Alary polymorphism in Triatoma spinolai and its possible relationship with demographic strategy

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Among collections of Triatoma spinolai from various sites in northern Chile, adults from coastal populations are invariably wingless, whereas inland populations show balanced alary polymorphism between wingless females and males that are either winged or wingless. Laboratory crosses showed that male offspring from normal-winged parents were always winged (88% long-winged) and those from long-winged male parents were all long-winged. The male offspring from wingless males always included winged males: 11/33 = 33%, of which 8/11 = 73% were long-winged. An X-linked mutation is proposed to inhibit wing development. Field studies of population demography indicate that male alary polymorphism is advantageous in the desert environment of northern Chile.