SOME INDIAN SPIDERS OF THE FAMILIES CTENIDAE, SPARASSIDAE, SELENOPIDAE AND CLUBIONIDAE.

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The previous papers of this series[1] have been based entirely on Simon's classification (1897); and the present paper, the completion of which has been greatly delayed by other work, was commenced on the same basis and deals with the various forms grouped by him in the single family Clubionidae.

A revised classification of spiders has, however, meanwhile been issued by Petrunkevitch (1923 and 1928), which seems to be in many ways an advance on Simon's. He divides Simon's Clubionidae—a somewhat heterogeneous and unwieldy group with evident affinities to other families widely separated from it—into the four families the names of which appear in the title of the present paper, arranging them among allied families placed elsewhere in Simon's system. As it has not been possible to extend the scope of this paper to include the latter families it has had to be confined to the limits originally planned, but Petrunkevitch's method of division has been adopted and consequently his names for the divisions.

The relation of Simon's system to Petrunkevitch's, within the limits of this paper, are indicated in the following list of the species recorded from or more or less likely to occur in India, "P." meaning Petrunkevitch, and "S." Simon.[2]

Family CTENIDAE, P.=Subfamily CTENINAE, S.

Subfamily CTENINAE, P.=Group *CTENEAE*, S.

Genus **Ctenus** Walckenaer.

C. argentipes . . . van Hasselt, 1893, p. 148. Sumatra.
Cambridge, 1897 (1), pp. 336-337. Sumatra.

C. barbatus . . . Thorell, 1895, pp. 214-216. Kyeikpadem (Pegu).
Cambridge, 1897 (1), p. 337. Kyeikpadem.

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[1] "Notes on Indian Mygalomorph Spiders." *Rec. Ind. Mus.* XI, pp. 257-287, pl. xv (1915).
"The Fauna of an Island in the Chilka Lake—Spiders and Scorpions." *Rec. Ind. Mus.* XXII, pp. 399-421, 3 text-figs., pls. xvii-xix (1921).
"Some Indian Spiders of the Sub-family Tetragnathinae." *Rec. Ind. Mus.* XXII, pp. 423-457, 8 text-figs. (1921).
"Some Indian Spiders of the Family Lycosidae." *Rec. Ind. Mus.* XXVI, pp. 587-613, 5 text-figs. (1924).

[2] Explained further on (pp. 237-8) I have retained Simon's group Deleneae as a single subfamily Deleneinae in place of Petrunkevitch's two subfamilies Eusparassinae and Micrommatinae.

C. bicostatus . . . Thorell, 1890, p. 134. Borneo.
Cambridge, 1897 (1), pp. 334-335. Borneo.

C. calcarifer . . Cambridge, 1902, pp. 405-406, pl. vii, fig. 10. Baram River, Borneo.

C. ceylonensis Cambridge, 1897 (1), pp. 346-348, pl. iv, figs. 12 and 16. Ceylon.
Cambridge, 1902, p. 414, pl. vii, fig. 14. Ceylon.

C. corniger . . Cambridge, 1898, pp. 26-27, pl. iii, fig. 11. Natal, S. Africa.
Cambridge, 1902, p. 413. Singapore. Former record rendered doubtful if this identification is correct.

C. cuspidatus Cambridge, 1902, p. 406, pl. vii, figs. 12-13. Ceylon.

C. denticulatus (Simon) 1884, pp. 355-357. Minhla (Burma).
(Thorell) 1895, pp. 216-217. Rangoon and Tharrawaddy. ? Kyeikpadem.
(Cambridge) 1897 (1), pp. 338-339, pl. iv, figs. 4-9. Burma.

C. feae . *nom. nov.* for *obscurus* Thorell (preoccupied). Cambridge, 1902, p. 414.

C. flavidus . Hogg, 1922, pp. 299-300, text-fig. 7*a-b*. Dran, Langbian Mts., S. Annam.

C. floweri . . Cambridge, 1897 (1), pp. 348-349, pl. iv, figs. 22-25. Penang.

C. fungifer . . Thorell, 1890, pp. 309-312. Penang.
Cambridge, 1897 (1), p. 334. Penang.

C. hosei . Cambridge, 1897 (1), pp. 345-346, pl. iv, figs. 11, 17, 20, 28-30. Sarawak.
Pocock, 1897, p. 608, fig. Sarawak.

C. javanus Pocock, 1897, p. 610, fig. Java.
Simon, 1904, p. 67. Java.

C. jucundus Thorell, 1897 (2), p. 17. Burma.

C. obscurus Thorell, 1887, pp. 294-297. Rangoon.
Cambridge, 1897 (1), p. 334. Rangoon.
=*feae* (*nom. nov.*, *obscurus* being preoccupied), Cambridge, 1902, p. 414.

C. palembangensis Strand, 1906, p. 272. Palembang, Sumatra.

C. philippinensis . Cambridge, 1897 (1), pp. 349-350, pl. iv, fig. 1. Manila, Luzon.

C. pollii . van Hasselt, 1893, p. 146. Sumatra.
Cambridge, 1897 (1), p. 336. Sumatra.

C. pulvinatus . Thorell, 1890, pp. 133-134. Borneo.
Thorell, 1891-2, pp. 139-142. Sarawak.
Cambridge, 1897 (1), p. 335. Sarawak.

C. ramosus . . Thorell, 1887, pp. 291-294. Bhamo.
Cambridge, 1897 (1), p. 333. Bhamo.
Thorell, 1897 (2), p. 15. Bhamo and Teinzo, Burma.

C. robustus . Thorell, 1897 (2), p. 12. Burma.

C. sarawakensis Cambridge, 1897 (1), p. 346, pl. iv, figs. 3 and 10. Sarawak.

C. simplex Thorell, 1897 (2), p. 16. Tenasserim.

C. smythiesi Simon, 1897 (3), p. 260. Dehra Dun.

C. thorellii Cambridge, 1897 (1), pp. 342-344, pl. iv, figs. 2, 15 and 27. Ceylon.

C. trabifer Thorell, 1887, pp. 288-291. Bhamo.
[*nec* Karsch, 1892, p. 295, pl. xi, figs. 18-18 *b*. Ceylon.]
Thorell, 1895, p. 214. Tenasserim.
Cambridge, 1897 (1), pp. 332-333, pl. iv, fig. 14. Burma.
[*nec* Cambridge (after Karsch), 1897 (1), p. 335, fig. 13. Ceylon.]
? Leardi in Airaghi, 1901, p. 363. Kandy.

C. tumidulus (Simon) 1887 (1), p. 108. Tavoy.
Cambridge, 1897 (1), p. 339. Tavoy.

C. valvularis (van Hasselt) 1882, pp. 45-46, pl. v, fig. 12. Korintji Peak, Sumatra.
Thorell, 1891-2, pp. 135-139. Limun and Mt. Singaleng, Sumatra.
(Cambridge) 1897 (1), p. 338, pl. iv, fig. 16. Sumatra.
Simon, 1901, p. 67. Jalor, Malay Peninsula.

Subfamily ACANTHEINAE, P.=Group *ACANTHEAE*, S.

Genus **Acantheis** Thorell.

A. dimidiatus (Thorell) 1891-2, pp. 142-145. Mt. Singaleng in Sumatra.
Thorell, 1891, p. 61 (transferred to n. g. *Acantheis*).
Cambridge, 1897 (1), p. 341.
Simon, 1904 (2), p. 67. Java.

A. laetus . . (Thorell) 1891-2, pp. 146-148, Sarawak.
Thorell, 1891, p. 61 (transferred to n. g. *Acantheis*).
Cambridge, 1897 (1), pp. 341-342.
Simon, 1897 (1), figs. 106-113, D-F (p. 116).

A. longiventris. Simon, 1896 (1), pp. 495-496. Singapore.

A. tridens . . Pocock, 1897, p. 611. Borneo.

A. variatus . . . (Thorell) 1890 (1), pp. 34-38. Bawo Lowalani in Nias.
Thorell, 1891, p. 61 (transferred to n. g. *Acantheis*).
Cambridge, 1897 (1), pp. 340-341.

Genus **Diallomus** Simon.

D. fuliginosus . . Simon, 1897 (1), p. 119, figs. 106-113, G-H (p. 116). Mountainous region of Ceylon.
D. speciosus . . Simon, 1897 (1), p. 119. Mountainous region of Ceylon.

Subfamily CALOCTENINAE, P.=Group *CALOCTENEAE*, S.

Genus **Caloctenus** Keyserling.

C. celer Simon, 1896 (1), p. 496. Java (mountains).
Simon, 1904 (2), p. 67. Java.
C. oreus . . Simon, 1901, pp. 67-68. Bukit-Besar, Jalor, Malay Peninsula.

Genus **Anahita** Karsch.

A. punctata (Thorell) 1891-2, pp. 131-135. Sumatra.

In Petrunkevitch's system the families Drassidae, Ammoxenidae, Prodidomidae, and Homalonychidae are inserted here from other parts of Simon's system.

Family SPARASSIDAE, P.=Subfamily SPARASSINAE, S.

Subfamily DELENEINAE[1]=Group *DELENEAE*, S.
(Eusparassinae, P. + Micrommatinae, P.)

Genus **Isopoda** Koch.

I. armillata . . . (Thorell) 1887, pp. 233-236. Shwegoomyo, Burma.
I. beccarii . . (Thorell) 1890 (2), p. 147. Sumatra.
(Thorell) 1891-2, pp. 46-49. Sungei Bulu, Sumatra.
do. var. *malangana* . Strand, 1907 (2), p. 189. Java.
I. striatipes . . . Leardi in Airaghi, 1901, p. 366. Mahé.

Genus **Rhitymna** Simon.

R. ingens . . . Simon, 1896 (1), p. 485. Palabouan, S. Java.

[1] See above, p. 211, footnote 2.

R. nigrifrons . Simon, 1896 (1), pp. 485-486. Palabouan, S. Java.

R. scanthopus . Simon, 1901, pp. 65-66. Kuala Aring, Kelantan, Malay Peninsula.

Genus **Pediana** Simon.

P. aurochelis Strand, 1907 (1), pp. 434-437. Java.

Genus **Olios,** Walckenaer.

(See also "*Sparassus*").

O. acolastus (Thorell) 1890, pp. 56-60. Hili Zabobo, Nias.

O. bungarensis. . Strand, 1913, p. 119. Sumatra.

O. callipygus (Thorell) 1887, pp. 250-253.

O. cursor (Thorell) 1894 (1), p. 339. Singapore.
(Workman) 1896, p. and pl. 82.

O. exterritorialis Strand, 1907 (3), p. 558. Java.

O. ferox (Thorell) 1890, p. 147. ? Dutch E. Indies or Australia.
(Thorell) 1891-2, pp. 40-43. ? Dutch E. Indies or Australia.

O. hirtus (Karsch) 1879, p. 560. Ceylon.
(Pocock) 1900, pp. 267-268. Ceylon.

O. impudicus (Thorell) 1887, pp. 241-244. Me-tan-ja, Burma.
(Thorell) 1892, pp. 233-235. Me-tan-ja.
(Thorell) 1895, p. 270. Tharrawaddy.
(Pocock) 1900, p. 268. Tharrawaddy; Me-tan-ja; Andamans; Sumatra.

O. iranii (Pocock) 1901, p. 492. Khost, Baluchistan; Poona District; Nagpur.

O. javensis Doleschall, 1857, p. 428. Java.
Doleschall, 1859, pl. xiii, fig. 7-7*a*.

O. lamarcki (Latreille) 1806, pp. 113-114. Isle de France.
Simon, 1881, p. 301.
(Pocock) 1900, p. 267. Kandy, Trincomali, Pundaloya and Peradeniya in Ceylon; Chingleput, Coimbatore and Pondichery in India; Madagascar.
Pocock, 1904, p. 803. Minikoi; Maldives (various localities); Madagascar; Ceylon; S. India.
(Gravely) 1921, pp. 416-417. Barkuda Island, Chilka Lake.

do. var. *taprobanensis.* Strand, 1913, p. 119. Ceylon.

O. lutescens .	(Thorell) 1894 (2), p. 12. Burma.
	(Thorell) 1895, pp. 272-274. Singapore.
	(Simon) 1899, p. 100. Burma, Singapore and Java.
	(Pocock) 1900, p. 269. Tharrawaddy.
O. maynardi .	(Pocock) 1901, p. 490. Jacobabad and Northern Baluchistan.
O. milleti .	(Pocock) 1901, p. 494. Nasik.
O. obesulus .	(Pocock) 1901, p. 493. Poona.
O. pearsoni .	(Pocock) 1901, pp. 492-493. Poona Ghats ; E. Khandesh ; and Pimpalner in W Khandesh.
O. pinangensis .	(Thorell) 1891, pp. 78-80. Penang.
O. punctipes	Simon, 1884, pp. 339-341. Minhla, Burma.
do. + *venustus* + *callypygus*.	(Thorell) 1887, pp. 244-253. Bhamo and Moulmein.
do. + var. *sordidata*	(Thorell) 1895, pp. 270-272. Tharrawaddy.
	(Pocock) 1900, pp. 268-269. Burma.
O. rotundiceps . .	(Pocock) 1901, pp. 493-494. Ootacamund.
O. tener .	(Thorell) 1891, p. 80. Assam.
	(Pocock) 1900, p. 269. Assam.
O. testaceus	Doleschall, 1859, p. 55, pl. xv, fig. 3-3*a*.
O. venustus	(Thorell) 1887, pp. 248-250. Bhamo.
O. versicolor	Simon, 1884, pp. 367-368. Bangkok.
O. wroughtoni .	(Simon) 1897 (3), pp. 257-258. N. Konkan.
	(Pocock) 1900, p. 268. N. Konkan ; Bulsar, Gujerat ; Matheran ; Uran.
O. xerxes	(Pocock) 1901, pp. 489-490. Omaia, Mekran Coast, 130 miles west of Karachi ; Bushire, Persian Gulf.
O. zonatus . .	Doleschall, 1859, pp. 54-55, pl. xiv, fig. 4.

Genus **Sparassus** Walckenaer.

All species of the old genus *Sparassus* which have not yet been definitely allocated to either of the genera *Olios* or *Eusparassus* are for the sake of convenience listed here under the old name.

S. admiratus	Pocock, 1901, p. 492. Bombay.
S. annandalei	Simon, 1901, p. 65. Nawng-Chik, Malay Peninsula.
S. fugax	Cambridge, 1885, p. 73. Murree to Sind Valley.
S. fuligineus . .	Pocock, 1901, pp. 491-492. Jaoli, Satara District, Bombay Presidency.
S. greeni	Pocock, 1901, pp. 494-495. Pundaloya, Ceylon.
S. hampsoni .	Pocock, 1901, p. 491. Nilgiris.
S. patagiatus	Simon, 1897 (3), p. 256-257. Dehra Dun.
S. phipsoni	Pocock, 1899, p. 752. Bombay.
	Pocock, 1900, p. 268. Bombay.

S. pyrozonis . . Pocock, 1901, pp. 490-491. Sylhet.
S. senilis . Simon, 1880, p. 303. Ceylon.
Pocock, 1900, p. 267. Ceylon.
S. stimulator . . Simon, 1897 (3) p. 258. Himalayas, 2,000-2,800 ft.
Pocock, 1900, p. 269. Himalayas, 2,000-2,800 ft.
S. tarandus Simon, 1897 (2), p. 294. Karachi.
Pocock, 1900, p. 269. Karachi.

Genus **Eusparassus** Simon.

E. lilus Strand, 1907 (1), p. 437. Java.

Subfamily SPARIANTHIDINAE, P.=Group *SPARIANTHIDEAE*, S.

Genus **Thelcticopis** Karsch.

Pocock (1900, pp. 270-271) regards *Seramba*, and apparently in some cases at least *Stasina* also, as synonyms of *Thelcticopis*. There may perhaps, therefore, be some confusion between these genera, all recognized by Simon as distinct, at least in the case of Pocock's species.

T ajax Pocock, 1901, p. 488. Ootacamund.
T. bicornutus Pocock, 1901, p. 489. Naga Hills.
T birmanica Thorell, 1895, pp. 274-275. Tenasserim.
Pocock, 1900, p. 271. Tenasserim.
T canescens Simon, 1887 (1), pp. 103-104. Hills between Burma and Siam.
Pocock, 1900, p. 271. Hills between Burma and Siam.
T hercules Pocock, 1901, pp. 487-488. Peradeniya Gardens, Ceylon.
T maindroni Simon, 1906, pp. 295-296. Coonoor.
T modesta Thorell, 1890, pp. 329-332. Penang.
T orichalcea (Simon) 1880, p. 116. Borneo.
(van Hasselt) 1882, pp. 40-41, pl. v, figs. 3-4. Silago, Sumatra.
Thorell, 1891-2, pp. 44-46. Sarawak.
T rufulus Pocock, 1901, pp. 488-489. Nilgiris.
T serambiformis Strand, 1907 (3), p. 561. India.
T. virescens Pocock, 1901, p. 488. Trivandrum, Travancore.

Genus **Seramba** Thorell.

S. bifasciata Thorell, 1891, p. 82. Nicobars.
S. pennata Simon, 1901, p. 66. Nawng-Chik, Malay Peninsula.

S. picta . Thorell, 1887, pp. 254-257. Shwegoo-myo.
(Pocock) 1900, p. 271. Shwegoo-myo.
? Hogg, 1922, p. 298. Dran, Langbian Mts., S. Annam.

Genus **Stasina** Simon.

S. nalandica . . . Karsch, 1892, p. 293, fig. Ceylon.
=*nigropicta* (Pocock) 1899, p. 753. Pundaloya, Ceylon.
(Pocock), 1900, p. 270.
S. paripes . (Karsch) 1879, p. 559, pl. vii, fig.7. Ceylon.
Karsch, 1892, p. 293.
(Pocock) 1900, p. 271. Ceylon.
S. planithorax . . . Simon, 1896 (1), pp. 491-492. Singapore.
S. vittata . . . Simon, 1877, p. 90. Malamoy, Bassilan, Philippines.

Subfamily HETEROPODINAE, P.=Group *HETEROPODEAE*, S.

Genus **Torania** Simon.

T. gloriosa . . . (Simon) 1880, p. 37.
van Hasselt, 1890, pp. 204-205. Buitenzorg.
Simon, 1904 (1), p. 285, fig. Indo-China.
T panaretiformis . . Strand, 1913, p. 119. Sumatra.
T. simoni . Karsch. Indo-China.[1]

Genus **Panaretus** Simon.

P. borneensis (Thorell) 1890-1, pp. 143-144. Borneo.
(Thorell) 1891-2, pp. 12-15. Sarawak.
P. nirounensis . Simon, 1903 (1), pp. 304-305. Nirou forest, Sumatra.

Genus **Panaretidius** Simon.

P. boutani Simon, 1906 (3), p. 27. Tonkin.

Genus **Heteropoda** Latreille.

H. altithorax Strand, 1907 (3), p. 559. India.
H. ambigua . . Simon, 1896 (1), p. 489. Trichinopoly.
H. atollicola . Pocock, 1904, pp. 803-804, pl. lxvi, figs. 6*a-c*. Maldives (various localities) ; Minikoi.
H. casaria . . . Simon =*H. prompta* (Cambridge) (see below).
H. cyanichelis . . . Strand, 1907 (1), pp. 431-434. Java.
H. debilis . . Thorell =*H. imbecilla*, Thorell (see below).

[1] Referred to by Simon, 1904 (1), p. 285. I have not succeeded in tracing the reference.

H. eluta . Karsch, 1892, p. 291, fig. Ceylon.
Pocock, 1900, p. 263. Ceylon.

H. emarginativulva . Strand, 1907 (3), p. 559. India.

H. fabrei Simon, 1885, p. 32, fig. Ramnad, S. India.
Pocock, 1900, p. 261. Ramnad ; ? Trichinopoly.

H. ferina . Simon, 1887 (1), pp. 102-103. Tavoy.

H. furva Thorell, 1890, pp. 319-322. Penang.

H. gemella Simon, 1877, pp. 64-65. Manila.

H. graaflandi Strand, 1907 (2), p. 196. Java.

H. gracilipes . Thorell = *H. leptoscelis*, Thorell (see below).

H. hampsoni Pocock, 1901, p. 495. Ootacamund, Nilgiris.

H. holzi Strand, 1907 (2), p. 193. Java.

H. hosei Pocock, 1897, p. 614. Borneo.

H. imbecilla =*debilis* Thorell, 1890, pp. 144 and 325. Sumatra.
=*debilis* Thorell, 1891-2, pp. 16-19. Padang, Upper Sumatra.

H. kandiana Pocock, 1899, p. 752. Kandy.
Pocock, 1900, p. 261. Kandy.

H. languida Simon, 1887 (1), p. 102.
Pocock, 1900, p. 262. Tavoy.

H. lentula Pocock, 1901, pp. 496-497. Ponmundi in Travancore ; Tinnevelly.

H. leprosa Simon, 1884, pp. 336-339, figs. 2-3. Minhla, Burma.
Thorell, 1895, p. 264. Rangoon.
Pocock, 1900, p. 262. Burma.
Simon, 1901, p. 64. Ulu Selama, Perak ; Kuala Aring, Kelantan ; Bukit Besar, Jalor.

H. leptoscelis =*gracilipes* Thorell, 1890, pp. 144 and 325. Sumatra.
=*gracilipes* Thorell, 1891-2, pp. 19-22. Sumatra.

H. lutea Thorell, 1895, pp. 265-266. Tharrawaddy.
Pocock, 1900, p. 263. Tharrawaddy.
Leardi in Airaghi, 1901, p. 89. Almora.

H. malitiosa Simon, 1906, pp. 294-295. Gingee, Coromandel Coast ; Coonoor, Nilgiris.

H. merkarensis Strand, 1907 (3), p. 560. Mercara, Coorg, S. India.

H. modigliani Thorell, 1890, pp. 48-53. Gunung Sitoli, Sumatra ; ? Lelemboli.

H. nebulosa Thorell, 1890, pp. 322-325. Penang.

H. nilgirina Pocock, 1901, pp. 495-496. Coonoor, Kotagiri and Ootacamund, Nilgiris.

H. obtusa . . Thorell, 1891-2, pp. 34-37. Sarawak.

H. panaretiformis . . Strand, 1906, p. 269. Sumatra

H. pedata . . Strand. 1907 (3), p. 560. India.

H. phasma . . Simon, 1897 (3), p. 258. Himalayas.
Pocock, 1900, pp. 260-261. Himalayas, 6,000-7,000 ft. ; Kasauli ; Jaunsar and Mundali, 8,000 ft.

H. plebeja . . . Thorell, 1887, pp. 237-241. Rangoon.
Thorell, 1895, pp. 264-265. Rangoon and Kyeikpadem.
Pocock, 1900, p. 262. Burma.

H. pressula . . Simon, 1904 (1), p. 285. Indo-China.

H. prompta . . (Cambridge) 1885, p. 71 Yarkand Expedition.

=*casaria* . Simon, 1897 (3), p. 259. Himalayas.
Pocock, 1900, pp. 261-262. Konain, 7,000 ft. ; Jaunsar ; Deota ; Murree.

H. rufognatha . . . Strand, 1907 (3), p. 561. India.

H. sexpunctata . . Simon, 1885, p. 14, pl. x, figs. 11-12. Guntakal.
Pocock, 1900, p. 261. Tanna, Poona, Khandesh, Bellary.
Simon, 1901, p. 65. Ligeh, Malay Peninsula.

H. signata Thorell, 1890, pp. 145-146. Sumatra.
Thorell, 1891-2, pp. 32-34. Mt. Singaleng, Sumatra.

H. smythiesi . Simon, 1897 (3), p. 259. Deccan (? error for Dehra—see Pocock, *l. c.*).
Pocock, 1900, p. 362. Konain, 7,800 ft., W. Himalayas.

H. stimulator . . Simon, 1897 (3), p. 258. Himalayas.

H. subplebeia . . Strand, 1907 (3), p. 560.

H. subtilis . Karsch, 1892, p. 292, fig. Ceylon.
Pocock, 1900, p. 263. Peradeniya.

H. sumatrana, with var. *montana* Thorell, 1890, pp. 144-145. Sumatra.
Thorell, 1891-2, pp. 26-31. Mt. Singaleng and Ajer Mancior, Sumatra.

subsp. *javacola* Strand, 1907 (1), p. 430. Java.

H. tetrica Thorell, 1897 (2), p. 33. Burma.

H. thoracica (Koch) 1845, pp. 42-43, pl. ccccvii, fig. 982. Java.

=*lunula* . (Doleschall) 1857, p. 428.
(Doleschall) 1859, p. 54, pl. vi, fig. 5, pl. vii, fig. 5, pl. ix, fig. 12 (? part only). Amboina.
Thorell, 1878, pp. 192-194 and 306. Amboina, ? New Guinea.
Thorell, 1891-2, pp. 24-26. Padang, Sumatra.

H. umbrata . . Karsch, 1892, p. 291, pl. xi, fig. 11. Ceylon.
Pocock, 1900, p. 263. Peradeniya.

H. verilianus . . Strand, 1907 (3), p. 560. India.
H. venatorius . . (Linnaeus) 1758, p. 1035.
=*regia* . Simon, 1877, pp. 63-64 (synonymy). Philippines and tropics generally.
Thorell, 1890, pp. 47-48. Nias (Gunung Sitoli, Hili Zabobo and Lelemboli).
Thorell, 1891-2, pp. 22-24 (synonymy). Many localities.
=*regia* Simon, 1897 (1), p. 1027, footnote (synonymy).
Pocock, 1897, p. 613.
Pocock, 1900, p. 260. Artificially introduced from the East into all tropical countries.
Flower, 1901, p. 45 (habits).
Strand, 1907 (3), p. 559. Varieties from China and Japan.
Merian, 1911, pp. 253-257. Varieties from Celebes.
Hogg, 1914, p. 57. Variety from New Guinea.
H. wardhiana . .. . Strand, 1907 (3), p. 561. India.

Genus **Parhedrus** Simon.

P. boiei . . .. . (Doleschall) 1859, pp. 52-53, pl. xv, figs. 1-1*a*. Buitenzorg.
(Simon) 1880, p. 51 (=*flavimana*, *l. c.* p. 54). Java and Benkolen, Sumatra.
(Thorell) 1891-2, pp. 15-16. Sungei Bulu, Sumatra ; Java.
Simon, 1897 (1), p. 53.
P. flavimana . . . (Simon)=*P. boiei* (Doleschall).
P. boycalinus . . . Simon, 1887 (2), p. 469. Java.

Genus **Spariolenus** Simon.

S. leucalopsis . . . Thorell, 1891, p. 77. Nicobars.
S. taeniatus . . . Thorell, 1890, pp. 44-47. Hili Zabobo and Bawo Lowalani, Nias.
S. tigris . . . . Simon, 1880, p. 281. Calcutta.
Pocock, 1900, p. 264. Matheran ; Poona ; Calcutta.
Simon, 1901, p. 65. Biserat, Jalor, Malay Peninsula.

Genus **Pandercetes** Koch.

P. celatus . . . Pocock, 1899, p. 753. Trivandrum, Travancore.
Pocock, 1900, p. 265. Trivandrum.

P. decipiens . . . Pocock, 1899, p. 753. Puñdaloya, Ceylon.
Pocock, 1900, p. 264, fig. 88. Pundaloya.

P. macilentus . . . Thorell, 1895, pp. 267-268. Southern Tenasserim.
Pocock, 1900, p. 265. Southern Tenasserim.

P. ochrea . . . Hogg, 1922, pp. 292-294, text-fig. 4. Dran, Langbian Mts., S. Annam, 3,000 ft.

P. plumipes . . . Doleschall, 1859, pp. 53-54, pl. iii, fig. 9 (see also last plate). Amboina.
Karsch, 1892, p. 290. Ceylon.

Genus **Adrastis** Simon.

A. lashbrooki . . . Hogg, 1892, pp. 294-296, text-fig. 5. Langbian Peaks, S. Annam, 6,500 ft.

A. murinus . . . (Pocock) 1897, p. 618, fig. Borneo.

A. nigrogularis . . Simon, 1896, p. 489. Palabonan in Java.

Genus **Geminea** Thorell.

G. sulphurea . . . Thorell, 1897 (2), p. 35. Burma.

Subfamily PALYSTEINAE, P.=Group *PALYSTEAE*, S.

Genus **Palystes** Koch.

P. flavidus . . . Simon, 1896 (1), pp. 489-490. Trichinopoly.
Pocock, 1900, p. 266. Trichinopoly, Allahabad, Calcutta.
Gravely, 1921, p. 417. Barkuda Island, Chilka Lake.

P. incanus . . . Thorell, 1890, p. 146. Borneo.
Thorell, 1891-2, pp. 37-40. Sarawak.

P. kochi . . . . Simon, 1880, p. 265. Singapore.
Simon, 1887 (1), p. 103. Mita, Tavoy
=*melanichnys* . Thorell, 1890, pp. 53-56. Bawo Lowalami, Nias.
Thorell, 1895, pp. 268-270.
Pocock, 1900, pp. 265-266. Sylhet, Rangoon, Tenasserim and Sumatra.

P. ledleyi . . . Hogg, 1922, pp. 296-298, text-fig. 6. Dran, Langbian Prov., S. Annam, 3,000 ft. and Kuala Lumpur, Malay Peninsula.

P. melanichnys . . Thorell =*P. kochi* (see above).

P. rutilans . . . Simon, 1899, pp. 99-100. Sumatra.

Genus **Tychicus** Simon.

T. erythrophthalmus . . Simon, 1896 (1), p. 489. Manila.

Subfamily CLASTEINAE, P.=Group *CLASTEAE*, S.

Genus **Prychia** Koch.

P. suavis — Simon, 1896 (1), p. 490. Antipolo, Philippines.

Family SELENOPIDAE, P.=Subfamily SELENOPINAE, S.

Genus **Selenops** Latreille.

S. aculeatus — Simon, 1901, p. 64. Gunong Inas, Perak.

S. birmanicus — Thorell = *S. radiatus* (Latreille).

S. malabarensis — Simon =*S. radiatus* (Latreille).

S. montigena — Simon, 1889, pp. 335-336. Jaunsar, Kumia, 6,000 ft.
Pocock, 1900, p. 258. Jaunsar, 6,000 ft.

S. radiatus — (Latreille) 1819, p. 579. Spain.

=*malabarensis* — Simon, 1880, p. 14. Malabar Coast.
Simon, 1884, pp. 335-336. Wagra-Karour, Bellary Dist. ; Minhla, Burma.
Simon, 1885, p. 14. Bellary District.

=*birmanicus* — Thorell, 1895, pp. 261-264. Tharrawaddy.
Simon, 1897 (1), p. 26 (synonymy). Throughout Africa, Arabia, tropical Asia and Madagascar.
Pocock, 1900, pp. 257-258, fig. 87. Omara, Mekran Coast ; Karachi ; Bareilly ; N. Gujerat ; Tanna ; Uran ; Poona ; E. Khandesh ; Bangalore ; Guntakal ; Malabar ; Tharrawaddy. Also Spain, Socotra, Mauritius, Madagascar and the whole of Africa as far south as the Zambesi.

In Petrunkevitch's system the families Platoridae, Thomisidae and Aphantochilidae are inserted here from other parts of Simon's system.

Family CLUBIONIDAE, P.= Subfamily CLUBIONINAE, S.

Subfamily CLUBIONINAE, P.= Group *CLUBIONEAE*, S.

Genus **Clubiona** Latreille.

C. acanthocnemis . — Simon, 1906, p. 298. Coonoor, Nilgiris.

C. analis — Thorell, 1895, pp. 41-42. Double Island off Moulmein.

C. concinna . — (Thorell) 1887, pp. 55-58. Rangoon.
(Thorell) 1895, p. 41. Tharrawaddy.

C. distincta . . . — Thorell, 1887, pp. 48-51. Bhamo.
Thorell, 1897 (1), p. 249. Carin Cheba (Bia-po) and ? Mandalay.

C. drassodes . . Cambridge, 1874, p. 414, pl. lii, fig. 36. Bombay.
C. esuriens Thorell, 1897 (1), pp. 249-251. Carin Cheba.
C. filicata Cambridge, 1874, pp. 413-414, pl. lii, fig. 35 *a-c*. Bombay.
C. hysgina Simon, 1889, pp. 343-344. Deota, Jaunsar, 7,700 ft. (W Himalayas).
C. melanosticta Thorell, 1889-90, pp. 374-378. Ajer Mancior (Sumatra).
C. melanothele Thorell, 1895, pp. 42-44. Tharrawaddy.
C. nilgherina Simon, 1906, pp. 298-299. Coonoor, Nilgiris.
C. pogonias . . Simon, 1906, pp. 312-313. Lower Himalayas (probably Darjeeling District).
C. pupula Thorell, 1897 (1), pp. 251-253. Bhamo.
C. tabupumensis Petrunkevitch, 1914, p. 171, fig. Burma.
C. versicolor Thorell, 1889-90, pp. 378-380. Mt. Singaleng (Sumatra).

Genus **Simalio** Simon.

S. castaneiceps Simon, 1906, pp. 299-300. Coonoor, Nilgiris.
S. lucorum . Simon, 1906, p. 300. Colombo, Galle, Kandy.
S. percomis Simon, 1906, p. 299. Coonoor, Nilgiris.
S. petilus . . Simon, 1897 (1), p. 86. Antipolo in Luzon, Philippines.
S. phacocephalus . Simon, 1906, pp. 300-301. Newara-Eliya and Maturata, Ceylon.

Genus **Systaria** Simon.

S. drassiformis . Simon, 1897 (1), p. 87. Palabuan, Java.
S. gedensis . . . Simon, 1897 (1), p. 87. Mt. Gede, Java.

Genus **Matidia** Thorell.

M. aeria . Simon, 1896 (1), p. 503. Jolo Islands, Philippines.
Simon, 1901, p. 67. Ban-Kong-Rak, Patalung.
M. bimaculata . . Simon, 1896 (1), p. 504. Ceylon.
M. flagellifera Simon, 1896 (1), pp. 503-504. Ceylon.
M. javana Simon, 1896 (1), p. 503. Palabouan.
M. luzonica Simon, 1896 (1), p. 503. Antipolo, Luzon.
M. simplex Simon, 1896 (1), p. 504. Ceylon.
M. tenera Thorell, 1889-90, pp. 380-383. Mt. Singaleng and Kaju, Sumatra.
M. trinotata Thorell, 1890, pp. 288-290. Penang.

Genus **Chiracanthium** Koch.

C. caudatum . .	(Thorell) 1887, pp. 58-61. Rangoon. (Thorell) 1895, p. 44. Rangoon. Simon, 1901, p. 67. Ban-Kong-Rak, Patalung, Malay Peninsula.
C. conflexum .	Simon, 1906, p. 297. Coonoor, Nilgiris.
C. gracilipes	(Thorell) 1895, pp. 47-49. Tharrawaddy.
C. incompta .	(Thorell) 1891, pp. 29-30. Nicobars.
C. indicum	Cambridge, 1874, pp. 411-412, pl. lii, fig. 34. Bombay. Simon, 1906, pp. 296-297. Coonoor; widely distributed in India and Ceylon.
C. inornatum	Cambridge, 1874, pp. 406-407, pl. lii, fig. 30*a-c*. Bombay.
C. insigne .	Cambridge, 1874, pp. 408-410, pl. lii, fig. 32*a-b*. Bombay and Ceylon.
C. longipes .	(Thorell) 1889-90, pp. 372-374. Sumatra.
C. mangiferae	Workman, 1896, p. and pl. 80. Malaysia (probably Singapore or Java).
C. melanostoma	(Thorell) 1895, pp. 44-47. Tharrawaddy. (Thorell) 1897 (1), p. 253. Palon. ? Simon, 1901, p. 67. Biserat, Jalor, Malay Peninsula.
C. montana .	(Thorell) 1889-90, pp. 368-372. Mt. Singaleng, Sumatra.
C. murina .	(Thorell) 1895, pp. 50-51. Tharrawaddy.
C. rupicola .	(Thorell) 1897 (1), pp. 253-255. Yado, Burma.
C. spectabilis	(Thorell) 1887, pp. 61-64. Shwegoo-myo.
C. tabrobanensis .	Strand, 1907 (3), p. 563.
C. trivialis .	(Thorell) 1895, pp. 49-50. Tharrawaddy.
C. trivittatum	Simon, 1906, pp. 297-298. Gingee, Coromandel Coast.
C. truncatum .	(Thorell) 1895, pp. 48-49. ? Female of *C. gracilipes*. Rangoon.
C. vorax	Cambridge, 1874, pp. 410-411, pl. lii, fig. 33*a-b*. Bombay.

Genus **Tolophus** Thorell.

T. submaculatus	Thorell, 1891, pp. 26-27. Nicobars.

Subfamily ANYPHAENINAE, P.=Group *ANYPHAENEAE*, S.

Genus **Anyphaena** Sundevall.

A. soricina	Simon, 1889, p. 344. Jaunsar, Deota, 7,700 ft. (W. Himalayas).

Subfamily LIOCRANINAE, P.= Subfamily LIOCRANINAE.

Genus **Syrisca** Simon.

S. cervina — Simon, 1896 (1), pp. 500-501. Antipolo, Luzon Island, Philippines.

Genus **Argistes** Simon.

?A. seriatus — (Karsch) 1892, p. 294. Ceylon.
A. velox — Simon, 1897 (1), p. 444. Galle, Ceylon.

Genus **Paratus** Simon.

P. reticulatus — Simon, 1897 (1), pp. 209-210. Kandy, Ceylon.

Genus **Palicanus** Thorell.

P. candatus — Thorell, 1897 (1), pp. 227-229. Rangoon.

Genus **Orthobula** Simon.

O. impressa — Simon, 1896 (1), pp. 498-499. Colombo, Kandy, Galle.
O. trinotata — Simon, 1896 (2), p. 402. Antipolo, Luzon, Philippines.

Genus **Otacilia** Thorell.

O. armatissima — Thorell, 1897 (1), pp. 244-246. Cheba Mountains, Burma.

Genus **Palaetyra** Simon.

P. luzonica — Simon, 1897 (1), pp. 211-212. Antipolo, Luzon I., Philippines.

Genus **Teutamus** Thorell.

T politus — Thorell, 1890, pp. 281-284. Penang.
Simon, 1901, p. 68. Gunong Inas and Ulu Selama, Perak.

Genus **Sesieutes** Simon.

S. lucens — Simon, 1896 (1), pp. 500. Singapore.

Genus **Mardonia** Thorell.

M. fasciata — Thorell, 1897 (1), pp. 247-249. Palon.

Subfamily CORINNINAE, P.=Subfamily CORINNINAE, S.

Genus **Trachelas** Cambridge.

T accentuatus	Simon, 1906 (2), p. 413. Newara Eliya, Ceylon.
T. fronto	Simon, 1906, p. 304. Kodaikanal; Trichinopoly.
T. oreophila	Simon, 1906, p. 303. Gingee, Coromandel Coast; Kandy, Ceylon.
T quisquiliarum	Simon, 1906, pp. 302-303. Colombo.
T vulcani	Simon, 1906 (2), p. 412. Mt. Gede, Java.

Genus **Oedignatha** Thorell.

O. affinis	Simon, 1897 (4), p. 12. Maturata, Ceylon.
O. albofasciata	Strand, 1907 (3), p. 563. India.
O. bicolor	Simon, 1896 (2), pp. 415-416. Newara Eliya, Ceylon.
O. bucculenta	Thorell, 1897 (1), pp. 197-199. Carin Cheba.
O. coriacea	Simon, 1897 (4), p. 14. Kandy, Ceylon.
O. decorata	Simon, 1897 (4), p. 13. Quingua, Antipolo, and Manila, Philippines.
O. ferox	(Thorell) 1897 (1), pp. 201-203. Carin Cheba.
O. flavipes	Simon, 1897 (4), p. 14. Kandy.
O. gulosa	Simon, 1897 (4), p. 12. Maturata, Ceylon.
O. major	Simon, 1896 (2), p. 415. Newara Eliya, Ceylon.
O. montigena	Simon, 1897 (4), p. 14. Maturata.
O. procerula	Simon, 1897 (3), p. 261. Dehra Dun.
O. retusa	Simon, 1897 (4), pp. 12-13. Kandy.
O. rugulosa	Thorell, 1897 (1), pp. 199-201. Chiala, Burma.
O. scrobiculata	Thorell, 1881, pp. 209-210 (footnote). Penang.
	Thorell, 1889-90, pp. 345-349. Penang; ? Java.
	Simon, 1897 (4), p. 14. Kandy and Galle, Ceylon.
	Simon, 1904 (2), p. 70. Java.
	Simon, 1906, p. 302. Mahé, Malabar Coast.
	Gravely, 1921, p. 418, pl. xvii, fig. 1. Barkuda Island, Chilka Lake; also Malabar Coast.
O. sima	Simon, 1904 (1), p. 286. Indo-China.
O. striata	Simon, 1897 (4), p. 13. Galle, Ceylon.

Genus **Medmassa** Simon.

M. armata Simon, 1896 (2), p. 415. Galle, Ceylon.
M. frenata (Simon) 1877, pp. 88-89, pl. iii, figs. 11-11*a*. Manila.
M. insignis (Thorell) 1889-90, pp. 365-368. Sungei Bulu, Sumatra.

Genus **Corinna** Koch.

C. gulosus (Thorell) 1878, pp. 175-178. Amboina.
=*sericeus* (Thorell) 1887, pp. 41-45. Bhamo.
=*punctata* (Thorell) 1891, pp. 21-23. Nancowry.
(Thorell) 1897 (1), p. 243. Palon and Mandalay.
C. proboscidea . Strand, 1913, p. 120. Ceylon.

Subfamily MICARIINAE, P.=Subfamily MICARIINAE, S.

Genus **Sphingius** Thorell.

S. bilineatus Simon, 1906 (1), pp. 301-302. Mahé, Malabar Coast.
S. caniceps . Simon, 1906, p. 301. Gingee, Coromandel Coast.
S. gracilis (Thorell) 1895, pp. 36-38. Tharrawaddy.
(Thorell) 1897 (1), p. 233. Palon.
S. scrobiculatus Thorell, 1897 (1), pp. 236-237. Palon.
S. scutatus Simon, 1897 (4), p. 15. Matale, Ceylon.
Simon, 1897 (1), figs. 155-157 (p. 155).
S. thecatus . Thorell, 1890, pp. 285-288. Penang.
S. tristiculus Simon, 1903, pp. 33-34. Phuc-Son, Annam.
S. vivax . . (Thorell) 1897 (1), pp. 233-236. Moulmein.

Genus **Jacaena** Thorell.

J. distincta Thorell, 1897 (1), pp. 231-233. Mt. Mooleyit, Tenasserim.

Genus **Castaneira** Keyserling.

? C. inquinata (Thorell) 1889-90, pp. 352-355. Sumatra.
Simon, 1897 (1), p. 167. Sumatra.
C. zetes . . . Simon, 1897 (2), p. 294. Karachi.
Simon, 1906, p. 302. Pondichery; Madura.

Genus **Copa** Simon.

C. annulata Simon, 1906 (2), p. 407. Ceylon (mountains).
C. spinosa . . . Simon, 1906 (2), p. 406. Galle, Ceylon.

Genus **Corinnomma** Karsch.

C. comatulatum	Thorell, 1891, pp. 23-25. Sambelong, Nicobars.
C. harmandi	Simon, 1886, p. 24. Siam or Cambodia. Thorell, 1887, pp. 45-48. Bhamo. Thorell, 1895, p. 40. Tharrawaddy and Rangoon. Workman, 1896, p. and pl. 79. Malaysia (probably Singapore or Java). Thorell, 1897 (1), p. 239. Moulmein, Palon, Bhamo, and the Carin Cheba mountains.
C. moerens	Thorell, 1889-90, pp. 349-352. Sumatra.
C. quadritaeniatum	Simon, 1904 (2), p. 69. Java.
C. severum[1] subsp. *javanum*	Simon, 1904 (2), p. 69. Java.
C. thorelli	Simon, 1904 (2), p. 68. Java.

Genus **Coenoptychus** Simon.

C. pulcher	Simon, 1885, p. 37. Ramnad.
=*mutillarius*	(Karsch) 1892, p. 295, fig. Ceylon.
=*pulchellus*	Green, 1912, pp. 92-93, figs. 5-6. Ceylon.[2] Gravely, 1912, p. 87.

Genus **Aetius** Cambridge.

A. decollatus	Cambridge, 1897 (2), pp. 1007-1008, pl. lii.

Genus **Micaria** Westring.

M. caesia	(Koch). Philippines and Australia.

Genus **Apochinomma** Pavesi.

A. ambiguus	(Thorell) 1897 (1), pp. 238-239. Chiala, Burma.
A. dolosum	Simon, 1897 (3), p. 261. Dehra Dun.[3]
A. nitidus	(Thorell) 1895, pp. 39-40. Tharrawaddy.

Genus **Sphecotypus** Cambridge.

S. birmanica	(Thorell) 1897 (1), pp. 240-242. Carin Cheba.
S. taprobanicus	Simon, 1897 (1), p. 170. Kandy, Ceylon.

[1] *C. severum* (Thorell) 1877, pp. 481-483. Kandari, Celebes.
[2] See also *Spolia Zeylanica* IV, pp. 181-182 (1907).
[3] I have not succeeded in tracing this record.

Family CTENIDAE.

This family has proved particularly difficult. The collection seems to indicate that its Indian species at least are not very widely distributed, and I have been forced to the conclusion that most of the species before me are new. As only a single species—*Ctenus smythiesi* Simon—has yet been described from the Himalayas, and that from an area not represented in this collection, and as none have yet been described from the Indian Peninsula, this is not very surprising, in spite of the comparatively large size and evident abundance of some of the species. In the genus *Ctenus* about half of these apparently new species are, however, represented by one or two female specimens only, and to these I do not feel justified in applying new names at present. They have therefore had to be omitted.

Sub-family *CTENINAE.*

Genus **Ctenus** Walckenaer.

The species before me may be separated thus—

Females.

1.	Size moderately small, legs long and slender; median piece of vulva pentagonal, not wider than long ..	*C. denticulatus*, p. 231.
—	Size larger, legs relatively shorter and stouter; median piece of vulva not pentagonal, often wider than long	2
2.	Median piece of vulva transversely ⊥-shaped, cross-piece long and somewhat bowed	*C. ceylonensis*, p. 232.
—	Median piece of vulva not ⊥-shaped	3
3.	Median piece of vulva roughly triangular, squarish or longitudinally rectangular, lateral pieces well developed	4
—	Median piece of vulva strongly transverse, more or less oval or rectangular, lateral pieces less prominent	7
4.	Median piece[1] of vulva more or less triangular, its lateral margins often dark coloured but never convex; lateral pieces dark and often convex ..	5
—	Median piece[1] of vulva longitudinally rectangular, squarish or triangular with strongly convex lateral margins, beyond which are the dark coloured lateral pieces	*C. indicus*, p. 234.
5.	Lateral pieces of vulva clearly separated from median piece	*C. andamanensis*, p. 232.
—	Lateral pieces of vulva closely in contact with median piece	6
6.	Lateral pieces of vulva of moderate size	*C. thorellii*, p. 232.
—	Lateral pieces of vulva large and tumid	*C. sikkimensis*, p. 232.
7.	Horns arising near postero-lateral angles of vulva very large and dark coloured, directed inwards ..	*C. trabifer*, p. 234.
—	Horns arising near postero-lateral angles of vulva very much smaller	8
8.	Postero-lateral horns of vulva directed obliquely forwards and inwards	*C. himalayensis*, p. 234.
—	Postero-lateral horns of vulva directed backwards ..	*C. cochinensis*, p. 235.

[1] By this is meant only the portion between the two darkly coloured lateral pieces. This often extends more or less distinctly forwards in front of them, but any such extension is not here included in defining the shape.

Males.

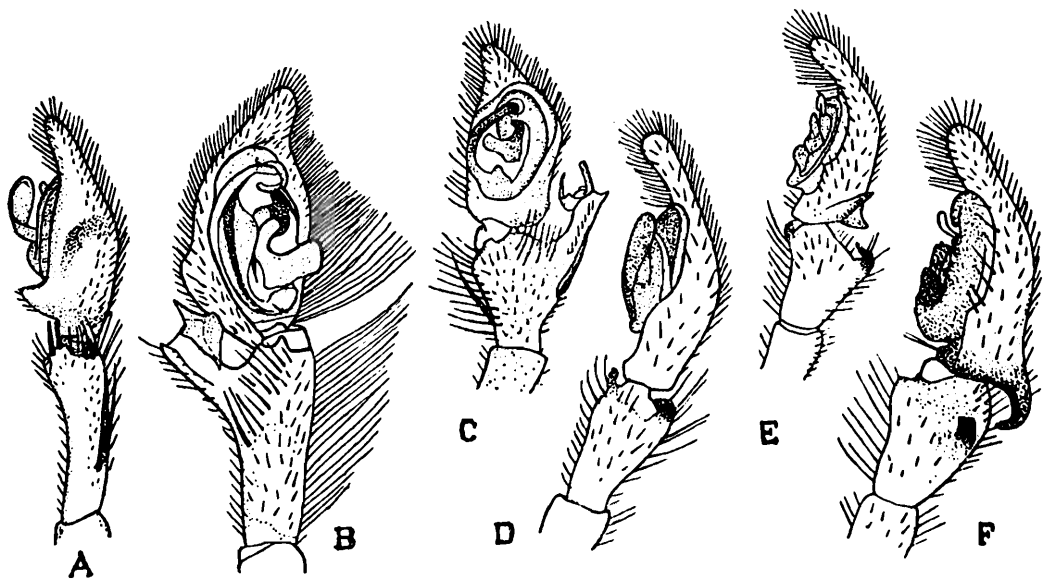
1.	Size moderately small, legs long and slender; tibial apophysis of palp represented by two short stout spines	*C. denticulatus*, p. 231.
—	Size larger, legs relatively shorter and stouter; tibial apophysis more strongly developped	2
2.	Tibial apophysis of palp more or less straight and parallel sided, furnished with a delicate chitinous lamina[1]; tarsus of palp without apophysis ..	3
—	No such lamina present, apophysis pointed ..	4
3.	Tibia of palp scarcely wider at apex than at base, lamina expanded; large species	*C. sikkimensis*, p. 232.
—	Tibia of palp more or less triangular, over twice as wide at apex as at base; smaller species ..	*C. himalayensis*, p. 234.
4.	Tarsus of palp without apophysis	*C. floweri*, p. 235.
—	Tarsus of palp with one or more apophyses ..	5
5.	Tarsus of palp with two small forwardly directed apophyses on the outer side	*C. cochinensis*, p. 235.
—	Tarsus of palp with one large backwardly directed apophysis on the outer side..	*C. ? corniger*, p. 236.

Ctenus denticulatus (Simon).

Figs. 1 A & 2 A.

Leptoctenus denticulatus, Simon, 1884, pp. 355-357.
Leptoctenus denticulatus, Cambridge, 1897 (1), pp. 338-339, pl. iv, figs. 4-9.

I have followed Simon (1897, 1, p. 114) in regarding *Leptoctenus* as a synonym of *Ctenus*. But the two named specimens from Tharrawaddy (male, imperfect, 7 mm. long, female 9 mm. long) of this species lent me by the British Museum are of much lighter build than any of the other species of *Ctenus* before me. These two specimens



TEXT-FIG. 1.

Ctenus spp. Tibia and tarsus of male palp.

A. *Ctenus denticulatus.*
B. *Ctenus sikkimensis.*
C. *Ctenus himalayensis.*
D. *Ctenus floweri.*
E. *Ctenus cochinensis.*
F. *Ctenus ? corniger.*

[1] This lamina is, however, very lightly attached and has been lost from both palps of one of the specimens of *C. sikkimensis* which, in the absence of other specimens, I should have supposed to belong to the second group.

were collected by Oates in Tharrawaddy and are therefore doubtless the ones already figured by Cambridge, who throws slight doubt on Thorell's identification of them with Simon's species, but provisionally accepts it as probably correct. The median piece of the vulva is pentagonal, with dark postero-lateral markings, on the outer side of which the margins of the posterior ends of the side pieces form a small elevated lamina. The tibia of the male palp has two strong spines in place of the usual apophysis.

Ctenus ceylonensis Cambridge.

Figs. 2 B & C.

Ctenus ceylonensis, Cambridge, 1897 (1), pp. 346-347, pl. iv, figs. 12 and 16.
Ctenus ceylonensis, Cambridge, 1902, p. 414, pl. vii, fig. 14.

Two females, one from Kandy and the other from Galle. Length 13 and 18 mm. respectively.

The transversely ⊥-shaped vulva, with long narrow crosspiece slightly convex in the middle behind, separates this species from all others in the collection. The median piece is rather broad and covered with coarse hair in both specimens, one of which seems to have the plates somewhat less completely developed than the other (compare figs. 2 B and 2 C).

Ctenus andamanensis, n. sp.

Fig. 2 D.

Three specimens from the Little Andamans and two from the Andamans. Length of female 15-22 mm. Male unknown.

The vulva is of the same general type as in the next three species, but differs constantly from each of them as already noted in the key on p. 230 and as shown in fig. 2 D.

The lower surface of the abdomen bears two pairs of longitudinal rows, somewhat convergent behind, of white spots, with smaller and less regular white spots laterally.

Ctenus thorellii Cambridge.

Fig. 2 E.

Ctenus thorellii, Cambridge, 1897 (1), pp. 342-344, pl. iv, figs. 2, 15 and 27.

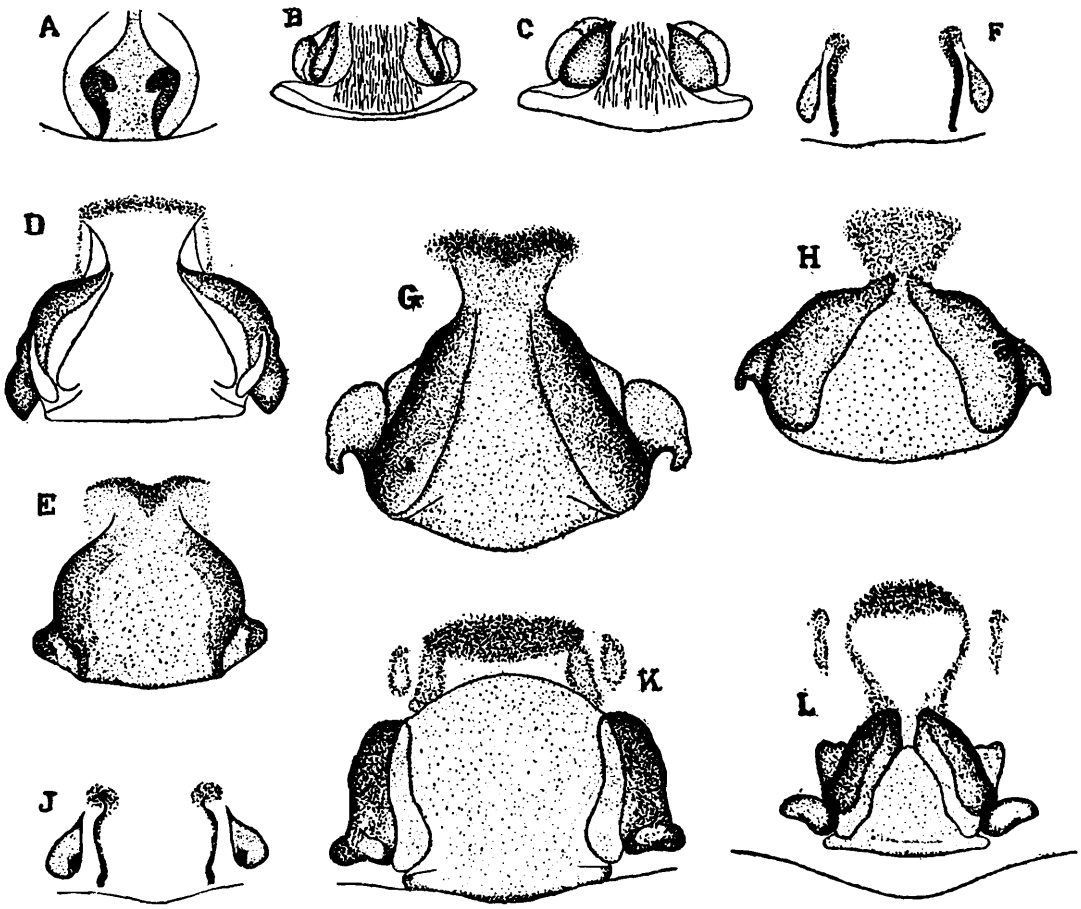
A single female from Peradeniya, Ceylon, 15 mm. long. Easily distinguishable from the preceding and following species, which it closely resembles in form and general colouration, by the structure of the vulva (see fig. 2 E). The median plate of the vulva is covered with coarse hair all of which has, however, been rubbed off behind.

Ctenus sikkimensis, n. sp.

Figs. 1 B & 2 F-H.

A large number of specimens, including a few males, from the Darjeeling District of the E. Himalayas, where it is evidently much the most abundant member of the family Ctenidae; and two closely allied if

not identical females from Assam. In the latter the median plate of the vulva seems to be rather unusually broad behind and narrow in front; but these proportions are somewhat variable even among specimens from the Darjeeling District and the difference is a very small one, if indeed it is a definite one at all. In the absence of males the Assam females may provisionally be included in this species. The localities represented are " Sikkim " ; Darjeeling District, 1,000-3,000 ft. ; Punkabari ; Singla, 1,500 ft. ; Tindharia ; Ghumti, *ca.* 4,000 ft. ; Pashok, 1,500 and 3,500 ft. ; and Kalimpong, 2,000-4,500 ft. Also Assam and Goalpara, Assam. Length of female about 17-26 mm., of male 15-22



TEXT-FIG. 2.

Ctenus spp. Vulva.

A. *Ctenus denticulatus.*
B. *Ctenus ceylonensis* from Kandy.
C. *Ctenus ceylonensis* from Galle.
D. *Ctenus andamanensis.*
E. *Ctenus thorellii.*
F. *Ctenus sikkimensis* not fully developed.
G. *Ctenus sikkimensis.*
H. *Ctenus sikkimensis.*
J. *Ctenus indicus* not fully developed.
K. *Ctenus indicus.*
L. *Ctenus indicus.*

mm. The general colouration is rather dark, distinctly darker than in *C. andamanensis*, and the white spots on the ventral surface of the abdomen are often more or less obsolete. The specimens from which the illustrations of the vulva and of the tibia and tarsus of the male palp are taken all came from Kalimpong. The curious dark coloured but thin and transparent chitinous appendage of the tibial apophysis of the male palp has the form of a roughly ◊-shaped lamina.

Ctenus indicus, n. sp.

Figs. 2 J-L.

One female from Ootacamund and several from the Cochin timber forests on the Western Ghats (Parambikulam, 1,700-3,200 ft.; Kavalai, 1,300-3,000 ft.; and Forest tramway mile 10-14, 0-300 ft.). Length 16-27 mm., the Ootacamund specimen being distinctly larger than the largest of the Cochin ones which is only 23 mm. long.

The general colouring resembles that of *C. sikkimensis*, but perhaps tends not to be quite so dark. The median piece of the vulva varies so greatly in shape that I should unhesitatingly have regarded the specimens as belonging to two species, one in which it is triangular and the other in which it is quadrangular, had not the side pieces been so strikingly alike in all. This seems to me to indicate that a larger series of specimens will probably show that transitional forms exist and that only one species is represented, though in the absence of males this must remain uncertain. In the event of the two forms proving to be distinct the name *indicus* can most suitably be applied to the form with rectangular central piece as this includes the single specimen from the Nilgiris as well as several from Cochin. It is possible that the other form is more restricted in range. The figures have been taken from two ovigerous specimens and one immature one, all from Parambikulam.

Ctenus trabifer Thorell.

Fig. 3 A.

Ctenus trabifer, Thorell, 1887, pp. 288-291.
Ctenus trabifer, Cambridge, 1897 (1), pp. 332-333, pl. iv, fig. 14.

A single named female, much broken, about 17 mm. long, from Tenasserim, lent by the British Museum.

The vulva is shown in fig. 3 A. It has a pair of faint longitudinal grooves separating a pair of broad lateral areas, which are more or less blackened, from a squarish median area of a dark reddish colour; and has a pair of large dark coloured inwardly directed horns behind. But it so closely resembles the vulva of *C. himalayensis* and *C. cochinensis* as seen under a hand lens that without the aid of a binocular microscope the three, though not difficult to distinguish by general appearance, are very hard to define by definite characters.

Ctenus himalayensis, n. sp.

Figs. 1 C & 3 B.

One male and two females from Lebong, 6,000-6,600 ft.; females only from Pashok, 5,000 ft., Kalimpong 600-1,500 ft., and Sitong Ridge, 4,700 ft.; all in the Darjeeling District of the Eastern Himalayas. Male 9 mm., females 11-16 mm. long.

The median plate of the vulva shows no trace of the faint grooves seen in that of *C. trabifer* and is uniformly reddish brown in colour except for a more or less distinct blackening of the extreme margin. The posterior lateral horns are small and are directed forwards rather than inwards. The tibia and tarsus of the male palp are shown in fig. 1 C. They differ greatly from those of *C. sikkimensis*, close affinity to which

is, however, suggested by the presence of a dark coloured but thin and transparent chitinous appendage on the tibial apophysis. But instead of being a simple lamina it forms a minute pouch armed with elongate slender processes.

Ctenus floweri Cambridge.

Fig. 1 D.

Ctenus floweri, Cambridge, 1897 (1), pp. 348-349, pl. iv, figs. 22-25.

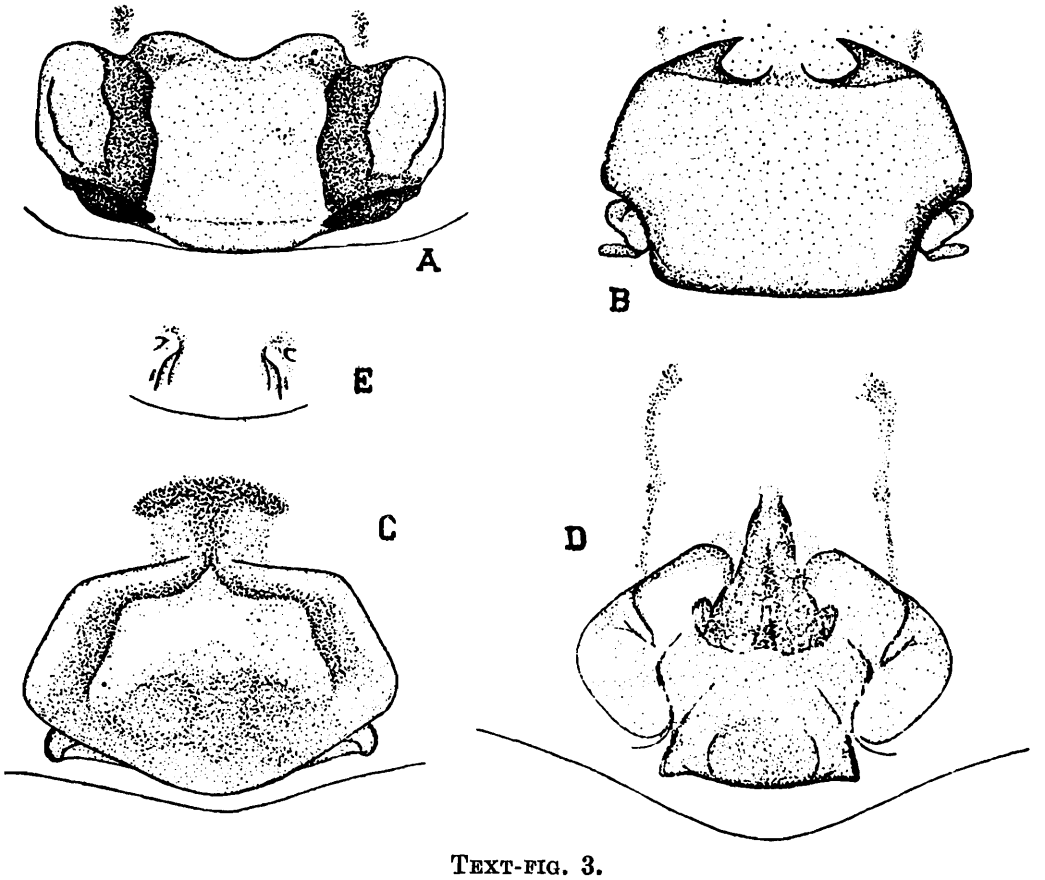
One named male and immature specimens from Penang, lent by the British Museum. Male 16 mm. long.

In the absence of the female I find it convenient provisionally to place this species here between *C. himalayensis*, which the male resembles in not having any apophysis on the palp of the tarsus, and *C. cochinensis*, which it resembles in not having any thin chitinous structure developed from the tibial apophysis. These are, however, purely negative characters ; and Cambridge's figure of the vulva suggests that it would perhaps be more correctly placed near *C. denticulatus*. The distinctive characters of the male palp are shown in fig. 1 D.

Ctenus cochinensis, n. sp.

Figs. 1 E & 3 C.

A number of specimens from the Cochin State timber forests on the Western Ghats, including two males from Kavalai, 1,300-3,000 ft. and



TEXT-FIG. 3.

Ctenus and *Acantheis* spp. Vulva.

A. *Ctenus trabifer.*
B. *Ctenus himalayensis.*
C. *Ctenus cochinensis.*
D. *Acantheis indicus.*
E. *Acantheis ? indicus* not fully developed.

two from Parambikulam, 1,700-3,200 ft., as well as females from these two places and also one from between the tenth and fourteenth miles on the State Forest Tramway, 0-300 ft. Males 11-12 mm. long, females 11-15 mm. long.

The borders of the vulva are much more extensively blackened than in *C. himalayensis*, and the distribution of this blackening is quite different from that in the single available specimen of *C. trabifer* (compare figs. 3 A & 3 C). The posterior lateral horns are very small and are directed backwards. The tibia of the male palp (fig. 1 E) bears distally on the outer side an apophysis, stout at the base, much more slender and downwardly directed towards the apex, without any trace of the curious chitinous organs characteristic of *C. sikkimensis* and *C. himalayensis*. The tarsus bears two short stout forwardly directed tooth-like apophyses on its outer side.

? **Ctenus corniger** Cambridge.

Fig. 1 F.

? *Ctenus corniger*, Cambridge, 1898, p. 26.
Ctenus corniger, Cambridge, 1902, p. 413.

A single male from Singapore, kindly lent by the British Museum. Length 19 mm. The type specimen was recorded as from Natal. The specimen now before me is evidently one of the two from Singapore which led Pickard Cambridge in 1902 to think that possibly the original record might be wrong.

The tarsus of the palp bears a large curved backwardly directed apophysis on the outer side, which at once distinguishes it from all other males of the genus that I have seen.

Sub-family *ACANTHEINAE.*

Genus **Acantheis** Thorell.

This genus is represented by at most two species from S. India. If distinct they agree with each other, and differ from other members of the genus as defined by Simon (with which they agree in other respects) in having the anterior median eyes much smaller than the posterior medians. But as the smaller and more numerous of the two may possibly be a developmental stage of the larger I hesitate to give it a separate name. Both are rather large spiders with very long and slender legs. The ocular quadrangle is fully as far from the margin of the clypeus as it is long, and is slightly longer than broad. There are at least 5 teeth on the lower margin of the chelicerae, the first three of these being distinctly larger than the rest.

Acantheis indicus, n. sp.

Fig. 3 D.

Two females, 22 and 26 mm. long, from Kavalai, 1,300-3,000 ft., Cochin State, and Ootacamund, Nilgiri Hills, respectively. The latter is much faded. The former is dark brownish in colour, with the dorsal

surface variegated with white, and possibly a more golden brown central band on the anterior half the abdomen, but this last may be an artifact. The femora have three whitish bands, situated subbasally, medially and apically and there is a more definitely white subapical band on the tibiae. The vulva is a somewhat rounded plate with an elevated tongue, slightly grooved in the middle line, extending backwards across its anterior half from the anterior margin, and with a pair of more or less erect horns arising from the lateral margins.

? Acantheis indicus, juv.

Fig. 3 E.

A number of females and three immature males from Parambikulam, 1,700-3,200 ft., and several from Kavalai, 1,300-3,000 ft., both in the Cochin timber forests. One, almost certainly identical, from Yercaud in the Shevaroy Hills. Length 11-20 mm. Yercaud specimen 21 mm.

The colour closely resembles that of the two adult females of *C. indicus* just described, with pale median band in the anterior part of both carapace and upper surface of abdomen, and more or less distinct basal as well as subapical bands on the tibiae, especially the third which, as in the two adult females, are much the shortest.

The vulva (fig. 3 E) consists of two small specially chitinised indentations of the posterior margin of the genital segment, with a pair of minute processes which might develop into the horns, and a small area between them which might develop into the tongue-like process and posterior median piece of the vulva of the mature *C. indicus*.

Family EUSPARASSIDAE.

Simon's group Deleneae is represented in Petrunkevitch's classification by two subfamilies, Eusparassinae and Micrommatinae, the former together with the Sparianthidinae being distinguished both from the latter and from all other subfamilies in which the two posterior pairs of legs are not much shorter than the two anterior pairs, by having the quadrangle of median eyes wider than long instead of longer than wide. This distinction seems to me to be quite unworkable, for in most of the species I have seen of the genera *Eusparassus* and *Olios* into which the old genus *Sparassus* is split, this quadrangle is practically square though *Eusparassus* is placed by Petrunkevitch in the Eusparassinae and *Olios* in the Micrommatinae.

Simon (1897, pp. 1020 and 1026) has pointed out the probable importance of the hair on the rounded lower anterior margin of the basal joint of the chelicerae. This is obviously a character that must be used with caution; for not only is it very inconspicuous, especially in small forms, but also such hair if present may easily be rubbed away, especially in specimens that have long been preserved. But I have found it quite a satisfactory distinction in practice as a generic character for *Eusparassus* and *Olios*. If, however, this character is to be used in defining the subfamilies, Petrunkevitch's classification will need considerable alteration; for *Isopoda* and *Rhytimna*, which he places in the Eusparassinae, agree with *Olios* and not with *Eusparassus*. As

no other genera either of Eusparassinae or Micrommatinae are represented in the collection before me I cannot persue the question further, except to point out that *Thelcticopis*, the only genus of the Sparianthidinae in the collection, agrees in this respect with *Eusparassus* and the Heteropodinae, but that *Palystes*, the only representative of the Palysteinae, agrees with *Olios*, which further agrees, according to Simon, with all the rest of his Deleneae (=Petrunkevitch's Eusparassinae and Micrommatinae combined) except *Cercetius*. I have therefore provisionally reunited the Eusparassinae and Micrommatinae and, to avoid possible confusion, I have retained Simon's name, changing the termination so as to give it sub-family form as Deleneinae.

In other respects the definitions given by Simon and Petrunkevitch are much alike. In view, however, of my inability to follow the latter as regards this one point I have found most convenient to adopt Simon's definitions of the sub-families (or groups as he calls them) throughout.

Sub-family *DELENEINAE.*

(Incl. *Eusparassinae* and *Micrommatinae* of Petrunkevitch.)

The four genera of this subfamily that are represented in the collection before me may be separated from each other thus—

1.	Lower anterior margin of basal joint of chelicerae with a series of long hairs, much as on the corresponding upper margin	2
—	Lower anterior margin of basal joint of chelicerae with not more than one such hair	*Eusparassus*[1].
2.	Cephalothorax flat; posterior lateral eyes distinctly prominent and larger than posterior medians ..	3
—	Cephalothorax convex; posterior lateral eyes less dissimilar from posterior medians; posterior line of eyes straight or lightly procurved as seen from above	*Olios*, p. 239.
3.	Posterior eyes lightly recurved as seen from above; thoracic groove elongate	*Isopoda*, p. 238.
—	Posterior eyes lightly procured as seen from above; thoracic groove short	*Rhytimna*[2].

Genus **Isopoda** Koch.

Isopoda armillata (Thorell).

Fig. 4 A.

Holconia armillata, Thorell, 1887, pp. 233-236.

Two mature females, one from the second defile of the Irrawady (under stones on bank of hill stream) and one from Lashio, Burma, 3,000 ft., may be identified, largely on geographical grounds, with the species described by Thorell under the name *armillata*, from a single immature female from Shwegoo-myo. Both specimens are very large (length of carapace a little more than 1 cm.) and of a dark brown colour.

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[1] Represented by a single specimen of *Eusparassus argelasius* Latreille, from Europe.

[2] Represented by a single specimen of *Rhytimna valida* Blackwall, from the Seychelles.

The cavity of the vulva, which is obscured by long hair, is a little broader than long, divided in front by a narrow longitudinal lamina which

TEXT-FIG. 4.

Isopoda spp. Vulva.
A. *Isopoda armillata.* B. *Isopoda pessleri.*

expands behind into a broad thickened plate covering the floor of the cavity. Posterior to the cavity is a pair of large, more or less circular lateral plates, flattened on their inner sides which are closely opposed throughout their length.

Isopoda pessleri Thorell (fig. 4 B), of which a mature female and an immature male from Singapore have been kindly lent to me by the British Museum, differs in having the vulva in the form of a horny depression surrounded by a horny ring.

Genus **Olios** Walckenaer.

There are a few species in the collection which I have been unable to identify and which, being represented by only one or two specimens, it seems best not to describe at present. The remaining species, all of which seem to be common, may be recognized thus—

Females.

1.	Lobes of vulva in contact throughout greater part of their length, diverging round definite cavity in front; ocular quadrangle and carapace longer than broad; size at least moderately large ..	*O. xerxes*, p. 240.
—	Lobes of vulva in front often united, never diverging round definite cavity; large or small species ..	2
2.	Lateral lobes of vulva united in front	3
—	Lateral lobes of vulva distinct throughout ..	6
3.	Cavity of vulva roughly U-shaped, much narrowed in front, and usually containing a more or less well marked median sclerite	*O. lamarcki*, p. 241.
—	Cavity of vulva more V-shaped; median sclerite often less conspicuous or absent	4
4.	Cavity of vulva extending forwards well beyond centre of plate	*O. iranii*, p. 242.
—	Cavity of vulva not or scarcely reaching centre of plate	5
5.	Cavity of vulva large, scarcely as broad as long, extending about to centre of plate; large species ..	*O. punctipes*,[1] p. 242.
—	Cavity of vulva small, scarcely as long as broad, not extending to centre of plate; small species ..	*O. milleti*, p. 244.
6.	Lateral lobes of vulva divided by transverse groove into matt anterior and glossy posterior portions, latter widely, former more narrowly, separated by median plate	*O. tener*, p. 244.
—	Lateral lobes of vulva not transversely divided, very prominent, in contact throughout	*O. obesulus*, p. 245.

[1] With this species may be grouped *O. pinangensis* (Thorell) from Penang.

Males.

1.	Tibia of palp with apical apophysis only	2
—	Tibia of palp with basal or median as well as apical apophysis	7
2.	Tibial apophysis a straight, slender, sharp spine; ocular quadrangle and carapace scarcely as broad as long	*O. xerxes*, p. 240.
—	Tibial apophysis not of this form	3
3.	Tibial apophysis stout, bluntly pointed, not strongly curved	4
—	Tibial apophysis a slender sharply pointed spine curved through about 90°	*O. milleti*, p. 244.
4.	Tibial apophysis a simple stout forwardly directed process	5
—	Tibial apophysis of more elaborate form	*O. wroughtoni*, etc., p. 244.
5.	Palpal organ with a large forwardly directed tooth or spike beneath near base	*O. lamarcki*, p. 241.
—	Palpal organ with this tooth less conspicuous and directed more inwards	6
6.	Palpal organ without spirally coiled style but with a strongly elevated backwardly directed pointed lamina on inner side	*O. iranii*, p. 242.
—	Palpal organ without elevated lamina but with oblique spirally coiled style distally..	*O. punctipes*, p. 242.
7.	Basal tibial apophysis slender, directed forwards; palpal organ with outwardly directed spine ..	*O. tener*, p. 244.
—	Basal tibial apophysis very stout, strongly divergent from tibia; palpal organ with inwardly directed spine	*O. obesulus*, p. 245.

Different species differ somewhat from one another in the average intensity of their colouration. But individuals of a single species often vary enormously among themselves, and the presence or absence of a black patch on the lower surface of the abdomen cannot be regarded as a specific character as it has been by some authors.

Olios xerxes (Pocock).

Figs. 5 A & 6 A.

Sparassus xerxes + *maynardi* + *pearsoni*, Pocock, 1901, pp. 489-490 and 492-493.

I have found it convenient provisionally to group the forms mentioned in the synonymy, together with several others closely allied to them, under the single specific name *xerxes*, as the material at my disposal does not suffice to determine the possible range of variation or change with growth.

The British Museum has kindly lend me a mature female and immature male of *O. maynardi* from Baluchistan and a mature male of *O. pearsoni* from East Khandesh.

The Zoological Survey collection includes two females (one scarcely mature) of typical *O. xerxes* collected by Prof. Zugmayer at Panjgur on the Mekran coast, a female of *O. maynardi* from the Punjab, a female of *O. pearsoni* from Poona (Ghats), a male from Robat (on the frontier between Afghanistan and Persian Baluchistan, about 30° N and 61° E) and a female from Nazratabad, probably both belonging to yet another form; and a female from the Andamans and two males from outlying spurs of the Kakhyen Hills which are probably different again. The typical *xerxes* has rather larger eyes than any of the others, and seems usually to have black markings on the lower side of the abdomen which

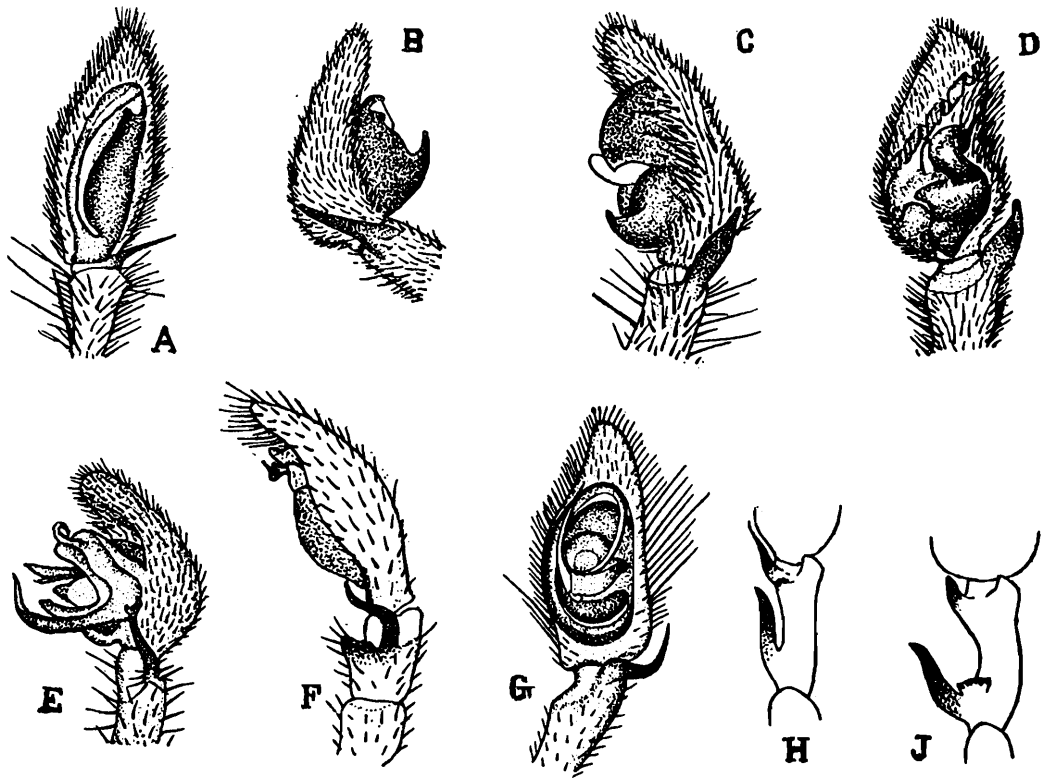
the others lack; but I am unable to distinguish its vulva from that of *O. maynardi*, nor is the specimen of the latter noticeably smaller than are those of the former. All the other forms are decidedly smaller and paler, as were Pocock's specimens of *O. maynardi*. The vulva of *O. pearsoni* is distinguished from that of all others by the presence of a black sclerite instead of a white membrane in the gap between its lobes in front. In the Nazratabad specimen the lobes seem to end more abruptly in front than in any of the others, while in the specimen from the Andamans they are very long and narrow.

Olios lamarcki (Latreille).

Figs. 5 B & 6 B-C.

Sparassus lamarcki, Pocock, 1900, p. 267.

The collection includes specimens from Anuradhapura and Matale, Ceylon; Madras; Velacheri, Chingleput District; Barkuda Island in the Chilka Lake and Gopalpur near Berhampur, Ganjam District; Balugaon and Bhubaneshwar, Puri District, Orissa; Serampore, Bengal; and Chakradhapur, Singbhoom District.



TEXT-FIG. 5.

Olios spp. Tibia and tarsus of male palp.

A. *Olios xerxes.*
B. *Olios lamarcki.*
C. *Olios iranii.*
D. *Olios punctipes.*
E. *Olios* sp. nr. *wroughtoni.*
F. *Olios wroughtoni.*
G. *Olios milleti.*
H. *Olios tener.*
J. *Olios obesulus.*

The vulva of *O. lamarcki* consists of two side-pieces and a more or less well-developed centre piece. The former enclose a cavity which is very narrow and acutely pointed in front, abruptly widened to a

somewhat variable degree behind. The centre piece is dark in front, where it completely fills the floor of the narrow anterior part of this cavity, usually paler and much broader behind, but very variable, sometimes quite small or absent. In view of this variability of the vulva and of the inconstancy of colour it will not be surprising if Pocock's "*Sparassus*" *admiratus* and possibly even his *hampsoni*, *fuligineus*, and *greeni* (1901, pp. 491-492 and 494-495) prove to be indentical with *lamarcki*.

The tibia of the male palp bears distally a moderately stout, slightly curved, pointed apophysis on the outer side. The palpal organ bears a stout, sharply pointed, forwardly curved spike.

Olios iranii (Pocock).

Figs. 5 C & 6 D.

Sparassus iranii, Pocock, 1901, p. 492.

This species seems to replace the preceding, which is typical of the Indian Peninsula, in the north and west, apparently overlapping with it in the Bombay Presidency. I have examined specimens from Siripur, Saran, Bihar ; N. W Himalayas ; Dehra Dun ; Fort Thal, Kohat District, N. W Frontier Province ; Khost, Baluchistan ; and Nasariyeh, Mesopotamia. *O. iranii* is closely related to *O. lamarcki*, but seems to lack the black markings which are usually, if not always, developed in that species in greater or less degree.

The vulva is an almost circular plate with à broad, almost parallel sided cleft extending from the middle of the posterior margin to a little beyond the centre and continued forwards from there as a narrow slit about half way to the anterior margin. The floor of this cleft may be either dark or light in colour, even in specimens from a single locality.

Males differ from those of *O. lamarcki* chiefly in the greater thickness and slightly different shape of the tibial apophysis and the presence on the outer side of the palpal organ of a large backwardly directed pointed lamina on the inner side. The spike of the palpal organ, though very strong, is much less conspicuous than in *O. lamarcki* and may easily be overlooked unless the organ is examined from somewhat behind on the inner side or in front on the outer side, being directed obliquely forwards and inwards.

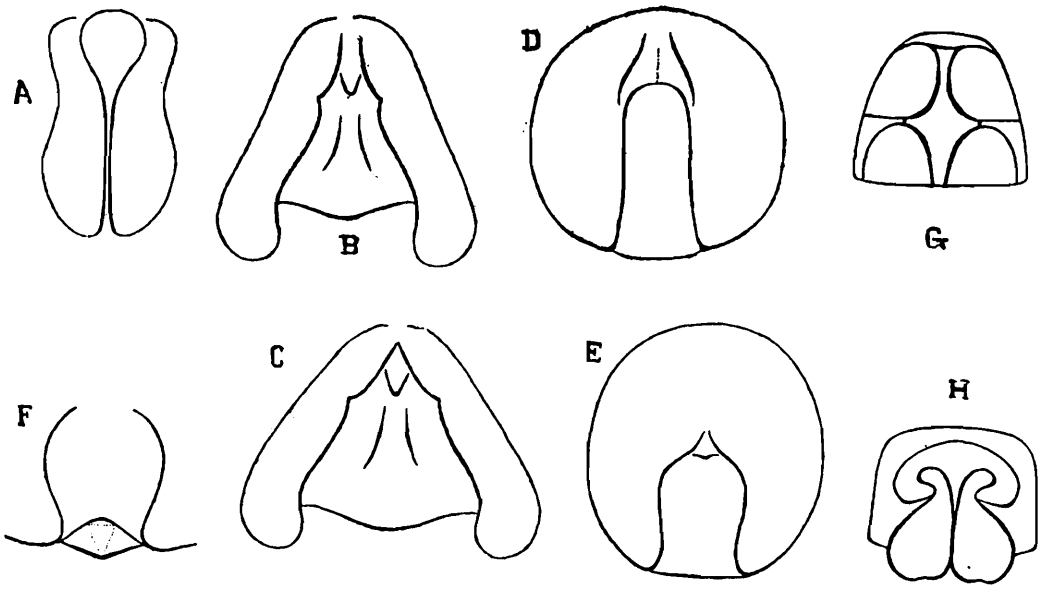
Olios punctipes Simon.

Figs. 5 D & 6 E.

Olios punctipes, Simon, 1884, pp. 339-341.
Sarotes impudicus, Thorell, 1887, pp. 241-244.
Sparassus impudicus + *punctipes*, Pocock, 1900, pp. 268-269.

Specimens have been received from Gopalpur, Ganjam District ; Chanda, Central Provinces ; Fyzabad, United Provinces ; Siripur, Saran, Bihar ; Gmatia, Birbhum District ; Kalimpong 2,000-4,500 ft. and Tindharia 3,000 ft., E. Himalayas ; Serampur, Sibpur (Botanical Gardens) and Salt Lakes near Calcutta ; Garo Hills (Tura 1,200-1,500 ft., and above Tura, 3,500-3,900 ft.), Sonapur and Dejoo, Assam ; Rangamati, Chittagong Hill Tracts ; Maymyo, Burma ; Andamans ; and Lengong, Perak, Malay Peninsula. It appears to represent *O. lamarcki*

in Assam, Burma and the Malay Peninsula, overlapping with it in north Ganjam and Bengal, and with *O. iranii* in Bihar and in the Central and United Provinces.



TEXT-FIG. 6.

Olios spp. Vulva.

A. *Olios xerxes.*
B. *Olios lamarcki.*
C. *Olios lamarcki.*
D. *Olios iranii.*
E. *Olios punctipes.*
F. *Olios milleti.*
G. *Olios tener.*
H. *Olios obesulus.*

It is very variable in colour, tending as a rule to be much darker than *O. lamarcki* but sometimes being as pale as *O. iranii*, so far as may be judged from spirit specimens.

The vulva is not unlike that of *O. iranii* except that the cleft is much shorter, not extending forwards beyond the middle of the plate.

The tibial apophysis of the male is very stout. There is a thick and not very conspicuous inwardly projecting tooth near the base of the palpal organ, and a long oblique and very characteristic spirally coiled style distally, which is rather indistinctly longitudinally grooved as far as the penultimate whorl, which is smooth, the apical portion being very strongly grooved longitudinally.

Females agree closely with Pocock's description of *punctipes* Simon, with which they are no doubt indentical. Males agree equally closely with Thorell's description of *impudicus*, a species separated by Pocock from *punctipes* mainly on grounds of colour, though he himself notes that this is variable in *punctipes*. The material before me convinces me that the colour distinction is valueless and that *impudicus* cannot be separated from *punctipes*. This probably applies also to "*Sparassus*" *pyrozonis*, Pocock (1901, pp. 490-491).

Olios pinangensis (Thorell).

Sarotes pinangensis, Thorell, 1891, pp. 78-80.

The British Museum has lent me a named female from Penang. Its vulva closely resembles that of *O. punctipes* and the two species may prove to be identical. The floor of the vulva in the single

specimen before me is occupied by a dark coloured and strongly chitinized median sclerite instead of by the white membrane commonly found in *O. punctipes*.

Olios wroughtoni (Simon).

Fig. 5 F.

Sparassus wroughtoni, Simon, 1897 (3), pp. 257-258.
Sparassus wroughtoni, Pocock, 1900, p. 268.

A named mature male and immature specimen from Bulsar, S. Gujerat, kindly lent by the British Museum.

This species, of which only the male is known in the mature phase, is not unlike the last three in size and general appearance, but the structure of the tibial apophysis of its palps is more complex (see fig. 5 F).

Allied to this species and even surpassing it in this respect are two mature males from Siripur, Saran, Bihar, the distal end of the left palp of which is shown in fig. 5 E.

Olios milleti (Pocock).

Figs. 5 G & 6 F.

Sparassus milleti, Pocock, 1901, p. 494.

Represented by specimens from Gopaldhara, Darjeeling District; Siripur, Saran, Bihar; Bandra, Bombay; Barkuda Island, Chilka Lake, Ganjam District; Kambakkam Hill, 1,500-2,500 ft., Chingleput District; Madras; and Peradeniya, Ceylon. This is a much smaller spider than any of the preceding, the total length of the carapace, which is rather longer than broad, not exceeding about 7 mm. It is pale greenish in life with or without a large reddish patch on the lower surface of the abdomen, and may easily be mistaken for *Palystes flavidus*. In spirit the pale green disappears and becomes yellowish.

The cavity of the vulva is small, more or less circular, posterior in position, not extending forwards to the middle of the plate.

The tibial apophysis of the male is slender, sharply curved through about a right angle and ending in a fine point. The palpal organ has a long style coiled twice round the bulb.

Olios tener (Thorell).

Figs. 5 H & 6 G.

Sparassus tener, Thorell, 1891, p. 80.
Midamus lutescens, Thorell, 1895, pp. 272-274.
Sparassus lutescens + *tener*, Pocock, 1900, p. 269.
Sparassus rotundiceps, Pocock, 1901, pp. 493-494.

Specimens have been received from Lahore, Punjab; Bombay; Siripur, Saran, Bihar; Serampur, Calcutta and Salt Lakes near Calcutta, Bengal; Bangalore; Madras; and Tharrawaddy, Burma, the last being a named specimen of *O. lutescens* kindly lent by the British Museum. All are small in size and pale in colour, the females with an intensely dark and sharply defined vulva.

The median plate of the vulva is broadest in the middle and most prominent a little further back; it extends from almost the

anterior end to the posterior end between the lateral plates which are each divided into a more or less matt anterior and more or less polished posterior portion, the posterior portions being more widely separated from one another than the anterior, and again subdivided more or less distinctly as in fig. 6 G.

The tibia of the male (fig. 5 H) bears two rather slender, forwardly directed apophyses, one at the base which is directed a little upwards, and one at the distal end which is rather the smaller of the two and directed more downwards, with a tubercle immediately above and behind its base. The palpal organ bears an outwardly directed spine.

Olios obesulus (Pocock).

Figs. 5 J & 6 H.

Sparassus obesulus, Pocock, 1901, p. 493.

This is another small species, not unlike the two last in general appearance. It is represented by specimens from Fyzabad and Allahabad, United Provinces; Siripur, Saran, Bihar; Podaspur, Bengal; Madras; Ponmudi, Travancore; and Tellichery, Malabar Coast. There is also one believed to be from Bombay. They seem to be rather paler than Pocock's types, and in no case are the face and mandibles now black, though they may have been when fresh. The third leg scarcely reaches beyond the base of the protarsus of the second.

The vulva is characterised by a pair of prominent, very dark coloured, lateral plates, in contact throughout their whole length and terminating in front in a more or less distinct sharply curved and outwardly directed prolongation.

One of the females from Siripur has the last four joints of the palp of a male attached to her vulva, rendering the identification of the male particularly clear.

The tibia of the male palp bears two apophyses on its outer side, a very large and strongly divergent basal one, with a tubercle immediately in front of it, and a much smaller distal one. The palpal organ bears an inwardly directed spine.

Sub-family *SPARIANTHIDINAE.*

Genus **Thelcticopis** Karsch.

In addition to *T. canescens* and *T. modesta* described below, the collection includes a male from Sibsagar, Assam, closely allied to *T. bicornutus* Pocock from the Naga Hills, but with the anterior lateral eyes nearer to the laterals and a somewhat different tibial apophysis.

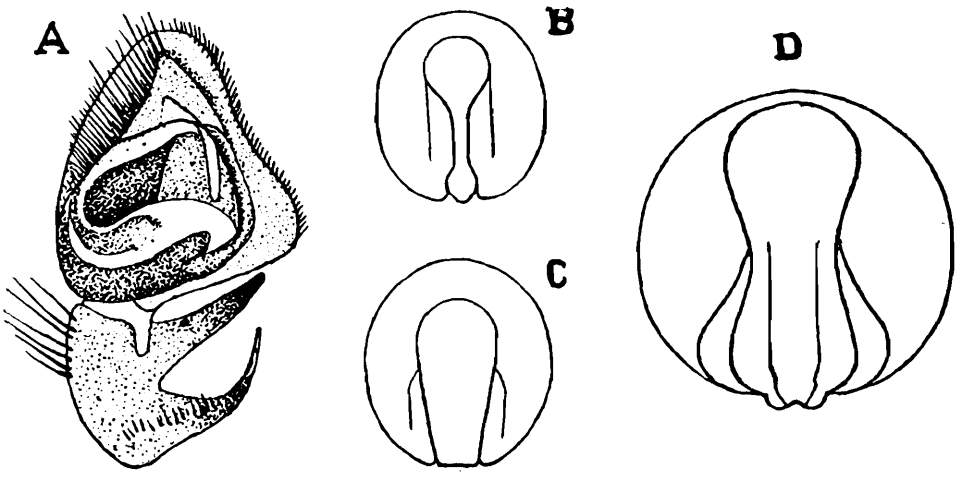
Thelcticopis canescens Simon.

Figs. 7 A-C.

Thelictopis canescens, Simon, 1887 (1), pp. 103-104.
? Thelcticopis birmanica, Thorell, 1895, pp. 274-275.
Thelcticopis canescens + ? birmanicus, Pocock, 1900, p. 271.

Three specimens (male, female and immature) from Upper Tenasserim; two (both female) from Tavoy; and one female with nest and eggs in a leaf

from Port Blair, Andamans. In the Tavoy specimens and in a named specimen of *T birmanicus* from Tennasserim, kindly lent by the British



TEXT-FIG. 7.

Thelcticopis spp. Vulva and male palp.

A. *Thelcticopis canescens.*
B. *Thelcticopis canescens* from Upper Tenasserim.
C. *Thelcticopis canescens* from Tavoy.
D. *Thelcticopis modesta.*

Museum, the vulva as a whole is flatter, and its median piece is broader than in the others, and truncate instead of rounded behind (compare figs. 7 B & C). It is possible, therefore, that two distinct species should be recognized ; but further material is in my opinion required to settle this point definitely.

Thelcticopis modesta Thorell.

Fig. 7 D.

Thelcticopis modesta, Thorell, 1890, pp. 329-332.

A single named spacimen from Penang Hill, kindly lent by the British Museum. The vulva is not unlike that of the preceding species in general form but the median sclerite is very strongly grooved in the middle line. Both rows of eyes are markedly procurved instead of almost straight.

Sub-family *HETEROPODINAE.*

Genus **Torania** Simon.

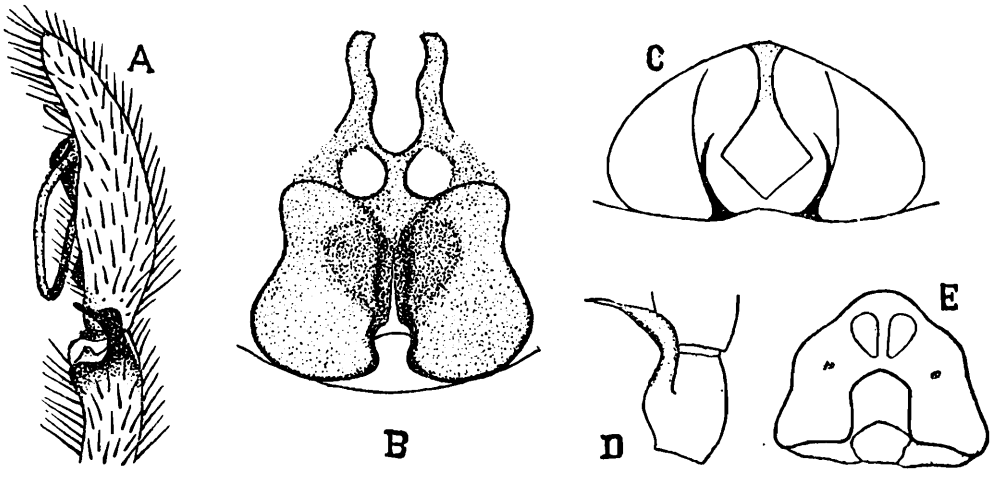
? **Torania gloriosa** Simon.

Fig. 8 C.

Tortula gloriosa, Simon, 1880, p. 37.
Torania gloriosa, Simon, 1904, (1), p. 285, fig.

A single female from Silcuri, Cachar. The eyes agree closely with the arrangement shown in Simon's figure, a photograph of which the Zoological Survey of India has kindly sent me. Neither they nor this figure seem, however, altogether to agree with Simon's original description.

The vulva is small and pale. It consists of one median and a pair of lateral pieces, united in front. If it is fully developed the species cannot be *gloriosa*. But it is possible that this is not the case, especially as the specimen is barely 3 cm. in length. Even so it seems unlikely that it could develop into a vulva like that of a named mature female from Penang kindly lent, together with a mature male from the same



TEXT-FIG. 8.

Torania and *Panaretus*. Vulva and male palp.

A. *Torania gloriosa*.
B. *Torania gloriosa*.
C. *Torania ? gloriosa* not fully developed.
D. *Panaretus* sp. from Pegu.
E. *Panaretus* sp. from Harmutti.

place, by the British Museum (figs. 8 A & B). The palpal organ of this male is furnished with a long slender style encircling the posterior part of the bulb.

Genus **Panaretus** Simon.

Figs. 8 D-E.

Two females, one from Singla, 1,500 ft., Darjeeling District, and one from Harmutti, base of Dafla Hills, two immature males from an altitudes of 1,000-3,000 ft. in the Darjeeling District, and a mature male from Pegu may be new species or they and *P. borneensis* and *nirouensis* may be local races of a single variable species.

The vulva has a pair of strongly marked depressions in front and a median cavity behind. The tibial apophysis of the male, which does not appear to have been described in any species of the genus, is situated submedially, very broad and bent abruptly outwards at right angles, about opposite the distal end of the tibia and ends in a long and finely tapered spine.

Genus **Heteropoda** Latreille.

Some at least of the species of this genus are extremely variable in size, colour and even structure. It is therefore probable that an

unusually large proportion of the species described will prove to be invalid. Those I have seen may be distinguished as follows :—

Females.

1.	Legs remarkably long, tibia of third pair about 1½ times as long as carapace	*H. kandiana*, p. 249.
—	Legs normal, tibia of third pair about equal to carapace in length	2
2.	Lateral lobes of vulva very small, directed obliquely backwards, meeting either each other or an enlarged posterior portion of a slender median sclertite behind a well marked cavity, the floor of which is whitish, except in the middle line, where extends the slender and sometimes indistinct median sclerite already referred to	*H. sexpunctata*, p. 250.
—	Lobes of vulva more strongly developed, longitudinal or transverse, rarely more or less oblique ..	3
3.	Lateral lobes of vulva not protruding	4
—	Lateral lobes of vulva much thickened, more or less protruding behind	*H. prompta*, p. 256.
4.	Ocular quadrangle not much wider behind than in front, its eyes all of about equal size ; lateral lobes of vulva transverse, meeting in middle line behind..	*H. venatoria*, p. 251.
—	Ocular quadrangle very much wider behind than in front ; anterior median eyes much smaller than posterior medians	5
5.	Lateral lobes of vulva transverse, without marginal groove, separated by a median sclerite which is very variable in shape, usually not extending to their posterior margins	*H. leprosa*, p. 252.
—	Lateral lobes of vulva not transverse, often strongly longitudinal, in contact, with marginal groove usually very distinct on inner side and behind ..	*H. sikkimensis*, p. 255.

Males.

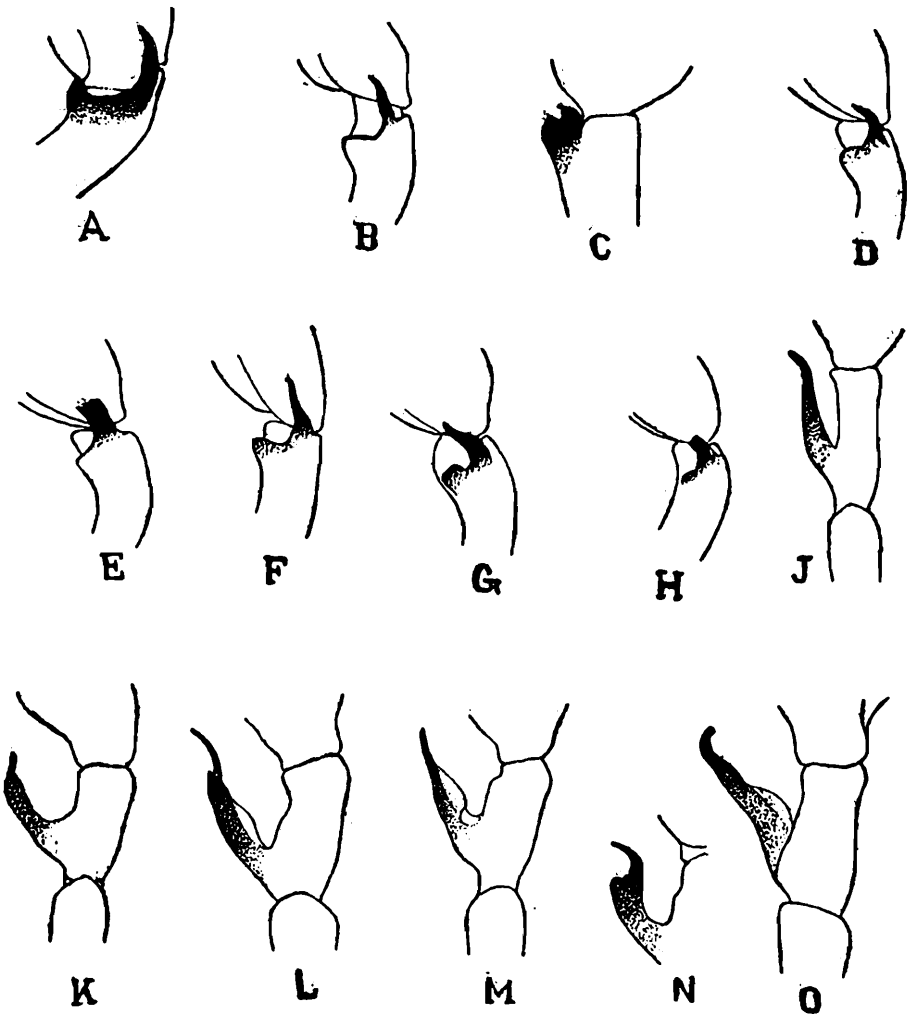
1.	Legs remarkably long, tibia of third pair nearly twice as long as carapace	*H. kandiana*, p. 249.
—	Legs normal, tibia of third pair not more than 1¼ times as long as carapace, often about equal to it	2
2.	Tibial apophysis of palp terminal, sometimes with a strong process below, but never with another apophysis further back	3
—	An apophysis always present at base or about half way up tibia of palp, terminal apophysis present or absent	5
3.	Tibial apophysis very broad, terminating in two teeth with semi-circular notch between them, lower side stongly convex ; anterior median eyes not much smaller than posterior medians, ocular quadrangle not very narrow in front	*H. venatoria*, p. 251.
—	Tibial apophysis not as above	4
4.	Eyes much as in *H. venatoria* ; tibial apophysis slender	*H. sexpunctata*, p. 250.
—	Anterior median eyes much smaller than posteriors, ocular quadrangle extremely narrow in front ; tibial apophysis stouter, very variable, sometimes truncate, often with a more or less strong process below	*H. leprosa*, p. 252.
5.	Tibial apophysis sub-medial, not expanded, bluntly pointed at apex	*H. sikkimensis*, p. 255.
—	Tibial apophysis more or less definitely basal, flattened or with more or ess distinct laminar expansion on lower side ; termlination acute or filamentous ..	*H. prompta* & *H. smythiesi*, p. 256.

Heteropoda kandiana Pocock.

Figs. 9 A & 11 A.-B.

Heteropoda kandiana, Pocock, 1899, p. 752.
Heteropoda kandiana, Pocock, 1900, p. 261.

A single female from the hill above Barkul, Puri District, 0-500 ft.; one, scarcely mature, from Tindharia, 3,000 ft., Darjeeling District; several from the Siju Cave, Garo Hills, and one from a cave on the banks of the Lubha River in the Khasi and Jaintia Hills, Assam, about 8 miles north of Lubhacherra Tea Estate, Sylhet District. Also a male



TEXT-FIG. 9.

Heteropoda spp. Tibial apophysis of male palp.

A. *Heteropoda kandiana.*
B. *Heteropoda sexpunctata.*
C. *Heteropoda venatoria.*
D. *Heteropoda leprosa* from Cochin.
E. *Heteropoda leprosa* from Nilgiris.
F. *Heteropoda leprosa* from E. Himalayas.
G. *Heteropoda leprosa* from Assam.
H. *Heteropoda leprosa* from Nicobars.
J. *Heteropoda sikkimensis.*
K. *Heteropoda smythiesi.*
L. *Heteropoda prompta* from W. Himalayas—larger form.
M. *Heteropoda prompta* from W. Himalayas—smaller form.
N. *Heteropoda prompta* from W. Himalayas, Jaunsar form.
O. *Heteropoda prompta* from E. Himalayas (Nepal).

from the Maosmai caves, Cherrapunji, Khasi Hills, which on account of its remarkably long legs as well as its cavernicolous habit I conclude

to belong to the same species as the females from the Siju Cave and from that on the Lubha River. It is, however, not unlikely that constant differences may exist between males from different localities and that the forms before me may prove to be distinct, either as varieties or species, from the Kandian type.

The legs are more or less distinctly banded and very long in both sexes, the tibia of the third pair being about 1¼ times the length of the carapace in the female and nearly twice as long as the carapace in the male. The eyes, especially in the female, are very large. The anterior medians are much smaller than the posterior medians and the quadrangle broader behind than in front and slightly longer than it is broad behind ; but these characters are scarcely as marked as in *H. leprosa*. The lateral lobes of the vulva are separated by a median tongue-like sclerite. The tibial apophysis of the male is terminal, nearly straight in its basal portion, bluntly acuminate and inwardly falcate at the tip. Its lower edge is continuous at base with a ridge terminating in a rounded process.

In length of leg and colouring, as well as to some extent in the form of the male tibial apophysis, this species affords a transition to the genus *Spariolenus*. Like *S. petricola* it seems to frequent caves, and it is perhaps noteworthy that the feebly chitinized vulva of *S. petricola* might well be regarded as a stage in the development of the vulva of *H. kandiana* but for the presence of other distinctive characters. Of these the one most readily recognisable is the low oblique keel found on the maxillary process in the genus *Spariolenus* but not in the genus *Heteropoda*.

Heteropoda sexpunctata Simon.

Figs. 9 B & 10 A-C.

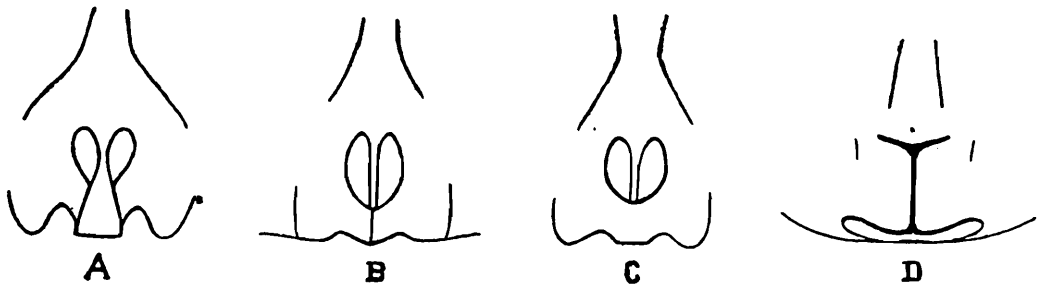
Heteropoda sexpunctata, Simon, 1885, p. 14, pl. x, figs. 11-12.
Heteropoda sexpunctata, Pocock, 1900, p. 261.

This is probably the most abundant species of *Heteropoda* all over the Indian Peninsula ; and it is perhaps noteworthy that not a single specimen from outside this area is represented in the collection before me. Simon's record (1901, p. 65) of a specimen from the Malay Peninsula may possibly, therefore, need revision.

The following localities are represented—Bansda, Surat District ; E. Khandesh ; Pimpalner, W. Khandesh ; Dahana, Thana District ; Mormagao Bay, Portuguese India ; Pattambi, S. Malabar ; Krusadai Island, Gulf of Manaar ; Kolli Hills, *ca.* 3,000 ft., Salem District ; Jalarpet, N. Arcot District ; Mysore ; Vandallur, Pallavaram, Velacheri, Kambakkam Hill, 200-800 ft. and 1,500-2,500 ft., and Nagalapuram Hill, *ca.* 500-2,400 ft., Chingleput District ; Madras ; Tirupati Hills, 600-2,000 ft., and Horsbykonda, *ca.* 3,000-4,000 ft., Chittoor District ; Barkuda Island, Chilka Lake, Ganjam District ; Barkul, Puri District ; Calcutta, Serampur, and Gmatia (Birbhum District), Bengal ; and Sahibgunge, Bihar.

H. sexpunctata is mainly an out-door spider, living under logs, stones, etc., as contrasted with *H. venatoria*, which is mainly a house spider. It is usually much smaller than *H. venatoria*, but occasionally reaches a size large enough to be confused with it. In such cases, the females

may be difficult to distinguish as the vulva of *H. sexpunctata* is very variable and sometimes approaches that of *H. venatoria* in form. The vulva has hitherto been regarded as always showing a hammer-shaped median sclerite, separating its lateral lobes. The collection before me shows, however, that more often that not this sclerite is not so well developed (compare figs. 10 A-C), the lateral lobes meeting one another in the middle line behind, the anterior portion alone of the median sclerite (if visible at all) being represented by a more or less distinct median line on the floor of a cavity bordered by the oblique sides of the lateral lobes in front of the place where they meet. The presence of this cavity is, in doubtful cases, the easiest means of distinguishing females of this species from those of *H. venatoria.* I have seen very few specimens from the Bombay Presidency, and none from the neighbouring district of Bellary whence came the type. But I am inclined to think that speci-



TEXT-FIG. 10.

Heteropoda spp. Vulva.

A-C. *Heteropoda sexpunctata.* D. *Heteropoda venatoria.*

mens from there probably have the median sclerite fully developed into its hammer-like form more commonly than those from further east. It is very strongly developed in the single specimen from S. Malabar.

The tibial apophysis of the male palp, which is somewhat compressed laterally, is lightly curved in a plane at right angles to the compression and ends in a finely pointed hook. It is continuous at its base with a well marked ridge which extends downwards parallel to and a little behind the distal margin of the tibia.

Heteropoda venatoria (Linnaeus).

Figs. 9 C & 10 D.

Heteropoda venatoria, Pocock, 1900, p. 260.

There is a large collection of this common and widely distributed species in the Indian Museum, Calcutta—so large that the trouble that would be involved in sending it to Madras for reference scarcely seems to me to be justified, since a long list of locality records for a species of universal tropical distribution would not be of any very great interest.

I have therefore only had for reference a few specimens from Trincomallee, Ceylon ; Ootacamund ; Madras ; Siripur, Saran, Bihar ; Tindharia, Darjeeling District, E. Himalayas ; Chandragona near Rangamati and Maini Mukh, Chittagong Hill Tracts ; Dran, 3,000 ft., Langbian Province, S. Annan ; Pattani, S. Siam and Kuala Lumpur, Malay Peninsula.

The legs tend to be of more uneven length than in other species, the third (shortest) scarcely reaching the end of the protarsus of the first and fourth or the middle of the protarsus of the second (longest).

The lobes of the vulva are directed inwards and meet in the middle line. There is no cavity in front of them as in the preceding species.

The tibial apophysis of the male palp is very broad, with the lower side strongly convex. It terminates in two teeth with a semi-circular notch between them.

Heteropoda leprosa Simon.

Figs. 9 D-H & 11 C-J.

Heteropoda leprosa, Simon, 1884, pp. 336-339, figs. 2-3.
Heteropoda languida, Simon, 1887 (1), p. 102.
Heteropoda plebeja, Thorell, 1887, pp. 237-241 and 1895, pp. 264-265.
Heteropoda phasma, Simon, 1897 (3), p. 258.
Heteropoda languida + *phasma* + *plebeia*, Pocock, 1900, pp. 260-262.
Heteropoda nilgirina + *? hampsoni*, Pocock, 1901, pp. 495-496.

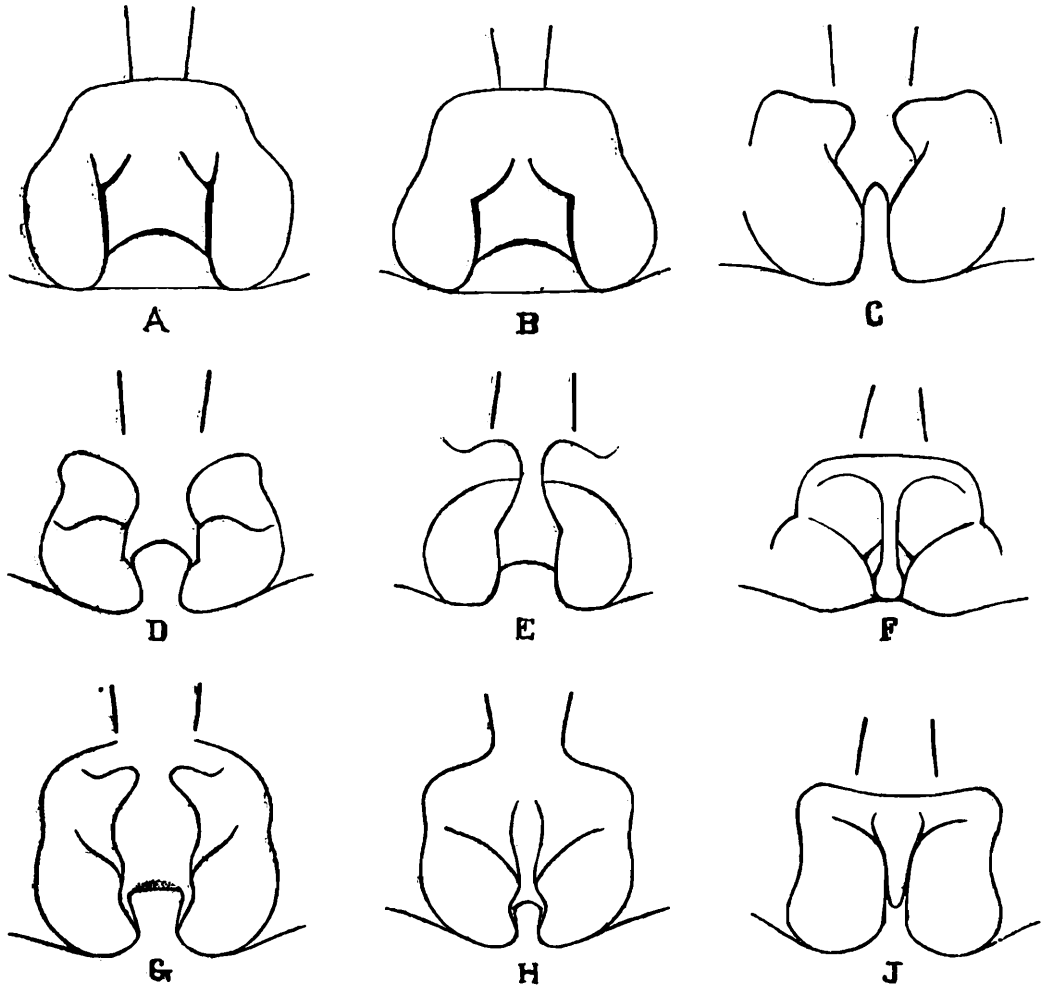
As here defined this is a widely distributed and extremely variable species which probably includes a number of other separately named forms in addition to the few that I have been able to give in the synonymy. Certain districts appear, however, to be the home of specimens varying in particular ways; and it is likely that some of the synonyms, such as *nilgirina* Pocock will prove to be valid for more or less definite local races. But much more extensive collecting is needed to establish this.

The collection before me includes specimens from Pattipola and Pundaloya in Ceylon; Ponmudi, Travancore; Chalakudi and Forest Tramway miles 10-14, Cochin State; Ootacamund, 6,700-8,000 ft. and Kotagiri, Nilgiri Hills; Simla, Kasauli and Jaunsar, W Himalayas; Punkabari, Tindharia, Singla 1,500 ft., Pashok (various altitudes from *ca.* 2,000-5,500 ft.), Sureil 5,000 ft., and Kalimpong, 600-4,500 ft., in the Darjeeling District and Pamionchi, Skikim, 6,900 ft. in the Eastern Himalayas; Camp 9, Daffla Hills, Assam; East of Pegu Yomas, Kyeikpadam, Rangoon, Upper Tenasserim, Lakya (Tenasserim) and Tavoy, Burma; Nicobars; ? Penang; and ? Perak, Malay Peninsula.

The chief characteristics of the species as a whole are (1) the vulva of the female consisting of a pair of lateral lobes separated by a median sclerite in front and a space behind; and (2) the tibial apophysis of the male which, though extremely variable, is always of the same general type as in *H. sexpunctata* but rather stouter, with the lower end of the basal ridge often developed into a more or less conspicuous tubercle; these characters being combined with (3) an ocular quadrangle extremely narrow in front, somewhat longer than it is broad behind, with the anterior median eyes very much smaller than the posterior medians.

Both the vulva and the tibial apophysis are extremely variable even in specimens from a single locality, making it difficult to determine how far variations that appear to be correlated with locality are really distinctive. It seems best, therefore, not to attempt to name, or even to define as distinct, any separate local races, but simply to describe the principal variations noticed in the collection in specimens from different districts.

Ceylon.—Only three specimens, all females of not more than half the normal size (length of carapace 4-5 mm. instead of about 10 mm.). The carapace is high and the median sclerite of the vulva is moderately broad, in one case darker in colour and so much more conspicuous than the lateral lobes.



TEXT-FIG 11.

Heteropoda spp. Vulva.

A. *Heteropoda kandiana* from Siju cave.
B. *Heteropoda kandiana* from hill above Barkul.
C-F. *Heteropoda leprosa* from E. Himalayas.
G. *Heteropoda leprosa* from Nilgiri Hills.
H. *Heteropoda leprosa* from Cochin.
J. *Heteropoda leprosa* from Tavoy.

Travancore and Cochin.—The carapace is high, about 4-6 mm. long in males and 7-9 mm. in females. The difference between the anterior and posterior median eyes is perhaps a little less marked than usual. The tibial apophysis of the male palp is moderately long and slender, relatively broader in small specimens than in large, obliquely truncate distally, the lower angle forming an acute point; its basal ridge is without any tooth. The median sclerite separating the lateral lobes of the vulva is parallel sided and rather narrow.

Nilgiri Hills.—The carapace is rather low, about 8 mm. long in males (2 only) and 7-9 mm. in females. The difference between the anterior

and posterior median eyes seems to be slightly less than usual in a single specimen from Kotagiri (a female). The tibial apophysis of the male palp is short and broad, transversely truncate distally with the upper angle somewhat rounded and the lower angle very slightly produced ; its basal ridge is without any tooth. The median sclerite of the vulva is very broad, almost parallel sided, its posterior margin more or less distinctly convex in the middle or practically straight.

Himalayas.—The carapace is apparently always low in specimens (females only known to me) from the Western Himalayas, more variable in those from the Darjeeling District, from which there is a particularly fine series of both sexes in the Zoological Survey collection. The carapace varies from 6-11 mm. in length in the male, and from 7-11 mm. in the female ; but small specimens are much less abundant than large in both sexes. The tibial apophysis of the male palp, though variable in detail, is bent slightly downwards near the base, straight or with a slight downward curvature beyond, stout and bluntly pointed, with a more or less conical tooth, sometimes small, sometimes very large, at the lower end of its basal ridge. The median sclerite of the vulva is very variable both in width and in shape. It is usually narrow in front, broadening behind and then narrowing again towards the posterior margin, which tends to be concave rather than convex.

Assam (Daffla Expedition).—The single mature female is not unlike females from the Darjeeling District. The two mature males have the tibial apophysis of the palp somewhat more abruptly narrowed towards the tip, and the whole of its basal ridge developed into a broad low transversely truncate tooth.

Burma.—I have not seen any males. In females the carapace is high and 5-10 mm. long, smaller sizes apparently predominating. The median sclerite of the vulva is very variable, usually more or less parallel sided in the few specimens seen.

Nicobars.—The carapace is only about 6 mm. long and moderately high. The tibial apophysis of the palp of the one mature male is rather broad, parallel-sided and abruptly though somewhat obliquely truncate. Its basal ridge has no very definite tooth. The three mature females show that the median sclerite of the vulva is again variable. It tends to be very slightly narrower towards the middle than at either end.

Malay Peninsula and Penang.—One male with carapace about 4 mm. long and one female with carapace about 11 mm. long from Penang, and one male from Perak with carapace about 9 mm. long, seem to belong here. In the male from Penang the tibial apophysis of the palp is short and broad, with its distal lower angle strongly produced. Its basal ridge has a small but well developed tooth. In the two larger specimens the front and back of the ocular quadrangle are somewhat less dissimilar than is usual in *H. leprosa*, but the tibial apophysis of the male and the vulva of the female suggest that they probably belong here.

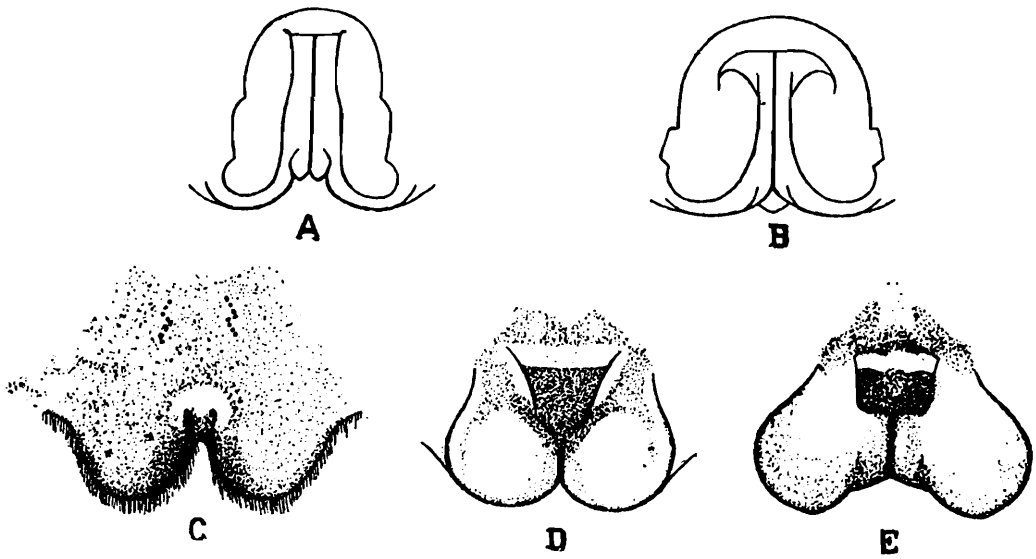
H. hampsoni, of which the British Museum has kindly lent me a mature female from Tinnevelly, has a vulva of the same general type as *H. leprosa*. I hesitate, however, to regard it as identical with that species

even in the broad sense in which the name *leprosa* is used here, as the anterior median eyes are much larger than is usual.

Heteropoda sikkimensis, n. sp.

Figs. 9 J & 12 A-B.

This small *Heteropoda* is evidently not uncommon in " Sikkim " Most if not all of the specimens before me come from the Darjeeling District, the exact localities recorded all being situated there —Sukna, *ca.* 1,000 ft. (*type*) ; Ghumti, 4,000 ft. ; Kurseong, 4,700 and 5,000 ft. ; Lebong, 6,000-6,600 ft. ; Pashok, 2,500, 4,500 and 5,500 ft. ; Kalimpong, 2,000-4,500 ft. ; Sitong Ridge, *ca.* 4,700 ft. The vulva of the female is very variable, and it is possible that two or three specimens from the same region and Assam that I have thought it best to leave unnamed at present may also belong to this species. There is also, however, in the collection



TEXT-FIG. 12.

Heteropoda spp. Vulva.

A. *Heteropoda sikkimensis,* type.
B. *Heteropoda sikkimensis,* broader form of vulva.
C-E. *Heteropoda prompta* showing stages in development of vulva.

one specimen of a male from the Darjeeling District, evidently closely allied to the present one, but quite distinct from it, with which such females might also be associated. Without further material, therefore, their position cannot be satisfactorily determined.

The carapace is somewhat elevated, 4-6 mm. long in the female, 5-6 mm. in the male. The eyes resemble those of *H. leprosa.* The vulva of the female consists of a pair of large plates, very variable in shape, often much longer than broad, never broader than long, with a clearly defined raised border on their inner and posterior sides, the inner sides being in contact, often throughout their whole length. The tibial apophysis of the male palp arises from rather less than half way up the outer side of the joint, to which it is about equal in length. It is gently tapered and directed forwards, almost parallel to the tibia for the first two-thirds of its length, then bent slightly downwards, and near the tip slightly outwards.

Heteropoda smythiesi Simon.

Fig. 9 K.

Heteropoda smythiesi, Simon, 1897 (3), p. 259.
Heteropoda smythiesi, Pocock, 1900, p. 262.

A single male from Konain, Himalayas, kindly lent by the British Museum. It is much smaller than either *H. leprosa* or *H. prompta*, but resembles the former as regards its eyes and the latter in the position and general form of the tibial apophysis.

Heteropoda prompta (Cambridge).

Figs. 9 L-O & 12 C-E.

Heteropoda casaria, Simon, 1897 (3), p. 259.
Heteropoda prompta, Pocock, 1900, pp. 261-262.

This is another variable species which may have to be split up into more or less distinct local races when sufficient material is available. Its anterior median eyes are much further apart than in the two preceding species, being separated by fully one diameter.

The collection includes specimens from Dungagali, 8,000 ft., Hazara District; Simla, *ca.* 7,000 ft., Phagu, 8,300-8,700 ft. and Theog, *ca.* 8,000 ft., Simla Hills; Painsur above Lohba, 7,500 ft., Garhwal; Bagarkote, 8,000 ft., Kumaon; Jaunsar; and Deota in the Western Himalayas: Katmandu, Nepal; Darjeeling, 6,000-7,000 ft.; Kalimpong; Sureil and "Sikkim" in the Eastern Himalayas; and a single male said to be from the Andaman Islands.

The carapace varies in length from about 5-12 mm. The eyes resemble those of *H. venatoria* and *sexpunctata* rather than those of *H. leprosa* and *H. sikkimensis*, and tend to be larger in specimens from the Eastern than from the Western Himalayas. The colour is usually (? always in life) very dark, usually with a pair of conspicuous longitudinal pale yellow lines on the ventral surface of the abdomen in specimens from the Western Himalayas, but without them in those from the Eastern part of the range.

In the Western Himalayas there seem to be two varieties, though how far they are really distinct I cannot be sure. The commoner of the two, which comes from all the W. Himalayan localities recorded above except Jaunsar (males are only known from Jaunsar, Painsur and Bagarkote) is smaller, darker, and less hairy than the other, with the filamentous extremity of the tibial apophysis of the male palp less abruptly distinct from the base. In the male from Jaunsar the apophysis is broad and truncate with its upper angle produced into a strongly bent filament. The lateral lobes of the vulva of the female are about equally tumid in each variety, perhaps a little more so in the larger of which there are specimens from Simla only.

The specimens from the Eastern Himalayas all resemble the larger of the two western forms in general appearance. But the lateral lobes of the vulva seem to undergo a progressive development and in the largest specimens project far out over the following segment. In the single male in the collection, which is the only specimen from Katmandu, the flattening of the tibial apophysis of the palp is

much less marked even than in the smaller of the two western forms, and its filamentous apex is obsolete. But the foliaceous expansion of the basal part of the lower side so closely resembles that found more distally in the small form of male from the Western Himalayas that there can, I think, be no doubt as to its identity. The specimen recorded from the Andamans is small and smooth, but has the pale colour and tibial apophysis of the larger of the two Western Himalayan forms.

Genus **Parhedrus** Simon.

Parhedrus boiei (Doleschall).

Figs. 13 A-B.

I have not seen a description of this species, but the British Museum has kindly lent me a named mature male and female of this species from Penang. The vulva of the latter and the tibial apophysis of the palp of the former are shown in figs. 13 A-B.

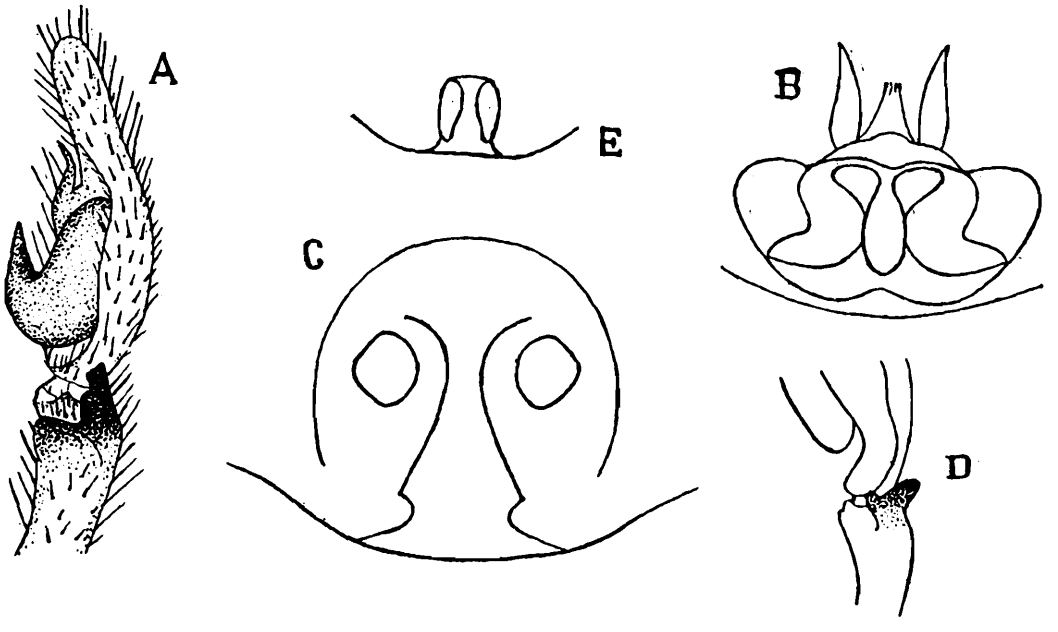
Genus **Spariolenus** Simon.

Spariolenus tigris Simon.

Figs. 13 C-D.

Spariolenus tigris, Pocock, 1900, p. 264.

Quetta; Lahore, Punjab; Siripur, Saran, Bihar (females only from these three localities); Gmatia, Birbhum District; Serampore and



TEXT-FIG. 13.

Parhedrus and *Spariolenus* spp. Vulva and male palp.

A-B. *Parhedrus boiei.* C-D. *Spariolenus tigris.*
E. *Spariolenus petricola.*

Calcutta, Bengal. Also two males, one from Sind and one without locality record, in which slight differences in the tibial apophysis or

its associated tubercle may or may not prove to be characters differentiating them either specifically or as local races, suggesting the possibility that, when more males are known, the range of the typical form may prove to be more restricted than it now appears to be from records of the female. In the female the vulva is marked in front with a pair of more or less circular dark patches. In the male the tibial apophysis is short and broad and more or less distinctly bifid, and there is a dark tubercle on the anterior margin of the tibia immediately beneath it.

Spariolenus petricola, n. sp.

Fig. 13 E.

This species has been found on the walls of small caves artificially cut in the rock both at Khandagiri, Puri District, Orissa and at Pachmarhi, Mahadeo Hills, Central Provinces. It attains a larger size than is usual in the preceding species (length of carapace 1 cm., length of second and longest leg a little over 7 cm.), which it otherwise resembles in colouration and general appearance. The vulva consists of a simple, small, parallel sided cavity, the sides of which are not even strongly chitinized. The male is not known.

Subfamily *PALYSTEINAE.*

Genus **Palystes** Koch.

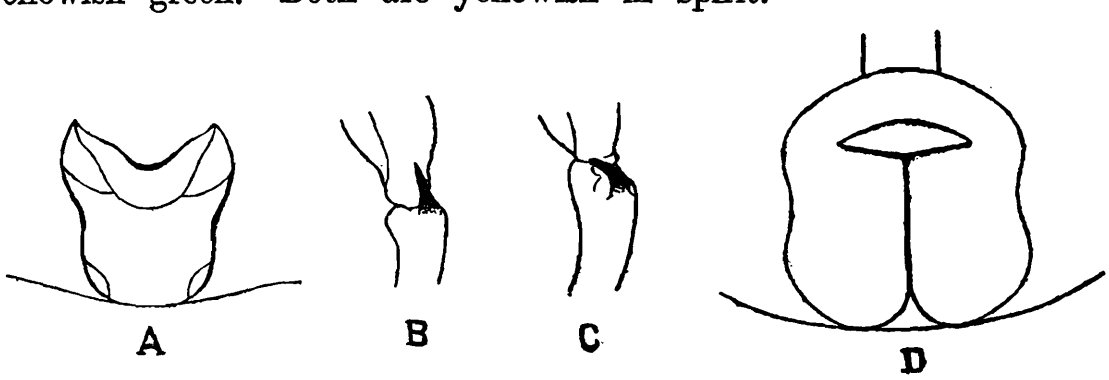
Palystes flavidus Simon.

Figs. 14 A.-B.

Palystes flavidus, Pocock, 1900, p. 266.

Ramnad ; Madras ; Barkuda Island, Chilka Lake, Ganjam District ; Serampore, Calcutta and Tollygunge, Bengal ; Pashok, E. Himalayas, 2,500 ft. Also immature specimens, doubtless of this species, from Cochin State and Kalimpong.

The female is pale green in colour when alive, and the male more yellowish green. Both are yellowish in spirit.



Text-fig. 14.

Palystes spp. Vulva and male palp.

A-B. *Palystes flavidus.* C-D. *Palystes kochi.*

The lateral lobes of the vulva are widely separated, with a V-shaped sclerite between them anteriorly.

The tibial apophysis of the male is not very large, more or less spiniform and directed slightly downwards with a slight inward bend just before the end.

Palystes kochi Thorell.

Figs. 14 C-D.

Palystes kochi, Pocock, 1900, pp. 265-266.

Arakan ; Southern Tenasserim ; Tavoy ; Penang.

This is a much larger and darker species than the last, which it appears to replace in Assam, Burma and Malaysia.

The lateral lobes of the vulva are in contact throughout their length, with a narrow transverse cavity in front of them. The male tibial apophysis is broad and forwardly directed at the base, then bent downwards through about a right angle and tapered to the apex, which is blunt.

Family SELENOPIDAE.

Genus **Selenops** Latreille.

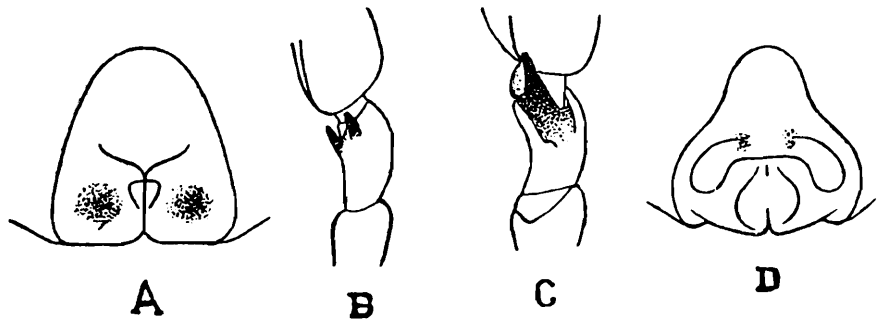
Selenops radiatus (Latreille).

Figs. 15 A-B.

Selenops radiatus, Pocock, 1900, pp. 257-258, fig. 87.

This species, which is distinguished by having only two pairs of spines on the first protarsi, is represented by specimens from Chalakudi, Cochin State ; Chidambaram ; Panchgani, Satara District ; Bombay ; Bansda, Surat Agency ; Nagpur ; Rambha, Ganjam D trict ; Calcutta ; Samaguting, Assam ; Thayetmyo, Pegu District. Its distribution extends to Spain and the Zambesi.

The vulva consists of a pair of large inwardly directed lobes, the curiously shaped ends of which meet in the middle line as shown in fig. 15 A.



TEXT-FIG. 15.

Selenops spp. Vulva and male palp.
A-B. *Selenops radiatus.* C. *Selenops shevaroyensis.*
D. *Selenops montigena.*

The distal end of the male palp bears two small stout conical apophyses, of which one is situated on the outer side and is directed somewhat outwards, while the other, which is the smaller of the two, is situated ventrally and is directed forwards.

Selenops shevaroyensis, n. sp.

Fig. 15 C.

A single male from Yercaud in the Shevaroy Hills. It resembles *S. radiatus* in having only two pairs of spines on the front protarsi, but

differs completely in the form of the tibial apophyses which are united by a chitinous lamina to form a sort of pouch, from the anterior margin of which a slender flattened process projects forwards on the outer side of the terminal joint.

Selenops montigena Simon.

Fig. 15 D.

Selenops montigena, Pocock, 1900, p. 258.

Represented by specimens from Almora; Painsur (above Lohba), 8,000 ft., Garhwal; and pass between Chaibassa and Chakardharpur, Chota Nagpur. The last named locality cannot be more than a few hundred feet above sea level. The specimens from it are noticeably smaller than the others, though the vulva is fully developed.

Three pairs of spines are present on the protarsi of the first pair of legs.

The lateral lobes of the vulva are very differently shaped from those of *S. radiatus*, being broadest where they meet (see fig. 15 D).

The only male in the collection is immature.

Family CLUBBIONIDAE.

Subfamily *CLUBIONINAE.*

Genus **Clubiona** Latreille.

Five species have been identified, three of them—*C. concina*, *analis* and *melanothele*—being represented only by named specimens kindly lent by the British Museum; one—*C. filicata*—by two specimens only; and the fourth—*C. drassodes*—by a somewhat larger number. There is in addition a single female from the Nilgiris which I am unable to identify. Its vulva closely resembles that of *C. analis* from Burma, but it is a much smaller spider of more compact build than the single specimen of that species that I have seen. The two species that have been described from the Nilgiris are both known from males only.

The four mature females identified may be distinguished thus—

1. Cleft of vulva longitudinal, without any transverse mark in front . . . . . *C. analis*, p. 261.
— Cleft of vulva with transverse mark (or cavity) in front 2
2. Cleft of vulva with more or less V-shaped markings in front 3
— Cleft of vulva with transversely oval cavity in front . . . . . *C. drassodes*, p. 262.
3. Cleft of vulva with somewhat deeply V-shaped mark in front and no additional longitudinal marks . . . . . *C. melanothele*, p. 261.
— Cleft of vulva with very broadly V-shaped mark in front and a pair of longitudinal marks which are somewhat lyriform when taken together . *C. filicata*, p. 261

The two males in the collection may be distinguished thus—

Tibia of palp without apophysis, about as long as wide, much smaller than patella, which is also short and broad. . . . . *C. concinna*, p. 261.
Tibia of palp with small apophysis of normal form, as is patella also . . . . . *C. drassodes*, p. 262.

Clubiona concinna (Thorell).

Fig. 16 A.

Atalia concinna, Thorell, 1887, pp. 55-58.

One male and one female from Tharrawaddy, barely 4 mm. in length. The latter is somewhat the smaller of the two, and though there is a dark patch on the anterior part of the genital segment its posterior part is entirely unmodified, from which I conclude that it is immature. The structure of the male palp is shown in fig. 16 A.

Clubiona analis Thorell.

Fig. 16 C.

Clubiona analis, Thorell, 1895, pp. 41-42.

A single female from Double Island near Moulmein, about 10 mm. long. The lateral lobes of the vulva are slightly separated in the middle line behind, and there is a pair of dark spots a little in front of them.

Clubiona melanothele Thorell.

Fig. 16 B.

Clubiona melanothele, Thorell, 1895, pp. 42-44.

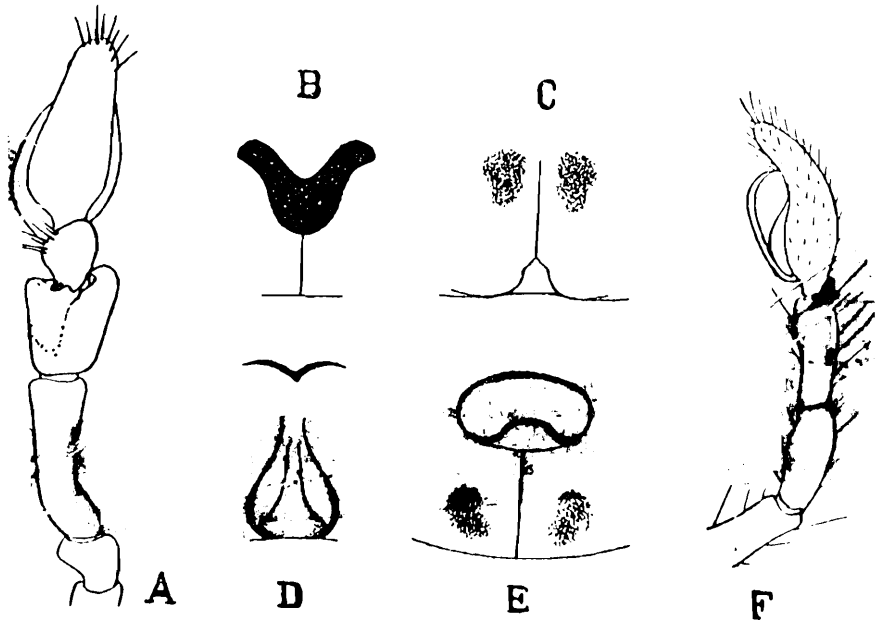
A single female from Tharrawaddy, nearly 5 mm. long. The vulva consists of a pair of lateral lobes, meeting in a long suture in the middle line and truncate behind, with a somewhat V-shaped dark area in front of them.

Clubiona filicata Cambridge.

Fig. 16 D.

Clubiona filicata, Cambridge, 1874, pp. 413-414, pl. lii, fig. 35*a-c*.

One specimen from Maniktolla, Calcutta, and one from Red Hills near Madras. Both are females just over 6 mm. in length. Each of the



TEXT-FIG. 16.

Clubiona spp. Vulva and male palp.

A. *Clubiona concinna*.
B. *Clubiona melanothele*.
C. *Clubiona analis*.
D. *Clubiona filicata*.
E-F. *Clubiona drassodes*.

lateral lobes of the vulva, which are very feebly chitinized, is strengthened by a dark '-shaped piece, the two pieces combining to produce a somewhat lyriform marking in front of which is a dark V-shaped marking, but much more slender and with a much more obtuse angle than in the preceding species.

Clubiona drassodes Cambridge.

Figs. 16 E-F.

Clubiona drassodes, Cambrdige 1874, p. 414, pl. lii, fig. 36.

One male each and several females from Siripur, Saran, Bihar, and Gmatia, Birbhum District, Bengal. The females vary in length from about 8-13 mm. and the males 7-9 mm.

The lateral lobes of the vulva, each of which contains a darkened patch, meet behind a transversely oval cavity into the bottom of which there usually projects a more or less well developed broad tongue-like projection of its posterior wall. The tibia of the male palp bears distally a short broad apophysis on its outer side.

Genus **Chiracanthium** Koch.

This genus belongs to a group in which the posterior median eyes are further from the posterior laterals than from each other. The preceding genus belongs to a group in which the reverse is the case or in which all four posterior eyes are about equidistant from each other.

The species in the collection may be identified thus—

Females.

1. Vulva with a pair of darkened lateral areas . .	2
— Darkened areas of vulva otherwise arranged . .	3
2. Darkened areas of vulva oblique, widely separated from posterior margin, united in front by anterior margin of cavity which projects backwards as an angle in the middle line ; terminal joint of posterior spinnerets normal	*C. murina*, p. 263.
— Darkened areas of vulva longitudinal as a whole, more or less convoluted when seen in detail, extending almost to posterior margin ; cavity without overhanging anterior margin ; terminal joint of posterior spinnerets unusually short .	*C. melanostoma* p. 264.
3. Vulva darkened throughout, with large cavity but without dark spots	*C. himalayensis*, p. 264.
— Cavity of vulva small ; dark spots present near posterior margin	4
4. Vulva darkened throughout, with lateral striated areas in front of a pair of dark spots . .	*C. trivialis*, p. 265
— Vulva marked by three dark spots, of which the middle one is situated in the cavity, in front of which is a small dark area	*C. insigne*, p. 266.

Males.

1. Palp with large tarsal apophysis, without membranous development of palpal organ . .	2
— Tarsal apophysis of palp small or absent ; palpal organ with strongly developed membrane .	5
2. Palp with two apophyses at apex of tibia . .	*C. murina*, p. 263
— Palp with only one apophysis at apex of tibia .	3
3. Tarsal apophysis moderately long, tibial apophysis slightly sinuous or hooked	4

— Tarsal apophysis very long, reaching almost to middle of tibia; tibial apophysis simply curved	*C. indicum*, p. 265.
4. Tibial apophysis shorter and stouter, slightly hooked at tip	*C. malanostoma*, p. 264.
— Tibial apophysis slightly larger, slenderer and more sinuous at tip	*C. himalayensis*, p. 264.
5. Tarsal apophysis of palp distinct; membrane of palpal organ well developed	*C. trivialis*, p. 265.
— Tarsal apophysis of palp rudimentary; membrane of palpal organ enormously developed . .	*C. insigne*, p. 266.

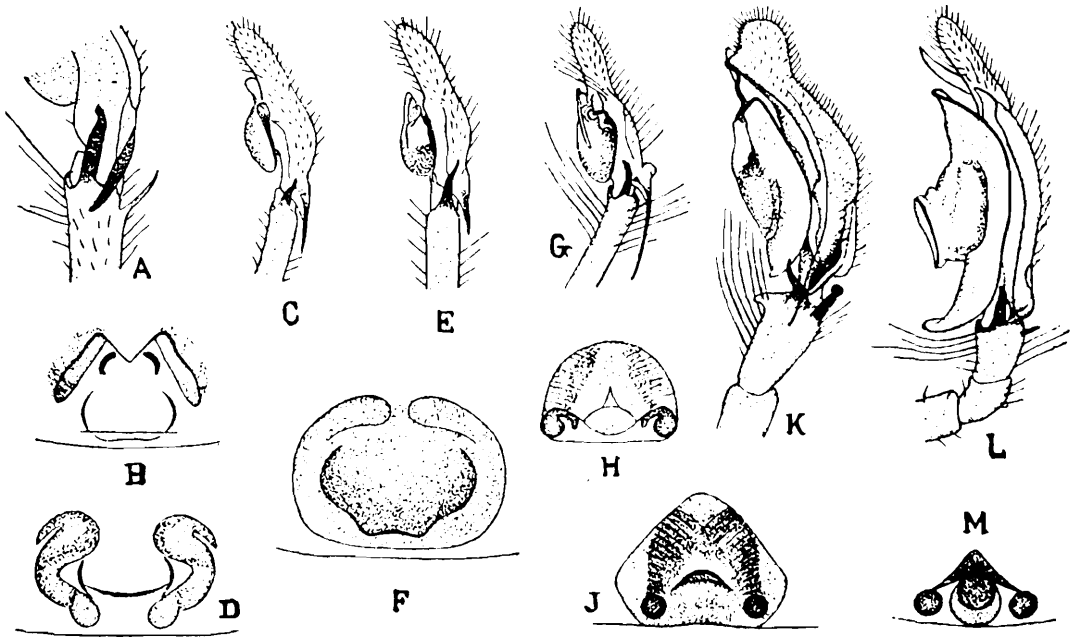
Chiracanthium murina Thorell.

Figs. 17 A-B.

Chiracanthium murina, Thorell, 1895, pp. 50-51.

Females from Tharrawady, Burma, and from Kalimpong, 4,100 ft., Darjiling District. Also a single male from Pashok, 3,500 ft., Darjiling District, the general appearance of which strongly suggests that it belongs to the same species, especially as there is no other species of female in the collection with which it could be associated. Females vary from about 8-12 mm. in length, the Burmese specimen being somewhat the smallest. The male is about 12 mm. long.

The anterior median eyes are distinctly larger than the posterior medians, especially in the male. The ocular quadrangle is not very much narrower in front than behind and is about as long as it is wide in front.



TEXT-FIG. 17.

Chiracanthium spp. Vulva and male palp.

A-B. *Chiracanthium murina.*
C-D. *Chiracanthium melanostoma.*
E-F. *Chiracanthium himalayensis.*
G. *Chiracanthium indicum.*
H. *Chiracanthium trivialis*, typical form of vulva.
J. *Chiracanthium trivialis*, Himalayan form of vulva.
K. *Chiracanthium trivialis*, tibia and tarsus of male palp.
L-M. *Chiracanthium insigne.*

The vulva consists of a transversely oval depression over the front of which the anterior wall forms a projecting angle in the middle line

The antero-lateral walls on either side of this projection are conspicuously thickened and brownish in colour.

The tarsus of the male palp is broad behind where it covers the bulb, then very abruptly narrowed, slender and apparently exavate in the middle above. The margins of the broad basal portion are very sharply defined, the outer margin especially being apparently strengthened by a special chitinous band. The tarsal apophysis on the right side consists of a slender and sharply pointed upper portion and a slightly shorter, stout and bluntly pointed lower portion ; but on the other side the latter alone seems to be present. This apophysis projects backwards between a spiniform inner tibial apophysis and the usual apophysis on the outer side of the tibia, which is rather large and slightly hooked at its tip and terminates bluntly. The stout tooth-like termination of the ventral side of the tibia is well developed.

A single female from Kandy, Ceylon, perhaps also belongs here. But the anterior wall of the vulva is much less strongly produced in the middle line.

Chiracanthium melanostoma (Thorell).

Figs. 17 C-D.

Eutittha melanostoma, Thorell, 1895, pp. 44-47.

Bandipur, *ca* 3,000 ft., Mysore ; Madras (from curled up withered leaves of *Calotropis gigantea* on beach—Rae Sherriffs) ; Guindy and Ennur near Madras ; Barkuda Island, Chilka Lake, Ganjam District ; Siripur (Saran), Katihar (Purneah District—on plantain flower, C. A. Paiva) and Dinapur, Bihar ; Gmatia, Birbhum District and Serampore, Bengal ; Singla, 1,500 ft. and Kalimpong, 2,000-4,500 ft., Darjiling District ; Tharrawaddy, Burma. Females varying in length from about 7-12 mm., males from about 6-9 mm.

This seems to be the commonest and one of the most widely distributed of the Indian species of the genus. It resembles *C. inornatum* Cambridge, from Bombay (1874, p. 407), and differs from all other species in the collection, in having the terminal joint of the posterior spinnerets rather short. The chelicerae are of a reddish brown colour, not blackish as in the preceding species.

The vulva consists of a transversely oval cavity a little in front of the posterior margin of the genital segment, with its anterior and posterior borders usually less sharply defined than its lateral borders which are, in addition, strengthened by lateral skeletal pieces. These pieces probably always have the curious coiled form shown in fig. 17 D, though it is not always easy to distinguish.

The male palp is very like that of the preceding species, but the tarsal apophysis extends somewhat further back and the tibial apophysis is rather shorter, and is blunter and less sinuous distally.

Chiracanthium himalayensis, n. sp.

Figs. 17 E-F.

Kalimpong, 2,000-4,500 ft., Sureil, 5,000 ft., Mungpoo, 3,000 ft., and Tindharia in the Darjiling District of the E. Himalayas. Also a single

female from Dehra Dun. This is the largest species in the genus, females varying in length from about 13-16 mm. and males from about 12-13 mm., except for a single specimen from Kalimpong barely 8 mm. in length and rather pale colour, which I think must nevertheless belong here. It is a strongly built form with the usual long slender legs and terminal joint of posterior spinnerets. The face and chelicerae are blackish brown in spirit.

The vulva is very like that of *C. inornatum* Cambridge from Bombay (1874, pl. lii fig. 30*c*), but is dark brown and strongly chitinized throughout, not only at the margin of the cavity. It differs from that species in its larger size and darker chelicerae and in having the terminal joint of the posterior spinnerets of normal form instead of very short. It is probably also very like that of *C. rupicola* (Thorell, 1897[1], pp. 253-255) from Burma, but in the absence of any figure of that species adequate comparison is impossible.

The male palp bears a single tibial apophysis, moderately strong and directed straight forwards in its basal half, then somewhat sinuous and tapering to a sharp point, bending first a little downwards, then a little upwards and then a little downwards again. The tarsal apophysis projects backwards above it, its point extending a little beyond the base of the tibial apophysis.

Chiracanthium indicum Cambridge.

Fig. 17 G.

Chiracanthium indicum, Cambridge, 1874, pp. 411-413, pl. lii, fig. 34.

Two specimens from Madras and one from Kalimpong, 2,000-4,500 ft., E. Himalayas. If this spider is really as wide-spread in India and Ceylon as Simon says (1906, p. 296) it is strange that it is so poorly represented in this collection and that the female has still to be identified. The Madras specimens are about 6 mm. long, the Kalimpong one about 9 mm. They are distinguished by the absence of any special dark pigmentation of the face and chelicerae, and by the simply curved tibial apophysis which is of about uniform thickness throughout, and by the rather long tarsal apophysis which reaches almost to the middle of the tibia.

Chiracanthium trivialis (Thorell).

Figs. 17 H-K.

Eutittha trivialis, Thorell, 1895, pp. 49-50.

Madras; Gmatia, Birbhum District, Bengal; Kalimpong, 2,000-4,500 ft., Darjiling District, E. Himalayas; Tharrawaddy, Burma. This species is known from the female only, which varies in length from about 6-11 mm., the Gmatia and Madras specimens being much the smallest and one of the Kalimpong ones much the largest. Two males in the Zoological Survey collection, one from Kalimpong ,000 4,500 ft. and one from Sureil, 5,000 ft., also in the Darjiling District, can, however, I think be associated with them with a very high degree of probability, partly on account of the general superficial resemblance

of their colour and spinnerets to those of the female (though such characters can hardly be considered distinctive) and partly by a process of elimination of other known possibilities, but chiefly on account of the evident relationship of both sexes to the corresponding sexes of *C. insigne.*

The vulva consists of a more or less triangular plate with a posterior median cavity, on either side of which is a conspicuous dark spot. In front of these spots the plate is transversely striped. In the Himalayan specimens the plate is much darker in colour than in the others and there seem to be slight differences in structure, especially as regards the aperture. It is possible, therefore that they represent a distinct local race.

The palps of the males, which I believe to belong to this species, but of which all that I have seen are Himalayan, are intermediate in character between the normal type described in the preceding species and the type characteristic of *C. insigne*, combining a small but well marked tarsal apophysis with a remarkable membranous development of the tarsus. The distal end of the tibia bears, in addition to the usual apophysis on the outer side, another apophysis on the inner side, in which it resembles *C. murina.* But instead of being simply spiniform as in that species this inner apophysis in the present species is slightly constricted below a somewhat bulbous extremity. The stout tooth-like extremity of the lower side of the tibia is very well developed.

Chiracanthium insigne Cambridge.

Figs. 17 L-M.

Chiracanthium insigne, Cambridge, 1874, pp. 408-410, pl. lii, fig. 32*a-b*.
Eutittha gracilipes + *truncata*, Thorell, 1895, pp. 47-49.

Thorell believed the female which he called *truncata* to be in all probability that of the male which he called *gracilipes*. A named specimen of each has kindly been lent to me by the British Museum. The probability of their being identical receives indirect support from their similarity to the female and male respectively which are likewise associated above on a basis of probability under the name *trivialis*.

In the male sex I can find no satisfactory distinction between *gracilipes* from Burma and *insigne* from India. And in the female the vulva of *truncata* shows little more under a hand lens than the simple transverse dark area adjoining the posterior margin of the genital segment as figured by Cambridge for the female of *insigne*. I therefore think that there can be little doubt that all should be united into a single species for which the name *insigne* Cambridge has priority.

The only female in the collection is the one lent by the British Museum from Rangoon, but there are males from Peradeniya, Ceylon; Madras; Kheri, Purneah District, Bihar; and Assam; as well as one from Tharrawaddy lent by the British Museum.

The males vary in length from about 4-7 mm., the single female being barely 5 mm. long. The vulva consists mainly of a median cavity close to the posterior margin of the genital segment, and three circular plates of which the largest occupies the anterior and greater part of this cavity, the other two being situated one on each side of it.

The tibia of the male palp has a single downwardly curved apophysis on its outer side. The tarsal apophysis is rudimentary and distally rounded. The tarsus is provided with a very elaborate membranous structure covering and surrounding the bulb.

Subfamily *LIOCRANINAE.*

Genus **Syrisca** Simon.

Syrisca barkudensis, n. sp.

Figs. 18 A-B.

Three males about 6-8 mm. long, one female a little over 6 mm. long, and a number of immature specimens, all from Barkuda Island in the Chilka Lake, Ganjam District, where they are not uncommon among soil and under bark at the bases of trees. They are brownish in colour, the abdomen somewhat greenish brown, at least in spirit.

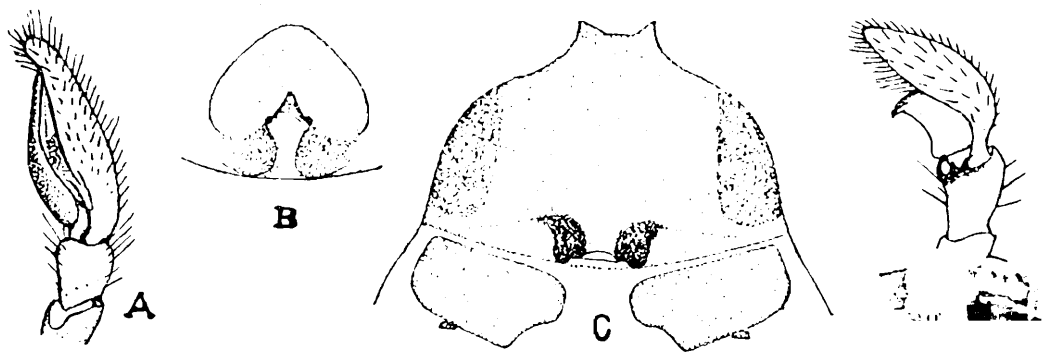
This species seems to differ from all others of the genus in having the posterior median eyes scarcely as near to each other as to the posterior laterals. The ocular quadrangle is practically square. The anterior and posterior laterals are situated very close together. The terminal joint of the superior spinnerets is very long and slender. The vulva of the female consists of a large but not very strongly differentiated plate with its opening in the middle line behind.

The tibia of the male palp bears a downwardly curved, rather long and extremely slender apophysis on its outer side.

Subfamily *CORINNINAE.*

Genus **Oedignatha** Thorell.

With the exception of *O. scrobiculata* Thorell all the species before me, and all hitherto recorded from India, appear to be of very restricted range. Their distinctive characters are found mainly in the proportions and arrangement of the eyes and sometimes in the texture of the



TEXT-FIG. 18.

Syrisca and *Oedignatha* spp. Vulva and male palp.
A-B. *Syrisca barkudensis.* C-D. *Oedignatha scrobiculata.*

carapace and the shape and ornamentation of the abdomen. The differences are, however, in many cases very small and consequently difficult to determine, especially from descriptions. All the species before me except *O. scrobiculata* are probably new; but it seems better

not to describe them without more extensive material or until they can be compared with Simon's various species from Ceylon and Thorell's from Burma and the differences clearly indicated by means of a key. Several of the species, moreover, are represented by immature specimens only.

All seem to fall into one or other of two groups. In the first of these the spines on the anterior tibiae are exceptionally robust, the abdomen is almost spherical, the ocular area approximately square (differing slightly in shape in different species) and the posterior median eyes are not very small. This group is represented by at least two species, one from Cochin in which the anterior median eyes are much larger than any others and one from the Nilgiris in which they are not. It is probably represented among described species by *O. coriacea*, *flavipes*, and *montigena* Simon, but the species before me both differ from the last in colour and from the first two in the texture of the carapace. In the second group the abdomen is longer in proportion to its breadth, the spines on the anterior tibiae are more slender, the ocular quadrangle is broader than long and the posterior median eyes are often very small. This group is represented by a larger number of species from various localities, and includes one species which is common at Ootacamund.

Oedignatha scrobiculata Thorell.

Figs. 18 C-D.

Oedignatha scrobiculata, Thorell, 1881, p. 209.
Oedignatha scrobiculata, Simon, 1897, p. 14; and 1906, p. 302.
Oedignatha scrobiculata, Gravely, 1921, p. 418, pl. xvii, fig. 1 (nest).

This, apparently the only widely distributed Indian representative of the genus, has already been recorded from various localities extending from Ceylon through the Indian Peninsula and as far to the east as Java (see above, p. 227). It is represented in the collection before me by specimens from Peradeniya, Ceylon; Mangalore; Hakladi and Kundha, S. Kanara; Bangalore; Madras; Barkuda Island, Chilka Lake; Gmatia, Birbhum District; Calcutta and Serampore, Bengal; and Singapore. It lives in small cavities in soil, etc., roofed over with silk and earth and provided with two apertures (Gravely, 1921), but runs about quite freely when disturbed and is often found thus when fallen leaves are turned over.

It may readily be recognized, especially when not quite mature, by the two rows of white spots which extend longitudinally over the abdomen, on either side of the mid-dorsal line, coalescing into a white patch, somewhat longer than broad, above the spinnerets. In adult specimens these spots are much less conspicuous, and are often represented only by little tufts of white pile, not visible unless the surface is completely dry.

The eyes are of approximately equal size, and are about equally spaced, the posteriors a little further apart than the anteriors and the posterior line consequently as usual a little longer than the anterior and also very slightly more procurved.

The carapace is somewhat coarsely punctured. The abdominal shield of adults of both sexes is large, covering almost the whole dorsal

surface of the abdomen ; as usual it is not developed at all in immature specimens.

The distal end of the tibia of the palp of the male bears a stout, blunt and slightly curved ventral apophysis with two smaller denticles on the outer side immediately above it.

Subfamily *MICARIINAE.*

Genus **Sphingius** Thorell.

All the specimens before me are from the Indian Peninsula. Two species, *S. caniceps* and *S. bilineatus*, have already been described by Simon from this area and one, *S. scutatus*, from Ceylon. Only the female is known in the first two species, and only the male in the last ; and Simon suggests that the latter may be the male of *S. bilineatus*. Males and females of both the Indian species are represented in the collection here described. They lead me to regard *S. scutatus* as probably distinct, judging from Simon's figures (1897[1], p. 115) as well as from his description.

The species known from India and Ceylon may be recognized as follows :—

Females.

1. Legs very long and slender ; pale markings absent .	*S. longipes*, p. 270.
— Legs normal ; pale markings present on legs and usually also on abdomen . . .	2
2. Vulva confined to posterior half of genital segment ; abdomen normally with whitish patch at anterior end and another above spinnerets, with one or more pale transverse lines between	*S. caniceps*, p. 271.
— Vulva extending from end to end of genital segment	3
3. Abdomen without white markings ; dark spots in posterior angles of vulva small . .	*S. barkudensis*, p. 271.
— Abdomen marked with pairs of more or less distinct white spots, some of which may coalesce to form a pair of broken lines in front, and with a white spot above the spinnerets ; dark spots in posterior angles of vulva larger	*S. bilineatus*, p. 272.

Males.

1. Pale markings absent, tibial apophysis small .	2
— Pale markings present on legs [1] and usually also on abdomen	3
2. Legs very long and slender ; palpal organ spherical, with style coiled round its equatorial plane ; abdominal shield scarcely extending beyond middle of abdomen	*S. longipes*, p. 270.
— Legs normal ; palpal organ with extensive white membrane in front ; abdominal shield extending almost to posterior end of abdomen .	*S. nilgiriensis*, p. 271.
3. Tibial apophysis absent	*S. kambakamensis*, p. 271.
— Tibial apophysis present	4
4. Tibial apophysis small	*S. caniceps*, p. 271.
— Tibial apophysis much larger .	5
5. Tibial apophysis with slight upward curve, rounded at apex	*S. scutatus*, Simon.
— Tibial apophysis straighter, not rounded at apex .	6
6. Abdomen without pairs of white spots	*S. barkudensis*, p. 271.
— Abdomen with pairs of white spots	*S. bilineatus*, p. 272.

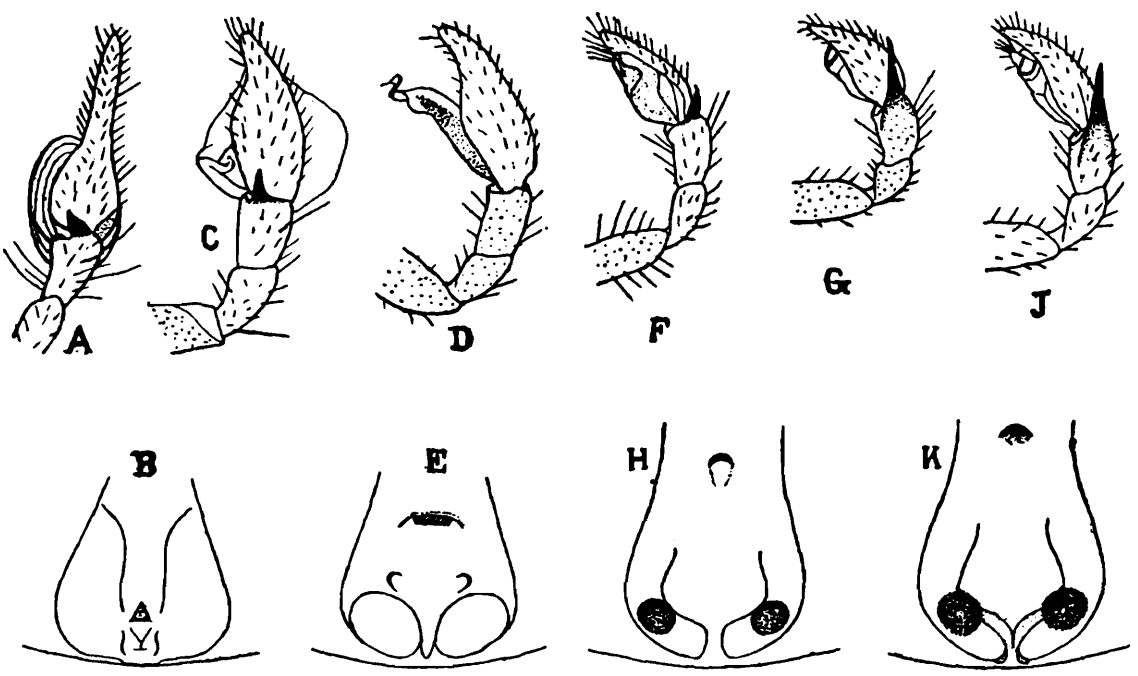
[1] Especially the distal extremities of the anterior tibiae.

Sphingius longipes, n. sp.

Figs. 19 A-B.

A number of specimens found among dead leaves under mango trees beside the travellers' bungalow at Pattambi, Malabar District.

This species can readily be recognised by its long slender and uniformly light coloured legs and by its oblique and narrowly ovate posterior median eyes. It is greenish brown in colour, the abdomen (in spirit) somewhat darker than the carapace and with a very distinct white spot just above the spinnerets. The median eyes of both rows are much larger than the laterals, those of the anterior row being round and those of the posterior row ovate with their pointed ends directed backwards and inwards and almost in contact, the posterior laterals being well separated from them. The anterior medians are, on the other hand,



Text-fig. 19.

Sphingius spp. Vulva and male palp.

A-B. *Sphingius longipes.*
C. *Sphingius nilgiriensis.*
D. *Sphingius kambakamensis.*
E-F. *Sphingius caniceps.*
G-H. *Sphingius barkudensis.*
J-K. *Sphingius bilineatus.*

almost in contact with the anterior laterals, but clearly separated from each other. The ocular quadrangle is approximately square. The thoracic groove is distinctly Y-shaped.

The vulva is somewhat tumid, with a median tongue-like plate extending almost to the posterior margin.

The tibia of the male palp bears distally on its outer side a short broad triangular apophysis, of which the lower side is approximately horizontal and the upper oblique. The tarsus is slender, with circular bulb round which a long style is closely coiled in a manner suggestive of Saturn's rings. The abdominal shield is not very distinct and extends only a little beyond the middle of the abdomen.

Sphingius nilgiriensis, n. sp.

Fig. 19 C.

A single male, about 5·5 mm. long, from the Kundahs, Nilgiri Hills. It is brownish in colour with golden pile on the abdominal shield which extends almost to the posterior end. There are no pale markings on either abdomen or legs. The tibial apophysis is very like that of *S. longipes*, but is somewhat more acute and more upwardly directed. The palpal organ is very different from that of *S. longipes*, its most conspicuous feature being a white membranous structure in front.

Sphingius kambakamensis, n. sp.

Fig. 19 D.

A single male from Kambakam Hill, *ca.* 2000-2,500 ft., about fifty miles north-west of Madras.

The general colouration is very dark, almost black, showing up the whitish portions of the legs even more strikingly than in *S. caniceps*. There are two broad transverse bands of whitish pile, one at the anterior and the other at the posterior end, and there is a pair of patches of longer white pile on the side membranes of the posterior part of the genital segment.

There is no tibial apophysis on the palp.

Sphingius caniceps Simon.

Fig. 19 E-F.

Sphingius caniceps, Simon, 1906, p. 301.

This species is not uncommon among dead leaves, stones, soil, etc., in Madras city. Most of the specimens before me were found in the Museum compound.

The markings on the dorsal surface of the abdomen of the female vary considerably in distinctness. The pale anterior patch is often hardly distinguishable, and the transverse lines behind it are usually more than one ; they are covered with golden pile in life. Immediately above the spinnerets there is usually a minute but very distinct patch of white pile, but this may be indistinct or absent and is not noticed by Simon in his description.

The colour of the male resembles that of the female, except that the abdomen is strongly chitinized above and below and (? always) lacks the pale anterior dorsal patch, though one or two transverse bands are present behind the middle. The white patch above the spinnerets is very conspicuous.

The tibia of the palp is armed on the outer side near the apex with a slender curved apophysis.

Sphingius barkudensis, n. sp.

Figs. 19 G-H.

Not uncommon among loose soil on Barkuda Island, Chilka Lake. One specimen from Bangalore.

The general colouration of the female resembles that of *S. caniceps*, the carapace being reddish brown and the abdomen olivaceous above, somewhat paler and browner beneath, occasionally with a white spot above the spinnerets but without the other markings characteristic of *S. caniceps* and *S. bilineatus*. The legs are less distinctly banded than in *S. caniceps*.

The vulva is similar in general plan to that of *S. caniceps*, but constantly different in detail (compare figs. 19 E and H). It is much longer, extending through the whole length of the genital segment instead of only through the posterior half.

The male differs from that of *S. caniceps* in having the tibial apophysis stouter, and straight instead of curved. In it as in the female the markings on the legs are less distinct but otherwise similar.

Sphingius bilineatus Simon.

Figs. 19 J-K.

Spingius bilineatus, Simon, 1906(1), pp. 301-302.

A number of specimens from among dead leaves under mango trees beside the travellers' bungalow at Pattambi, Malabar District. Mahé, the type locality, is on the coast somewhat further north in the same district and I have no hesitation in identifying my specimens as belonging to Simon's species, though the abdomen of the female bears a series of pairs of white spots throughout its length instead of a single pair of such spots near its middle with a pair of interrupted lines in front. The vulva is very like that of *S. barkudensis*, differing however in the larger size of the dark spots in the posterior angles. Simon suggests that *S. bilineatus* may prove to be the female of his *S. scutatus* from Ceylon ; but I scarcely think that this can be so, as the male of the Pattambi form does not fully agree with Simon's figures (1897[1], figs. 155-157). The tibial apophysis of the male palp is straighter as a whole and less rounded at its apex than in Simon's figure of *S. scutatus*. The abdomen is strongly scutate and bears two pairs of minute patches of white hair in front and one pair about half way back.

Genus **Castaneira** Keyserling.

Only two species of this genus have hitherto been described from the Oriental Region. One of these, described by Thorell from Sumatra under the name *Aqroeca inquinata*, is doubtfully referred to this genus by Simon. It differs entirely from all the species before me in its paler colouration, with small black spots on the abdomen, forming three longitudinal series dorsally. The remaining species, *C. zetes* Simon, has been recorded from Karachi, Pondicherry and Madura. It is evidently, therefore, widely distributed in India, and the larger of the two species which I recorded (1921, p. 418) from Barkuda Island under the name *corinnomma* sp. must I think be identical with it, though it does not seem to agree perfectly with the description in all characters, particularly the colour of the legs. The range of the specimens before me extends from Bangalore and Madras in the south to the Assam-Bhutan frontier in the north-east ; but specimens from the north-east

probably belong to a more or less distinct subspecies. Further material is required, however, before this point can be settled.

Four other species, all from India, are represented, all of which seem to be new. One of them was also recorded by me from Barkuda Island under the name *corinnomma* sp. (1921, p. 418).

Males are known in two species only, *P. zetes* and *P. flavipes* ; they are easily distinguishable by their colouration.

Females may be distinguished as follows :—

1.	Eyes of approximately uniform size, the two lines almost parallel, slightly convergent distally ; anterior coxae very dark, almost black, the remaining coxae much paler (often whitish in spirit) in the typical (Indian Peninsula) form, but not always so in specimens from Bengal, the Eastern Himalayas and Assam ; legs somewhat conspicuously striped longitudinally ; a large and somewhat slender, long legged species . . .	*C. zetes*, p. 273.
—	Median eyes of either anterior or posterior row much larger than laterals, the two rows usually more strongly convergent laterally ; coxae more uniformly coloured . .	2
2.	Anterior median eyes much larger than anterior laterals, posteriors of more uniform size ; spiders moderately large	3
—	Posterior medians much larger than posterior laterals, anteriors of more uniform size ; spiders smaller	*C. flavipes*, p. 275.
3.	Legs with strong longitudinal markings as in *C. zetes* ; posterior tibiae dark with conspicuous white band at apex	*C. albopicta*, p. 275.
—	Legs without longitudinal markings or white bands	*C. himalayensis*, p. 275.

Castaneira zetes Simon.

Figs. 20 A-B.

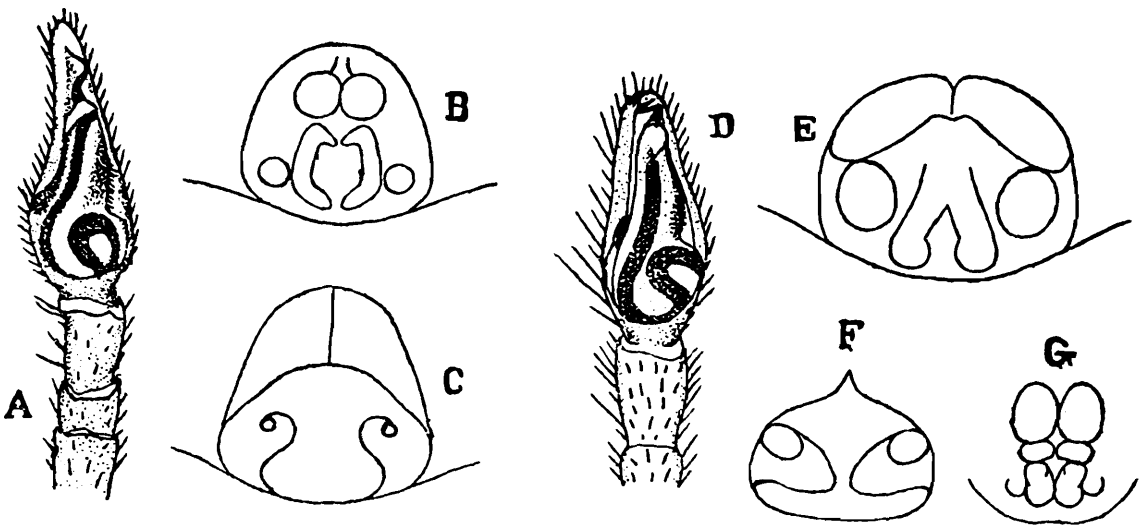
Castaneira zetes, Simon, 1892(2), p. 294.

Common in Madras among dead leaves. Also from Bangalore, Chittoor, Barkuda Island (Chilka Lake), Calcutta, Kalimpong, and the Bhutan frontier of Mangaldai District, Assam. The specimen from each of the last two localities and one of those from Calcutta have the coxae almost (in one case quite) uniformly dark, and the pale markings of the legs imperfectly developed. They should probably be regarded as a distinct subspecies. If my identification of this species is correct (see above, p. 272) Simon's description of it is not an altogether happy one, partly no doubt because the colouration, especially of the abdomen, is apt to be very indistinct in spirit specimens.

The total length of large specimens may be as much as 8 mm.

The general ground colour is black in life, with the sides of the lower surface of the genital segment dark chestnut, and the coxae and usually the lower surface of the femora of at least the third and fourth legs a paler reddish brown or even yellowish colour. The pile on the carapace is whitish but very thin in front, more distinct and of a somewhat golden colour behind. The bands on the abdomen are white ventrally, but also tend to be more golden above. They are arranged as follows : in front of the broad transverse band just in front of the middle, and usually united to it and to each other in the middle line, are two other smaller

transverse bands, of which one only is usually discernable, and that often with difficulty, in spirit specimens. The middle one of these bands is confined to the dorsal surface ; the first and third extend downwards and backwards (the first especially backwards) and are usually continuous with large whitish patches on the sides which have a less distinct mid-ventral white band, wider in front than behind, extending backwards between them from the posterior margin of the genital



TEXT-FIG. 20.

Castaneira, Corinnomma and *Coenoptychus* spp. Vulva and male palp.

A-B. *Castaneira zetes.*
C. *Castaneira himalayensis.*
D-E. *Castaneira flavipes.*
F. *Corinnomma harmandi.*
G. *Coenoptychus pulcher.*

segment. Midway between the third dorsal band and the posterior end are about two more bands, situated close together, of which the anterior is the strongest but does not nearly reach down to a pair of corresponding lateral patches which are usually present close behind those formed by the downward extensions of the third abdominal band. Finally, there is a conspicuous tuft of rather long snow-white pile immediately above the spinnerets. The femora of the first two pairs of legs are usually more or less completely black at the base, always with conspicuous longitudinal pale lines (which are often broader than the black lines between them) throughout the rest of the joint. The tibiae and tarsi of these legs are paler, so do not show these longitudinal bands so clearly. They are well developed on all but the terminal joints of the remaining two pairs of legs, however, and give them a markedly characteristic appearance.

The vulva is moderately large in mature specimens but without strongly marked characters.

The male is somewhat smaller and distinctly more slender than the female. It resembles the female in colouration, though the coxae of the last three pairs of legs and lower surface of the femora of the last two pairs are darker, the hind femora especially being practically as dark as the front two pairs below. The tibia of the palp bears a very small blunt downwardly directed extension of its inner distal margin, scarcely amounting to an apophysis.

Castaneira albopicta, n. sp.

Two specimens from Pashok, Darjiling District, one an almost mature female about 6 mm. long from an altitude of 3,500 ft., the other an immature specimen from 2,000 ft.

This species is closely allied to *C. zetes*, having the same strongly marked longitudinal striation of the legs; but all the coxae are uniformly pale, and there is a strongly marked pale ring at the apices of the hind tibiae. The hind patellae are also paler than in *C. zetes*. The anterior median eyes are much instead of slightly larger than the anterior laterals and are somewhat more distinctly separated from them. The anterior and posterior lateral eyes are much instead of slightly nearer together than are the anterior and posterior medians. They resemble the eyes of the following species, except that the two rows as a whole are somewhat more widely separated.

Castaneira himalayensis, n. sp.

Fig. 20 C.

Two females, one from Tindharia (*type*) and one from Punkabari, both at low elevations in the Darjeeling District, the latter quite at the base of the hills.

The length of this relatively large species is 11 mm. The Punkabari specimen is a very old one and nothing can be seen of its colour, which is somewhat pale throughout. The Tindharia specimen, which is in excellent condition, has the thorax and abdomen uniformly dark, almost black, throughout. The hind legs are slightly and the front legs markedly paler. The median eyes are much larger than the laterals in the anterior row, very slightly larger in the posterior row. The anterior laterals are smaller than the posterior laterals and are separated from them by about the diameter of one anterior lateral. The anterior medians are perhaps very slightly larger than the posterior medians and are separated from them by somewhat more than one diameter. The legs are long and slender, strongly chitinized and armed with numerous long and strong spines.

Castaneira flavipes, n. sp.

Figs. 20 D-E.

Bangalore, *ca* 3,000 ft., Mysore; Coonoor, Nilgiris; Horsleykonda, Chittoor District; Barkuda Island, Chilka Lake, Ganjam. *Type* from Barkuda Island.

Maximum length about 5 mm. The general colour is very dark, usually almost black above, though often slightly reddish towards the middle of the carapace. Below it is paler, sometimes much paler. The carapace is sparcely covered with fine pile of a somewhat golden colour. The dorsal surface of the abdomen bears in the female a well marked transverse patch of similar pile in front, occasionally followed by a fainter and more longitudinal patch. The posterior part of the abdomen bears three or four fine transverse bands of similar pile, often indistinct. In the male the dorsal surface of the abdomen is uniformly covered with

whitish pile, with indistinct golden patches laterally. In both sexes there is a well marked white spot above the spinnerets. The sternum is dark brown. The coxae are paler. The femora are dark brown with yellow apices sometimes covered with white pile, and are sometimes yellow at the base also. The patellae and tibiae are dark in the hind legs only. The remaining joints are yellow, usually in striking contrast to the darker parts. The dark parts often bear longitudinal lines of whitish pile which may be very conspicuous. In young specimens the legs are yellow throughout.

The structure of the vulva, though often difficult to distinguish, is somewhat different from that of *C. zetes*, as is shown in fig. 20 E. The male palps are without apophysis.

Genus **Corinnomma** Karsch.

Corinnomma harmandi Simon.

Fig. 20 F.

I have not seen any description of this species ; but a male and female specimen have been sent to me named by the British Museum. Judging from previous records (see above, p. 229) it must be widely distributed and by no means uncommon in Further India. In general appearance it is not unlike the largest specimens of the two or three preceding genera. The vulva of the female is shown in fig. 20 F. The palp of the male closely resembles those of *Castaneira zetes* and *flavipes*.

Genus **Coenoptychus** Simon.

Coenoptychus pulcher Simon.

Fig. 20 G.

Coenoptychus pulcher, Simon, 1885, p. 37.
Coenoptychus pulchellus, Green, 1912, pp. 92-93, figs. 5-6.

Several females of this remarkable Mutilid-like spider have been found running on open paths in Madras. From Seven Pagodas, Chingleput District, we have a single very small specimen in which the characteristic white spots on the abdomen are not developed, but which is apparently a young form of the same species.

The number of white spots on the abdomen is normally 7—three median and 2 pairs lateral—not 6 as described by Simon, but the degree of development of the anterior two of the median ones is somewhat variable. The vulva is shown in fig. 20 G.

Genus **Apochinomma** Pavesi.

Apochinomma nitidus (Thorell).

Tyrrhus nitidus, Thorell, 1895, pp. 39-40.

A named female from Tharrawaddy, probably somewhat immature, has been received from the British Museum. The mature form is apparently unknown.

BIBIOGRAPHY.

1758. Linnaeus, C. " Systema Naturae " Ed. 10, I (ii).

1806. Latreille, P. A. " Genera Crustaceorum et Insectorum Secundum Ordinem Naturalem in Familias disposita, Iconibus Exemplisque plurimus explicata." I (Paris and Strassburg, 1806), 302 pp., 16 pl.

1819. Latreille, P. A. " Nouveau Dictionnaire d'Histoire Naturelle appliquée aux Arts, à l'Agriculture, à l'Economie rurale et domestique, à la Medicine, etc." (I-XXXVI, 2 vols., Paris, 1816-1819) XXX.

1845. Koch, C. L. " Die Arachniden." XII (Nürnberg, 1845), 166 pp. pls. cccxcvii-ccccxxxii.

1857. Doleschall, C. L. " Bijdrage tot de Kennis der Arachniden van den Indischen Archipel." *Natuurk. Tijdschr. Ned. Ind.* XIII, pp. 399-434, pl. i-ii.

1859. Doleschall, C. L. " Tweede Bijdrage tot de Kennis der Arachniden van den Indischen Archipel." *Kom. Natuurk. Ver. Ned. Ind.*, V (5) (Batavia, 1859), 60 pp. 17 pl.

1874. Cambridge, O. P. " On some New Species of Drassides." *Proc. Zool. Soc. London*, 1874, pp. 370-419, pl. li-lii.

1877. Simon, E. " Études Arachnologiques, 5e Memoire. Arachnides recueillis aux îles Philippines par MM. G. A. Baer et Laglaise." *Ann. Soc. Ent. France*, (5) VII, pp. 53-96.

Thorell, T. " Studi sui Ragni Malesi e Papuani. I. Ragni di Celebes raccolti nel 1874 dal Dott. O. Beccari." *Ann. Mus. Civ. Stor. Nat. Genova* X, pp. 341-637.

1878. Thorell, T. " Studi sui Ragni Malesi e Papuani. II. Ragni di Amboina raccolti dal Prof. O. Beccari." *Ann. Mus. Civ. Stor. Nat. Genova* XIII, pp. 5-317.

1879. Karsch, F. " Arachnologishe Beiträge. V Zur Arachniden-Fauna Ceylans." *Zeitschr. Ges. Naturw.* (3) IV (=LII), pp. 547-560, pl.

1880. Simon, E. " Révision de la Famille des Sparassidae." *Act. Linn. Soc. Bordeaux* (4) IV (XXXIV), pp. 223-351.[1]

1881. Thorell, T. " Studi sui Ragni Malesi e Papuani. III. Ragni dell' Austro-Malesia e del Capo York, conservati n el Museo Civico di Storia Naturale di Genova." *Ann. Mus. Civ. Stor. Nat. Genova* XVII, pp. vii-xxvii, 1-720.

1882. Hasselt, A. W. M. van. " Araneae " in P. J. Veth's " Midden Sumatra " IV (iiA) (Leiden, 1882), 56 pp. 5 pl.

1884. Simon, E. " Arachnides recueillis en Birmanie par M. le Chevalier J. B. Comotto et appartenant au Musee Civique d'Histoire Naturelle de Genes." *Ann. Mus. Civ. Stor. Nat. Genova* XX, pp. 325-372, 10 text-figs.

[1] The page references given in the text to this work, which I have not seen, appear to be about 220 less than those of the paper in the journal; presumably they are from a reprint paged separately from p. 1 onwards.

1885. Cambridge, O. P. "Araneidea" in *Scientific Results of the Second Yarkand Mission* (London, 1878-91).

Simon, E. "Materiaux pour servir à la Faune arachnologique de l'Asie meridionale." *Bull. Soc. Zool. France* X.—I, pp. 1-26 (from Bellary); II, pp. 26-39 (from Ramnad); III, pp. 436-455 (from Malay Peninsula and Singapore); IV, pp. 456-462 (from Collegal).

1886. Simon, E. "Arachnides recueillis par M. A. Pavie dans la Royaume de Siam, au Cambodge, et in Cochinchine." *Act. Soc. Linn. Bordeaux* XL, pp. 137-166.

1887. Simon, E. (1) "Étude sur les Arachnides de l'Asie méridionale faisant partie des collections de l'Indian Museum (Calcutta)." *Journ. Asiatic Soc. Bengal* LVI (ii), pp. 101-116 and 282-287.

(2) "Espèces et Genres nouveaux de la Famille des Sparassidae." *Bull. Soc. Zool. France* XII, pp. 466-474.

Thorell, T. "Viaggis di L. Fea in Birmania e Regioni vicine. II, Primo Saggio sui Ragni Birmani." *Ann. Mus. Civ. Stor. Nat. Genova* (2ª) V (=XXV), pp. 5-417

1889. Simon, E. "Étude sur les Arachnides de l'Himalaya recueillis par MM. Oldham et Wood-Mason et faisant partie des collections de l'Indian Musuem; 1re Partie." *Journ. Asiatic Soc. Bengal* LXVIII (ii), pp. 334-344.

1889-90. Thorell, T. "Studi sui Ragni Malesi e Papuani. IV. Ragni dell' Indo-Malesia, Raccolti da O. Beccari, G. Doria, H. Forbes, J. C. H. Kinberg ed Altri, vol. i." *Ann. Mus. Civ. Stor. Nat. Genova* (2ª) VIII (=XXVIII), pp. 5-419.

1890. Hasselt, A. W M. van. "Araneae ex Archipelago Malayano" in Max Weber's "Zoologische Ergebnisse einer Reise in Niederlandisch Ost-Indien" I (Leiden, 1890-91), pp. 193-210. Descriptions of new species supplied by Simon.

Thorell, T. (1) "Aracnidi di Nias e di Sumatra raccolti nel 1886 dal Sig. E. Modigliani." *Ann. Mus. Civ. Stor. Nat. Genova* (2a) X (=XXX), 1890-91, pp. 5-106.

(2) "Diagnoses Aranearum Aliquot Novarum Indo-Malesia Inventarum." *T.c.*, pp. 132-172.

(2) Aracnidi di Pinang raccolti nel 1889 dai Signi. L. Loria e L. Fea." *T c.*, pp. 269-383.

1891. Thorell, T. "Spindlar från Nicobarerna och andra Delar af Södra Asien, etc." *Sv. Ak. Handl.* XXIV (2), pp. 1-149.

1891-92. Thorell, T. "Studi sui Ragni Malesi e Papuani. IV Ragni dell' Indo-Malesia Raccolti da O. Beccari, G. Doria, H. Forbes, J. G. H. Kinberg ed Altri, vol. ii." *Ann. Mus. Civ. Stor. Nat. Genova* (2a) XI (=XXXI), 490 pp.

1892. Karsch, F. "Arachniden von Ceylon und Minikoy." *Berlin Ent. Zeitschr.* XXXVI, pp. 267-310, pl. x-xii.

Thorell, T. "On some Spiders from the Andaman Islands collected by E. W. Oates, Esq." *Ann. Mag. Nat. Hist.* (6) IX, pp. 226-237.

1893. Hasselt, A. W. M. van. "Spinnen van Java, Sumatra en Ceylon." *Tijdschr. Ent.* XXXVI, pp. 129-158.

1894. Thorell, T. (1) "Decas Aranearum in insula Singapore a cel Workman inventarum". *Bull. Soc. Ent. Ital.* XXVI, pp. 321-355.

(2) "Förteckning öfver Arachnider fran Java och Närgransande öar, insamlade of decenen Dr. Carl Aurivillius; Jemte beskrifnigar a Nagra Sydasiatiska och Sydamerikanska Spindlar." *Bih. Sv. Vet. Akad. Handl.* XX (IV) 4, pp. 1-63.

1895. Thorell, T. "Descriptive Catalogue of the Spiders of Burma, based upon the collections made by Eugene W. Oates and preserved in the British Museum." (London, 1895), 406 pp.

1896. Simon, E. (1) "Études Arachnologiques; 27e Mémoire xlii. Descriptions d'espèces nouvelles de l'ordre des Araneae." *Ann. Soc. Ent. France* LXV, pp. 465-510, pl. xii-xiii.

(2) "Descriptions d'Arachnides nouveaux de la famille des Clubionidae." *Ann. Soc. Ent. Belg.* XL, pp. 400-422.

Workman, T. "Malaysian Spiders." (Belfast, 1896), 96 pl.

1897. Cambridge, F. O. P. (1) "On the Cteniform Spiders of Ceylon, Burmah and the Indian Archipelago West and North of Wallace's Line; with Bibliography and List of those from Australia South and East of Wallace's Line." *Ann. Mag. Nat. Hist.* (6) XX, pp. 329-356, pl. iv.

(2) "On some new and little-known Spiders (Araneidea)." *Proc. Zool. Soc. London*, 1896, pp. 1006-1012, pl. lii.

Pocock, R. I. "Spinnen (Araneae)." *Abh. Senckenb. Ges.* XXIII, pp. 591-629, pl. xxv-xxvi.

Simon, E. (1) "Histoire Naturelle des Araignées, 2nd ed. Vol. II, (Paris, 1897), 1080 pp., 1122 text-figs.

(2) "Arachnides recueilles par M. M. Maindron à Kurrachee et à Matheran près Bombay en 1896." *Bull. Mus. Paris*, 1897, pp. 289-297.

(3) "Matériaux pour servir à la faune arachnologique de l'Asie Meridionale. V (1). Arachnides recueillis a Dehra-Dun (N. W. Prov.) et dans le Dekka par M. A. Smythies." *Mem. Soc. Zool. France* X, pp. 252-262.

(4) "Descriptions d'Arachnides Nouveaux." *Ann. Soc. Ent. Belg.* XLI, pp. 8-17.

Thorell, T. (1) "Viaggio di Leonardo Fea in Birmania e Regioni vicine (LXXIII) Secondo Saggio sui ragni Birmani: I. Parallelodontes-Tubitelariae." *Ann. Mus. Civ. Genova* (2a) XVII (=XXXVII), pp. 161-267.

(2) "Araneae paucae Asiae australis." *Bih. Sv. Vet. Akad. Handl.* XXII (IV) 6, 36 pp.

1898. Cambridge, F. O. P. "On the Cteniform Spiders of Africa, Arabia and Syria." *Proc. Zool. Soc. London*, 1898, pp. 13-32, pl. iii-iv.

1899. Pocock, R. I. "Diagnoses of some new Indian Arachnida." *Journ. Bombay Nat. Hist. Soc.* XII, pp. 744-753.

1899. Simon, E. "Contribution à la Faune de Sumatra. Arachnides recueillis par M. J. L. Weyers, à Sumatra (2e memoire)." *Ann. Soc. Ent. Belg.* XLIII, pp. 78-125.

1900. Pocock, R. I. "Arachnida" in *Fauna of British India Series.* 279 pp., 89 text-figs. (London, 1900).

1901. Flower, S. S. "Notes on the Millipedes, Centipedes, Scorpions, etc., of the Malay Peninsula and Siam." *Journ. Straits Asiatic Soc.* No. 36, pp. 1-48.

Leardi in Airaghi, Z. "Aracnidi d'Almora." *Atti. Mus. Milano* XL, pp. 85-94. "Arachnidi di Mahe e Kandy." *T. c.* pp. 345-373.

Pocock, R. I. "Descriptions of some new species of Spiders from British India." *Journ. Bombay Nat. Hist. Soc.* XIII, pp. 478-498.

Simon, E. "On the Arachnida collected during the Skeat Expedition to the Malay Peninsula, 1899-1900." *Proc. Zool. Soc. London* 1901 (ii), pp. 45-84.

1902. Cambridge, F. O. P. "New Species of Spiders belonging to the Genus *Ctenus*, with Supplementary notes." *Ann. Mag. Nat. Hist.* (7) IX, pp. 401-415, pl. vii.

1903. Simon, E. (1) "Études Arachologiques. 34e Memoire. LIV Arachnides recueillis à Sumatra par M. J. Bouchard." *Ann. Soc. Ent. France* LXXII, pp. 301-310.

(2) "Descriptions d'Arachnides Nouveaux." *Ann. Soc. Ent. Belg.* XLVII, pp. 21-39.

1904. Pocock, R. I. "Arachnida" in J. Stanley Gardiner's *Fauna and Geography of the Maldive and Laccadive Archipelagoes, being the Account of the Work carried on and of the Collections made by an Expedition during the years* 1899 and 1900. (Cambridge, 1906), pp. 796-805, pl. lxii.

Simon E. (1) "Arachnides recueillis par M. A. Pavie en Indo-Chine." *Mission Pavie en Indo-Chine* 1879-1895. *III. Recherches sur l'Histoire Naturelle de l'Indo-Chine orientale.* (Paris, 1904), pp. 270-295, pl. xvi.

(2) "Arachnides de Java." *Mt. Mus. Hamburg* XXII, pp. 51-73, 5 figs.

1906. Simon E. (1) "Voyage de M. Maurice Maindron dans l'Inde Méridionale (mai à novembre 1901); 8me Mémoire, Arachnides 2e partie." *Ann. Soc. Ent. France* LXXV, 1906, pp. 277-305.

(2) Appendix to above entitled "Descriptions de quelques Arachnides des bas plateaux de l'Himalaya, communiqués par le R. P. Castets (de St. Joseph's College à Trichinopoly)." *T. c.* pp. 306-314.

(3) "Description d'un Arachnide cavernicole du Tonkin." *Bull. Soc. Ent. France* 1906, p. 27.

Strand E "Sumatra- und Neu-Guinea- Spinnen des naturhistorisches Museums zu Wiesbaden." *Wiesb. Jahrb. Ver. Nat.* LIX, pp. 257-278.

1907. Strand, E. (1) "Spinnen des Zoologischen Institute in Tübigen." *Zool. Jahrb.* (Syst.) XXIV, pp. 391-468.
(2) "Einige Spinnen aus Kamerun, Java und Australia." *Wiesb. Jahrb. Ver. Natk.* LX, pp. 177-219.
(3) Various papers in *Zool. Anz.* XXXI.

1911. Merian, P. "Die Spinnenfauna von Celebes. Beiträge zur Tiergeographie in Indoaustralischen Archipel." *Zool. Jahrb.* (Syst.) XXXI, pp. 165-314, 1 pl.

1912. Gravely, F. H. "Mimicry of a Mutillid by a Spider." *Rec. Ind. Mus.* VII, p. 87.
Green, E. E. "On a Remarkable Mimetic Spider." *Spolia Zeylanica* VIII, pp. 92-93, 1 pl.

1913. Strand, E. "Neue indo-australische und polynesische Spinnen des Senckenbergischens Museums." *Arch. Natg. Berlin* LXXIX, Abt. AH. 6, pp. 113-123.
Petrunkevitch, A. "Spiders collected by Mr. C. William Beebe in Burma and Borneo." *Ann. Ent. Soc. Amer. Columbus, Ohio* VII, pp. 169-175, pl. xxvi.

1915. Strand, E. "Indoaustralische, papuanische und polynesische Spinnen des Senckenbergischen Museums gesammelt von Dr. E. Wolf, Dr. J. Elbert u. a. Wissensch. Ergeb. d. Hanseatischen Sudsee-Exped. 1909. *Abh. Senckenb. Ges. Frankfurt a. M.* XXXVI (2), pp. 181-274, pl. xiii-xix.

1921. Gravely, F. H. "The Fauna of an Island in the Chilka Lake. Spiders and Scorpions." *Rec. Ind. Mus.* XXII, pp. 399-421, text-figs. 1-3, pl. xvii-xix.

1922. Hogg, H. R. "Some Spiders from South Annam." *Proc. Zool. Soc. London*, 1922 (1), pp. 285-312, 10 text-figs.

1923. Petrunkevitch, A. "On Families of Spiders." *Ann. New York Ac. Sci.* XXIX, pp. 145-180, pl. i-ii.

1928. Petrunkevitch, A. "Systema Aranearum." *Trans. Connecticut Ac. Arts and Sci.* XXIX, pp. 1-270.