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A SOLUTION OF THE STARTING POINT PROBLEM IN THE NOMENCLATURE OF FUNGI

V. Demoulin¹, D. L. Hawksworth², R. P. Korf³, and Z. Pouzar⁴

Summary

The present system of disparate starting points for fungi is shown to be incapable of producing a stable unambiguous nomenclature. Its faithful application not only imposes an intolerable sterile bibliographic burden on taxonomists but also forces them to make subjective biological decisions. A solution to this problem exists in Prop. 32 for modification of the International Code of Botanical Nomenclature. This proposal would give a single starting point date of 1753 for all fungi but would retain the protected status granted by the existing Art. 13.1.f to names used by Fries in his *Systema* vol. 2 and 3 extend it to vol. 1 and to Persoon's *Synopsis* for the names for which this was the starting point book. The advantages for nomenclatural stability and simplicity of this proposal are outlined, and contrasted with the catastrophic changes that would arise from adoption of the current Prop. 31 (which we therefore strongly oppose).

History

The International Code of Botanical Nomenclature (Stafleu et al., 1978), rules (Art. 13.1) that except for Myxomycetes and lichenized fungi which have the usual Linnean starting point of 1753, valid publication of fungal names begins on 31 Dec. 1801 for Uredinales, Ustilaginales and Gasteromycetes (Persoon, *Synopsis methodica fungorum*) and 1 January 1821 for the rest of the fungi ("fungi caeteri") (Fries, *Systema mycologicum*, vol. 1).

The origins of this system have been outlined by Petersen (1977), Weresub (1979) and Korf and Kohn (1980). Briefly, later starting points for non-lichenized fungi were hastily introduced at the 1910 Brussels Congress (De Wildeman, 1912) in an obscure formulation: "La nomenclature botanique commence pour les divers groupes végétaux (vivants et fossiles) aux dates suivantes:

". . .

- d) Lichenes, 1753 (Linné, *Species plantarum* ed. 1).
- e) Fungi: Uredinales, Ustilaginales et Gasteromycetes, 1801 (Persoon, *Synopsis methodica Fungorum*).
- f) Fungi caeteri, 1821-32 (Fries, *Systema mycologicum*).
- h) Myxomycetes, 1753".

The adoption of this formulation is particularly surprising, the "Commission cryptogamique" having recommended the Saccardo motion of a uniform 1753 starting

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point (Briquet, 1910). Mycologists were not much more numerous at the Congress than in the commission and many famous members of the commission (Boudier, Bresadola, Fischer, Masee) did not attend the Congress . . .

World War I prevented an elaboration of the system which remained ignored by many mycologists until the 1930s, notably those following the "American Code" with its uniform 1753 starting point. While an uniformisation of starting points to 1753 was to be expected at the 1930 Cambridge Congress, given the support of the majority of mycologists on the "Commission de nomenclature cryptogamique" and of the rapporteur who wrote of J. C. Arthur's proposal for a single 1753 starting point: "Le rapporteur donne un préavis favorable à la proposition contenue dans l'art. B 19 complémentée par le dernier alinéa de la proposition C 19. Un grand nombre de cryptogamistes, en particulier de mycologues, sont revenus de l'opinion émise par eux en 1910. Une date unique constitue une simplification. Les listes de "nomina utique conservanda" peuvent facilement corriger les inconvénients de cette date unique" (Briquet, 1930a and b).

Nonetheless nothing happened, and confused discussions led to the conclusion that a decision should be left to the next congress after reports of special commissions (Brooks and Chipp, 1931). At this congress (Amsterdam, 1935) the same scenario repeated itself: we learn from Linder and Seaver (1936) that dissatisfaction with the system was considerable but the problem was again referred to the special committees.

World War II prevented the work of those committees and the 1950 Stockholm Congress saw only individual proposals dealing with the problem of the starting point of Fungi Caeteri, which until then extended over the twelve year period 1821–32. Those were respectively to adopt 1821 (C. W. Dodge) or 1832 (W. W. Diehl). The special committee met during the Congress (Lanjouw, 1953) and prepared a compromise included in a package accepted "en bloc" without discussion of the starting point issue; this constitutes the present wording of the Code. At Stockholm, nobody apparently raised the possibility of deleting the later starting points altogether rather than trying to make the system workable. After 1950, it seems that many mycologists believed the system was now workable and that later starting points had been with us for too long to be deleted. That this opinion is ill-founded must be stressed.

Art. 13 as It Stands Since Stockholm

The starting point for Myxomycetes and lichen-forming fungi is currently 1 May 1753; for Uredinales, Ustilaginales and Gasteromycetes, 31 Dec. 1801; and for Fungi caeteri, 1 Jan. 1821. Beside the increased precision of the date to a day and not a year, the difference from previous versions of the Code is that a precise date is given for the starting point of Fungi caeteri instead of the twelve year period over which Fries' *Systema Mycologicum* appeared. The intention of promoters of the starting point system, to protect Fries' nomenclature (Farlow, 1910), was maintained by giving to volumes of the *Systema* published after 1821 a peculiar status defined by "Names of Fungi caeteri published in other works between the dates of the first (Vol. 1) and last (Vol. 3 part 2 and index) parts of the *Systema* which are synonyms or homonyms of names of any of the Fungi caeteri included in the *Systema* do not affect the nomenclatural status of names used by Fries in this work" (Stockholm Code Art. 23 f, Leningrad Code Art. 13.I f). Donk (1961) proposed that when one cites such names the author be linked to that of Fries by a colon (:). For example, *Thelephora viticola* Schwein. : Fr., a name published by Schweinitz in 1822 and "sanctioned" by its use by Fries in the *Elenchus* in 1828, which means it takes precedence over any earlier synonym or homonym. At first glance this system, which provides both a clear cut starting point date and protects Fries' nomenclature seems fine. What, however, is in our opinion impossible to apply correctly is not

the protection granted to Fries' nomenclature, but *any* system of starting points later than 1753.

There is a fundamental difference between 1753 and later starting points. 1753 is the natural beginning of binomial nomenclature and, except for generic names whose problems can in anyway be solved through conservation, if Art. 12 did not exist, Art. 23.6 (c) would imply that no valid nomenclature exists before 1753.

Other starting point dates have *a posteriori* placed artificial limits between otherwise perfectly normal names. Prestating points names become devaluated and their valid publication is displaced to their first post-starting point use. In this way any post-starting point floristic or other publication can acquire a nomenclatural importance never intended by its author.

The intentions of those who introduced the later starting point system for fungi are far from clear. Only Farlow (1910) expressed his feelings in detail; his arguments in favour of later starting points are clearly incompatible with the rigours of modern nomenclatural methodology and shows a fundamental confusion between nomenclature and taxonomy. For him a starting point date should be fixed by answering the question "What was the first work on bryophytes, on lichens, on algae, on fungi, in which those groups were scientifically and comprehensively treated?". Beside the subjectivity in the answer to such a question, well illustrated by the fact Farlow considers for fungi such a work to be Fries' *Systema*, while many would rather cite Persoon's *Synopsis*, it is evident Farlow is looking for a *taxonomic*, not a *nomenclatural* starting point book. The idea that the first good comprehensive treatise on a group would provide a sound basis for its whole future nomenclature is erroneous. The first good treatise on a group is not necessarily bibliographically exhaustive and, even if it did take every anterior name into account, it is impossible that its disposition of those names will be final. Who would accept that because *Agaricus carcharias* of Persoon was not recognised by Fries in the *Systema* the name should disappear? The idea that starting with a good treatise would simplify nomenclatural work by allowing one to forget the pre-starting point literature is not realistic, a truism repeatedly confirmed by the experience of those who have tried to faithfully apply the Code (including ourselves).

Our experience is that there are very few, if any, pre-starting point works introducing new names which can be ignored because none of their names have been validated after the starting point. One should also note that even if ignored by many mycologists, these books are familiar to specialists of Myxomycetes and lichenized fungi. Further, the literature between 1801 and 1821 that some agaricologists might like to forget is the one that students of rusts, smuts and Gasteromycetes must most attentively scan.

Later starting points not only do not liberate us from the knowledge of old literature, they lead us to an evidently unending bibliographical search, the sterile complexity and time consuming nature of which makes the deletion of later starting points a matter of urgency.

For each pre-starting point name which has been used after the starting point (and we believe this is the case for practically all of them), one must determine in which work this name first appears. This implies not only the scanning of *all* literature potentially holding botanical names (not just the taxonomic literature but any work with names) but to know the relative chronology of this literature. There are already difficulties in determining the relative order of publication of important taxonomic works; when this is extended to scores of obscure local floras and the like, one can say that no final unequivocal answer can be given to this problem.

For example, Petersen (1975) uses the reference to *Amanita verna*, which he considers "probably did not fruit until very late June", to date Laterrade's *Flore Bordelaise*. According to Parrot (1960: 71) the fungus is however common in May around Bordeaux. Obviously when one needs to resort to such arguments, discussions can be endless, for somebody can come up with an observation of a mass fruiting in April or in March, etc. Having tried to present a catalogue of validations

made in 1821, Petersen (1977a) had to admit it is impossible for some names to "cite the correct (or first) validating author, for the actual sequence of publications *within* 1821 is only imperfectly known". His opinion that the problem does not appear insurmountable is in our view wishful thinking.

The work compiled by Petersen for 1821 is only a small part of the problem as it requires repeating for many further years. For example, many classical pre-starting point names which were not used by Fries in the *Systema* often have their validation attributed to Secretan (1833) or to Fries in his *Epicrisis* (1838). Independently of the fact no valid publication can occur in Secretan (Art. 23.6 c), it is clear one needs to index and sequence the whole literature of at least the 1820s–1830s before admitting such validations. Worst, for *Lycoperdon oxyacanthae* Schrank (*Baiersche Fl.* II: 667, 1789) the first validation known at the moment is in Oudemans (*Enum. Syst. Fung.* III: 422, 1921); to be sure this is the really correct validation, all the literature between 1801 and 1921 should be indexed for fungal names and sequenced.

With such a system it is hopeless to expect stability in the priority of names, in their author citation, and consequently in their typification.

It is for example quite different for priority purposes to attribute the validation of *Agaricus tabescens* Scop. to Fries in his *Epicrisis* (1838) as often done, or more correctly (but without guarantee that an earlier validation does not exist) to Steudel (1824). Further, for typification purposes the acceptance by Steudel, with indirect reference (Art. 32.3) does not pose any problem, while in Fries reference to the original description is only a part of a complex protologue.

A good example of instability in the determination of the place of validation is *Lycoperdon furfuraceum* Schaeff. which has its validation attributed to De Toni in Saccardo (1888) by Eckblad (1955), to Vittadini ("1843", in fact 1842) by Šmarda (1958), and to Quélet (1873) by Kreisel (1967); in fact many earlier "validations" exist, the earliest one known at the moment being that of Steudel (1824). Such a case also demonstrates the absurdity of citing only the validating author and not the original one as authorized by the Code and unfortunately practiced by some mycologists today (see, in this regard, Korf and Kohn, 1980).

Endless bibliographical searches do not only occur for the determination of validation but also with that of combinations. A fine example was provided by Korf and Kohn (1979) with the classical *Monilia fructigena* for which it seems the validation has been as *Acarosporum fructigenum* (Pers.) ex Pers. but for which the first recombination in *Monilia* has never been cited by any other authors.

Another example is *Lycoperdon pini* Willd. validated as *Aecidium pini* by Persoon in the *Synopsis* (starting point book for rusts) and recombined in *Lycoperdon* by Kops (*Fl. bat.* XI: t. 855, 1853). Beside the fact one cannot be sure there is no earlier recombination the accurate citation of such a name is impossible without double-brackets or a special preposition like *trans* proposed by Damblon, Darimont and Lambinon (1959).

Lichenized Fungi

The original proponents of the present starting-point system also evidently did not take account of the fact that they were introducing a completely new aspect into the Code, viz. the necessity to make a biological decision to decide whether a fungus should be treated as lichenized or not. It is becoming increasingly clear that a strict application of the Code will lead to name changes where lichenologists have chosen to ignore it in the past. It is also becoming evident that under the present rules one cannot always even decide with any great certainty just what the starting point should be! These problems are discussed further by Hawksworth (1978) but should be mentioned here: (1) different starting points now operate for different species within a single genus depending whether the species is lichenized or not (a genus may not date from before 1821 because its type is non-lichenized but include lichen-

ized species dating from 1753 within it); (2) when it is uncertain if a fungus is forming a biotrophic association with an alga how can one decide if 1753 or 1821 should be used—this can also have wider applications as with *Lichen roseus* Schreb. 1771 which could be lichenized, lichenicolous or an alga and without knowing the group one cannot be sure which starting point applies and so if homonym problems exist or not (see Hawksworth, 1979: 280–281); (3) if a fungus traditionally regarded as lichenized is found to be only fortuitously associated with algae or not lichenized its starting point is immediately put forward 68 years (this applies for example, to many species placed in *Arthopyrenia* Massal., also *Stenocybe* Nyl. ex Körber etc.); (4) the converse of (3) also applies (e.g. *Mniaceae* Boud., *Orbilina* Fr. species); (5) with facultatively lichenized species or species where the biological situation is unclear should one use 1753 or 1821 (this applies especially to pyrenocarpous corticolous “lichens”); and (6) are parasymbiotic fungi living on lichens but not damaging the host, fungi or lichens in the sense of the Code, also, what is the position when it is unsure if a lichenicolous fungus is parasymbiotic or parasitic/saprophytic or if it is parasymbiotic on some hosts but aggressive on others (examples of all are known).

Also, it must be stressed that lichenologists have in the main ignored the implications of existing starting points when treating non-lichenized taxa in the past and only in the last few years are starting to implement the rules with resultant changes in names of well-known taxa. For example, some authors argue (? correctly) that lichenized taxa described in “fungal” genera prior to 1821 are not validly published as the generic names were not then available (Art. 43.1); this affects lichenized taxa described in genera such as *Mucor* and *Peziza* which concern some of the commonest and better known European crustose species (e.g. *Coniocybe furfuracea* (L.) Ach. would become “*C. capitata* (Schreber)” as the former basionym is *Mucor furfuraceus* L. 1753 and the latter *Lichen capitatus* Schreber 1771; *Dimerella diluta* (Pers.) Trevisan would become *D. pineti* (Schrader) Vězda as the former originated as *Peziza diluta* Pers. 1801 and the latter as *Lecidea pineti* Schrader 1810). In our opinion such changes make a mockery of the Code’s aim for stability and should be rendered unnecessary by the change to 1753. A similar problem, yet not so complex exists in the Myxomycetes, where at least twenty epithets, including that of the most common *Lycogala epidendrum*, are invalidly published for having been introduced as *Lycoperdon*, whose legal existence starts in 1801 (Demoulin, 1973), a fact ignored by every Myxomycete specialist. Many other epithets were introduced as *Mucor* or other primarily non myxomycetous genera.

Many might consider the case of lichenicolous fungi unimportant as they are so rarely studied but it is becoming clear that they are an extremely diverse group with numerous genera and species awaiting description. There are perhaps as many as 300 genera and 1000 species so the group is larger than, for example, the whole of the Gasteromycetes! With this background it is regrettable that uncertainties should remain even though, fortunately, many such taxa were not described before 1821; those that were, however, are the better known (e.g. *Sclerococcum sphaerale* (Ach. ex Ficinus & Schubert) Fr.).

As an example of a name change that would have been avoided by a uniform lichenized/non-lichenized starting point, *Mycocalicium parietinum* (Ach. ex Schaerer) D. Hawksw., a bark-inhabiting non-lichenized fungus studied by lichenologists (historically), may be cited. This species was first described as *Calicium subtile* Pers. in 1797 and this epithet has been almost universally used for the fungus for the last 60 years. However, the epithet *subtile* does not appear to have been re-validated until 1824, as *C. subtile* Pers. ex Steudel (or “ex Pollin.” depending on the sequencing of his *Flora veronensis* within 1824!). The synonymous name *Calicium parietinum* Ach., introduced in 1816, was, however, re-validated by Schaerer in 1821. The name of this fungus was therefore changed in accordance with the present Code.

It should also be recognized that many mycologists and lichenologists cannot make the lichenized/non-lichenized distinction in practice. There are numerous cases of lichenized species described as non-lichenized and vice versa. In his revision of

the foliicolous lichenized fungi Santesson (1952: 49–53) lists 136 taxa originally described as non-lichenized (many by well-known mycologists) but which are undoubtedly lichens. Difficulties also arise in the indexing of names and since 1970 the *Index of Fungi* has had a separate "Lichenes" section; so many times have taxa studied by lichenologists had to be listed in the "Fungi" section and vice versa that this artificial separation will probably be abandoned from the start of the next volume (January 1981). The only checklist for lichenized fungi to be produced in Europe in recent years is that for the British Isles (Hawksworth et al., 1980); in this it was decided that the only logical solution was to include many non-lichenized and lichenicolous taxa because of difficulties of determining biological status and wishing to ensure that genera shunned by mycologists and lichenologists (e.g. *Odontotrema* Nyl.) were not ignored. We believe that the increasing realization that lichenized fungi are a biological group dispersed through many subclasses and orders of Ascomycetes (but also including Coelomycetes, Hyphomycetes, Basidiomycetes and Phycomycetes) can only lead to more and more questioning of the purpose behind the disparate starting points.

The Present Situation

That the introduction of later starting points has made mycological nomenclature unstable and extremely complicated has only been fully realised recently. The reason is probably that few mycologists have really tried to apply the rules completely. Many have attributed validations to Fries or a few other books without attempting a search for the earliest validation. The only person who came close to defining the correct nomenclature of a group of fungi is M. A. Donk with his checklist of European polypores (1974). The group is however limited and not too difficult, many validations occurring in vol. 1 of Fries' *Systema*, nonetheless Donk devoted to his bibliographical search a time that might be considered inordinate.

Impressions that a correct nomenclature has been attained in other groups like the agarics come from a tranquillizing ostrich policy.

Those who introduced later starting points probably believed that this principle would simplify nomenclature by eliminating the old abandoned names. We are now fully aware this was an illusion and that we have been driven into a situation of either applying the Code and diverting the efforts a taxonomist should devote to the study of specimens to that of books, without even the hope of a definitive result, or of living with the illusion that some gentleman's agreement will maintain a traditional nomenclature which is not necessarily correct.

The New Proposal

A solution to the current dilemma is at hand which has the following advantages:

1. It simplifies the bibliographic procedures and suppresses the uncertainties linked to the present problems of covering exhaustively the post starting point literature and of accurately sequencing it.
2. It consequently stabilizes the author citation and typification of names.
3. It is respectful of the present current nomenclature, most especially of the names which are the most stable at the time for they are used in starting point books.
4. It involves very little change in the Code (a single proposal is necessary) and no addition that would upset nomenclatural methodology.
5. It avoids the necessity to make biological decisions as well as taxonomic ones to define the "group" (for lichenized/non-lichenized/lichenicolous species).

This solution is to adopt 1753 as unique starting point date for fungi but maintaining the protected status granted by Art. 13.1 f to names included in vol. 2 and 3 of the

Systema and extending this status to vol. 1 of the *Systema* and Persoon's *Synopsis* for the groups for which it is the starting point book.

This solution is the basis of Proposal 32 for the Sydney congress first introduced in an inevitably brief form (van Warmelo, 1979) and in defence of which we have prepared the present more detailed paper.

Proposal 32 reads:

Proposal (32). Article 13.1: Substitute for Article 13.1d,e,f,h, 'd. Fungi (including lichen-forming fungi): Linnaeus, *Species Plantarum*, ed. 1 (1 May 1753). Names in the Uredinales, Ustilaginales and Gasteromycetes adopted by Persoon (*Synopsis Methodica Fungorum*, 31 Dec. 1801) and names of Fungi Caeteri (excluding Myxomycetes) adopted by Fries (*Systema Mycologicum*, vols. 1 (1 Jan. 1821) to 3, and *Elenchus Fungorum*, vols. 1–2), are not affected by, and take priority over, homonymous and synonymous names published earlier. For nomenclatural purposes names given to lichens shall be considered as applying to their fungal component.' 'g', Renumber 'g' as 'e'.

In this way valid publication of names will start with their real authors, eliminating the uncertain quest for the first post-starting point validator. The retention of the protected status, through which already a majority of Friesian names are sheltered (the 1821 starting point only protects names in vol. 1 of the *Systema*) ensures that this nomenclatural simplification and consequent stabilization will not be accompanied by numerous changes in current nomenclature.

This is logical since only names included in starting point books can be considered protected at the moment. Names validated in other works only get their priority in so far as the post-starting point literature is accepted as exhaustively indexed and definitively sequenced, a Sisyphean task. For those names dating them from their original publication may alter some accepted priorities but no more than through a careful search of the post-starting point literature. Those changes in priorities must also be placed in balance with the cases where the later starting point system has not been fully applied (e.g. *Mycocalicium subtile*, see above).

Impact on Names in Current Use

To illustrate this system we have applied it to European Gasteromycetes and Polypores, two groups for which we consider the bibliographical data at hand (Donk 1974 checklist for the polypores, and Demoulin personal files for the Gasteromycetes) are sufficient to have an approximate idea of the correct nomenclature according to the present rules. One should note, however, that the uncertainties linked to dates of revalidation are such that even in those groups where the literature has been extensively searched one cannot consider the nomenclature as stabilized but only as approaching closer to an asymptotic ideal than in groups where bibliographic searches have been less exhaustive.

Example 1: The Polypores

For the European polypores, of 319 accepted names only 6 would change; that is 1.9%, a very low percentage when compared with the changes in the group that have arisen through the remodeling of genera in the last 15 years. Those changes would be:

Boletopsis leucomelaena (Pers. ex Pers.) Fay. on which *Fungus porcinus* Paulet would have priority. This is however Donk's opinion which we do not accept for two reasons. One is that Paulet's index in which the name was introduced was not consistently Linnaean and thus does not meet requirements of valid publication (Art. 23.6.c); for example the species preceding *Fungus porcinus* is *Fungus polyporus perennis*. The other is that the publication date of Paulet's *Traité des Champignons* should not be accepted as 1793 (the title page date) but as 1808. The reason, overlooked by Donk and others, is that the *Prospectus* (the copy of which at LG is dated 1808) includes the statement (p. 42): "Cet ouvrage dont la publication n'a été retardée qu'à cause des gravures, qui en sont une partie inséparable, n'a qu'un petit nombre

d'exemplaires, une partie ayant été volée à l'Imprimerie Royale, pendant les troubles de la révolution. Ceux qui voudraient l'acquérir peuvent se faire inscrire chez le libraire indiqué, ou chez l'Auteur, à Fontainebleau''.

It is thus evident that the book was printed in 1793 but not put on sale before 1808 which is the date of effective publication in the sense of Art. 29. Further in this *Prospectus* Paulet explains he has abandoned his nomenclature of the index in favour of a new one (which appears on the plates). Names of the index are thus not even accepted by the author (The *Traité* and the *Prospectus* were sold together as the *Prospectus* states "Prix 18 Fr broché, 24 fr relié, y compris le *Prospectus*, sans les figures coloriées de cet ouvrage, qui seront vendues avec ou séparément, et qui paraîtront par livraison de plusieurs planches, de mois en mois. Les deux premières sont en vente . . ."') and are not validly published (Art. 34.I.a). If we did go somewhat in detail in this case it is because it is interesting to show the names of Paulet's index which are numerous and usually forgotten except by the most careful bibliographers like Donk are not validly published while they are among those which partisans of a 1821 starting point would be afraid to have to consider.

Bondarzewia montana (Quél.) Singer on which *Boletus mesentericus* Schaeff. would have priority.

Buglossoporus pulvinus (Pers. ex Pers.) Donk on which *Boletus quercinus* Schrad. would have priority. The epithet *quercinus* as in *Buglossoporus q.* (Schrad. ex Fr.) Kotlaba et Pouzar, has in any case been more commonly used than *pulvinus*.

Ganoderma applanatum (Pers. ex S. F. Gray) Pat. on which *Boletus lipsiensis* Batsch would have priority. Atkinson, following the American Code already made the combination in *Ganoderma*. If *Ganoderma applanatum* is a well known name it is however quite ambiguous for "it has been made a receptacle for quite a number of closely related or more or less similar species from all parts of the world. The resulting mess has not yet been sorted out, . . ." (Donk, 1974, p. 218). In Europe the confusion with *G. adpersum* (S. Schulz.) Donk has been especially frequent. The loss of such a name is thus not very dramatic.

Phellinus pomaceus (Pers. ex S. F. Gray) Maire, on which *Boletus tuberculatus* Baumg. would have priority.

Polyporus badius (Pers. ex S. F. Gray) Schw. on which *Boletus durus* Timm. would have priority. This species had a confused nomenclatural history and an additional name change would not make much difference.

In conclusion, a single disagreeable name change (*Phellinus pomaceus*, a not uncommon, well defined fungus of some phytopathological importance) would occur. All other name changes cited above would affect rare species or species with an already confused nomenclatural history. This is an extraordinarily low price to pay for a system so much easier to use and which gives us a real hope to soon reach stability in the nomenclature of fungi.

Example 2: The Gasteromycetes

For the West European Gasteromycetes, that is about a hundred species, only 3 names changes would occur, one disagreeable, one satisfactory, one unimportant.

Those would be:

Lycoperdon pedicellatum Peck (a rare species) would become a later homonym of *L.p.* Batsch and be replaced by *L. caudatum* Schroet.

Gastrum sessile (Sow.) Pouz., a name only introduced in 1971 would be replaced by *G. fimbriatum* Fr., the best known name for the fungus, since *Lycoperdon sessile* Sow. would lose priority as a later homonym of *L.s.* Retz.

Gastrum recolligens (Woodw. ex Rehl., em. Sow.) Desv., a name only in use since 1957, would be replaced on priority grounds by *G. corollinum* (Batsch) Hollós a name that is about as well known.

We can add that in the genus *Lycoperdon* taken on a world basis a single other change than that involving *L. pedicellatum* is expected: *L. atrum* Pat., another rare species would become a later homonym of *L. atrum* Schaeff.

Persons anxious about the consequences of our proposal raised the problem of resurrected Adanson generic names and of homonymies in the genus *Amanita* because of the existence of *Amanita* Dill. To the first point one must say, many Adansonian generic names are in existence

today for they have been validated after the 1821 starting point notably by Kuntze. Anyway the first lists of nomina generica conservanda were drawn in great part against those Adansonian names and adding a few fungal ones presents no special problem.

For the *Amanita* question it would be necessary to conserve *Amanita* Pers. (1797) against *Amanita* Dill. ex Boehmer (1760) and *Amanita* Adanson (1763). One should note *Amanita* Dill. is in the present system validated by Rafinesque (1830). Using Streinz's Nomenclator (1862) for combinations in *Amanita* Dill. ex Boehmer and Gilbert (1940) for a checklist of current *Amanita* names, we found only two homonymy problems which are of minor importance: *Amanitopsis punctata* Ueland and Shell, a taxon from Australia which Gilbert treats as *A. vaginata* var. *punctata*. The existence of an *A. punctata* Lam. would render illegitimate the combination in *Amanita* Pers. only introduced in 1980 by Reid. The other case is *A. calyptata* Peck non Lam. The existence of the Lamarckian homonym was the reason for Murrill, following the American Code, to introduce the new name *Venenarius lanei*. If Gilbert uses *A. calyptata*, the name in current use in the US is however *A. calyptroderma* Atk. and Ballen. *A. calyptroides* Peck is yet another available synonym. Lamarck also made the combinations *Amanita verna* and *vaginata*; those will be covered by Art. 62.2 and hence unproblematic.

Bibliographical Aspects

To those persons who seem to be afraid that a 1753 starting point for the whole of the fungi would oblige us to unearth a mass of obscure literature, we must firmly affirm that the bibliographical problems of pre-1821 literature are less troublesome than those of the post starting point revalidating literature.

The reason is pre-1821 literature that ought to be searched for original descriptions is strictly taxonomic. This is much more restricted in scope than the revalidating literature which includes any work where a fungal name is cited. Pre-1821 taxonomic literature is a finite quantity of which an exhaustive search is conceivable. The literature potentially holding revalidations with the present system is practically infinite and its exhaustive search is an asymptotic ideal while its exact sequencing is hopeless.

Further, pre-1821 taxonomic literature should already be familiar to mycologists as a source of validated names of which the consultation is essential for a correct interpretation of protologues and to lichenologists and mycologists working with Myxomycetes (from 1753 onward) and to students of rusts, smuts and Gasteromycetes (from 1801 onward). It also is frequently a general botanical literature well known to phanerogamists. Further, before 1909 and until the thirties for the follower of the American Code it was fully relevant and was taken into accounts by works like Saccardo's *Sylloge*, North American Flora and the very complete nomenclators of Steudel (1824) and Streinz (1862).

The taxonomic character of this literature also means it is better studied by bibliographers and is thus better covered by Pritzel, Lindau and Sydow or Stafleu and Cowan than the local floristic or other works to which later starting points have *a posteriori* granted an exorbitant nomenclatural importance.

Since those works are often of general interest they are more liable to be available on microfiche or as reprints than local works relevant only to mycological nomenclaturists. Their age adds to their rarity but the limited interest of some of the revalidating works means they are even more difficult to locate than precious eighteenth century works which even if existing in few copies are usually present in the main libraries used by nomenclaturists.

The Case Against Prop. 31

Finally we must comment of Proposal 31, presented concurrently to Prop. 32 by the IMA (van Warmelo, 1979). It should be made clear that this received very limited

support following a detailed scrutiny among the starting point committee of the International Mycological Association and was only presented as a result of an open meeting at the IMC.2 attended by mycologists who had not studied the problem in depth. It must be vigorously opposed. Its consequence on nomenclatural stability would be catastrophic: the protected status of Fries' *Systema* vol. 2 and 3 and *Elenchus* would be deleted. All the Ascomycetes, the most numerous and economically important group of fungi, would thus be left without starting point book and many names which have come in current use because they were protected against earlier homonyms and synonyms would have to be dropped.

For example of the 26 *Helvella* species, recognized by Dissing (1966), the names of 4 (15%) including the 3 most common Northern Hemisphere species would change:

Helvella macropus (Pers. ex Fr.) Karst. would be superseded by *Peziza stipitata* Bull. ex Mérat (combination in *Helvella* to be introduced). *Peziza sublicia* Holmskj. ex Pers. would also be an earlier synonym.

Helvella crispa Scop. ex Fr. would be superseded by *H. mitra* L. ex St-Amans. *H. leucophaea* Pers. ex S. F. Gray would be another earlier synonym.

Helvella lacunosa Scop. ex Fr. would be superseded by *H. sulcata* Willd. ex S. F. Gray.

Helvella atra Holmskj. ex Fr. would be superseded by *H. nigricans* Pers. ex Pers.

This by the way shows how the “:” status and not the 1821 starting point date is fundamental in shaping our present nomenclature of Ascomycetes. Only 2 names in those *Helvellas* are apparently protected by the later starting point. One *H. elastica* Bull. ex St-Amans is protected against the devalidated *H. laevis* Berg.; the protection given by the starting point date is however not necessary for a more complete one is given by the fact the name is used by Fries in the *Systema* vol. 2. For the other, *Helvella leucopus* Pers. the protection against *H. spadicea* Schaeff. is only apparent. Dissing had missed the revalidation of that name by Leman discovered by Petersen (1977a) in a particularly obscure 1821 publication. With or without a later starting point, the correct name for *H. leucopus* is thus inescapably *H. spadicea*.

Proposal 31 has nothing to commend itself: it will leave intact the later starting point problem of search for the revalidating author and will destabilize current nomenclature inordinately with no compensating advantage whatsoever.

The result would be the exact opposite of Proposal 32 which would solve the problems raised by later starting points while preserving current nomenclature.

If mycological nomenclature is not to become an increasingly sterile bibliographic game, which will only serve to bring our nomenclatural rules into disrepute, we cannot overemphasize the need to accept Prop. 32 and reject Prop. 31.

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