

stitute for pollen. It should be fed early before flowers are in blossom. Put it on a comb, and place it in the cap of the hive. Or, place it in a dry, sunshiny spot, where the bees of the whole apiary can readily obtain it.

If water, slightly sweetened, is placed in the cap of the hive, either in a sponge or piece of old comb, it may save a great loss of bees in cold, windy days. They must have it, in order to raise brood, and if the apiarian does not supply it in some form, the bees will seek it abroad though they perish by thousands.

If any colonies are queenless, give the bees to some other colony. If there is brood in the combs, there is a queen present. If you have any doubts about the presence of

a queen, drive the bees away from their cluster between the combs, with smoke, and look for sealed brood. Take care of hives containing comb, but no bees lest they breed moth worms.


If swarms issue this month, they are queenless, or are starved out. Return and feed, or unite with some other stock.

The foregoing remarks are especially applicable to the box-hive, as the mass of beekeepers throughout the country usually retain it in use. In the movable frame-hives, many of the operations may be much simplified. Feeding, for instance, is easily accomplished by taking a card or two of stores from a hive containing a surplus, and give it to the needy stock.

L. I. FAIRCHILD.

ENGINEERING DEPARTMENT.

IMPORTANCE OF MACHINERY.

IS is an age characterized beyond all others, in the numerous inventions to facilitate labor in every department of industry. To relieve agriculture of its slow process of human labor, and elevate it into an employment that can be pursued in a business-like manner, have engaged the minds of men not the least ingenious among the many who have given attention to machinery.

And now a great many implements have been brought to such perfection, that "improvement can no further go." The ordinary tools, as hoes, rakes, and pitchforks, are now made upon such an adoption of mechanical principles, as to make them light, and at the same time strong. We do encounter a venerable farmer occasionally, using his crooked stick instead of the light steel hay-fork, and heavy domestic manufactured rake instead of the light machine-made one; but we pity his prejudices, and know that his sons will not inherit them at any rate.

Every one whose mowing fields are clear of stumps, should have a spring tooth horse-rake. A man and horse with this implement, will do as much as five men with the common hand rake. A rake which on rough bottoms is superseding the latter on account of being easier to work, is one called the piano rake. The teeth are made of wood, and each one is separate, so that should it meet with an obstruction it can

jump over it; but the whole can be lifted at once by the pressure of the foot on a bar to clear the winrow. This rake moves on wheels, and the man operating it rides on top. The revolving wooden toothed rake is only adapted to meadows that are perfectly smooth; but it gathers the hay with less dust than the other kinds, and is valuable on this account.

But the mowing and reaping machine is the great assistant in expediting and lightening the labors of haying and harvest times. These machines are constructed after a great many different designs; and some of them have been brought to such perfection, that they may be considered almost perfect in their arrangement of gear, facility of operating, ease of draft, and lightness compatible with strength. We would not, however, advise the indiscriminate use of even the mowing machine, nor would we like to say how extensive a farmer's business should be to warrant them in their use. This is a matter we prefer leaving to the judgment of the individual. We will give, however, a New Brunswick farmer's experience as to the economy of using one, leaving each to make the application for himself.

In the Summer of 1859, a farmer, not a hundred miles from where we write, was obliged to pay two men to assist him for a month in haying, at the rate of six pounds per month, and board. With them and his own assistance, and that of a boy, he gets his hay, but he thought the wages more