

standard of excellency to

manufactured but bred, A. B. Jarratt would get very so early in the season Queen Co. were formed in the land of the Western, ahead of you for queen-keeping we often have to wait for the virgin to be queen so early in the season to form a company province, but I fail to see better service could result B. Jarratt had one remedy was to place his order in time to say that the value his reputation will with him and not take his not fulfil by date named.

Bees Better

Health of thought in Miss Hand's "Instinct acquired the bees." The passage "Instinct versus System" between Hand and Mr. Hand is interesting. Where would system be without? Is not system the outcome of instinct? I well remember the coming up in the old country claimed that a child could slide. Yes, so it could. All the instinct of the experienced keeper to tell when to stop, and to work the system.

Where is the Geary to scrap-heap. All that was the Geary, all that is claimed system, can be done by who works his stocks in Miller, and who has achieved by living with the bees. The enthusiasts that we find in Mr. Hand's system an advance on the Geary is only new bottom boards for hives.

and plans of mice and men, Gang aft agley."

Drone Parentage

The Editor is correct in his statement, C.B.J. page 227. "The Drone is the insect resulting from the development of a single germ 'cell.' And now, Mr. Editor, seeing that the drone comes from a single germ cell, then it is half blood of the preceding sire, and this sire is the first in lineal ancestry, whereas a grand-sire is second in lineal ancestry and produces only quarter-blood stock, hence the error in friend Hand's Lineal Breeding.

"Only one parent" is incorrect for lineal breeding therefore always incorrect. We are so accustomed to direct lineal descent in stock breeding, that it is almost impossible to approach this subject with an open mind. Apparently there is only one parent, literally there are two. The male influence of the preceding generation is equal to the male influence of the present generation in all other stock breeding.

"Son of his grandfather"; that's illogical. Shure, he's his father's son! The drone has but one parent of the present generation, i.e. the Queen mother; his sire dates back to the preceding generation, the sire's influence being transmitted to him in all its fullness through the queen mother.

Wasco, Cal.

INDEXED LINE BREEDING

By Joseph Gray

On page 316 Mr. Hand opens his remarks re "Line Breeding" by saying that "we should not pin our faith to fake scientists." I certainly was not aware that I quoted from any but accredited scientists.

The Drone is not the Product of His Mother

I have not the preceding journal by me for reference, but if the error is mine I stand corrected. The very fact that the drone has but one parent of the present

generation—i.e., the queen mother—proves that even though the latter be mismated, the drone takes his inherited traits from the sire of the queen mother.

I am not writing for the benefit of queen-breeders, but for the wider class of readers of this journal, who, possessing an apiary, wish to "keep better bees" I also assume that they stand reasonably clear of other apiaries. Again I assert that the qualities of one queen can be, by two years' requeening from that queen, be transmitted to the whole apiary. This is not an experiment, but is the actual fact and can be proved to the advantage of the readers of this journal.

"Proof of the Pudding"

A mismated queen produces half-blood workers and queens, but pure blood drones, which latter are the equal of pure mated queens for mating purposes.

Quality

It is well-known that thoroughbred stock do not produce all ideal stock; hence a wide range of selection is required for our purpose.

"A freak!" What is a freak? Mr. Hand admits that none of her qualities were admitted to her offspring, but were lost.

An Appeal to Reason

Mr. Hand brings forward the old idea that cell structure is the factor in changing the egg from male to female. There are few practical readers of this journal but who will have found eggs in normal queen cells, which are $\frac{3}{8}$ inch in diameter, while the drone cell is only $\frac{1}{4}$ inch. We have a more reasonable theory advanced by scientists, viz.: that the queen possesses complete control in the matter of fertilization or non-fertilization of the eggs.

A Machine fashioned by the Master Hand to Fulfil the Demands of Nature

The Master Hand made no error in giving will control to the queen in the