REDESCRIPTION OF THE TYPE SPECIES OF
MYOPSOCUS, M. UNDUOSUS (HAGEN), AND
RESULTING NOMENCLATURAL CHANGES IN GENERA
AND SPECIES OF MYOPSOCIDAE (PSOCOPTERA)*

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The assignment of species to the major genera in the Family
Myopsocidae has been hampered by lack of detailed morphological
information about the types of these genera. The genera involved
are Myopsocus Hagen, Lichenomima Enderlein, Phlotodes Ender-
lein, and Rhaptoneura Enderlein.

Enderlein's (1910) genera were based entirely on wing venational
characters. Some of these have later proven to be variable and of
questionable value (Badonnel 1967). Roesler (1944) synonymized
Phlotodes and Rhaptoneura at the generic level but maintained
them as subgenera. Badonnel (1955) stated that genitalic characters
justify the maintenance of Rhaptoneura and Phlotodes as genera
but did not show what characters were involved. Smithers (1964)
assigned all species which might fall in the genera Myopsocus,
Lichenomima, Phlotodes, and Rhaptoneura to Myopsocus until the
types could be studied. Badonnel (1967) following Enderlein (1910)
and Roesler (1944) assigned to Myopsocus all species with Rs and
M joined by a crossvein in the hindwing, thus synonymizing
Lichenomima with Myopsocus, and assigned all species in which Rs
and M in the hindwing are fused for a distance to Phlotodes, thus
synonymizing Rhaptoneura with Phlotodes.

The present paper reports diagnostic features of the type of
Myopsocus unduosus (Hagen), the type species of Myopsocus
(Enderlein 1910). Genus Myopsocus is re-diagnosed on the basis of
this examination, and an augmented diagnosis of Lichenomima is
included. Generic synonymies are revised, and the species now
assigned to Myopsocus and Lichenomima are listed.

*Manuscript received by the editor August 15, 1982.
Myopsocus unduosus (Hagen)

Psocus unduosus Hagen 1859:201.

Type material and its examination.—Types consist of two males, originally pointed, in the Museum of Comparative Zoology, Cambridge, Massachusetts. Each bears a type label with MCZ number 10118 and the label “Ceylon, coll. Nietner.” I first examined these types in January 1970, ascertained that both are males of the same species, and selected one as lectotype. I then soaked the lectotype off the point, placed it in 80% ethanol, mounted the right wings on a slide in euparal, and cleared and figured the external genitalia. Early in 1982, I borrowed the wing slide and made figures from it.

Measurements (mm).—Forewing length = 3.94; hindwing length = 3.22; posterior tibial length = 1.72; least distance between compound eyes = 0.27; transverse diameter of compound eye = 0.42.

Color characters.—Forewing (Fig. 1) with fairly distinct, mottled crossband in basal half of wing; a distinct stigmasaum darkly marked in middle; entire margin and most of veins with alternating dark and light marking. Hindwing (Fig. 2) unmarked except for brown clouding at base and along anterior margin and alternating dark and light marking along margin from distal end of R₁ to distal end of R₄+₅. All femora dark brown with a narrow yellowish-white preapical ring.

Structural characters.—Forewing (Fig. 1) with relatively long Rs-M fusion, short M-Cu₁ fusion. Hindwing with Rs-M fusion slightly longer than segment of Rs before it. Hypandrium (Fig. 3) elongate, tapering distally, with slightly bulging, shagreened area on each side at about distal two-thirds of length; distal end on each side with field of heavy setae, each seta tapering toward end and base. Phalloosome (Fig. 4) elongate, slender; median style separate from lateral arms at about two-thirds distance from base to tips of arms and extending beyond tips of arms. Epiproct (Fig. 5) semicircular except truncated distally, the distal end beset with minute tubercles. Paraproct (Fig. 6) bearing bluntly rounded distal process; sense cushion with 28 trichobothria, all with basal florets.

Diagnostic Features and Synonymy of Myopsocus Hagen

Various authors have noted the constancy within and among species of the two character states Rs and M joined by a crossvein...
Figs. 1–6. *Myopsocus unduosus* (Hagen) male lectotype.  
Fig. 1. Forewing; scale = 1.0 mm.  
Fig. 2. Hindwing; scale of Fig. 1.  
Fig. 3. Hypandrium; scale = 0.2 mm.  
Fig. 4. Phallosome (dorsal view); scale of Fig. 3.  
Fig. 5. Epiproct; scale = 0.2 mm.  
Fig. 6. Right paraproct; scale of Fig. 5.
versus fused for a distance in the hindwing of the Myopsocid genera under consideration. Enderlein (1910:68) stated about *M. unduosus*: “im Hinterflügel ist der Radialramus und die Media durch eine Querader mit einander verbunden.” Obviously, the statement is not correct. Rs and M are fused for a distance in the hindwing; however, following Enderlein’s erroneous statement, Roesler (1944) and Badonnel (1967) mis-assigned these two character states. Thus *Lichenomima* (Rs and M joined by a crossvein) was synonymized under *Myopsocus* and *Rhaptonectra* (Rs and M fused for a distance) was synonymized under *Phlotodes*. On the basis of examination of the type, it is evident that *Myopsocus* has as synonyms *Phlotodes* and *Rhaptonectra*. *Lichenomima* is probably tenable as a distinct genus.

Characters correlating with the fusion of Rs and M for a distance in the hindwing are the following: 1) phallosome generally with a median style (known exceptions: *M. aldabrensis* (New), *M. minor* (New and Thornton), *M. pallidus* (Smithers), *M. speciosus* (Smithers), *M. splendidus* (Badonnel)); 2) female subgenital plate terminating in a process tapered distally and with two large setae at the tip plus smaller setae in some species.

**Assignment of Species to Myopsocus**

Given the above definition and synonymies, *Myopsocus* includes the following species, grouped according to their nomenclatural history:

1) Species originally placed in *Psocus* and subsequently transferred to *Myopsocus*:
   - *australis* Brauer 1865, Australia, Melanesia
   - *unduosus* Hagen 1859, Sri Lanka

2) Species originally assigned to *Myopsocus*, all subsequently transferred, in effect, to *Phlotodes*, or *Rhaptonectra*, or both in sequence:
   - *clunius* Thornton, Lee, & Chui 1972, Micronesia
   - *eatoni* McLachlan 1880, Europe, North Africa
   - *furcatus* Smithers 1964, Australia
   - *griseipennis* McLachlan 1866, Australia
   - *hickmani* Smithers 1964, Tasmania
   - *incomptus* Smithers 1964, Australia
   - *kolbei* Enderlein 1903 (type of *Phlotodes*), New Guinea
novaezealandiae Kolbe 1883, New Zealand
palauensis Thornton, Lee, & Chui 1972, Micronesia
punctatus Thornton, Lee, & Chui 1972, Micronesia
3) Species originally assigned to Phlotodes:
aenulus Badonnel 1967, Madagascar
aldabrensis New 1977, Aldabra
alticola Thornton 1981, Fiji
ambiguus Badonnel 1967, Madagascar
amicus Thornton 1981a, Tonga
angolensis Badonnel 1955, Angola, Madagascar
anomalus Smithers & Thornton 1979, Melanesia
antillanus Mockford 1974, Cuba, Hispaniola, Florida
ascoides Thornton 1981, Fiji
bellus Smithers & Thornton 1974, New Caledonia
bipunctatus Thornton 1981, Fiji
bomasus Smithers & Thornton 1974, New Guinea
brunneigenus Smithers & Thornton 1979, Melanesia
clarki Turner 1975, Jamaica
congolensis Badonnel 1949, Zaire
corticosus Smithers 1964a, Madagascar
cubanus Mockford 1974, Cuba
dentatus Smithers & Thornton 1974, New Guinea
fenestratus Smithers & Thornton 1974, New Guinea
graptus Thornton 1981, Fiji, Tonga
gregarius Smithers & Thornton 1979, Melanesia
gressitti Smithers & Thornton 1974, New Guinea
hoskinsi Smithers & Thornton 1979, Melanesia
inocellatus Smithers & Thornton 1974, New Guinea
lichenosus Enderlein 1931, Seychelles, Madagascar
lineatus Smithers & Thornton 1979, Melanesia
lyriferus Smithers 1964a, Madagascar
maculatus Smithers & Thornton 1974, New Guinea, Melanesia
marginatus Smithers & Thornton 1974, New Guinea
megops Smithers & Thornton 1979, Melanesia
minor New & Thornton 1975, Brazil
minutus Mockford 1974, Cuba, Mexico
mjöbergi Karny 1925, Sarawak, Borneo
napuka Thornton 1981, Fiji
obscurus Badonnel 1967, Madagascar
peltatus Smithers & Thornton 1974, New Guinea
pennyi New 1979, Brazil
personatus Badonnel 1967, Madagascar
pilipes Smithers & Thornton 1974, New Guinea
placidulus Smithers 1975, Australia
platyvalvulus Smithers & Thornton 1979, Melanesia
preclarus Smithers & Thornton 1974, New Guinea
punctatoides Thornton 1981, Fiji, Tonga
quadrisetosus Smithers & Thornton 1974, New Caledonia
rastafari Turner 1975, Jamaica
reptus Thornton 1981, Fiji
rimosus Smithers & Thornton 1974, New Guinea
samoanus Karny 1932, Samoa
scabiosus Smithers & Thornton 1974, New Guinea
splendidus Badonnel 1967, Madagascar
thecatus New & Thornton 1975a, Malay Peninsula
toxeres Smithers & Thornton 1974, New Guinea
venustus Smithers & Thornton 1974, New Guinea
vilazi Smithers & Thornton 1974, New Caledonia
zimmermani Thornton 1981, Fiji

4) Species originally assigned to Rhaptoneura:
africanus Badonnel 1955, Angola
ciliiferus Smithers 1964a, Madagascar
cryptus Smithers 1957, Natal
*dispar Enderlein 1910 (type of Rhaptoneura), Paraguay
magnificus Smithers 1957, South & East Africa
muscosus Enderlein 1931, Seychelles
pallidus Smithers 1964a, Madagascar
setosus Smithers 1964a, Madagascar
speciosus Smithers 1957a, Madagascar

5) Species incertae sedis, originally assigned to Myopsocus and best left there until they are re-examined:
bakeri Banks 1916, Philippines, Guam
cinereus Navás 1932, Argentina
enderleini Banks 1913, Philippines
fraternus McLachlan 1866, Assam (originally assigned to Psocus)
pluviosus Navás 1934, India
taurus Banks 1941, Santo Domingo
RELATIONSHIPS OF *MYOPSOCUS UNDUOSUS* (HAGEN)

Badonnel (1967) constructed a classification of the species from Madagascar, and Smithers and Thornton (1974) augmented it to include many of the Old World species. *M. unduosus*, being known only from the male, and presenting such unique male characters as the phallosome with its basal half a simple rod, and the hypandrium with two distal fields of heavy setae, does not seem to fit into any of the groups that have been proposed. Smithers and Thornton (1974) noted that numerous other species could not be placed in their classification due to paucity of information.

AUGMENTED DIAGNOSIS OF *LICHENOMIMA ENDERLEIN*

Species assigned to *Lichenomima* (assigned to *Myopsocus* by most authors since Badonnel 1967) have veins Rs and M joined by a crossvein in the hindwing. Correlated with this character are absence of a median style of the phallosome (possible exception: *L. ariasi* New) and female subgenital plate distally with a transverse sclerite, more or less separate from the main plate, and never terminating in a single process tapering posteriorly.

Species assignable to *Lichenomima* appear to be those listed by Smithers (1967) plus the following:

- *ampla* Smithers & Thornton 1974 (from *Myopsocus*), New Guinea
- *ariasi* New 1979 (from *Myopsocus*), Brazil
- *capeneri* Smithers 1973 (from *Myopsocus*), South Africa
- *chelata* Thornton & Woo 1973 (from *Myopsocus*), Galapagos Islands
- *clypeofasciata* Mockford 1974 (from *Myopsocus*), Cuba
- *coloradensis* Banks 1907 (from *Myopsocus*), Colorado
- *elongata* Thornton 1960 (from *Myopsocus*), Hong Kong
- *machadoi* Badonnel 1977 (from *Myopsocus*), Angola
- *medialis* Thornton 1981 (from *Myopsocus*), Fiji
- *posterior* Navás 1927 (from *Psocus*), Costa Rica
- *pulchella* New & Thornton 1975 (from *Myopsocus*), Brazil
- *sanguensis* New 1973 (from *Myopsocus*), Nepal
- *varia* Navás 1927 (from *Amphigerontia*), Costa Rica

Note.—*Myopsocus medialis* Thornton (1981), assignable to *Lichenomima* on the basis of hindwing venation, appears to be so different in several other features as to merit a distinct genus.
SUMMARY

Examination of the type of *Myopsocus unduosus* (Hagen), the type species of *Myopsocus*, allows the genera *Phlotodes* Enderlein and *Rhaptoneura* Enderlein to be synonymized with *Myopsocus*. The species now assigned to *Myopsocus* are listed according to their nomenclatural history. Species assigned to *Myopsocus* by most recent authors are re-assigned to *Lichenomima* Enderlein.

ACKNOWLEDGMENTS

I wish to thank the officers of the Museum of Comparative Zoology, Cambridge, Massachusetts for the privilege of examining the type material of *M. unduosus*.

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