

remedies are made in like manner. It is the text to a long and complicated sermon. Every physician will read in it such a multiplicity of applications that would astonish the uninitiated.

As a nutrient I will not speak of it as food, but in connection with its properties that serve to arrest the waste of certain diseases, in particular in consumption. The important features of the medical properties of honey lie in the nutrient, expectorant, deobstruent and restorative effects in the management of consumption, and its allied diseases. Now let us go back to a fact that exists in the process of making honey. No honey could be had if it were not for its ready metamorphosis into oil, or in other words, in the making of wax, as stated. The great object in the treatment of consumption is to arrest waste. Therefore we resort to the use of oils or remedies that will readily make fat in the system. But the great difficulty in the way is to get the system to accept these remedies and effect their assimilation. Under Leibig's authority we give sugar freely to make fat, but the system often refuses it, as it does the oil, for before it can be assimilated it has to be changed into a glucose, or really into pretty much what honey itself is. This alone gives us a great advantage in giving honey to stay the waste caused by disease, that we have in no other remedy.

Honey in being assimilated is disposed of in three ways: what is not deposited in the cellular tissue as fat, is consumed by the liver, and its volatile principle is eliminated by the lungs. This elimination is a matter of the greatest importance as a remedy in all pulmonary disorders. But the most remarkable feature of honey as a pulmonary sedative is its administration by atomization and inhalation. The spray arising in extracting has been proved to exert a very beneficial effect upon cough and dyspnea, thus revealing its curative tendency.

Young trees need protection the first summer, says W. D. Boynton, in *Indiana Farmer*. It is, in fact, the most critical time with them. The winters are bad enough, but the summers are often worse. The sun and drying winds are fully as fatal in summer as the alternate freezing and thawing of winter. Mulching is a great thing for the roots, but the tops and the trunks of young trees taken from the thickly planted nursery are in no way protected, and they miss such protection very much. The greatly reduced root can not supply the top with the requisite moisture or sap, while the sun and wind make constant and heavy drafts upon it. I find that planting corn among young newly-set trees is a great help to them the first summer. Trees four or five feet high will be well shaded by corn growth during the driest, hottest weather of summer. Growing corn also breaks the force of the wind. It prevents the stems from being wrenched about in the usual way of exposed trees.

A number of careful experiments were made by Prof. S. T. Maynard, of the Massachusetts Agricultural College, to test the vitality of seeds as affected by age. Ten seeds of each kind were taken, with the following results: At one year, white, red, Alsike, crimson, yellow, and Bokhara clovers, all fully germinated in two days; of the true grasses and grains, nearly all germinated in nine or ten days. Of seeds five years old, most of the clovers germinated in four or five days, but wheat, oats and barley did not germinate at all. Among seeds from eleven to sixteen years, one-half of the Hubbard squash and Early Turnip beet started, the first in ten days, the latter in sixteen days; one-third of the muskmelon seed germinated, and a small portion of the pepper and flat turnip seed, but out of about thirty other sorts none grew. There is no doubt that the result is largely affected by the condition of the seed as to ripeness, and by the degree of moisture and the variations of temperature to which they are subjected during the period through which they are kept.

The Dairy.

Mr. Moyer defends his Deep Setting System.

Just as we were going to the press we received Mr. Moyer's contribution on milk setting, which appears in our correspondence columns. We gladly give him space for his defence, and hope the discussion may be productive of some good. We have always been very partial to Mr. Moyer, knowing him to be one of our most enterprising dairymen, and it is our policy to encourage such men, even at the expense of giving them free advertising.

It must be borne in mind, however, that Mr. Moyer has devoted his attention exclusively to the creamery business, and is personally interested in fixtures belonging to the deep setting system, but we do not believe that he would consciously attempt to benefit himself at the expense of our creamery industry. It is our duty to see that dairying does not receive undue prominence over other agricultural branches, thereby creating a boom, which must sooner or later collapse. Our course in the dairying interest is to promote it just enough and not too much.

We fail to see the inconsistency of our course in quoting Danish experiments and refusing to publish the records of the boomed up dairy breeds; the former have been made by authorities in whom the world has placed implicit confidence, while the latter are the offspring of men whose interest consists in subverting the truth. We do not depend on the Danes alone for evidence of the superiority of the centrifugal separator, or other methods of skimming milk or making butter; when all the leading disinterested authorities agree, we certainly cannot accept the evidence of Mr. Moyer's few experiments, knowing that he has not the necessary apparatuses for making accurate tests, and knowing that he is personally interested in the success of his system. His doctrine is that the dairymen can make their own experiments. Of course they can, if they know how, but as he says that milk and cream are affected by hundreds of influences, we know from observation and experience that it takes years of study to understand these influences—more years in fact than Mr. Moyer or any other dairymen has to devote to the subject. We shall not commit ourselves to the *principle* which Mr. Moyer advocates, viz., that knowledge comes to a man without study and practice, so that we cannot yet dispense with real experts or professors. The difficulty is that we have too many bogus ones who are personally interested in some schemes or pet theories.

As a rule, we object to importing experiments, for there is usually something in our conditions to vary the results; but with reference to the Danish experiments we were dealing almost exclusively with temperatures, and a degree of temperature is just the same here as in Denmark.

As a practical dairymen, Mr. Moyer should know that the system must accommodate itself to the farmers until the farmers see fit to accommodate themselves to the system. The general practice is to use no ice; if ice were in common use, we would boom up Mr. Moyer's system for all it is worth. What the farmer wants to know is whether or not any change in his present system will pay, and this is the

kind of instruction we wish to impart, the benefit or injury we do to Mr. Moyer's or any other man's system being a secondary consideration. The farmer should stick to his old methods until there is incontestible proof that they can be profitably changed.

We never said that perfectly pure air can be obtained. In raising this issue, Mr. Moyer begs the question. The ordinary air as found at considerable distances from stagnant water and decomposing vegetable matter, which can be obtained on most farms, is sufficiently pure, and does not require to be excluded from the cream. The farmer who cannot obtain this should unhesitatingly build an ice-house and buy a few of Mr. Moyer's submerged process cans. Practically, we have yet to deal with summer conditions, with comparatively high temperatures, and experiments which do not embody this condition are worthless at the present time. If the pure air always contains "myriads of germs," surely there will be a few hundred millions in the quantity of air which comes into contact with the cream in the submerged, low temperature system. Mr. Moyer wants to exclude the air entirely on the ground that milk is intended by nature to go into the stomach from the cows' udder. If he can give us butter from the udder without passing it through the air, his doctrine is quite sound, but we are dealing with artificial conditions all through, and it does not always follow that the milk in the udder is in a fit condition for food; it is often purified by aeration. He does not seem to understand the effects of heavy milk in the creaming process. The milk of old calved cows is always heavy, more so when the cows are in calf, and it has been proved that not over 25 percent of the butter fat can be obtained sometimes, although it can be almost completely separated by the centrifuge. At the same time there is actually a greater percentage of fat in the milk than there was shortly after the cows dropped their calves—even on the same feed.

Mr. Moyer says: "Milk cannot get too cold to raise the cream." If he goes into the science of the thing, he should be scientific. It is a fixed law that water attains its greatest density at 39° Fahr., and if specific gravity means anything, this is the best temperature for raising the cream, for the water in the milk is then in its densest condition. This has been abundantly proved by practice, for a can of milk set in ice water will give about this temperature to the milk, and the best results have therefore been obtained.

Nothing can be gained in defending the deep-setting system until it can be proved to be superior to the ordinary shallow-pan method.

The great reduction in the amount of oil in linseed and other cakes, due to improved machinery or chemical processes, has brought out considerable differences of opinion in regard to the influence of such reduction in the value of the cake as a food. A reduction of oil necessarily increases the amount of the albuminous compounds, and—according to the views of some—the feeding value of the cake is increased, or at all events not diminished. In one circular from a manufacturer I noticed that, in his opinion, linseed oil was not a food at all, but a purgative! I should certainly myself be disposed to place a considerably higher value upon oil than upon albumen, and when I purchase cake for my own use I select that which contains the most oil.—[Sir J. B. Lawes.]