

ishable while they remain in the situation in which Nature deposits them," proceeds to cite numerous instances in which one crop of plants has disappeared on a change of conditions, and another, of different nature, has promptly assumed its place, originating evidently from seeds pre-existing for ages in the soil. He says, "Earth brought up from wells or other excavations soon produces a harvest of plants often very unlike those of the local flora." He goes so far as to express the opinion that earth ejected from considerable depths by a certain earthquake convulsion, to which reference is made, and which soon became covered with vegetation "never observed in that region before," must have brought with it the seeds from which the novel vegetation sprang, under "the influence of air and sun, from depths where a previous convulsion had buried them ages before."

From such facts as those which have been cited, it seems to be proven that the seeds of plants may retain their vitality in the soil and subsoil at least for quite a number of years. The facts show that the germs exist in places where we have no knowledge of their introduction, and in places where they could not probably have been introduced during the human epoch. Whence come the germs of that vegetation which is every where springing up in situations to which recent seeds could not have been distributed? This question has agitated the mind of many an inquirer who would have shrunk from the solution which I venture to offer. Let us examine the facts.

The vegetation which characterized the close of the Tertiary Epoch was probably nearly identical with that existing at the present day under the same climatic conditions. Even in the older Tertiary Lignites we have, according to the investigations of Lesquereux and Newberry, the remains of plants belonging to the following American gen-