body, primordial germ cells included, since they are subject to the coordinating mechanism of the organism.

On this basis there can be no possible question of the association of somatic characters with the germ-cells. It has been shown that any character which has significance in evolution is already a part of the heritage at least to the extent that it is a product of inherited functional capacity responding to some condition within or without the organism. If we are justified in the interpretation of the functions of genes here expressed, any change in functional capacity accruing from use or disuse is no less a part of the heritage.

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TYPE CULTURES

A COMPLETE catalogue has been issued by the American Type Culture Collection. This catalogue can be obtained upon request to the Curator, American Type Culture Collection, John McCormick Institute for Infectious Diseases, 637 S. Wood Street, Chicago, Illinois. The collection now contains about 1,450 cultures including 256 fungi and 200 yeasts. A charge is made for cultures to help defray the cost of maintaining the collection.

L. A. ROGERS
Chairman, Executive Committee

THE ORIGIN OF THE PRAIRIE

A PHENOMENON heretofore unsatisfactorily explained by scientists is the occurrence of the natural grasslands of the Middle West, particularly the extensive prairies of Illinois, Indiana and Iowa. Though most of the theories advanced explain their existence altogether in terms of present physical conditions, I am convinced that rapid drainage prevailing at the time of their origin is a determining factor in their development.

It is generally agreed that lakes or marshes are destined in the course of time to become either forest or prairie. One of the factors which may determine which of these shall be the ultimate stage has not been reported. It has come to my observation that if lakes or marshes are drained quickly prairie develops, if drained slowly forest develops. This relationship occurred to me after I had observed small ponds in Albemarle County in Piedmont, Virginia, for a period extending over twenty-five years. One pond observed was that on my father's land near North Garden, Virginia, which was built in 1888 by filling the lower end of a ravine with dirt and pine brush. This ravine contained a small stream which rose at the foot of a forest made principally of poplars (*Populus balsamifera*), black locust (*Robinia*), white (*Quercus alba*), red (*Quercus rubra*) and black (*Quercus velutina*) oaks. The pond, however, was more directly surrounded by a jack pine (*Pinus virginiana*) forest. Black porters loam soil had been washed down into the pond from the forest mentioned first until there was a deposit of two and one half feet and the pond was then left two feet deep. In the summer of 1904 the dam of the North Garden Pond was broken by a storm. The succeeding vegetation was grass, in which no seedling trees appeared. Though the dam was rebuilt in 1905, since then the pond has been neglected. Due probably to slow leakage caused by crayfish, the water level of the dam has been gradually falling. Following this gradual drainage, the exposed edges have been passing through the willow (*Salix nigra, Salix longifolia*) and cattail (*Typha*) into the pine (*Pinus virginiana*) stage without the intervention of grass.

Another pond observed through a period of years was the Coles Pond on top of Green Mountain, 1,000 feet above sea-level, and surrounded by a virgin oak forest consisting mainly of white (*Quercus alba*) and black (*Quercus velutina*) oaks. The pond was made by an artificial mound of dirt between two hills. When I first saw this pond in 1901 it was covered with coarse grass. Mr. Butler, the manager of Stutsville (the name of the farm), informed me it was broken two years previously by the water after a thunder storm. Mr. Butler refilled the pond in the fall of 1901. Since then it has been gradually drained by seepage. Algae first appeared on the edges such as *Oscillatoria, Spirogyra, Oedogonium* and *Vacheria,* followed by mosses on the edge, but not sphagnum. As the water level dropped, these were replaced in the following sequence: cattail (*Typha*), bottombush (*Cephalanthus occidentalis*), black willow (*Salix nigra*), sand-bar willow (*Salix longifolia*), maple (*Acer saccharinum*), jack pine (*Pinus virginiana*), and at the present time the black oak (*Quercus velutina*), red oak (*Quercus rubra*), sassafras, *Vertifolium,* intermingled with wild grape (*Vitris vulpina*).

Recently, further study under Dr. H. C. Cowles in the Chicago region has provided additional data. Prairies, for example, are developing to-day from Calumet Lake near Chicago. Sedges are encroaching rapidly upon the bulrushes as the new soil is gradually raised higher and higher above the lake, and in turn the encroaching of grasses upon the sedges is resulting in a prairie. Skokie marsh and hog marsh are also undergoing transformation of this character. Sometimes with the prairie grasses are a number of