January, 1911
TO DISEASE.

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ease visits a district for the first time, all the very susceptible stocks are killed. The immune, if any, and those capable of recovery perpetuate the species. Successive epidemics will weed out those that revert to suceptibility, and a balance is at last established in which the disease, although propagated at the expense of the stocks, is not sufficiently virulent to inhibit the production of honey and swarms."

Bee diseases have existed from time immemorial and in countries where bee-keeping has been carried on as an industry for many centuries, it would appear that the process of natural selection has tended to produce races of bees in which susceptibility is so reduced as to enable the bees to maintain themselves successfully against bacterial attacks. We ourselves are acquainted with districts and with individual apiaries in which the native bees have developed a partial immunity.

Without traversing the ground already covered by Mr. Bullamore, we may, perhaps be permitted very briefly to refer to the natural processes that take place in living tissues, subsequent to their invasion by pathogenic bacteria, with the object of showing that immunity to disease is possible and may be encouraged and perpetuated in the case of bees. Living tissue, from its very nature, is hostile to bacterial life, for it possesses certain resistant forces which prevent most bacteria from growing or multiplying within it. There are present, in fact, very active agents perpetually engaged in repelling attacks. The principal of these are certain poisons produced in the tissues for the purpose of checking the growth of parasitic organisms, and together with the active powers of special cells, form a very effective means of defence. combat between these forces and the Jisease germs is far too complex to describe here. We must content ourselves with merely stating that the chance of the victim's death or recovery is decided by the issue of the fight. The point that we desire to emphasize is that these resisting forces are subject to variation. The native bees of various countries, as we have already mentioned, by the process of natural selection, have become to a certain extent immune to bee-disease. This immunity at the same time implies a widespread prevalence of disease, which again usually results from ignorance. Nature's methods of selection after all are very clumsy; and we believe it is possible for the bee-keeper to attain to the same end by the exercise of those nice powers of discrimination that the stock breeder has to put forth in his profession. We do not go to the length of advising beekeepers to bring in queens or stocks from infected areas. Yet we feel it greatly desirable on the part of those located in districts where foul brood is prevalent to watch carefully for those stocks possessing, or appearing to possess, the greatest degree of immunity, if, indeed, any such can be found. In localities where foul brood exists as an epidemic, it is almost an impossibility we conceive for any stock to escape an attack. Numerous colonies, may survive, exhibiting no signs whatever of disease, and these we should consider as having proved themselves worthy of the honor of being selected as the progenitors of the future generations. The universal use of Italians, careful selection, and the vigorous application of the Mc-Evoy treatment to all diseased colonies, will solve the Foul Brood problem.

## POINTS FROM PRESIDENT YORK'S ADDRESS.

To Co-operate or Not to Co-operate?

The question as presented by President York at the Albany Convention:

If bee-keeping is ever to be put on a business basis in this country there must be co-operation in marketing the honey crop.