

upward. From two of these chambers no main galleries arise ; there may be some special reason for this, since they are much narrower and much more deeply excavated than the ordinary chambers ; they were perhaps unsatisfactory to the constructor and left unfinished.

From the other mating-chambers, which are about three millimetres in diameter, the main galleries generally run obliquely, but more nearly transversely than longitudinally to the stem ; they are subequal and take their rise one on each side of the mating-chamber at the lateral angles, and run in exactly or almost exactly opposite directions. In one case, however, there is but one main gallery, and in another they are at right angles to each other, one being perpendicular ; in this latter case, the mating-chamber is reversed, the apex being downward. These main galleries vary from one and a half to eight millimetres long, and are slightly more than a millimetre wide, with dentate edges, where the eggs were probably laid by the parent.

At least this is the general custom with the Scolytidæ ; but here, as in some other rare cases, the young larvæ do not commence to mine, each at right angles to the main gallery, but collect together and all start from one spot, the summit of the mating-chamber or the extremity of one of the galleries, and thence burrow in irregular and somewhat interlacing mines along the stem, and all apparently either upward or else downward, not, as is usually the case, in both directions ; apparently they may often turn upon their course again and again, or they may mine in an almost perfectly straight line, or in a tortuous line, for half a decimeter. In that whole distance the mine will scarcely have doubled in width with the growth of the larva, and in many cases it is difficult to tell in which direction the larva moved. The greatest width of these larval mines is scarcely more than half a millimetre, and they vary greatly in depth. The connection between the main gallery and the mines is often obscure, owing doubtless to the larvæ burrowing, while young, more in the bark than in the wood. In one case there is a mating-chamber and a pair of short galleries, but nothing more ; here, apparently, the mother fell a prey to some enemy before accomplishing her purpose.

This mode of origin of the larval mines seems to be different from anything described hitherto, and therefore it is difficult to decide to what group the insect making the mine belonged. In the Museum of Comparative Zoology at Cambridge is a mine of the European *Scolytus rugu-*