

Dr. A. B. Mason-When is the proper time to reverse the combs ?

James Heddon—The proper time to reverse brood-combs is when the bees are rearing large quantities of brood, and desire to increase the size of the brood-nest. To reverse the broodcombs late in the season, when they are contract. ing the brood-nest, will cause the brood-nest to be filled with honey all the faster. Sections should be reversed when the bees are inclined to store honey in them ; if done after the bees cease storing honey in them, it will hasten the removal of the honey to the brood-nest. As soon as the outside sections are far enough advanced to bear inversion, change them to the centre of the case, then insert the whole case, and all the sections will be finished at nearly the same time. Inversion causes the bees to attach the combs to the sections all around, and thus makes them bear shipment much better. Swarming is also lessened by reversing the combs, as the removal of the honey gives more room for brood, and thus helps to destroy the desire for swarming. It also has a tendency to the destruction of queen-cells.

C. P. Dadant-How about contraction ?

James Heddon—My objection to the Langstroth hive is its depth; with that I contracted by removing some of the combs and putting in "dummies." With my new hive I contract by simply taking away one section of brood-frames.

Mr. Thompson, of New York—How shall those manage your new hive that do not wish to feed <sup>sug</sup>ar for winter stores ?

James Heddon—During basswood the bees can gather honey faster than they can store it in the sections, and we have only to place a section of brood-combs over the sections, and in this catch the "overflow." When the harvest is over, remove this and keep it until fall, then shake the bees down in front of this case of honey, or else set it over the case containing the bees, and it is done.

Geo. E. Hilton—In practicing the contraction method, how can we remove a section of the brood-nest after swarming without removing some of the brood.

W. Z. Hutchinson-After a swarm has issued,

the young queen does not commence laying untip about the 19th day, two or three days later all the brood will have hatched, and we can remove one section without taking any brood; we may get a few eggs, but this is immaterial.

L. C. Root—Are we to understand that you prefer brood-combs only 5 inches deep ?

Mr. Hutchinson--Most emphatically.

C. P. Dadant—We object to a shallow comb and to two sets of combs, because the queen cannot lay in a circle; it consumes time for her to pass from comb to comb, or from one end of a shallow frame to the other.

W. Z. Hutchinson—We do not care how the queen travels, whether in a circle or crosslots, if she only keeps the combs full of brood, and if we do not give her too many combs to fill, she will do this.

Prof. A. J. Cook then read an essay on the Pollen Theory. It was a scientific dissertation on the nature of different food elements, and the process of digestion. The upshot of it was that bees during their long winter imprisonment should not have nitrogenous food, as it rendered them uneasy, and necessitated exertion. The Professor's paper was an argument in favor of what is known as the pollen theory, from a chemical stand-point.

C. P. Dadant—We once imported bees largely, and by long experience learned that the food must contain no pollen ; if it did, the bees died

James Heddon—I have found bees frozen upon combs of honey—frozen before they had consumed enough pollen or bee-bread to produce diarrhœa. I have used the term "heat-producing food" in the sense in which it is generally used. I know that a stage driver in cold weather needs food of a different character than does a woodchopper.

Prof. Cook—The chemist speaks of heat-pro. ducing food; the physiologist does not. I think it an improper term.

Mr. Ira Barber's essay was read by the Secretary on

## WINTERING BEES IN CELLARS.

Another year has passed since we met together in council, and thousands of colonies of bees have been lost for want of proper protection in winter. It is quite often said that no one has learned the secret of wintering bees, so that they can be wintered safely every time; but I deny the assertion, and ask-this association of bee-keepers if a quarter of a century of successful wintering of hundreds of colonies of bees without loss, except where an occasional one starves, is it not long enough to establish the fact that bees can be wintered as safely as any other stock ?

In my early experience I had all the troubles in