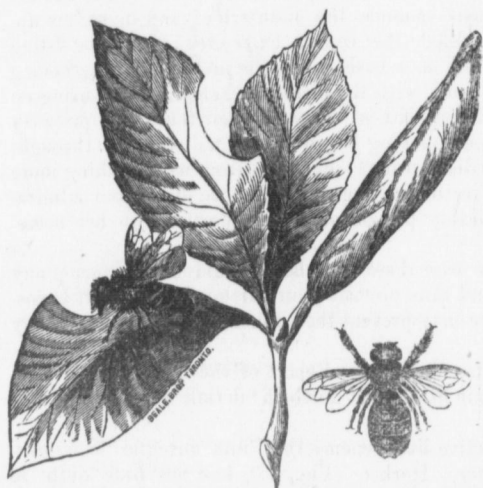


FIG. 22.



(Fig. 22) belongs to a family of Bees called *Apidae*, many of the members of which, from their habits of building their nests, are commonly known as, mining, carpenter, mason, or upholsterer bees. The species *Megachile* to which our insect belongs consists chiefly of solitary bees, not building in societies like the common hive bee. Although it is not probable that any serious damage will ever be caused to fruit trees by this pretty little creature, inasmuch as its operations, are we believe, generally confined to other trees, yet we are tempted to give for the benefit of horticulturists a description from Rennie's admirable little work on "Insect architecture" of the habits of a very similar bee, The Rose-Leaf cutter, *Megachile centuncularis*, Latr. known also as an upholsterer bee, and whose singularly ingenious habits, have long at-

tracted the attention of naturalists. "The Rose-Leaf cutter makes a cylindrical hole in a beaten pathway, for the sake of more consolidated earth, or in the cavities of walls, or decayed wood), from six to ten inches deep. In this she constructs several cells about an inch in length, shaped like a thimble, and made of cuttings of leaves (not petals), neatly folded together, the bottom of one thimble-shaped cell being inserted into the mouth of the one below it, and so on in succession. It is interesting to observe the manner in which this bee procures the materials for forming the tapestry of her cells. The leaf of the rose-tree seems to be that which she prefers, though she sometimes takes other sorts of leaves particularly those with serrated margins, such as the birch, the perennial mercury, mountain ash, etc. She places herself upon the outer edge of the leaf which she has selected, so that its margin may pass between her legs. Turning her head towards the point, she commences near the foot-stalk, and with her mandibles cuts out a circular piece with as much expedition as we could do with a pair of scissors, and with more accuracy and neatness than could easily be done by us. As she proceeds, she keeps the cut portion between her legs, so as not to impede her progress; and using her body for a *trammel* as a carpenter would say, she cuts in a regular curved line. As she supports herself during the operation upon the portion of the leaf which she is detaching, it must be obvious, when it is nearly cut off, that the weight of her body might tear it away, so as to injure the accuracy of its curvilinear shape. To prevent any accident of this kind, as soon as she suspects that her weight might tear it, she poises herself on her wings, till she has completed the incision. With the piece which she has thus cut out, held in a bent position perpendicularly to her body, she flies off to her nest, and fits it into the interior with the utmost neatness and ingenuity; and without employing any paste or glue, she trusts as Reaumur ascertained, to the spring the leaf takes in drying, to retain it in its position.

It requires from nine to ten pieces of leaf to form one cell, as they are not always of precisely the same thickness. The interior surface of each cell consists of three pieces of leaf of equal size, narrow at one end, but gradually widening at the other, where the width equals half the length. One side of each of the pieces is the serrated margin of the leaf from which it was cut, and this margin is always placed outermost, and the cut margin innermost. Like most insects, she begins with the exterior, commencing with a layer of tapestry, which is composed of three or four oval pieces, larger in dimensions than the rest, adding a second and a third layer proportionately smaller. In forming these, she is careful not to place a joining opposite to a joining, but with all the skill of a consummate artificer, lays the middle of each piece of leaf over the margins of the other, so as by this means both to cover and strengthen the junctions. By repeating this process, she sometimes forms a fourth or fifth layer of leaves, taking care to bend the leaves at the narrow extremity or closed end of the cell, so as to bring them into a convex shape. When she has in this manner completed a cell, her next business is to replenish it with a store of honey and pollen, which, being chiefly collected from thistles, forms a beautiful rose-coloured conserve. In this she deposits a single egg, and then covers in the