Scaptodrosophila aclinata: A New Hibiscus Flower-breeding Species Related to S. hibisci (Diptera: Drosophilidae)

SHANE F. MCEVEY\(^1\) AND J.S.F. BARKER\(^2\)

\(^1\) Australian Museum, 6 College Street, Sydney NSW 2010, Australia
shanem@austmus.gov.au

\(^2\) School of Rural Science & Natural Resources, University of New England, Armidale NSW 2351, Australia
sbarker@metz.une.edu.au

ABSTRACT. Physiological, ecological and evolutionary studies of Scaptodrosophila hibisci have led to recognition of a second species in the Northern Territory (Australia) which is described here as Scaptodrosophila aclinata n.sp. The new species is readily distinguishable by reference to the first orbital: it is large and proclinate in S. hibisci and small and reclinate in S. aclinata. Scaptodrosophila hibisci has been collected from the flowers of five Hibiscus species in eastern Australia and S. aclinata uses eleven Hibiscus species in the Northern Territory. Only H. meraukensis is a host for both, and there is no evidence of narrow host-specialization. The distributions are apparently disjunct. The two species can be reared in the laboratory on cultured plants. Hybridization studies showed the two species to be partially interfertile; S. aclinata has delayed sexual maturation and extended copulation latency when compared to S. hibisci. This species pair is already the subject of various eco-physiological and reproductive-biological studies because of so many useful experimental attributes: they are interfertile and can be laboratory-cultured, their hosts and reproductive biology are known, they are abundant and easy to find, and research is underpinned by extensive genetic information already available for Drosophila.


There are about 300 drosophilid species recorded from Australia, with some 90% of them described. The genus Scaptodrosophila Duda, 1923 (for many years treated as a subgenus of Drosophila but see Grimaldi [1990] for revised status) has 81 named species and is by far the largest. The predominance of Scaptodrosophila among the 36 genera represented, is striking and distinguishes the Australasian fauna from major drosophilid radiations in other regions—Afrotropical, Neotropical and Hawaiian. In Australia, the other large genera Drosophila (35 species), Hirtodrosophila (31 species), Leucophenga (25 species) and Mycodrosophila (24 species) are much smaller by comparison. In general, Drosophila species are attracted to fermenting fruit and may be reared easily in the laboratory; whereas Scaptodrosophila...