

the Indifferent realize that while rs and all the e place, will eat es not watch out, r what costs no- te, and will pay .cent. dividends capital invested. honey sells read- and the average to 100 pounds ives of bees re- a 50-acre gen- that the proper uch bother?"

## THE BEE- R

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ience of genetics promise to bee- abtably does to s of stock is at r for conjecture. by writers, in impaired their to the economic ts of recent bio- and in conse- thus been said . It should not erto, the efforts s particular field directed princi- bounds of man's rious life phen- ation of the na- by analytical a those employed , establishing of in themselves of e higher life of hilst the intelli- these truths and ith the power to imits the various ch we may have search work re-

mains to be done before we may be able to predict with certainty the results of any particular matings made for purposes of "improvement." This is especially true in the case of the bee, for practically nothing, so far, has been done to subject the insect in which we are professionally interested to the necessary analytical scrutiny.



Gregor Mendel

The race characters of bees are, for all practical purposes, still unknown to us.

There can be but little doubt, however, that the bee, in common with most other animals, shares the capacity for "improvement"; and it is inevitable, therefore, that efforts should be made by bee-keepers to work along lines that appear to point to the desired goal. During the past twelve or thirteen years a new light has been thrown upon the subject of heredity, illuminating, in fact, the whole field of bio-

logical research. Many of the problems of life are now largely divested of the mystery that formerly enshrouded them, and we may perceive in the various life-phenomena a marvellous coherence and simplicity of plan.

The great pioneer in this work was Gregor Mendel, the monk of Brunn. Mendel, like many other students of his time, was deeply engaged in an endeavor to solve the problem of the relationship existing between the fixed varieties to be found within a species, and he spent eight years in experimental work. In 1865 he published the result of his labors, failing, however, to attract the notice his discoveries deserved. He appears to have abandoned his investigations, and for thirty-five years his work was almost completely forgotten.

Before describing Mendel's experimental work in detail, it will be well for us to obtain a conception of the nature of living things in the light that Mendel himself was the means of throwing upon it.

We recognize the adult form of any animal or plant by means of certain typical characters of form, size, color, behavior, etc., and the more intimately acquainted we are with it, the more numerous are its recognizable characters. We may readily understand, then, that any animal may be regarded as an aggregation of characters, each of which in heredity may behave as a unit, a separate entity. These characters may be modified or influenced by environmental conditions, and until some few years ago, it was almost universally assumed that such modifications of character could be transmitted to the offspring of the individual. But in his "Germplasm," one of the most notable contributions to biological knowledge, Weissmann showed clearly that the theory of the inheritance of acquired characters broke down completely when subjected to critical ex-