

In regard to its right to a place in the genus *Uredo*, where the able Mr. Bauer has placed it, unquestionably, in looking at the figure above quoted of his *U. nivalis*, ff. 1—8, *U. Graminis*, 9—10, and *U. fetida*, f. 11, these would all appear to belong to one and the same genus. I do not possess, at this time, any specimens of *U. fetida*, but I presume that it denotes the *Stinking or Bladder Brand* of the Norfolk farmer, the *U. Caries* of De Candolle, of *Hooker's Fl. Scotica*, and *Greville's Fl. Edinensis*; the *U. sitophila* of Ditmar in *Sturm's Fungi of Germany*, tab. 34. If this be the case, then, setting aside the different places of growth, which I must yet allow to be of some consequence in these minute vegetables, there is the remarkable distinction that the extremely minute *sporules* are themselves enclosed in a *sporidium* or kind of capsule, which is not the case with our plant. The *Uredo Segetum* I take to be that of Persoon, and most authors; and, to quote figures, the *Reticularia Segetum* of Bulliard's *Champignons*, t. 472, the *Ustilago Segetum* of Link, in *Sturm's Fungi of Germany*, t. 33, what is commonly called the *Smut or Pepper Brand* by agriculturists. I am aware that most authors, and amongst them I myself in the *Flora Scotica*, have described this species as having its sporules forming a copious black dust, *naked*, attached within the fruit or glume of grasses; in other words, *destitute of sporidium*; and, on again looking casually at my specimens, I find such to be the case in a great many instances; but, on a more strict investigation, I clearly discover a number of *sporidia*, which have not yet shed their dust*; so far according with the character of *U. Caries* (or *fetida*), but differing in the shape of their sporidia. Mr. Bauer has, perhaps, only observed the sporidia before they were burst, and I am the more inclined to this supposition from the circumstance of his having given that tuberculated appearance to his plants (f. 9.), which indicate their containing sporules. Nothing of this kind is observable in the Arctic plants.

Upon a consider- a of all these circumstances, I cannot but think that the *Red Snow*, although not decidedly a *Palmella*, since the granules are not immersed, yet approaches much nearer to it than to *Uredo*†; and, perhaps, Lyngbye's generic character might, without inconvenience, be modified so as to include it.

On a subject, however, of such minuteness, and which has excited so much attention, I was not willing to rest satisfied with the result of my own unaided investigations. Mr. Greville, who has examined the plant, quite agrees in the above remarks; and Captain Carmichael, to whom I communicated specimens, was kind enough to write to me as follows respecting it:—"I was anxious to see the *Red Snow*, having read a great deal of discordant opinion respecting its nature; I have examined it with some care, and from all I know of *Uredo*, it does not appear to have the slightest affinity with that genus. The *Uredos* are all parasitical, and the sporidia are attached by more or less of a pedicel to the matrix. But there cannot be parasites upon snow, any more than on water; and, as you have remarked, the sporules of this plant are merely imbedded in gelatine, without any kind of attachment. A *Palmella* it may be, according to the present loose construction of that genus, but surely very far removed from *P. cruenta*. In the latter, the sporules are all of the same size, and buried in the gelatine; whereas in this plant, they are of twenty different sizes, and the larger of them are twenty times the size of those of *P. cruenta*. They are, besides, protruded in such a manner as to render the whole surface granular. Of all the plants I am acquainted with, it comes the nearest, in general habit, to *P. botryoides*; but its internal structure is widely different. On the whole, I should think, as you have asked me to give my opinion, that you may safely arrange the *Red Snow* among the *Palmellæ*. It has, at least, a better title to rank there than *P. botryoides*. The great diversity in the size of the sporules, peculiar, I believe, to the Arctic plant, cannot be considered as a generic objection, though it will form a good specific distinction."

* If a fully formed sporidium be put into water, it bursts after a little time, and the numerous sporules, which have been considered to form the entire plant, will float about in great numbers upon the table of the microscope.

† Professor Agardh, of Lund, has, since the above account was written, described the *Red Snow* as a new genus, under the name of *Rotococcus nivalis*.