

**THE SHILLING BEE BOOK.
CONTAINING THE LEADING
FACTS IN THE NATURAL OF BEES,
WITH DIRECTIONS FOR BEE
MANAGEMENT**

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The shilling bee book. Containing the leading facts in the natural of bees, with directions for bee management by Robert Golding

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ROBERT GOLDING

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THE
SHILLING BEE BOOK,
CONTAINING THE LEADING FACTS
IN THE
NATURAL HISTORY OF BEES,
WITH DIRECTIONS FOR
BEE MANAGEMENT.
By ROBERT GOLDING,
HUNTON, KENT.

“ So work the Honey Bees—
Creatures that by a ruling nature teach
The art of order to a peopled kingdom.”

Shakspeare.

LONDON:
LONGMAN AND CO., PATERNOSTER ROW.
1847.

PREFACE.

Having been repeatedly importuned to publish the result of my experience in the management of bees, and it having been suggested that if I could so concentrate my observations as to bring them within the means of the poorer bee-keepers, a great benefit would be conferred upon them,—the price of most of our apiarian works placing them beyond their reach,—I have endeavoured, at the risk of a brevity amounting perhaps to paucity, so to condense the information I wished to convey, as to fill up a desideratum in apiarian literature—a *Shilling Bee Book*, and thus add to the poor man's scantily-furnished book-shelf a work which it is hoped will prove cheap, pleasing, and useful.

All that I have been able to attempt, is to give evidence on a few leading and most important points in the natural history of the bee, from my own experience; and also such practical information as will enable every lover of investigation in natural history, either to satisfy himself of the truth of these points, by the same means as I have adopted, or to apply them to rendering bee management agreeable and profitable in the highest possible degree.

Whilst, however, it has been one of my objects to enable the humblest bee-keeper to derive increased pleasure and profit from his care of that interesting insect,—at the same time I have given, for the assistance

of those who may have more leisure and greater means, reference to other authorities, whence they may learn the fullest knowledge of the progress of discovery and invention on the subject, from the earliest period. Trusting to the candour of all persons for excusing any inadvertent omissions or errors of style and language, it will give me great pleasure to find that my practical suggestions may prove of advantage.

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R. GOLDING.

NATURAL HISTORY.

Whilst it is certain that the produce of the Honey Bee was greatly in favour with the early inhabitants of all countries where it was known ; it is also pretty evident that the study of its natural history and curious architecture was matter of contemplation to enquiring minds in remote times. The philosopher Aristotle, the celebrated Roman agriculturist Columella (see his treatise *De Re Rustica*,) the great poet Virgil, all alike employed their pens in recording the wonders of our little architect.

A work on the Bee, to be useful, should be a compendium of the most valuable matter which can be gleaned from the best authorities, combined with the results of practical experience. Among these stands pre-eminent "The Honey Bee," by Dr. Bevan (Van Voorst, London, 1838,) which, to use the words of the *Quarterly Review*, is "the standard work" upon the subject. The writer of the present work having lent his humble assistance in the preparation of that work, feels alike at liberty to recommend its study to his apiarian brethren, or to draw from its pages the valuable assistance which they can supply ; containing as they do many particulars of the highest interest, which are necessarily omitted in a work of this character.

The Bee is considered by naturalists as belonging to

what are called perfect societies of insects, and in entomological arrangement is placed in the order *Hymenoptera*, genus *Apis*.

Every association or swarm of bees comprises three description of individuals.

The QUEEN, at once the mother and the mistress of the hive. She is distinguishable from the rest of the society by the great length of her body, and the proportional shortness of her wings.

The WORKING BEES, or undeveloped females, who are consequently *non-breeders*. In a single hive the number of these varies from 10,000 to 20,000. Upon this class devolves the labour of the whole community; they rear the young, collect and store the provision, and build the cells in which it is warehoused, and which contain the brood.

The DRONES, or MALES.—These generally make their appearance about the end of April, and remain only during the summer months, being expelled when it is certain that they are no longer required. They are, however, allowed to remain in a queenless stock, it may be assumed in a kind of forlorn hope that their services may be required. They are larger than the workers, *without stings*, and of a darker colour.

It is the office of the queen bee to multiply the species by depositing eggs in the waxen cells. These cells vary in size, according as they are intended for the rearing of drones or of workers. The royal cells, those intended for the rearing of queens, vary in a remarkable degree from the others, both in shape and direction. They hang perpendicularly, and somewhat approach to an inverted acorn and cup in shape, and are much *more massive in structure*. In these the eggs are de-

posited which are destined to become queens, and a stock, at the swarming season, generally contains from 3 to 6, or sometimes even 9 of these cells. The working bee comes forth a perfect insect in about twenty-one days after the egg is deposited; the queen in about sixteen days; and the drone in about twenty-four days. These periods probably vary with the state of the external temperature.

Bees, when deprived of their queen, have the power of selecting one or more worker-eggs, or grubs, and converting them into queens, thus showing that there is no inherent difference in female ova. To effect this, each of the selected grubs has a royal cell formed for it. Schirach, who was secretary to the Apiarian Society in Upper Lusatia, may be regarded as the discoverer, or rather the promulgator, of this fact, for there seems pretty good evidence of its having been long known, particularly in the Levant;* Schirach's experiments have been frequently repeated by others, and have been amply confirmed by those of Huber, Bonner, Dunbar, Bevan, and myself. Few questions in natural history have created more controversy among naturalists than this power of the bees to make a perfect queen; and although it has now become as well established as any fact can be, there are yet many who doubt, and some who absolutely deny, the power. These latter persons seem to have a vague notion about there being common eggs and royal eggs. *There is no such distinction.* Any common worker-egg is capable of producing a queen. For the satisfaction of the apiarian inquirer, I will extract from my journal my first experiments upon this subject.

* See Wheeler's Travels, London, 1682.

“ On the 22nd of May, 1833, I introduced into the unicomb hive (hereafter to be described) a second swarm, which of course contained a young queen. On the 29th I saw, adhering to the queen, what was probably, according to Huber’s opinion, the evidence of fecundation, and on the following day I saw her depositing eggs in the cells. On the 6th June, at 9 o’clock, I took away the queen. The bees did not appear to miss her until the next morning, when it was evident, from their agitation, that they had ascertained their loss. Some ran wildly about the hive, whilst others went flying and searching for her in its neighbourhood. This, however, did not continue long, for between 12 and 1 o’clock they had begun to construct three royal cells, the bees busily employed upon which frequently introducing their heads into them. On the 10th, two royal cells were finished and were sealed up, and the preparation of the other was discontinued. During the night of the 17th, one queen came forth, and was probably permitted to make off with her rival, for in the morning I found the other cell torn open at its side, and its contents gone. On the 3rd July the young queen began to lay eggs. On the 12th July I also removed this second queen from the hive. On the 14th three royal cells were begun as before. On the morning of the 26th one queen came forth, and at 11 o’clock the workers were assisting another young queen to get out by tearing away the cell. At 12 o’clock this young queen came out, and there were thus two queens at liberty in the hive at the same time. My fellow apiarians will readily believe how anxiously I watched for the combat between the two queens, as described by *Huber*. Both queens ran over the comb, as if search-