

## On Correct Generic Names of *Acrocentron* CASS. and *Acrolophus* CASS. (*Centaurea* L. s. l.)

Správná rodová jména pro *Acrocentron* CASS. a *Acrolophus* CASS. (*Centaurea* L. s. l.)

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HOLUB J. (1972): On correct generic names of *Acrocentron* CASS. and *Acrolophus* CASS. (*Centaurea* L. s. l.) — Preslia, Praha, 44 : 215—218. — *Centaurea* L. is a very heterogeneous genus which should be divided into several more naturally circumscribed genera. Czechoslovak representatives of *Centaurea* belong to five genera (*Acosta* ADANS., *Calcitrapa* HILL, *Colymbada* HILL em. HOLUB, *Cyanus* MILL., *Jacea* MILL.). The nomenclatural problems of *Acrocentron* CASS. and *Acrolophus* CASS. have been solved; the correct names of these genera are *Colymbada* HILL em. HOLUB and *Acosta* ADANS., respectively. — *Botanical Institute, Czechoslovak Academy of Sciences, Průhonice near Praha, Czechoslovakia.*

*Centaurea* L. s. l. with its 500—600 species is a very heterogeneous genus and many authors have therefore proposed its splitting into more natural genera. Preparing some summarizing works on the Czechoslovak flora, I had to concern myself with these problems which I have touched also before — cf. *Jacea pseudophrygia* (C. A. MEY.) HOLUB Preslia 37 : 102, 1965; *Cyanus* comb. ined. — Zprávy Čs. Bot. Společ. 5 : 114, 1970.

An attempt to subdivide *Centaurea* into several genera was made in Czechoslovakia by DOSTÁL (1958) who recognized *Jacea*, *Cyanus* and *Calcitrapa* (and also *Psephellus*) as distinct genera in the Czechoslovak flora. Most recently DOSTÁL (1971) abandoned, however, that classification and restored a broadly circumscribed genus *Centaurea*. According to the opinion of the present author, this solution is not justified from the taxonomic point of view. *Centaurea* L. s. l. comprises several natural groups, which are well characterized by their morphological (incl. anatomical and palynological) characters, basic chromosome numbers, degree of hybridisation processes, evolutionary level, phytogeography etc.; by the inclusion of these groups into one genus a not very homogeneous group arises. A classification into several genera, as proposed by Á. et D. LÖVE (1961), is considered here to be justified.

Czechoslovak species of *Centaurea* L. s. l. belong in the classification of the present author to five genera: *Acosta* ADANS., *Calcitrapa* HILL, *Colymbada* HILL em. HOLUB, *Cyanus* MILL. and *Jacea* MILL. This classification accords with that proposed by Á. et D. LÖVE (l.c.); a difference is in the inclusion of annual spiniferous species in one single genus (*Calcitrapa*). The newly proposed classification is based on a complex of morphological characters, the most important being as follows: habit of plants; structure of involucre bracts; structure of heads; presence of hairs on filaments and styles; anatomical features of achenes (DITTRICH 1968); pollen-type (WAGENTZ 1955); chromosome numbers. DOSTÁL (1958), when splitting *Centaurea*, stopped midway in comparison with Á. et D. LÖVE's classification. His concepts of *Jacea* and *Calcitrapa* are very natural, but his *Cyanus* represents a very unnatural complex (*Cyanus* + *Acosta* + *Colymbada*) from the taxonomic viewpoint. In the classification of Á. et D. LÖVE (on the generic level) only the overemphasizing of the importance of basic chromosome numbers of annual spiniferous species for their taxonomic placement could be questioned. In this group (very young from the evolutionary viewpoint and rapidly

devellopping), an abrupt dysploidy seems to have played an important role (an analogous case is also known in another annual group of *Centaurea* s.l. — *Cyanus*) and therefore it is not possible to evaluate the different basic chromosome numbers in this group so as in other groups, where the basic chromosome numbers have persisted for long evolutionary periods. From the nomenclatural viewpoint a defect of the classification of Á. et D. LöVE is, that the oldest legitimate names for the genera accepted by these authors were not used. In this short preliminary report the problems of the correct names for the genera *Acrocentron* CASS. and *Acrolophus* CASS., accepted by Á. et D. LöVE, will be discussed.

*Acrocentron* CASS., in which Á. et D. LöVE (1961) correctly included also *Lopholoma* CASS., is a well defined group characterized, in addition to morphological features (habit of plants, involueral bracts) well known already to earlier authors, also by its "Scabiosa" pollen-type (WAGENTITZ 1955) and by the basic chromosome number of  $x = 10$  (rarely 11); polyploidy in this group can reach at least the decaploid level. An older generic name for this genus is *Vellis* ADANS. 1763 (type: *Centaurea eryngioides* LAM.); even older names are those proposed by HILL (1762) which cover some species of the taxonomic group involved: *Colymbada*, *Crocodylium*, *Psora*, *Sagmen* and *Staebe*. With regard to species included, HILL's genera are very unnaturally circumscribed, as species of one natural group (*Acrocentron*) are placed by this author in five various genera, and each of these genera incorporates in addition to these species, heterogeneous elements belonging in present classifications justifiably to other taxonomic groups (sometimes very remotely related to one another). HILL's generic names must be typified, those typified by a species of *Acrocentron* have to be compared to one another and the most applicable of them has to be selected as the correct name for *Acrocentron* CASS. ampl. Á. et D. LöVE.

HILL's genera are provided with short descriptions; further data on morphology are included in the text of a "determination key"; on tables a "generic character" (heads) of every genus is given, which can be compared with the characters shown in the drawings of individual species. Texts on the species concerned, HILL's acquaintance with them, connection of the generic names with names in the literature of earlier periods (*Psora*, *Crocodylium*), etc. were also taken into account for the purpose of the lectotypification. It must be, however, pointed out, that numerous drawings in HILL's work are to a certain extent imaginary (see for example *Centaurea stoebe* L., etc.).

For relevant HILL's generic names following lectotypes are proposed here:

*Colymbada* HILL 1762 — T.: *Centaurea collina* L. 1753

*Crocodylium* HILL 1762 — T.: *Centaurea crocodylium* L. 1753

*Psora* HILL 1762 — T.: *Centaurea orientalis* L. 1753

*Sagmen* HILL 1762 — T.: *Centaurea scabiosa* L. 1753

*Staebe* HILL 1762 — T.: *Centaurea paniculata* L. 1753.

The first four generic names are typified by species belonging to our concept of the genus *Acrocentron*. In the genus *Staebe* *Centaurea ragusina* L. is included among six species as the only representative of *Acrocentron*. Further data on this generic name are given below. Even though *Colymbada*, *Crocodylium*, *Psora* and *Sagmen* are taxonomically not homogeneous, they must be taken into consideration for nomenclatural purposes. Taxonomically very unnatural genus is *Sagmen*, containing besides its lectotype species also *Centaurea sempervirens* L. (*Cheirolophus* CASS.) and *C. sibirica* (*Heterolophus* CASS.); *Crocodylium* includes besides its lectotype species also *Centaurea muricata* L. (*Volularia* CASS.) and *C. peregrina* (a species of a not clear taxo-

conomic position). *Colymbada* and *Psora* are taxonomically more homogeneous than *Sagmen* and *Crocodylium*; each of these genera includes three species, two belonging to *Acrocentron* and only one species representing a heterogeneous element there. *Colymbada* comprises besides its lectotype species and *Centaurea centauroides* L. also *C. sicula* L. (*Calcitrapa* HILL), *Psora* includes besides the lectotype species and *C. acaulis* L. also *C. stoebe* L. (belonging to *Acosta* ADANS., but HILL's concept of this species is not very clear). Selecting the name for *Acrocentron* the present author prefers *Colymbada* and *Psora* to *Crocodylium* and *Sagmen*. *Crocodylium* in HILL's circumscription is taxonomically heterogeneous and represents only a little marginal group in *Acrocentron*; neither is *Sagmen* accepted here because of the taxonomic heterogeneity in its original circumscription. Choosing between *Colymbada* and *Psora* which are equivalent from the viewpoint of their original taxonomic constitution, *Colymbada* is preferred to *Psora* because this name — according to our knowledge — has been used for no other taxon than that of HILL. The name *Psora* was used in lichenological taxonomy, e.g. by HOFFMANN in 1795 for a group of species related to *Lecidea* L.; *Psora* HOFFM. has later been used several times by various authors and also a number of nomenclatural combinations have been proposed under this generic name. Even though this taxon is usually considered to be only a part of *Lecidea* L. at present, it cannot be excluded that its generic status might be restored in future and *Psora* HOFFM. 1795 could then be proposed for conservation. To avoid these possible complications, the following name (with a taxonomic emendation) is accepted here as the correct name for *Acrocentron* CASS. ampl. Á. et D. LÖVE:

***Colymbada* HILL** Veget. Syst. 4 : 31, 1762, em. HOLUB hoc loco

Emendatio: *Colymbada* HILL, l.c., (excl. *Centaurea sicula* L.) + *Psora* HILL, l.c.: 30, (excl. *Centaurea stoebe* L.) + *Sagmen* HILL, l.c.: 35, (excl. *Centaurea sibirica* L. et *C. sempervirens* L., i.e. tantum quoad *C. scabiosa* L.) + *Crocodylium* HILL, l.c.: 22 (excl. *Centaurea muricata* L. et *C. peregrina* L., i.e. tantum quoad *C. crocodylium* L.) + *Staebe* HILL, l.c.: 33, p.p. min. (tantum quoad *Centaurea ragusina* L.).

Typus: *Centaurea collina* L. 1753 (lectotypus — HOLUB 1972).

*Colymbada* HILL em. HOLUB includes about 100 species in several sections; their evolutionary centres are located in Mediterranean and Submediterranean regions; a greater number of species occur in the East Mediterranean.

*Acrolophus* CASS. is a very natural taxonomic group, homogeneous not only from the morphological point of view (habit of plants, characters of involucrel bracts), but also considering its pollen grains (“*Jacea*” pollen-type; WAGENITZ 1955) and its basic chromosome number (mostly  $x = 8$ ; the highest ploidy level hitherto known is  $4x$ ). HILL (1762) assigned the species belonging to the present concept of *Acrolophus* into three of his genera: *Staebe*, *Heraclea*, *Psora*. *Staebe* HILL has been lectotypified here by *Centaurea paniculata* L. (see above) and is therefore (taxonomically) synonymous with *Acrolophus*. In view of the fact that an older name *Stoebe* L. 1753 exists, *Staebe* Hill 1762 — as a homonym (ortographic variant) — is an illegitimate name. *Heraclea* HILL 1762 (of the genus *Acrolophus* only the poorly known *Centaurea capillata* L. is included as the second species of the genus) is lectotypified here by *Centaurea phrygia* L., a representative of an other taxonomic group than *Acrolophus*. The nomenclatural problems of *Psora* have been discussed above. A year after HILL ADANSON (1763) published the generic name *Acosta*, based on the

only species, *Centaurea spinosa* L., which is therefore the holotype of this generic name. Even though the position of this species is rather marginal in the genus involved, *Acosta* ADANS. is precisely nomenclaturally defined by this species and must be accepted instead of *Acrolophus* CASS. if *C. spinosa* L. is placed in this genus. The correct name of the genus under discussion is as follows:

*Acosta* ADANS. Fam. Pl. 2 : 117, 1763

Typus: *Centaurea spinosa* L. 1753 (holotypus).

*Acosta* ADANS. includes about 100 species (many of them are difficult to define). A satisfactory classification of the genus into sections has not been elaborated till now. The circumscription of the genus is not quite certain either; especially the relationships to *Phalolepis* CASS. require further study. Evolutionary centres are both in West and East Mediterranean and in adjacent regions (especially in Euxinic and Pontic regions).

The name *Acosta* was used after ADANSON by three other authors (as a generic name) for three different genera: by LOUREIRO in 1790 for *Agapetes* G. DON (*Vacciniaceae*), by RUIZ et PAVON in 1794 for *Moutabea* AUBL. (*Polygalaceae*) and by DE CANDOLLE in 1835 for *Spicantha* HUMB., BONPL. et KUNTH (*Asteraceae*); only one combination with that name was proposed by these authors in each of the relevant genera. None of these illegitimate names has been generally accepted and used, nor has it been proposed for conservation. Therefore no objection can be raised to the use of the name *Acosta* ADANS. for the genus discussed here.

#### Souhrn

Rod *Centaurea* L. s. l. představuje po stránce vývojové dosti heterogenní rod, jenž na základě různých znaků a vývojových tendencí je nutno rozdělit na několik přírozenějších rodů. Českoslovenští zástupci tohoto rodu patří do 5 rodů (*Acosta* ADANS.; *Calcitrapa* HILL; *Colymbada* HILL em. HOLUB; *Cyanus* MILL.; *Jacea* MILL.). Při stanovení správných rodových jmen v této skupině je nutno přihlídnout zvláště k Hillovu členění z r. 1762. Pro rod *Acrocentron* CASS. ampl. Á. et D. LÖVE je správným jménem *Colymbada* HILL em. HOLUB; pro *Acrolophus* CASS. pak *Acosta* ADANS.

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