

FURTHER NOTE ON THE HURST COLLECTION OF GENETICAL
MATERIAL IN THE CAMBRIDGE UNIVERSITY LIBRARY

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WHEN I wrote the note for *Heredity* (34, 2, p. 279, 1975) on the Hurst Collection of Genetical Letters deposited in the Cambridge University Library, I did not know that all C. C. Hurst's working materials would be joining them. This, however, is now the case, and notebooks, papers, etc., of the early Mendelian work at Burbage, followed by those of the genetic work carried on at the considerable Experiment Station Hurst founded there to apply genetics to agricultural and horticultural problems, are now with the letters.

The 1914 War interrupted this work, Hurst himself being in the Army for the duration of the war as were most of his men, and it was not till his return in 1919 that experiments could be continued, although the more important stocks had been kept going by a few older men, especially those on egg production in poultry for the Development Commission, and the preservation of genetically pure lines in various crop plants in which the impurity of stocks and seeds had been such a menace to agriculture and horticulture that this had been one of the chief projects of the Station.

Economic conditions and the general disruption—the experimental ground had been ploughed up for food production during the submarine menace—made it impossible to continue the Station in anything like its pre-war usefulness. Hurst also felt that ordinary genetical work could now be continued by the breeders, and that the future lay with the new cytogenetics of Morgan and his colleagues. Having a considerable collection of *Rosa* species and cultivated forms he realised this would provide excellent material for following up these experiments with plants.

In 1922 he went up to Cambridge to obtain laboratory accommodation for the cytological part of the work, while the two allotments at the Cambridge Botanic Garden which had been used by Bateson, were taken over for the genetical experiments. There were at the time various big rose collections here and in Europe as a result of the work of the famous pre-war plant collectors and it was possible through these to cover the genus in its wide distribution round the Northern Hemisphere.

I was also trained in cytological techniques at the Botany School so that I could help with this side of the work as it was necessary to examine the chromosomes of several hundred species and forms to get a picture of the genus as a whole—actually nearly 800 were examined during the following years. The extremely peculiar behaviour of *Rosa* chromosomes allied with genetical experiments amply explained the extraordinary difficulties the rosarians had always experienced in making a feasible classification of the genus. Various papers were published—especially the one for the 1927 Berlin Genetical Conference—but the main publication was to be through a Cytogenetical Monograph of *Rosa* involving a completely new classification based on the experimental facts. Owing to the economic crises of the

thirties, quickly followed by the 1939 War it was impossible to get this published, but the vast amount of information, cytological, genetical and systematic, remains intact and is with all the other material at Cambridge, in 70 separate files (Ref. No. Add. 7955).

This work with *Rosa* had convinced Hurst that the new knowledge of the genes and chromosomes was the key to the problems of evolution, but the further progress of genetics could only proceed through its fusion with physics. Joining the work of other pioneer cytogeneticists with his own, he brought out the much publicised book, *The Mechanism of Creative Evolution* (C.U.P., 1932) in which these views were propounded.

A copy of the manuscript deposited with the genetical letters at Cambridge containing a background study of the writers and their connections, with copies of the letters, has been placed in the Library of the American Philosophical Society in Philadelphia, with lists of the files, notebooks, etc., in the main collection in the University Library at Cambridge, for the use of American workers and as a token of remembrance of the American pioneers of genetics, many of whose letters to Hurst are included.