

**APPLICATION FOR SUPPORT OF AN
EXPERIMENTAL INVESTIGATION OF
MENDEL'S PRINCIPLES OF HEREDITY IN
ANIMALS AND PLANTS**

BY W. BATESON, MA, F.R.S.

Oct. 1902

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INTRODUCTION

Although not considered to be one of the “official” rediscoverers of Mendel’s work, William Bateson was the first English-speaking scientist to recognize the importance of Mendel’s work and he immediately set out to bring Mendel’s work to the attention of the scientific community.

Even before the rediscovery of Mendel, Bateson had, in 1899, given a presentation¹ that anticipated Mendel’s methodology with remarkable precision:

What we first require is to know what happens when a variety is crossed with its nearest allies. If the result is to have a scientific value, it is almost absolutely necessary that the offspring of such crossing should then be examined statistically. It must be recorded how many of the offspring resembled each parent and how many shewed characters intermediate between those of the parents. If the parents differ in several characters, the offspring must be examined statistically, and marshalled, as it is called, in respect of each of those characters separately.

Small wonder that Bateson, upon encountering Mendel’s work, quickly became convinced that the correct method for studying inheritance was finally at hand. Upon learning of Mendel’s work, Bateson asserted:

That we are in the presence of a new principle of the highest importance is, I think, manifest. To what further conclusions it may lead us cannot yet be foretold.²

Bateson also prepared the first translation into English of Mendel’s work and included it in a monograph³ presenting Mendelism to the scientific community.

¹ Bateson, W. 1899. Hybridisation and cross-breeding as a method of scientific investigation. *Journal of the Royal Horticultural Society*, 24:59–66.

Available at <http://www.esp.org/foundations/genetics/classical/wb-99.pdf>

² Bateson, W. 1900. Problems of Heredity as a Subject for Horticultural Investigation. *Journal of the Royal Horticultural Society*, vol. 25, 54–61, 1900–1901.

Available at <http://www.esp.org/foundations/genetics/classical/wb-1.pdf>

³ Bateson, W. 1902. *Mendel’s Principles of Heredity: A Defence*. London: Cambridge University press.

Available at <http://www.esp.org/books/bateson/mendel/facsimile>

Bateson devoted his subsequent scientific career to further elucidations of “Mendelism.” In the process, he proposed the word “genetics” to describe this new field of investigation.

In 1902, he wrote to the Trustees of the Carnegie Institution in Washington seeking financial support (£600 a year) to support his use of Mendelian methods in investigating the mechanism of heredity. In the opening paragraph, Bateson makes a strong case for the potential scientific and practical importance of his proposed research:

The confirmation and extension of Mendel’s discoveries constitute a new departure in the study of Heredity, in our conceptions of Evolution, and in all Sciences which are concerned with the essential nature of living organisms. In addition to the high scientific importance of these principles, there can be no doubt of their economic value to the practical breeder of Animals and Plants. The operation of these principles has now been perceived in a considerable range of animal and plant species, but a precise determination of their scope and limitations is urgently needed. The science of Heredity is in a position not very different from that which Chemistry once occupied when the objects and methods of analysis were known, and the empirical study of the chemical properties of the various bodies was beginning.

This letter was almost certainly the world’s first grant application in the new field of genetics. The proposal was declined.

Robert J. Robbins
Seattle, Washington 2000

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The objects to be attained by the experimental study of Heredity are now definite, and the methods to be employed are perfectly clear. The number of forms which can be simultaneously studied, and the extent of the work which can be undertaken is thus merely a matter of expense.

For several years I have been engaged in this work and the results arrived at up to 1901, in association with Miss Saunders, are set forth in the Report to the Evolution Cttee. Royal Society, of which a copy is sent herewith. The work of 1902 will appear in a further Report.

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These researches I hope in any case to continue, but from lack of means my operations have hitherto been confined to the barest limits. In order to carry on these experiments on an adequate scale, I require more land, more labour, and appliances, together with the assistance of a skilled observer, which, with my present resources, are unattainable. In illustration I may mention that I have begun an inquiry into the statistical relations of the Compound Allelomorphs of the Sweet Pea (see Report, p. 143), and have carried the experiments through two seasons. Unless however I am enabled to increase the scale of the work it will not be possible to make more than a sample testing of the next generation, whereas for a proper study of the problem the entire crop must be sown and recorded.

At the present time I hold appointments which suffice for my personal expenses, and have my time very largely at my own disposal. The whole of this leisure is occupied with these researches and I estimate that they cost even on the present scale from £100 - £150 a year, an expenditure maintained with increasing difficulty.'

From time to time I have received grants from the Government Grant Fund of the Royal Society, and I may perhaps look forward to receiving occasional help from that Fund. Nevertheless no considerable sum can be expected from this source, and I do not know of any other available. Though by limiting the work to its present dimensions I may fairly hope to carry it on, I greatly desire to extend it, and with this object I now make application to the Carnegie Trustees.

It will be understood that for work of this nature the support, to be effectual, must be in the form of an annual subsidy. As the work is carried on in the neighbourhood of Cambridge, no expense is needed for Laboratory accommodation, the laboratories of the University being available.

I estimate the sum required for carrying on the work as contemplated at £600 a year. Of this, £200 would be used for the payment of a scientific assistant; £150 for the payment of labour, the remainder being spent on hire of land (4-6 acres), food of experimental animals, purchase and maintenance of appliances, such as greenhouse, incubators, rearers, sheds of a simple character, &c.

Accompanying this letter are sent:

- (1) Report to the Evolution Committee of the Royal Soc. No. 1, by W. Bateson and Miss Saunders.
- (2) Mendel's Principles of Heredity, by W. Bateson.