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# LETTERS

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## THERE ARE NO MAMMIL-LARIA SPECIES IN CANADA

The number of cactus species per unit area is greatest in the tropical parts of the American continents and dwindles to the north. By the time the Cactaceae crossed the Canadian border in their evolutionary travels, the number of species was down to four confirmed and one probable. The paucity of Canadian cacti means that they are not very important to Canadian botanists. Consequently, most botanists are content to refer back to others when discussing cacti. This would not be so serious except that Canadians are out of date when writing about one particular species, the pincushion cactus.

I suspect the trouble began when earlier botanists used outdated references when compiling local floras. When E. H. Moss published his standard book, *The Flora of Alberta*, he not only used the wrong name but gave it the wrong spelling. The pincushion cactus was listed by him as *Mamillaria vivipara*. The spelling of the generic name has been standardized as *Mammillaria* by specialists in cacti. Although *Mammillaria* is still a valid genus, indeed one of the largest and most studied in the Cactaceae, the species known as *vivipara* has been accepted as a *Coryphantha* for seventy years elsewhere in the world. Only in Canada has the incorrect name persisted, due to botanists copying out of each others' books.

The genus *Coryphantha* is distinguished from *Mammillaria* by the former having grooved tubercles from which flowers arise. *Mammillaria* does not flower from grooved tubercles. This

difference is quite obvious and for this reason the pincushion cactus is accepted outside Canada as *Coryphantha vivipara*.

I have been trying for a number of years to get Canadian botanists in line with the rest of the world on this matter. This note was prompted by the appearance of several books and articles recently which continue to use a name obsolete since 1913. — D. C. Speirs, Box 6830, Stn. "D", Calgary, Alberta. T2P 2E7.

*The following letter is the response of Vernon Harms whose article in the September Blue Jay prompted Speirs' comments.*

## MAMMILARIA VS. CORYPHANTHA

... Personally, I think "he doth protest too much" (i.e. rather too adamantly) on what is only a matter of taxonomic interpretation of how broadly or narrowly to accept genus *Mammillaria*, and not of correctness vs. incorrectness according to the ICBN. (International Code of Botanical Nomenclature).

It is true that many, especially western North American, botanists have recently (the last decade or so) been following the usage of Lyman Benson in his revival of the generic name *Coryphantha* for the "grooved-tubercle" members of *Mammillaria* sensu latus (in the broad sense). Nomenclaturally, there is no question, but that *Mammillaria* has priority if one accepts the more inclusive (aggregate) generic concept. But it remains a matter of individual taxonomic inter-

pretation as to whether or not the apical groove on the tubercles is a significant enough character to split away the species with this feature to form a segregant genus to which the name *Coryphantha*, would apply. This remains the sort of open taxonomic question similar to whether or not one should split *Oxycoccus* from *Vaccinium*, *Machaeranthera* from *Aster*, *Glandularia* from *Verbena*, *Conyza* from *Erigeron*, *Moneses* from *Pyrola*, *Gentianella* from *Gentiana*, *Moehringia* or *Minuartia* from *Arenaria*, *Mahonia* from *Berberis*, etc., among many other possible examples. How any of these are accepted is not a matter of "right vs. wrong" usage *per se* (according to the ICBN) but of the degree of taxonomic lumping or splitting (i.e. - con-

servatism vs. liberalism) accepted, and thus the particular usage by any taxonomist really falls into the realm of taxonomic privilege (i.e., it can not be legislated or standardized except to some extent by consensus usage).

Speirs' statement that, "... the species known as *vivipara*, has been accepted as a *Coryphantha* for seventy years elsewhere in the world" and that "... only in Canada has the incorrect (sic!) name persisted ..." is a gross exaggeration. The generic name, *Coryphantha*, was coined earlier and received some usage along with those of various other generic segregants of *Mammillaria* sensu lat. during the "generic-splitting era 1900-1930, especially as a result of its usage in the



*Pincushion Cactus.*

S. M. Lamont

1913 2nd Edition of the Britton and Brown *Illustrated Flora* . . . but there has been no 70-year long or even present-day consensus in applying the generic name, *Coryphantha*, to our pincushion cactus of the Canadian Prairies, as can readily be noted by reference to various major American floras beginning with P.A. Rydberg about 50 years ago, who in his 1932 classic *Flora of the Prairies and Plains of Central North America* treated it as *Neomammillaria vivipara*. Interestingly, even the "Britton and Brown", 3rd edition (1952), did not follow the 2nd edition's instigation of *Coryphantha*, but followed Rydberg in treating it as *Neomammillaria vivipara* instead.

M. L. Fernald, in his 1950 *Gray's Manual 8th Edition*, treated this species as *Mamillaria vivipara*. Almost all North American floras from 1950 to roughly a decade ago (eg., Kearney & Peebles, 1951, *Arizona Flora*; Harrington, 1954, 1964 *Manual of Plants of Colorado*; Munz & Keck, 1968, *A California Flora*; Gleason & Cronquist, 1963, *Manual of the Northern United States and Canada*, the "Britton and Brown" updating; etc.; plus such Canadian floras as Budd & Best, *Plants of the Canadian Prairies*; Scoggan's *Flora of Manitoba*; Moss' *Flora of Alberta*; Breitung's *Saskatchewan Checklist*; Boivin, 1966, *Enumeration des Plantes du Canada*, and 1967, *Flora of Prairie Provinces Part I*; etc.) tended to submerge *Coryphantha* (as well as *Neomammillaria*, etc.) under *Mammillaria*. It is really only in the last decade or so that *Coryphantha* has been more or less revived and used once again by many botanists, following, I believe, the usage of Lyman Benson. One notes among most recent Canadian publications that H. J. Scoggan (in his 1979 *Flora of Canada, Part IV*) and John Packer (in his 1983 revision of the *Flora of Alberta*) have used the name, *Coryphantha vivipara*. But Looman in his 1979 *Budd's Flora*, used *Mamillaria vivipara*.

But the generic name used depends upon the generic concept accepted (i.e., how inclusively should the genus *Mammillaria* be accepted? and what segregants of *Mammillaria* sensu lat., if any, are meaningful or well-marked enough to be accepted at the generic level?). It is not a matter of "correctness" or "incorrectness" *per se*. Incidentally, neither a group of "experts on cacti" nor anyone else can really "standardize" taxonomic interpretations (e.g., broadness of specific or generic concepts) and the resulting different name usages occasioned thereby. All such groups or individuals might do is possibly influence the International Botanic Congresses to conserve and reject particular names contrary to the ordinary rules of priority.

Personally, with regard to the generic name used for our pincushion cactus, I do not consider this a very fundamental or overly important matter. This is especially so if the appropriate synonyms are included in writings to avoid possible confusion as to what taxon is being referred to. Actually, I think it may indeed be most preferable at this time to follow the seemingly current trend to accept the segregant genus, *Coryphantha*, and call our Saskatchewan and Alberta pincushion cactus, *Coryphantha vivipara*, rather than retaining the species in *Mammillaria* sensu lat. — Vernon L. Harms, The W. P. Fraser Herbarium, University of Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0

EDITOR'S NOTE: Incidentally M. L. Fernald's *Gray's Manual of Botany* published in 1950 and printed with corrections in 1970 (corrected by R. C. Rollins) employs the spelling *Mamillaria*, and the second edition of Britton and Brown (*An Illustrated Flora of the Northern United States and Canada*, 1913) which employs the genus *Coryphantha* gives *Mamillaria vivipara* as a synonym, so I do not believe we can credit E. H. Moss with the initial misspelling of the name.