THE PROGRESSIVE DEVELOPMENT OF THE WHEAT KERNEL—II

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INTRODUCTION.

At the meeting of this Society held in Washington, D. C., November, 1913, I read a paper on this subject in which I presented the results of a series of analyses of Turkey and bluestem wheat cut at three-day intervals during the period of kernel formation. That paper contained a historical review of the investigations concerning the changes in chemical composition of the wheat kernel during its development and ripening and an explanation of the reasons for undertaking our own work, which need not be repeated here.

The results obtained in the first year of this investigation were so different than had been expected and opened so many interesting fields of inquiry that it was decided to continue the same general method of investigation through another year, using a larger number of varieties of wheat, securing larger samples each time, and submitting them to somewhat more thorough examination than had been possible with the limited quantity of material which was available in the first year’s samples. This was done, and the present paper is a report of the results of this work, the wheat having been grown and the samples secured in the summer of 1914, while the analytical work on the samples has been completed only recently.

EXPERIMENTAL DATA.

Four plots were each seeded to a different variety of wheat to be used in this investigation. At blossoming time, however, it became apparent that the seed which had been used on one of the plots must have been very impure, as the crop was very badly mixed. This plot was, therefore, rejected, and only the other three used for the experimental work. The varieties grown on these three plots were of the fife, velvet chaff, and bluestem groups, respectively.

1 Presented at the eighth annual meeting of the American Society of Agronomy, Berkeley, Cal., August 9, 1915.
3 The so-called “velvet chaff” wheat used in this experiment is a variety of