

VERMEULENIA – A NEW GENUS OF ORCHIDS

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SUMMARY

The new genus *Vermeulen* is separated from the collective genus *Orchis* to accommodate the section *Labellointegrae*. It includes the species *V. papilionacea*, *V. caspia*, *V. saccata*, *V. chlorotica*, and *V. fedtschenkoi*, the transfer of which is validated. In addition to morphological differences, the new genus is characterized by smaller chromosomes and the basic chromosome number $x = 8$. The chromosome number $2n = 32$ is confirmed from Italian material of *V. papilionacea*.

In recent decades an increasing number of taxonomists have departed from the concept of the classically inclusive genus *Orchis* of Linnaeus, Reichenbach, Lindley and others, because increasing biological evidence has shown it to be highly heterogeneous and thus unnatural. Instead, old and long ignored generic splits have been revived, and the acceptance has become almost general of more restricted genera as *Amitostigma* Schlechter, *Comperia* C. Koch, *Dactylorhiza* Necker in Nevski, *Galeorchis* Rydb., *Orchis* L., s.str., *Ponerorchis* Rchb., *Steveniella* Schlechter, and *Traunsteinera* Rchb. f. Although this subdivision has been based mainly on morphological distinctions, it has been supported also by karyological observations, mainly variations in karyotype, chromosome size, and basic chromosome number. Only in the case of *Traunsteinera* there seems to be some reason to doubt the wisdom of this action, which is being accepted by many authors of recent manuals in Europe and by some authors in North America (cf. Soó 1966; LÖVE & SIMON 1968).

Although this splitting of the genus has greatly reduced the number of species in the restricted genus *Orchis*, it still has not become a biologically homogeneous taxon. As shown by VERMEULEN (1949), the European representatives of the genus fall easily into four groups on basis of morphological characteristics, named by Vermeulen as the sections *Labellointegrae* Vermln., *Labellotrilobatae* Vermln., *Coriophorae* Parl. and *Militares* Parl., each of which may be further divided into subsections. The fact that the chromosome number is $2n = 42$ for the section *Militares*, $2n = 38$ for the section *Coriophorae*, and either $2n = 36$, 38 , 40 or 42 for the section *Labellotrilobatae* seems to indicate that the classification of these groups still is insufficient from evolutionary points of view, although the morphology of the chromosomes of all these sections is very similar so the variation in basic numbers may be secondary. The section *Labellointegrae*, however, which is morphologically very distinct from the other three sections, also is cytologically more different than any other taxon earlier

split out of the genus, since its chromosomes are distinctly smaller and their basic number $x = 8$, as shown by VERMEULEN (1949) for *O. papilionacea* L., which has $2n = 32$ chromosomes, a number reported by HEUSSER (1938) from Switzerland and confirmed by us on fixations made in 1963 in a humid forest about 4 km north of Cortina in Italy (Voucher: Löve & Löve N610B). The group includes five species of Mediterranean distribution reaching from Portugal to the Caspian Sea, the Caucasus and the Turkmenistan mountains.

Since the section *Labellointegrae* apparently differs even more from the other sections left in *Orchis* than does, e.g., the well-defined *Dactylorhiza*, in morphology, geographical distribution, and cytology, its separation as a genus in its own right is amply warranted. Therefore, we propose to distinguish it under the new generic name *Vermeulenia*, in honor of Dr. P. Vermeulen of the Netherlands, who has solved more orchid problems in the past than other contemporary botanists.

Vermeulenia Löve & Löve, *gen. nov.*, based on *Orchis* L. sectio *Labellointegrae* Vermeulen, in *Nederl. Kruidk. Arch.* 56 (1949) 236. Typus: *Vermeulenia (Orchis) papilionacea* (L.) Löve & Löve.

1. *Vermeulenia papilionacea* (L.) Löve & Löve, *comb. nov.*, based on *Orchis papilionacea* Linnaeus, *Syst. ed. X* (1759) 1242.

2. *Vermeulenia caspia* (Trautv.) Löve & Löve, *comb. nov.*, based on *Orchis caspia* Trautvetter, in *Acta Horti Petrop.* II (1873) 484.

3. *Vermeulenia saccata* (Ten.) Löve & Löve, *comb. nov.* based on *Orchis saccata* Tenore, *Prodr. Fl. Napolit.* I (1811) LIII.

4. *Vermeulenia chlorotica* (Woron.) Löve & Löve, *comb. nov.*, based on *Orchis chlorotica* Woronow, in *Mitt. Kauk. Mus.* IV (1909) 265.

5. *Vermeulenia fedtschenkoi* (E. Czerniak.) Löve & Löve, *comb. nov.*, based on *Orchis fedtschenkoi* E. Czerniakowska, in *Not. Syst. ex Herb. Horti Bot. Petrop.* III (1922) 147.

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