



Organ and Form Genera: Significance and Nomenclatural Treatment

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Comments. Article 75 of the present Code needs an overhaul as it contains an emendation of the definition of the term 'homonym' such as to include names which are differently spelt. This, and the consequences hereof have been explained in the comment to Proposal 4. The proposed new Article 75 is superfluous as its meaning is included in Article 64 if emended as suggested in Proposals 4 and 5. Nevertheless, it seems desirable to keep an Art. 75 in the proposed form in order to maintain the present arrangement of Code. The new Article 75 with the examples will make some parts of Article 64 more easily understood (see comment to Prop. 5). The new Recommendation 75A will direct how to proceed when the elimination of paronyms is desired.

Proposal 11. Incorporate the names given in Article 75 as 'examples of names treated as orthographic variants' in Appendix III 'Nomina Generica Conservanda et Rejicienda' in the most suitable manner.

Comment. The examples of names treated as orthographic variants must be eliminated if the restricted definition of the terms 'homonym' and 'orthographic variant', used here, is accepted. It appears that at least some of the similar names listed would become legitimate, and their rejection will be necessary. As they have been used as examples for confusing names in the present edition of the Code their revival would, indeed, be confusing. (The necessary proposals are in preparation).

Proposal 12. Alter the numbers of the present Recommendations 75A and 75B into 75B and 75C.

Comment. If Proposal 10, which contains a new Recommendation 75A, is accepted, the new numbers for the present Recommendations 75A and 75B become necessary.

Proposal 13. Insert in the introduction of Appendix III between 'H' and '≡':
P = Paronym.

Proposal 14. Replace in Appendix III the designation '(H)' by '(P)' in all those cases in which the name after '(H)' differs in its spelling from that of the corresponding conserved name.

Comment to Proposals 13 and 14. The approval of such an alteration becomes necessary if the proposed alterations in Articles 64, 73 and 75 are accepted in order to effect the restriction of the definition of the term 'homonym'.

ORGAN AND FORM GENERA: SIGNIFICANCE AND NOMENCLATURAL TREATMENT

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Very rarely does a palaeobotanist find a whole plant. In practically all instances, detached organs: impressions of leaves, casts of stems, compressions of fructifications, etc. constitute the material. If the whole plant is known there is no nomenclatural difficulty in naming parts: terms are obvious whether the plant fragment in question is fossil or living: *Acer campestre* leaf, *Pinus silvestris* pollen, etc. However, if there is no undisputable indication as to where a detached plant fragment belongs, it is necessary

* The author has had the inestimable advantage of discussing this article with Professor Tom M. Harris, of Reading. It should, however, be understood that Professor Harris is in no way responsible for the views expressed herein, nor does he necessarily agree with them.

to establish a term by which one may refer to it, until and if ever its real position becomes known. The situation is not unique for palaeobotany: *Sphacelaria segetum*, *Ceratostomella ulmi*, *Conchocelis rosea*, all represent such provisional designations, to be replaced by the "proper" name when it becomes known: *Claviceps purpurea*, *Ophiostoma ulmi*, *Porphyra umbilicalis*.

What we need, is therefore a provisional and *taxonomically non-committal* designation. In principle, a code number would suffice, but experience shows that a name is better: easier to remember and better suited for pigeon-holeing.

This is the background for the establishment of organ- and form-taxa, and let it be expressly stated that this type of designation is vitally important in palaeobotany. My question is not whether we need such types of designation, but whether we need two of them, viz. *both* organ *and* form genera with their species and corresponding hierarchies of higher taxa, and how they should be treated in nomenclature.

WHAT ARE ORGAN- AND FORM-TAXA?

Organ- and form-taxa are very old concepts, but they did not make their entry into nomenclature until the Amsterdam Congress, at which it was unanimously decided (*Proceedings* I: 367): "that additions should be made to the rules and recommendations for the following objects:

1. To recognize as taxonomic groups, organ genera and artificial or form genera.
2. To ensure that the names originally given to detached organs or parts of plants shall only be used in their original significance and shall not be employed in the designation of different organs, or of the plant as a whole.
3. To provide for the naming of an entire plant when it has been possible to reconstruct it by the association of its different organs.
4. To define how the names of the artificial genera are to be used.
5. To set up a permanent committee to consider the interpretation of the rules; to adjudicate in cases of dispute or difficulty; to draw up lists of *Nomina generica conservanda*; and to make such further recommendations as may prove necessary, including rules for the determination of types.

No immediate action was taken by the new-established committee, and in the (unofficial) Amsterdam rules there are (p. 31) regulations about typification of organ- (but not form-) taxa, but no definition of the one or the other.

In the Stockholm Code the following definition was given (p. 64, all paginations refer to the English version): "Since the names of the species, and consequently of many of the higher taxa of fossil plants are usually based on specimens of detached organs and since the connection between these organs can only rarely be proved, *organogenera* (*organo-genera*) and *formogenera* (*forma-genera*) are distinguished as taxa within which species may be recognized.

An *organ-genus* is a genus whose diagnostic characters are derived from single organs of the same morphological category or from restricted groups of organs connected together.

A *form-genus* is one that is maintained for classifying fossil specimens that lack diagnostic characteristics indicative of natural affinity but which for practical reasons need to be provided with binary names. Form-genera are artificial in varying degree.

Note 1. *Organ-genera* based on detached parts may be distinguished not only by morphological characters, but also by reason of different modes of preservation.

Note 2. It is necessary to distinguish both *organ-genera* and *form-genera* since the former are held to indicate a certain degree of natural affinity, while the latter may—and in many instances do—include species belonging to different families or even groups of higher rank, e.g. ferns and pteridosperms. But *form-genera* have been recognized as pertaining to a special morphological

category since 1828 (Adolphe Brongniart). Since that time they have been constantly used in taxonomic and morphological literature and they are quite indispensable.

At the Paris congress very little was done about paleobotanical nomenclature (cf. Rapport), and with the exception of a different typography the definitions of the Stockholm Code were repeated verbatim in the Paris Code (p. 55).

The relevant part of the Stockholm Code was based upon an elaborate proposal put forth by HAMSHAW THOMAS (LANJOUW 1950: 244).

At the Montreal meeting, where problems of palaeobotanical nomenclature were very much to the fore, the logical differences between the two concepts as used in the Stockholm (and Paris) Code were not, to my mind, made clear. This apparently being a general feeling at the meeting, the Palaeobotanical committee furnished definitions which were completely reworded, and which are now incorporated in the Code (p. 17): Note 1. Since the names of species, and consequently of many higher taxa, of fossil plants are usually based on fragmentary specimens, and since the connection between these specimens can only rarely be proved, organ-genera (*organo-genera*) and form-genera (*forma-genera*) are distinguished as taxa within which species may be recognized.

An organ-genus is a genus assignable to a family. A form-genus is a genus unassignable to a family, but it may be referable to a taxon of higher rank (see Art. 59 and Rec. 18A). Form-genera are artificial in varying degree.

Examples: Organ-genera: *Lepidocarpon* Scott (Lepidocarpaceae), *Mazocarpon* (Scott) Benson (Sigillariaceae), *Siltaria* Traverse (Fagaceae); form-genera: *Dadoxylon* Endl. (Coniferopsida), *Pecopteris* (Brongn.) Sternb. (Pteropsida), *Stigmaria* Brongn. (Lepidophytales and Lepidospermales), *Spermatites* Miner (Cormophyta, excl. Eocormophyta et Palaeocormophyta microphylla).

The new definition has the great advantage of being more easily understandable, but three questions pose themselves: 1° Is the distinction between organ- and form-genera according to the new definition the same as according to the old one, or does the change of wording also imply a change of concept? 2° Does the present form of the definitions distinguish between concepts that are not only really different, but are these concepts also useful—has their distinction a practical purpose? 3° If this is so, is there any reason to treat them in different ways in the Code?

In differentiating between two concepts one must, logically, look for differential passages in definitions. Analysis shows that the definitions of the Stockholm Code give no clear differentiating statements. *Organ-genera* should in principle represent “single organs of the same morphological category” (italicizing: K. F.). That would, in fact, mean that a leaf *plus* fructification could not be designated as an organ-genus, whereas the isolated leaf or fructification would correspond to the definition. To some extent this situation is remedied by the rest of the sentence, quoted previously.

The operative clause in the Stockholm definition of a *form-genus* is “that lack diagnostic characteristics indicative of natural affinity”. What is “natural affinity”?¹

Does this mean that we do not know the morphological character of the specimens included in form-genera? That would give a good logical contrast against the definition of organ-genera, but, in practice, very little would be left for inclusion in form-genera, only specimens that could not be interpreted morphologically. Or does “natural affinity” refer to the general taxonomic position of the plant of which the specimen formed part?

¹ The two notes do not make this clearer; on the contrary, the statement that “*form-genera* have been recognized as pertaining to a special morphological category” is rather enigmatic. Surely, form-genera are not a morphological category to be compared with other morphological categories: stem, leaf, root. They belong to any and all of these categories. Besides, some fossils cannot be classified in the ordinary morphological categories, but certainly they are not what is meant by “a special morphological category”.

That would give a definite meaning to the otherwise unwarranted statements beginning Note 2 in the Stockholm Code, but does not constitute any contrast against the definition of organ-genus, considering that a leaf impression or a microspore does not always tell very much about the taxonomical position of the plant in question. That the latter interpretation should be chosen, is shown by the clearer wording in the original proposal (LANJOUW 1950: 245): "An *artificial genus (form-genus)* is a genus known to contain species which are unrelated according to the ordinary systems of taxonomy . . ." But with the badly defined taxonomic delimitation implied in the organ-genus definition, the difference has become rather vague, even in this formulation.

The clear-cut definition of the present Code seems to help us out of this logical predicament. But in reality, even if we are out of the frying-pan, we may have jumped into something equally hot.

There is a double pigeon-holing. (1) An isolated fragment may be referable to the whole, complete plant (whatever that is, cf. below), like an *Acer campestre* leaf is referable to the plant, *A. campestre*. The fragment is then fitted into HAMSHAW THOMAS'S "ordinary systems of taxonomy". (2) However, when a category of isolated plant fragments, e.g. microspores-pollen, contains too many individual species, there is the necessity for making a special system for this type of fragments, to systematize form-species into higher form-taxa, simply to keep things from falling into confusion. If we maintain the term "family" for the former type of systematizing and use other terms for higher (organ- and) form-taxa, this problem would be simpler. I would very much recommend that such a step be taken, but so far, it has not been taken, and, even worse, both the designation *genus* and the *family* name *Lepidocarpaceae* indicate that the categories in the system of form- and organ-taxa are presumed to be named like the corresponding ones in "ordinary taxonomy".

Let us now for the further discussion presume that "family" in the Montreal Code refers to the "ordinary taxonomy" concept, which no doubt is the fact, even if the wording is ambiguous. Is this restriction to family level a good definition of what the Stockholm Code may have had in mind, but did not express by "natural affinity"?

The answer can hardly be in the affirmative. I shall take my examples from palynology; they might also be taken from other fields, e.g. leaf impressions. Some microsporespollen grains can, with more or less doubt, be referred to a plant family. Others can not be. Consequently, some artificial microspore genera would be organ-genera, others form-genera, and a great many are doubtfully placed between the two, one author considering them as belonging to a form-genus, another as belonging to an organ-genus. The distinction is not clear-cut and is, to my mind, complicating, and in many cases unnecessary. For instance, if the family *Ephedraceae* is kept in a wide meaning, certain pollen types belong to organ-genera, as they may (with some doubt) be referred to that family. If, however, we divide into *Ephedraceae* (s.s.) and *Welwitschiaceae*, they become form-genera because we cannot decide to which one of these families we shall refer the grains.

That there is a real difference between the definitions of the Stockholm and Montreal Codes is easily shown, e.g. by the example of *Leptopteris* which is obviously an organ-genus under the former, but, representing leaves from different families, must be classified as a form-genus under the latter.

Let us also add that with the exceptions to be discussed below, the Code does not in any way use nor need the distinction between organ- and form-genera. The latter are stated to be "artificial in varying degree", but so are organ-genera, too, only a different degree. Let us state it very simply: either a plant fragment, recent or fossil, can be referred to a known plant taxon (cf. below), and then it has its place in the "ordinary systems of taxonomy". Or it cannot, and any designation will have to be artificial "in

varying degree". The plant taxon to which we refer the fragment may be a species, of a higher taxon. "A grass leaf" is just as "ordinary" as "an *Acer campestre* leaf", and we need no extra terms or category for either. But a *name* for a *taxon of leaves* as such is an "extra-ordinary" piece of nomenclature notwithstanding whether we can refer that leaf to a known plant taxon or not.

The "artificiality" is not dependent upon how good is our guess as to which plant we shall hang our leaf on, but upon the fact that we give a name to a detached leaf without taking into account the rest of the plant. Many names of organ- and form-taxa reflect various degrees of ignorance, rather than artificiality, but certain well-known old form-genus names, such as *Pecopteris*, reflect also a firmly held conviction of inherent artificiality.

The present unsatisfactory state is reflected in the confusion in the relevant parts of the Code:

Rec. 20 B "It is desirable that the name of an organ genus of fossil plants should indicate the morphological category of the organ (. . .)"; why not also form-genera? Suddenly, we are back in the thinking of pre-Montreal Codes. The morphological value of a fragment included in a form-genus (sensu Montreal) is in many cases equally clear as that of organ-genera and might equally well be indicated. The same problem returns in Rec. 41 B.

Rec. 20 C. "When naming an organ-genus or form-genus of fossil plants of uncertain nature or affinities, a name suggesting definite relationship with a recent plant should be avoided". How can an organ genus be "of uncertain nature" or, even less, "affinities", considering its restriction, by definition, to a definite family?

Art. 59. 3: ". . . the provisions of the Code shall not be construed as preventing the use of names of form genera in works referring to such taxa." Why not also names of organ-genera?

Rec. 18 A is in a somewhat different position: "Names of families of fossil plants should not be based on names of form-genera (. . .)". Again, one may ask why not also organ-genera? To which may be answered that as organ-genera shall be referable to an "ordinary" plant family, there is no possibility for that. Nevertheless, the rules themselves cite *Lepidocarpon* as an organ-genus referred to *Lepidocarpaceae*. What is *Lepidocarpaceae*? Is it an organ-family, in which case this example does not illustrate what it purports to do, or is it an ordinary family, in which case *Lepidocarpon* is an organ-genus because it is referable to a family based upon itself, and it can only be based upon itself because it is presumed to be an organ-genus!

In other words the attempts of the Code to distinguish between organ- and form-genera do not lead to very convincing results.

My conclusion must be that we need a nomenclature and a system for plant fragments, the connection of which with a complete plant is not known, but that any attempt to differentiate between different categories of artificiality or ignorance is redundant and confusing. If the Code maintains both terms, they should appear in combination as organ- or form-genera, cf. below.

In the Montreal discussions where I, rather unprepared, brought up this matter, HARRIS (Proceedings III: 99) admitted that a distinction between organ and form genera might be of no use in some branches of palaeobotany, but useful in others. My own field being restricted to palynology. I am not in a position to dispute this statement, but, presuming it is correct, I cannot see that it justifies the establishment of a mandatory differentiation forcing e.g. a palynologist to state whether he is describing a microspore as an organ- or a form-taxon (Rec. 41 A) when the differentiation is both useless and meaningless. If a differentiation between different types of artificial (organ- and form-) taxa is to be maintained, it must be optional.

It would prevent confusion if authors in the future avoided the taxon rank designation: family, order etc. for artificial taxa. Some palynologists, e.g. POTONÉ and his collaborators (POTONÉ 1952), have already acted on this basis and use, partly, vernacular terms like *Abteilung*, partly scientific terms, like *turma*. Personally, I think the situation is so unsettled that it is premature to put into the rules what should be done, but certainly one should lay down a rule for what ought not be done, viz. using terms that can be confused with those of ordinary taxonomy.

ON COMBINATIONS

In some cases, fragments formerly known in an isolated state only are found together in such a way as to permit a reconstruction of their original connection, or, in some cases, the whole plant. Then another problem comes up, which is suggested by the Amsterdam resolution, but on which no real action has been taken: what name shall be applied to this new plant? There are at least three possibilities:

1. As in higher pleomorphic fungi, one stage, or one type of fragment may be considered the “typical” or “perfect” state, and the name be given in the way indicated by Art. 59.1. This principle is hardly applicable, as it would be very difficult to decide what the “perfect” state was, especially in the case of different states of preservation of the same organ. This might be regulated by subsidiary rules, but would on the whole, be awkward and confusing.

2. The oldest name may be used, notwithstanding to which part it refers. This is a natural application of the *priority* principle. It may lead to awkward results, like the classical pteridosperm having to be called *Callymmatotheca*, because its cupula was the first detached organ of this plant to be described.² A plant might even have to be referred to by the name of its microspores. This alone would not be enough to invalidate the priority principle, but there are more serious complications. A species of e.g. detached leaves is a taxon according to the Code. So is the whole plant species. If we now give the same name both to the detached leaf (or whatever it may be) and to the whole plant, we give the same name to two different taxa, based upon two different types, which is strictly against the Code, especially the principle of *homonymity*.

3. The third possibility is to follow the principle of the Amsterdam resolution: “Names originally given to detached organs or parts of plants shall only be used in their original significance and shall not be employed in the designation of different organs, or of the plant as a whole”. This is the only way out that does not violate the principles of the Code. Another thing is that practical considerations would advocate some lenience in the application. The fact that two fragments, representing different artificial taxa, are found in connection does not automatically force us to adopt a new name for the combined taxon. A first qualification is that the combination forms a natural morphological unit. Thus, it would be natural to make a new artificial leaf genus for e.g. rhachis and pinnules, previously found isolated and treated as separate artificial taxa. But it is not immediately obvious that the same would be the case for e.g. leaf + calyx. A second qualification is that there should be some morphological parity between components, as in the rhachis plus pinnule example. It would be unrealistic to demand a new name for e.g. a stem because some previously isolated leaves could be shown to adhere to it; a term like “*Lepidodendron* leaf” should be an acceptable term. The case of the complete plant is a much more difficult one. On one side it will be felt unnatural to have to construct something like *Lepidodendrophytum* to signify the whole plant. On the other hand it is in direct contravention of the Code to let *Lepidodendron*, based upon the stem,

² I shall not discuss the facts of this case, which is here represented as in ARNOLD (1947).

signify both that and the complete plant, and quite obviously, in spite of the size, *Lepidodendron* (i.e. the stem) is not sufficiently indicative of taxonomic position to stand for the whole plant. Conservation of *Lepidodendron* the plant against *Lepidodendron* the stem would leave us with no valid name for the latter.

For practical purposes and in "extension" literature, including lectures and elementary text-books, it is usually sufficient to use a semi-vernacular term like "the *Caytonia* plant". Such terms are, of course, independent of any code.

The provisions in the present Code Rec. 57 B are curiously indefinite: "Fossil specimens uniting diagnostic features of diverse taxa may be either assigned to one of them, thereby enlarging its circumscription or proposed as a new taxon having the amplified circumscription (but see Art. 63)". It gives palaeobotanists a much greater freedom than envisaged by the Amsterdam resolution. According to the present recommendation they are permitted to act against the principles of both priority and homonymity. As these are laid down in, respectively, Principles and Articles, it is hardly feasible to let a Recommendation supersede them. The Amsterdam principle, which is violated by Rec. 57 B is in reality the only one tenable. It is highly unsatisfactory to have *Callymmatotheca* meaning both a cupula and a whole plant. If it is, after the reconstruction, accepted for the whole plant, what shall we then call the cupula? And Art. 59 expressly presumes that at any rate form-species names should be retained also after their position in relation to "ordinary" taxonomy has been established.

The homonymity principle is based upon the type concept (Art. 64). There is no doubt that the type of *Callymmatotheca* is an impression of a cupula. This cannot be the type of the whole pteridosperm. There is no provision in the Code for typification of combined taxa.⁴ It should be added.

CONCLUSION

In consequence of the above I formally propose the following amendments of the Code.

Proposal 15. Art. 3. Replace Note 1 and examples with:

I. "Since the names of species, and consequently of many higher taxa, of fossil plants are usually based on fragmentary specimens, and since the connection between these specimens can only rarely be proved, artificial taxa (organ- or form-taxa) are recognized and given names according to this Code."

II. "With the exception of species and genus, ranks of artificial taxa, if needed, should not be referred to by the designations indicated above, and in Art. 4 (family, order, etc.) nor should their names be formed in accordance with Art. 17-19."

III. "Organ-taxa are considered indicative of a closer natural affinity than are form-taxa."

The three paragraphs numbered I, II, and III are to be considered independent proposals to be inserted consecutively, if accepted.

Comments: The basis for the proposal is given in the text, above. The word *genera* is replaced by *taxa* to avoid all collision between ordinary taxonomy and systematizing of artificial taxa. *Species* is maintained in accordance with Art. 2. For higher categories the following example may be quoted (from POTONIE and KREMP 1954):

⁴ Note 5, Art. 7: "The typification of names of genera based on plant megafossils and plant microfossils (form- and organ-genera), genera of imperfect fungi, and any other analogous genera or lower taxa does not differ from that indicated above" is not quite clear. Does the parenthesis mean that the sentence refers to typification of form- and organ-genera, or does it define the fossils mentioned as representatives of such form- and organ-genera?

Organ- (form-) species: *Lagenosporites rugosus*.

Organ- (form-) genus: *Lagenosporites*.

Unterabteilung/subturma: *Lagenotriletes*.

Abteilung/turma: *Triletes*.

Oberabteilung: *Sporites*.

Proposal 16. Art. 7. Add Note 6 bis: "Combined species of fossil plants (Rec. 57 B) are typified by the types of the individual parts from which they are combined and a specimen showing the combination."

Comments: If a leaf is said to be constituted by rhachis A and pinnules B, it is obvious that the types of A and B are concerned. If, however, the identification of rhachis and/or pinnules with A or B was erroneous, there are two possibilities: either to let the new name stand forever for an A-B combination which has perhaps never existed, or to treat the whole according to Art. 70: "a type consisting of two or more entirely discordant elements" in which case the name must be rejected, and we may get rid of it again. My proposal is in line with the latter procedure. If we only use the combining specimen as the type, the description (including A and B) may differ from the type (not including A and/or B), which may be unfortunate. If the types of A and B are mentioned in the way proposed above it opens a possibility for rejecting the name; if they are not mentioned, the name of the combination taxon will depend on the combining specimen alone. If the combination is merely based upon theoretical deductions and cannot be typified by a specimen it is merely a name (in binominal form) for a concept, and has no validity according to the Code.

Proposal 17. Rec. 18 A. Replace with: "Names of families of fossil plants should not be based on names of organ- or form-genera (see Art. 3) that are recognized as being artificial."

Comments: The recommendation is explained above. As this is a recommendation only, no measures are necessary to "save" established names.

Proposal 18. Rec. 20 B: Replace with "It is desirable that the name of an organ- or form-taxon of fossil plants should indicate the morphology of the organ concerned."

Proposal 19. Rec. 20 C: Replace with "In the naming of organ- or form-taxa of fossil plants of uncertain taxonomical affinity, a name suggesting definite relationship with a recent plant should be avoided."

Comments: The two changes of wording are self-explanatory. The present wording of Rec. 20 C is grammatically incorrect.

Proposal 20. Rec. 41 A. Replace with: "An author describing a new species or genus of fossil plants should, if necessary, indicate whether he regards it as an organ- or form-taxon."

Comments. The present wording implies that all genera of fossil plants are organ- or form-genera, which is certainly not the intention of the recommendation. Secondly, there is only a provision for the description of genera, but in most cases the description of one or more species will precede that of the genus, so the word "species" should appear also in the recommendation. The most important feature of the proposed change is, however, that the present obligation to indicate whether there is an organ- or a form-genus, which is in many cases meaningless, is made voluntary, so that it can be used in those groups where the distinction has a meaning and dropped in groups where it has none.

Proposal 21. Rec. 41 B. Replace with: "An author describing an organ- or form-taxon should clearly indicate for which kind of organ the taxon is established."

Comments. Again, there is no special reason to restrict this to genera alone. And also a form-species may be morphologically well defined, even if its taxonomic position may be obscure, e.g. the examples quoted in the present Article 3.

Proposal 22. Rec. 57 B. Replace with: "Fossil specimens uniting diagnostic features of diverse taxa and forming a natural morphologic unit, may be proposed as a new taxon (a combination taxon) which must be given a name that differs from those of the taxa composing the specimens."

Comments: This has been discussed above.

Proposal 23. Art. 59, 3. Replace by: "As in the case of pleomorphic fungi, the provisions of the Code shall not be construed as preventing the use of names of organ- or form-genera in works referring to such taxa."

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DIAGNOSEN VON NEUEN KAKTEEN

F. Ritter (Olumé, Chile)

Noch immer ist eine erhebliche Anzahl der neuen Kakteen, welche ich auf meinen Reisen durch Südamerika gefunden habe, nicht gültig beschrieben worden. Von vielen dieser Neuheiten habe ich Samen nach Europa gesandt, die von der Firma H. Winter, Fechenheim bei Frankfurt, an Berufszüchter und Liebhaber verkauft werden. Um die Nomina nuda gültig zu veröffentlichen, werden jetzt und in den folgenden Nummern dieser Zeitschrift die lateinischen Diagnosen gegeben.

Wenn nicht anders angegeben, werden die Holotypen im Herbar der staatlichen Universität Utrecht, Niederlande, aufbewahrt.

1. **Rebutia tuberosa** (subg. *Aylosteria*) Ritter, sp. nova, corpus hemisphaericum, valde proliferans, viride, 2-4 cm diam. radice rapacea; costae in tubercula 2-4 mm alta solutae; areolae, 1,5-3 mm longae, 1-1,5 mm latae, albae; spinae tenuiter aciculares, 2-5 mm longa, luteo-brunneae vel brunneae, rectae,