

# HONEY MAKERS.

INTERESTING OCCUPATION OF BEE CULTURE EXPLAINED.

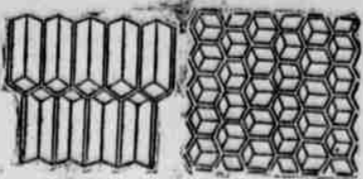
Queens, Drones, Workers, Robbers—Human Conditions Reproduced in the Hives—Great Profits Made.

Did you ever hear of robber bees, that wage fierce war on other colonies of bees and relentlessly carry off every drop of honey belonging to the vanquished? Well there are such, in real truth, says the Washington Star. Their only object is plunder. When they set out on a robbing expedition they select as their point of attack a neighboring defenseless colony, that has been disorganized through loss of its queen or demoralized through bad management. The burglaries of robber bees are es-

The immediate conditions that incite a colony to swarm are an abundant secretion of honey and general prosperity of the colony, with combs crowded with bees and bread. As the bees before swarming usually fill their little "knapsacks" with honey and are quite peaceable, there is seldom much difficulty in living them again by the use of a little smoke. If the cluster should be on a small limb that can readily be cut off, it can be laid down in front of a new hive. The bees will then go trooping in contentedly, but if they do not move fast enough a little gentle urging of the rear guard with a feather will hasten them.

To prevent swarms from absconding and to facilitate the work of hiving them, as well as to keep track more easily of the age of queens, many bee culturists prefer to clip the wings of the queens as soon as mated. The first season one of the large or primary wings is clipped half way; at the opening of the second season the other

to the plant from which it was gathered, and this is frequently far from agreeable. To make from this raw product the delicious and health-



WORKER CELLS OF COMMON HONEY BEE.

ful table luxury of cured honey is one of the special functions of the worker bee. The first step is the stationing of workers in lines near the hive entrances. These, by incessantly buzzing their wings, drive currents of air into and out of the hive and over the comb surfaces. If the hand be held before the entrance at such a time a strong current of warm air may be felt coming out.

The loud buzzing heard at night during the summer time is due to the wings of workers engaged chiefly in ripening nectar. Instead of being at rest, as many suppose, the busy workers are caring for the last lot of gathered nectar and making room for more. This may go on far into the night, or even all night, the activity and loudness being proportionate to the amount and thinness of the liquid. Frequently the ripening honey is removed from one set of cells and placed in others, incidental to the manipulation of the bees subject to it. When finally the process has been completed, the water constituent is found to have been reduced to ten or twelve per cent, and all disagreeable odors and flavors, probably due to volatile oils, have also been driven off in a great measure by the heat of the hive, largely generated by the bees. During the manipulation a subtle antiseptic, formic acid, secreted by glands in the head of the bee, has been added.

The queen, by a natural instinct, flies out to mate. Should she be lost, no more fertilized eggs would be deposited in the hive, and the old workers gradually dying off without being superseded by young ones, the colony would become extinct in a few months or meet a speedier fate through intruders—wasps, moths, or robber bees. The production of many drones is accordingly provided for, so that young queens flying out to mate will not incur too many risks from birds and insect enemies. But the loss of queens while flying out to mate is evidently one of the provisions of nature to prevent bees from undue multiplication, for were there no such checks they would become a pest in the land. On the other hand, the risk to the queen is not uselessly increased, for she usually mates but once during her life.

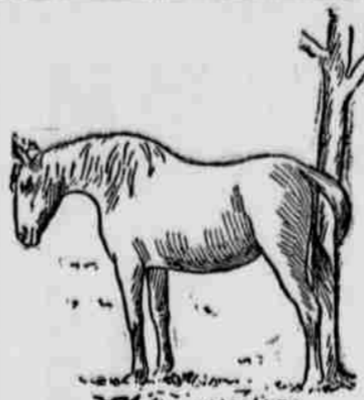
Queen bees are transported nowadays almost invariably by mail, and sent to all parts of the United States, and even to distant foreign countries, in a cage of diminutive pattern constructed for the purpose. The food usually employed in these cages by queen breeders is a soft candy made by kneading fine sugar and honey together until a stiff dough is formed. The food for the journey having been placed in the end of the cage opposite that containing the ventilating holes, a bit of honeycomb is pressed down over it to assist in retaining the moisture. The cover, with a bit of wire cloth between it and the bees, for greater security, together with the address and a one-cent stamp, completes the transportation arrangements for a queen and eight or ten attendant workers for a journey of 3000 miles. A special postal regulation admits them to the mails at merchandise rates—one cent per ounce. A recent estimate by one of the apian journals places the number of queens sold and thus transported through the mails annually at 20,000.

The different races of bees vary materially from each other in individual qualities, such as temper, spirit, tractability, pugnacity, industry, courage, honey-getting capacity, endurance of cold and character and flavor of product. Besides the common or brown

## A STRANGE ACCIDENT.

A Horse Gets its Tail Fastened to a Tree.

One of the most remarkable accidents that has ever happened in the fields of this country to stock occurred on a recent Friday night on the farm of Ephraim Willey, of Troy Township, Ohio, and he lost one of his best horses. The beast was out in the field grazing with a number of other horses kept for farm use, and it is thought that it backed up to a tree to scratch its tail, as horses do sometimes. While in that position the horse switched its tail about the tree and the hair caught in the bark. The horse was fastened in that position like a vise, and was in



PULLED ITS TAIL OUT BY THE ROOTS.

a horrible condition when found. It had pulled so long and hard that its tail was partially pulled out by the roots.

Mr. Willey does not know how long the horse was in the terrible position in which he was found, as the field in which they were grazing was supplied with all that is needful, and no attention to stock is required for supplies. The horse was a valuable one, and will be a great loss to Farmer Willey. This is one of the strangest accidents that has ever been heard of in that locality.

## A Wonderful Creature.

The polype is the most remarkable creature that now inhabits the earth. It cut transversely or longitudinally into several parts each part will soon become a perfect animal. Turn one inside out and it will continue to eat and enjoy itself. Professor Trombly cut them in two and placed them together in such a shape that he formed animals with two heads and animals with two sets of hinder parts and no heads! The cut edges in such cases readily unite, and the patched-up creatures go right on living as if nothing had happened.

## The Champion Reinswoman of America.

To Mrs. Harriette Winch, of Middlebury, Vt., belong the title of champion reinswoman of the country. Perhaps no other woman has a better practical knowledge of the horse than she, and there are but few men who can handle the ribbons any better, especially in a race. It was in 1894 that she determined to become a professional reinswoman, but illness prevented her making a public appearance until this spring. After driving a number of lesser turf lights, Mr.



MRS. HARRIETTE WINCH.

Winch bought Major Wonder from Gil Curry and presented him to his wife. Three weeks later, at Sandy Hill, N. Y., Mrs. Winch drove Major Wonder against the track record—2:26—made by Mrs. S. F. Crosby with Emma B. She clipped 14 seconds off this record. At Glens Falls, N. Y., Mrs. Winch drove the Major to a "bike" road cart, covering a mile in 2:17. She then repeated, and by excellent judgment landed the Major past the wire in 2:12, thus establishing a record.

## An Ancient Tenor.

Sims Reeves, aged seventy-eight, and his young wife and infant, are on their way from England to South Africa. It is the intention of the ancient tenor to give concerts, and if his voice holds out he will go on to Australia. One reason why Reeves has preserved his voice to such an advanced age is that he has invariably refused to sing when his throat was relaxed or in a bad condition, and, oddly enough, his throat has given him a great deal of trouble all through his artistic career.

## Webster and His Butcher.

Daniel Webster was once sued by his meat man. The man did not call upon Webster afterward to trade with him. Webster met him in the course of a few days, and asked him why he didn't call. "Because," said the man, "I supposed you would be offended and wouldn't trade with me any more," to which Webster replied, "Oh, sue me as many times as you like, but for heaven's sake don't starve me to death."—Boston Transcript.

## NEW DRESS DESIGNS.

SOME LATE HINTS FROM THE WORLD OF FASHION.

A Stylish Basque Specially Designed for Stout Women—Party Gown for a Young Girl—Child's Apron.

The stylish basque depicted in the large illustration is specially designed to meet the requirements of ladies who have grown stout, the pretty pointed outline of the lower edge, the double under arm-gores, and the long pointed revers conducting to give a slender appearance to the stoutest figure. Nut-brown mohair is the material represented, small round pearl buttons with buttonholes closing the front edges. The standing collar fits the neck smoothly, and a ribbon or silk stock can be worn over and tied in a bow at the back, if desired. The pointed revers and coat collar are finished with stitched edges in tailor style. They can be faced with contrasting material or trimmed with braid, gimp or otherwise decorated. The lining fronts can be faced with contrasting fabric or decorated with braiding to give a more decided vest effect, or the front with revers and collar can be omitted and the vest outlined with bands of passementerie if a change in style is desired. The mode can be stylishly developed in all

little apron made of grass linen with trimmings of batiste edging and insertion. The straight lower edge of the full skirt is ornamented by a deep hem and band of insertion. An attractive feature is the pretty bertha, gathered at the top to fall well over the shoulders in square handkerchief style (a



GIRL'S APRON.

novelty considerably in vogue). The short, low yoke, fitted by shoulders seams, has the fullness of the skirt portion joined to its lower edge in round outline. Muslin in plain, striped and cross-bar patterns may be employed in making, also linen, lawn, nainsook and similar fabrics, decorated with embroidery, edging, insertion, etc. To make this apron for a girl of



A BASQUE FOR STOUT LADIES.

kinds of dress materials, preference being always given to those having a smooth, plain finish, or small stripe, check or figured designs in serge, Henrietta, Sicilienne-faced cloth, canvas, chevot, tweed, mohair, alpaca, silk or peau de soie. To make this basque for a lady in the medium size it will require two and one-half yards of forty-four inch wide material.—May Mantou, in Modes.

## IDEAL PARTY GOWN FOR A GIRL.

An ideal dancing or party gown is here represented made of pale reseda silk and decorated with multicolored embroidered chiffon. The front is arranged over fitted linings provided with single bust darts to which the material is applied at square yoke depth. The full front is joined to the lower edge of yoke, the joining being concealed by the pretty insertion that forms a pompadour effect in front extending over the shoulders and on either side of the back. Three bands of similar insertion fall from yoke. The skirt-shaped front, side gores and full straight back is particularly adapted to sheer fabrics. The foot trimming consists of a narrow chiffon-edged frill with band of insertion above. The gown may be developed in challis, creponne, taffetas, or cream-



GIRL'S PARTY GOWN OF RESEDA SILK.

white alpaca, or fashioned in lighter fabrics, as organdie, Swiss, or mousseline de soie over colored linings. Flax-colored batiste over old rose makes an effective combination. To make this waist for a miss in the medium size it will require of thirty-six inch wide material two and five-eighths yards, and for the skirt four yards.

## APRON FOR A LITTLE GIRL.

Our illustration shows a serviceable

six years it will require four yards of thirty-six-inch wide material.

## ANTIQUÉ RUFFS TO BE FASHIONABLE.

Dinner gowns this fall are made with ruffs. Reincarnations of Queen Elizabeth appear at every social function in New York, and the ghosts of sixteenth century fashions have become re-embodied in the ultra-modern drawing-rooms of New York's fashionable women. Undoubtedly the stately ruff will do much in the way of imparting distinction to the costumes it accompanies, but a fashion that cannot be becoming to more than one woman out of ten should not be too hilariously welcomed.

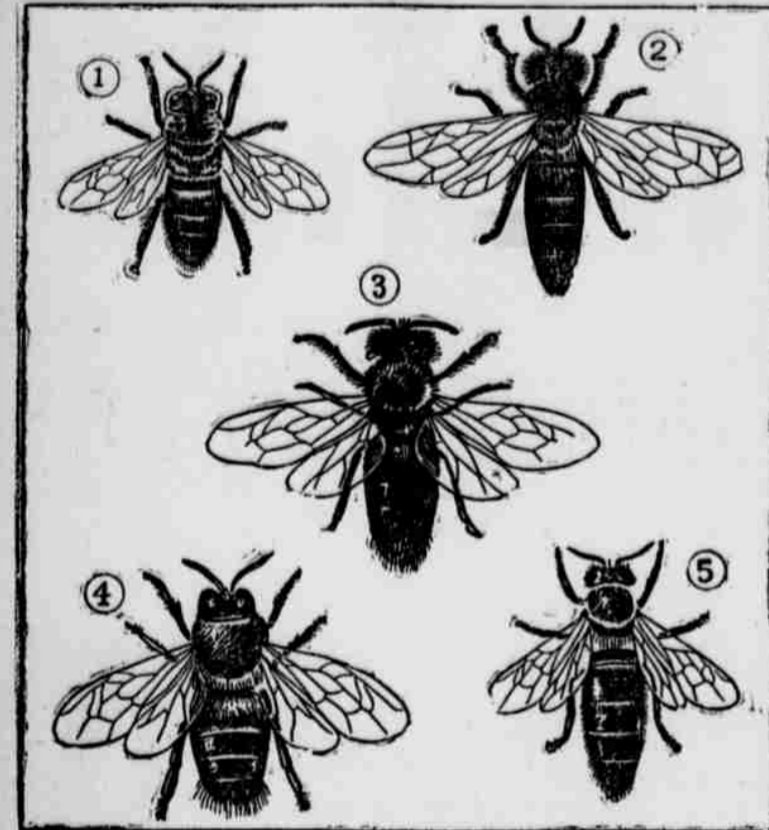
It is the woman with the long neck, the well-set head, the erect and stately bearing, who should select the ruff as her most appropriate adornment and encourage her dressmaker in making it as high and bristling as she will. It will serve to emphasize the good points of her form and make her face seem only the more comely.

Stout, short women, on the other hand, would better ignore the fact that such a fashion is coming in, and on dressy occasions leave their short necks, as far as possible, uncovered. That there is a time and a place for all things is never more emphatically true than in considering a matter of modes. To know instinctively the right time and the right place is, in the world of fashion, the summit of wisdom.

The new ruffs are of the highest and stiffest type. Oftenest the ruffs are of white muslin, stiffly starched and carefully adjusted. As everybody knows, the gown with which a ruff is worn must be high necked in the back. Thus the ruff stands very close to the back of the head and the ears, and is so stiff and straight that it makes an effective and becoming background to a pretty face. The corsage is always cut square in front, and the ruff comes down for a little at each side of the square cut neck, leaving the white throat and the jewels which bedeck it in a sort of frame.

Naturally with this manner of costume the low coiffure has to be abandoned, for, however many coils might be placed at the back of the neck, the ruff would conceal them. So the hair is smoothly brushed up at the back, and puffed and frizzed and rolled into as lowering a piece of architecture as the material will permit.

The forehead is left uncovered too, after the manner of good Queen Bess herself, and the hair drawn away from the face at front and sides over different sized rolls and rats or whatever these feminine devices may have been called in the course of sixteenth century toilets.—New York Journal.



HONEY BEES.

1. Worker, Carniolan variety of *Apis mellifica*—twice natural size.
2. Giant honey bee of East India (*Apis dorsata*), worker—twice natural size.
3. Giant honey bee of East India (*Apis dorsata*), drone twice natural size.
4. Drone, Carniolan variety of *Apis mellifica*—twice natural size.
5. Queen, Carniolan variety of *Apis mellifica*—twice natural size.

pecially frequent when forage is scarce in the field, or when they see stores of honey in hives other than their own poorly guarded. In such attacks they kill thousands of the defenders and leave the remainder to starve miserably, while they themselves make off with the spoil. They seem to have no code of morals that inclines them to select as opponents forces equal in strength to their own. With them "all's fair in war." A great stir and loud buzzing in the hive of the conquerors attest their rejoicing over their ill-gotten gains. It is always to the interest of the bee owner to stop this demoralizing business, and the quicker the better.

An interesting chapter on robber bees, as well as a great quantity of other quaint and curious facts about bees, is contained in a timely bulletin just issued by the division of entomology, United States Department of Agriculture. The importance of the bee industry in the United States today is not generally realized, for despite it has developed chiefly within the last forty years, its present magnitude is surprisingly enormous. It is shown that the present annual value of bee products in this country is not far from \$20,000,000. The honey and wax alone produced in 1890 and sold at wholesale rates netted \$7,000,000.

It is calculated that 300,000 persons in the United States are engaged in the culture of bees. In 1889 nearly 64,000,000 pounds of honey were produced by them, as compared with 14,000,000 pound in 1869. There are now running in this country fifteen steam factories, besides a large number of smaller establishments, for the manufacture of bee hives and apian implements. It is estimated by the experts of the Department of Agriculture that the present existing flora of the United States could undoubtedly support ten times the number of colonies that it now maintains. This branch of agricultural industry does not impoverish the soil in the least, but, on the contrary, results in better seed and fruit crop.

Recent investigations by the Department of Agriculture show that certain varieties of pears are nearly or quite sterile until bees bring pollen from other distant varieties for their cross fertilization.

These busy little producers of "the nectar of the gods" are truly wonderful creatures, and their methods of life and activity offer a fascinating study in the country. Many of their habits and instincts are strikingly suggestive of human nature.

Thus the swarming of an increasing colony closely resembles a strike of workmen or operatives in a mill. The outward indications immediately preceding the phenomenon are a partial cessation of field work on the part of colonies that have hitherto been industriously gathering honey, and the loitering of these workers in squads and clusters at the entrance of the hive. Apparently many are awaiting the signal to strike or migrate, while some seem not yet to have caught the spirit of unrest, but remain at their work. Suddenly great excitement seizes the workers that happen to be inside the hive. They rush forth pell mell, accompanied by the old queen, and after circling about for some minutes cluster on some neighboring tree or shrub.

large wing, and the third season an additional clip is taken from one of the large wings, and with it a portion of one of the secondary or smaller wings. The loyalty of a colony to their queen is proverbial, and it is principally by operating upon this instinct that bee culturists manage the work of a colony.

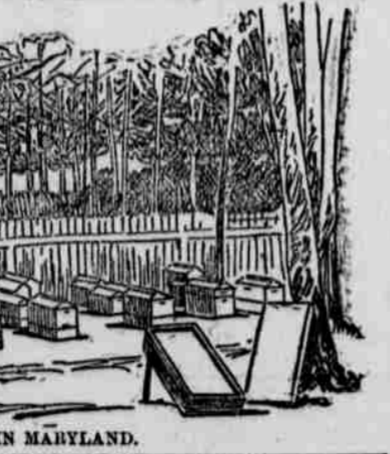
Each colony of bees in good condition at the opening of a season contains a laying queen and some 30,000 to 40,000 worker bees, or six to eight quarts by measurement. Besides this there should be four to six combs fairly stocked with developing brood, with a good supply of honey about them. Several hundred drones may also be present.

Under normal conditions the queen lays all the eggs that are deposited in the hive, being able to deposit as many as 4000 eggs in twenty-four hours. Ordinarily she mates but once, flying out from the hive to meet the drone—the male bee—high in the air, when from five to nine days old. If the eggs are fertilized they develop into workers or queens, according to the character of food given and the size and shape of the cells; if unfertilized, into drones. The queen's life may extend over a period of four or five years.

Upon the workers, which are undeveloped females, devolves all the labor of gathering honey, pollen and glue, bringing water, secreting wax, building combs, draughting designs, stopping up crevices in the hive, nursing the brood and defending the hive from invasion. To do all this, they are furnished with highly specialized or-

gans. The drones seem to have no other office except that connected with reproduction and contributing to the general warmth of the hive, necessary to the development of the brood.

The liquid secreted in flowers is usually quite thin, containing, when just gathered by the bee, a large percentage of water. The bee sucks or laps it up from such flowers as it can reach with its flexible tongue. This nectar is taken into the honey sac, located in the abdomen, for transportation to the hive. It is possible that part of the water is eliminated by the gatherer before it reaches the hive. However this may be, evaporation takes place rapidly in the heat of the hive after the nectar or thin honey has been stored, as it is temporarily, in open cells. Besides being thin, the nectar has at first a raw, rank taste, generally the flavor and odor peculiar



AN APIARY IN MARYLAND.

German bee, imported from Europe to this country some time in the seventeenth century and now widely diffused from the Atlantic to the Pacific, several other races have been brought in to the United States and acclimated—the Italian in 1860, and later the Egyptian, the Cyprian from the Island of Cyprus, the Syrian, the Palestine, the Tunisian and the Carniolan from Carniola, Austria. Of these the brown or black German, the Italian and the Carniolan are probably the only races existing pure in the United States, the others having become more or less mixed. Egyptian bees were tried here some thirty years ago, and, like the Syrians and Palestines imported in 1880, they were condemned as inferior in temper and wintering qualities to the other races, despite their greater fecundity and greater energy in honey collecting.