ey. The show of comb is excellent. They are said to be the finest that have ever come under the the notice of the judges here. The granulated honey and beeswax make a complete show, which taken with the rest, speaks well for the past season and the experience of the Canadian bee keepers. The honey extracted is perfectly pure, the combs, as has already been stated, are finely formed, and the granulated honey is, in appearance and on closer examination, of the very best. The apiary is well worth a visit. The exhibits are beautifully arranged and in addition to the honey there are exhibited an interesting selection of upon which the bees operate. —Empire.

Plenty of Bees, Food and Packing; and Several Other Things Essential to Success in Wintering.

FEW are aware how short the time is since the science of out-door wintering of bees in protected hives has been generally known. It is only about a dozen years since one of Michigan's oldest bee-keepers, Mr. J. H. Townley, first described the principle. I had used essentially the same method for two or three years previous, and Mr. Townley had still longer. Cellar wintering had engaged the attention of our best bee-keepers for many years previous. It is reasonable to suppose that the principles of successful chaff hive wintering have not yet had time to become so thoroughly understood as those of the other method.

A few essential requisites to success are already known; the following being the principal ones:—

1. Colonies in good condition, and of at least medium strength. I have carried three-frame nuclei through all right, during severe winters in northern Iowa, but this is exceptional. Strong colonies have more advantages over weak ones in out-door wintering, than in the cellar.

2. Good food. My ideas on this point have already been published on page 139 of the Review for Sep., 1888.

3. Plenty of food. This is an indespensable requisite; and is where many have failed. Years ago, we used to often see the advice that "the lower half of the center combs ought to be empty to give the bees a chance to cluster." No attention should be paid to such nonsense. If every comb is solid honey, so much the better. Mr. Wm. Foos, of Iowa, several years ago advanced a theory that whenever bees became short of stores, though lacking quite a little of being out, they seemed to realize what their condition might be, and becoming uneasy were soon diseased; while if they had possessed ample stores, of the same quality, no such condition would have resulted. Since then, I have watched the matter closely, and I am inclined to think his theory correct. I certainly do think that the giving of ample, or even more than enough stores to carry them through, is of more importance than quality of stores.

The apiary should be protected by ample wind breaks. This point has rarely been given the importance it deserves. I consider it an absolutely essential requisite north of the 41st degree, or about that of Ft. Wayne, Indiana; and very desirable much south of that. Small apiaries can be sufficiently protected by a high board fences, but large ones need something more effective. A thick, very thick, grove of bushes or trees should surround all sides unless it be the south, and it would be much better to have it on that side too. My experience and observation in a prairie state taught me the absolute necessity of this condition; and any one who cannot command it, would better give up all idea of out-door wintering, unless the hives are likely to be covered with snow during severe winters. The failures of many have been due, probably, to this unsuspected cause.

5. Proper kind of packing material is important. It must be such as will best afford protection from cold and freedom from dampness. Any material that is fine and light is better than the same would be if coarser; hence, all fine kinds of chaff are better than the coarser kinds; and any kind of chaff is better than hay or straw. In fact, the latter are utter failures unless used in very large quantities. Sawdust from fine saws is preferable to that from large lumber mill saws; in fact, I should hesitate to use the latter. Some kinds of material retain, in a much greater degree than others, the moisture thrown off by the bees; become damp and mouldy, and in time rotten. In the latter case sinking down and exposing part of the hive to cold. Such materials ought never be used. I find timothy seed chaff gives the best satisfaction of anything I have tried; it being the finest, driest chaff I know of, with the least affinity for moisture. Next to that in value is sawdust made by fine saws from dry, white, pine boards. Wheat chaff and forest leaves come next, but they are far less valuable than the first mentioned, probably on account of being so much coarser. Oat chaff is unfit to use on account of its retaining dampness; and buckwheat chaff is the poorest for the same reason.

6. Enough packing must be used to insure good protection. This, of course, depends somewhat upon the kind of material used, and