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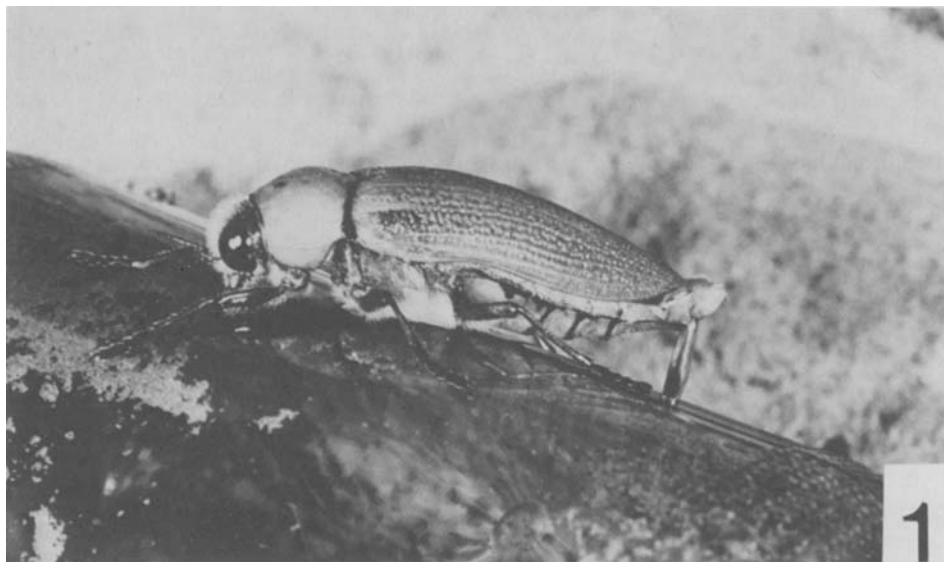
BEETLES ON THE BOTTLE: MALE BUPRESTIDS MISTAKE STUBBIES FOR FEMALES (COLEOPTERA)

D. T. GWYNNE and D. C. F. RENTZ

*Department of Zoology, University of Western Australia, Nedlands, 6009, W.A.
CSIRO Division of Entomology, P.O. Box 1700, Canberra City, 2601, A.C.T.*

Abstract

Male *Julodimorpha bakewelli* White were observed attempting to copulate with beer bottles. Colour and reflection of tubercles on the bottle glass are suggested as causes for attraction and release of sexual behaviour.



FIGS 1-2—*Julodimorpha bakewelli*: (1) male attempting to copulate with beer bottle, note protruding genitalia; (2) male attacked by ants, note reflection of tubercles on the bottle and its similarity to the reflection of the punctations on the elytra of the beetle.

Douglas (1980) published a photograph of a male buprestid beetle (*Julodimorpha bakewelli* White) attempting to copulate with a 370 mL beerbottle (a "stubbie"). We have recently observed this to be quite a common occurrence in the Dongara area of Western Australia.

On 12-13 September 1981 *J. bakewelli* (det. J. F. Lawrence) were quite common flying 1-2 m above the ground at a site (29°20'S 115°01'E) 12 km SE of Dongara. These are apparently males seeking the large flightless females (copulation taking place on the ground) (Douglas 1980). On 2 occasions a flying male was observed to descend to a stubbie and attempt to copulate (Fig. 1). A search was made for other stubbies in the area and 2 others, with associated beetles were located. The males were either at the side or "mounted" on top of the bottle, with genitalia everted and attempting to insert the aedeagus. Only 1 stubbie without a beetle was located. A short experiment was conducted in which 4 stubbies were placed on the ground in an open area. Within 30 min 2 of the bottles had attracted beetles. In total, 6 male beetles were observed to mount stubbies.

Once on the bottles the beetles did not leave unless displaced by us. In 1 of the observations a male, at the side of the bottle, was being attacked by a number of ants (*Iridomyrmex discors* Forel, det. R. W. Taylor) (Fig. 2) which were biting at the soft portions of his everted genitalia. A dead male, covered with ants was located a few centimetres away from this same bottle.

The stubbies were apparently acting as "supernormal releasers" (Alcock 1975) of male copulation attempts in that they resemble large females. The shiny brown colour of the glass is similar to the shiny yellow-brown elytra of *J. bakewelli* (a discarded wine bottle of a different colour brown held no attraction). In addition, rows of regularly spaced, small tubercles around the base of the bottles reflect light in a similar way to punctations on the elytra of the beetle. These along with the colour and shape of the bottles may well enhance their resemblance to females (Figs 1-2). There was no liquid remaining in the stubbies which might have attracted beetles (few stubbies which still held beer would be discarded and the bottles had apparently been in the area for some time).

These observations bear out predictions from sexual selection theory that males of species with low male parental investment should be indiscriminate in mating relative to females (Daly and Wilson 1978). Also, predation by ants may support the prediction that males should be taking more risks than females in mating.

Lastly, a comment should be made about the fact that improperly disposed of beer bottles not only present a physical and "visual" hazard in the environment, but also could potentially cause great interference with the mating system of a beetle species.

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References

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