

DISCOVERIES

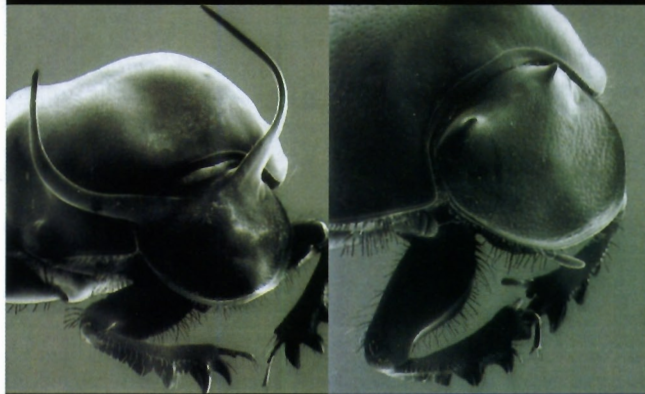
MATING ● It's fight or flight for male dung beetles.

Armless rivalry

Male dung beetles *Onthophagus taurus* come in two forms: large with long, curved horns and small with no horns. Large males guard females within breeding tunnels underneath dung pats and use their horns to fight off rivals. But, without weapons, what do small males do?

To see if males need horns to get a mate, biologists Armin Moczek and Douglas Emlen of Duke University, USA, staged contests between males in an artificial glass-sided nest. They found that hornless males fought and evicted each other but never won a fight against a horned competitor. Nevertheless, hornless males still managed to mate. They either managed to slip past big males or avoided them by using small intersections between tunnels. They then mated with the females before the guarding males could do anything to stop them.

The researchers noticed that big males had difficulty manoeuvring within tunnels – their large horns scraped the



Main: Armin Moczek; insets: Douglas Emlen

walls and got in the way – and wondered whether the lack of horns helped small males evade larger rivals. Comparison of how fast different males travelled through the narrow tunnels showed that small, hornless males were capable of outrunning their horned rivals to gain access to females.

Head to head. Males with horns (right and below left) fight for access to females; hornless males (below right) can't compete but still win mates.

When it comes to mating, small males do just as well as large ones – they simply use different tactics. While big males use their weapons to fight over mates, small males – unencumbered by horns – can speed their way to success (*Animal Behaviour*, vol. 59, pp459-66).

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