

Alexander, AJ & van Staaden MJ 1989 **Alternative sexual strategies in male bladder grasshoppers: (Orthoptera, Pneumoridae)**. *In* Alternative Life-history styles of animals (ed. M. Bruton), Kluwer Academic Publishers, pp 261-277.

Two contrasting male reproductive tactics occur amongst three ecologically categorised groups of the short-horned grasshoppers of the family Pneumoridae: forest, marginal and desert groups. On grounds not presented in this paper, the forest-living pneumorids are considered to be phylogenetically most primitive: males use only a single tactic and it is hence assumed to be the primary one. Here the male calls to, locates an answering female, and flies to her for mating. The alternative tactic involves no calling or flight and this tactic occurs in some marginal species together with the primary one whilst in some desert species the alternative tactic only is used. What little is known of the proximate and ultimate explanation is given. The distribution pattern of the use of male sexual pattern is correlated with geographical distribution and the alternative male tactic is tentatively associated with environmental instability, as envisaged in the original r-K selection theory. Other aspects of the biology that have been presented as r-K correlated are considered: body size, life cycles, longevity, reproductive output, and complexity of social relationships are presented for the three pneumorid groups. Some of these features fit classical theory adequately but additional constraints must be invoked to account for patterns of vagility, reproductive output and social relationships. Discontinuities in time and space, general harshness of the environment and biotic pressure, whether of conspecifics, competitors or predators, need to be taken into account. Population pressures within the groups and patterns of predator activity are suggested as areas where important constraints may be acting and that require investigation.

Key words: insects, reproduction, life styles, environmental stability, r- and K-selection, longevity, vagility, biotic pressure, predation