

NATURAL HISTORY

OF

THE BEE.



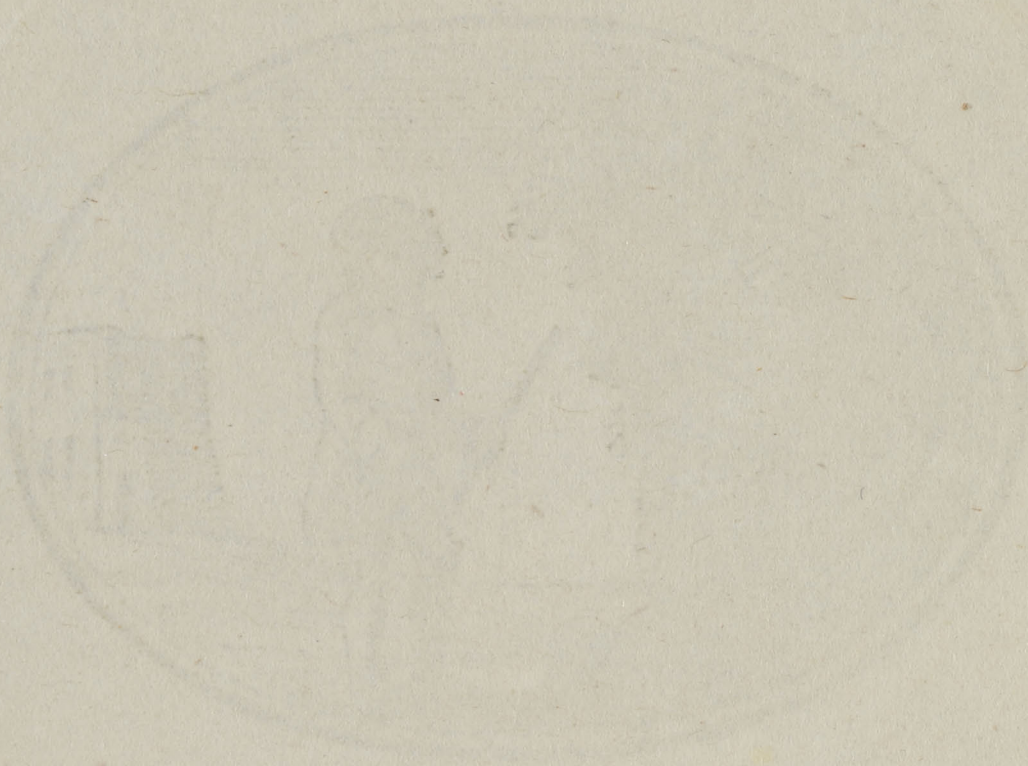
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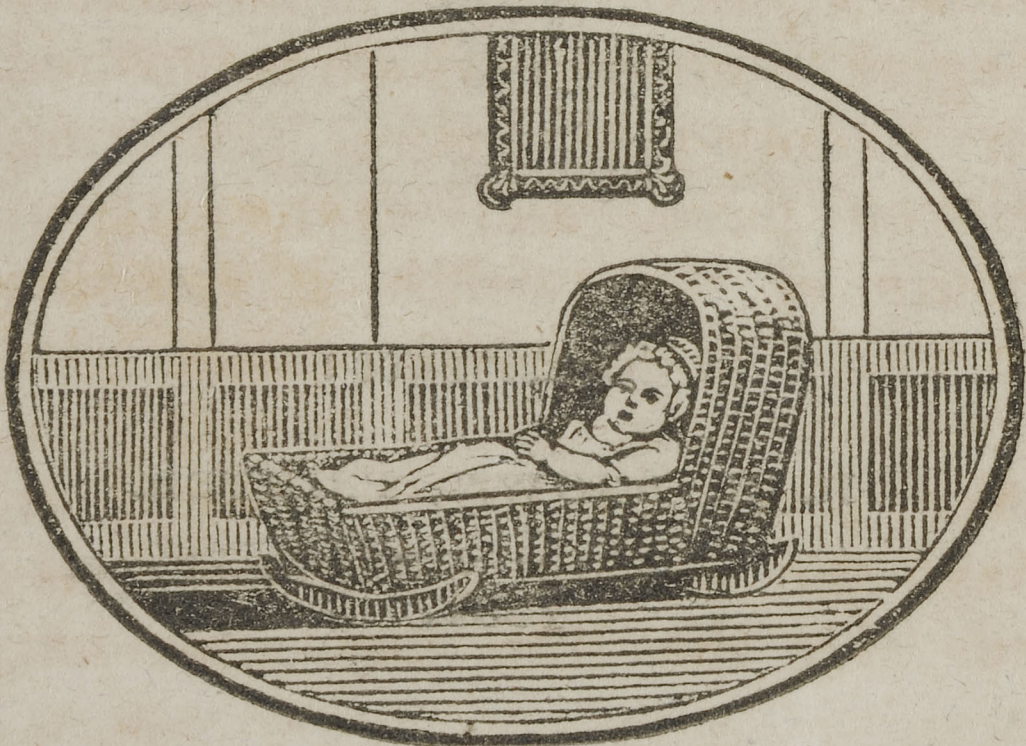
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The Queen Bee. The royal insect passes three days in the egg, is five a worm, when the bees close its cell, and it immediately begins to cocoon, which is finished in twenty-four hours. During eleven days, and even sixteen hours of the twelfth, it remains in a state of complete repose. Its transformation into a nymph then takes place, in which state four days and part of a fifth are passed. On the fifth day after her

appearance the queen quits the hive for the purpose of fecundation: forty-six hours afterwards she begins to lay eggs, and a hive will often consist of forty thousand inhabitants, the most of them her own offspring. The first eggs of the queen always give birth to workers. In spring she lays about two thousand eggs of males, resumes it again in August, but during the rest of the intervals she exclusively lays workers' eggs.— It is curious that oviposition is retarded by cold; during winter it does not take place. Huber relates an instance where a queen instead of laying her eggs 46 hours after fecundation, did not do so for several months, owing to her impregnation having taken place just before winter. The queen must be at least

eleven months old before she begins to lay the eggs of males.— The bees both workers and queen, know the period of oviposition proper for each kind of egg, and take care to provide suitable cells at a proper period. Huber removed all the workers' cells from a hive, and left nothing but the male cells; the bees, instead of repairing the damage done to the hive, by uniting the fragments of comb, seemed quite disheartened, went into the field, but returned unladen. The queen too, hesitated about laying her worker eggs in the large male cells, and at last they were seen to drop from her at random. However, six eggs were deposited regularly; but the workers did not treat them very carefully. They were removed

next day, and the cells left empty. In order to re-animate them, he gave the bees a piece of comb, composed of workers' cells, but which were filled with male instead of workers' eggs. For twelve days the bees obstinately abstained from working in wax, but at last they positively removed the whole of the male brood, and cleaned the cells, just as if they had been aware that the eggs which were to come from the queen required worker cells. As soon as this was done, the queen no longer dropped her eggs at random, but deposited them in the cells.— The male cells were then taken away, and the worker cells restored; upon which the ordinary labors of the hive were resumed. If the workers reasoned and felt,

here is a fact which would at once attest their foresight and their affection for their queen; they knew she required worker cells, and accordingly, to accommodate her, they pulled out the male brood, which under other circumstances, they would have fondly nourished.

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Economy of Bees. There are three substances for which bees forage during their excursions from the hive: honey, or a saccharine matter extracted from the nectary of flowers—the pollon or fertilizing dust of the anthers—and an odiferous resin called propolis.—Honey is extracted from that part of the flower called the nectarium. For the purpose of collecting this fluid substance, the insect is furnished with a trunk, or tongue,

which is capable of doubling up or elongating at pleasure. This is not formed in the manner of a tube, by which the fluid is to be sucked up, but like a tongue, to lick away the honied juice which nature has secreted in little glands which were always known to the bee, although they had, until a very recent period, completely eluded the researches of the most skilful botanists. From the tongue this sweet juice is conveyed to the mouth; it then passes through the gullet into the first stomach, or honey bag, which when filled, appears like an oblong bladder, and as transparent as chrystal. Children in country places are well acquainted with this bladder, and destroy many bees in order to get at their store of honey. When

the bee has sufficiently filled this bag, it returns to the hive, and reserving only a small part of its load for its own use, disgorges the remainder into one of the cells. Sometimes the insect may be seen delivering its surplus store to another bee, which appears ready to receive it at the entrance of the hive; when it flies off for a fresh supply. Some honey combs are always left open for the use of the common workers engaged in the hive; but the greater number of the cells filled during the course of the summer are carefully stopped up until the internal supply of honey begins to fail and it becomes necessary to have recourse to their contents. When the harvest of honey is so plentiful that the bees have not sufficient room for it, they

lengthen their cells or build new ones. The pollon, or yellow dust, which loosely adheres to the central parts of flowers, is another substance eagerly sought after by the industrious bee. The breast, legs, and many other parts of the body, are covered with a fine down, or hair. The insect enters the cup of a flower charged with this yellow farina, rolls itself round, and soon becomes quite covered with this vegetable dust. Nature has provided the bee with means admirably adapted to secure the treasures thus collected on its body; the last joint but one of each leg being formed exactly like a brush. These natural brushes are passed one after another over the various parts of the body, and by that means the pollon is collected into

two little heaps. The thighs of the last pair of the insect's legs are furnished with two cavities fringed with hair; these form a convenient basket for the use of the bee. The dust collected from a thousand flowers is kneaded into diminutive pellets and stuck into these cavities; and when these balls have been increased to the size of a grain of pepper, away flies the insect to deposit its store in the hive. But this meal, or dust, is not always to be obtained in sufficient quantities: early in the season, before the flowers upon which the bee feeds are generally blown, this pollon is contained in a capsule from which in its then immature state, it is not easily dislodged. The bee, however, well knows where the object of its

search lies concealed—it examines and feels these repositories: having discovered one sufficiently advanced towards maturity to answer its purpose, it pinches the capsule with its teeth, and then takes possession of the hidden treasure. When a bee charged with a load of this vegetable dust reaches the hive, it enters one of the cells head foremost. The pellets are then detached from the hollow cavities in which they have been carried, and being moistened and mixed with a small portion of honey, they are kneaded into a substance called by the country people bee-bread. An adequate supply of this food is indispensable for the health and strength of bees during the winter season.— Bees may be robbed of their hon-

ey, and will thrive if fed during the winter with treacle; but no proper substitute has yet been found for this bee-bread. When deprived of this necessary of life, they become consumptive and die. The gathering of the pollen affords a striking illustration of the means indirectly employed by nature to second her purposes. The pollen is the fertilizing dust of flowers; it is necessary for some of it to fall on a particular part of the pistil, in order that the flower shall give place to fruit, inclosing the seed of a future plant. Now, it has been remarked by a great number of naturalists, that the bee, when it collects the pollen from one plant, does not go to a different sort of plant for more, but, laboring to collect the same kind of

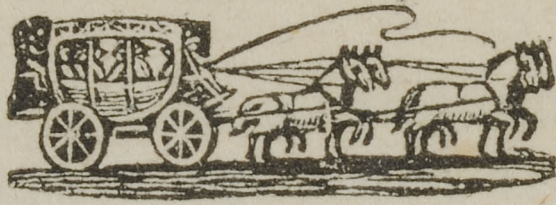
fertilizing dust, it seeks only the same kind of flowers. Since the foundation of the vegetable kingdom is effected in no small degree through the medium of insects, which, while searching for their own food, unconsciously sprinkle the fertilizing pollen on the re-productive organs of plants, it follows, that had the bee gone from one kind of flower to another, this would give rise to hybrid plants, and thus have counteracted the purpose of nature. *Murray's Family Library.*

Duels of Bees. On those fine spring days, in which the sun is beautiful and warm, duels may often be seen to take place between two inhabitants of the same hive. In some cases, the quarrel appears to have begun within, and

the combatants may be seen coming out of the gates eager for blows. Sometimes a bee peaceably settled on the outside of the hive, or walking about is rudely jostled by another, and then the attack commences, each endeavoring to obtain the most advantageous position. They turn, pirouette, throttle each other; and such is their bitter earnestness, that Reaumur has been enabled to come near enough to observe them with a lens without causing a separation. After rolling about in the dust, the victor, watching the time when its enemy uncovers his body by elongating it, in the attempt to sting, thrusts its weapon between the scales, and the next instant its antagonist stretches out its quivering wings, and expires. A bee

cannot be killed so suddenly, except by crushing, as by the sting of another bee. Sometimes the stronger insect produces the death of the vanquished by squeezing its chest. After this feat has been done, the victorious bee constantly remains, says Reaumur, near his victim, standing on his four front legs, and rubbing the two posterior ones together. Sometimes the enemy is killed in the hive; then the victor always carries the corpse out of the city and leaves it. These combats are strictly duels, not more than two being concerned in them; and this is even the case when armies of bees meet in combat. *Murray's Family Library.*

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