centaurea fritschii* HAYEK, Denkschr. Akad. Wien 70 : 623, 1901.

Jacca pratensis LAM. subsp. *gaudinii* (BOISS.) LÖVE et LÖVE, comb. nova. — Bas.: *Centaurea gaudinii* BOISSIER in BOISSIER et REUTER, Diagn. 2, 3, p. 70, 1842.

Jacca pratensis LAM. subsp. *haynaldii* (BOBR.) LÖVE et LÖVE, comb. nova. — Bas.: *Centaurea haynaldii* BOBRAS ex VUKOTINOVIĆ, Rad. Jugosl. Akad. Zagreb 58 : 149, 1981.

Stenactis

When the collective genus *Erigeron* L. is divided into more natural genera as proposed by CRONQUIST (1947), the genus *Stenactis* CASS. comprises the annual North American weeds which have become widely introduced into Europe. We agree with WAGENITZ (1964) that the two triploid apomicts frequently distinguished as the varieties or subspecies *strigosa* and *septentrionalis* of the species *E. strigosa* (MUEHLENB.) DC. are better placed as two equivalent subspecies of the also obligately apomictic triploid complex *S. annua* (L.) NEES. Only the subsp. *septentrionalis* seems to occur in Slovenia:

Stenactis annua (L.) NEES subsp. *septentrionalis* (FERN. et WIEG.) LÖVE et LÖVE, comb. nova. — Bas.: *Erigeron ramosus* (WALT.) B. S. P. var. *septentrionalis* FERNALD et WIEGAND, Rhodora 15 : 60, 1913; *Erigeron annuus* (L.) PERS. subsp. *septentrionalis* (FERN. et WIEG.) WAGENITZ.

Souhrn

Autoři této práce se podílejí spolu s jugoslávskými botaniky na rozsáhlém cytotoxonomickém výzkumu jugoslávské flóry, zaměřeném v první etapě především na rostlinstvo Slovinska. V rámci tohoto studia je uplatňována evolucionistická koncepce biologicky definovaných taxonomických jednotek. Protože současně vymezení některých taxonů slovinských kapradinostů a dvouděložných této koncepci neodpovídá, jsou potřebné taxonomické a z nich vyplývající nomenklatorické změny navrženy a zdůvodněny v předložené práci. Z čeledě *Ranunculaceae* jsou vyčleněny dva její dosavadní triby jako samostatné čeledě *Thaliaceae* LÖVE et LÖVE a *Coptaceae* LÖVE et LÖVE; obdobně čeleď *Umbelliferae* je zúžena vytvořením nové čeledě *Saniculaceae* LÖVE et LÖVE z dřívější subfam. *Saniculoideae* DRUDE. Sekce *Grandiflorae* McNEILL ($x = 11$) rodu *Arenaria* L. ($x = 10$) je přijata jako samostatný rod, pojmenovaný na počest prof. Z. Černohorského *Cernohorskyia* LÖVE et LÖVE. Ve dvě stejnocenné jednotky je rozdělen rovněž rod *Scabiosa* L. Rod tohoto jména zahrnuje v novém pojetí pouze taxóny $s x = 8$, zatímco druhy $s x = 9$ jsou přearženy do rodu *Trochocephalus* (MERT. et KOCH) OPIZ s podrody *Trochocephalus* a *Prismakena* (BOBR.) LÖVE et LÖVE. Autoři dále akceptují užší pojetí rodů *Minuartia* L. ($x = 12, 13$), *Stellaria* L. ($x = 13$) a *Arabis* L. a přijímají již dříve navržené rody *Someraueria* HOPPE ($x = 9$), *Alsine* L. a *Caulopsis* FOURR. ($x = 7$). V práci je mimoto navrženo 98 nových nomenklatorických kombinací pro druhy nebo nižší jednotky rodů: *Asplenium*, *Cernohorskyia*, *Someraueria*, *Alsine*, *Papaver*, *Biscutella*, *Caulopsis*, *Rubus*, *Geum*, *Alchemilla*, *Vicia*, *Rhcdax*, *Trochocephalus*, *Colymbada*, *Jacca* a *Stenactis*; v řadě případů je navržen i nový taxonomický status těchto taxonů.

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Karanténní plevelé Československa

Studie ČSAV 8/1973, Academia Praha 1973, 160 str., 27 obr., 16 map, cena 26,— Kčs. (Kniha je v knihovně ČSBS.)

Práce je rozdělena do pěti základních částí: Úvod, obecná část, speciální část, literatura a rejstřík jmen rostlin. Osu publikace tvoří obecná a speciální část.

V obsáhlé obecné části jsou v dostatečné šíři a přehledně řešeny nejprve metody výzkumu. Kolektiv našich předních odborníků zde dále osvětluje proces přizpůsobování adventivních druhů, všímá si různých forem tendence rozšiřování druhů na nových stanovištích, vysvětluje způsoby zaznamenávání údajů o rozšíření do map a uzavírá tuto teoreticky i metodicky cennou stať erudovaným návodem na syntetické zpracování dat o adventivním druhu a prognóze jeho šíření. Obecná část pokračuje hodnocením dosavadního stavu výzkumu v ČSSR, všímá si problematiky zahraničních osiv, dopravních uzlů a komunikačních sítí jako možných ohnisk šíření adventivních druhů.

V dalším oddílu této části autoři věnují pozornost speciálním substrátům (olejniny, vlna, bavlna, jižní ovoce, rudiště, skládky, jatky a čistící stanice osiv). Ke každému speciálnímu okruhu problémů uvádějí nejen aktuální příklady z ČSSR, ale i doporučení k omezení a likvidaci druhu. Obecná část je uzavřena charakteristikou cest karanténních druhů na naše území a současně platných karanténních opatření v ČSSR, se zdůvodněným seznamem druhů, které by měly být v ČSSR nově zařazeny do seznamu druhů vnější a vnitřní karantény.

Speciální část jedná o 28 druzích karanténních plevelů. O jednotlivých druzích jsou předkládány tyto informace: stručný popis, původní rozšíření, rozšíření v ČSSR, ekologická charakteristika, způsoby omezování a perokresba druhu, doplněná většinou o diagnosticky důležitý detail (pouze u *Chenopodium missouriense* AELLEN perokresba chybí).

Speciální část zdařile přibližuje čtenáři probírané adventivní druhy — karanténní plevely — a umožňuje mu vhodnou orientaci pro studium v jakékoli části území ČSSR. V této části se měli autoři podle mého názoru, i když si uvědomují obtížnost tohoto úkolu, vypořádat s bližší charakteristikou *Chenopodium missouriense* AELLEN. Je možno namítnout, že speciální literatura poskytuje o diagnostice tohoto druhu potřebné informace, ale bude mít možnost každý zemědělský odborník či florista z příslušné literatury čerpat? Je to úkol, který bude třeba, projeví-li se u nás v budoucnosti *Chenopodium missouriense* jako akutní karanténní druh, řešit. Aspoň grafický pokus, který by znázornil typické znaky *Ch. missouriense* proti *Ch. album* L., by byl velmi dobrý a snad by částečně pomohl třeba pouze v podezření, že nalezený exemplář by mohl být *Ch. missouriense*. Snad by po přečtení takový materiál pomohl k zjištění dalších lokalit tohoto druhu v ČSSR.

Publikace vyplňuje dosud citelnou mezeru v literatuře o této problematice u nás. Za velmi cenný považuji fakt, že je recenzované dílo klasičkou ukázkou, jak může přímo základní výzkum pomoci výrobnímu odvětví. Stále stoupající význam botaniky antropofyt s. l. činí z této studie jednu ze základních příruček, po níž by měli sáhnout všichni ti, kteří se jakkoliv dostávají do styku se studiem víceméně antropicky ovlivňovaných stanovišť.

A. Pyšek