

See all >

8 Citations

See all >

27 References



Download citation

Share

Request full-text

The phenology of *Onitis alexis* (Coleoptera: Scarabaeidae) in the Araluen Valley: Survival in a marginal environment

Article in *Austral Ecology* 13(4):431-443 · December 1988 with 21 Reads

DOI: 10.1111/j.1442-9993.1988.tb00991.x



Cite this publication



MARINA TYNDALE-BISCOE

Abstract

The introduced African dung beetle, *Onitis alexis* Klug, has become established in the warmer regions of Australia. The south-eastern limit of its current distribution is Moruya, NSW, and the Araluen Valley 50 km inland. At Araluen newly emerged beetles are present in dung in late spring, summer and autumn. Egg-laying starts 1-2 weeks after emergence and continues throughout the summer and autumn, as indicated by the presence of parous females in the population and of broods under experimental pads. Eggs laid in December/January produce adults in late summer and autumn, those laid from February to April produce adults in the following spring and summer. In the laboratory, mortality of larvae is high in cold (0–16°C), wet conditions and their development is delayed in warm (25°C and 27°C), dry conditions. This delay was confirmed in the field during the summer drought of 1982-83 when predicted times of emergence (based on day-degree summation in the soil) always preceded the observed emergence time of the local population, as well as preceding the emergence of beetles developing from eggs laid at known times. Follicle resorption in adult females was related directly to increasing age and to rainfall. Dung collected from hayed-off pasture did not affect fecundity, but caused larval mortality. Adults survived the winters at Araluen in some years, and immatures survived best during dry winters, being facilitated in this by a cold-induced larval diapause. *Onitis alexis* larvae can survive wet or dry summers, and cold dry winters (down to about 0°C) but not wet winters. This seems to be the major factor limiting the southern distribution of the species.

Do you want to **read the rest** of this article?

Request full-text

Citations (8)

References (27)

... Furthermore, the lower dry season correlations between colour and minimum temperatures may indicate a greater influence from the relative magnitude of dry season maximum temperatures. Alternatively, higher correlations with minimum temperatures in spring might be significant if they coincided with pupation and development of nascent adults, particularly, as overwintering in immature dung beetles is, generally, as dormant third instar larvae (Tyndale-Biscoe, 1988; Bang et al. , 2004). Differences in cross-climatic colour polymorphism shown by the largely sympatric dung beetle species, *G. humanus* and *G. andreaei* Ferreira may be related to different seasonal breeding strategies to survive unfavourably cold or dry conditions in southern Africa. ...

Functional implications of temperature-correlated colour polymorphism in an iridescent, scarabaeine dung beetle

Article Dec 2008 · *Ecol Entomol*

ADRIAN L.V. DAVIS · D. JOHAN BRINK · CLARKE H. SCHOLTZ · LINDA C. PRINSLOO · CHRISTIAN M. DESCHODT

[View](#) [Show abstract](#)

... fly at dusk and dawn, traps were installed at 16:00, and trapped beetles were collected at the next day morning. The procedures for dissecting and age-grading were similar to those used on the dung beetle, *O. alexis* (Tyndale-Biscoe, 1988). Females were killed in 75% ethanol. ...

Reproductive development and seasonal activity of two Korean native Coprini species (Coleoptera: