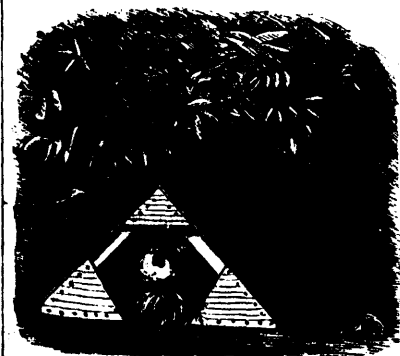


mairs. Their history all through, tells a story of quick feeders, with necessarily quiet dispositions, hardy, healthy, with great capacity for flesh and excellent quality of meat when dressed. They take naturally to grass, and may be wintered on hay in great part, as they eat it as readily as sheep will do. The animal given on the preceding page, is 19 months old, had no grain from April last until Sept. 24th, when he was sent to the fair, weighing 476 pounds. On Oct. 24th, or 30 days afterwards, he weighed 576, gaining 94 lbs., being fed solely on raw corn-meal and water. He is 32 inches high, 5 feet 94 inches long, and girls 6 feet. His belly reaches to within 3 inches of the ground when standing. In a recent case, 53 of these hogs fattened at Salem, N. J., at 18 months old, averaged, when dressed, 523 pounds; the lightest weighed 460 pounds. With such a character as this, the Duroc is certainly worthy of being known everywhere.

### Movable Nests for Hens.

Hens, as a general thing, are remarkably self-willed and obstinate. Perhaps an exception may be made as regards the Brahmas, which are very docile and easily managed. On account of this general peculiarity of fowls, many people who possess a somewhat similar disposition, find no success in keeping them. Their hens will not lay in the nests provided for them, or after sitting a few days upon a nest of eggs, leave them and never return. The consequences are, either no eggs at all, or nests hidden where they can not be reached; no chickens, and time and labor lost. This may all be avoided if the owners will only study the habits and instincts of their poultry reasonably. One of the most inveterate habits of hens, is that of hiding their nests or seeking them in retired shaded places. Those who would have plenty of eggs, must make their arrangements accordingly. A very cheap and convenient nest is shown in the accompanying illustration. It is made of pieces of board eighteen inches long, nailed endwise to three-sided cleats at the top and bottom. The box need not be more than eighteen or twenty inches in length. Some corner pieces are nailed at the front to make it firm, and the back should be closed. These nests may be placed in secluded corners, behind sheds, or beneath bushes in the back yard, or behind a barrel or a bundle of straw. The nest egg should be of glass or porcelain, and every evening the eggs that have been laid during the day should be removed. A little cut straw mixed with clean earth or sand, will make the best material for the nest. This



A MOVABLE HEN'S NEST.

should be renewed occasionally, for the sake of cleanliness. When a hen has taken possession of one of these nests, it may be removed at night to the hatching house, without disturbing her. Before the nests are used, they should be thoroughly well lime-washed around the joints, to keep away lice.

### BEE MANAGEMENT.

#### INTRODUCTION.

MY sole object in writing these articles is to give clear, plain instructions in bee management, which will, if faithfully carried out, result in an undoubted profit, and a most instructive and interesting recreation (without that pain which must be felt by any one with an ordinary amount of feeling, who, following the old barbarous system, has to reap that profit at the expense of thousands of lives). It will be quite unnecessary to take any retrograde steps to see what the plan adopted by the ancients was, but rather to bring forward the most modern improvements and principles, and give such descriptions of "bee furniture" as will enable any one desirous of doing so, to make his own hives and fittings. Nor will it be necessary to go into the truly scientific portion of bee history, further than to point out such principles as are really necessary for a proper understanding of the methods now commonly adopted by advanced agriculturists.

#### PART FIRST.

##### Natural History of the Bee.

If any one will stand close to a healthy hive on a fine day about the end of June, he will notice two kinds of bees, one being perceptibly smaller than the other, the smaller greatly outnumbering the larger. The difference is so great that the merest tyro may notice it. The larger bees are the drones; the smaller the workers.

##### The Drone.

The drone or male bee is a stout, broad bee; he abdomen being rounded and not tapering



Queen.

Drone.

Worker.



Queen's Cell.

as in the worker. The head of the drone bears a strong resemblance to that of a blue-bottle fly. The eyes are a bright brown, the body brighter than that of the worker, the hum is very deep and loud, and when a large number are flying at once, the sound has been most aptly termed a roar. The sole use of the drones is the impregnation of the queen, which being accomplished, their destiny is fulfilled, and the workers soon after drive them from the hive to perish. The drones having no stings are quite unable to defend themselves. The drone is perfected about 25 days after the egg is laid.

##### The Worker.

The worker is a dwarfed and imperfect female, in which the reproductive organs are dwarfed and the sting is greatly developed. The workers are most aptly named, for on them rests the whole labour of the hive. They gather the honey, feed the larvæ, build the combs, attend upon the queen, and ventilate and clear the hive from all pollution. The worker is about 21 days in its different stages before it emerges a perfect insect, and is several days after that confined to the hive, performing internal duties, but quite unable to fly abroad. When large quantities of young bees are hatching daily—as about the middle of July—they will be noticed hovering around the hive in great numbers, trying their wings and taking a survey of their residence. Young bees are readily distinguished from old ones by their lighter colour; having the appearance of being powdered with flour. The worker lives about nine months.

##### The Queen.

The queen is the only bee which lays, and she is, therefore, the mother of the hive. Should a hive become queenless, either by death or swarming, the workers immediately tear down several cells, and fix a cell—generally on the edge of a comb—which closely resembles an inverted bird's nest; as shown by illustration (illustration of "queen cell"). In this cell an egg is placed which has been taken from a worker cell, and which would, if undisturbed, develop into a common worker—and here we come to the most remarkable fact in the whole of bee natural history. This egg being hatched, the tiny grub is fed upon a substance called by apiarians "royal jelly." It is quite unknown at present where the bees obtain this substance from. Its properties are most remarkable; for the grub which is fed upon it becomes a perfect insect in about seven days sooner than it would if fed on pollen, &c., and instead of being a common worker, emerges a perfect female—a princess of the blood royal. Should the bees have no worker eggs in the hive at the time the queen is lost, larvæ which are less than four days old are enthroned in royal cells, and are developed into perfect queens. Should the larvæ all exceed this age, no amount of royal jelly is sufficient to develop them into queens; but workers which have the power of laying drone eggs—and only drone eggs—emerge, and usurp the place of the true queens. These are termed "fertile workers," and a great nuisance they are to any one whose hives are honoured by their presence.

The young queen being hatched, stays in the hive for the first day or two of her existence, and then choosing the first fair day, leaves the hive on her wedding flight. Should she be lucky in meeting a drone, she returns to the hive a "fertile queen," and about a week afterwards commences her laying duties, which duties she continues to perform for four years, although she never comes in contact with the drone afterwards; nor does she leave the hive except at swarming time. Should the young queen not meet the drone before she is a fortnight old, she lays but few eggs, and they all hatch into drones. The eggs laid by a fertile queen are of two kinds: male and female eggs. The first hatch into drones, and no treatment of the bees can transform them into anything else. The second, as I have just shown, are transformed into perfect or imperfect females by the treatment they receive. Drone eggs, as we shall see farther on, are always laid in drone cells, and worker eggs in worker cells; showing that her majesty is quite aware as to the sex of the eggs she lays. The queen ceases laying about the middle of August, and recommences the following March, though this period may be extended, as will be shown, at the will of the bee-master. The queen bears the stamp of refinement and royalty, being much larger than the worker; and though less than the drone, her body is longer. This appears more evident from the comparative shortness of her wings, which do not exceed in length those of the worker. She possesses a sting, which is much smaller and more curved than that of the worker. She never uses it except in her combats with other queens. Impregnation never takes place inside the hive; consequently the mate of the queen is generally a drone from another hive, and as drones fly many miles, the chances are very great of an introduction of new blood and fresh vigour into the hive.

During wet summers, such as the one we have just had (1877), queens often miss meeting the drones, as these latter are fine weather gentlemen, and seldom fly far except during sunny weather, and the consequence is the queens become drone-breeders. Unless a fertile queen is given to it, the hive is doomed to certain destruction. During the height of the breeding season, extending through the hot summer months, a fertile queen lays at least 2,000 eggs per day. For the assistance of beginners in apiculture, the drawings of the queen, drone, and worker are given life-size.