

honey stored? As close to the brood as the bees can get it which restricts the queen's laying. During the cold nights the cluster contracts, and so brood rearing is further restricted. If we made the hive warmer the cluster would not so contract, there would be more bees reared to replace those lost, the honey would not crowd down the brood so much, and the bees covering a much larger area of comb surface would store the honey further from the brood. Many bee-keepers do not reap much advantage from the winter honey flows on account of the loss of old bees, and I will ask would it not pay us to protect our hives, and in what form are we to get most suitable protection? In the Northern States of America, cellar wintering is most generally adopted. On the approach of cold weather the colonies are carried into a cellar and packed one on top of the other, and by this means they are brought out in the spring in strong condition, proper attention having been paid to temperature and suitable stores. I was in Dr. Miller's and Mr. G. M. Doolittle's cellars and found the bees comfortably clustered on the combs after a confinement of about four months, and in stronger condition than I have usually found the bees in any apiary I have visited during winter in N. S. W. Of course there is total loss of some colonies from various causes and from the long continuous confinement, which is to some extent unnatural. At Mr. Doolittle's, of those colonies wintered out of doors and chaff packed at sides and top, there was considerable loss. At Mr. Holtermann's the bees were packed four colonies together in a large box made waterproof and packed with straw between and around the hive and inside of case. The bees were wintering very well even though there was about 8 to 10 inches of snow in front of the entrances, the heat from the hive entrances kept the entrances open and prevented suffocation. At Mr. Pridgen's apiary the bees had no Autumn flow, so breeding ceased very early and he had but few young bees to winter with. He is not in a very cold locality, and it is usually sufficient to use a chaff packed quilt on top of the frames, but this season the winter lasted a month longer than usual and was more severe at the end than before, the result being a very

heavy loss. If the winter had been as short as usual, in spite of the loss of a fall flow his colonies would have been fairly strong, or if they had had more protection they would not have suffered so much. The Jennie Atchley Co. being almost as far south in the United States as they can get have practically no winter problem, though every now and then a cold spell strikes them and then the bees are much reduced in numbers, but in ordinary winters they can rear queens right through the winter, the locality is so warm. This, to my mind, proves that protection is very desirable. American bee-keepers do not consider it a difficult matter to winter their bees, but find more difficulty in carrying them through the spring on account of dysentery. The long confinement in the hives, whether in cellar or chaff packed outside, causes an accumulation of fecal matter in the intestines, to void which they must fly, and being prevented from so doing causes dysentery, when the combs, frames, &c. of the hives become a dirty mass of dark brown glossy matter with a foul smell. Those colonies wintered outside do not as a rule suffer so much from dysentery, the bees, having their liberty, but when they attempt to fly, when the sun shines warms are chilled and fall on the snow and perish. We are not much troubled with dysentery in this country, so need not consider it. I never knew the disease to recognize it before, but think I saw one case of it about six years ago.

BUILDING UP IN SPRING.—I find on inquiry, when spring once commences, the weather continues warm and favorable to rapid "building up" without any setbacks in the form of cold winds as we often experience in August and September, so when the bees start breeding there is no great attention necessary to have them strong for an early flow, beyond having plenty of room, plenty of stores, and an occasional spreading of brood. The method usually adopted to stimulate for early breeding is to uncap patches of sealed honey opposite patches of brood in the next comb, and a moderate yet cautious spreading of brood. Queens reared late in the autumn are said to build up more rapidly and earlier in the spring than those that have had an opportunity to lay many eggs previous to the winter. Artificial pollen is sometimes fed but it is a matter of doubt if it proves beneficial.