

It may be suggested here that the most satisfactory homology of the parts of the perithecium in *Sphaerotheca* is to regard the oogonium as a uninucleate ascogonium, which, after fertilization, develops directly by division into a row of cells, i.e. into a *single ascogenous hypha*, of which the usual penultimate cell becomes the ascus. This row of cells cannot satisfactorily be compared with the whole 'scolecite' of *Ascobolus*, for that is certainly not, itself, a product of fertilization.

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THE POSITION OF MAXIMUM GEOTROPIC STIMULATION.—In a recent paper in which he discusses the position of maximum geotropic stimulation, Fitting¹ refers to a note by me published in this Journal in 1899². I then obtained results with apogeotropic organs which seemed to prove that the optimum position lay at 45° below the horizontal, but experiments of the same kind and others which are still more conclusive, carried out by Fitting, all indicate that the horizontal is the optimum position. Fitting suggests that the difference in my results is possibly due to a slight deviation from the horizontal in the position of the axis of my klinostat, which error would, as he proves experimentally, be quite sufficient to account for my results.

Although Fitting's experiments are so convincing as to leave little doubt that the error must lie with me, it yet seemed desirable to repeat my experiments.

I again made use of grass-haulms (those of *Lolium perenne*) and fixed them on an intermittent klinostat at an angle of 45° to the horizontal axis (the position of which was most carefully adjusted) so that they were for periods of 25 minutes alternately 45° above and below the horizontal. The results, unlike those of my earlier experiments, quite agreed with those of Fitting, for there was no indication of any difference in the amount of stimulation in the two positions. Of twenty-eight grass-haulms ten remained straight; eleven curved towards the horizontal with an average curve of 6.1°, and seven curved in the opposite direction with an average curve of 11.7°. The experiments, five in number, were all carried on for about twenty-three hours.

In order to obtain more positive results I then employed a method suggested and carried out by Fitting. Inclining the axis of the klinostat 22.5° from the horizontal, I so arranged the haulms that they were alternately horizontal and 45° below the horizontal. Almost without exception they curved decidedly away from the side which was stimulated whilst horizontal, showing that the stimulus in that position is greater than it is when inclined 45° below the horizontal. Of

¹ Untersuchungen über den geotropischen Reizvorgang, Teil I. Jahrb. für wiss. Bot. xli. 2. 1905. See also F. C. Newcombe, Geotropic responses at various angles of inclination. Ann. of Botany, 1905, p. 319.

² On the gravitation stimulus in relation to position. Ann. of Botany, 1899, p. 620.

thirty-seven haulms, thirty-three curved from the horizontal with an average curve of 14° , and only four curved in the opposite direction with an average curve of 4° . There were five experiments, each carried on for about twenty-three hours.

My experiments thus fully confirm Fitting's conclusion that the horizontal is the position of maximum stimulation.

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