Notice of two Forms of *Eriophorum angustifolium*. By GEORGE DICKIE, M.D., F.L.S., Professor of Botany, Aberdeen.

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ON 13th May last I happened to visit a locality near Aberdeen where *Eriophorum angustifolium* is rather plentiful; the moor is one of the few places near town which, being still uncultivated, yields a considerable number of wild plants. The *Eriophorum* was in full flower, and there were obviously two forms of it, one with slender spikes having only stigmas visible, the other with shorter and blunter spikes with very prominent anthers and short stigmas; specimens of both were collected for more careful examination. In the forms having stigmas alone visible, I found on dissection that in each flower there were three stamens in a rudimentary condition; and at a later date, May 28th, I found them in the same state, anther and filament together measuring only from a twentieth to a fifteenth of an inch in length, and without a trace of pollen. In the other form the anthers were large and prominent, yielding copious pollen; the stigmas were shorter than the stamens, but were apparently well formed although shrivelled; they had evidently exercised their special function, and this at the time when the stigmas of the other form were still fresh and their tissues full of fluid.

About the end of May the cotton-like appendages were beginning to protrude beyond the bracts in both forms. Plants of each were carefully marked for farther observation; and lest the marks should be accidentally removed or the plants injured by cattle, several were transplanted and kept in a greenhouse that their progress might be noted. It may be necessary to state that the plants were scattered over a surface about an eighth of a mile long by the same in breadth; in four different parts of the moor I found that the two forms grew quite separate from each other, several yards apart. At only one spot they were intermixed, and here I endeavoured to ascertain whether the two had any connexion underground, I failed in tracing any.

In both forms the seeds apparently reached full ripeness, and on dissection there was no apparent difference. The power of germination being, however, the proper test, about forty seeds of each form were sown under precisely the same conditions. Almost every seed of those from the plants with large anthers and short stigmas sprang and continued to grow; not more than five or six of the seeds from the other form showed any sign of life: the ex-

periment was repeated with the same result. It may be necessary to state that the seeds were taken from plants of the two forms growing several yards apart; seeds from individuals growing intermixed were unfortunately not secured for experiment: it is probable that the result would have been different, close proximity of the two being more likely to insure fecundation of the one by the other.

The genus *Eriophorum* is usually defined as hermaphrodite; at least one species must be considered an exception, *E. angustifolium* having two forms, one truly hermaphrodite, the other structurally bisexual, but virtually unisexual, the stamens remaining rudimentary and producing no pollen. Having examined some duplicates of this species from the shores of Davis Straits, I find that they also have the two forms.

It is usual to speak of plants as either hermaphrodite or else bisexual, but in this respect animals and plants may not in every case be strictly parallel. If, as I presume is the ordinary view, flowers of most plants high in the scale are really composite in their nature—as the entire plant is—then only can we say in strict terms that a flower with a single stamen and a solitary pistil is hermaphrodite; such a case may, however, be either homomorphous or heteromorphous. In cases where several perfect stamens occur, either in one whorl or in more than one, there may be only apparent homomorphism; I presume it has not been proved that the pollen of each individual stamen is equally capable of fertilizing the pistil or pistils of that flower. May there not be cases in which stamens of the one whorl are intended to influence the contiguous pistil, and those of the other to fertilize, by various agents, the ovules of some other flower? This is mere conjecture, but there may be some ground for it when we remember that different stamens in the same flower attain maturity at distinct periods, and, in some cases, stigmas and stamens in the same flower also differ in this respect. Plants in which dehiscence of anthers is extrorse also deserve consideration in relation to this subject.