impotent to create new races until an individual, no different externally from the others, is found whose offspring do not revert as do offspring in general. However, if, after a female, for instance, has attained her final form and coloration, she be subjected to extreme temperature and moisture conditions, the germ plasm of the eggs then maturing is so affected that the beetles developing from them are, for the most part, entirely different from the parent form, even though their entire ontogeny is passed under perfectly normal conditions, and they will breed true, under normal conditions, to their new characters. If this same original female had been returned to a normal environment the eggs which mature under these conditions develop into normal offspring as though their mother had never been forced to give birth to abnormal children. To quote part of a single experiment :

"In May, 1901, I subjected four males and four females from the hibernating population of *decemlineata* to extremely hot (average 35° C.), dry (relative humidity, average 45 per cent.) conditions, accompanied by low atmospheric pressure (19–21 inches) during the growth and fertilization of the first three lots of eggs, which were placed as soon as laid in natural conditions and reared. The last two lots were laid and reared in normal conditions. The first I designated Lot A, the second Lot B. All were reared during their ontogeny from the earliest embryonic stage to adults in normal environment. From 506 larvæ which hatched from Lot A I obtained 96 adult beetles, of which 82 were of the form *pallida*, two of the form *immaculo-thorax*, and 14 unmodified. From Lot B, of 319 eggs I got 61 normal beetles."

In another experiment the action of abnormal conditions on the forming germ plasm brought about inheritable physiological modifications. They had five instead of two or three generations a year, being normal in every other respect. This was kept up through three cycles, when the experiment was stopped. "In the rise of a *five-brooded race* there was a pure, perfectly constant inheritable character arising as the response to stimuli applied to the germ plasm. Eleven years of study of this and related genera have shown that *in none of the family, or relations of the family, are there traces of five-brooded races or species.*"

Unfortunately, further details of the data can not be given here. But an idea of the contents of the paper has perhaps been given. Not even all the conclusions can be quoted. The following, however, can not be passed over : "Variation is to be interpreted upon the basis of response to stimuli directed by the stage of development reached and the nature of the pre-existing stages. Variation is also epigenetic, and not a predetermined character in organisms" (p. 307). "There is not at present