

STUDIES ON THE SEED-SETTING AND
ON THE GERMINATION OF THE SEED,
OF INDIGENOUS GRASSES, WITH PARTI
CULAR REFERENCE TO METHODS FOR
OVERCOMING DELAYED GERMINATION.

BY

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I N T R O D U C T I O N .

The main objective of the present studies was to investigate the potentialities of the assembled indigenous grasses from the viewpoint of their propagation by seed, when the necessity arose for their appropriate utilization in pasture development programmes. The first requirement was to give attention to seeding habits and germinability.

The work was commenced in June 1935 and was continued till the present day, with the exception of a year's interruption as a result of the writer's transfer in 1939. Being a virgin field, the prosecution of these studies were naturally attended with difficulties. The studies were pursued along lines which entertained the greatest chances of ensuring quickest results. The outcome was that a study of the causes of the delayed germination of the seed which should, logically, have been undertaken first, was only recently taken in hand.

Many researchers have given attention to the development of the seed, its physiology, ^{histology} ~~histology~~ and anatomy, and much valuable information has been accumulated on post-fertilization events, but we are still much in the dark about certain of these events, the course of which is seemingly readily influenced by environmental conditions, both external and internal. About the complex problem of embryo unpreparedness, including that of associated factors, there is even less agreement, ^{than what?} though numerous investigators have made contributions towards the elucidation of the basic aspects of both the physiology of germination and of delayed germination. The problem is thus not only a vexed one, but, apparently, one of which the solution will depend upon the progress of our knowledge re-

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garding the basic aspects of growth. The scope of the problem of delayed germination is an immense one, embracing the majority of the fundamental problems of plant physiology.

As only a few authors, such as Nilsson-Ehle (1909 and 1914), Deming and Robertson (1933) and Johnson (1935), have given attention to the question of the inheritance of delayed germination and allied phenomena, there is a great gap in our knowledge, but one cannot help thinking that such inheritance plays a major role and that along the line of breeding and/or selection, there is much scope for improvement. This should be borne in mind.