Little Creatures About Our Homes

By LE ROY WELD

XII.—What Experiments With Ants Teach Us.

THE study of ants is fascinating and profitable recreation for the long summer months. How to begin may be learned from what follows, and once started you will need no further directions.

In the first place, it will be necessary to induce a colony of ants to build their nest in a place so situated that you can readily observe them at any time. Fortunately this is a very easy matter, and if you observe carefully the following instructions you will have no trouble:

Get two pieces of window glass about 10 by 12 inches and four strips of wood about half an inch wide and an eighth of an inch thick, two of them being half an inch shorter than the length of the glass, one as long as the width of the glass and the fourth about two inches shorter than the width of the glass.

These strips may be obtained by splitting up the bottom of a peach basket. By means of some good glue cement these strips firmly to the surface of one plate of glass around the edges and then cement the other plate down upon them.

This will make a space between the plates of glass about 9 by 11 inches and an eighth of an inch high, inclosed all around except about an inch at one corner.

When the glue has thoroughly hardened, the space between the plates must be filled with very fine, dark earth, which should be sifted if possible. This may prove a long and tedious process, and it may be better to leave out the shorter strip along the end until the dirt is in. It should then be placed in, however, in order to keep the dirt from drying out. This apparatus is to be the artificial nest of the ants.

Before introducing the colony into this nest it is necessary to provide some means of confining them. There are various ways of doing this, the best one being to surround the nest with water by laying it on a piece of inch board, setting the board in a shallow pan and pouring a little water around it. Great care must be taken not to get water in the nest.

Now to introduce the colony get a large tin can or a tin pail with a tight cover and a trowel or spade. Go out and look until you find what appears to be a thrifty nest in the ground. Open your tin can, dig up the nest, ants and all, with one dip of the spade, thrust it into the can and clap on the cover.

Carry your prize home, set it on the glass nest, surrounded by water, and cautiously take off the cover. The ants will immediately swarm over everything as far as the water, and you must take care that none gets drowned during the excitement.

Very soon, however, they will become more calm, and it is very probable that in less than ten minutes some of them will find the opening into the artificial nest and at once begin excavating it.

Inside of one day they will have an elaborate nest dug, with its main hall and long tunnels, and will be thoroughly established in it.

You should now dump the dirt from the can out upon the nest and, using a broad knife blade, take it up a little at a time, carefully pick out any larvæ (little white grubs) or pupæ (cocoons) that the ants have not already removed, place them near the mouth of the nest and throw the dirt away. The nest should now be covered with a sheet of pasteboard to keep out the light, which the ants dislike.

By removing the pasteboard at any time you will be able to watch these little creatures in their new home. You can learn more about their mode of living by observing them for a few days than could be written in a whole book. The nest should be kept in a warm, light place, preferably before an open window, and the ants should be fed with a variety of things, such as small grubs, insects, bits of meat, fruit, honey, sugar, etc.

The nest should not be shaken or disturbed in any way, and the pasteboard should be kept over it when you are not looking at it.

Before saying anything about the senses and powers of these insects let us examine the structure of their tiny bodies. Much may be learned by simply looking at them, especially if they belong to one of the larger species.

A glance will show that the three divisions of the body—head, thorax and abdomen—are quite distinct and that the abdomen is fastened to the thorax by what looks like a short stem with a knot in it. Under a small magnifier the head is seen to be provided with a pair of powerful pinchers, or mandibles, a pair of feelers, or antennæ, and a pair of compound eyes.

There are also three small, simple eyes in the top of the head. Close study with a powerful microscope reveals the fact that there are in the tips of the feelers organs that seem to be designed for ears, and it is also thought that the sense of smell is located in these feelers, as will be seen presently.

The scientist who has probably studied the habits of ants more patiently and carefully than any other is Sir John Lubbock. The results of his many experiments to determine something of their senses and intelligence are truly marvelous. He made extensive tests of their senses of sight, smell and hearing and of their powers of communication and recognising each other, some of which will be briefly described.

It is very evident that ants have a more or less definite sense of sight. However, it is probable that they cannot see objects distinctly at any great distance, from the fact that they apparently take no notice of things going on around them, except those in their immediate vicinity, within a few inches.

One thing which Lubbock clearly proved is the fact that ants have the power of distinguishing colors and also that bluish and violet colors are not agreeable to them. He did this mainly by laying pieces of colored glass over the nest in broad daylight and watching the behavior of the ants under the different colors.

The sense of smell is also highly developed in ants. This is shown by the fact that they will go directly to honey, sirup, etc., in the dark and will even crawl through narrow, indefinite cracks and openings to get into the sugar box, as we all know.

Lubbock made some experiments which lead us to believe that the sense of smell is located in the antennæ. He accustomed the ants to walking over a strip of paper to get their food and then hung a camel's hair brush dipped in musk, peppermint or other strong scent directly over this paper. The ants would often stop and turn back on smelling the perfume, indicating that it was disagreeable to them. On slowly advancing a feather dipped in perfume toward an ant that was at rest the ant drew back the antennæ, whereas an unscented feather had no effect.

No such results, however, were obtained by Lubbock in his experiments on the sense of hearing. In fact, all of his experiments had decidedly negative results, and scientists generally accepted the apparent fact that ants cannot hear. But Lubbock carefully avoided concluding that ants are really deaf, and some experiments made by the author several years later seem to point to the opposite conclusion.

One experiment performed on several nests containing different species may be described as most significant. The ants in a nest all being perfectly quiet, a shrill note was blown on a whistle near the nest, great care being taken that the ants should not be disturbed in any other way. Immediately there were confusion and alarm, the ants running excitedly hither and thither, carrying their eggs, grubs and cocoons, which were usually piled at one side of the main hall of the nest, off into the long passages, evidently endeavoring to hide them. This was the invariable result whenever the experiment was tried.

Strange to say, these same ants were not apparently much alarmed when any one tapped on the glass nest or even picked it up and handled it. Many experiments with single ants resulted in the insect wildly waving its antennæ when compelled to listen to shrill sounds, thus indicating the location of the sense of hearing in these organs.

The author would be much pleased to receive communications relating to further experiments along this line, and many young people throughout the country might make themselves useful to the scientific world in just this way.

Sir John Lubbock made some intensely interesting experiments on the power of communication possessed by ants, conclusively proving that these little creatures have something that corresponds to a language by which they exchange thoughts.

It may be a combination of minute sounds or a set of motions with the antennæ such as the dumb make with their hands. At any rate, it serves its purpose well.

Strangest of all, it appears from many experiments the results of which cannot be questioned that these insects, which look so much alike to us, are actually able to distinguish a friend from strange ants of the same species even when the ant was removed from the nest as a grub and left out for months.

If the ants from two nests of the same species are brought together, a battle will ensue as fierce and terrible as any ever fought on human field, for the insects are so strong that they will tear each other in pieces before they can be separated.

And now let us remember before we ruthlessly crush one of these little creatures under our feet that it is a being endowed with many of the powers of man; that it thinks, reasons, loves, hopes, desires; that it helps its companions in distress and, above all, that it is one of God's own little ones.

WOMAN AND FASHION

A Handsome Wrapper.

This design is especially desirable, as it embodies so many good points that are needed both for comfort and good style. A fitted lining is given, and the skirt is perforated for walking length. The back is princess style, and the fronts are loose and confined

THE DALTON.

by a belt. The watteau plait at the back and front is applied; hence its use is optional. The one seamed bishop sleeve is recommended for comfort. A dainty afternoon wrapper may made of cashmere with an applied lace yoke, as shown in the illustration, and trimmed with rows of narrow velvet ribbon. It will develop equally well in cotton goods for a simple morning wrapper. Seven and a quarter yards of material will be required to make this wrapper in the medium size.

Keeping a Fashion Alive.

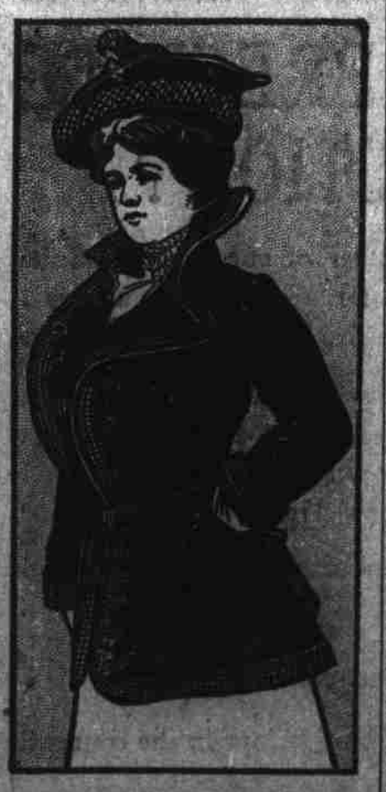
You have heard of people who kept a fashion alive by sheer "holding on" because of its becomingness to their particular style of beauty. There is danger of the hair and corsage now obtaining a goodly lease of life if the will of the average girl has anything to do with the matter. The wide, flat hair bow is rather more in favor nowadays than the rosette style, but a large assortment still awaits the wearer's choice, and even the simulated flower is not quite wilted yet. It is subject, however, to many variations. Many jeweled designs are chosen in butterfly forms—bespangled ostrich tips, fluffs of jeweled feathers and novel rosettes touched with a few bright gems.

An Attractive Mode.

A rather odd but nevertheless extremely attractive mode is soft figured Japanese silk. It makes up to peculiar advantage in the gowns now in style, showing off the curves of the figure in a way that is thoroughly in keeping with the up to date models. The stylish gown that is thoroughly up to date displays the lines as plainly as can be done without in any way exceeding the bounds of good taste or propriety. Anything that goes beyond this immediately becomes vulgar and is strictly tabooed.

The Popular Jacket.

One of the styles that seemingly will not down is the medium length jacket belted in tight at the waist, with the skirt extending almost to the knees. This seventeenth century style is very popular, and especially so in velvet, as shown in the illustration. For practical purposes the garment is a most excellent one. It is handsomely but not too elaborately trimmed with wide black braid and shows a high standing collar, that incidentally may be worn turned down, and squared mannish lapels. It is cut away slightly in front below the waist line, with the corners rounded off, after the conventional modes of this character.



LENGTH JUST RIGHT.