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PIONEER PLANTS ON A NEW LEVEE. III.

FRANK E. A. THONE.

The present paper is the third of a series of brief notes on the yearly changes in the re-vegetation of a soil area exposed by the building of a new levee in Des Moines in the spring of 1914.¹

In the first paper the general character of the plant pioneers during the season of 1914 was discussed, with speculations as to their probable modes of travel. In the second, note was made of the replacement of the first year's dominating plant, *Amaranthus retroflexus*, by *Chenopodium album*, which gained the leadership through its earlier germination, and of the threatened overthrow of the latter by *Lactuca scariola*.

The writer regrets that the hasty survey he was able to give the place during the past summer (1916), together with his inability to visit it at all during the present spring, do not make possible anything like a comprehensive summary of conditions now prevailing on this strip of ground. However, one or two of the more marked changes seem to be worth recording.

In the first place, the statement made in the spring of 1916 that the goosefoot would probably hold its place as dominant that summer, but have to fight for it with the wild lettuce the following year, proved to be too conservative.

The lettuce was overwhelmingly the dominant, crowding the goosefoot practically to extinction, just as the latter had in its day crowded the pigweed. It was also holding its own against the invasion of *Ambrosia trifida*, which during the two previous seasons had been spreading up the levee from its original restricted territory on the lower end. The two previous dominants had failed to prevent this weed from encroaching on their territory. Scattered among the wild lettuce was a good deal of *Erigeron canadense*, which formed dense clumps here and there. This plant was a newcomer, having appeared for the first time during the preceding season. It may possibly become a contender for first place.

¹Proceedings Iowa Academy of Science, Vol. XXII, pp. 135-142, and Vol. XXIII, pp. 423-426.

The most interesting thing about the conditions on the levee last summer, however, was the start that was being made toward a second re-vegetation of the upper end of the levee, which had been denuded by grading operations early in the year. Only a scattering stand of plants made their appearance during the summer. Of these, the dominant was not the lettuce, which held first place elsewhere on the area, but *Amaranthus retroflexus*, the dethroned and exiled monarch of the first season! It would rather seem as though the whole cycle were about to repeat itself.

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