

vals sufficient to afford a resting-place for the hives; place them in rows close together, giving ventilation by removing either tops or bottoms (if tops cover with cotton quilt). In this mode of wintering I prefer the removal of bottom boards, not only for the purpose of giving the necessary ventilation but also that all dying bees may drop free of the combs and thus prevent the accumulation of filthy mass of dead bees among the ranges of comb. Having placed the hives in position, place a saucer or two containing a mixture of equal parts of powdered arsenic, sugar and flour in the trench to destroy any stray vermin that may find their way in. Place boards at a slope from the sides of the clamp to meet over the hives; cover all thoroughly with one foot in depth of straw and one of earth, and the work in done.

You may now leave them to undisturbed repose until the return of the warm settled spring weather. When appearances indicate that we may expect a day or two of sunshine open the clamp at night, disturbing the hives as little as possible, and carry them to their summer stands in the darkness.

If it is objected that no sufficient provision has been made for ventilation to the clamp, one tube may be placed for the purpose in the middle of it, especially if the number of stocks buried be large: but beware of creating a draught, this having often proved fatal. Choose a rather cold day toward the end of November for making the clamp.

QUERIES AND REPLIES.

UNDER THIS HEAD will appear each week, Queries and Replies; the former may be propounded by any subscriber, and will be replied to by prominent bee-keepers, throughout Canada and the United States who can answer from experience, as well as by the Editor. This Department will be reserved for the more important questions, others will be answered in another place.

DO BEES PROMOTE HEAT BY EXERCISE.

QUERY No. 46.—We read that "bees add to the heat-producing method of consumption of oxygenated food that of producing heat by exercise." In what way does exercise contribute to the production of animal heat?

S. CORNEIL, LINDSAY, ONT.—Muscular exercise is often resorted to in winter by some of the higher animals as a means of increasing the bodily warmth. But muscular labor or exercise is transformed heat whose source lies in the combustion of the food by respiration. It is just so with the bees. They have only one "heat producing method," namely, the combustion of the carbon in the honey by the oxygen of the air which they

breathe. When the cold becomes intense they increase the rapidity of their respirations, or in other words, they increase the draft of the furnace, to increase the production of heat.

This reply was not received along with the rest of friend Corneil's and so was not inserted with the other replies to the same query.

DAMPNESS IN HIVES.

QUERY No. 47.—A great deal has been said in connection with the wintering question as to the advantages and disadvantages of dampness in hives and in the air surrounding them. (1) What is the point at which air may be said to cease to be damp and become dry? (2) How is the degree of dampness or dryness correctly ascertained?

G. M. DOOLITTLE, BORODINO, N. Y.—Have no instrument for testing it.

H. COUSE, THE GRANGE, ONT.—Not possessing a hygrometer could not say.

JUDGE ANDREWS, MCKINNEY, COLLIN Co., TEX.—These questions do not apply "Way down South in Dixie."

M. EMIGH, HOLBROOK, ONT.—Can't say just at what point it would become dry. I have noticed when my bee-cellar was fifty degrees or above everything seemed dry. If it gets much below forty degrees the cloths will be damp and water will drip from the hives.

PROF. A. J. COOK, LANSING, MICH.—(1) It is governed wholly by the heat. (2) By examination with a thermometer with a wet bulb. Do we know that dampness hurts bees, except that it condenses in the hive and gives them a shower bath? Condensed moisture in the hive must be bad.

DR. DUNCAN, EMBRO.—The simplest test for an excess of moisture is a decanter full of cold water placed in the room; the moisture will collect on the sides and run down in drops of water. If any one wants to test it accurately according to chemistry they would require a dry and wet bulb thermometer or the hair hygrometer of Saussure.

O. O. POPPLETON, WILLIAMSTOWN, IOWA.—This, and the three preceding questions are evidently asked by the same person, and while they are questions of much interest to practical bee-keepers, it requires a much better knowledge of chemistry to answer them correctly, than beekeepers usually possess. I hope to see them