

THE LEAF-CUTTER BEE
by John D. Ritchie

The Leaf-cutter Bees, the Megachilidae, are possibly the most interesting members of an extremely interesting family. Unlike the "social" hive bees, the Leaf-cutters are "solitary" bees, the mother bee making, and provisioning, the nest entirely through her own efforts.

Here in short is the life cycle of the Leaf-cutter - when the weather gets really warm in the spring, the pupae change to adults and with their strong jaws chew their way out of the nest cells and take wing. For several days they fly around and during this time mating takes place. Soon after this females choose nest sites. They pick on various places - I have found their nests in the deserted tunnels of wood borers in fire wood; in the hollow stems of plants such as the big Cow Parsnip; between the shingles of a roof, and under stones. Some species even bore holes in solid wood and one of these once bored a hole in the bottom log of my cabin and worked for several days before completing the job.

Once the hole is ready the Leaf-cutter Bee proceeds to construct a thimble-shaped nest made from round or oblong pieces of leaf which she cuts from such plants as the wild rose and the fire-weed. On one occasion I split open a block of wood and found a tier of no less than eighteen nest cells inside a tunnel in the block. I counted the different pieces of leaf which were used in the building of one cell and found they numbered 35. Assuming that each cell had the same number of pieces, this particular bee must have collected 630 pieces to complete the tier of cells.

As each "thimble" is completed, the mother bee fills it with a mixture of pollen and nectar and then on top of this food supply she deposits one egg. She then cuts some circular pieces of leaves, a little bigger than the top of the cell, and jams several of these down close to form a tight lid or cover. This done she proceeds to construct another cell, and yet another, until worn out with her summer's labours, she dies and never sees the babies for which she worked so industriously.

When the eggs hatch, the larvae feed on the food supply stored within the cell and then transform into the pupa stage after weaving a paper like cocoon. Then in spring each pupa changes into an adult bee and the life cycle begins all over again.

There is a species which nests in among the logs of my cabin which is most pugnacious. Once, while I was watching, one of them came back with a load of pollen. She popped head first into her tunnel and after unloading, came out and then backed into her hole. At that moment another bee came by, apparently hunting for a nesting site and poked her head into the door-way of the first bee. Immediately her head was seized by the rightful owner and the greatest buzzing ensued. I grabbed the intruder with my tweezers but the little house-keeper hung right on until she was almost pulled bodily out of the entrance. Only then did she release her hold and back inside again. Later on I captured her and sent her with some other specimens to Dr. Chas. Michener of the American Museum of Natural History. When returned to me, I found her name to be *Magachile pugnata*, which I thought to be quite appropriate.

Leaf-cutter bees are stout, strong bees, darker in colour than the honey-bee and vary greatly in size. The under side of the abdomen is very hairy and is used to carry pollen. It would be very interesting if other observers would record, in the "Blue Jay", the different places in which they have come across the nests of these fascinating insects, or anything else they may have noticed about them. Even if one has never seen a nest, all of us have noted leaves and even flower petals from which circular pieces have been clipped by the Leaf-cutter. Try to watch some of these bees at work this summer.