

ABOUT WASPS.

One day this summer, my little nephew brought me a couple of small and very pretty wasps' nests, which were deserted by the insects. Each nest consisted of a row of cells placed horizontally, and covered by a sort of shelter or umbrella to keep off the rain.

"What are the wasps good for?" asked the young man. "English youngsters of about your age find them very useful," I replied, "to supply them with pocket-money." The owners of fine gardens pay for every captured nest. The wasps are very destructive to various garden crops, especially to juicy fruits, such as plums, grapes, and others. The most troublesome wasps in that country build their nests in the ground. The boys having found a nest, lay siege to it. They attack the nest in various ways, the most effective being to pour some gas-tar into the opening of the nest. This makes the nest no longer habitable, for the insects cannot avoid smearing their wings with the tar, when they are

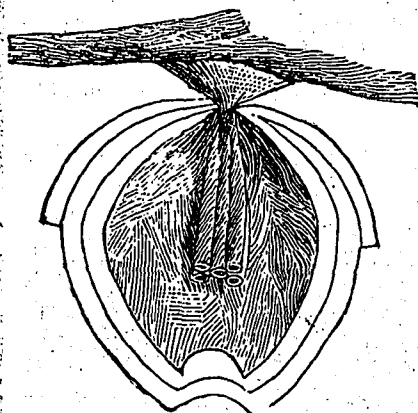


FIG. 1.—SECTION OF WASP'S NEST.

helpless and soon die. The nests are afterwards dug up and presented for count and pay, a shilling a nest being the former rate.

ARE WASPS OF ANY USE?

Of late, gardeners do not regard wasps as being an "unmixed evil" so much as they formerly did, and think that the many injurious insects of other kinds that they destroy more than an offset to the harm they do to the fruit. Like the bees, the wasps lay their eggs in a cell. This egg hatches and produces a larva, or grub; this larva cannot leave its cells to find its food, and must be fed. The grub of the bee is fed upon the pollen of flowers mixed with honey, but the young wasp requires "strong meat," and is fed upon the grubs of other insects, or upon the perfect insects, from which the mother wasp bites off the wings, legs, etc., before feeding it to her young. In due time, about thirteen or fourteen days, the young wasp has made its growth: it then spins a thin web, which closes the mouth of its cell, and in about ten days it comes out a winged insect. The old cell is cleaned out, another egg is laid, and the performance repeated again and again, to the end of the season. Though bees and wasps are closely related, they differ in many important respects.

HOW BEES AND WASPS DIFFER.

In their building material, the bees use wax, which is formed under the rings or scales of their bodies. Wasps build of a kind of paper which they make from exposed and partly decayed wood. They may be seen on old rails, fence posts, weather-worn boards, gathering the fibres, which they

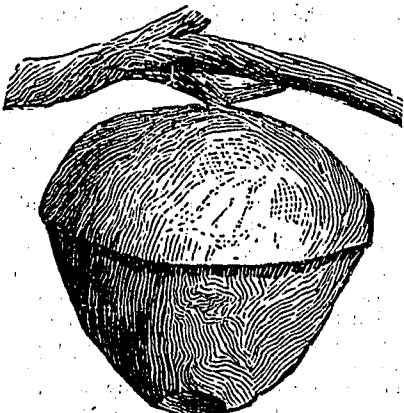


FIG. 2.—WASP'S NEST COMPLETE.

pull off fibre by fibre, with their powerful jaws. They work it up with their saliva,

and make it into paper of various degrees of fineness, according to its position in the nest.

PAPER FROM WOOD.

Making paper from wood pulp is one of the greatest modern inventions. Paper was formerly made of rags, but the demand for paper greatly exceeded the supply of rags, and it is not many years ago that poplar and other soft woods were ground up into pulp to take the place of rags, in all but the finer kinds of paper. Yet the wasps had been setting an example in doing this for untold centuries.

NEST BUILDING.

We very frequently see in the bright days of early spring, especially in the country, numerous wasps buzzing about the windows. These are female wasps which have passed the winter in a dormant state, and have now come out to find a place in which to build their nests and continue their kind. When a suitable place is found, as under the eaves of the house, or under the window frame, or other sheltered place, the nest is begun by a single female. An English observer, who does not give his name, describes in "Science Gossip" how a wasp began her work. As we have wasps in this country which build in much the same way, the illustrations will answer well enough to show the way in which ours begin their structures. The wasp, or queen, as this observer calls her, first attached to the frame of the window a very strong stem. From this stem suspended a comb of five cells of coarse thin paper, with their openings down. The next step was to build a shell or covering around the cells: beginning it at the stem and continuing it as in figure 1, which shows the nest in section. After this first cover was completed, she built another at a little distance from the first, and then a third, each with an opening below, to allow of a passage to the interior. As a finish, a fourth shell or cover was commenced and carried about half way down, as in figure 2. This served to keep all dry and warm within. Finally, one egg was laid in each of the five cells. When the eggs were hatched, the queen was kept busy in providing food for the grubs; as they grew she enlarged their cells, to give them room as required.

In some wasps, and in the hornet, which is a kind of wasp, the colonies are quite large. The nests contain several horizontal combs, the numerous cells in each with their mouths downward, the general routine of life in which is much the same as in the smaller nests. Some wasps make their nests of mud, plastered against walls, and some make burrows in the soil. The nests usually contain the females, or queens, the neuters or workers, which are undeveloped females, and the males. The females and workers are provided with stings, which are more painful than those of bees. The pain is stopped by applying a drop of water of ammonia.—*American Agriculturist*.

HOW THE LEAD GOT INTO THE PENCIL.

BY OLIVE THORNE MILLER.

I know a curious house with two doors. Into one door go cedar logs and barrels of graphite, and out of the other comes an endless procession of beautiful pencils, red and black, round and cornered, big and little, some with caps of ivory or rubber, and some with none.

It isn't a very long journey through that house, but it's a very busy one. Let us go in. The first room is the blackest you ever saw; it looks as if the whole thing had been dipped into ink, and if you touch the tip of your finger anywhere, you'll be marked. There are two long rows of big tanks in which graphite and clay are being washed and cleaned, and there are pans of blackness itself, and there is a large tub with a wheel running around in it. This persevering wheel is simply mixing together the two substances, for graphite alone is too soft to use; it must be joined with clay: the more clay the harder the pencil.

But there is an interesting thing going on even in this black hole. Out of a small machine comes all the time a soft black string, and falls on a board in a queer-looking pile. This is a press: into the top is poured the thick, tough paste that comes out of the mixing tub, and being squeezed more than it can bear, it is pushed out of a

small square hole in the bottom. When the board is full of yards and yards of the tangled-looking stuff, it goes into the hands of a boy, who was white once—though you wouldn't think it, so covered are face and hands with the black of the leads he works with.

The business of this youth is to straighten the leads, and he does it by laying the soft string across a board three or four times as long as a pencil, pushing it up evenly against the raised edge, and cutting it off. Length after length he thus lays straight, and when the board is full it goes into a very hot room to dry.

Maybe you think the leads are now ready to take up their residence in their cedar houses; but they must go through another process, or they would crumble as fast as we sharpened the pencil. When dry, they are cut into pencil lengths, packed tightly into cases, and baked. Now they are ready to use.

While all this has been happening to the lead, a home has been prepared for it to live in. Pencil houses are made in blocks, like city houses, always six in a row. When the cedar comes into the room, it is in the shape of little boards, somewhat longer than a pencil, and as wide as six pencils side by side. Half of the boards are nearly as thick as a pencil, and the other half very thin—for roofs, as you will see. First the thicker boards go through a machine that ploughs six little square grooves in them, and now at last both cedar and lead are ready to be joined for life, to wear out in useful work together.

This happens in a most disagreeable room, strong with the odor of glue, and at the hands of sticky, dreadful-looking boys and girls. The first girl daubs one of the clean, sweet-smelling cedar boards with hot glue, and pushes it along to the next. This girl takes in one hand some leads, spreads them out like a fan, and presses six of them into the six little grooves, where they fit perfectly. Then she pushes it back to the first girl, who slaps on the roof in a second, before the glue has time to cool. Now it goes to a boy who packs it on top of a pile in an iron frame, where it is screwed down to prevent it from warping. After another rest in the drying-room, the ends are sawed off square, and they are ready to go down stairs.

They go by themselves; that is, they are placed one by one in the top of a case that reaches to the floor below, to the very jaws of a machine. As one of these blocks touches the bottom of the long case, a finger of steel comes up and pushes it forward, between two sets of small knives, and it comes out the other side cut into six nice round pencils.

They are now perfect for use, but they have to be smoothed to fit them for polite society. They are polished in a droll way. A man stands before an endless belt full of notches and feeds it, a pencil to a notch all the time. The belt is moving slowly along, and the next moment the pencil passes under four wooden hands with gloves of emery, which polish it off as if they liked the fun, while the pencils rattle but cannot get away, and in a second or two drop, all warm and shining, into a basket below.

If one were satisfied with plain cedar pencils, they would now be done; but fashion says they must be black or red. So into big barrels go thousands at a time, together with the red or black coloring matter that is to paint them. There the steam-power shakes them back and forth, and over and over, with a great rattle and clatter, till every pencil has its colored coat.

Now comes the last machine, and in the factory I speak of, near New York, it is a marvellous affair. At the beginning is a box full of pencils, which drop one at a time on the bed of the machine. From here it is instantly pushed through a cup of varnish, and comes out wet on the other side. At once it falls on to an endless open belt, which carries it slowly through a hot-air box that dries it on the way. At one point each pencil is registered, and when ten gross have gone through, something drops that strikes a bell and stops the machine. A man comes, takes away the ten gross, and starts up the machine again.

The gilt lettering and putting into packages of one dozen are at present done by hand, but I dare say by the time you are grown up, a machine will be contrived to do the whole thing itself.—*Christian Union*.

WHAT NOT TO SAY?

Careless habits of speech are among the prominent faults of our young people, even those young people who have advantages of schools and intelligent home surroundings. Recognizing this the professor of English literature at Wellesley College has prepared a list of "words, phrases and expressions to be avoided," from which the young (and old) readers will receive many serviceable hints:

Guess, for suppose or think.

Fix, for arrange or prepare.

Ride and drive, interchangeably (Americanism).

Real as an adverb, in expressions real good, for really or very good, etc.

Some or any, in an adverbial sense; e. g., "I have studied some," for somewhat.

"I have not studied any," for at all.

Some ten days, for about ten days.

Not as I know, for not that I know.

Storms, for it rains or snows moderately.

Try an experiment, for make an experiment.

Singular subject with contracted plural verb; e. g., "She don't skate well."

Plural pronoun with singular antecedent; "Every man or woman should do their duty"; or, "If you look any one straight in the face, they will flinch."

Expect, for suspect.

First-rate, as an adverb.

Nice, indiscriminately. (Real nice may be doubly faulty.)

Had rather, for would rather.

Had better, for would better.

Right away, for immediately.

Party, for person.

Promise, for assure.

Posted, for informed.

Post-graduate, for graduate.

Depot, for station.

Stopping, for staying.

Try and do, for try to do.

Try and go, for try to go.

Cunning, for small, dainty.

Cute, for acute.

Funny, for odd or unusual.

Above, for foregoing, more than or beyond.

Does it look good enough, for well enough.

Somebody else's, for somebody's else.

Like I do, for as I do.

Not as good as, for not so good as.

Feel badly, for feel bad.

Feel good, for feel well.

Between seven, for among seven.

Seldom or ever, for seldom if ever, or seldom or never.

Taste and smell of, when used transitively. Illustration: We taste a dish which tastes of pepper.

More than you think for, for more than you think.

These kind, for this kind.

Nicely, in response to an inquiry for health.

Healthy, for wholesome.

Just as soon, for just as lief.

Kind of, to indicate a moderate degree.

The matter of, for the matter with.—

Boston Evening Transcript.

THE OLD DECANter.

There was an old decanter,
and its mouth was gaping
wide; the rosy wine had
ebbed away and left its
crystal side; and the
wind went humming,
humming, up and down
the sides it flew, and
through its reed-like hollow
neck the wildest notes
it blew. I placed it in
the window where the
blast was blowing free, and
fancied that its pale
mouth sang the queer-
est strains to me. "They
tell me—punny conquerors!
the Plague has slain his ten,
and War his hundred thou-
sand of the very best of men;
but I,—twas thus the bottle spake
—but I have conquered more than all
your famous conquerors so feared and famed of
yore. Then come ye youths and maidens all come
drink from out my cup the beverage that dullest
brims and burns the spirits up; that puts to
shame your conquerors that slays their foes
below, for this has deluged millions with the
lava tide of woe. Though in the path of battle
darkest waves of blood may roll; yet
while they killed the body, I have
damned the very soul. The
cholera, the plagues, the sword, such
ruin never wrought as I, in mirth or
malice, on the innocent have brought.
And still I breathe upon them, and they
shrink before my breath; and year by year
my thousands tread the dismal road of DEATH."
—Selected.