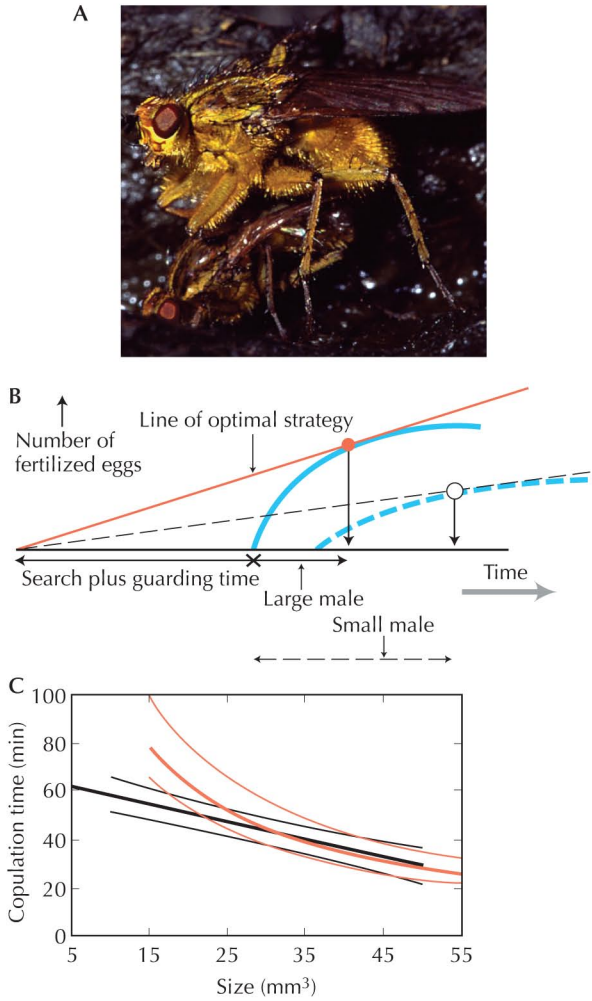

FIGURE 20.3. (*A*) Copulating pair of dung flies, *Scatophaga stercoraria*. (*B*) The *thick blue curves* show how the number of eggs that a male dung fly fertilizes increases with the time spent copulating. A male's fitness is proportional to the number of eggs he fertilizes per unit of time (i.e., proportional to the slope of the *straight lines*). This is maximized by the *straight line* that just touches the curve; the point where they touch shows the optimum copulation time. *Dashed lines* are for small males. (*C*) The observed copulation time as a function of male size is shown by the *thick black lines*. (The *upper* and *lower black lines* show the standard error of the estimate.) This matches the predicted optimum well (*red lines*, ±S.E.M.), except for very small males (*left*). Size is measured as the cube of hind tibia length.