On a New Species of Grass, *Bromus interruptus*, in Britain. By
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[Read 5th December, 1895.]

THE history of the species is as follows :—In 1888 I found what I thought was a peculiar variety of *Bromus mollis* occurring in considerable quantity in a barren chalky field, in which a crop of barley had been sown the preceding year, but which was then lying fallow. The field is situated on the Lower Chalk formation between Unwell Wood and Blewburton Camp, in Berkshire. In the adjoining fields *B. mollis* var. *glabrescens* occurred more frequently than the ordinary form. Subsequently I found the same peculiar form in smaller quantity, in a clover field on the same geological formation on the Oxfordshire side of the river, between Goring and Gathampton. An examination of our herbaria and of botanical works having failed to yield anything like these specimens, I sent a supply to the Botanical Exchange Club in 1888, under the name of *B. mollis* var. *aggregatus*. One of these Berkshire specimens was sent to Professor Hackel so labelled. He quite agreed in considering it a new variety, and while offering to retain my suggested name thought that the name *interruptus* would be more suitable, to which I willingly acceded. Professor Hackel diagnosed it as follows :—“*B. mollis* L. var. *interrupta*, mihi (Hackel). Panicula brevis, interrupta, spiculis glomeratis obovato-ellipticis, gluma sterili superiore dimidiam spiculam æquante vel superante. Affinis *B. molli* var. *conglomerato*, Persoon, Syn. i. p. 8, cujus panicula æqualiter compacta, spiculæ angustiores, villosiores.”

For the last seven years I have kept the plant under observation. I find it comes true from seed, and it is fairly persistent in its localities. It must be borne in mind that so far it has only been met with in arable ground. It is by no means confined to the two fields where I first discovered it in 1888, but is found over a considerable area of the Lower Chalk cornfields.

This season it was very abundant in a field of vetches near Upton, in Berkshire. From the result of my observations I was led to believe it to be at least sub-specifically distinct from *B. mollis*, and I had described it as a species in my forthcoming

‘Flora of Berkshire.’ This summer Mr. L. Lester found it in a sandy cornfield, on the Coralline Oolite, between Elsfield and Headington, near Oxford, and pointed out to me that in his specimen the inner pale was split to the base. I was at once struck with the importance of this character in deciding upon its specific position, and in order to test its constancy proceeded to examine all the specimens of *Bromus* I could meet with. The result of my investigations is that I find all the specimens of *B. mollis* and its varieties, *glabrescens* and *Lloydianus*, have the upper pale entire. Some hundreds of specimens from Britain, France, Germany, Austria, Russia, Hungary, Turkey, Madeira, and Tasmania have been examined. I have also never found specimens of *B. commutatus* or *B. racemosus* with the upper palea split. On the other hand, all the specimens of *B. interruptus* which I have examined have the inner palea split to the base. This is true, not only of my gatherings of 1888, but of those gathered since that time. The specimens which have been cultivated by Mr. F. Tufnail as the var. *interruptus*, and for seeds of which I am indebted to him, show the same character. It may be well to add that specimens labelled *B. mollis* var. *interruptus*, which were collected by Captain Wolley-Dod, near Dartford Hospital, in West Kent, and sent to the Exchange Club in 1893, were referred to *B. mollis* by Professor Hackel. The two specimens in my possession from that locality, and which I referred to *B. interruptus* from their general appearance, show on examination that the palea is split.

The question may be asked: Is *B. interruptus* a native plant to Britain? This question I am unable to answer positively in the affirmative. We may urge in its favour that when it was sent to Professor Hackel seven years ago it was a new form to him, nor since that time have I been able to see a continental specimen. From its occurring exclusively in arable ground and chiefly in crops of vetches, seeds, and clover, it may be urged with some force that the designation colonist would be more suitable. In these fields I have not observed any specimens of *Silene dichotoma*, *Crepis taraxacifolia*, or *C. nicæensis*, which are often present among continental grass seeds. *B. commutatus* occurs with *B. interruptus* more frequently than *B. mollis*, although I have seen these two growing together. The suggestion of its being a form due to local peculiarities of soil is, therefore, not tenable.

Mr. F. Tufnail tells me that it has been cultivated at Reading by the side of *B. mollis*, and that it keeps quite distinct. *B. interruptus* is not so much inclined to vary either as to height or condition of hairiness as *B. mollis*, and seeds of the two species may be separated one from the other.

Since the publication of the eighth edition of the 'London Catalogue' more than a hundred species have been added to the list of British plants; it is scarcely probable that botanists of another decade will agree in retaining all of these. In bringing forward the claims of an aspirant for specific distinction, I place stress upon a well-marked character which differentiates it from its nearest ally, this structural character not being made out until its peculiar habit, its more perennial growth, &c., had marked it as being a probably distinct species. In fact the suggestion made by the lamented Professor Babington in his preface to the 'Manual,' has in this instance been complied with, namely, to make the species afford the character, not the character the species.

I have seen specimens of *B. interruptus* from Oxfordshire, Berkshire, Buckinghamshire, W. Kent, and Norfolk. Mr. Tufnail says he has found it rather plentiful near Lowestoft, in Suffolk, and that he had seen specimens from Lincolnshire.

BROMUS INTERRUPTUS, mihi. Herba annua, biennis aut perennis, sæpius perennis. Spiculæ in pedicellis brevibus rigidis singillatim (alternatim dextrorsum et sinistrorsum) in rhachide dispositæ; singuli pedicelli cum 3-5 sessilibus aut subsessilibus spiculis apice pedicelli racemosim dispositi. Panicula, florem et fructum gerens, erecta angusta evidenter *interrupta*. Spiculæ, florem et fructum gerentes, erectæ primum ovali-lanceolatæ acutæ; proventu ovales et obtusæ cum 6-12 floribus glauco-viridis pubescentes. Gluma interior et vacua dimidia non supra in partem sexti floris (tertii floris in eodem latere) producta. Glumæ, florem et fructum gerentes, arcte imbricatæ. Palea inferior exterior marginibus dimidiâ parte inter mediam paleam et apicem utroque latere obtuse angulata, 5-7 costata; apice nonnihil emarginata, pubescens aut subglabra marginibus late scariosis. Arista ex una emarginatione inferioris paleæ procedens, fere directa aut erecta, paleâ nonnihil brevior. *Palea superior interior (gluma florens superior) pæne ad basin in binas angustas lanceolatas partes, paleâ*

inferiore vel exteriori dimidiâ parte aut duâbus partibus minus longas, divisa.

Synonym. *Bromus mollis*, Linn. var. *interruptus*, Hackel, in 'Report Botanical Exchange Club British Isles for 1888,' p. 240.

The most striking feature of this plant when first seen is the inflorescence, which differs from all other species of *Bromus* known to me, in that single short stiff pedicels arise, alternately right and left of the main rachis, each bearing at its extremity 3-5 sessile (or in some cases shortly stalked) spikelets. To this fact is due the peculiar and strikingly interrupted and compact appearance of the whole inflorescence, which is made up of two rows of clustered groups of 3-5 spikelets.

This peculiar feature does not obtain in its nearest allies, since in them 4-5 slender pedicels of various lengths arise at the same level on the rachis, each bearing one or two, rarely more, spikelets; hence the inflorescence in these species is more loosely continuous.

As will be seen, the alliance of *B. interruptus* is essentially with *B. mollis*, since the larger or inner glume extends half way to the apex of the sixth floret (the third on the same side), whereas in *B. racemosus* and *B. commutatus* it reaches only to the fourth flower (the second on the same side). The texture and pubescence too of the spikelets of *B. interruptus* are similar to those of *B. mollis*. The character which at once separates *B. interruptus* from *B. mollis*, *B. commutatus*, *B. racemosus*, &c., is to be found (as pointed out to me by Mr. L. Lester, M.A., of St. John's College, Oxford) in the upper pale (the inner palea of Parnell), which is uniformly split to the base, and is much shorter than the outer or lower pale.

B. interruptus is further distinguished from *B. mollis* by its more perennial growth, its greater height, and narrow strict interrupted panicle. The fruits of *B. interruptus* are shorter and darker in colour with a more conspicuous groove. In *B. mollis* the palea is more or less adherent to the surface of the caryopsis, than which it is slightly narrower, so that a small margin of the fruit is to be seen. In *B. interruptus* the pales are only rarely adherent and then not to the face but to the margins of the fruit. I can see no difference in the lodicules. The suggestion may be made that the split palea may be an accidental rupture during the growth of the fruit. That it is

not due to this cause is evident from the fact that examination shows the pales are split from its early flowering stage.

[In all the examples of *B. interruptus*, Druce, the upper pale is, even in the young flower, divided to the base or at least $\frac{1}{6}$ ths of its length into two subequal lanceolar lobes; each of these has the green nerve down its middle (not exactly median), and the two lobes stand soon rather divaricately apart. There is nothing in any other species of *Bromus* approaching this; and no such complete division of the upper pale is well established in the whole order. Dr. Stapf has lately examined into the few alleged cases of the occurrence of a split upper pale in grasses; and he cannot find in verifying these any case parallel to that of *Bromus interruptus*; the split is either only partial, hardly half-way down, or it is mechanical, *i.e.*, does not exist in the young flower.

Hackel, of course, overlooked the split pale in *Bromus interruptus*, because he never thought of looking for anything so abnormal.

Dr. Stapf argued, when Mr. Druce's paper was read, that *Bromus interruptus*, Druce, must be treated as a monstrosity and could in no case be made a new species. It may indeed be maintained that the character of the completely bifid upper pale is either generic or monstrous, one or the other, and cannot be specific.

The remarkable uniformity with which the upper pale is split to the base in every flower, in every specimen yet got from diverse localities, may be held to negative for the present the view that *B. interruptus* is a monstrosity. Of all the innumerable species proposed as split-offs from *Bromus mollis*, there is no one so well worth a specific name as *B. interruptus*, Druce, and no one to be compared with it in morphologic interest.—
C. B. CLARKE.]

The foregoing note in square brackets was drawn up 25th June, 1896, from materials kindly supplied by Dr. Stapf.