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A revision of the spider genus *Phyaces* (Araneae : Salticidae)

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Introduction

The genus *Phyaces* Simon 1902, was comprised of two taxa, *P. comosus* Simon, the type species from Sri Lanka and *P. furiosus* Hogg from Sumatra. The latter species lacks the ornate hair tufts of *P. comosus* and is therefore transferred to the genus *Simaetha* Thorell to which it clearly belongs. The species is not redescribed in the present work, but will be dealt with when *Simaetha* is revised.

Interest in *P. comosus* stems from the unusual behaviour, cryptic appearance and bizarre ornamentation of this small salticid spider. They are detritus mimics in life and specimens have been collected from ground litter and litter trapped in the shrub layer of bushes. Several examples were preserved in spirit by the author before their unusual features were fully appreciated and it is unfortunate that only one live female was available for behaviour studies (see Jackson, 1986).

The standard abbreviations and measurements are those used by Wanless (1978a), but for the leg spination the system adopted is that used by Platnick and Shadab (1975).

Taxonomy

Genus *Phyaces* Simon

Phyaces Simon, 1902: 399. Type species *Phyaces comosus* Simon, by original designation and monotypy. Simon, 1903: 836, 839, 840, 843. Waterhouse, 1912: 230. Petrunkevitch, 1928: 191. Neave, 1940, III: 736. Roewer, 1954: 1009. Bonnet, 1958: 3647. Prószyński, 1971: 459; 1984: 10. Brignoli, 1983: 628.

DEFINITION. Small spiders adorned with pronounced hair tufts and with legs I enlarged; total length between 2.0—4.0 mm; sexes alike in general habitus. In life, cryptic detritus mimics.

Carapace: of medium height, slightly longer than broad, widest and somewhat bulbous at level of coxae II-III; fovea absent; cuticle sculptured, papillate-falsifoveate with setae, i.e. scattered setose pits with raised papillae-form rims posteriorly; adorned with lateral fringes and dorsal hair tufts. *Eyes*: with moderately pronounced lenses set on low tubercles; laterals with black surrounds; anteriors unequally spaced, medians contiguous, laterals separated from medians by about half their diameter, apices slightly recurved; posterior medians minute, set closer to and well outside optical axis of anterior laterals; posterior laterals about as large as anterior laterals, set just inside lateral margins of carapace when viewed from above; posterior ocular quadrangle clearly wider behind; entire quadrangle about 56% of carapace length. *Clypeus*: low. *Chelicerae*: of medium size, slightly more robust in male; bulbous but with anterior surface somewhat flattened; slightly inclined anteriorly, more or less parallel; fang moderately strong and curved; promargin with two teeth, retromargin with bicuspid tooth. *Maxillae*: moderately long, parallel with outer distal margins more or less rounded. *Labium*: longer than broad, greater than half maxillar length. *Sternum*: scutiform with markedly bulbous central area. *Pedichel*: short. *Abdomen*: set so that anterior part lies over thoracic slope; more or less ovoid and somewhat flattened with pronounced basal hair tuft; spinnerets relatively short, subequal in length, anteriors robust others slender; former position of colulus indicated by scanty group of setae between anterior spinnerets and tracheal spiracle; tracheal system not examined, spiracle an

indistinct slit near base of anterior spinnerets. *Legs*: first pair enlarged with scanty fringes, others relatively short and moderately robust; claws pectinate, tufts present, scopulae absent; spines few, but vary from normal to robust—strongest on metatarsi I. In males spines present on metatarsi, tibiae and femora of legs I-II and femora of legs III-IV, in females only present on metatarsi and tibiae of legs I-II. *Female palp*: moderately long and hairy.

Epigyne: moderately simple with median triangular pouch not always evident in uncleared specimens; copulatory openings indistinct and associated with large disc-like surrounds (arrowed, Fig. 2D, F); introductory ducts short and relatively broad; spermathecae rounded with large fertilization ducts.

Male palps: simple; femora bowed and laterally flattened; tibiae short with simple unmodified retrolateral apophysis; cymbium with distal scopula; embolus short, slender, arising from distal prolateral margin of tegulum; tegulum rounded with marginal seminal duct; expanded palps not examined.

DIAGNOSIS. The ornate hair tufts readily separate *Phyaces* from other salticid genera.

AFFINITIES. Simon (1903) was correct when he placed *Phyaces* in his subgroup Simaetheae. The general habitus and structure of the genitalia suggesting a relationship with the nominate genus *Simaetha* Thorell and furthermore, as Prószyński (1984) noted, it also shares affinities with *Ligurra* Simon, also in Simaetheae. A casual survey of other genera currently included in the sub group and unidentified specimens in the collections of the British Museum (Natural History), indicates that some genera may be synonymous and that there are possibly many new species to be described. It is also probable that diversity, in respect of habitus may be considerable.

For the present, *Phyaces* can only be treated as valid on the basis of its ornate hair tufts which are evidently autapomorphic for the genus. It could, however, fall into synonymy when the morphological peculiarities of Simaetheae are fully known.

***Phyaces comosus* Simon**

Phyaces comosus Simon, 1902: 399. LECTOTYPE ♂, PARALECTOTYPES 2 ♀ ♀, 3 ♂ ♂, (here designated) Sri Lanka, (MNHN, Paris). Simon, 1903: 836, 839, 840, 843. Waterhouse, 1912: 230. Petrunkevitch, 1928: 191. Neave, 1940, III: 736. Roewer, 1954: 1009. Bonnet, 1958: 367. Prószyński, 1971: 459; 1984: 110.

MALE from Badulla, in good condition. *Carapace* (Fig. 1B, C): sculptured papillate-falsifoveate with setae (see generic description); orange-brown lightly tinged black in eye region; clothed in scattered black hairs and fine shining greyish setae with long whitish and greyish hairs below lateral eyes and five black hair tufts dorsally, the posterior pair largest, tipped white and mixed with white hairs. *Eyes*: laterals with black surrounds; fringed by shining white and amber hairs. *Clypeus*: clothed in fine long grey hairs below anterior median eyes and long white hairs below anterior laterals; these sweep upwards in space between anterior laterals and anterior medians, to extend as rather scanty tufts above anterior median eyes. *Chelicerae* (Figs. 1E; 2C): rugulose, shiny with scattered finely setose papillae; pale yellow-brown with whitish hair along inner margins; teeth not examined. *Maxillae* (Fig. 1H) pale yellow-brown. *Labium*: pale yellow-brown lightly tinged grey. *Sternum* (Fig. 1G): central region bulbous; yellow-brown with scattered black hairs on margins, suffused black with fine greyish hairs centrally. *Coxae*: first pair large, yellow-brown lightly tinged black; others smaller, mottled black. *Abdomen*: dorsum yellow-brown to pale amber suffused and mottled black with vague chevrons posteriorly and four indistinct apodemal spots; clothed in recumbent fine amber setae and scattered stiff black hairs with an enormous tuft of grey and creamy white hairs anteriorly and inconspicuous scattered white tufts marginally; lateral sides grey with white guanin and black streaks, clothed in whitish and scattered stiff black hairs; venter creamy white mottled black on sides with three longitudinal black bands centrally; clothed in scattered long black hairs with fine whitish ones over paler areas; spinnerets pale yellow lightly tinged black with scattered black and grey-black hairs. *Legs*: first pair enlarged (Fig. 1A), yellow-brown with black mottling on inner and underside of femora, clothed in black and some white hairs forming fringes on femora, patellae and tibiae, also, on

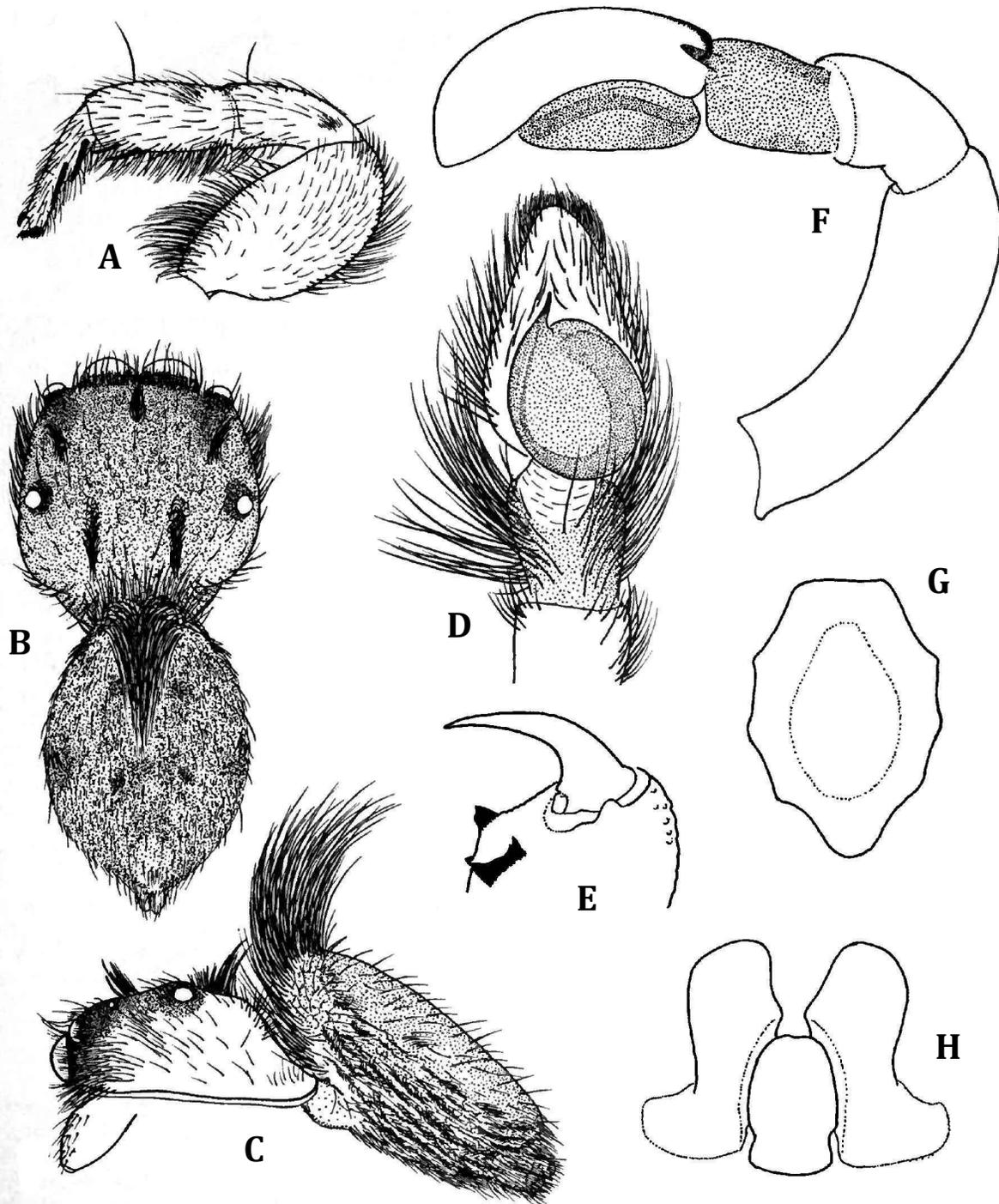


Fig. 1. *Phyaces comosus* Simon, ♂ from Badulla: A, leg I; B, dorsal; C, lateral; D, palp, ventral view; F, palp, retrolateral view. Paralectotype ♂: E, cheliceral teeth; G, sternum; H, maxillae and labium.

tibiae and patellae a thin covering of recumbent iridescent brown hairs; other legs pale yellow-brown grading to greyish white distally with joints and femora mottled black, generally clothed in scattered black and whitish hairs. Spines relatively large and robust on metatarsi I, short and robust on tibiae I, otherwise more or less normal elsewhere; spination of legs I: metatarsi v 2-0-0, p 0-0-1, r 0-0-1; tibiae v 0-0-3; femora d 0-0-3. *Palp* (Fig. 1D, F): yellow-brown clothed in black hairs.

Dimensions (mm): total length 2.92; carapace length ca. 1.52, breadth 1.48, height 0.74; abdomen length 1.96; eyes, anterior row 1.17, median row 1.12, posterior row 1.44; quadrangle length 0.84 (55% of carapace length).

| Leg | 1 | 2 | 3 | 4 | Palp |
|------------|------|------|------|------|------|
| Femora | 1.12 | 0.76 | 0.66 | 0.86 | 0.56 |
| Patella | 0.71 | 0.44 | 0.35 | 0.40 | 0.24 |
| Tibia | 0.68 | 0.32 | 0.34 | 0.42 | 0.16 |
| Metatarsus | 0.32 | 0.32 | 0.30 | 0.36 | ---- |
| Tarsus | 0.32 | 0.34 | 0.28 | 0.30 | 0.44 |
| Total | 3.21 | 2.20 | 1.95 | 2.38 | 1.40 |

Ratios: AM : AL : PM : PL :: 8.5 : 4.2 : 0.75 : 4; AL—PM—PL :: 5.5—8; AM : CL :: 8.5 : 1.5.

FEMALE from Dikwella, in fair condition. As male except for the following. *Carapace*: more heavily suffused black in eye region. *Chelicerae* (Fig. 2E) smaller, smoother and with fewer, less conspicuous setose papillae; teeth not examined. *Legs*: spination see generic description; spination of legs I: metatarsi as in male, tibiae v 1—2—1. *Epigyne* (Fig. 2A, B, D, F, G): although figured in ventral and posterior aspects, the latter is probably the more usual view point because of the position of the abdomen relative to the carapace.

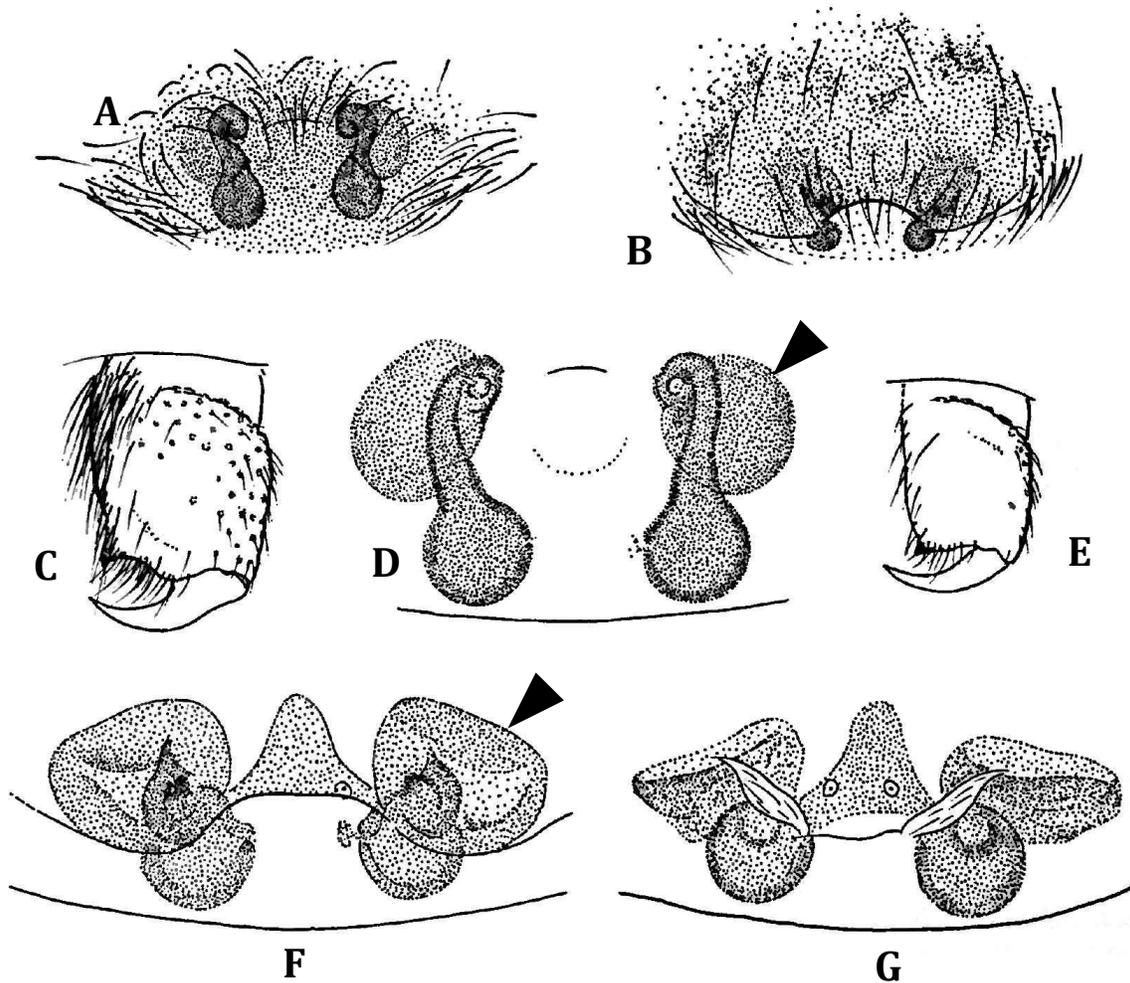


Fig. 1. *Phycates comosus* Simon, ♀ from Dikwella: A, epigyne, posterior view; B, epigyne, ventral view; D, vulva, posterior view; E, chelicera; F, vulva, ventral view; G, vulva, dorsal view. ♂ paralectotype: C, chelicerae.

Dimensions (mm): total length 2.9 (pedicel stretched); carapace length 1.40, breadth 1.36, height 0.68; abdomen length 1.48; eyes, anterior row 1.14, medium row 1.16, posterior 1.39; quadrangle length 0.8 (57% of carapace length).

| Leg | 1 | 2 | 3 | 4 | Palp |
|------------|------|------|------|------|-------|
| Femur | 0.88 | 0.64 | 0.56 | 0.78 | 0.44 |
| Patella | 0.56 | 0.40 | 0.28 | 0.36 | 0.22 |
| Tibia | 0.46 | 0.32 | 0.28 | 0.44 | 0.24 |
| Metatarsus | 0.32 | 0.32 | 0.30 | 0.36 | ----- |
| Tarsus | 0.20 | 0.24 | 0.28 | 0.32 | 0.32 |
| Total | 2.42 | 1.92 | 1.70 | 2.26 | 1.22 |

Ratios: AM : AL : PM : PL :: 8 : 4 : 0.8 : 4; AL—PM—PL :: 5.5—7.5; AM : CL :: 8 : ca. 1.5.

VARIATION. Male total length 2.72-2.96 mm, carapace length 1.44-1.52 mm (four specimens); female total length 2.72-3.16 mm, carapace length 1.28-1.4 mm (four specimens).

In the majority of females there is an orange scutum on the dorsum of the abdomen, which is lacking in males and not evident in the female described above. Also, the abdominal apodemes are sometimes conspicuous, in reality there are four pairs, but the anterior pairs are close together, minute and not always evident.

DISTRIBUTION. Sri Lanka.

MATERIAL EXAMINED. Sri Lanka: Badulla, Dunhinda Falls, 1♂, ground litter, 20.x.1982 *F. R. Wanless*; Dikwella, nr. Badulla, 1♀, roadside vegetation by paddy field, 20.x.1982, *F. R. Wanless*, (BMNH). Kandy: lectotype ♂, paralectotypes 2♂♂, 3♀♀, *E. Simon*, (MNHN, Paris. 20505); Peradeniya: Royal Botanic Gardens, 1♀, in litter beaten from bamboo, 16.x.1982, *F. R. Wanless*; 1♀, O. P.-Cambridge coll, (UM, Oxford).

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