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African and Southeast Asian elements in the spider fauna of the Western Ghats of India

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Abstract

Although the Western Ghats are a biodiversity hotspot in the world, the studies conducted on the faunal affinity of this region are very few and there are no studies focused on spiders. Biota of the Western Ghats is the product of extreme climatic, ecological and biogeographical history. In this study, we tried to expose the faunal affinities of spiders distributed along this biodiversity hotspot based on their distribution throughout the world. A total of 270 species of 138 genera grouped in 39 families of spiders are so far reported from the Western Ghats of India. The biogeographical analysis revealed that a total of six genera of spiders are endemic to the Western Ghats, four genera showing affinities to the African region and 18 showing affinities to the Southeast Asian region. Another 20 genera are common to Africa, Western Ghats and Southeast Asian regions and 90 genera are cosmopolitan in distribution. These results agree with previous studies conducted on other faunal and floral elements of India, because India was part of the African continent until about 130 million years ago. It detached from there and later moved northwards and finally collided with Eurasia about 50 million years ago. In between, India was an isolated island for about 50 million years. This isolation might have lead to the creation of its unique fauna and flora. After the collision with Eurasia, the fauna of the Western Ghats underwent drastic changes due to faunal migrations between Southeast Asia and the Indian plate. There are different hypotheses explaining this migration of different animal groups through a continuous corridor of tropical evergreen forest. During this event, the Indian plate actually functioned as a "biotic ferry" which led to the spreading of African spiders to Southeast Asia. It is concluded that the spider fauna of the Western Ghats can be divided into an ancient African lineage, later Southeast Asian migrant and an endemic part. So a detailed phylogeographical approach is necessary to differentiate between these different time scale elements.

INTRODUCTION

One of the features of the biota of the Western Ghats is its strong affinity with African and Southeast Asian biota. There are several such cases of affinity in different taxa like mammals (Kurup 1974), birds (Ali 1935), freshwater fish (Jayaram 1974), amphibians (Das 2002), reptiles (Daniel 2002), insects (Singh 1974) and plants (Mani 1974a). Fauna and flora of the Western Ghats are an excep-

tionally interesting and challenging objective for biogeographers due to its antiquity, unique plate tectonic and palaeoclimatic history, and astounding array of physiognomic and habitat diversity (Ashton & Gunatilleke 1987). These factors have contributed to a considerable diversification of biota in this region (Morley 2000). Additionally, changes in the extents of habitats, especially of tropical evergreen forests in space and time, have resulted in striking endemism in almost all taxonomic groups, inviting much debate about processes underlying them (Swan 1993).

Dealing with complex palaeogeographical histories is a problem of major importance in biogeographical studies. Since the superposition of palaeogeographical events may produce multiple changes in species range distributions, highly complex patterns of animal and plant distributions are to be expected (Nelson & Platnick 1981; Myers & Giller 1988). As changes may interact and produce an apparent discordance between species distributions, the biogeographical relationships of areas are often difficult to trace back in time (McLennan & Brooks 2002; Brooks & Van Veller 2003). The Indian subcontinent exhibits such a complex biogeographical pattern, and several hypotheses based on different processes have been proposed to explain the presence of Southeast Asian and African faunal and floral elements in India (Mani 1974b). Some studies related this area as a sister area with the Southeast Asian region (Wallace 1876) or as sister area with the African region (Blanford 1876). Biogeographically the Indian region contains a complex assortment of barriers and dispersal routes varying in their nature as well as spatial scale to which multiple co-distributed taxonomic groups are unlikely to show a congruent response.

The spiders of the Western Ghats are a poorly worked out group compared to other parts of the country. With respect to its geographical, climatic and ecological features, the Western Ghats region harbours a rich amount of arachnids of which spiders have a huge share. This area is also enriched with large forests and therefore possesses various assemblages of spiders. Due to high species endemism, the Western Ghats are listed among the 34 biodiversity hotspots of the world (Mittermeier et al. 2005). Due to the paucity of workers, much of the spider diversity in the Western Ghats has remained unexplored so far. As a result, the disappearance of many species remains undocumented. The present study provides the result of a preliminary analysis of the faunistic affinities of the spiders in the Western Ghats of India, which aims to demonstrate their great diversity and their high degree of endemism and to present a biogeographic hypothesis of the region.

MATERIALS AND METHODS

The Western Ghats occupy the western part of Peninsular India, between 8° and 20° North and between 73° to 77° East. The Western Ghats cover a practically unbroken relief dominating the west coast of the Indian peninsula for almost 1600 km from the river Tapti in the north to the tip of Peninsular India. Zoogeographically, the Western Ghats can be divided into three parts: a northern division, comprising the Deccan Trap area from the Tapti river down to 16° N, about the region of Goa; a central division, extending from 16° N southwards and including the Kudagu and Wayanad region of south Karnataka and Nilgiris; and a southern division, comprising the Anaimalai, Palani and Cardamom hills of Kerala (Bhimachar 1945). The Western Ghats are the main watershed in peninsular India from which all the principal rivers, namely Godavary, Krishna and Cauvery originate and flow east emptying into the Bay of Bengal. A large number of short perennial, torrential west flowing rivers also originate from it. The average height of the Ghats is less than 1500 m above sea level, but in the south it rises up to 2000 m and to exceptionally high peaks of 2500 m and above. Along its entire length, this hill range has only one discontinuity, the Pal-

ghat gap in Kerala, a more than 30 km wide gap, less than 100 m above sea level (Nair 1991).

The presence of spiders, which are reported from the Western Ghats, in other geographic regions of the world was collected from the literature. A checklist of spiders so far reported from the Western Ghats was prepared based on the world spider catalogue (Platnick 2008). Each species was classified according to its distribution in the African region and Southeast Asian region, and it was stated whether its distribution is endemic or cosmopolitan, *i. e.*, distribution in the tropics throughout the world.

RESULTS

A total of 270 species of 138 genera listed in 39 families of spiders are so far reported from the Western Ghats (Appendix 1). Among these 138 genera, six genera are endemic; *Diplothele* and *Sasonichus* of the family Barychelidae; *Annandaliella, Haploclastus, Poecilotheria* and *Thrigmopoeus* of the family Theraphosidae. A total of 91 species are endemic in the Western Ghats. A total of four genera shows affinities with the African region but there is no common species with distribution in the Western Ghats and Africa. A total of 18 genera shows affinities with the Southeast Asian region and a total of 68 species share a distribution in these two regions. Although there are species of another 20 genera showing a distribution in Africa, Southeast Asia and the Western Ghats, there is no common species between these regions. Among the 270 species of spiders reported from the Western Ghats, a total of 90 genera and 111 species are distributed in the tropics throughout the world.

DISCUSSION

India's peculiar and diverse biota has attracted the attention of researchers for more than a century. Earlier workers noticed close similarities with Africa's biota, which sparked a perpetual debate on the origins and biogeographical relationships of India's flora and fauna. The question of whether the links with Southeast Asia or Africa are more important has been a central aspect of this discussion. It culminated in the refusal of Wallace's (1876) hypothesis that India's biota was essentially of Southeast Asian origin, by Blanford (1876), who in turn emphasized a strong African influence on India's fauna and flora.

As the present study revealed the occurrence of both African and Southeast Asian influence on the spider fauna of the Western Ghats, it has been related to the geographic history of India. The geographic history of India can be summarised as follows based on plate tectonics and continental drift. First, the Indian subcontinent detached from Africa – 130 million years ago (Krause et al. 1997), as part of the Madagascar–Seychelles–India block. Its long northward drift across the Tethys sea, with disconnection from Madagascar at – 88 million years ago (Storey et al. 1995) and the Seychelles at – 65 million years ago (Courtillot et al. 1988), ended only in the Palaeogene (Najman et al. 2001), after accretion to the Eurasian block. The first contact between both landmasses immediately enabled Southeast Asian animals and plants to invade the subcontinent (Briggs 1989), and lineages of old African origin, if they persisted on the drifting subcontinent, to disperse to Southeast Asia (Bossuyt & Milinkovitch 2001; Conti et al. 2002; Gower et al. 2002; Wilkinson et al. 2002). During this million years long process, the movement of the Indian subcontinent over the Reunion mantle plume at the Cretaceous–Tertiary transition (K-T transition) generated the notorious Deccan basalt floods (Courtillot et al. 1988) that almost wiped out old African lineage, which resulted in the formation of the Western Ghats. Upon impact with Asia in the Early Tertiary, the uplift of the Himalayan chain and subsequent Late Tertiary aridification further contributed to the progressive impoverishment of African elements from the Indian biota, with the exception of refugial areas in India (Raven & Axelrod 1974; Gu-

leria 1992; Morley 2000). So the presence of four genera of spiders in the Western Ghats with African affinity can be explained by their common origin in former Gondwanaland and by vicariance.

Among the 138 genera of spiders reported from the Western Ghats, 20 genera share distribution in the African region and the Southeast Asian region along with the Western Ghats. As much of Southeast Asia was never part of old Africa, the presence of African forms in Southeast Asian region is intriguing. The main hypothesis for the presence of African elements in Southeast Asia is that fauna and flora associated with the drifting Indian plate were dispersed into Southeast Asia following accretion with Eurasia (Wilkinson et al. 2002). This hypothesis known as "out-of-India" hypothesis (McKenna 1973), has been proposed to explain the presence of African forms in Southeast Asia. The geophysical evidence for this scenario is well known (Briggs 2003a). Thus it is plausible that rafting peninsular India carried with it African forms to Asia. Mani (1974b) points out that with the physical contact of peninsular India with Asia, extensive interchange between Indian and Southeast Asian flora and fauna occurred. In all these studies, the drifting Indian landmass is perceived as a "biotic ferry" for old African groups. This biotic ferry model (McKenna 1973; Morley 2000; Briggs 2003b) became the standard explanation for the presence of African elements in Southeast Asia. Based on this model, a number of studies in different taxa like amphibians (Bossuyt & Milinkovitch 2001; Gower et al. 2002; Wilkinson et al. 2002) and plants (Conti et al. 2002) suggested that African elements colonized South and Southeast Asia as "out-of-India".

A total of 18 genera and 68 species are commonly present in the Western Ghats and Southeast Asia. Some taxonomic (Hora 1949; Bande & Prakash 1986; Bande 1992) and recent molecular (Krause & Maas 1990; Clyde et al. 2003) studies revealed the dispersion of organisms from the Southeast Asian region into India, for which the term "out of Asia" hypothesis was coined by Hedges et al. (1993). It has been proposed that, during the Early Tertiary, Southeast Asian lineages reached India over temporary land connections almost immediately after the collision with Eurasia. Many paleontological studies also suggested that the latest Cretaceous-Paleocene Indian fauna and flora which survived extensive volcanic activities was almost completely replaced by the diverse and relatively advanced biota from Southeast Asia upon the India-Asia collision (Briggs 2003b).

Landmasses that have experienced a prolonged period of extensive isolation may lead to the evolution of their own fauna and flora. Such high level endemism is apparent on large islands or island groups, such as New Zealand (Hay et al. 1995), the Seychelles (Ruvinsky & Maxson 1996) and Madagascar (Vences et al. 2000). When long term isolation is followed by restoration of contact with other regions, the biotic uniqueness of an area may gradually fade due to floral and faunal interchange. Nevertheless, some previously isolated regions may incidentally retain inconspicuous remnants of a unique ancient biotic composition. During the journey of India from Africa to Asia it was in an isolated condition during 50 million years. When continents or islands are well isolated for such extended periods of time, evolution invariably produces endemic species. If the isolation continues long enough, a host of peculiar genera and families may appear. In this study a total of six genera and 91 species of spiders are found as endemic. The presence of some endemic genera in spiders of the Western Ghats, provides strong evidence that India underwent an extended isolation during its journey across the middle of the Indian Ocean. Recent molecular dating estimates in 14 species of amphibians (Bossuyt & Milinkovitch 2001) indicated that several lineages originated on the Indian subcontinent during its trans-Tethys drift. Remarkable suites of endemic species are characteristic of isolated land masses. This

is particularly true for India, where the biota is well known for its extraordinary high levels of endemism, with species frequently confined to minute distributional ranges (Myers et al. 2000).

Although fauna and flora of India originated in Africa, present similarity with African region is very low. This may be due to the faunal interchange with the Southeast Asian region and the evolution of its own biota during the period of isolation. These intruders from Southeast Asia not only led to the dilution of its original fauna but also dominated gradually as described in this study. So a detailed study using modern phylogenetic methodology is needed to differentiate between these faunal elements and to estimate the age of these different components in spiders of India, especially the Western Ghats region.

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APPENDIX 1
Check list of spiders reported from the Western Ghats of India

* Endemic species.
** Species distributed in the Southeast Asian region.
† Endemic genus.
†† Genus with African affinity.
††† Genus with species distribution in the African region, the Southeast Asian region and the Western Ghats.
†††† Genus with species distribution in the Southeast Asian region.

FAMILY AGELENIDAE C.L. Koch, 1837
*Agelena kariansholaensis** Sugumaran et al. 2005
*Agelena satmila** Tikader, 1970

FAMILY ARANEIDAE Simon, 1895
*Arachnura††† angura** Tikader, 1970
*Arachnura scorpionoides** Sugumaran et al., 2005
Araneus bilunifer Pocock, 1900
Araneus ellipticus (Tikader & Bal, 1981)
Araneus himalayaensis Tikader, 1975
*Araneus nympha*** (Simon, 1889)
Argiope aemula (Walckenaer, 1842)
Argiope anasuja Thorell, 1887
Argiope catenulata (Doleschall, 1859)
Argiope pulchella Thorell, 1881
Chorizopes††† bengalensis Tikader, 1975
*Chorizopes calciope*** (Simon, 1895)
*Cyclosa anaikattae** Sugumaran et al., 2005
Cyclosa bifida (Doleschall, 1859)
Cyclosa confraga (Thorell, 1892)
*Cyclosa hexatuberculata** Tikader, 1982
Cyclosa insulana (Costa, 1834)
*Cyclosa moonduensis** Tikader, 1963
Cyclosa mulmeinensis (Thorell, 1887)
Cyclosa quinqueguttata (Thorell, 1883)
Cyclosa spirifera Simon, 1889
*Cyrtarachne bengalensis*** Tikader, 1961
*Cyrtophora bidenta** Tikader, 1970
*Cyrtophora cicatrosa*** (Stoliczka, 1869)
Cyrtophora citricola (Forskal, 1775)
Cyrtophora koronadalensis Barrion & Litsinger, 1995
Eriophora himalayaensis (Tikader, 1975)
*Eriovixia††† excelsa*** (Simon, 1889)
*Eriovixia laglaizei*** (Simon, 1877)
*Eriovixia poonaensis** (Tikader & Bal, 1981)
*Gasteracantha dalyi*** Pocock, 1900
Gasteracantha geminata (Fabricius, 1798)
*Gasteracantha hasselti** C.L. Koch, 1837
Gasteracantha kuhli Koch, 1837
Gasteracantha remifera Butler, 1873
*Gea subarmata*** Thorell, 1890
*Gibbaranea bituberculata*** (Walckenaer, 1802)
*Heurodes†††† porculus*** (Simon, 1877)
*Macracantha†††† arcuata*** (Fabricius, 1793)
Neoscona bengalensis Tikader & Bal, 1981
*Neoscona molemensis*** Tikader & Bal, 1981
Neoscona mukerjei Tikader, 1980
*Neoscona nautica*** (L. Koch, 1875)
*Neoscona parambikulamensis** Patel, 2003
*Neoscona pavida** (Simon, 1906)
Neoscona theisi (Walckenaer, 1842)
Neoscona vigilans (Blackwall, 1865)
*Parawixia dehaani*** (Doleschall, 1859)
*Parawixia mundanthuraiensis** Sugumaran et al., 2005
*Poltys††† columnaris*** Thorell, 1890
*Zygiella indica** Tikader & Bal, 1980

FAMILY ATYPIDAE Thorell, 1870
Atypus sutherlandi Chennappaiya, 1935

FAMILY BARYCHELIDAE Simon, 1889
Sason††† robustum (O. P.-Cambridge, 1883)
*Sasonichus† sullivani** Pocock, 1900

FAMILY CLUBIONIDAE Wagner, 1887
*Clubiona coimbatorensis** Sugumaran et al., 2005
Clubiona drassodes O. P.-Cambridge, 1874

FAMILY CORINNIDAE Karsch, 1880
Castianeira zetes Simon, 1897
Oedignatha††† carli Reimoser, 1934
Oedignatha microscutata Reimoser, 1934
Oedignatha scrobiculata Thorell, 1881

FAMILY CTENIDAE Keyserling, 1877
*Acanthies†††† indicus** Gravely, 1931
*Ctenus cochinensis** Gravely, 1931
*Ctenus indicus** Gravely, 1931

FAMILY DEINOPIDAE C.L. Koch, 1850
*Deinopis goalparaensis** Tikader & Malhotra, 1978

FAMILY DICTYNIDAE O. P.-Cambridge, 1871
*Dictyna umai** Tikader, 1966

FAMILY DIPLURIDAE Simon, 1889
*Indothele† mala** Coyle, 1995

FAMILY ERESIDAE Koch, 1851
Stegodyphus pacificus Pocock, 1900
*Stegodyphus sarasinorum*** Karsch, 1891
Stegodyphus tibialis (O. P.-Cambridge, 1869)

FAMILY FILISTATIDAE Ausserer, 1867
*Pritha poonaensis** (Tikader, 1963)

FAMILY GNAPHOSIDAE Pocock, 1898
*Drassodes carinivulvus** Caporiacco, 1934
*Gnaphosa kailana** Tikader, 1966
*Poecilochroa barmani** Tikader, 1982
*Setaphis subtilis*** (Simon, 1897)
*Zelotes ashae** Tikader & Gajbe, 1976

FAMILY HAHNIIDAE Bertkau, 1878
*Hahnia alini** Tikader, 1964

FAMILY HERSILIIDAE Thorell, 1870
Hersilia††† pectinata Thorell, 1895
Hersilia savignyi Lucas, 1836
Tama gravelyi ** Sinha, 1950

FAMILY LINYPHIIDAE Blackwall, 1859
*Atypena simoni** Jocqué, 1983
*Lepthyphantes rudrai*** Tikader, 1970
*Linyphia urbasae*** Tikader, 1970
*Neriene sundaica*** (Simon, 1905)

FAMILY LYCOSIDAE Sundevall, 1833
Crocodilosa††† leucostigma (Simon, 1885)
Evippa†† banarensis * Tikader & Malhotra, 1980
*Hippasa†† agelenoides** (Simon, 1884)
*Hippasa greenalliae** (Blackwall, 1867)
*Hippasa holomerae** Thorell, 1895
*Hippasa leucostigma** Simon, 1885
*Hippasa lycosina** Pocock, 1900
Hippasa olivacea (Thorell, 1887)
*Hippasa pisaurina** Pocock, 1900
*Lycosa barnesi*** Gravely, 1924
*Lycosa bistriata** Gravely, 1924
Lycosa carmichaeli Gravely, 1924
Lycosa madani Pocock, 1901
*Lycosa tista*** Tikader, 1970
Pardosa atropalpis Gravely, 1924
*Pardosa minuta** Tikader & Malhotra, 1976
*Pardosa oakleyi** Gravely, 1924
*Pardosa pseudoannulata*** (Bosenberg & Strand, 1906)
Pardosa sumatrana (Thorell, 1890)
Wadicosa quadrifera (Gravely, 1924)

FAMILY MIMETIDAE Simon, 1881
*Mimetus indicus** Simon, 1906

FAMILY MITURGIDAE Simon, 1885
Cheiracanthium danieli Tikader, 1975
*Cheiracanthium insulanum*** (Thorell, 1878)
Cheiracanthium melanostomum (Thorell, 1895)
Cheiracanthium triviale (Thorell, 1895)

FAMILY NEPHILIDAE Simon, 1894
*Herennia†††† multipuncta*** (Doleschall, 1859)
*Nephila kuhlii*** (Doleschall, 1859)
*Nephila pilipes*** (Fabricius, 1793)
*Nephilengys malabarensis** (Walckenaer, 1842)

FAMILY OECOBIIDAE Blackwall, 1862
Oecobius putus O. P.-Cambridge, 1876

FAMILY OONOPIDAE Simon, 1890
*Opopaea†† sponsa** Brignoli, 1978

FAMILY OXYOPIDAE Thorell, 1870
*Oxyopes ashae** Gajbe, 1999
*Oxyopes bharatae** Gajbe, 1999
*Oxyopes birmanicus*** Thorell, 1887
Oxyopes hindostanicus Pocock, 1901
Oxyopes javanus Thorell, 1887
*Oxyopes lineatipes*** (C.L. Koch, 1847)
*Oxyopes rukminiae** Gajbe, 1999
Oxyopes sakuntalae Tikader, 1970
Oxyopes shweta Tikader, 1970
Oxyopes sitae Tikader, 1970
*Oxyopes quadridentatus*** Thorell, 1895

Oxyopes sunandae Tikader, 1970
Oxyopes wroughtoni Pocock, 1901
Peucetia viridana (Stoliczka, 1869)

FAMILY PHILODROMIDAE Thorell, 1870
*Philodromus ashae** Gajbe & Gajbe, 1999
*Tibellus elongatus** Tikader, 1960

FAMILY PHOLCIDAE C.L. Koch, 1851
Artema atlanta Walckenaer, 1837
Crossopriza lyoni (Blackwall, 1867)
Pholcus phalangioides (Fuesslin, 1775)
*Uthina†††† atrigularis*** Simon, 1901

FAMILY PISAURIDAE Simon, 1890
*Perenethis††† dentifasciata*** (O. P.-Cambridge, 1885)
*Perenethis unifasciata*** (Doleschall, 1859)
Pisaura mirabilis (Clerck, 1757)
Polyboea vulpina Thorell, 1895
Thalassius††† albocinctus (Doleschall, 1859)

FAMILY PRODIDOMIDAE Simon, 1884
*Zimiris indica** Dyal, 1935

FAMILY PSECHRIDAE Simon, 1890
*Fecenia†††† travancoria** Pocock, 1899
*Psechrus†††† torvus*** (Cambridge, 1869)

FAMILY SALTICIDAE Blackwall, 1841
*Aelurillus improvisus** Azarkina, 2002
Bavia†††† kairali * Samson & Sebastian, 2004
*Bianor angulosus** (Karsch, 1879)
Brettus†††† anchorum * Wanless, 1979
Hasarius adansoni (Audouin, 1826)
Hyllus††† diardi (Walckenaer, 1837)
Hyllus semicupreus (Simon, 1885)
Menemerus bivittatus (Dufour, 1831)
*Myrmarachne markaha*** Barrion & Litsinger, 1995
Myrmarachne orientales Tikader, 1973
Myrmarachne plataleoides (O. P.-Cambridge, 1869)
Phintella vittata (C.L. Koch, 1846)
*Plexippus chandraseharani** Samiayyan, 1995
*Plexippus dharineae** Samiayyan, 1995
Plexippus paykulli (Audouin, 1826)
Plexippus petersi (Karsch, 1878)
*Portia††† fimbriata** (Doleschall, 1859)
*Pseudicius daitaricus** Prószyński, 1992
Rhene††† danieli Tikader, 1973
*Rhene flavigera*** (C.L. Koch, 1846)
Rhene rubrigera (Thorell, 1887)
*Stenaelurillus lesserti** Reimoser, 1934
*Tamigalesus munnaricus** Zabka, 1988
*Telamonia††† dimidiata*** (Simon, 1899)
*Thiania†††† bhamoensis*** Thorell, 1887

FAMILY SCYTODIDAE Blackwall, 1864
Scytodes fusca Walckenaer, 1837
Scytodes thoracica (Latreille, 1802)

FAMILY SELENOPIDAE Simon, 1897
*Selenops montigenus*** Simon, 1889
*Selenops radiatus*** Latreille, 1819

FAMILY SPARASSIDAE Bertkau, 1872
*Heteropoda hampsoni*** Pocock, 1901
*Heteropoda lentula*** Pocock, 1901
*Heteropoda leprosa*** Simon, 1884
Heteropoda lunula (Doleschall, 1857)
Heteropoda nicobarensis Tikader, 1977
*Heteropoda nilgirina** Pocock, 1901
*Heteropoda phasma*** Simon, 1897
Heteropoda venatoria (Linnaeus, 1767)
*Micrommata virescens*** (Clerck, 1757)
*Olios hampsoni*** (Pocock, 1901)
*Olios milleti*** (Pocock, 1901)
*Olios obesulus*** (Pocock, 1901)
*Palystes†† flavidus** Simon, 1897
*Thelcticopis††† maindroni** Simon, 1906

FAMILY STENOCHILIDAE Thorell, 1873
*Stenochilus†††† hobsoni*** O. P.-Cambridge, 1870

FAMILY TETRAGNATHIDAE Menge, 1866
*Dyschiriognatha†††† dentata*** Zhu & Wen, 1978
Leucauge bituberculata Baert, 1987
*Leucauge celebesiana*** (Walckenaer, 1842)
Leucauge decorata (Blackwall, 1864)
Leucauge dorsotuberculata Tikader, 1982
Leucauge pondae Tikader, 1970
Leucauge subgemmea Bösenberg & Strand, 1906
Leucauge tessellata (Thorell, 1887)
*Opadometa†††† fastigata*** (Simon, 1877)
*Orsinome††† marmorea*** Pocock, 1901

Tetragnatha andamanensis Tikader, 1977
*Tetragnatha ceylonica*** O. P.-Cambridge, 1869
Tetragnatha cochinensis Gravely, 1921
*Tetragnatha fletcheri*** Gravely, 1921
*Tetragnatha javana*** (Thorell, 1890)
*Tetragnatha mandibulata*** Walckenaer, 1842
*Tetragnatha maxillosa*** Thorell, 1895
*Tetragnatha nitens*** (Audouin, 1826)
Tetragnatha siruvaniensis Sugumaran et al., 2005
Tetragnatha sutherlandi Gravely, 1921
Tetragnatha vermiformis Emerton, 1884
Tetragnatha virescens Okuma, 1979
Tetragnatha viridorufa Gravely, 1921
*Tylorida††† culta*** (O. P.-Cambridge, 1869)
*Tylorida ventralis*** (Thorell, 1877)

FAMILY THERAPHOSIDAE Thorell, 1870
*Anandaliella† travancorica** Hirst, 1909
*Chilobrachys†††† fimbriatus**** Pocock, 1899
*Haploclastus† kayi** Gravely, 1915
*Haploclastus nilgirinus** Pocock, 1899
*Ischnocolus decoratus** Tikader, 1977
*Plesiophrictus†††† bhori** Gravely, 1915
*Plesiophrictus raja** Gravely, 1915
*Poecilotheria† regalis** Pocock, 1899
*Poecilotheria rufilata** Pocock, 1899
*Poecilotheria striata** Pocock, 1895
*Thrigmopoeus† parambikulamensis** Sanjay & Daniel, 2002

FAMILY THERIDIIDAE Sundevall, 1833
Achaearanea diglipuriensis Tikader, 1977
Achaearanea durgae Tikader, 1970
*Achaearanea mundula*** (L. Koch, 1872)
*Achaearanea triangularis** (Patel, 2003)
Argyrodes ambalikae Tikader, 1970
Argyrodes flavescens O. P.-Cambridge, 1880
*Argyrodes gazedes** Tikader, 1970
*Argyrodes gazingensis** Tikader, 1970
Argyrodes xiphias Thorell, 1873
Ariamnes flagellum (Doleschall, 1857)
Chrysso argyrodiformis (Yaginuma, 1952)
Chrysso isumbo Barrion & Litsinger, 1995
Chrysso nigra (O. P.-Cambridge, 1880)
*Coleosoma†††† floridanum**** Banks, 1900
Faiditus xiphias Thorell, 1887
Phycosoma martinae (Roberts, 1983)
Theridion incertum O. P.-Cambridge, 1885
*Theridion manjithar** Tikader, 1970
Theridion otsospotum Barrion & Litsinger, 1995
Theridula angula Tikader, 1970
*Steatoda alboclathrata** (Simon, 1897)

FAMILY THOMISIDAE Sundevall, 1833
*Camaricus††† formosus** Thorell, 1887
*Camaricus khandalaensis** Tikader, 1980
Misumena decorata Tikader, 1980
*Misumena silveryi** Tikader, 1965
Misumenops andamanensis Tikader, 1980
Oxytate virens (Thorell, 1891)
*Ozyptila amkhasensis** Tikader, 1980
*Pistius bhadurii** Basu, 1965
*Strigoplus††† netravathi** Tikader, 1963
Thomisus andamanensis Tikader, 1980
*Thomisus beautifularis** Basu, 1965
Thomisus lobosus Tikader, 1965
Thomisus pugilis Stoliczka, 1869
Xysticus himalayaensis Tikader & Biswas, 1974

FAMILY ULOBORIDAE Thorell, 1869
Miagrammopes extensus Simon, 1889
*Philoponella hilaris** (Simon, 1906)
Uloborus coimbatoriensis Sugumaran et al., 2005
*Uloborus danolius*** Tikader, 1969
*Uloborus krishnae** Tikader, 1970
*Zosis geniculata*** (Olivier, 1789)

FAMILY ZODARIIDAE Thorell, 1881
*Asceua††† cingulata** (Simon, 1905)
*Cryptothele collina*** Pocock, 1901
*Cryptothele sundaica** Thorell, 1890
*Hermippus†† arjuna** (Gravely, 1921)
*Storena arakuensis** Patel & Reddy, 1989