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How are the names Williamsonia and Wielandiella to be used?

A question of nomenclature.

By

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There has lately been much confusion in the use of the name *Williamsonia*.. When WILLIAMSON in his well-known paper[1] described the reproductive organs which he thought borne by the same plant the fronds of which were long before named *Zamia gigas* by LINDLEY & HUTTON, he employed this latter name for all the organs of the plant.[2] Although this was in perfect harmony with the rules of priority, it seems rather curious that the great English palaeobotanist did not prefer the generic name *Zamites* already used by STERNBERG and by MORRIS. For the flowers so carefully described by WILLIAMSON had evidently nothing in common with those of the recent genus *Zamia*, in which the fossils accordingly could not reasonably be included.

It was CARRUTHERS who, in his renowned paper[3] on the fossil cycadean stems from the secondary rocks of Britain.

[1] W. C. WILLIAMSON, Contributions towards the history of *Zamia gigas* LINDL. & HUTT. Trans. Linn. Soc. London. Vol. 26. 1870.

[2] It must therefore be 'a slip of the pen' when, in the list of synonyms for *Williamsonia gigas* in Professor SEWARDS Jurassic flora of the Yorkshire coast, *Zamites gigas* is cited as having been used by WILLIAMSON.

[3] W. CARRUTHERS, On fossil cycadean stems from the secondary rocks of Britain. Trans. Linn. Soc. London. Vol. 26. 1870.

proposed the new generic name *Williamsonia* for those cycadophytes whose reproductive organs were built in accordance with those described by WILLIAMSON. The name was employed not only for the reproductive organs themselves but also for the plant as a whole.

Whether CARRUTHERS meant that the leaves, even when found isolated, were also to be named *Williamsonia gigas*, *W. pecten*, etc. or whether they should retain their old names (*Zamites gigas*, *Ptilophyllum pecten*, etc.), seems uncertain. Butacc ording to the rules of priority it seems rather reasonable that, if the same name was to be employed for all organs of the plant, the earlier name for the leaves ought to have been preferred. On the other hand, there could naturally be no objection whatever to creating a new name for the reproductive organs themselves, which at that time through WILLIAMSON'S investigations had for the first time become more thoroughly known. And for those organs no better name than *Williamsonia* could have been chosen.

Names of their own for reproductive organs or fruits are, as is generally known, employed for many fossil genera, just as, for instance, we speak of grapes as being the fruit of the vine. And also other organs of the same fossil plant may have different names. For instance *Lepidostrobus* means the cones of fructification, *Lepidophyllum* the sporophylls, *Stigmaria* the roots of *Lepidodendron*, while different cortical surfaces of the same plant are known as *Aspidiaria*, *Bergeria*, *Knorria* or *Lyginodendron*. In similar manner we have *Calamostachys*, *Calamocladus* and *Calamites*; *Cordaianthus*, *Cordaicarpus*, *Cordaicladus*, *Artisia* and *Cordaites*, etc., etc. So far from causing any confusion this method of employing different names for different parts of the same fossil has, on the contrary, shown itself both necessary and satisfactory. For already from the name one learns at once the nature of the fossil in question. If, on the other hand, no other name than *Lepidodendron* were to be employed also for the strobili, the sporophylls, the roots, the

different bark surfaces, etc., one might easily imagine the long paraphrases that would be necessary for every description.

In analogy to *Lepidostrobus*, *Cordaianthus*, *Calamostachys*, etc. the name *Williamsonia* should consequently, according to my opinion, be employed for the reproductive organs alone or for the plant as a whole, while the leaves should retain their old names *Zamites*, *Ptilophyllum*, *Otozamites*, etc. I cannot think it more repugnant to say that *Williamsonia* means the reproductive organs of the genera just mentioned than to say that *Lepidostrobus* means the cone of *Lepidodendron* or *Artisia* the pith-cast of *Cordaites*. By employing this method, as I have repeatedly urged, there will be no confusion whatever. If, on the other hand, *Williamsonia* is used as generic name for the fronds also then we shall be obliged to regard those species of *Zamites*, *Ptilophyllum*, and *Otozamites* the reproductive organs of which are of *Williamsonia*-type as all belonging to the same genus. I for my own part will not lay too great a stress on the circumstance that such a procedure is against the laws of priority, *Williamsonia* being the younger name. But considering the almost fanatical manner in which the rules of priority at present are enforced, it ought not to be forgotten that the only chance of saving the name *Williamsonia* for the future is to employ it in the manner here proposed.

It is, however, mainly from a practical point of view that the question should be discussed. That all confusion is avoided by the method here proposed has already been mentioned. But the great uncertainty which follows from employing *Williamsonia* as a generic name including fronds should also be accentuated. For instance, from the statement that *Williamsonia pecten* has been found in a certain deposit, one cannot draw any conclusion whatever as to whether this means fronds or flowers or both. A couple of years ago a well-known German dealer in minerals and fossils offered several species of *Williamsonia* from Yorkshire in his catalogue for sale. In order to ascertain

if he had any flowers, I was obliged to make an inquiry and the result was that he only meant fronds; but this man was naturally not to be blamed, since he had followed the nomenclature used by some English palaeobotanists.

There arises the further question: where is the employment of *Williamsonia* for *Zamites*, *Ptilophyllum*, etc. to finish? If it is not the intention that all species of the latter genera should be named *Williamsonia*, where are then the limits to be drawn? Every palaeobotanist ought to understand that the method here criticized must result in a dreadful confusion, since no distinct rules can be followed and the decision consequently will be left to the arbitrary opinions of the different authors.

And there is, lastly, another point which should not be overlooked. Although it is hardly to be doubted that *Williamsonia gigas* is the flower of *Zamites gigas*, *W. spectabilis* that of some *Otozamites*, *W. whitbiensis* that of *Ptilophyllum pectinoides*, *W. pecten* that of *Ptilophyllum pecten*, it ought not to be forgotten that this has not yet been definitively proved.

Now it is quite natural that one is inclined to accentuate the close relationship which exists in the genera already mentioned regarding the organs of reproduction. This, however, is made sufficiently evident by including them in the same tribus or family. CARRUTHERS in his paper referred to employed the name *Williamsonieae* for a tribus the reproductive organs of which were built in accordance with those of *Williamsonia gigas*. In our present state of knowledge this tribus ought rather to be considered as a family, *Williamsoniaceae*, at the side of *Bennettitaceae* under the class *Bennettitales*. Now, if *Zamites*, *Ptilophyllum*, and *Otozamites* in descriptive papers are placed in this family, it follows of itself that their reproductive organs are *Williamsonias* and, consequently, there is no reason why they should not, henceforth as before, be held as separate genera characterized by the different structures of their fronds.

Summarizing what has been urged above, therefore, I consider that not only in accordance with the rules of nomencla ture but still more for practical reasons the generic names *Zamites*, *Ptilophyllum*, and *Otozamites* should be employed for the fronds, while *Williamsonia* (and *Weltrichia*) should be confined to the organs of reproduction only or to the plants as a whole.

What has here been said concerning *Williamsonia* also holds true for *Wielandiella*. The type specimen, *W. angustifolia*, was originally described as a species of *Williamsonia* but was afterwards brought to a genus of its own, characterized by bisporangiate strobili and highly reduced microsporophylls. Besides, the slender stems are distinguished from all other cycadophytean stems known by their repeated forking and the position of the strobili at the points of bifurcation. It has been shown by the present writer that the leaves borne by these stems belong to *Anomozamites minor*. Now in all my papers concerning *Wielandiella* I have always found it convenient to retain the original name *Anomozamites minor* for the leaves, confining *Wielandiella* to the plant as a whole, the strobili and the stems, since both the latter generally occur in organic connexion with each other. The method thus employed has in every way proved satisfactory and every confusion has been avoided.

It is therfore regrettable that Mr H. H. THOMAS in a recent paper[1] employs the generic name *Wielandiella* for the fronds formerly known as *Anomozamites Nilssoni*. It is probable that these fronds have been borne by stems of the *Wielandiella* type, the more so as some fragmentary specimens have been found in the same deposit, although, 'nothing can yet be said for certain as to the real nature of these stems'. But the connexion has not been proved; and therfore the nomenclature — *Wielandiella* (*Anomozamites*) *Nilssoni* — employed

[1] H. HAMSHAW THOMAS, The fossil flora of the Cleveland district. Quart. Journ. Geol. Soc. 69 (1913).

by Mr THOMAS is at all events premature. But even if the connexion between stems and leaves could be demonstrated, there is no reason whatever why the leaves should not retain their original name. By acting otherwise the same confusion as in the case of *Williamsonia* will arise; and I consequently must insist on the method employed by myself in the case of *Wielandiella angustifolia*, viz. that the name *Wielandiella* should be confined to the plant as a whole, the reproductive organs and the stems, while the leaves henceforth as previously should be named *Anomozamites*.

If our efforts to find a good nomenclature are intended to facilitate study and to avoid confusions, then I think it necessary that the methods here proposed should unhesitatingly be employed by my palaeobotanical fellow-workers.