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# Report for 1923-1924 With the Supplement to the Guide to the Experimental Plots Containing the Yields per Acre Etc.



[Full Table of Content](#)

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## Apiculture

### Rothamsted Research

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compared, the Latin Square, replicated and randomised, apparently always gives highly accurate results.

The bearing of this advance on plot experimentation in all its branches is obvious. If plot experiments of known accuracy are repeated either upon different soils or under different weather conditions it becomes possible to distinguish discrepancies due to experimental errors from those due to changed conditions. Where the latter are of importance, it is possible to evaluate them analytically, and the results afford valuable guidance in showing in what soils and in what regions a proposed change in variety, in manurial treatment or in tillage procedure is likely to be beneficial or the reverse. In all cases the need for the very numerous results in order to average out uncontrolled causes of error can be obviated by the use of fewer observations of known accuracy under known conditions.

#### APICULTURAL INVESTIGATIONS.

Work has been directed towards the solution of two practical problems of importance to beekeepers and is being carried out by Mr. D. M. T. Morland.

(a) The suitability of metal " semicomb " in place of wax foundation as a basis for comb building.

The results so far obtained appear to indicate that the metal combs are not suitable for brood rearing in the climate of this country. The Queens did not lay well in them, the brood was scattered and the population consequently not kept up. Moreover, the larvæ tend to leave the metallic cell base and to work upwards towards the wax extension at the mouth of the cell.

Temperature appears to be maintained only at the expense of the consumption of an undue quantity of stores. It is probable that more adequate protection than that afforded by the simple air space of the W.B.C. type of hive is needed when using these combs. It is intended to test this point in the future.

It was also noted that the bees were quick to detect small inaccuracies in manufacture of the artificial cells, and where the cells were on the small side the bees endeavoured to correct matters by missing out a row every now and then and faulty combs were the result.

It was found that a strong stock would store honey in metal combs in the supers. The season of 1924 was, however, such a poor one in this locality that the test cannot be considered as fair.

(b) The situation of the frames in relation to the hive front.

The data respecting the situation of the frames in relation to the hive front need to be analysed more fully than at present before reliable conclusions can be drawn. The work has, however, brought to light useful indications for future enquiry.

The chief method in both these investigations has been a consideration of temperature conditions within the hive. It is intended to continue work on these lines and also to make a preliminary study of moisture and carbon dioxide in the hives.

In the summer of 1924 a number of beekeepers representing various county beekeepers' associations met and had a discussion