

A CHECKLIST OF MEMBRACIDAE FROM INDIA
(INSECTA: HOMOPTERA: CICADOMORPHA: MEMBRACOIDEA)



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INTRODUCTION

The family Membracidae commonly known as "Tree hoppers", comprises of a distinct group of small phytophagous insects belonging to auchenorrhynchous Homoptera occurring in all the major geographic regions, their diversity and abundance reaching a peak in the tropical and sub tropical areas. These homopteran bugs are easily recognized by the structure of pronotum which takes curious bizarre shapes in different species that have earned the name "Cow bugs" or "Horn bugs". In other words the pronotum of these bugs is extended backward over abdomen and ornamented with various spines, horns, keels and bell- like knobs etc., of different shapes. They are unique in having a pair of mesopleural processes. The wings are large and concealed by pronotum. Although endowed with powers of flight, they prefer to hop about when disturbed and this habit has earned them the popular name 'Tree hoppers'. These bugs feed by sucking the sap of trees, shrubs and cultivated crops and most species are host specific. Even though they are not destructive to the extent of assuming pest status, the principal damage or injury caused to host plants is either by feeding or egg laying. These tree hoppers secrete a sugary substance called 'honey dew' which serves as food for ants, bees and wasps. In turn, this group of bugs frequently benefit from the interaction with ants that provide house cleaning services and often protect the hoppers from predators in exchange of the honey dew. These phytophagous bugs are solitary, gregarious or sub social and some species guard their eggs and immatures. Parental care and ant – mutualism are common in some families. Globally, the family Membracidae comprises of 3200 extant species accommodated under 400 genera. 235 species under 41 genera so far reported from India are presented in this check list. Interestingly, 38.7% of the species so far known from India are occurring in Western Ghats (Table). The classification followed here is after Ananthasubramanian, 1996 and Deitz and Dietrich, 2008.

Table. List of genera and number of membracid species known from India and Western Ghats

Genera	India	Western Ghats
<i>Acanthuchus</i> Stål	1	-
<i>Aleptocentrus</i> Thirumalai & Ananthasubramanian	1	1
<i>Anchon</i> Buckton	4	2
<i>Antialcidas</i> Distant	1	-
<i>Centrotypus</i> Stål	8	4
<i>Centrotus</i> Fabricius	1	-
<i>Centruchus</i> Stål	1	-
<i>Coccosterphus</i> Stål	5	1
<i>Convactor</i> Distant	1	1
<i>Cryptaspidia</i> Stål	2	1
<i>Deitzius</i> Ananthasubramanian	1	-
<i>Demanga</i> Distant	1	-
<i>Dograna</i> Distant	1	1
<i>Ebhul</i> Distant	2	1
<i>Eucoccosterphus</i> Ananthasubramanian & Ghosh	3	-
<i>Emphusis</i> Buckton	2	1
<i>Gargara</i> Amyot & Serville	31	11
<i>Gargarina</i> Ananthasubramanian	1	-
<i>Hybanda</i> Distant	1	-
<i>Hypsauchenia</i> Germar	3	-
<i>Hypsolyrium</i> Schmidt	3	-
<i>Imporcitor</i> Distant	1	1
<i>Insitor</i> Distant	1	1
<i>Insitoroides</i> Funkhouser	1	1
<i>Kanada</i> Distant	1	1
<i>Lanceonotus</i> Capener	5	4
<i>Leptobelus</i> Stål	2	-
<i>Leptocentrus</i> Stål	28	5
<i>Maurya</i> Distant	1	-
<i>Neocentrus</i> Thirumalai & Ananthasubramanian	1	1
<i>Nilautama</i> Distant	1	-
<i>Occator</i> Distant	1	-
<i>Otinotus</i> Buckton	14	7
<i>Oxyrhachis</i> Germar	20	4

<i>Parayasa</i> Distant	15	13
<i>Periaman</i> Distant	1	-
<i>Pogonotus</i> Thirumalai & Ananthasubramanian	1	1
<i>Sinodemanga</i> Chou and Yuan	1	-
<i>Telingana</i> Distant	16	13
<i>Tricentrus</i> Stål	49	15
<i>Tricentroides</i> Distant	1	-
TOTAL	235	91

SYSTEMATIC LIST

Order: Homoptera

Suborder: Auchenorrhyncha

Superfamily: Membracoidea

Family: Membracidae Rafinesque, 1815

Subfamily : Oxyrhacinae Haupt, 1929

Tribe : Oxyrhacini Haupt, 1929

1. Genus: *Oxyrhachis* Germar, 1835

1. *Oxyrhachis apicalis* Ananthasubramanian, 1980
2. *Oxyrhachis binsarus* Distant, 1916
3. *Oxyrhachis brevicornutus* Ananthasubramanian and Ananthakrishnan, 1975
4. *Oxyrhachis geniculata* Ananthasubramanian, 1980
5. *Oxyrhachis grandis* Ananthasubramanian, 1980
6. *Oxyrhachis haldari* Ananthasubramanian, 1980
7. *Oxyrhachis krusadiensis* Ananthasubramanian and Ananthakrishnan, 1975
8. *Oxyrhachis lefroyi* Distant, 1916
9. *Oxyrhachis malabaricus* Ananthasubramanian, 1980
10. *Oxyrhachis mangiferana* Distant, 1916
11. *Oxyrhachis minusculus* Ananthasubramanian and Ananthakrishnan, 1975
12. *Oxyrhachis nigrodorsalis* Ananthasubramanian, 1980
13. *Oxyrhachis palus* (Buckton, 1905)
14. *Oxyrhachis punctatus* Ananthasubramanian, 1980
15. *Oxyrhachis rufescens* Walker, 1851
16. *Oxyrhachis subjecta* Walker, 1851
17. *Oxyrhachis taranda* (Fabricius, 1798)
18. *Oxyrhachis tuberculus* (Walker, 1858)
19. *Oxyrhachis uncatatus* Melichar, 1903
20. *Oxyrhachis unicolor* Ananthasubramanian, 1980

Subfamily: Centrotinae Amyot and Serville, 1843

Tribe: Tricentrini Ahmad and Yasmeen, 1974

2. Genus: *Tricentrus* Stål, 1866

21. *Tricentrus aeneus* Distant, 1916
22. *Tricentrus aiyuri* Funkhouser, 1933
23. *Tricentrus albomaculatus* Distant, 1908
24. *Tricentrus allabens* Distant, 1916
25. *Tricentrus ananthasubramaniani* Sharma and Badan, 1986
26. *Tricentrus assamensis* Distant, 1908
27. *Tricentrus atrus* Ananthasubramanian, 1980
28. *Tricentrus banguensis* Funkhouser, 1914
29. *Tricentrus bicolor* Distant, 1908

30. *Tricentrus bifurcus* Distant, 1916
31. *Tricentrus brevis* Funkhouser, 1914
32. *Tricentrus cinereus* Ananthasubramanian, 1980
33. *Tricentrus compressus* Ananthasubramanian, 1980
34. *Tricentrus concolor* Ananthasubramanian, 1996
35. *Tricentrus congestus* (Walker, 1858)
36. *Tricentrus cornutus* Ananthasubramanian, 1980
37. *Tricentrus decornis* Ananthasubramanian and Ananthakrishnan, 1975
38. *Tricentrus distinctus* Thirumalai and Ananthasubramanian, 1985
39. *Tricentrus elegans* Ananthasubramanian, 1980
40. *Tricentrus erectus* Thirumalai, 1986
41. *Tricentrus euschistus* Distant, 1916
42. *Tricentrus fairmairei* (Stål, 1859)
43. *Tricentrus ferruginosus* Funkhouser, 1929
44. *Tricentrus gibbosulus* (Walker, 1858)
45. *Tricentrus hameedi* Ananthasubramanian, 1996
46. *Tricentrus horizontalis* Distant, 1916
47. *Tricentrus indicus* (Funkhouser, 1942)
48. *Tricentrus kamaonensis* Distant, 1916
49. *Tricentrus longiceps* Ananthasubramanian, 1980
50. *Tricentrus longicornis* Ananthasubramanian, 1980
51. *Tricentrus minomorii* Ananthasubramanian, 1980
52. *Tricentrus minusculus* Ananthasubramanian, 1980
53. *Tricentrus mitrai* (Kato, 1960)
54. *Tricentrus nobilis* Ananthasubramanian, 1980
55. *Tricentrus pilosus* Ananthasubramanian and Ananthakrishnan, 1975
56. *Tricentrus platycornis* Ananthasubramanian, 1980
57. *Tricentrus projectus* Distant, 1908
58. *Tricentrus pronus* Distant, 1916
59. *Tricentrus pubescens* Funkhouser, 1929
60. *Tricentrus recurvicornis* Ananthasubramanian, 1980
61. *Tricentrus repandus* Distant, 1916
62. *Tricentrus sissoo* Sharma and Badan, 1986
63. *Tricentrus spathodei* Ananthasubramanian, 1982
64. *Tricentrus speciosus* Thirumalai and Ananthasubramanian, 1985
65. *Tricentrus subangulatus* Distant, 1908
66. *Tricentrus syrandriake* Thirumalai and Ananthasubramanian, 1981
67. *Tricentrus transversus* (Distant, 1908)
68. *Tricentrus unicolor* Ananthasubramanian, 1980
69. *Tricentrus varicornis* Ananthasubramanian, 1980

3. Genus : *Tricentroides* Distant, 1916

70. *Tricentroides propria* Distant, 1916

Tribe: Hypsaucheniini Distant, 1908

4. Genus: *Hypsauchenia* Germar, 1835

71. *Hypsauchenia ananthakrishnani* Ananthasubramanian, 1996
72. *Hypsauchenia hardwickii* (Kirby, 1829)
73. *Hypsauchenia subfusca* Buckton, 1846

5. Genus: *Hypsolyrium* Schmidt, 1929

74. *Hypsolyrium kempii* (Distant, 1916)
75. *Hypsolyrium manni* (Distant, 1916)
76. *Hypsolyrium unicanthum* (Stål, 1869)

6. Genus: *Hybanda* Distant, 1908

77. *Hybanda anodonta* (Buckton, 1903)

Tribe: *Micreunini* Distant, 1908

7. Genus: *Leptobleus* Stål, 1866

78. *Leptobleus dama* (Germar, 1835)

79. *Leptobleus gazella* (Fairmaire, 1846)

Tribe: *Leptocentrini* Distant, 1908

8. Genus: *Telingana* Distant, 1869

80. *Telingana balteata* Distant, 1916

81. *Telingana campbelli* Distant, 1916

82. *Telingana canescens* (Buckton, 1903)

83. *Telingana capistrata* Distant, 1908

84. *Telingana consobrina* Distant, 1916

85. *Telingana curvispina* (Stål, 1869)

86. *Telingana flavipes* (Kirby, 1891)

87. *Telingana imitator* (Kirby, 1863)

88. *Telingana majuscula* Thirumalai and Ananthasubramanian, 1981

89. *Telingana nigroalata* Ananthasubramanian and Ananthakrishnan, 1975

90. *Telingana orlanda* Distant, 1916

91. *Telingana paria* (Fairmaire, 1846)

92. *Telingana pulniensis* Ananthasubramanian, 1980

93. *Telingana sabarigiriensis* Thirumalai and Ananthasubramanian, 1985

94. *Telingana subsimilis* (Walker, 1859)

95. *Telingana travancorensis* Distant, 1916

9. Genus : *Deitzius* Ananthasubramanian, 1996

96. *Deitzius tomentosus* (Ananthasubramanian, 1980)

10. Genus: *Lanceonotus* Capener, 1968

97. *Lanceonotus cinnamomi* Ananthasubramanian, 1980

98. *Lanceonotus indicus* Ananthasubramanian, 1980

99. *Lanceonotus luteinervis* (Funkhouser, 1936)

100. *Lanceonotus malabaricus* Thirumalai and Ananthasubramanian, 1981

101. *Lanceonotus mukkaliensis* Thirumalai, 1986

11. Genus: *Leptocentrus* Stål, 1866

102. *Leptocentrus acuticornis* Ananthasubramanian, 1980

103. *Leptocentrus albonotatus* Distant, 1916

104. *Leptocentrus bajulans* Distant, 1916

105. *Leptocentrus bauhiniae* Ananthasubramanian and Ananthakrishnan, 1975

106. *Leptocentrus beluri* Ananthasubramanian, 1980

107. *Leptocentrus carinatus* Ananthasubramanian, 1980

108. *Leptocentrus insignis* Distant, 1951

109. *Leptocentrus leucaspis* (Walker, 1851)

110. *Leptocentrus longispinus* Distant, 1908

111. *Leptocentrus luteus* Ananthasubramanian, 1980

112. *Leptocentrus majesticus* Ananthasubramanian, 1980

113. *Leptocentrus major* Ananthasubramanian and Ananthakrishnan, 1975

114. *Leptocentrus mangiferae* Ananthasubramanian and Ananthakrishnan, 1975

- 115. *Leptocentrus moringae* Ananthasubramanian and Ananthakrishnan, 1975
- 116. *Leptocentrus nigra* Ananthasubramanian and Ananthakrishnan, 1975
- 117. *Leptocentrus obliquus* (Walker, 1858)
- 118. *Leptocentrus obortus* Distant, 1916
- 119. *Leptocentrus reponens* (Walker, 1851)
- 120. *Leptocentrus rhizophagus* Ananthasubramanian and Ananthakrishnan, 1975
- 121. *Leptocentrus rubrinigris* Ananthasubramanian, 1980
- 122. *Leptocentrus rufescens* Ananthasubramanian, 1980
- 123. *Leptocentrus scutellatus* Distant, 1916
- 124. *Leptocentrus splendens* Ananthasubramanian, 1980
- 125. *Leptocentrus substitutus* (Walker, 1851)
- 126. *Leptocentrus taurus* (Fabricius, 1775)
- 127. *Leptocentrus ustus* Buckton, 1903
- 128. *Leptocentrus varicornis* Ananthasubramanian and Ananthakrishnan, 1975
- 129. *Leptocentrus mephistopheles* Buckton, 1903

12.Genus. *Nilautama* Distant, 1908

- 130. *Nilautama typica* Distant, 1908

13.Genus: *Dograna* Distant, 1908

- 131. *Dograna suffulta* Distant, 1908

14.Genus: *Imporcitor* Distant, 1916

- 132. *Imporcitor typicus* Distant, 1916

15.Genus: *Pogonotus* Thirumalai and Ananthasubramanian, 1985

- 133. *Pogonotus indicus* Thirumalai and Ananthasubramanian, 1985

16.Genus : *Convector* Distant, 1916

- 134. *Convector cavendus* Distant, 1916

17. Genus: *Otinotus* Buckton, 1903

- 135. *Otinotus albomaculatus* Distant, 1916
- 136. *Otinotus ammon* Buckton, 1903
- 137. *Otinotus aureus* Ananthasubramanian, 1980
- 138. *Otinotus badius* Distant, 1916
- 139. *Otinotus brevicornis* Distant, 1916
- 140. *Otinotus campbelli* Distant, 1916
- 141. *Otinotus elongatus* Distant, 1908
- 142. *Otinotus indicatus* (Melichar, 1903)
- 143. *Otinotus mimicus* Distant, 1916
- 144. *Otinotus mysorensis* Ananthasubramanian, 1980
- 145. *Otinotus obliquus* Ananthasubramanian and Ananthakrishnan, 1975
- 146. *Otinotus oneratus* (Walker, 1858)
- 147. *Otinotus pallescens* Distant, 1908
- 148. *Otinotus transversus* Distant, 1916

18. Genus: *Emphusis* Buckton, 1903

- 149. *Emphusis malleus* (Walker, 1851)
- 150. *Emphusis perarmata* Distant, 1916

19. Genus: *Centrotypus* Stål, 1866

- 151. *Centrotypus assamensis* (Fairmaire, 1846)
- 152. *Centrotypus flavescens* Distant, 1908
- 153. *Centrotypus flexuosus* (Fabricius, 1794)
- 154. *Centrotypus malabaricus* Ananthasubramanian, 1996
- 155. *Centrotypus ortus* Distant, 1908
- 156. *Centrotypus parvus* Funkhouser, 1922
- 157. *Centrotypus pulniensis* Ananthasubramanian, 1996
- 158. *Centrotypus securis* Buckton, 1903

20. Genus: *Acanthuchus* Stål, 1866

- 159. *Acanthuchus minutispinus* Funkhouser, 1922

21. Genus: *Periaman* Distant, 1908

- 160. *Periaman pilosum* (Distant, 1916)

22. Genus: *Centruchus* Stål, 1866

- 161. *Centruchus brevicornis* Funkhouser, 1936

23. Genus: *Neocentrus* Thirumalai and Ananthasubramanian, 1981

- 162. *Neocentrus rufus* Thirumalai and Ananthasubramanian, 1981

Tribe: Centrotini Goding, 1892

24. Genus: *Centrotus* Fabricius, 1803

- 163. *Centrotus indicus* Ananthasubramanian, 1996

25. Genus: *Anchon* Buckton, 1903

- 164. *Anchon echinatum* Distant, 1908
- 165. *Anchon pilosum* (Walker, 1851)
- 166. *Anchon rectangulatum* (Kirby, 1891)
- 167. *Anchon ulniforme* Buckton, 1903

26. Genus: *Antialcidas* Distant, 1916

- 168. *Antialcidas attenuatus* Funkhouser, 1922

27. Genus: *Maurya* Distant, 1916

- 169. *Maurya bicolor* Funkhouser, 1936

Tribe: Uroxiphini Goding, 1930

28. Genus: *Insitoroides* Funkhouser, 1933

- 170. *Insitoroides typica* Funkhouser, 1933

29. Genus: *Aleptocentrus* Thirumalai and Ananthasubramanian, 1985

- 171. *Aleptocentrus notabilis* Thirumalai and Ananthasubramanian, 1985

30. Genus: *Cryptaspidia* Stål, 1870

172. *Cryptaspidia fasciata* Funkhouser, 1936
173. *Cryptaspidia piceola* (Melichar, 1903)

31. Genus: *Sinodemanga* Chou and Yuan, 1982

174. *Sinodemanga brunnea* (Funkhouser, 1922)

32. Genus: *Demanga* Distant, 1908

175. *Demanga sooknana* Distant, 1908

33. Genus: *Occator* Distant, 1916

176. *Occator erectus* Distant, 1916

Tribe: Gargarini Distant, 1908

34. Genus: *Gargarina* Ananthasubramanian, 1980

177. *Gargarina carinata* Ananthasubramanian, 1980

35. Genus: *Gargara* Amyot and Serville, 1843

178. *Gargara affinis* Distant, 1908
179. *Gargara albitarsis* Ananthasubramanian and Ananthakrishnan, 1975
180. *Gargara aurea* Funkhouser, 1933
181. *Gargara brevis* Ananthasubramanian, 1980
182. *Gargara caelata* Distant, 1916
183. *Gargara confusa* Distant, 1916
184. *Gargara contraria* Distant, 1916
185. *Gargara delimitata* Distant, 1908
186. *Gargara discoidalis* Ananthasubramanian, 1980
187. *Gargara extrema* Distant, 1916
188. *Gargara flavolineata* Distant, 1908
189. *Gargara hraswa* (Walker, 1870)
190. *Gargara kandala* Ananthasubramanian, 1996
191. *Gargara maculata* Funkhouser, 1936
192. *Gargara madrasensis* Ananthasubramanian and Ananthakrishnan, 1975
193. *Gargara majuscula* Distant, 1908
194. *Gargara malabarica* Ananthasubramanian and Ananthakrishnan, 1975
195. *Gargara mixta* (Buckton, 1903)
196. *Gargara nigrofasciata* Stål, 1870
197. *Gargara nigrolimbata* Ananthasubramanian, 1980
198. *Gargara pellucida* Ananthasubramanian, 1980
199. *Gargara penangi* Funkhouser, 1918
200. *Gargara pulchripennis* Stål, 1870
201. *Gargara pulniensis* Ananthasubramanian, 1980
202. *Gargara rivulata* Distant, 1908
203. *Gargara robusta* Distant, 1908
204. *Gargara rustica* Ananthasubramanian and Ananthakrishnan, 1975
205. *Gargara sikhimensis* Distant, 1908
206. *Gargara splendidula* Distant, 1916
207. *Gargara tumida* Melichar, 1903
208. *Gargara varicolor* Stål, 1870

36. Genus: *Ebhul* Distant, 1908

209. *Ebhul maculipennis* Funkhouser, 1922

210. *Ebhul varium* (Walker, 1858)

Tribe: *Coccosterphini* Distant, 1908

37. Genus: *Eucoccosterphus* Ananthasubramanian and Ghosh, 1987

211. *Eucoccosterphus mucronicollis* (de Motschulsky, 1859)

212. *Eucoccosterphus paludatus* (Distant, 1916)

213. *Eucoccosterphus tuberculatus* (de Motschulsky, 1859)

38. Genus: *Coccosterphus* Stål, 1869

214. *Coccosterphus decoloratus* Distant, 1908

215. *Coccosterphus luteus* Funkhouser, 1933

216. *Coccosterphus minutus* (Fabricius, 1798)

217. *Coccosterphus mysorensis* Ananthasubramanian and Ghosh, 1987

218. *Coccosterphus obscurus* Distant, 1908

39. Genus: *Parayasa* Distant, 1916

219. *Parayasa affinis* Distant, 1916

220. *Parayasa affixa* Distant, 1916

221. *Parayasa atricapilla* Distant, 1916

222. *Parayasa dissimilis* Distant, 1916

223. *Parayasa elegantula* Distant, 1916

224. *Parayasa fasciata* Ananthasubramanian, 1981

225. *Parayasa maculosa* Distant, 1916

226. *Parayasa margherita* Distant, 1916

227. *Parayasa modesta* Distant, 1916

228. *Parayasa nigrolimbata* Ananthasubramanian, 1981

229. *Parayasa nilgiriensis* Distant, 1916

230. *Parayasa pilosa* Ananthasubramanian, 1981

231. *Parayasa rustica* Distant, 1916

232. *Parayasa typica* Distant, 1916

233. *Parayasa variegata* Thirumalai and Ananthasubramanian, 1981

40. Genus: *Insitor* Distant, 1916

234. *Insitor exemplificatus* Distant, 1916

41. Genus: *Kanada* Distant, 1908

235. *Kanada irvinei* Distant, 1908

Note: *Darthula hardwickii* (Gray, 1831) included by Ananthasubramanian (1996) under the subfamily *Darthulinae* Metcalf of the family *Membracidae* currently belongs to the family *Aetalionidae* Spinola, 1850 under the superfamily *Membracoidea*.

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