Re-examination of Monopterus and "Micropterous" House Crickets
(Acheta domestica)

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ABSTRACT
Monopterus and "micropterous" house crickets, Acheta domestica (Linnaeus), are macropterous
crickets that have shed one or both metathoracic wings. No truly micropterous house crickets
are known.

Many species of crickets are dimorphic in the length of the metathoracic wings. Long-winged or
macropterous individuals may fly; short-winged or micropterous individuals cannot. The genetic
and environmental factors that cause an individual to develop long or short wings are poorly
understood (Alexander 1968).

R. L. Patton (1975) reported experiments to de-
termine the effect of diet on the development of wings in Acheta domestica (Linnaeus). He observed 3
states of wingedness in his colonies: (1) both meta-
 thoracic wings longer than the tegmina; (2) neither
metathoracic wing longer than the tegmina; and (3)
one metathoracic wing longer than the tegmina. He
assumed that individuals in the 1st and 2nd categories
were macropterous and micropterous, respectively.
The 3rd category was different from any previously
described and he termed such individuals monopter-
ous.

Macropterous crickets sometimes shed their wings
(McFarlane 1964, Walker 1972, Tanaka 1976). They
then may be confused with micropterous crickets, but
they have stumps of wings beneath the tegmina rather
than fully formed, short wings. Dr. Patton’s illus-
tration of the metathorax of a “micropterous” house
cricket (1975, p. 853, Fig. 2) showed what appeared
to be wing stumps.

Dr. Patton graciously sent samples of 15–20 in-
dividuals of each of his categories. The samples in-
cluded no individuals with fully formed, short wings.
“Micropterous” individuals had 2 wing stumps and
monopterous individuals had one wing stump. When
gently pulled with forceps, hindwings of macropterous
individuals detached at the axillary sclerites. The
stumps were indistinguishable from those of “micro-
pterous” and monopterous individuals.

REFERENCES CITED
Alexander, R. D. 1968. Life cycle origins, speciation,
and related phenomena in crickets. Quart. Rev.
Biol. 43: 1–41.
McFarlane, J. E. 1964. Factors affecting growth and
wing polymorphism in Gryllodes sigillatus (Walk.):
dietary protein level and a possible effect of photo-
Patton, R. L. 1975. Wing polymorphism in Acheta
Tanaka, S. 1976. Wing polymorphism, egg produc-
tion and adult longevity in Pteronemobius tapo-
banicus Walker (Orthoptera, Gryllidae). Kontyu
44: 327–33.
Walker, T. J. 1972. Deciduous wings in crickets: a