

and the resultant pupa in its cocoon (9-10 mm) lasting about 25 days, or about 57 days total for the developmental period beginning with oviposition and ending with eclosion. The fourth larval instar, as compared with only 3 in the case of the dwarfed (minim) workers produced by a lone nest-founding queen, is to be noted, but the difficulties in counting larval instars have already been discussed above.

Four larval instars were also reported by Ledoux for worker broods produced from eggs laid by queens taken with workers from a nest in nature; these workers needed only about 48 days to develop from oviposition to eclosure, and the pupal stage took only about 16 days instead of the 24 required of minim pupae. The workers resulting were normal-sized and dark-colored, instead of the dwarfed, light-colored minimis of incipient nests. Ledoux here emphasizes the 4- vs. 3-instar larval period as being responsible for the imaginal differences between the two classes of workers, but again it is necessary to issue a warning against the pitfalls of instar-counting of ant broods. In fact, Ledoux gives us only figures for the *means* of body length of the different instars of larvae, which in my experience will usually not allow a reliable separation of size modes in an organism such as an ant larva, which expands, the integument stretching over much of the body, *during* each stadium. The head capsule width is presumably not affected by within-stadium expansion, but Ledoux cites no measurements for this dimension, which in any case is not known to correspond exactly to the sequence of molts. The whole question of instar counts, in my opinion, needs further investigation by more rigorous methods, such as timelapse photography, that will record the actual number of molts for given larvae from hatching to pupation. Meanwhile, we may view Ledoux' account of the origin of differences between minim and «normal» workers as no more than an interesting hypothesis.

D e f e n s e. When a nest of any of the larger odontomachite species is breached, some of the workers immediately hide beneath leaves or other objects, while other workers rush about with open jaws, which they snap at foreign objects, or even at leaves and twigs, with an audible tick. On human skin or clothing, a worker will snap her jaws and hold fast to the surface with them, at the same time quickly bringing her gaster around to sting. The sting is long and strong, and to me the