

Read at Leeds Bee-Keepers' Convention.

DEEP AND SHALLOW FRAMES.

DEAR MR. FULFORD AND FRIENDS:—

I THANK you for your kind invitation to attend your Convention. As I cannot, however, be present with you personally I send my cordial greetings accompanied by some thoughts on the subject you have suggested to me, viz., "Deep and shallow Frames and their results." As to the relative merits of deep and shallow frames there seems to be a wide diversity of opinion amongst leading bee-keepers. This is, I suppose, quite natural and just what we might expect for two reasons. The first is the fact that a high degree of success is attained by the use of each style of frame; and the second is the varied environment, including a wide range of latitude and climate, in which this success is attained.

Now, in dealing briefly with the subject in hand I shall simply give you my own views for what they are worth founded on such experience as I have had with both styles of frame. Had such experience been more extended the opinions offered would perhaps be of more value. With the deep frames I have had about twenty years experience; with the shallow frames about five years. At present I keep both kinds in my apiary, and have had both side by side for the past five years. The deep frame I have always used since I abandoned the old box hive over twenty years ago; nor do I ever expect to abandon the deep frame. The general conclusion I have come to after the above experience with both frames is that I can make bee-keeping successful with either one or the other. Still all things considered, my preference is for the deep frame. This is not merely because I have used it longer than the other but for other more substantial reasons.

Now, what is a deep frame and what is a shallow frame? Of the former we may fairly take the Jones frame as a sample, which is about 12½ inches deep inside measure, and of the latter we may take the Langstroth which is about 8 inches deep. In my own apiary I use both the Jones and Langstroth hives as well as three other styles of hive with frames respectfully 12½ by 13 inches, 12½ by 12 inches and 12½ by 9 inches inside measure. You may think this foolish and inconvenient to have so many sizes of frame in one apiary and so it is perhaps in one sense; yet I do not find much inconvenience as my extractor will take all of the sizes and I have a sufficient number of each size for a free interchange of frames in spring management, building up nuclei, swarming etc. The fact, however, of my having so many styles of hive is owing more to

the force of circumstances—such as buying selling, sharing etc.—than to choice. For experimental and test purposes the variety is useful. But I would not advise any bee-keeper beginning the business to have more than one size of frame unless indeed he is compelled to winter a portion of his stock outside without proper protection, and in that case if he be a shallow-frame man he had better get the deep frames for outside wintering. This brings us to one of the main advantages the deep frames have over the shallow. Unless the bees are in thoroughly comfortable winter quarters at a uniform temperature outside the hive of about 45° Fah the deep frame is, in my opinion, far ahead of the shallow frame for wintering purposes. If the repository is comfortable, with a steady temperature as above it makes but little difference so far as wintering is concerned, what the style of frame is. There is, however, a little difference I have observed, aside from the temperature, in favor of the deep frame for fall and winter, which is this; I have noticed in the fall that the winter stores are never so well capped over in the shallow frame as in the deep frame, whether the stores be natural or artificial. And as well-capped stores are a very essential condition of successful wintering, it therefore follows that the hive which most effectually secures this condition is the best hive for wintering, that is, other conditions being equal. Wherefore, it follows that the deep frame is somewhat better for winter even in a proper temperature which in my opinion for successful wintering ought to be from 45° to 50° Fah., outside the hive. But then if the deep frame has this small advantage even in the proper winter temperature it certainly has a very great advantage over the shallow frame in uncomfortable quarters or a comparatively low temperature. The why and wherefore of this will be obvious enough to the experienced apiarist, but as there may be some inexperienced ones present it may not be amiss to set forth the facts and principles in explanation. We all know it is quite a common occurrence for bees in winter to starve to death in a low temperature with plenty of honey in the hive. We also well know the reason. The stores near the cluster are consumed, and the bees cannot move in a lateral direction to remaining stores as they are too cold and stiff to do so. Now, in the shallow-frame hives the stores are necessarily spread laterally, and are mostly on one or both sides of the bees instead of being above them. In the deep-frame hives the winter stores are mostly at the top of the hive and hence above the bees—or at least, ought to be at the top, and will be if the management is correct. And as heat naturally