## BOTANICAL GAZETTE

AUGUST

pronounced wind effects. In places many seedling trees may be found, though the distribution of these is curiously irregular. In one place only did I find any other tree, and that was a single specimen of the prince's pine, *Pinus Banksiana*.

If it be asked why the white spruce is the first tree to develop on these plains instead of some other of those growing on the upland near by, I can only say that an answer must wait until we know something about the physiology of the which bruce and of other trees of the vicinity.

We turn next to the swales, those long open hollows carpeted by a close turf, and bordered by spruces. The general appearance



FIG. to.—Highly developed swale, looking south; on the left is the edge of the sumily woods with old trees, and on the right a line of much younger trees, here much larger than usual.

of the turf is well shown on the right in fig. 8, and extremely well in fig. 10, which shows pet taps the best-developed of all the swales. The turf is a good deal modified in vegetation by the grazing of cattle and horses, yet its general characters should plainly enough. Originating in the outer hollows with the strawberry, as already noted, the real turf begins with the red fescue grass, *Festuca rubra* (*F. ovina rubra*), which soon drives out the strawberry. To this, as it becomes compact in the inner hollows, other grasses are rapidly added, especially the June grass, *Poa pratensis*, and then the brown top, *Agrostis alba*. After these comes a rush *Juncus Vaseyi*, and the little sedge, *Carex Oederi*. Very likely, also, there are other

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