

a piece of sheet-celluloid, leaving a very small opening at one side of the nuptial-chamber for ventilation and the extrusion of the boring-dust. Better results are obtained with but one egg-tunnel, since in sets with several working females more dust is pushed into the nuptial-chamber than the male can handle under the abnormal conditions, and the chamber rapidly becomes blocked. With such an arrangement one may observe the removal of the boring-dust and its extrusion from the nuptial-chamber, the feeding habits of the male, copulation, and the reversal of position of the female before and after egg-laying. If the roof of the egg-tunnel is rapidly and carefully removed immediately after the female has been observed to back into the tunnel, the process of egg-laying may be studied. A bit of sheet-celluloid should be placed over the tunnel as soon as it is opened.

When the bark is thick, and the tunnels chiefly in the inner bark, the following method may be used with advantage. The bark is carefully removed from the wood, leaving the nuptial-chamber and the developing egg-tunnel as nearly uninjured as possible, with the beetles within them. A small sheet of moderately thick glass is placed over the inner side of the bark, closing in the tunnels. The glass should be held firmly in place by rubber bands or other means. When the tunnels are not under observation, the bark should be kept glass downwards upon dark cloth and weighted moderately with a block of wood to prevent warping.

Whether celluloid or glass is used to cover the tunnel, the male will immediately proceed to fasten all cracks about the edges of the chamber with boring-dust, and the female does the same in the egg-tunnel; excessive evaporation from the opened tunnels is thus somewhat checked. It is necessary to remove the glass or celluloid from time to time and clean away the boring-dust which has become attached to it.

The moisture content of sticks used in breeding experiments may be preserved to some degree, while the bark is intact, by coating the cut ends with melted paraffin.

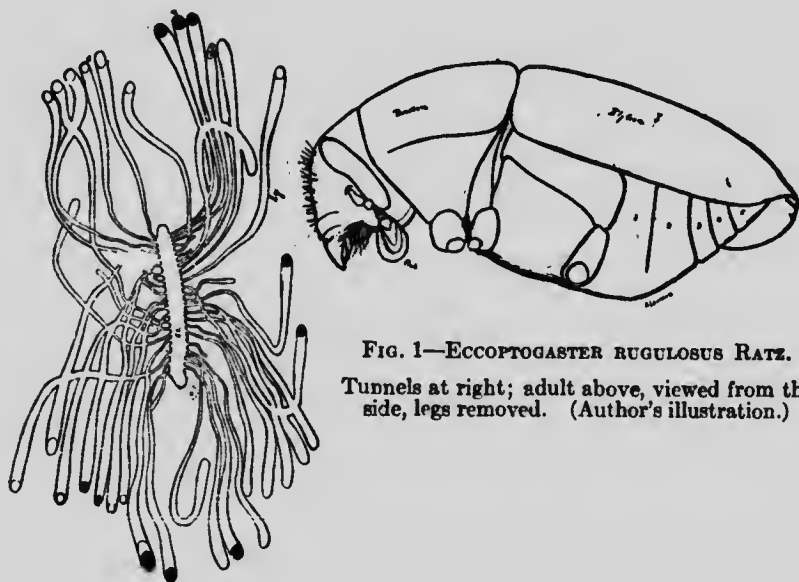


FIG. 1—*ECCOPTOGASTER RUGULOSUS* RATZ.

Tunnels at right; adult above, viewed from the side, legs removed. (Author's illustration.)