



## A list of Psocoptera (Insecta: Psocodea) from Brazil

### Listado de Psocoptera (Insecta: Psocodea) de Brasil

Alfonso N. García Aldrete<sup>1\*</sup> and Edward L. Mockford<sup>2</sup>

<sup>1</sup>Instituto de Biología, Universidad Nacional Autónoma de México, Apartado postal 70-153, 04510 México, D. F., Mexico.

<sup>2</sup>Department of Biological Sciences, Illinois State University, Campus Box 4120, Normal, Illinois 61790-4120, USA.

\*Correspondent: [anga@ibiologia.unam.mx](mailto:anga@ibiologia.unam.mx)

**Abstract.** The species of Psocoptera currently known for Brazil are listed, with state distribution and biogeographic status. The categories of geographic distribution are discussed, as well as some of the evidence indicating that the present size of the Brazilian fauna is underestimated.

Key words: Psocodea, Psocoptera, Brazil, geographic distribution.

**Resumen.** Se listan las especies de Psocoptera actualmente registradas en Brasil, incluyendo la distribución por estado y su categoría biogeográfica. Se presenta alguna de la evidencia que hace suponer que el tamaño actual de la fauna de Psocoptera de Brasil está subestimada.

Palabras clave: Psocodea, Psocoptera, Brasil, distribución geográfica.

### Introduction

The Catalogue of the Psocoptera (Lienhard and Smithers, 2002) lists for Brazil 374 species in 87 genera and 29 families. We have updated this information, and the list presented here includes 425 species in 94 genera and 28 families (Table 1). The 'Psocoptera', a paraphyletic group, are the non-parasitic members of the order Psocodea (sensu Yoshizawa and Johnson, 2006: 358), which comprises also the ectoparasitic chewing and sucking lice ('Phthiraptera') (see Johnson et al., 2004). The list below is to be considered as a work in progress subject to modification as more information on the Brazilian psocid fauna becomes available.

### Material and methods

The updating of the information on the Brazilian fauna in Lienhard and Smithers (2002) is derived mostly from the ongoing study of the vast Psocoptera collection in the Instituto Nacional de Pesquisas da Amazônia (INPA), in Manaus, Amazonas, and from the study of the Psocoptera collected through the program PPBio, housed in the Laboratory of Insect Systematics, Universidade Estadual

de Feira de Santana, Bahia, Brasil. The distributions in Table 1 were taken from the literature and from specimens in collections (mostly INPA and Colección Nacional de Insectos, CNIN, Instituto de Biología, Universidad Nacional Autónoma de México, México City).

### Results

Table 1 presents the list of species of Psocoptera known in Brazil; 425 species are listed, in 94 genera and 28 families. The largest and most diverse family is Psocidae, with 89 species in 23 genera, followed by Ptiloneuridae (50 species in 5 genera), Epipsocidae (48 species in 6 genera), and Lachesillidae (41 species in 6 genera). The most speciose genera (*Lachesilla*, *Triplocania*, *Epipsocus*, *Archipsocus*, *Mesepipsocus*, and *Valenzuela*) account for 135 species, and on the other extreme, 32 genera are represented by 1 species and 11 genera have 2 species. It is likely that *Notolepium brasiliense* New will have to be transferred to *Thylacella* (cf. Mockford, 2005). Twelve additional genera (*Thylacella*, *Cyptophania*, *Neolepoplepis*, *Lepinotus*, *Nanopsocus*, *Peritroctes*, *Epitroctes*, *Compsocus*, *Spurostigma*, *Pararchipsocus*, *Tricholachesilla* and *Palmicola*) probably occur in Brazil (García Aldrete and Mockford, unpublished data), but they have not yet been detected.

**Table 1.** Psocoptera recorded from Brazil, distribution and biogeographic status. The species not listed by Lienhard and Smithers (2002) are marked with an asterisk (\*). Most of them are new to Brazil, otherwise the references to published records are given

Trogiomorpha

Lepidopsocidae

1. *Nepticulomima brasiliensis* (Enderlein). Pará (Endemic).
2. *N. pulvillata* New. Mato Grosso (Endemic).
3. *Notolepium brasiliense* New. Mato Grosso (Endemic).
4. *Proentomum personatum* Badonnel. Roraima (Tropical waif).
5. *Soa flaviterminata* Enderlein. Amazonas, Pará, Roraima (Widely distributed).
6. *S. violacea* New. Amazonas, Mato Grosso (Endemic).
7. *Echmepteryx angusta* New. Mato Grosso (Endemic).
8. *E. bishopi* New. Mato Grosso (Endemic).
9. *E. falco* (Badonnel). Amazonas, Bahia (Tropical waif).
10. *E. fuscata* New. Mato Grosso (Endemic).
11. *E. lealae* New. Pernambuco (Endemic).
12. *E. lutosa* Mockford. Roraima (Endemic).
13. *E. madagascariensis* (Kolbe). Rio de Janeiro, Bahia (Tropical waif). (\*). New for Brazil.
14. *E. uniformis* Mockford. Roraima (Endemic).
15. *Pteroxanium* sp. "Brazil" (Endemic).

Trogiidae

16. *Cerobasis guestfalica* (Kolbe). Pernambuco, Rio de Janeiro (Widely distributed).

Psoquillidae

17. *Psoquilla marginepunctata* Hagen. Mato Grosso, Santa Catarina (Widely distributed).
18. *Rhyopsocus rafaeli* García Aldrete. Amazonas (Endemic). (\*). See García Aldrete (2004a).

Psyllipsocidae

19. *Psocathropos lachlani* Ribaga. Amazonas, Sao Paulo (Widely distributed).
20. *Psyllipsocus yucatan* Gurney. Pará (Brazil, Mexico). (\*). New for Brazil.

Troctomorpha

Troctopsocidae

21. *Troctopsocus brasiliensis* New. Mato Grosso (Brazil, Mexico).
22. *Troctopsocus separatus* (Roesler). Santa Catarina (Brazil, Trinidad).

Musapsocidae

23. *Musapsocus mockfordi* New. Amazonas (Endemic).
24. *M. newi* Mockford. Roraima (Endemic).

Amphientomidae

25. *Seopsocus acuminatus* Roesler. Santa Catarina (Endemic).
26. *S. albiceps* Mockford. Roraima (Endemic).

27. *S. fasciatus* Mockford. Roraima (Endemic).

28. *S. rafaeli* Mockford. Roraima (Endemic).

29. *S. rotundatus* Roesler. Santa Catarina (Endemic).

Liposcelididae

30. *Belaphopsocus badonneli* New. Mato Grosso (Brazil, Colombia, Mexico, Paraguay).

31. *Belaphotroctes brunneus* Badonnel. Sao Paulo (Endemic).

32. *B. ghesquierei* Badonnel. Mato Grosso, Roraima, Sao Paulo (Widespread in tropical Africa and America).

33. *B. major* Badonnel. Mato Grosso (Endemic).

34. *B. mimulus* Badonnel. Sao Paulo (Endemic).

35. *B. ocularis* Badonnel. Sao Paulo (Endemic).

36. *B. striatus* Badonnel. Sao Paulo (Endemic).

37. *B. vaginatus* Badonnel. Sao Paulo (Endemic).

38. *Belapha* sp. Pará (Endemic). (\*). New for Brazil.

39. *Chaetotroctes lenkoi* Badonnel. Mato Grosso (Endemic).

40. *Embiodopsocopsis newi* Badonnel. Mato Grosso (Endemic).

41. *Embiodopsocus brasiliensis* Badonnel. Sao Paulo (Endemic).

42. *E. flexuosus parvulus* Badonnel. Mato Grosso (Endemic).

43. *E. frater* Badonnel. Sao Paulo (Endemic).

44. *E. leucomelas* (Enderlein). Mato Grosso (Brazil, Paraguay).

45. *E. luteus* Hagen. Mato Grosso (Brazil, Cuba, Mexico).

46. *E. mendax* Badonnel. Mato Grosso, Sao Paulo (Brazil, Argentina).

47. *E. pilosus* Badonnel. Mato Grosso, Sao Paulo (Endemic).

48. *E. similis* Badonnel. Mato Grosso (Endemic).

49. *E. virgatus* (Enderlein). Mato Grosso, Sao Paulo (Brazil, Argentina, Paraguay).

50. *Liposcelis bostrychophila* Badonnel. Rio de Janeiro (Cosmopolitan).

51. *L. entomophila* (Enderlein). Amazonas, Rio de Janeiro (Cosmopolitan). (\*). New for Brazil.

52. *L. fuscipes* Badonnel. Sao Paulo (Brazil, Mexico).

53. *L. lenkoi* Badonnel. Sao Paulo (Endemic).

Pachytroctidae

54. *Tapinella gamma* Mockford. Roraima (Endemic).

55. *T. maracana* Mockford. Roraima (Endemic).

56. *T. ornaticeps* Mockford. Roraima (Brazil, Venezuela).

57. *Antilopsocus nadleri* Gurney. Mato Grosso (Brazil, Trinidad).

58. *Pachytroctes brasilianus* Roesler. Santa Catarina

(Brazil, Venezuela).

59. *Psyllotroctes plaumanni* Roesler. Santa Catarina (Endemic).

#### Psocomorpha

##### Epipsocidae

60. *Epipsocus acanthus* New. Amazonas (Endemic).  
 61. *E. argutus* New. Amazonas (Endemic).  
 62. *E. atratus* New. Amazonas, Roraima (Endemic).  
 63. *E. badonneli* Mockford. Pará, Roraima (Endemic).  
 64. *E. borgmeieri* Karny. Rio de Janeiro (Endemic).  
 65. *E. foliatus* Mockford. Roraima (Endemic).  
 66. *E. fuscicareolatus* New. Amazonas (Endemic).  
 67. *E. latistigma* Roesler. Santa Catarina (Endemic).  
 68. *E. maculithorax* New. Amazonas (Endemic).  
 69. *E. meruleus* New. Amazonas (Endemic).  
 70. *E. pennyi* New. Amazonas (Endemic).  
 71. *E. pereirai* Badonnel. Amazonas, Mato Grosso (Endemic).  
 72. *E. phaeus* New. Amazonas, Roraima (Endemic).  
 73. *E. quircus* Roesler. Santa Catarina (Endemic).  
 74. *E. roraimensis* Mockford. Roraima (Endemic).  
 75. *E. serenus* Roesler. Santa Catarina (Endemic).  
 76. *E. stigmaticus* Mockford. Roraima (Endemic).  
 77. *E. uniformis* New. Mato Grosso (Endemic).  
 78. *E. verrucosus* New. Amazonas (Endemic).  
 79. *E. willineri* New. Mato Grosso (Endemic).  
 80. *Goja nebulosa* (Roesler). Santa Catarina (Endemic).  
 81. *G. picta* (Banks). "Brazil" (Endemic).  
 82. *G. plaumanni* (Roesler). Santa Catarina (Endemic).  
 83. Genus ca. *Goja*. Bahia (Endemic). (\*). New for Brazil.  
 84. *Mesepipsocus brasiliensis* (New). Mato Grosso (Brazil, Perú).  
 85. *M. brasiliensis* (New). Amazonas (Endemic).  
 86. *M. brevistigma* (New). Mato Grosso (Brazil, Perú).  
 87. *M. brunellus* (New). Mato Grosso (Endemic).  
 88. *M. capitulatus* (New). Amazonas (Endemic).  
 89. *M. fuscatus* (New). Mato Grosso (Brazil, Perú).  
 90. *M. newi* Badonnel. Sao Paulo (Endemic).  
 91. *M. niger* (New). Mato Grosso (Brazil, Perú).  
 92. *M. obscurus* (New). Mato Grosso (Endemic).  
 93. *M. proctus* (New and Thornton). Pará (Brazil, Perú). (\*). New for Brazil.  
 94. *M. roesleri* (New). Mato Grosso (Endemic).  
 95. *M. roncadorensis* (New). Mato Grosso (Endemic).  
 96. *M. semiclarus* (Mockford). Roraima (Endemic).  
 97. *M. sinuatus* (New). Mato Grosso (Brazil, Perú).  
 98. *M. taitubai* (New). Mato Grosso (Endemic).  
 99. *Mesepipsocus* sp. 1. Bahia (Endemic). (\*). New for Brazil.  
 100. *Mesepipsocus* sp. 2. Bahia. (Endemic). (\*). New for Brazil.

101. *Neurostigma dispositum* Roesler. Amazonas, Mato Grosso, Santa Catarina, Sao Paulo (Brazil, Mexico, Perú).

102. *N. enderleini* New. Amazonas (Endemic).

103. *N. paucivenosum* New. Amazonas (Endemic).

104. *N. radiatum* Mockford. Roraima (Endemic).

105. *N. roesleri* New. Amazonas (Endemic).

106. *N. xanthopterum* New. Amazonas (Endemic).

107. *Papilopsocus oriximinaensis* García Aldrete. Pará (Endemic). (\*). See García Aldrete 2005.

##### Dolabellopsocidae

108. *Dolabellopsocus carcinus* Mockford. Roraima (Endemic).

109. *D. catenatus* Mockford. Roraima (Endemic).

110. *D. ctenatus* (New). Amazonas, Bahia, Mato Grosso (Brazil, Perú).

111. *D. eertmoedi* Badonnel. Mato Grosso (Endemic).

112. *D. flavipennis* (Roesler). Santa Catarina (Endemic).

113. *D. intermedius* Eertmoed. Pará, Rondônia (Brazil, Trinidad). (\*). New for Brazil.

114. *D. lobatus* Mockford. Roraima (Endemic).

115. *D. pectenatus* Eertmoed. Bahia (Endemic).

116. *D. pictus* Mockford. Roraima (Endemic).

117. *D. pygmaeus* (New). Mato Grosso (Endemic).

118. *D. similis* Mockford. Roraima (Endemic).

119. *D. spinosus* Mockford. Roraima (Endemic).

120. *Isthopsocus barbatus* Mockford. Roraima (Endemic).

121. *I. breviceps* (New). Mato Grosso (Endemic).

122. *I. lanceatus* Mockford. Roraima (Endemic).

123. *I. luridus* New. Amazonas (Endemic).

124. *I. ornatus* (New). Mato Grosso (Endemic).

125. *I. radulatus* New. Bahia (Endemic).

126. *I. speculatus* Mockford. Roraima (Endemic).

##### Cladiopsocidae

127. *Cladiopsocus distinctus* Eertmoed. Paraná, Santa Catarina (Endemic).

128. *C. dolosus* (Roesler). Santa Catarina (Endemic).

129. *C. domesticus* (New). Mato Grosso (Endemic).

130. *C. fuscus* (New). Mato Grosso (Endemic).

131. *C. prionotus* (New). Amazonas (Endemic).

132. *C. uncinatus* (New). Amazonas (Endemic).

##### Ptiloneuridae

133. *Euplocania badonneli* New and Thornton. Rondônia (Brazil, Perú).

134. *E. ca. badonneli* New and Thornton. Pará (Endemic). (\*). New for Brazil.

135. *E. cerata* New. Amazonas (Brazil, Perú).

136. *E. marginata* New and Thornton. Pará (Brazil, Perú). (\*). New for Brazil.

137. *E. picta* New. Amazonas (Endemic).

138. *E. picta* complex, sp. 1. Bahia (Endemic). (\*). New for

- Brazil.
139. *E. picta* complex, sp. 2. Pará (Endemic). (\*). New for Brazil.
140. *E. picta* complex, sp. 3. Pará, Roraima (Endemic). (\*). New for Brazil.
141. *E. picta* complex, sp. 4. Goiás (Endemic). (\*). New for Brazil.
142. *Euplocania* sp. 1. Pará (Endemic). (\*). New for Brazil.
143. *Euplocania* sp. 2. Amazonas (Endemic). (\*). New for Brazil.
144. *Loneura amazonica* (New). Amazonas (Endemic).
145. *L. brasiliensis* Roesler. Santa Catarina (Endemic).
146. *L. maracaensis* García Aldrete. Roraima. (Endemic). (\*). See García Aldrete 2004a).
147. *Loneura* sp. 1. Pará (Endemic). (\*). New for Brazil.
148. *Loneura* sp. 2. Amazonas (Endemic). (\*). New for Brazil.
149. *Loneura* sp. 3. Pará (Endemic). (\*). New for Brazil.
150. *Loneura* sp. 4. Amazonas (Endemic). (\*). New for Brazil.
151. *Loneura* sp. 7. Paraná (Endemic). (\*). New for Brazil.
152. *Loneura* sp. 8. Paraná (Endemic). (\*). New for Brazil.
153. *Ptiloneuropsis immaculata* Roesler. Rio de Janeiro (Endemic). See García Aldrete (2004b).
154. *Timnewia greeni* (New). Mato Grosso (Brazil, Ecuador).
155. *Triplocania ariasi* New. Amazonas, Bahia (Endemic).
156. *T. calcarata* New. Amazonas (Endemic).
157. *T. ca. calcarata* New, sp. 1. Goiás (Endemic). (\*). New for Brazil.
158. *T. ca. calcarata* New, sp. 2. Goiás (Endemic). (\*). New for Brazil.
159. *T. ca. calcarata* New, sp. 3. Rondônia (Endemic). (\*). New for Brazil.
160. *T. caudata* New. Amazonas (Endemic).
161. *T. furcata* New. Mato Grosso (Endemic).
162. *T. ca. furcata* New. Amazonas, Goiás, Pará (Endemic). (\*). New for Brazil.
163. *T. immaculata* New. Amazonas (Endemic).
164. *T. lunulata* New. Amazonas (Endemic).
165. *T. lucida* Roesler. Santa Catarina, Paraná (Endemic).
166. *T. magnifica* Roesler. Santa Catarina (Endemic).
167. *T. reflexa* Roesler. Santa Catarina (Endemic).
168. *T. rondoniensis* García Aldrete. Rondônia (Endemic).
169. *T. ca. tambopatensis* García Aldrete. Pará (Endemic). (\*). New for Brazil.
170. *T. umbrata* New. Amazonas (Brazil, Perú).
171. *Triplocania* sp. 1. Bahia (Endemic). (\*). New for Brazil.
172. *Triplocania* sp. 2. Goiás (Endemic). (\*). New for Brazil.
173. *Triplocania* sp. 3. Rondônia (Endemic). (\*). New for Brazil.
174. *Triplocania* sp. 4. Pará (Endemic). (\*). New for Brazil.
175. *Triplocania* sp. 5. Pará (Endemic). (\*). New for Brazil.
176. *Triplocania* sp. 6. Pará (Endemic). (\*). New for Brazil.
177. *Triplocania* sp. 7. Pará (Endemic). (\*). New for Brazil.
178. *Triplocania* sp. 8. Pará (Endemic). (\*). New for Brazil.
179. *Triplocania* sp. 9. Pará (Endemic). (\*). New for Brazil.
180. *Triplocania* sp. 10. Amazonas (Endemic). (\*). New for Brazil.
181. *Triplocania* sp. 11. Pará (Endemic). (\*). New for Brazil.
182. *Triplocania* sp. 12. Paraná (Endemic). (\*). New for Brazil.
- Asiopsocidae
183. *Notiopsocus facilis* Mockford. Roraima (Endemic).
184. *N. neotropicus* (Machado-Allison and Papavero). Mato Grosso (Endemic).
185. *N. simplex* Banks. Amazonas, Roraima (Endemic).
186. *Pronotiopsocus amazonicus* Mockford. Amazonas (Endemic).
- Caeciliusidae
187. *Coryphaca inka* Enderlein. Amazonas, Santa Catarina (Brazil, Argentina, Perú).
188. *C. matona* (New and Thornton). Mato Grosso (Endemic).
189. *Stenocaecilius antillanus* (Banks). "Brazil" (Widespread in the American tropics).
190. *Stenocaecilius casarum* (Badonnel). Bahia (Widespread in the tropics). (\*). New for Brazil.
191. *Valenzuela adrianae* (Mockford). Roraima (Endemic).
192. *V. albofasciatus* (Mockford). Roraima (Endemic).
193. *V. albomarginatus* (Enderlein). Rio de Janeiro (Endemic).
194. *V. cinalus* (New and Thornton). Mato Grosso (Endemic).
195. *V. claripennis* (Mockford). Roraima (Endemic).
196. *V. claristigma* (New and Thornton). Mato Grosso, Roraima (Brazil, Venezuela).
197. *V. clayae* (New and Thornton). Mato Grosso (Endemic).
198. *V. fasciatus* (Enderlein). Pará (Endemic).
199. *V. gemmatus* (Mockford). Roraima (Endemic).
200. *V. micans* (New and Thornton). Mato Grosso, Pará, Roraima (Endemic).
201. *V. nigroticta* (Williner). Paraná (Endemic).

202. *V. obscuripennis* (Mockford). Roraima (Endemic).
203. *V. paradistinctus* (New and Thornton). Mato Grosso (Endemic).
204. *V. posticoideus* (Mockford). Roraima (Endemic).
205. *V. tuberculatus* (New and Thornton). Mato Grosso, Roraima (Endemic).
206. *Valenzuela* sp. "Brazil" (Endemic).
207. *Enderleinella occidentalis* Mockford. Roraima (Endemic).
208. *Xanthocaecilius eroticus* Mockford. Santa Catarina (Endemic).
209. *X. granulosus* Mockford. Roraima (Brazil, Mexico, Panamá, Venezuela).
210. *X. pallidus* Mockford. Roraima (Endemic).

#### Stenopsocidae

211. *Graphopsocus cruciatus* (Linnaeus). Pará, Rondônia (Holarctic, probably introduced).
212. *G. mexicanus* Enderlein. Paraná, Santa Catarina (Brazil, Mexico, Venezuela).

#### Amphipsocidae

213. *Dasypsocus nigrifrons* (Roesler). Santa Catarina (Brazil, Venezuela).
214. *D. roesleri* (New and Thornton). Mato Grosso (Brazil, Mexico, Venezuela).
215. *Polypsocus coleopterus* Roesler. Santa Catarina (Endemic).
216. *P. delunatus* Roesler. Santa Catarina (Endemic).
217. *P. falcifer* Roesler. Santa Catarina (Endemic).
218. *P. fastosus* Roesler. Santa Catarina (Endemic).
219. *P. fuscopterus* Mockford. Roraima (Endemic).
220. *P. griseolineatus* (Enderlein). Amazonas (Brazil, Perú).
221. *P. lineatus* Mockford. Roraima (Endemic).
222. *P. ohausianus* (Enderlein). Roraima (Brazil, Ecuador).
223. *P. selenius* Roesler. Amazonas, Santa Catarina (Brazil, Venezuela).
224. *P. serpentinus* Mockford. Amazonas, Roraima (Endemic).
225. *P. suffusus* Roesler. Santa Catarina (Endemic).
226. *P. unicolor* Roesler. Santa Catarina. (Endemic).

#### Dasydemellidae

227. *Dasydemella gynopeza* Roesler. Santa Catarina (Endemic).
228. *D. setosa* Roesler. Santa Catarina (Endemic).

#### Lachesillidae

229. *Anomopsocus radiolus* (Roesler). Mato Grosso (Brazil, Costa Rica, Mexico).
230. *Graphocaecilius interpretatus* Roesler. Paraná, Santa Catarina (Endemic).
231. *Notolachesilla maracana* Mockford. Roraima (Endemic).
232. *Prolachesilla* sp. Bahia. (Endemic). (\*). New for

Brazil.

233. *Lachesilla acuminata* Mockford. Roraima (Endemic).
234. *L. aethiopica* Enderlein. Roraima (Tropical waif).
235. *L. amarilla* New. Mato Grosso (Endemic).
236. *L. ariasi* García Aldrete. Amazonas (Bolivia, Brazil). (\*). See García Aldrete (2004a).
237. *L. bahiana* García Aldrete. Bahia (Endemic).
238. *L. belemensis* García Aldrete. Pará (Endemic).
239. *L. bicornata* New and Thornton. Mato Grosso, Roraima (Endemic).
240. *L. bimaculata* García Aldrete. Pará (Brazil, Belize, Panamá).
241. *L. brasiliensis* García Aldrete. Sao Paulo (Endemic).
242. *L. braticagua* García Aldrete. Pará (Brazil, Costa Rica, French Guiana).
243. *L. breviforceps* García Aldrete. Santa Catarina (Endemic).
244. *L. capreola* New. Mato Grosso (Endemic).
245. *L. carioca* García Aldrete. Rio de Janeiro (Endemic).
246. *L. columnaris* García Aldrete. Santa Catarina (Endemic).
247. *L. concava* García Aldrete. Río Grande do Sul, Santa Catarina (Brazil, Venezuela).
248. *L. convexa* García Aldrete. Bahia (Brazil, Panamá).
249. *L. cuala* García Aldrete. Pará, Paraná, Rio de Janeiro, Roraima, Sao Paulo (Brazil, Mexico, Panamá, Trinidad).
250. *L. falcata* García Aldrete. Roraima, Sao Paulo (Brazil, Bolivia).
251. *L. marginata* New and Thornton. Mato Grosso (Endemic).
252. *L. matogrossensis* García Aldrete. Mato Grosso (Endemic).
253. *L. megaforcepeta* Mockford. Roraima (Endemic).
254. *L. nevermanni* (Navás). Pará (Brazil, Costa Rica, Honduras, Panama, Trinidad). (\*). New for Brazil.
255. *L. palmera* New. Mato Grosso (Endemic).
256. *L. papillata* García Aldrete. Pará (Brazil, French Guiana).
257. *L. patula* García Aldrete. Rondônia (Endemic).
258. *L. paulista* García Aldrete. Sao Paulo (Endemic).
259. *L. rugosa* García Aldrete. Rio de Janeiro, Santa Catarina, Sao Paulo (Brazil, Perú, Trinidad).
260. *L. tectorum* Badonnel. Sao Paulo (Widely distributed).
261. *L. teresiana* García Aldrete. Espírito Santo (Endemic).
262. *L. trunca* García Aldrete. Pará, Pernambuco (Brazil, Panamá).
263. *L. valvula* New and Thornton. Mato Grosso (Endemic).
264. *L. yanomami* Mockford. Pará, Roraima (Endemic).
265. *Lachesilla* sp. 1. Pará (Endemic). (\*). New for Brazil.
266. *Lachesilla* sp. 2. Pará (Endemic). (\*). New for Brazil.



267. *Nadleria alpha* Badonnel and García Aldrete. Pará (Brazil, Trinidad).

268. *N. gamma* Mockford. Amazonas (Brazil, Belize, Perú).

269. *N. mockfordi* Badonnel and García Aldrete. Pará (Endemic).

#### Ectopsocidae

270. *Ectopsocopsis cryptomeriae* (Enderlein). Río Grande do Sul (Cosmopolitan).

271. *Ectopsocus pumilis* (Banks). São Paulo (Widely distributed).

272. *E. ribagai* Enderlein. Pará (Brazil, Puerto Rico).

273. *E. richardsi* (Pearman). "Brazil" (Widely distributed).

274. *E. titschacki* Jentsch. Pará (Tropical waif).

275. *E. vilhenai* Badonnel. Pará (Tropical waif). (\*). New for Brazil.

#### Peripsocidae

276. *Peripsocus australis* Mockford. Santa Catarina (Endemic).

277. *P. nubifer* Mockford. Roraima (Endemic).

278. *P. pauliani* Badonnel. "Northern Brazil" (Widely distributed).

279. *P. phacelledomi* New. Pernambuco (Endemic).

280. *P. placidus* Mockford. Roraima (Endemic).

281. *P. subtristis* Mockford. Roraima (Endemic).

282. *P. teutonicus* Mockford. Santa Catarina (Endemic).

283. *P. tristis* Mockford. Roraima (Endemic).

#### Archipsocidae

284. *Archipsocopsis frater* (Mockford). São Paulo (Brazil, Florida, Jamaica, Mexico).

285. *A. inornata* New. Mato Grosso, São Paulo (Brazil, Mexico, Panamá, Surinam, Trinidad, Venezuela).

286. *A. virgata* New. Pará, Roraima (Brazil, French Guiana, Surinam, Venezuela).

287. *Archipsocus badonneli* New. São Paulo (Brazil, Colombia, Venezuela).

288. *A. brasilianus* Enderlein. Pará (Brazil, Paraguay, Puerto Rico).

289. *A. broadheadi* Badonnel. Pará (Brazil, Panamá).

290. *A. castrii* Badonnel. São Paulo (Brazil, Colombia).

291. *A. cervinus* New. Pará, Rio de Janeiro (Brazil, Colombia, Surinam, Venezuela).

292. *A. costalimai* New. Pará, São Paulo (Endemic).

293. *A. enderleini* New. Mato Grosso (Endemic).

294. *A. floridanus* Mockford. São Paulo (Brazil, Florida, Mexico).

295. *A. gibberophallus* New. Mato Grosso (Brazil, French Guiana).

296. *A. granulosus* Badonnel. Mato Grosso (Endemic).

297. *A. gurneyi* Mockford. Roraima (Brazil, Florida, Jamaica, Mexico).

298. *A. indentatus* Mockford. Roraima (Endemic).

299. *A. lenkoi* Badonnel. Roraima (Endemic).

300. *A. lineatus* New. Pará (Endemic).

301. *A. minutillus* New. Amazonas, Mato Grosso (Endemic).

302. *A. mockfordi* New. Mato Grosso, Pará, Roraima, São Paulo (Brazil, Panamá, Perú, Surinam, Trinidad, Venezuela).

303. *A. modestus* New. Mato Grosso (Brazil, Colombia).

304. *A. newi* Badonnel. São Paulo (Endemic).

305. *A. pearmani* New. Mato Grosso (Brazil, Panamá).

306. *A. tenebricosus* New. Mato Grosso (Endemic).

307. *Notarchipsocus fasciipennis* Mockford. Roraima (Endemic).

308. *N. macrurus* (New). Mato Grosso, Roraima (Brazil, Panamá, Trinidad).

#### Pseudocaeciliidae

309. *Pseudocaecilius tahitiensis* (Karny). Pará, Rio de Janeiro, Roraima (Widespread in the tropics).

310. *Scytosopus coriaceus* Roesler. Santa Catarina (Brazil, Cuba, Jamaica, Mexico).

311. *S. difficilis* Roesler. Santa Catarina (Endemic).

312. *S. fluminis* Mockford. Roraima (Endemic).

313. *S. medialis* New and Thornton. Mato Grosso (Endemic).

#### Philotarsidae

314. *Haplophallus leopardina* (Williner). Paraná (Brazil, Argentina, Colombia).

315. *Aaroniella bruchi* (Williner). Roraima (Brazil, Argentina).

316. *A. glabra* New and Thornton. Santa Catarina (Endemic).

317. *A. recta* New and Thornton. Mato Grosso (Endemic).

#### Elipsocidae

318. *Nepiomorpha brasiliensis* Badonnel. São Paulo (Brazil, Mexico, Venezuela).

319. *N. cingulata* New. Mato Grosso (Endemic).

320. *N. dolosa* Badonnel. São Paulo (Endemic).

321. *N. pallida* New. Mato Grosso, Roraima (Endemic).

#### Hemipsocidae

322. *Hemipsocus pallidus* New and Thornton. Mato Grosso (Endemic).

#### Psocidae

323. *Amphigerontia* sp. "Brazil" (Endemic).

324. *Blaste alfineta* New. Mato Grosso (Endemic).

325. *B. amazonica* García Aldrete. Roraima (Endemic).

326. *B. caudata* Mockford. Roraima (Endemic).

327. *B. forcepata* New. Mato Grosso (Endemic).

328. *B. fuscimera* New and Thornton. Paraná (Endemic).

329. *B. hamata* Mockford. Roraima (Endemic).

330. *B. ligula* New and Thornton. Paraná (Brazil, Uruguay).

331. *B. longispina* Mockford. Roraima (Endemic).

332. *B. macrura* (New). Amazonas, Mato Grosso, Roraima (Endemic).
333. *B. obscura* (New). Mato Grosso (Endemic).
334. *B. plaumanni* New. Paraná (Endemic).
335. *B. richardsi* New. Paraná (Endemic).
336. *Blastopsocidus brasiliensis* (New). Mato Grosso (Endemic).
337. *Blastopsocus mockfordi* Badonnel. Roraima (Brazil, Colombia).
338. *Elaphopsocus glaphyrostigma* Roesler. Santa Catarina (Endemic).
339. *Elaphopsocus* sp. Amazonas (Endemic). (\*). New for Brazil.
340. *Cerastipsocus beaveri* New. Mato Grosso, Paraná (Endemic).
341. *C. brasilianus* (Enderlein). Espírito Santo (Endemic).
342. *C. consocius* (Navás). "Brazil" (Endemic).
343. *C. fuscipennis* Burmeister. "Brazil" (Endemic).
344. *C. kolbei* New. Mato Grosso (Endemic).
345. *C. rugosus* New and Thornton. Paraná (Endemic).
346. *C. sivorii* (Ribaga). Sao Paulo (Brazil, Uruguay). See Requena et al., (2007).
347. *C. willineri* New and Thornton. Paraná (Endemic).
348. *Cervopsocus medialis* New. Amazonas, Pará (Brazil, Belize, Perú).
349. *Dactylopsocus fumigatus* (Kolbe). Santa Catarina (Endemic).
350. *D. similis* Mockford. Roraima (Endemic).
351. *Eremopsocus crassicornis* (Kolbe). Minas Gerais, Santa Catarina (Brazil, Argentina, Uruguay).
352. *E. infumatus* McLachlan. Goiás (Brazil, Venezuela).
353. *E. nigripes* Mockford. Santa Catarina (Endemic).
354. *Psococerastis amazonica* New. Amazonas (Endemic).
355. *P. callangana* (Enderlein). Amazonas, Espírito Santo, Minas Gerais, Pernambuco, Rio de Janeiro, Santa Catarina (Brazil, Panamá, Perú).
356. *P. fasciata* Mockford. Amazonas, Espírito Santo, Pará, Rio de Janeiro, Santa Catarina (Brazil, Belize, Mexico, Panamá).
357. *P. hageni* New. Mato Grosso (Endemic).
358. *P. opulenta* (Navás). Amazonas, Goiás, Mato Grosso, Pará, Pernambuco, Rio de Janeiro, Sao Paulo (Widely distributed in tropical America).
359. *P. paraguayana* (Ribaga). Santa Catarina, Sao Paulo (Brazil, Paraguay).
360. *P. pictiventris* (Kolbe). Santa Catarina (Endemic).
361. *P. pyralina* (Kolbe). Minas Gerais, Santa Catarina (Endemic).
362. *P. stictica* (Banks). "Brazil" (Endemic).
363. *Brachinodiscus cinctipes* (Enderlein). "Brazil" (Brazil, Bolivia, Paraguay, Perú).
364. *Metylophorus bishopi* New. Mato Grosso (Endemic).
365. *M. calcaratus* Mockford. Roraima (Endemic).
366. *M. ctenatus* New. Mato Grosso (Endemic).
367. *M. fasciatus* New. Amazonas (Endemic).
368. *M. hispidus* Mockford. Roraima (Endemic).
369. *M. symmetricus* Mockford. Roraima (Endemic).
370. *M. theresopolitanus* (Enderlein). Rio de Janeiro (Endemic).
371. *Ophtalmopsocus ocularis* (Kolbe). "Brazil" (Endemic).
372. *O. pallidus* New. Mato Grosso, Roraima (Endemic).
373. *Indiopsocus paranensis* (New and Thornton). Paraná (Endemic).
374. *I. sinuatistigma* (New). Mato Grosso (Endemic).
375. *Psocidus allostigmus* (Banks). "Brazil" (Endemic).
376. *P. manausensis* New. Amazonas (Endemic).
377. *P. fuscatus* (Navás). "Brazil" (Endemic).
378. *P. kotzbaueri* (Navás). "Brazil" (Endemic).
379. *P. nigricornis* (Brauer). "Brazil" (Endemic).
380. *P. proi* (Navás). Río Grande do Sul (Brazil, Argentina).
381. *P. punctaticeps* (Enderlein). "Brazil" (Endemic).
382. *P. quadrisignatus* (Banks). Amazonas (Endemic).
383. *P. simplex* (Enderlein). "Brazil" (Endemic).
384. *P. zikani* (Navás). "Brazil" (Endemic).
385. *Psocomesites continuatus* (Roesler). Pará (Endemic).
386. *Ptycta lunulata* New. Mato Grosso (Endemic).
387. *P. pearmani* New. Mato Grosso (Endemic).
388. *P. reticulata* New. Mato Grosso (Endemic).
389. *Steleops maculatus* New. Mato Grosso (Endemic).
390. *S. pedunculatus* (Enderlein). "Brazil" (Brazil, Paraguay, Perú).
391. *S. pulcher* New. Mato Grosso (Endemic).
392. *Trichadenotecnum circularoides* Badonnel. Roraima (Widely distributed).
393. *T. gonzalezi* (Williner). Roraima (Brazil, Argentina).
394. *T. pardus* (Badonnel). Pará (Widely distributed).
395. *T. punctipenne* New. Pernambuco (Endemic).
396. *T. roesleri* New. Mato Grosso (Endemic).
397. *T. simile* Mockford. Roraima (Endemic).
398. *T. sinuatum* New. Mato Grosso (Endemic).
399. *Dyctiopsocus pennicornis* (Burmeister). Amazonas, Santa Catarina (Brazil, Argentina, Venezuela).
400. *Poecilopsocus anticus* (Walker). Pará (Endemic).
401. *P. beaveri* (New). Mato Grosso (Endemic).
402. *P. bishopi* (New). Mato Grosso (Endemic).
403. *P. cinctus* (Enderlein). Amazonas (Endemic).
404. *P. leucotelas* (Walker). Pará (Endemic).
405. *P. richardsi* (New). Mato Grosso (Endemic).
406. *Thyrsophorus formosus* Navás. "Brazil" (Endemic).
407. *T. speciosus* Burmeister. Pará (Brazil, French Guiana, Panamá, Perú, Surinam).
408. *Thyrsopsocus aequatorialis* Enderlein. "Brazil"

(Brazil, Ecuador).

409. *T. bellus* (McLachlan). Pará (Brazil, Bolivia, Perú).

410. *T. brasiliensis* New. Amazonas (Endemic).

411. *T. elegans* (Enderlein). "Brazil" (Endemic).

#### Myopsocidae

412. *Lichenomima ariasi* (New). Amazonas, Roraima (Endemic).

413. *L. conspersa* Enderlein. Espírito Santo (Brazil, Paraguay).

414. *L. onca* Mockford. Roraima (Endemic).

415. *L. pulchella* (New and Thornton). Mato Grosso (Endemic).

416. *L. sparsa* (Hagen). Espírito Santo (Brazil, Canada, Cuba, Mexico, USA).

417. *L. thornstoni* Mockford. Roraima (Endemic).

418. *L. timmei* Mockford. Roraima (Endemic).

419. *Myopsocus albomaculatus* (New). Amazonas (Endemic).

420. *M. albus* García Aldrete. Roraima (Endemic).

421. *M. cinctus* (New). Amazonas (Endemic).

422. *M. minor* (New and Thornton). Mato Grosso (Endemic).

423. *M. parvus* Mockford. Roraima (Endemic).

424. *M. pennyi* (New). Amazonas (Endemic).

425. *M. vespertilio* Mockford. Roraima (Endemic).

Table 2 presents the categories of geographic distribution of the species listed in Table 1. The most important component is that of the endemics, resulting in a strikingly high level of endemism (73.41%); the second most important component is that of the species shared with other South American countries (54 species). It is likely that, as the South American fauna becomes better known, the level of endemism will decrease. The number of widely distributed species, and the group of South American species shared with Central America is relatively important, although small in relation to the size of the fauna. The usual assemblage of cosmopolitans and tropical waifs (9 species) is also present.

## Discussion

Lienhard and Smithers (2002: Table 1) list 762 species of Psocoptera for South America. A conservative estimate of total species for South America is 1 300 species of Psocoptera, representing 13% of the world psocid fauna. García-Aldrete (2006) pointed out that, by the end of 2005, there were 5 557 described species in 474 genera; the potential total can be easily rounded up to 10 000 species, to account for the undescribed ones. The 13%

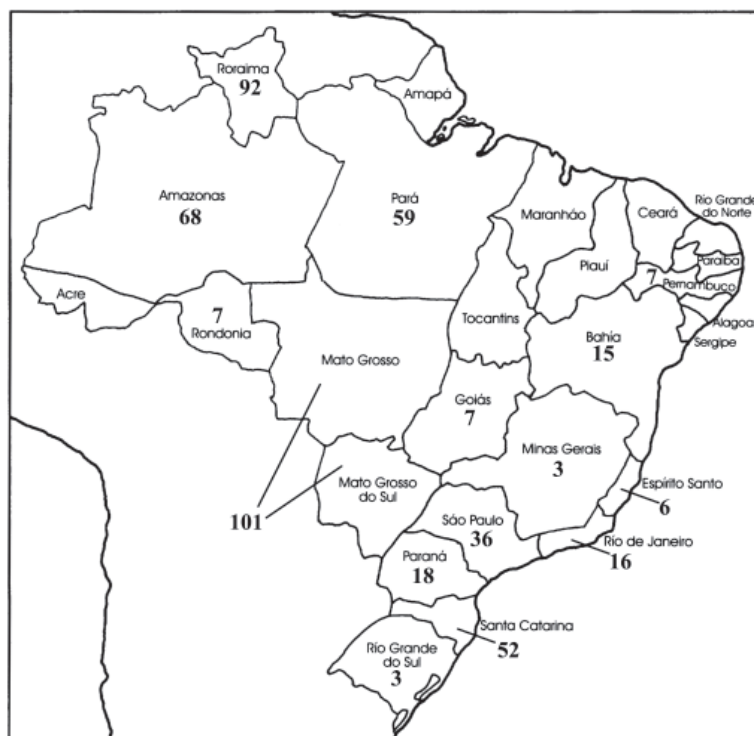
**Table 2.** Categories of geographic distribution of the Brazilian psocid fauna, and number of species in each

Category	Number of species
Endemic	312
South American (including Trinidad)	54
Widely distributed	16
South American, shared with Central America	7
Tropical waifs	6
South American, shared with Mexico	5
Shared with the Caribbean and Mexico	5
Shared with Central America	4
South American, shared with Central America and Mexico	3
Shared with Mexico	3
Cosmopolitan	3
Shared with Central America and Mexico	2
Shared with the Caribbean	1
Shared with the Caribbean and North America (other than Mexico)	1
Shared with North America, Caribbean and Mexico	1

above constitutes a gross underestimation, given that South America includes 4 megadiverse countries (Brazil, Colombia, Ecuador and Perú), and that the number of species in an extra-South American megadiverse country (Mexico) represents about 10% of the estimated world fauna (Mittermeier and Goetsch de Mittermeier, 1992; Llorente et al., 1996). In this context, Brazil, with 425 species recorded, stands as the richest country for Psocoptera in South America.

The nature of the Brazilian psocid fauna is, as expected, strongly South American, with many endemics and a good number of species shared with the surrounding countries; some species are also shared with the Caribbean area and with Central America (see Table 2). There is evidence indicating that the known size of the Brazilian fauna is underestimated; some of it is speculative, e.g. the psocid fauna of Mexico, also a megadiverse country, but nearly 4 times smaller than Brazil, is almost twice as large (Mockford and García-Aldrete, 1996; García-Aldrete, 2001); if psocid species diversity is proportional to geographical area, then many more species remain to be collected in Brazil. Other evidence comes from examination of a small fraction of the Psocoptera deposited in the INPA (Manaus, Amazonas) Invertebrate Collection, and the Psocoptera of the PPBio Program. In the latter, for example, 7 out of 8, in 5 genera, are new to science. In addition, the lack of records in 9 Brazilian states (Fig.1) almost certainly reflects a lack of collecting efforts and not genuine absences. It could be hypothesized that, in a medium time period, the psocid fauna of Brazil could be shown to be twice that presently recorded.





**Fig. 1.** Number of species of Psocoptera in each Brazilian state. Twenty three species in Table 1 are only listed from "Brazil", so their distribution in the Brazilian states is unknown.

Nacional Autónoma de México, Serie Zoología 75:303-311.

García Aldrete, A. N. 2004b. Rediscovery of *Ptiloneuropsis immaculata* Roesler 1940 (Psocoptera: Ptiloneuridae), augmented description and neotype designation. *Studies on Neotropical Fauna and Environment* 39:207-215.

García Aldrete, A. N. 2005. Three new monotypic genera of Epipsocidae (Psocoptera) from Peru and Brazil. *Zootaxa* 1077:51-60.

García Aldrete, A. N. 2006. New genera of Psocoptera (Insecta), from Mexico, Belize and Ecuador (Psoquillidae, Ptiloneuridae, Lachesillidae). *Zootaxa* 1319:1-14.

Johnson, K. P., K. Yoshizawa and V. S. Smith. 2004. Multiple origins of parasitism in lice. *Proceedings of the Royal Society of London, Series B*, 271:1771-1776.

Lienhard, C. 2004. Worldwide country checklist of Psocoptera species (based on the World Catalogue by Lienhard and Smithers 2002). Online: <http://www.ville-ge.ch/mhng/psocoptera/page/ps-coun.htm>

Lienhard, C. and C. N. Smithers. 2002. Psocoptera (Insecta). World Catalogue and Bibliography. *Instrumenta Biodiversitatis* V.

Muséum d'histoire naturelle, Genève, Suisse. 745 p.

Llorente, B. J., E. González S., A. N. García Aldrete and C. Cordero. 1996. Breve panorama de la taxonomía de artrópodos en México. *In* Biodiversidad, biogeografía y taxonomía de artrópodos de México: hacia una síntesis de su conocimiento, J. Llorente B., A. N. García Aldrete and E. González S. (eds.). Instituto de Biología, Universidad Nacional Autónoma de México. Mexico, D. F. p. 3-14.

Mittermeier, R. A. and C. Goetsch de Mittermeier. 1992. La importancia de la diversidad biológica de México. *In* México ante los retos de la biodiversidad, J. Sarukhán and R. Dirzo (Compiladores). Comisión Nacional para el Conocimiento y Uso de la Biodiversidad. Mexico, D.F. p. 63-73.

Mockford, E. L. 2005. A new genus of Perientomine psocids (Psocoptera: Lepidopsocidae) with a review of the Perientomine genera. *Transactions of the American Entomological Society* 131:201-215.

Mockford, E. L. and A. N. García Aldrete. 1996. Psocoptera. *In* Biodiversidad, biogeografía y taxonomía de artrópodos de México: hacia una síntesis de su conocimiento, J. Llorente B., A. N. García Aldrete and E. González S. (eds.). Instituto de Biología, Universidad Nacional Autónoma de México. Mexico, D.F. p. 175-205.

Requena, G. S., B. A. Buzatto and G. Machado. 2007. Habitat use, phenology, and gregariousness of the Neotropical psocopteran *Cerastipsocus sivorii* (Psocoptera: Psocidae). *Sociobiology* 49:197-214.

Yoshizawa, K. and K. Johnson. 2006. Morphology of male genitalia in lice and their relatives and phylogenetic implications. *Systematic Entomology* 31:350-361.

## Acknowledgments

We thank José Albertino Rafael (INPA, Manaus, Amazonas) for the loan of specimens in the INPA collection to ANGA, and for the facilities provided to ANGA during his visit to Manaus in April 2005. Thanks are also extended to Freddy Bravo (Universidade Estadual de Feira de Santana, Feira de Santana, Bahia) for the loan of specimens in the Museu de Zoologia, Universidade Estadual de Feira de Santana Collection, and for the attention and facilities provided to ANGA during his stay in Feira de Santana in September, 2008. We also thank Charles Lienhard (Muséum d'histoire naturelle, Genève, Suisse) and an anonymous reviewer, who read a former version of this work, and whose comments improved it considerably. Special thanks to PPBio Project, for partially financing the stay of ANGA at the UEFS in September 2008.

## Literature cited

- García Aldrete, A. N. 2001. Genera of Psocoptera new to Mexico. *Entomological News* 112:94-100.
- García Aldrete, A. N. 2004a. New species of Psocoptera (Insecta) from Brazil. *Anales del Instituto de Biología, Universidad*