

THE STATUS OF BOTANICAL LITERATURE PUBLISHED BEFORE 1753

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In a recent paper, Chatterjee (1) criticizes a contention by Furtado (2) that botanical literature published prior to 1753 should be regarded as invalid. In our opinion, Chatterjee omits certain relevant considerations, and a further statement on the subject is therefore desirable.

Chatterjee objects to the use of the term valid and its derivatives by Furtado, and also to certain other "unfamiliar" terms, but he does not mention that Furtado has defined the use of these terms (3, 4), nor does he seem aware of the inconsistent use of the terms valid, legitimate and their derivatives in the Rules. Chatterjee himself is not consistent in his use of these terms.

As an example of the confusion that exists, we may quote the following possible argument, using a strict verbal interpretation of the Rules. Under Art. 36, literature published prior to 1753 may be regarded as effectively published, and under Art. 20 legitimate botanical nomenclature begins with Linnaeus' *Species Plantarum* of 1753; then by the application of Art. 19 and Art. 37, names published before 1753 are illegitimate but validly published (not invalidly, as maintained by Chatterjee); therefore under Art. 61 many Linnean names (which it is the intention of Art. 20 to conserve) become unusable as homonyms.

Basic to all Furtado's work is an attempt to define necessary terms, so that the Rules shall not be ambiguous; he has further attempted to clarify the Rules by bringing together those Rules which deal with the same subject. Much argument about the Rules is due to the lack of clear thought about the use of the terms concerned, and to the lack of logical sequence in the present Rules.

Chatterjee does not mention that Furtado's paper (2) deals with generic names, nor does he mention those parts of Art. 20 and Art. 42 which deal with generic names. Art. 20 states that it is agreed to associate the generic names which appear in *Linn. Sp. Pl. ed. 1 (1753)* and *ed. 2 (1762-63)* with the first *subsequent* descriptions given under those names in *Linn. Gen. Pl. ed. 5 (1754)* and *ed. 6 (1764)*. Art. 42 states that the generic names of *Sp. Pl. ed. 1* and *ed. 2* are treated as validly published in those works. If these statements are not intended to indicate that Linnean generic names are not validated by reference to literature

published before 1753, what do they mean? And if such a rule applies to Linnean generic names, surely it should apply also to other generic names.

Prior to the Vienna Congress, the rule about names was "each natural group of plants can bear in science but one valid designation, namely the most ancient, whether adopted or given by Linnaeus or since Linnaeus, provided it be consistent with the essential rules of nomenclature". For generic names, it was then customary to refer back to Linnaeus' *Genera Plantarum* of 1737; some botanists even thought that Tournefort's work should be made the starting point for them. It was the work of Otto Kuntze which showed the enormous changes that would result if an attempt were made to find the most ancient use of a name, and it was because of this that the Vienna Congress of 1905 passed the rule making Linnaeus' *Species Plantarum*, first edition, the starting point for names of genera as well as species.

We contend that it was the intention of the Vienna Congress to make 1753 a starting point, and to rule out of consideration everything before that for purposes of name-validation. The rules which the Congress made concerned generic names, because the concept of a genus, and many generic names, existed before 1753, whereas the bulk of binomial names for species did not exist before 1753. Therefore special rules for generic names were necessary. It was recognised that Linnaeus changed the application of many generic names (so that his own names are later homonyms), and it was intended to regularize the position and prevent further argument.

It is true that the Rules do not specifically say that literature prior to 1753 is invalid. But in fact almost all botanists of the 19th century (except Otto Kuntze and any who followed him) regarded 1753 as a starting point, and did not recognize references to pre-1753 literature as validating names. It was only in the present century that this practice began. Chatterjee states that Prain was the first modern author on East Asiatic botany to validate a binomial by reference to Rumphius; but if he refers to Prain's publication of the name *Sindora galedupa* he will find an excellent diagnosis in which *S. galedupa* is distinguished from all other members of the genus; it is this diagnosis which validates the name, and the case is totally unlike those of Burman's Index and Stickman's list, which merely refer to Rumphius without any discussion or diagnoses.

Furtado has shown (2) the appalling complications which can ensue if references to pre-1753 literature are regarded as validating names; this discussion again is not

mentioned by Chatterjee. We contend that the intention of Arts. 20, 42 and 44 is to prevent such complications. Chatterjee himself admits that the practice is undesirable, and proposes that future authors should be recommended to cease the practice. We should prefer to see the recommendation made into an explicit prohibition by a change in the Rules such as that already proposed by Furtado (4, p. 14).

Furtado contends (and this again Chatterjee does not mention) that reference to pre-1753 literature should have the same status as manuscript notes in herbaria, or as herbarium specimens; a name cannot be validated by reference to notes or specimens. It appears to us that Prain also adopted this attitude to the plate and description of Rumphius which he cited; he used them as evidence only, and did not regard his citation of Rumphius as by itself validating his name.

Now we come to the special case of the interpretation of Linnean names. This is of fundamental importance, and it is not properly discussed in the Rules. It has many difficulties, and there is great need for a clear statement of correct procedure. We believe that proposals for such a statement are now being prepared; they are long overdue. We cannot here fully discuss this complex problem, but we make the following observations.

As Chatterjee points out, the descriptions accompanying most Linnean names are not adequate to characterize the species concerned. They must be interpreted by consideration of the figures quoted by Linnaeus, and also by the specimens which Linnaeus had at that time in his herbarium, or which he saw in other herbaria. These figures and specimens (which Furtado (5) calls the syntypes of a Linnean species; one can speak similarly of the syntypes of a Linnean genus) explain to us what Linnaeus meant, and give his name a meaning. The name is valid (in Furtado's sense) because we agree to start nomenclature with *Species Plantarum* edition 1 of 1753, and for no other reason; Linnaeus explained his names (and therefore made them usable, or valid in a different sense) by quoting figures and referring (often implicitly) to specimens. The case of *Cyclamen indicum*, quoted by Chatterjee, in which the figures cited by Linnaeus are incomprehensible (and possibly inaccurate) and no specimens exist, shows how useless the process of "validation" by reference to ancient literature may be.

The principle of priority is not an end in itself. It is a means to an end, and the end is stability of nomenclature. Many early names cannot be typified with absolute certainty. Therefore botanists are apt to disagree about their typification, and stability is lost. We submit that Furtado's

interpretation of the intention of the Rules would eliminate the possibility of a great deal of fruitless argument about the status of ancient names, and thereby free botanists to attend to much-needed monographic work on the vast number of tropical plants which are still unknown or very imperfectly or even inaccurately described.

Old names must be given precise meaning by study of type specimens or by other means; otherwise their use leads to confusion. But if there is insufficient evidence for a precise typification of such names, we submit that it is much better to ignore them altogether. Unless the evidence is clear, there is room for argument, and to difference of interpretation, with resultant instability of nomenclature. It was to eliminate such uncertainty and instability that the present Rules about generic names were made. We believe that these rules should be more strictly defined in the sense proposed by Furtado, and that this would lead to a greater stability of nomenclature.

LITERATURE CITED

- (1) Chatterjee: Validating Botanical Names by Reference to Pre-1753 Literature. *Journ. Arnold Arb.* 30: 71-74, 1949.
- (2) Furtado: Validating Botanical Names by Referring to Invalid Literature. *Gard. Bull. Straits Settl.* 10: 162-172, 1938.
- (3) Furtado: A Commentary on the Laws of Botanical Nomenclature. *Gard. Bull. Straits Settl.* 9: 223-284, 1937.
- (4) Furtado: Amendments Proposed to the International Rules of Botanical Nomenclature (1935). *Gard. Bull. Straits Settl.* 11: 1-30, 1939.
- (5) Furtado: The Nomenclature of Types. *Gard. Bull. Straits Settl.* 9: 285-309, 1937.