Recommendations and Proposals for Palynological Systematic Nomenclature
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XIX. RECOMMENDATIONS AND PROPOSALS
FOR PALYNOLOGICAL SYSTEMATIC NOMENCLATURE

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The natural system may of course be used for the classification of fossil pollen grains, but only where definite evidence for the specific or generic position is available. A purely artificial system has to be used for the classification of fossil pollen grains of which the natural generic position is doubtful or unknown.

The artificial classification of pollen grains has to be based exclusively on their morphology, independent of their geologic age, and can take no account of whether their natural systematic position is known, doubtful or unknown. Consequently a pollen grain may eventually be classified in both systems, the natural and the artificial. It makes no difference in principle whether a particular pollen grain is fossil, subfossil or recent, as the age cannot be a generic characteristic, neither of a natural nor of an artificial genus.

An artificial genus cannot be treated as a natural genus, as the former is exclusively based on morphological characters, whilst in the latter natural relationship plays an important role. For that reason artificial systematic nomenclature cannot in all respects be governed by the same International Rules as natural systematic nomenclature. It needs certain special rules, in agreement with its nature.

It is found in practice that there are no natural norms for the order of morphological differences which indicate the separation of two or more artificial genera. Consequently genera are often established on very small differences which might also perfectly well be held to be differences of specific character. There exists at present no rule or criterion to define the magnitude of these generic differences, and theoretically (and also in practice) a new genus for every new species might be established. This is in part the reason why palynological systematic nomenclature is in its present state. Consequently, the type-method alone is insufficient for artificial palynological nomenclature; it needs a definite classification-criterion.

Of morphological pollen (and spore-) characteristics, the number, shape and combination of apertures ("pollen-types"), and the sculpture-types, are amongst the most important. The shape of the grains may be of importance, but often shows considerable specific variations. Exine structure may also be of importance.

It seems most adequate to base generic and subgeneric characteristics principally on "pollen-type" and "sculpture-type" respectively. (Which characteristics are of subgeneric, generic or even higher rank might be established by general agreement).

As we know today the majority of the possible "pollen-types" and "sculpture-types", a simplification of the artificial system might be established with great advantages, by always using the same names for the same morphological characteristics, and by using those names for the formation of generic names (for example: Tricolpites for tricolpate grains, Retitricolpites for tricolpate reticulate grains, etc.). In this respect it does not matter so much which names we use (Monolpites or Monosulcites etc.), but it is important that some agreement is reached about it. In this way a basic system of generic names might be established (with the necessary flexibility). These genera could then be based on types, but the generic characteristics will be already prescribed to a certain degree. This is the logical consequence of a consistent artificial system.

If the arguments presented above are accepted, many problems as to pollen grains (and eventually spores) already validly described will have to be solved, but in our opinion palynological nomenclature will be safeguarded from a future state of complete confusion, the signs of which are already visible.

Similar principles have already been used or proposed by different authors (Ibrahim, Erdtman etc.), and their views form the basis of the present proposal, and of the artificial system proposed by us some time ago (van der Hammen, 1954; Principios para la nomenclatura palinológica sistemática, Boletín Geológico Vol. 2,2) and afterwards described in more detail (van der Hammen, 1956; A palynological systematic nomenclature. Bol. Geol. Vol. 4, 2.3).

It will perhaps be the general opinion that the names used in the description mentioned will have to be partially or entirely changed. The important thing seems to be to us, how-
ever, the basic principles, which are in our opinion the logical consequence of the use of an artificial classification-system.

212. The present proposal may be summarized as follows:
1. Both pure natural and pure artificial systematic nomenclature may be used in palynology. A species of which the natural position is known (fossil, subfossil or recent), has also its place in the artificial system. Age cannot be a classification-criterion.
2. The nature of an artificial classification-system (the lack of the criterion of natural relationship), implies the need to establish definite classification-criteria. The type-method alone is insufficient.
3. Morphological differences which represent classification-criteria are, in the order of their importance:
   1st order: “Pollen-types” (principally number, shape and position of apertures, number of grains united, presence of air-sacs).
   2nd order: “Sculpture type”.
   (3rd order: Exine structure).
   (4th order: Shape).
   In pollen grains showing various types of sculpture-elements, the dominant positive elements will decide.
   In special cases, exceptions may be made on this rule.
4. Genera and subgenera will be based on types, but in the formation of the generic etc. names, and in the establishment of generic, etc., characteristics, general lines, established by the Congress, will have to be followed.
   If the above principles are accepted, the Congress will have to decide on the fate of genera and species already validly described in accordance with systems based on other principles. A solution which may prove satisfactory is that they should continue to be valid, but that they should also be placed in a genus according to the new principles, retaining their specific name.
   The artificial system published in 1956 is put forward as a possible solution in agreement with the above-mentioned proposals. Names and relative rank may be changed, if necessary or convenient. Names for discussion are, for instance: Monocolpites or Monosulcites, etc., relative ranks, for instance:
   Genus Tricolpites Subgenus Psialatricolpites
   ” " Foveotricolpites
   ” " Fossutricolpites
   ” " Scabratricolpites
   ” " Echitricolpites
   ” " Verrutricolpites
   ” " Gemmatricolpites
   ” " Bacutricolpites
   ” " Clavatricolpites
   ” " Retitricolpites
   ” " Regutricolpites
   ” " Striatricolpites
   or: Tricolpates genus Psialatricolpites
   ” " Foveotricolpites
   ” " Fossutricolpites
   ” " Scabratricolpites etc.

XX. PROPOSALS BY CZECHOSLOVAK BOTANISTS

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Supplementation and correction of the Code

213. Article 7. We suggest that in the Code the terms “standard” and “nomenclatural type” should be distinguished as follows: the term “standard” should be used for the typification of taxa of the rank of order or below, but higher than species, the term “nomenclatural type” to be used for taxa of the rank of species or below. The term “standard” is understood to designate a taxon used for the typification of the nearest higher taxon, the term “nomenclatural type” to designate a plant or its part (preparation) by means of which we typify a species or a taxon of lower rank.

Motivation: In the interest of clearness it is necessary to differentiate between the term used for a type represented by a taxon and a type represented by an actual part of a plant.

Proposed change of Code: Article 7, paragraph 1 should be altered to read as follows:

“The application of names of taxa of the rank of order or below but above that of species is determined by means of standards (typifying taxa), the application of names for