

THREE NEW TORYMIDAE (HYMENOPTERA : CHALCIDOIDEA) FROM *FICUS ARNOTTIANA*

U. C. Abdurahiman & K. J. Joseph

*Department of Zoology, University of Calicut, Calicut University P.O.
Kerala, India*

ABSTRACT. Three new species of fig insects of the family Torymidae, viz., *Philotrypomorpha indica*, gen. et sp. nov., *Sycoscapter arnottianus*, sp. nov. and *Philosycella wiebesina*, gen. et sp. nov., from *Ficus arnottiana* Miq. are described.

Philotrypomorpha, gen. nov.

Female : Head distinctly over one and one-fourth as wide between the external margins of the eyes as long. Antenna with twelve segments, of which the third and fourth are annuliform. Mandible bidentate. Fore, mid and hind tarsi of legs five-segmented each. The eighth and ninth segments of the abdomen tubular.

Male : Head a little longer than wide; lateral margins of the head converging forward. Antenna with eleven segments with the third segment forming an indistinct ring-joint. Mandible bidentate. Pronotum large and massive. Mesonotum and metanoto-propodeum fused; wings reduced. The fore-tarsal segments excluding the metatarsus fused; mid and hind tarsi five-segmented each.

Comparison of *Philotrypomorpha* with *Philotrypesis* :

Female

Antenna consists of twelve segments with two ring joints.

Eighth and ninth segments of the abdomen elongated and tubular.

Antenna formed of thirteen segments with three ring joints.

Eighth and ninth segments of the abdomen tubular.

Male

Head a little longer than wide.

The antennal ring joint is small and indistinct.

Head generally wider than long.

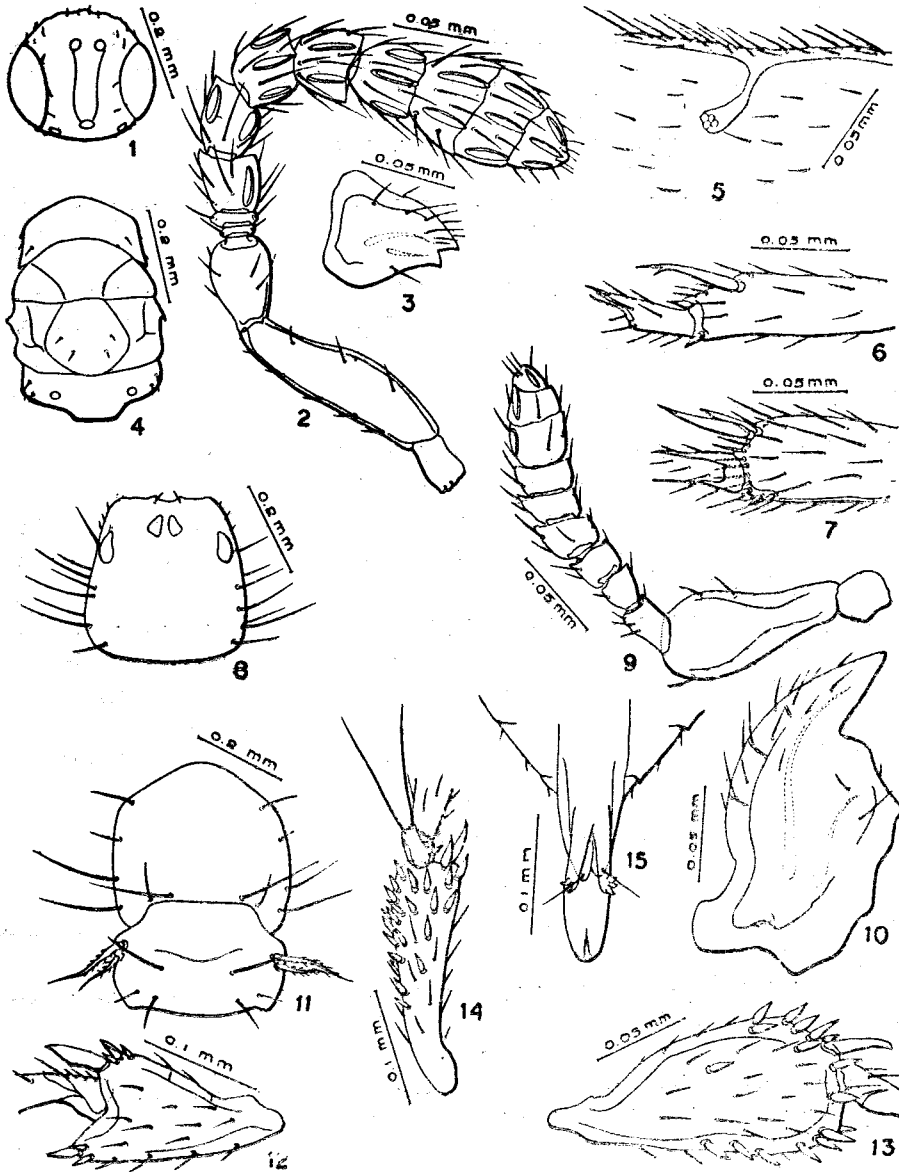
Ring-joint is distinct.

1. **Philotrypomorpha indica**, sp. nov. (Figs. 1-15)

Female : Length 1.86 mm. Head, thorax and abdomen with a fundamental yellowish-brown coloration; antennae excepting the scape and sheaths of the ovipositor smoky-brown; eyes and ocelli brownish-black; wings hyaline.

Published December 1976

Bonček



Figs. 1-15. *Philotrypomorpha indica*, sp. nov. Female (Figures 1-7) : 1, head; 2, antenna; 3 mandible; 4, thorax; 5, stigmal vein; 6, apex of the fore tibia; 7, apex of the hind tibia. Male (Figures 8-15) : 8, head; 9, antenna; 10, mandible; 11, thorax; 12, fore tibia; 13, mid tibia; 14, hind tibia and metatarsus; 15, genital armature.

Head (Fig. 1) distinctly over $1.25\times$ wider between the external margins of eyes than long; lateral margin forwards of eye converging and distinctly over $0.5\times$ the longitudinal diameter of the eye; posterior margin of the head convex; eyes large. Antenna (Fig. 2) with twelve segments, of which two are annuliform; scape $3.33\times$ as long as wide; second about $1.6\times$ as long as wide; third and fourth form ring-joints, of which fourth is definitely larger than third; fifth, sixth and seventh of equal width; fifth as long as wide; sixth a little over $1.33\times$ as long as fifth; seventh slightly shorter than sixth; eighth and ninth of equal width; eighth a little shorter than seventh and a little longer than wide; ninth equal to seventh in length and $1.17\times$ as long as wide; tenth, eleventh and twelfth join to form a club which is distinctly less than twice as long as wide; setae and sensoria on segments five to twelve as shown in figure. Mandible (Fig. 3) distinctly longer than wide; bidentate. Maxillary palpus four-segmented; labial palpus two-segmented.

Thorax (Fig. 4) a little over $1.5\times$ as long as wide; pronotum over twice as wide as long, its surface with faint rugosities. Mesonotum distinctly longer than wide, with scutum a little over $1.5\times$ as wide as long; scapulae distinctly wider than its own length; the surface of the scutum and scapulae with clear rugosities; scutellum a little over $1.33\times$ as wide as long; axillae as wide as long; metanoto-propodeum clearly over $3.0\times$ as wide as its maximum length. Fore wing about $2.2\times$ as long as wide; submarginal vein about $1.75\times$ the marginal; postmarginal hardly half the marginal and twice as long as the stigmal; the distal end of the stigmal vein (Fig. 5) with four round sensillae as in figure; pubescence moderate. Fore femur about $2.5\times$ as long wide, with an outer convex margin; tibia about five-sixths the femur, a little less than $5.5\times$ as long as its own width, with its distal end (Fig. 6) provided with two odontoid spines and a bifid apical spur. Tarsus a little over $0.66\times$ the tibial length. Mid tibia long, about eleven times as long as its own width; length of tarsus a little over $0.8\times$ the tibia; metatarsus about $0.4\times$ the tarsus and $0.6\times$ the length of the three following segments combined. Hind tibia about $5.33\times$ as long as its own width; the distal end of the tibia (Fig. 7) is provided with four short and stout odontoid spines at its outer aspect, two unequal apical spurs on the inner aspect and a few spines on the distal margin, as shown in figure. Tarsi longer than tibia; metatarsus distinctly less than half the tarsal length and a little over $0.83\times$ the length of the three following segments combined.

Abdomen : Length up to the seventh urotergite $1.66\times$ as long as the height of the abdomen; the combined length of the eighth and ninth tubular segments of the abdomen equal to the combined length of abdominal segments 2 to 7; projecting part of the ovipositor a little less than $1.33\times$ as long as the abdomen; ovipositor valves strongly setiferous.

Male : Length 1.4 mm. Head, pronotum and fore coxae yellowish-brown; rest of the thorax and abdomen pale yellowish-brown; mandibles, fore legs

excepting the coxae, and mid and hind tibiae rusty yellowish-brown; remaining parts of the mid and hind legs and antennae pale yellowish-brown; eyes black.

Head (Fig. 8) : a little longer than wide; lateral margins of head converging forwards; epistomal margin as in figure; dorsum of head with a few long macrochaetae. Antenna (Fig. 9) with eleven segments with the third forming a small indistinctly demarcated ring-joint; scape about $2\times$ as long as its maximum width; second segment over $1.5\times$ as long as wide; fourth a little wider than long; fifth as long as fourth but slightly wider; sixth, seventh and eighth of equal length and width, slightly longer than fifth, $1.25\times$ as wide as long, ninth, tenth and eleventh fused to form a club which is over $1.5\times$ as long as wide; segments four to eleven with a few setae and sensoria as in figure. Mandible (Fig. 10) about $2\times$ as long as wide; bidentate. Maxillary palpus four-segmented, labial palpus two-segmented.

Thorax (Fig. 11) distinctly less than $1.5\times$ as long as wide; pronotum large and massive, a little wider than long; its anterior margin convex; lateral posterior angles slightly projected backwards as shown in figure. Mesonotum and metanoto-propodeum fused, distinctly less than $1.5\times$ as wide as long; propodeal tracheal spiracles with small rounded peritremes. Wings reduced; fore wing $1.75\times$ as long as the hind wing. Fore tibia over $2\times$ as long as wide, the distal end of the tibia (Fig. 12) at its outer aspect provided with three stout unequal odontoid spines and the inner aspect with four odontoid spines and a long and stout apical spur as in figure. Length of tarsus a little less than $0.5\times$ the tibial length; metatarsus $0.33\times$ the tarsus; remaining segments fused, their total length $2.66\times$ the length of metatarsus. Mid tibia distinctly longer than the mid femur and over $2\times$ as long as its own width, claviform, with seventeen odontoid spines and a stout apical spur at its distal end, as shown in figure (Fig. 13). Hind tibia (Fig. 14) $3.5\times$ as long as its own width with many odontoid spines, long setae and two apical spurs, disposed as in figure. Length of tarsus distinctly less than the length of tibia; metatarsus a little longer than half the tarsal length, its projecting distal outer margin with two long macrochaetae and inner margin with two stout spines as shown in figure; fifth segment a little shorter than metatarsus.

Abdomen $1.25\times$ as long as its height; genital armature (Fig. 15) with two ventral flattened processes each provided with a long apical seta, and a pair of long dorsal appendages each bearing at its distal end three odontoid spines; aedeagus flattened, shape as in figure.

Holotype ♀, dissected on slide Nos. 21-1a and 21-1b, *allotype* ♂, dissected on slide Nos. 21-2a and 21-2b and *paratypes* 31 ♀♀, 4♂♂, in alcohol, INDIA : KERALA : Calicut, 28.iv.1968, U.C. Abdurahiman, from figs of *Ficus arnottiana* Miq. (det. by E.J.H. Corner).

This new genus *Philotrypomorpha* is closely allied to the genus *Philotrypesis* Forst. and hence included in the tribe, *Philotrypini* Wiebes.

2. *Sycoscapter arnottianus*, sp. nov. (Figs. 16-29)

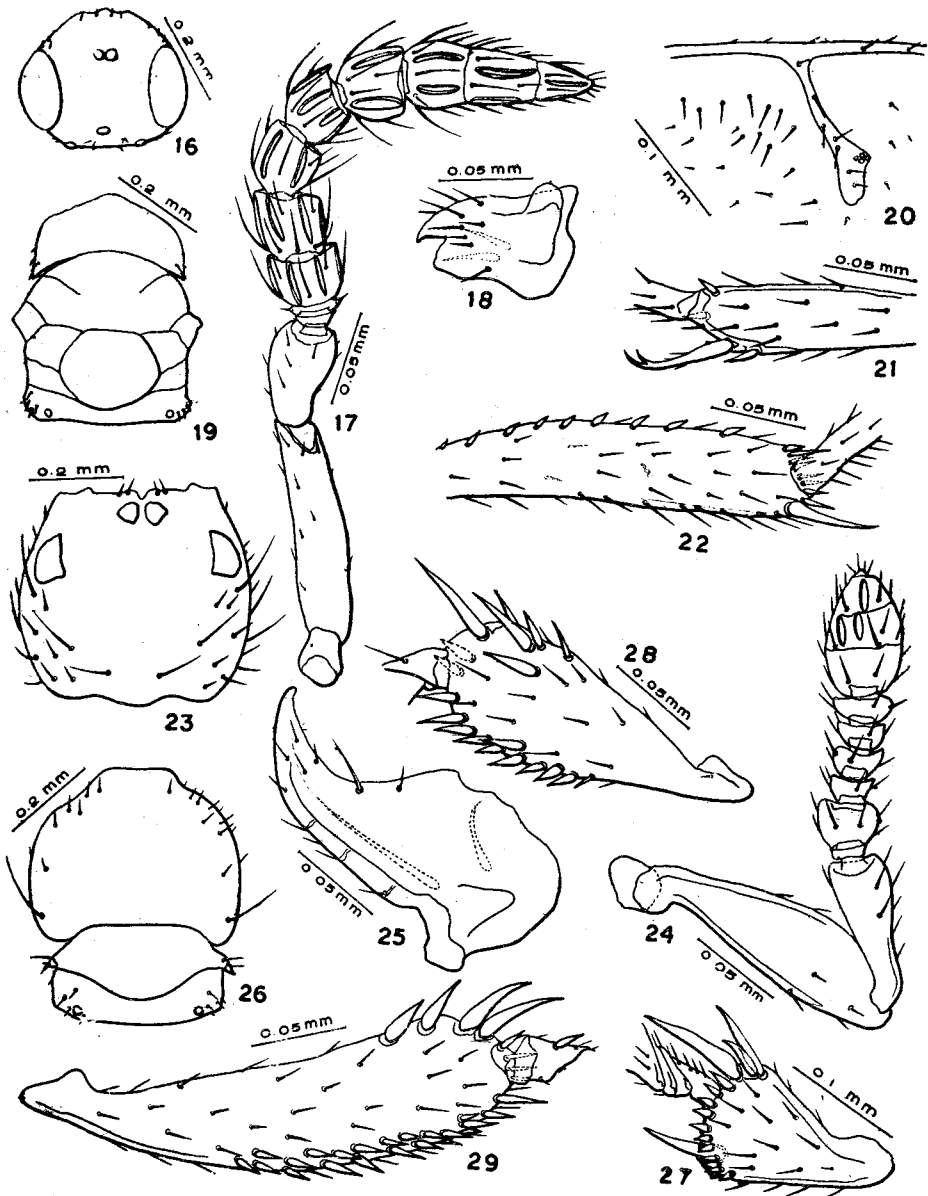
Female : Length 1.4 mm. Ovipositor 2.66 mm long. Body with iridescent green and blue coloration; legs and scapes of antennae pale brownish-yellow; remaining parts of the antennae smoky-brown; ovipositor yellowish-brown; eyes coralline.

Head (Fig. 16) about $1.33\times$ as wide as long; lateral margin forwards of eye a little over $0.66\times$ the longitudinal diameter of the eye; epistomal margin as in figure; dorsum of the head with close reticulated and pitted punctae; antennal toruli close together. Antenna (Fig. 17) with twelve segments, of which the third and fourth form ring-joints; scape $3.75\times$ as long as wide; second segment a little less than $1.5\times$ as long as wide; fifth segment distinctly wider than long; sixth a little longer than fifth and as long as wide; seventh longer than sixth, but less wide; eighth and ninth almost equal and equal to fifth in length, distinctly wider than their own lengths; tenth, eleventh and twelfth fused to form a club, about $2.66\times$ as long as wide; setae and sensoria on segments five to twelve as shown in figure. Mandible (Fig. 18) bidentate, distinctly less than $1.5\times$ as long as wide. Maxillary palpus four-segmented; labial palpus two-segmented.

Thorax (Fig. 19) $1.33\times$ as long as wide. Pronotum over twice as wide as long with closely packed reticulated and pitted punctation on its dorsal surface. Mesonotum distinctly longer than wide, surface with closely reticulated and pitted punctae; scuto-scapulae $2\times$ as wide as long; scutellum about $1.2\times$ as wide as long; axillae a little longer than wide; metanoto-propodeum $5\times$ as wide as its length. Fore wing a little over $2.25\times$ as long as wide; submarginal vein about $1.5\times$ as long as the marginal and distinctly over $1.5\times$ the stigmal; the stigmal vein dilated at its extremity and bears four rounded sensilla as in figure (Fig. 20); alar cuticle anterior to the stigmal vein with a few long conspicuous pilae. Hind wing about $4.33\times$ as long as its own width. Fore tibia a little less than $3.66\times$ as long as its own thickness; its distal end (Fig. 21) with three odontoid spines and an apical spur as in figure. Tarsi $0.66\times$ the length of tibia; metatarsus about $0.43\times$ the tarsal length and over $0.75\times$ the combined length of the three following segments; fifth segment about $0.66\times$ the metatarsus. Hind tibia over six times as long as its own thickness; its outer margin with ten short odontoid spines, its inner margin distally with many long spines and an apical spur as in figure (Fig. 22). Length of tarsus over $0.6\times$ the tibial length; metatarsus distinctly over less than half the tarsal length and $0.8\times$ the length of the three following segments combined; fifth segment a little over half the length of metatarsus.

Abdomen about $1.66\times$ as long as its height. The length of ovipositor a little over $3.33\times$ as long as abdomen.

Male : Length 1.6 mm. Dorsum of head and pronotum yellowish-brown;



Figs. 16-29. *Sycosapter arnottianus*, sp. nov. Female (Figures 16-22): 16, head; 17, antenna; 18, mandible; 19, thorax; 20, stigmatal vein; 21, distal part of the fore tibia; 22, distal part of the hind tibia. Male (Figures 23-29): 23, head; 24, antenna; 25, mandible; 26, thorax; 27, fore tibia; 28, mid tibia; 29, hind tibia.

rest of the body excepting the fore tibiae and mandibles with pale yellowish-brown coloration; mandibles and fore tibiae reddish-brown; eyes black.

Head (Fig. 23) $1.2\times$ as wide as long: epistomal margin with a median shallow groove bordered laterally by two faint convexities as in figure; antennal toruli close together near the anterior margin of the head; lateral margin of the head slightly covering forwards. Antenna (Fig. 24) eleven-segmented with one ring-joint; scape hardly $3.5\times$ as long as wide; second segment a little over $1.5\times$ as long as wide; third forms a ring-joint; fourth segment $1.33\times$ as wide as long; fifth smaller than fourth, $1.5\times$ as wide as its own length; sixth and seventh equal, a little larger than fifth and a little less than $1.5\times$ as wide as long; eighth slightly shorter than seventh, but wider, $1.66\times$ as wide as long; ninth, tenth and eleventh form a club, a little less than $1.5\times$ as long as its own width; setae and sensoria on segments four to eleven as in figure. Mandible (Fig. 25) twice as long as wide; falcate; bidentate; with one tooth at the tip and another at the base. Maxillary palpus four-segmented labial palpus two segmented.

Thorax (Fig. 26) a little less than $1.25\times$ as long as wide; pronotum large and massive, about $1.17\times$ as wide as long. Metanoto-propodeum a little less than $3.75\times$ as wide as long. Wings much reduced. Fore tibia $1.75\times$ as long as its own width; its distal end (Fig. 27) broader, shape subtriangular, with many stout odontoid spines, three very long odontoid spines and a longer apical spur disposed at the distal end as shown in figure. Tarsus $0.66\times$ the tibia; metatarsus distinctly less than $0.5\times$ the tarsal length and slightly shorter than the combined length of the three following segments; fifth segment a little over $1.25\times$ as long as metatarsus. Mid tibia $2.5\times$ as long as its own width, with 18 odontoid spines and an apical spur as in figure (Fig. 28). Length of tarsus $0.75\times$ the tibia; metatarsus $0.2\times$ the tarsal length and over $0.75\times$ the length of the three following segments combined; fifth segment distinctly longer than metatarsus. Hind tibia (Fig. 29) over $4.66\times$ as long as its own width with a few long and many short odontoid spines, two unequal apical spurs and many setae disposed as in figure. Tarsi $0.6\times$ the tibial length; metatarsus a little more than $0.66\times$ the tarsal length and slightly shorter than the combined length of the three following segments; its ventral margin with four odontoid spines; fifth segment $0.66\times$ the length of metatarsus.

Abdomen a little over $1.5\times$ as long as its height. Genital armature with each of its ventral processes provided with two setae.

Holotype ♀, dissected on slide Nos. 22-1a and 22-1b, *allotype* ♂, dissected on slide Nos. 22-2a and 22-2b, *paratypes* 16♀♀, 10♂♂, in alcohol, INDIA : KERALA : Calicut, 28.iv.1968, U.C. Abdurahiman, from figs of *Ficus arnottiana* Miq.

Sycosapter arnottianus, sp. nov. is related to *Sycosapter* (= *Indothymus*) *infectorius* Joseph. However, the following characters of the female differentiate the new species from the latter.

Sycosapter arnottianus, sp. nov.

Length 1.4 mm.
 Scape of antenna $3.75\times$ as long as wide.
 Maxillary palpus four-segmented.
 Fore wing $2.25\times$ as long as wide.
 Abdomen $1.66\times$ as long as its height.

Sycosapter infectorius Joseph

Length 1.27 mm.
 Scape $4\times$ as long as wide.
 Maxillary palpus three-segmented.
 Fore wing about $2.5\times$ as long as wide.
 Abdomen $2.66\times$ as long as broad.

Philosycella, gen. nov.

Female: Head about $1.66\times$ as wide between the external margins of eyes as long. Antenna consisting of thirteen segments of which three, four and five are annuliform. Mandible tridentate. Dorsum of the head and thorax with reticulate punctation. Fore, mid and hind tarsi five-segmented each; abdomen laterally compressed, surface reticulated.

Male: Head distinctly over $1.5\times$ as wide as long. Antenna consisting of eleven segments with the third forming a ring-joint; scape very large, almost rectangular in shape. Mandible long and slender, almost falcate, with three glands. Pronotum large and massive. Fore wings reduced, with a few long spines. Hind wings absent. Fore, mid and hind tarsi four-segmented each.

Type-species: *Philosycella wiebesina**, sp. nov.

This new genus is allied to *Philosycus* Wiebes in several female and male characters. The essential differences between this genus and *Philosycus* which are evident in the male characters are as follows:

<i>Philosycella</i>	<i>Philosycus</i>
The antenna formed of eleven segments with one ring-joint.	Antenna eleven segmented, with two ring-joints.
Length-width ratio of the head is 4 : 6	Length-width ratio is 5 : 4.
Antennal toruli close together on the midline of the dorsum of the head.	Antennal toruli are wide apart and situated in the posterior half of the head.
Mandible long, slender and almost falcate.	Mandible stout and scarcely falcate.

3. *Philosycella wiebesina*, sp. nov. (Plate 3)

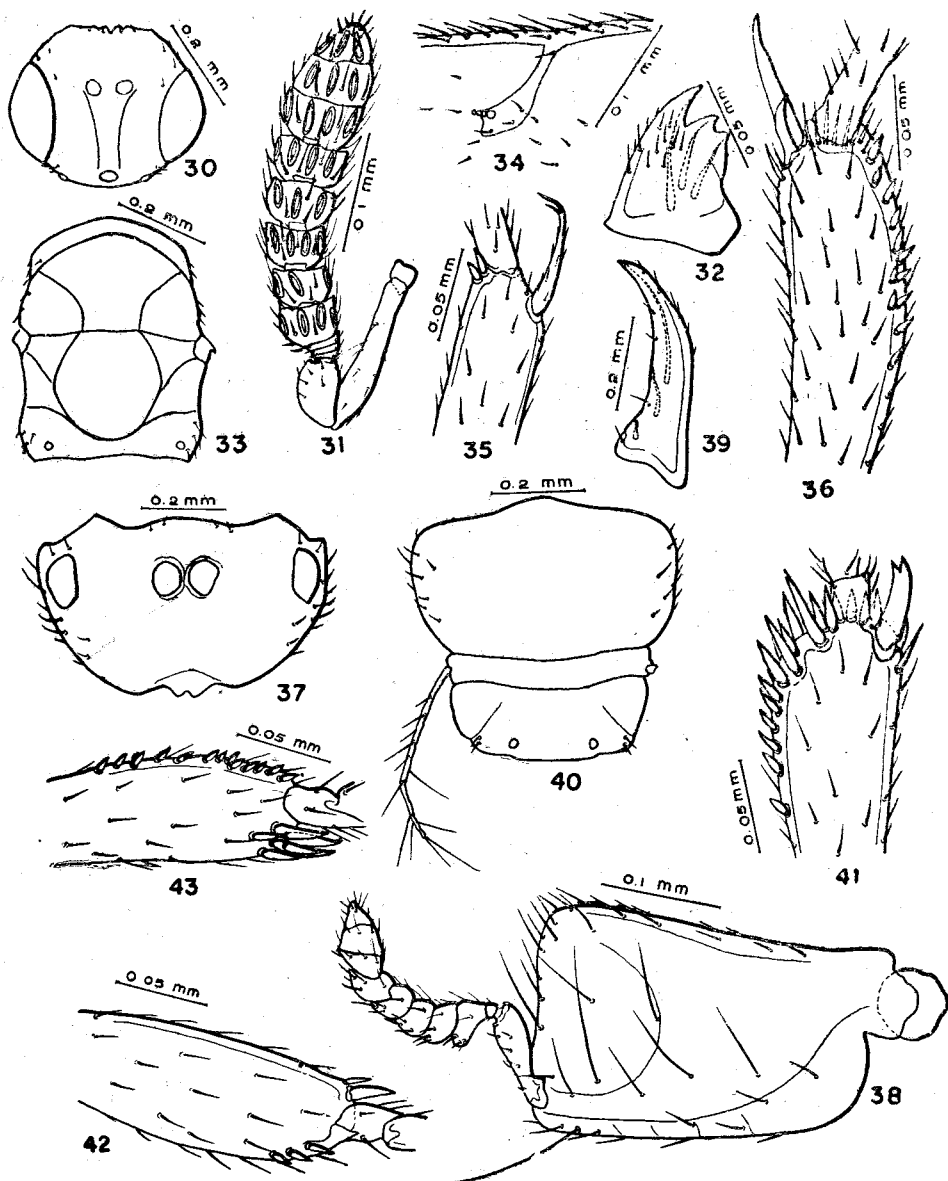
Female: Length 1.52 mm. Body with dark iridescent green and blue coloration; legs excepting the coxae pale yellowish-brown; antenna rusty yellowish-brown; eyes coralline.

Head (Fig. 30) about $1.4\times$ as wide between the external margins of eyes as long; epistomal margin with two lateral convexities separated by a narrow groove in the centre as shown in the figure; dorsum of head with clear reticulated punctae; lateral margin forwards of eye a little over $1.6\times$ the longitudinal diameter

* Named after Dr. J.T. Wiebes for his valuable contributions towards the taxonomy of fig chalcidoids.

of the eye; antennal toruli somewhat close to each other. Antenna (Fig. 31) consisting of thirteen segments of which segments three to five are annuliform; scape a little less than $3.66\times$ as long as wide; second segment about $1.6\times$ as long as wide; sixth segment a little less than $1.33\times$ as wide as long; seventh slightly longer; over $1.2\times$ as wide as long; eighth equal to sixth in length, but less wide; width equal to that of seventh; ninth and tenth almost equal, longer than eighth; ninth distinctly less than $1.33\times$ as wide as long; tenth slightly wider than ninth; eleventh, twelfth and thirteenth form a club, over twice as long as wide; setae and sensoria on segments six to twelve as shown in figure. Mandible (Fig. 32) a little less than $1.4\times$ as long as wide; tridentate. Maxillary palpus four-segmented; labial palpus two-segmented.

Thorax (Fig. 33) a little less than $1.4\times$ as long as wide; dorsum with reticulate sculpture. Pronotum over $3\times$ as long as wide. Mesonotum a little wider than long; scutoscapulae hardly thrice as wide as long; scutellum a little wider than long; axillae about $1.66\times$ as long as wide. Metanotopropodeum distinctly over thrice as wide as long; propodeum very short in the mid-line and expands laterad; peritremes of the propodeal spiracles subcircular. Fore wing about $2.25\times$ as long as wide; submarginal vein $3.6\times$ the length of marginal; post-marginal distinctly longer than the marginal and a little less than $1.5\times$ the length of the stigmal; distal end of the stigmal vein (Fig. 34) with four sensillae arranged in a line as shown in figure; wing membrane moderately pilose. Hind wing $6.25\times$ as long as wide. Fore coxa over twice as long as wide; surface with oblique rugosities; trochanter over $1.33\times$ as wide as long; femur about $1.2\times$ as long as coxa and distinctly over thrice as long as its own width; tibia about $0.8\times$ the femur, over $4.5\times$ as long as its width; distal end of the tibia (Fig. 35) at its outer aspect with two short odontoid spines and the inner aspect with a long apical spur as shown in the figure. Tarsus about $0.66\times$ the tibial length; metatarsus hardly half the tarsal length and $0.66\times$ as long as the three following segments combined; fifth segment hardly half the metatarsus. Mid coxa slightly wider than long; trochanter a little less than twice as long as wide; femur distinctly over twice as long as coxa, over $3.6\times$ as long as its own width; tibia longest, $2.5\times$ as long as coxa and over $5.5\times$ as long as its own width; its distal end with a long apical spur. Tarsi $0.8\times$ the length of tibia; metatarsus over half the tarsus in length and slightly shorter than the length of the three following segments combined; fifth segment one-fourth the metatarsus. Hind leg coxa $2.4\times$ as long as wide; surface with oblique rugosities; trochanter hardly twice as long as wide; femur distinctly longer than coxa, a little over $2.66\times$ as long as its own width; tibia as long as femur, a little less than $5\times$ as long as its own width; its outer margin with twelve odontoid spines and the inner distal margin with an apical spur and many long spines (Fig. 36), Tarsi over $0.8\times$ the tibial length; metatarsus a little over $0.4\times$ the tarsal length and $0.8\times$ the combined length of the three following segments; fifth segment hardly over $0.33\times$ the metatarsus.



Figs. 30-43. *Philoscella wiebesina*, sp. nov. Female (Figures 30-36): 30, head; 31, antenna; 32, mandible; 33, thorax; 34, stigmatal vein; 35, apex of the fore tibia; 36, distal part of the hind tibia. Male (Figures 37-43): 37, head; 38, antenna; 39, mandible; 40, thorax with the left fore wing; 41, distal part of the fore tibia; 42, distal part of the mid tibia; 43, distal part of the hind tibia.

Abdomen hardly thrice as long as wide; depressed laterally; surface of the abdomen reticulated; ovipositor not exerted.

Male : Length 1.52 mm, including the mandibles. General body coloration pale yellowish-brown; hind femora and eyes rusty brownish black.

Head (Fig. 37) distinctly over $1.5\times$ as wide as long; epistomal margin straight in the mid point with two prominent convexities laterally; lateral margins of the head forward of the eyes rounded off; antennal toruli close together on the midline of the dorsum of the head. Antenna (Fig. 38) consisting of eleven segments with the third forming a ring joint; scape very large, almost rectangular in shape, $1.5\times$ as long as wide; with a distal straight margin; surface of scape with a few long setae; second segment over thrice as long as wide; fourth over $1.25\times$ as wide as long; fifth equal to fourth in length, but slightly less wide than fourth; sixth slightly shorter than fifth and their widths are equal; seventh and eighth almost equal to sixth; ninth, tenth and eleventh form a club which is distinctly less than twice as long as wide; setae on segments two to eleven as shown in figure. Mandible (Fig. 39) long and slender, almost falcate; length hardly thrice its own width; mandible with three glands, apical tooth prominent; the other two teeth less prominent, one at the middle and the other at the base of the inner margin.

Thorax (Fig. 40) as long as wide. Pronotum large and massive, over $1.6\times$ as wide as long; its anterior margin almost straight but slightly convex in the middle. Mesonotum over $5\times$ as wide as long. Metanoto-propodeum hardly thrice as wide as long; peritremes of the propodeal spiracle sub-circular. Fore wing reduced, almost as long as head with a few long spines. Hind wings absent. Fore coxa about $1.66\times$ as long as wide; femur distinctly longer than coxa and over $1.66\times$ as long as its own width. Tibia shorter than femur, a little less than $3.25\times$ as long as wide with many odontoid spines and a bifid stout apical spur at its distal end (Fig. 41). Length of tarsus about $0.4\times$ the tibia; metatarsus over half the tarsal length and distinctly over the combined length of the two following segments; fourth segment $0.83\times$ the length of metatarsus. Mid coxa distinctly longer than wide; trochanter twice as long as wide; femur about $1.75\times$ as long as wide, hardly twice as long as its own width; tibia slightly longer than femur, $3.8\times$ as long as its own width; its distal end (Fig. 42) with four odontoid spines, a stout apical spur and a few setae as shown in figure. Length of tarsus about half the length of tibia; metatarsus slightly shorter than half the tarsal length and almost equal to the combined length of the two following segments; fourth segment $0.83\times$ the metatarsal length. Hind leg coxa a little less than $2.33\times$ as long as its own width, distinctly longer than coxa; femur distinctly shorter than coxa, about the $2.33\times$ as long as wide; tibia almost equal in length to femur, $4\times$ as long as its width, its distal end (Fig. 43) with many odontoid spines, setae and two stout unequal apical spurs, as shown in figure. Tarsi distinctly less than half the tibial length and slightly more than the combined length of the two following segments; fourth segment slightly shorter than metatarsus.

Abdomen : Length 1.5× its width. Genital armature with each of its two dorsal appendages with four odontoid spines and each of the two ventral processes bearing two long spines; aedeagus short.

Holotype ♀, dissected on slide Nos. 23-1a and 23-1b; allotype ♂, dissected on slide Nos. 23-2 and 23-2a, *paratypes* 3♀♀, in alcohol, INDIA : KERALA : Calicut, 28.iv. 1968, U. C. Abdurahiman, from figs of *Ficus arnottiana* Miq.

REFERENCES

- JOSEPH, K.J. 1953. Contributions to our knowledge of fig insects (Chalcidoidea : parasitic Hymenoptera) from India : 3. Descriptions of three new genera and five new species of *Sycophagini* with notes on biology, distribution and evolution. *Agra Univ. J. Res.* **2** : 73-77.
- JOSEPH, K.J. 1954. Contributions to our knowledge of fig insects from India. V. On seven species of the genus *Philotrypesis* Forst. with a note on unisexual variations and polymorphism. *Agra Univ. J. Res.* **3** : 43-94.
- JOSEPH, K.J. 1957. Contributions to our knowledge of fig insects from India. VII. Description of fifteen new and revision of some old species. *Ann. Soc. Ent. France* **125** : 103-107.
- WIEBES, J.T. 1964. Indo-Malayan and Papuan fig wasps (Hymenoptera : Chalcidoidea). 3. Insects from *Ficus conocephalifolia* with a note on the Sycophaginae. *Nova Guinea, Zool.* **27** : 79-84.
- WIEBES, J.T. 1966. The structure of the ovipositing organs as a tribal character in the Indo-Australian Sycophagine Torymidae (Hymenoptera : Chalcidoidea). *Zool. Meded. Leiden* **41** (9) : 151-158.
- WIEBES, J.T. 1969. XLVI. *Philosycus*, a new genus of fig wasps allied to *Oritesella* Westwood (Hymenoptera : Chalcidoidea, Torymidae). *Ann. Mus. Roy. Afr. Quat. Zool.* **175** : 439-444.
- WIEBES, J.T. 1971. XVII. A new record of *Allotriozone prodigiosum* Grandi, and description of its symbionts (Hymenoptera, Chalcidoidea). *Le massif des Monts Loma* **1** : 369-378.