

THE NEW GENUS *BROMELICA* (THURB.) FARWELL.

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THE arguments adduced by Mr. Farwell in support of his proposed new genus *Bromelica* (RHODORA 21: 76–78) are very convincing as long as the delimitation of *Melica* is based on the characters taken by most American authors as distinctive. Certainly if the genus is established primarily on the texture of the lemmas and the arrangement of the uppermost into a club-shaped mass, it becomes very difficult to construct any key that will place the species *striata*, *Smithii*, *aristata*, *subulata*, *Harfordii* and *Geyeri* under the genus. Yet, as Mr. Farwell points out, this is just what American botanists have done, with results that have led to much inconsistency and confusion. If these are indeed the characters that distinguish *Melica* from its allies, a subdivision of the genus seems inevitable.

But the question arises whether the characters above stated are correctly taken as those on which the genus is established. Undoubtedly it is excluded from Aveneae for the reasons advanced by Mr. Farwell, i. e., the glumes are *shorter* than the lower floret, and the rachilla is not prolonged. Clearly then it belongs in Festuceae, as long as that tribe is delimited as at present. Just as clearly it is separated from *Festuca* by the bifid apex of the lemma. Apparently then *Bromus* is its nearest ally among the North American grasses. But cannot some less minute character than the pubescence of the grain or its adherence to the palea be found to distinguish *Melica* from *Bromus*, which will at the same time permit the retention of the species of Mr. Farwell's *Bromelica* under the original *Melica*?

After a careful study of Hackel's key to the Festuceae (in Engler & Prantl, Nat. Pflanzenfam. ii. Abt. 2, 61–64), I cannot feel that he regarded the texture or arrangement of the lemmas as determining characters, or that he would have accepted the prevailing American delimitation of the genus. The essential facts seem to him to be (1) the *presence* of imperfect florets on the upper part of the spikelet; (2) the *number* of such florets — not their texture or arrangement. The genera in which these sterile or empty lemmas are uniformly *two or more* might then be set off from those in which normally only *one*,

and that the uppermost, lemma is sterile or empty — in which group both *Festuca* and *Bromus* would be found. Those in which two or more imperfect florets exist might be further subdivided into

- (a) Lemmas 1–3-nerved, including *Eragrostis*, *Sphenopholis*, *Koeleria*, and *Catabrosa*.
- (b) Lemmas 3–5-many-nerved, including *Diarrhena* and *Melica*, as well as the South American *Anthochloa*, the African *Harpachne*, and the Australian *Ectrosia* and *Heterachne*.

It must not be overlooked that occasionally specimens of *Festuca* or *Bromus* are found with more than one empty lemma; but these are the exception rather than the rule. Tribal and generic differences must be based on *prevailing* rather than *universal* characters, and there can be no doubt that the *single* empty lemma predominates in *Festuca* and *Bromus*, just as in *Melica* and its allies the existence of more than one imperfect floret is fairly constant.

If these characters be taken as the basis of our dichotomy, the subgenus *Bromelica* may still remain in *Melica*, because it agrees in having uniformly more than one imperfect floret; and the membranous texture and more remote arrangement of the upper lemmas become characters of subgeneric rank. The nearest ally of *Melica* among American grasses would then not be *Bromus* or *Festuca*, but *Diarrhena*, from which it would be easily distinguished by its three stamens (*Diarrhena* having 2 or rarely 1) and 1 lodicule (*Diarrhena* having 2).

Melica would further be distinguished from the other genera with more than one imperfect floret as follows: *Heterachne* and *Harpachne* have lemmas and glumes *keeled*, *Anthochloa* has the lemmas *fan-shaped*, *Lophatherum* and *Ectrosia* have the sterile lemmas *awned*.

But the attempt to distinguish *Melica* on texture and arrangement of the upper lemmas alone will, as Mr. Farwell has pointed out, never be satisfactory. I am inclined to think, however, that the problem is not to be solved by a segregation of the genus, but by an attempt to find a different set of characters on which to base the delimitation; and this cannot be done until we consider the genus in wider relations than those afforded by its North American allies.

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