



Rec. zool. Surv. India : 105 (Part 1–2) : 83-95, 2005

CHECKLIST OF TERRESTRIAL GASTROPODS OF TAMIL NADU, INDIA

RAJENDRA, G. MAVINKURVE, SANDHYA, P., P. SHANBHAG AND N. A. MADHYASTHA*

Malacology Centre, Poornaprajna College, Udupi-576 101, Karnataka, India

E-mail : na_madhyastha@sancharnet.in; rajendragm@yahoo.com; sps162002@yahoo.com

INTRODUCTION

Molluscs form an important constituent of leaf litter and soil biota. They are an ideal group for monitoring site specific environmental impact assessment studies because of their limited migration patterns. Majority of them remain undiscovered or under described, partly because of insufficient exploration and partly because of their often minute sizes (Emberton, 1995). Unfortunately, for the last 75 years or so, in South India, no attention has been paid for this important group with exceptions of some localized reviews and publications [(Tonapi and Mulhekar, 1963; Tonapi 1971; Subba Rao and Mitra, 1979, 1986; Madhyastha *et al.*, 2003, 2005; Mavinkurve *et al.*, 2004a, (in press); Sandhya *et al.*, (submitted)]. The works of Ramanan (1900) and Sathyamurthi (1960) are the preliminary source for those interested in the terrestrial molluscs of Tamil Nadu. This work is in continuation of the checklist for the land snails of the southern states that is being formulated (Mavinkurve *et al.*, 2004b).

STUDY AREA

Situated on the southeastern side of the Indian peninsula, the state of Tamil Nadu has an area of 130,058 sq km. The landmass of the state can be divided into two natural divisions :

- (i) The eastern coastal plain
- (ii) The hilly region along the north and the west.

Along the whole length of the western part, at a distance from the sea varying from 80 to 160 km runs the Western Ghats range, a steep and rugged mass averaging 1220 metres above the sea level.

*Author for correspondence

The Nilgiris and the Anamalai are the hill groups with the maximum height. In the Ootacamund area of the Nilgiris District, is the highest peak Doddabetta, 2640 metres above the sea level. On the east are the Palani Hills on which is situated the hill station Kodaikanal. The slopes of the Western Ghats are covered with heavy evergreen forests and are the water source to the rivers Kaveri, Vaigai and Tamaraparni. The Eastern Ghats begin in Orissa, runs southwest through all the districts lying between Ganjam and Nilgiris plateau of Tamil Nadu.

**LIST OF LAND MOLLUSCS FROM TAMIL NADU — BASED ON THE
FAUNA OF BRITISH INDIA AND AVAILABLE COLLECTIONS**

Class GASTROPODA

Sub Class PROSOBRANCHIA

Order MESOGASTROPODA

Super Family CYLOPHOROIDEA

Family CYCLOPHORIDAE

Genus *Japonia* Blanford, 1864

1. *Japonia (Lagochilus) malleata* Blanford 1861*

Genus *Craspedotropis* Blanford, 1864

2. *Craspedotropis cuspidata* (Benson 1851)*
3. *Craspedotropis salemensis* Beddome 1875*

Genus *Micraulax* Theobald, 1876

4. *Micraulax coeloconus* (Benson 1851)#

Genus *Ditropis* Blanford, 1869

5. *Ditropis beddomei* Blanford 1869**
6. *Ditropis convexa* Blanford 1869*
7. *Ditropis planorbis* Blanford 1869*

Genus *Theobaldius* G. Nevill, 1878

8. *Theobaldius annulatus* var. *nilgircus* (Kobelt 1907)*
9. *Theobaldius deplanatus* (Pfeiffer 1854)#
10. *Theobaldius ravidus* (Benson 1851)#
11. *Theobaldius shiplayi* (Pfeiffer 1856)*
12. *Theobaldius stenostoma* (Sowerby 1843)*
- 12a. *Theobaldius stenostoma* var. *anguis* (Hanley and Theobald 1875)*
13. *Theobaldius tristis* Blanford 1869#

Genus *Cyclophorus* Montfort, 1810

14. *Cyclophorus aurantiacus* (Schumacher 1817)
15. *Cyclophorus jerdoni* (Benson 1851)#
16. *Cyclophorus nilagiricus* (Benson 1852)

Genus *Pterocyclus* Benson, 1832

17. *Pterocyclus bilabiatus* (Sowerby 1843)*
18. *Pterocyclus comatus* Moellendorff 1897*
19. *Pterocyclus cyclophoroideus* (G. Nevill 1881)*#
- 19a. *Pterocyclus cyclophoroideus* var. *subluteola* (G. Nevill 1881)*
20. *Pterocyclus nanus* (Benson 1851)*
- 20a. *Pterocyclus nanus* var. *applanata* (G. Nevill 1881)*
- 20b. *Pterocyclus nanus* var. *reflexilabris* (G. Nevill 1881)*
21. *Pterocyclus pseudocumingi* Moellendorff 1897*#

Genus *Pearsonia* Kobelt, 1902

22. *Pearsonia fairbanki* Blanford 1869*
23. *Pearsonia travancorica* Blanford 1880*

Genus *Cyathopoma* Blanford, 1861

24. *Cyathopoma (Jerdonia) anamullayanum* Beddome 1875*
25. *Cyathopoma (Cyathopoma) atrosetosum* Beddome 1875#
26. *Cyathopoma (Cyathopoma) beddomeanum* (Nevill 1875)*#
27. *Cyathopoma (Cyathopoma) coonoorensis* Blanford 1868*#
28. *Cyathopoma (Cyathopoma) filocinctum* (Benson 1851)*#
29. *Cyathopoma (Jerdonia) imperforatum* (Nevill 1888)*
30. *Cyathopoma (Cyathopoma) kalryenense* Blanford 1861
31. *Cyathopoma (Cyathopoma) kolamulliense* Blanford 1861*
32. *Cyathopoma (Jerdonia) malabaricum* (Blanford 1860)*
33. *Cyathopoma (Jerdonia) nitidum* Beddome 1875#
34. *Cyathopoma (Cyathopoma) ovatum* Beddome 1875*#
35. *Cyathopoma (Cyathopoma) peilei* (Preston 1903)*#
36. *Cyathopoma (Cyathopoma) shevroyanum* Beddome 1875*#
37. *Cyathopoma (Cyathopoma) sivagherrianum* Beddome 1875*#
38. *Cyathopoma (Jerdonia) trochlea* (Benson 1851)*#
39. *Cyathopoma (Cyathopoma) vitreum* Beddome 1875*#
40. *Cyathopoma (Cyathopoma) wynaadense* Blanford 1868*#

Genus *Mychopoma* Blanford, 1861

41. *Mychopoma hirsutum* Blanford 1869**
42. *Mychopoma limbiferum* Blanford 1869*
43. *Mychopoma seticinatum* Beddome 1875*

Genus *Alycaeus* Gray, 1850

44. *Alycaeus expatriatus* (Blanford 1860)#
45. *Alycaeus footei* Blanford 1861

Family DIPLOMMATINIDAE

Genus *Nicida* W. Blanford, 1868

46. *Nicida anamullayana* Beddome 1875**
47. *Nicida fairbanki* Blanford 1868**
48. *Nicida kingiana* Blanford 1861**
49. *Nicida liricineta* Blanford 1868#
50. *Nicida nilgirica* (Blanford 1860)**
51. *Nicida pulenyana* (Blanford 1868*)

Genus *Opisthostoma* W. and H. Blanford, 1860

52. *Opisthostoma deccanense* Beddome 1875
53. *Opisthostoma nilgircum* (Blanford 1860)**

Family PUPINIDAE

Genus *Tortulosa* Gray, 1847

54. *Tortulosa calacadensis* Blanford 1869*
55. *Tortulosa costulata* Blanford 1880*
56. *Tortulosa recurvata* (Pfeiffer 1862)*

Super Family LITTORINOIDEA

Family POMATIASIDAE

Genus *Cyclotopsis* Blanford, 1864

57. *Cyclotopsis montana* (Pfeiffer 1854)*

Sub Class GYMNMORPHA

Order SOLEOLIFERA

Family VERONICELLIDAE

Genus *Filicaulis* Simroth, 1913

58. *Filicaulis (Lavecaulis) alte* (Ferrussac 1821)#
59. *Filicaulis (Lavecaulis) frauenfeldi* (Semper 1885)*

Sub Class PULMONATA

Order STYLOMMATOPHORA

Sub Order ORTHURETHRA

Super Family PUPILLOIDEA

Family VALLONIIDAE

Genus *Vallonia* Risso, 1826

60. *Vallonia miserrima* (Gude 1907)*#

Family VERTIGINIDAE

Genus *Pupisoma* Stoliczka, 1873

61. *Pupisoma evezardi* (Blanford 1875)#

Family PYRAMIDULIDAE

Genus *Pyramidula* Fitzinger, 1833

62. *Pyramidula euomphalus* Blanford 1861*

Super Family BULUMINOIDEA

Family BULUMINIDAE

Genus *Ena* Leach in Turton, 1831

63. *Ena hanleyana* (Kobelt 1902)*#

64. *Ena nilagirica* (Pfeiffer 1846)*

Family CERASTUIDAE

Genus *Edouardia* Gude, 1914

65. *Edouardia orbus* Blanford 1861

Genus *Rhachis* Albers, 1850

66. *Rhachis bengalensis* (Lamarck 1822)#

67. *Rhachis praetermissus* Blanford 1861#

68. *Rhachis pulcher* (Gray 1825)

69. *Rhachis punctatus* (Anon 1834)#

70. *Rhachis trutta* (Blanford 1866)*

Sub Order SIGMURETHRA

Super Family ACHATINOIDEA

Family SUBULINIDAE

Genus *Subulina* Beck, 1837

71. *Subulina octona* (Bruguiere 1789)

Genus *Opeas* Albers, 1850

72. *Opeas gracile* (Hutton 1834)[#]

Genus *Prosopeas* Moersch, 1876

73. *Prosopeas hebes* Blanford 1861*

Genus *Glessula* Von Martens, 1860

74. *Glessula anamullica* (Blanford 1866)*
 75. *Glessula beddomei* (Blanford 1866)*
 76. *Glessula bensoniana* (Pfeiffer 1851)*
 77. *Glessula blanda* Gude 1914*
 78. *Glessula bollampattiana* (Hanley 1876)
 79. *Glessula botellus* (Benson 1870)*
 80. *Glessula corrosula* (Pfeiffer 1856)
 81. *Glessula courtallica* Gude 1914*[#]
 82. *Glessula facula* (Benson 1860)
 83. *Glessula filosa* Blanford 1870*
 83a. *Glessula filosa* var. *exigua* Gude 1914*
 84. *Glessula gracilis* Beddome 1906
 85. *Glessula hebes* (Pfeiffer 1868)
 86. *Glessula indica* Gude 1914*
 87. *Glessula isis* (Hanley 1875)*
 88. *Glessula jerdoni* (Reeve 1850)
 89. *Glessula mullorum* (Blanford 1861)
 90. *Glessula neglecta* Gude 1914*
 91. *Glessula nilagirica* (Reeve 1850)*[#]
 92. *Glessula oreas* (Reeve 1850)
 93. *Glessula orophila* (Reeve 1849)
 94. *Glessula paupercula* Blanford 1861[#]
 94a. *Glessula paupercula* var. *nana* Beddome 1906
 95. *Glessula perrotteti* Blanford 1861*
 96. *Glessula pseudoreas* (Nevill 1881)
 97. *Glessula pusilla* Beddome 1906*
 98. *Glessula reynelli* var. *immitis* Gude 1914
 99. *Glessula shiplayi* (Pfeiffer 1855)*

- 100. *Glessula sisparica* Gude 1914*#
- 101. *Glessula subfilosa* Beddome 1906
- 102. *Glessula subinornata* Beddome 1906*
- 103. *Glessula subjerdoni* Beddome 1906
- 104. *Glessula subperrotteti* Beddome 1906*
- 105. *Glessula subserena* Beddome 1906
- 106. *Glessula subtornensis* Gude 1914*
- 107. *Glessula tenuitesta* Gude 1914*
- 108. *Glessula textilis* (Blanford 1866)
- 109. *Glessula tinnevellica* Gude 1914*#
- 110. *Glessula tornensis* Blanford 1870

Genus *Zootecus* Westerlund, 1887

- 111. *Zootecus chion* (Pfeiffer 1856)

Super Family STREPTAXOIDEA

Family STREPTAXIDAE

Genus *Streptaxis* Gray, 1837

- 112. *Streptaxis beddomii* Blanford 1899*
- 113. *Streptaxis compressus* Blanford 1880*
- 114. *Streptaxis footei* (W and H Blanford 1860)*
- 115. *Streptaxis peroteti* (Petit 1841)*#
- 116. *Streptaxis personatus* Blanford 1880
- 117. *Streptaxis pronus* Blanford 1880*#
- 118. *Streptaxis scalptus* Blanford 1899#
- 119. *Streptaxis watsoni* (W and H Blanford 1860)

Genus *Ennea* H. and A. Adams, 1855

- 120. *Ennea beddomii* Blanford 1880*
- 121. *Ennea bicolor* (Hutton 1834)
- 122. *Ennea macrodon* Blanford 1880*#
- 123. *Ennea pirriei* (Pfeiffer 1854)*
- 124. *Ennea sculpta* Blanford 1869*#
- 125. *Ennea subcostulata* Blanford 1880*
- 126. *Ennea turricula* Blanford 1899#

Super Family PLECTOPYLIDOIDEA

Family PLECTOPYLIDIDAE (Corillidae)

Genus *Corilla* H. and A. Adams, 1855

- 127.
- Corilla anax*
- (Benson 1865)*

Super Family PUNCTOIDEA

Family ENDODONTIDAE

Genus *Philalanka* Godwin-Austen, 1898

128. *Philalanka bidenticulata* (Benson 1852)*#
 129. *Philalanka bilirata* Blanford 1861*
 130. *Philalanka bolampattiensis* (Godwin-Austen 1898)*
 131. *Philalanka daghoba* Blanford 1861*
 132. *Philalanka febrilis* Blanford 1861*
 133. *Philalanka quinquelirata* Gude 1914**
 134. *Philalanka tertia* Blanford 1861**
 135. *Philalanka tricarinata* Blanford 1861**

Family CHAROPIDAE

Genus *Ruthvenia* Gude, 1911

136. *Ruthvenia clathratuloides* (Gude 1897)*#
 137. *Ruthvenia retifera* (Pfeiffer 1845)

Genus *Thysanota* Albers, 1860

138. *Thysanota cirinigera* (Benson 1850)*#
 139. *Thysanota flavida* Gude 1914*
 140. *Thysanota guerini* (Pfeiffer 1842)*#
 141. *Thysanota tabida* (Pfeiffer 1855)*

Sub Order ELASMOGNATHA

Super Family SUCCINEOIDEA

Family SUCCINEIDAE

Genus *Succinea* Draparnaud, 1801

- 142.
- Succinea gravelyi*
- (Rao 1924)

Super Family HELIXARIONOIDEA

Family HELIXARIONIDAE

Genus *Kaliella* Blanford, 1863

143. *Kaliella aspirans* (Blanford 1867)*
 144. *Kaliella barrakporensis* (Pfeiffer 1852)#
 145. *Kaliella sigurensis* (Godwin-Austen 1882)#

Genus *Pseudaustenia* Cockerell, 1891

146. *Pseudaustenia atra* (Godwin-Austen 1898)*
 147. *Pseudaustenia auriformis* (Blanford 1866)*

Family ARIOPHANTIDAE

Genus *Ariophanta* Desmoulins, 1829

148. *Ariophanta cysis* (Benson 1852)
 149. *Ariophanta thyreus* (Benson 1852)

Genus *Cryptozona* Morch, 1872

150. *Cryptozona albata* Blanford 1880*#
 151. *Cryptozona belangeri* (Deshayes 1834)#
 152. *Cryptozona bistrialis* (Beck 1837)#
 153. *Cryptozona gassi* (Blanford 1901)#
 154. *Cryptozona ligulata* (Ferussac 1819)
 155. *Cryptozona maderaspatana* (Gray 1834)#
 156. *Cryptozona semirugata* (Beck 1837)#
 157. *Cryptozona sisparica* (Blanford 1866)*
 158. *Cryptozona solata* (Benson 1848)*#

Genus *Hemiplecta* Albers, 1850

159. *Hemiplecta basilessa* (Benson 1865)
 160. *Hemiplecta basileus* (Benson 1861)*
 161. *Hemiplecta beddomei* (Blanford 1874)#

Genus *Indrella* Godwin-Austen, 1901

162. *Indrella ampulla* (Benson 1850)

Genus *Euplecta* Semper, 1870

- 163. *Euplecta acalles* (Pfeiffer 1856)*
- 164. *Euplecta acuducta* (Benson 1850)#
- 165. *Euplecta albizonata* (Dohrn 1853)#
- 166. *Euplecta apicata* Blanford 1870*
- 167. *Euplecta cacuminifera* (Benson 1850)*
- 168. *Euplecta granulifera* (Blanford 1901)
- 169. *Euplecta hyphasma* (Pfeiffer 1853)
- 170. *Euplecta indica* (Pfeiffer 1846)#
- 170a. *Euplecta indica* var. *shiplayi* (Pfeiffer 1856)
- 171. *Euplecta layardi* (Pfeiffer 1851)
- 172. *Euplecta mucosa* (Blanford 1882)
- 173. *Euplecta mucronifera* (Blanford 1901)*
- 174. *Euplecta orbiates* (Blanford 1901)#
- 175. *Euplecta pulchella* (Blanford 1904)*
- 176. *Euplecta semidecussata* (Pfeiffer 1851)#
- 177. *Euplecta subdecussata* (Pfeiffer 1851)#
- 178. *Euplecta turritella* (H. Adams 1869)#

Genus *Mariaella* Gray, 1855

- 179. *Mariaella beddomei* (Godwin-Austen 1888)*#
- 180. *Mariaella dussumieri* (Gray 1855)

Genus *Macrochlamys* Benson, 1832

- 181. *Macrochlamys infausta* (Blanford 1866)
- 182. *Macrochlamys lixa* (Blanford 1866)
- 183. *Macrochlamys peringundensis* (Beddome 1891)
- 184. *Macrochlamys perotetti* (Pfeiffer 1851)#
- 185. *Macrochlamys prava* (Pfeiffer 1851)
- 186. *Macrochlamys rutila* (Pfeiffer 1851)
- 187. *Macrochlamys todarum* (Pfeiffer 1851)
- 188. *Macrochlamys vallicola* (Pfeiffer 1851)
- 189. *Macrochlamys vilipensa* (1851)
- 190. *Macrochlamys woodiana* (Pfeiffer 1851)#

Genus *Sitala* H. Adams, 1865

- 191. *Sitala infula* (Benson 1848)
- 192. *Sitala injussa* Blanford 1861
- 193. *Sitala liricincta* (Stolickzka 1871)#
- 194. *Sitala palmaria* (Benson 1864)#

Genus *Satiella* Godwin-Austen, 1908

- 195. *Satiella compressa* (Godwin-Austen 1908)
- 196. *Satiella flexilis* (Godwin-Austen 1898)#
- 197. *Satiella levidensis* (Godwin-Austen 1898)
- 198. *Satiella pertenuis* (Godwin-Austen 1908)

Super Family CAMAENOIDEA

Family CAMAENIDAE

Genus *Amphidromus* Albers, 1850

- 199. *Amphidromus bontiae* (Chemnitz 1786)
- 200. *Amphidromus calacadensis* Blanford 1870
- 201. *Amphidromus physalis* (Benson 1857)

Genus *Chloritis* Beck, 1837

- 202. *Chloritis propinqua* (Pfeiffer 1857)

Genus *Trachia* Albers, 1860

- 203. *Trachia crassicostata* (Benson 1848)
- 204. *Trachia fallaciosa* (Ferrussac 1821)#
- 205. *Trachia nilgirica* (Pfeiffer 1845)
- 206. *Trachia proxima* (Ferrussac 1832)
- 207. *Trachia ruginosa* (Ferrussac 1821)
- 208. *Trachia vittata* (Muller 1774)#

*Endemic to Peninsular India and Sri Lanka; #Observed during present studies.

DISCUSSION

Of all the southern states Tamil Nadu is the richest in terms of molluscan diversity due to the presence of both the Eastern and Western Ghats. The state harbours 208 species (excluding varieties), nearly 1/3rd of the total species (257) present in the Western Ghats and 14% of the terrestrial molluscan species present in India. The region of Palani hill ranges and the Nilgiris account for

90% of the molluscan species present in this state followed by the Kalakkad-Mundunthurai Tiger Reserve with 62 species. The Palani Hill ranges and the Nilgiris may be termed as mega molluscan diversity centres. They are the type locality for most of the endemic species. One of the primary reasons for the extraordinary diversity is the favourable climate with enhanced microhabitats and secondly, they have been thoroughly explored by the British malacologists for whom these areas were favourite holiday spots. The climate hardy species like *Ariophanta belangeri*, *A. semirugata*, *Trachia vittata*, *Trachia fallaciosa* and *Rachis punctatus* are found in the arid plains, whereas the *Prosobranchiata* predominantly occupies the Ghats. The systematic position of the families, genera, and species have been thoroughly updated with the current and latest nomenclature provided in "A classification of the living Mollusca" compiled by K.C. Vaught (1989). The number will definitely increase with increased studies in others areas away from the hill stations.

ACKNOWLEDGEMENTS

The authors are grateful to MoEF for the Grants to study Molluscs Of Western Ghats under the AICOPTAX scheme and to The Principal, Poornaprajna College, Udipi for extending institutional facilities. The authors thank the Tamil Nadu forest department for permission to carry out the survey.

REFERENCES

- Emberton, K.C. 1995. Land snail community morphologies of the highest diversity sites of Madagascar, North America and New Zealand, with recommended alternatives for height diameter plots. *Malacologia*, **36** : 43-46.
- Madhyastha, N.A., Mavinkurve, R.G. and Sandhya, P.S. 2003. Land snails of Western Ghats. In *ENVIS Bulletin : Wildlife and protected areas, Conservation of Rainforests in India*, A.K. Gupta, Ajith Kumar and V Ramakantha (Eds.), **4**(1) : 143-152.
- Madhyastha, N.A., Rajendra, G.M. and Sandhya, P.S. 2005. Banding polymorphism in *Trachia vittata*. *Zoos' Print Journal*, **20**(3) : 1821-1822.
- Mavinkurve, R.G., Sandhya, P.S. and Madhyastha, N.A. 2004a. Non-marine molluscs of Western Ghats : A status review. *Zoos' Print Journal*, **19**(12) : 1708-1711.
- Mavinkurve, R.G., Sandhya, P.S. and Madhyastha, N.A. 2004b. Checklist of terrestrial gastropods of Karnataka, India. *Zoos' Print Journal*, **19**(11) : 1684-1686.
- Mavinkurve, R.G., Sandhya, P.S. and Madhyastha, N.A. 2005. The land snails of Sharavathi Wildlife Sanctuary. *Rec. zool. Surv. India*, **104**(Part 1-2) : 123-131.
- Ramakrishna and Mitra, S.C. 2002. Endemic land molluscs of India. *Rec. zool. Surv. India, Occ. Paper No.*, **196** : 1-65.
- Ramanan, V.V 1900. Non-marine mollusca of Madras and its vicinity.

- Sandhya, P.S., Mavinkurve, R.G. and Madhyastha, N.A. (submitted). Diversity and distribution of micro gastropods in Western Ghats of Karnataka (India).
- Sathyamurthi, S.T. 1960. *The Land Freshwater Mollusca* In the Collection of the Madras Government Museum. Bulletin of Madras Government Museum — Natural History Section, Vol. VI, No. 4.
- Subbarao, N.V and Mitra, S.C. 1979. On the land and freshwater molluscs of Pune district, Mahasrastra. *Rec. zool. Surv. India*, **75** : 1-37.
- Subbarao, N.V. and Mitra, S.C. 1986. Molluscs of the Silent Valley. *Rec. zool. Surv. India*, **84**(1-4) : 185-189.
- Tonapi, G.T. and Mulherkar, L. 1963. Studies on freshwater and amphibious molluscs of Poona with notes on their distribution – Part II. *J. Bombay Nat. Hist. Soc.*, **60** : 103-120.
- Tonapi, G.T. 1971. On the freshwater Molluscs of Poona. *J. Bombay Nat. Hist. Soc.*, **68** : 115-126.
- Vaught, K.C. 1989. *A Classification of the living Mollusca*. (Eds. R.T. Abbott and K.J. Boss). American Malacologists, Melbourne, Florida 32902, USA.