

DESCRIPTIONS OF GALL MIDGES (ITONIDIDAE : DIPTERA)
FROM INDIA.*

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This paper contains descriptions of one new genus and three new species. I have in addition included the redescription of an imperfectly described species.

I thank Prof. M. S. Mani for guidance and encouragement. My thanks are also due to Major Dr. M. L. Roonwal, Forest Entomologist, Forest Research Institute, Dehra Dun, for the specimen of *Cincticornia bivalviae*, sp. nov.

Subfamily ITONIDIDINAE.

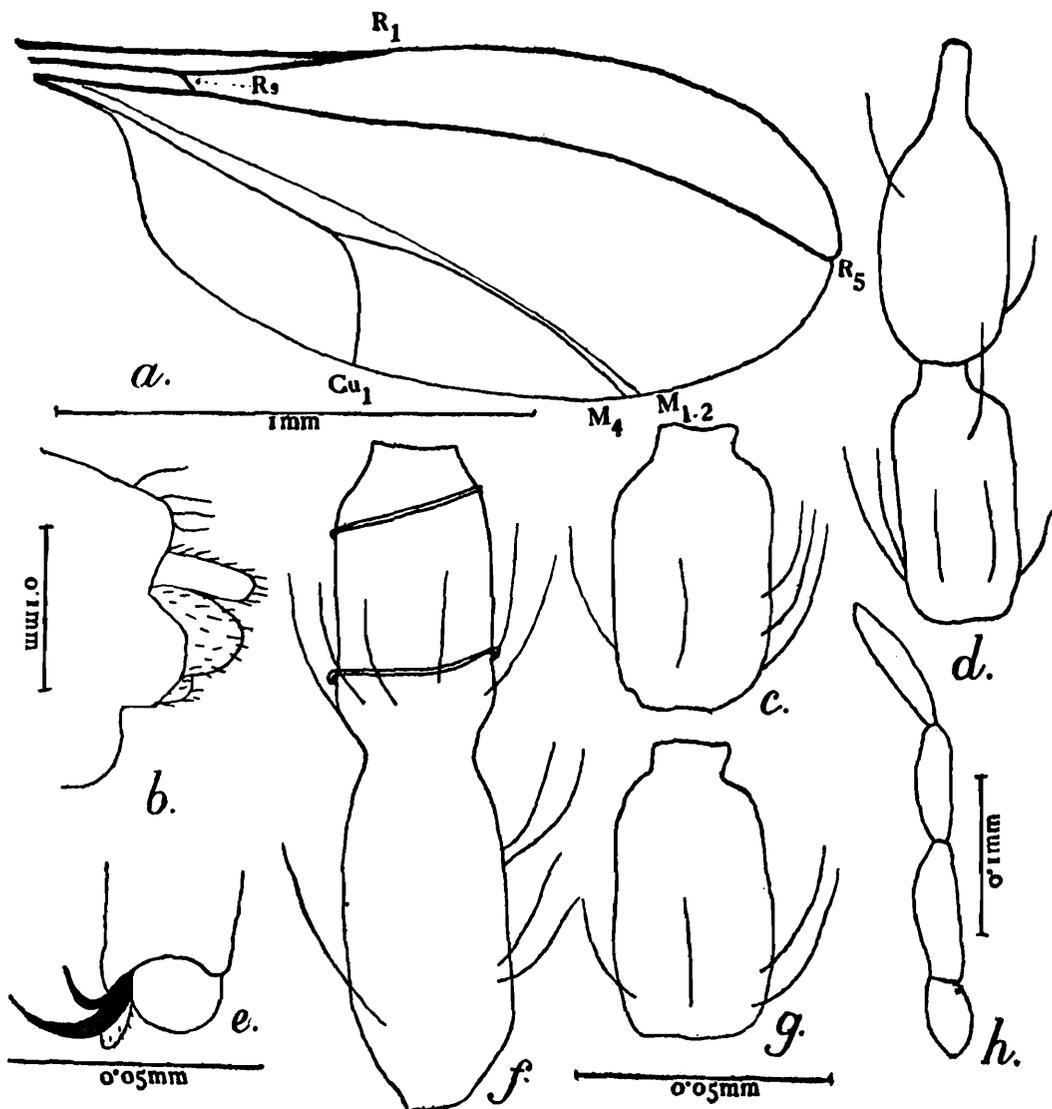
Tribe PORRICONDYLINI.

Vanchidiplosis agraensis, sp. nov.

Female.—Length 1.5 mm. Brown. Eyes confluent above. Trophus bluntly and conically produced. Neck prominent. Antenna with 15 segments, sparsely setose, segments brown with two whorls of rather stout setae, with very short apical stems and gradually becoming shorter and slender towards the apex; scape cup-shaped, yellowish-brown, pedicel slightly darker, subcylindrical; first flagellar segment fused with the second (Text-fig. 1*f*), a little over twice as long as thick, cylindrical; second segment as long as and as thick as the first; third segment as long as the second but slightly slender; fifth segment (Text-fig. 1*c*) shorter than the third and a little less than twice its own thickness; seventh segment (Text-fig. 1*g*) as long as the fifth but very slightly slender; ninth segment slightly shorter than the seventh but as thick as the latter; eleventh segment equal to the ninth; twelfth segment (Text-fig. 1*d*) as thick as and as long as the eleventh; terminal segment (Text-fig. 1*d*) shorter than the penultimate but with a short teat-like projection nearly one-third the length of the segment. Palpi (Text-fig. 1*h*) quadriarticulate, moderately setose; first segment nearly cylindrical, very slightly bulging in the middle, shortest of all segments, length a little less than twice the width in the middle; second segment cylindrical, nearly twice the length of the first and two and three-fourths its own thickness, slightly pointed distally; third segment shorter than the second, cylindrical, thrice as long as thick, ends slightly tapering; fourth segment cylindrical, very nearly equal to the third. Mesonotum brown. Scutellum and postscutellum brown. Abdomen brown. Halteres pale yellow. Wings (Text-fig. 1*a*) hyaline, neither too long

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nor too broad, length a little over twice the width, with four long veins, R_s distinct and making an obtuse angle with costa, costa and R_1 covered with thick hairs, R_5 reaching the margin of the wing beyond apex, M_{1-2} simple, complete, distinct but faint, $Cu-M_4$ forked. Legs pale brown, thickly hairy, coxae brown and with characteristic thick hairs, metatarsus short, one-eighth the length of the second tarsal segment, slightly shorter than the terminal tarsal segment, second segment longest of all, longer than the two following segments combined, third segment nearly half the second, longer than the fourth, terminal segment slightly longer than the metatarsus. Claw (Text-fig. 1e) bifid, bent at almost right



TEXT-FIG. 1.—*Vanchidiplosis agragensis*, sp. nov., ♀.

a: wing; b. ovipositor; c. fifth flagellate antennal segment; d. terminal two antennal segments; e. bifid claw of hind leg, f. first two flagellate antenna segments; g. seventh flagellate antennal segment; h. palpus.

angles, slender, dark brown, empodium half the length of the claw. Ovipositor small (Text-fig. 1b), with nearly triangular terminal lobes, fairly hairy.

Holotype.—1 ♀ dissected on slide No. $\frac{2146}{H6}$ in the collections of the Zoological Survey of India, Calcutta. "At light, School of Entomology Laboratory, S. N. Rao Coll. Agra, 12.ix.1949."

This species is readily separated from *Vanchidiplosis vanchi* Nayar¹ by the different proportions of the palpal segments, terminal lobes of ovipositor being triangular and the lighter colour of legs and halteres.

Tribe LASIOPTERINI.

Neoprotoplonyx, gen. nov.

Eyes confluent above. Trophi short. Palpi quadriarticulate. Antenna with 18 segments in ♀, segments cylindrical, sessile; first and second flagellate segments not fused. Wings neither too long nor too broad, hyaline, with three long veins; costa thickly and R₁ and R₅ sparsely hairy, the latter close to the costa and uniting with it a little beyond the middle of the wing, Cu-M₄ forked. Claws dentate on all legs. Ovipositor one-third the length of the abdomen, of the usual Lasiopteran type.

Genotype : *Neoprotoplonyx indica* sp. nov.

This genus runs very close to *Protoplonyx* Felt in Mani's² key to the Oriental genera but is readily distinguished from it by the dentate claw on all legs.

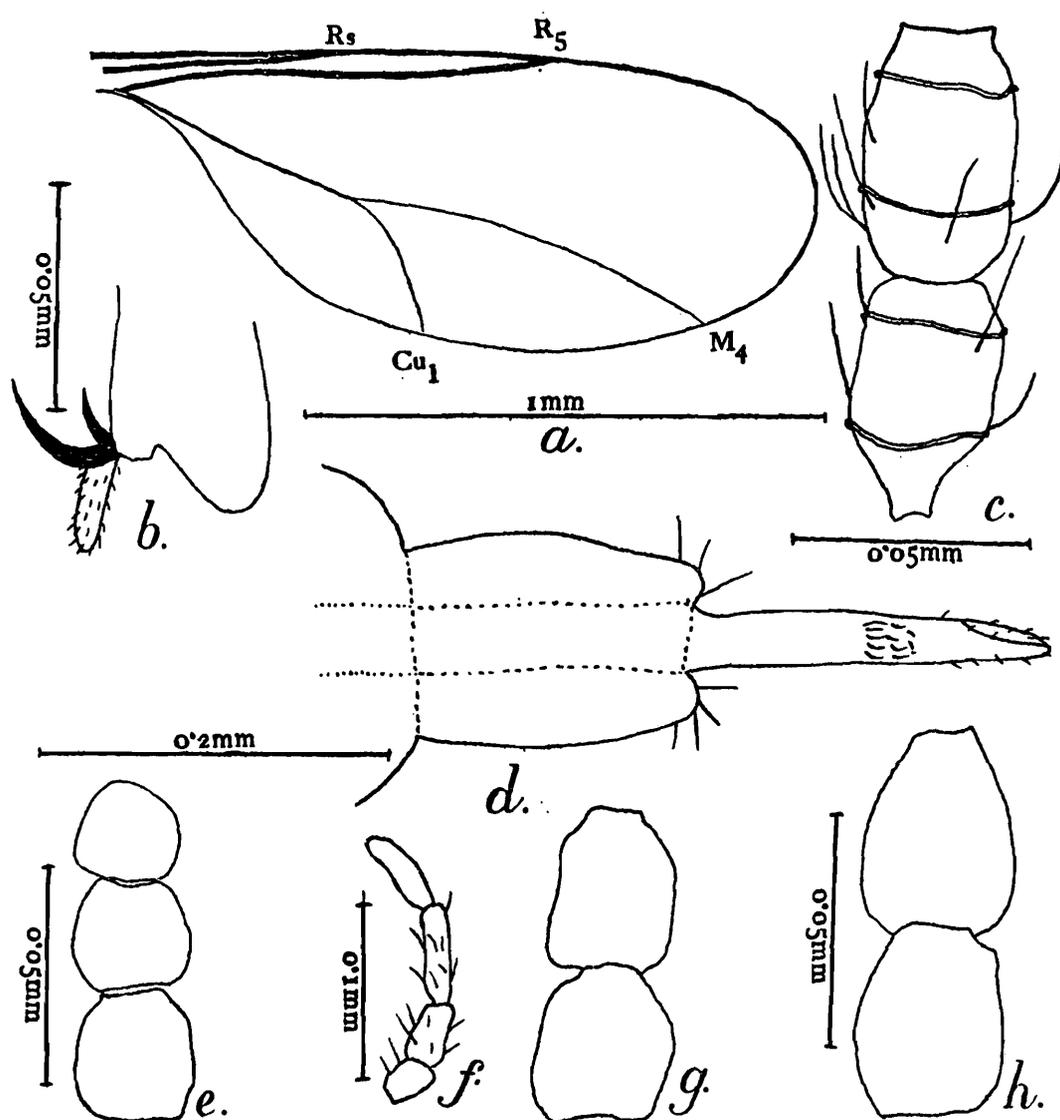
Neoprotoplonyx indica, sp. nov.

Female.—Length 1.13 mm. Brown. Eyes confluent above. Trophi not produced. Antenna brown, half the length of the body, with 18 segments, segments cylindrical, sessile, gradually becoming slender, shorter and somewhat transverse towards the apex, with a basal whorl of stout and moderately long setae reaching upto nearly half the length of the segment; scape cup-shaped, yellowish-brown, length one and one-third the width at apex; pedicel subglobose, slightly darker than the scape, a little longer than wide; first flagellar segment (Text-fig. 2c) fused with the second, as long as the scape and one and one-third as long as its own thickness; second segment (Text-fig. 2c) equal in all proportions to the first; third segment very slightly shorter than the second; fifth segment (Text-fig. 2h) shorter than the third, very slightly longer than its own thickness; seventh segment as long as the fifth but slightly slender and very slightly narrower distally; ninth segment (Text-fig. 2g) a little shorter and slender than the seventh and a little longer than its own thickness, slightly narrowed distally; eleventh segment slightly shorter than the ninth, narrowed distally, length a little greater than its median thickness; thirteenth segment subglobose, narrowed distally, length a little less than its own thickness; fifteenth segment (Text-fig. 2e) subglobose, wider than long; terminal segment (Text-fig. 2e) uniformly wide upto the apical three-fourths and narrowed into a blunt knob distally, shorter than wide. Palpi (Text-fig. 2f) quadriarticulate, pale yellow, sparsely setose, first segment subcylindrical, shortest of all, a little longer than thick; second segment cylindrical, stouter and longer than the first, nearly twice as long as thick, very slightly narrowed distally; third

¹ Nayar, K. K., *Proc. Roy. Ent. Soc. London*, XVIII, p. 82 (1949).

² Mani, M. S., *Ind. Jour. Ent.*, VII, pp. 189-235 (1946).

segment longest of all, cylindrical, slender than the second, more than thrice as long as thick; fourth segment slender than the third, cylindrical, other proportions as in the third. Mesonotum dark brown. Scutellum and postscutellum lighter than mesonotum. Abdomen brown. Wings (Text-fig. 2a) hyaline, nearly two and two-thirds as long as wide, R. very close to the costa and uniting with the latter a little beyond the middle, costa densely and R₁ and R₅ sparsely hairy, M₁₋₂ absent, Cu-M₄ forked, the fork reaching the wing margin a little beyond the middle. Halteres brownish-yellow basally and pale yellowish distally. Legs slender, long, sparsely hairy, yellowish-brown, metatarsus shorter than the fifth tarsal segment, nearly one-seventh the second tarsal segment, second tarsal segment longest of all, longer than the three following



TEXT-FIG. 2.—*Neoprotoplonyx indica*, sp. nov., ♀.

a. wing; b. bifid claw of hind leg; c. first two flagellate antennal segments; d. ovipositor; e. terminal three antennal segments; f. palpus; g. ninth and tenth flagellate antennal segments; h. fifth and sixth flagellate antennal segments.

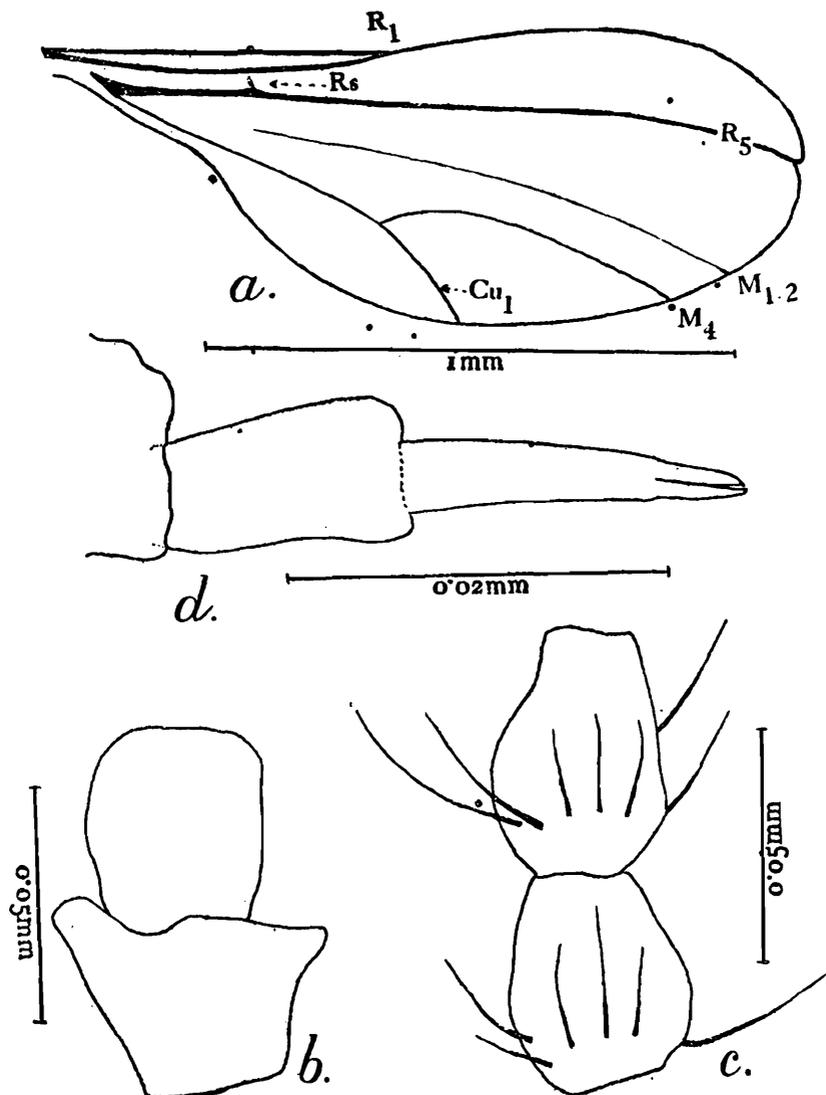
segments combined, third segment a little shorter than half the second, fourth two-thirds the third, terminal segment nearly three-fifths the penultimate. Claw (Text-fig. 2b) dark brown, evenly curved, not very slender, with a tooth at the base, empodium a little less than three-fourths the length of the claw. Ovipositor (Text-fig. 2d) yellowish-brown, one third the length of the body.

Holotype.—1 ♀ dissected on slide No. $\frac{2142}{H\ 6}$ in the collections of the Zoological Survey of India, Calcutta. At light, School of Entomology, Laboratory, St. John's College, S. N. Rao Coll. Agra, 12.ix. 1949''

Tribe ASPHONDYLINI.

Cincticornia bivalviae, sp. nov.

Female.—Length 1.52 mm. Yellowish-brown to brown. Eyes confluent above. Antenna short, light brown, half the length of the body, with 14 segments, segments short, sessile, gradually becoming



TEXT-FIG. 3.—*Cincticornia bivalviae*, sp. nov., ♀.

a. wing; b. scape and pedicel; c. fifth and sixth flagellate antennal segments
d. ovipositor.

shorter and slender towards the apex, with long scattered setae almost near the base of the segment and with two rows of circumfila; scape (Text-fig. 3b) widest at the apex, width at apex nearly one and a half times the length; pedicel (Text-fig. 3b) subcylindrical, very slightly narrowed towards the apex, length one and a half times the breadth; first flagellar segment cylindrical, nearly equal to the length of the scape

and pedicel combined, fused with the second, twice as long as thick, with a very short basal stem of one-sixth the length of the segment; second segment half the length of the first, slightly slender than the first; third segment slightly broader basally than at apex, nearly one and a half times as long as the median width; fifth segment (Text-fig. 3c) shorter than the third, subglobose, length a little greater than the width; sixth (Text-fig. 3c) and seventh segments equal in all proportions to the fifth; ninth segment nearly globose; tenth segment equal to the ninth; terminal two segments nearly equal in all proportions to each other. Palpi quadriarticulate, (shrunk) fairly hairy, light brown, first segment cylindrical, length a little less than one and a half times the thickness, second segment cylindrical, one and a half times the length of the first and a little over twice its own thickness, third segment slightly shorter than the second, fourth segment longer than the third, longest of all segments. Mesonotum brown. Scutellum and postscutellum lighter than mesonotum. Abomen yellowish-brown. Wings (Text-fig. 3a) hyaline, neither too long nor too broad, length a little over twice the breadth, costa thickly and R_1 sparsely covered with brown hairs, the latter uniting with costa a little before the middle of wing, R_s not very distinct, only in the form of a stump from R_1 and making a small angle and not uniformly pigmented throughout, R_5 reaching the margin of the wing a little beyond the apex, very sparsely covered with hairs, M_{1-2} very faint, $Cu-M_4$ forked, the fork very faint. Halteres brown. Legs long, slender, brown, densely hairy, metatarsus nearly equal to the fifth tarsal segment, three-eighths the second tarsal segment, the latter longest of all, longer than the two following segments combined, distal two segments nearly equal to each other. Claw slender simple and bent nearly at right angles at the distal three-fourths, empodium shorter than claw. Ovipositor (Text-fig. 3d) long, exerted, nearly one-fourth the length of the body, not aciculate, with two small terminal lobes.

Holotype.—1 ♀ dissected on slide Nos. 3121 & 3122 in the collections of the Forest Research Institute, Dehra Dun. "Reared on 8.vi.1950, from gall No. 209 (Text-fig. 4) on leaflets of *Acacia catechu* Willd. by Dr R. N. Mathur, at the Forest Research Institute from material received from the Research Ranger, Shahapur, Thana Dist., Bombay."

This species is named after the nature of the bivalve gall No. 209 (Text-fig. 4) this midge produces. This gall was described by Mani as early as 1935 from material collected by him at Walayar (South India) in 1928. He did not however breed the midges.

This is the first record of the genus *Cincticornia* Felt from India.

***Asphondylia pongamiae* Felt.**

1922. *Asphondylia pongamiae*, Felt, *Mem. Dept. Agric. India Ent. Ser.* VII, p. 24.

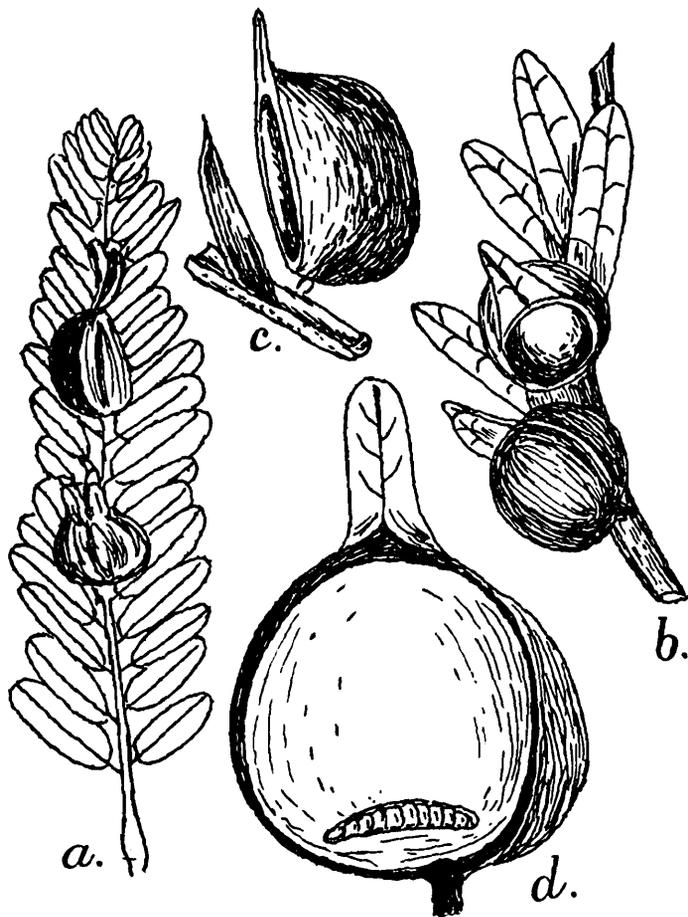
1934. *Asphondylia pongamiae*, Mani, *Rec. Ind. Mus.*, XXXVI, p. 415.

1948. *Asphondylia pongamiae*, Mani, *Jour. Roy. As. Soc. Bengal, Sci.*, XIV, p. 92.

¹Mani, M. S., *Rec. Ind. Mus.* XXXVII, p. 447 (1935); *Jour. R. Asiatic Soc. Bengal, Sci.*, XIV, p. 139 (1948).

I have before me 3 ♂♂ received for identification from the Government Entomologist, Bangalore, and causing gall No. 202 on *Pongamia glabra* Vent.

These midges differ from the original description by Felt (*loc. cit.*) in the following: length 3.5 mm. Fifth antennal segment (third flagellate) four and a half times as long as thick. First segment of palpi widest at apex, length one and a half times the width at apex. Third segment of palpi only a little longer than the second (15 : 17), cylindrical. Abdomen dark brown.



TEXT-FIG. 4.—Gall No. 209 by *Cincticornia bivalviae*, sp. nov. on *Acacia catechu* Willd (after Mani.)

a. one pinna with the galls *in situ* ($\times 3$); b. two galls enlarged; c. the gall with the valves open; d. gall with the larva inside ($\times 7\frac{1}{2}$).

Tribe ITONIDIDININI-TRIFILA.

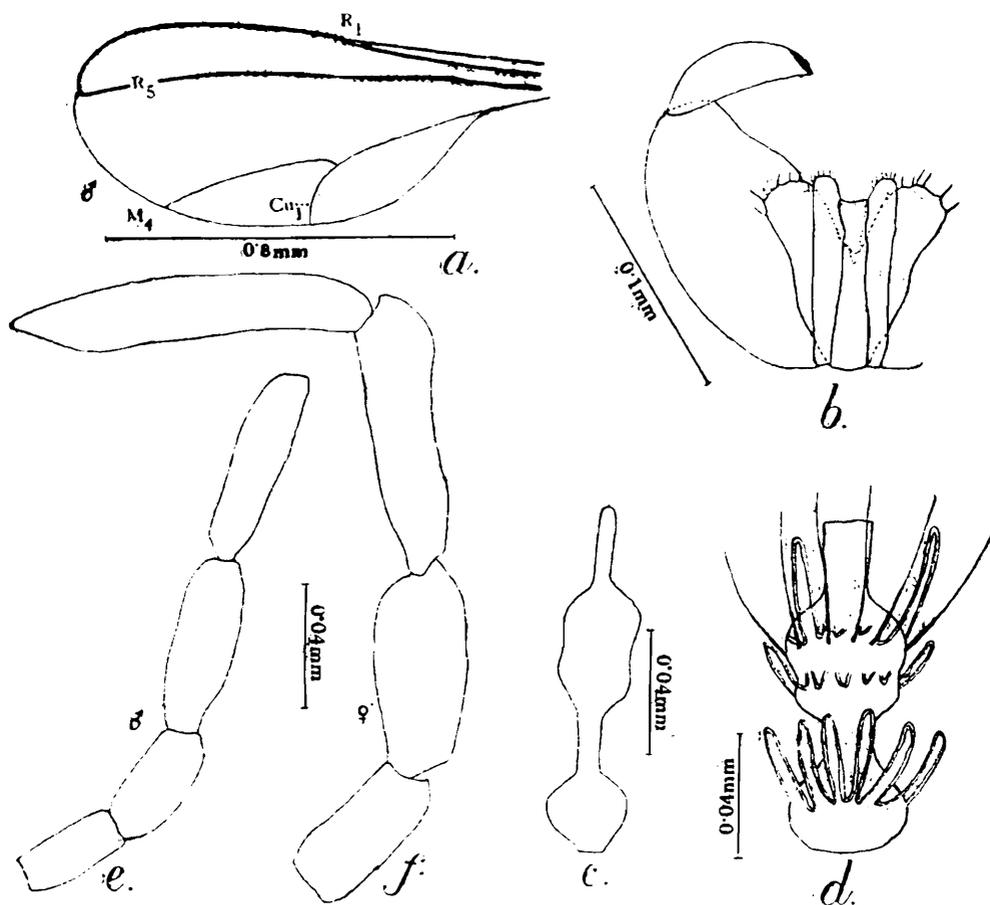
Aschistonyx crataevae (Mani).

1934. *Cecidomyiela crataevae*, Mani, *Rec. Ind. Mus.*, XXXVI, p. 428.

This species was originally described by Mani (*loc. cit.*) from specimens reared by him from leaf bud gall No. 171 on *Crataeva religiosa* Först. at Tanjore. At Prof. Mani's request, I re-examined his cotype specimens on slide No. 1033, kindly loaned by the Director, Zoological Survey of India, Calcutta and have also compared with them the midges reared by me. I find this species to belong to the genus *Aschistonyx* Rübsaamen and redescribe the ♂ and ♀ in detail.

Male.—Length 1.24 mm. Body light orange-red in live specimens, sparsely hairy. Eyes confluent above. Trophi not produced. Antenna light brown basally and paler distally, a little longer than body, with 14 segments, segments gradually becoming slender and the stems longer towards the apex, all segments binodose, apical nodes slightly constricted about the basal fourth, with three whorls of circumfila, loops of the basal and apical whorls being similar and equal to the length of the apical stems, the middle whorl slightly shorter, with two whorls of long setae, one on the basal and the second on the apical three-fourths of the apical enlargements; scape very light brown, broader than long, broadest at apex, width at apex one and a half times the length; pedicel subglobose, slightly darker than scape, length a little less than the median width; first flagellar segment fused with the second, with a very stem, stem nearly one-third the length of the basal enlargement and three-fifths as long as thick, basal enlargement nearly globose, a little less than one-third the length of the segment and as thick as long, basal stem as long as the basal stem, slightly slender and nearly one-fourth the length of the apical enlargement, apical enlargement subcylindrical, slightly constricted a little below the middle, giving a false appearance of two sessile segments fused together, a little less than one-third the length of the segment and one and one-third as long as thick, apical stem one-sixth the length of the segment, a little less than half the length of the apical enlargement and slightly longer than broad; second segment as long as the first, basal enlargement globose, as long as and as thick as that of the first segment, basal stem as that of the first segment, apical enlargement longer than that of the first segment, one and two-fifths as long as thick, apical stem longer than that in the first segment, twice as long as thick, and a little less than one-fourth the length of the segment; third segment equal in all proportions to the second, very slightly slender than the second; fifth segment (Text-fig. 5*d*) as long as the third, but slender, basal enlargement wider than long, length seven-tenth the width and less than one-fourth the length of the segment, basal stem a little less than twice its own thickness, one-sixth the length of the segment and slightly shorter than half the apical enlargement, apical enlargement a little over one-third the length of the segment, slightly longer than thick, apical stem a little over twice as long as thick, more than half the length of the apical enlargement; seventh segment as long as the fifth but slender, basal enlargement wider than long, length three-fourths the width, and one-fifth the length of the segment, basal stem as long as the basal enlargement, twice as long as thick, apical enlargement one-third the length of the segment, one and one-fourth as long as thick, apical stem four-fifths the apical enlargement and a little less than twice its own thickness; ninth segment equal in all proportions to the seventh; eleventh segment as long as the ninth but with slender stems, basal enlargement one-fifth the length of the segment and three-fourths its own thickness, basal stem as long as the basal enlargement and thrice its own thickness, apical enlargement a little less than one-third the length of the segment, nearly one and one-third as long as thick, apical stem very slightly shorter than the apical enlargement four times as

long as thick; terminal segment (Text-fig. 5c) very slightly longer than the penultimate, rest of the details as those of the eleventh. Palpi (Text-fig. 5e) quadriarticulate, pale yellow, finely and moderately setose, first segment cylindrical, slender than the second segment, twice as long as thick, second segment cylindrical, slightly stouter than the first, as long as the latter, a little over one and a half times as long as thick, third segment slender and longer than the second, cylindrical, a little less than twice as long as thick, fourth segment very slightly slender than the third, other proportions as in the latter. Mesonotum light brown. Scutellum and postscutellum lighter than mesonotum. Abdomen very light orange-red. Halteres pale brown basally and lighter distally. Wings (Text-fig. 5a) nearly two and a half times as long as broad, R_s wanting, with three long veins, costa sparsely hairy, R_1 uniting with costa before the middle of wing, R_5 reaching the wing margin at apex,



TEXT-FIG. 5.—*Aschistonyx crataevae* (Mani).

a. wing of ♂; fifth flagellate antennal segment; e. palpus of ♂; f. palpus of ♀.
b. genitalia; c. terminal antennal segments of ♂; d.

M_{1-2} absent, $Cu-M_3$ forked. Legs long, slender, thickly hairy, light brown, metatarsus shorter than the fifth tarsal segment, nearly one-eighth the length of the second tarsal segment, the latter longest of all segments, longer than the three following segments combined, third segment less than half the length of the second, fourth segment shorter than the third terminal segment shorter than the fourth. Claw simple, slender, evenly curved, dark brown, empodium as long as the claw. Genitalia (Text-fig. 5b) light brown; basal clasp segment nearly cylindrical, twice as

long as broad, moderately hairy, without basal lobe; terminal clasp segment half the length of the basal clasp segment, nearly twice the thickness in the middle, gradually narrowed towards the apex, slightly curved and ending in a blunt tooth; dorsal plate not chitinized, bilobed, the margins of the lobes thickened laterally and produced into small projections apically, with rather stout setae; ventral plate nearly as long as the dorsal plate, much slender, deeply notched, with the tips of the lobes bluntly pointed, and covered with fine setae; style stout, broader at base than at apex, gradually narrowed distally and ending in an angulated tip, thrice as long as thick in the middle, slightly shorter than the dorsal plate and nearly half the length of the basal clasp segment.

Female.—Length 1.43 mm. Body light orange-red in live specimens, slightly darker than that of the ♂, sparsely hairy. Eyes confluent above. Trophi not produced. Antenna light brown, lighter towards the apex, slightly shorter than the body, with 14 segments, segments gradually becoming shorter and slender towards the apex, cylindrical, with very short apical stems, with two whorls of setae, the basal whorl long and almost reaching the tip of the segment, apical whorl rather short, circumfila in two rows; scape yellowish brown, cup-shaped, length equal to the width at apex; pedicel slightly darker than scape, subglobose, length nearly equal to the median thickness; first flagellar segment fused with the second, longest of all, with a short basal stem, length of stem two-thirds its own thickness, enlargement with a slight constriction in the middle, nearly five times as long as thick, apical stem equal in all proportions to the basal stem; second segment without the basal stem very slightly shorter than the first, rest of the details as in the first segment; third segment shorter than the second, nearly twice as long as thick, with an apical stem similar to that of the second segment; fifth segment shorter than the third, one and two-thirds as long as thick, with an apical stem of one-fifth the length of the segment; seventh segment equal in all proportions to the fifth; ninth segment slightly slender than the seventh, nearly twice as long as thick; eleventh segment as long as the ninth but slender, twice as long as thick; terminal segment slightly longer than the penultimate, length a little over twice the thickness, with an apical knob of almost half the length of the enlargement and two and a half times its own thickness. Palpi (Text-fig. 5f) finely and moderately setose, quadriarticulate, light brown, first segment cylindrical, nearly twice as long as thick, second segment cylindrical, slightly stouter but as long as the first, one and a half times as long as thick, third segment cylindrical, longer and slender than the second, thrice as long as thick, fourth segment cylindrical, very slightly slender and slightly longer than the third, longest of all, a little over as long as thick. Mesonotum brown. Scutellum and postscutellum light brown. Abdomen light orange red. Halteres pale brownish basally and lighter distally. Wings hyaline nearly two and half times as long as broad. Rest of the details as in the wing of the ♂. Legs long, longer than those of the ♂, thickly hairy, light brown, metatarsus shorter than the fifth tarsal segment, a little over one-seventh the second tarsal segment, the latter longest of all, longer than the following three segments combined, third segment very slightly less than half the length of the

second tarsal segment, fourth segment shorter than the third, terminal segment shorter than the fourth. Claw simple, slender, evenly curved, dark brown, empodium as long as the claw. Ovipositor of variable length, from half to one fourth the length of the body, exerted, with two elongately oval terminal lobes.

Redescribed from 1 ♂ and 1 ♀ dissected on slides and several ♂♂♀♀ in spirit in the collections of the School of Entomology St. John's College, Agra and from cotypes. "Reared from leaf-bud gall No. 171 on *Crataeva religiosa* Först. in the School of Entomology Laboratories, S. N. Rao Coll. Agra, 25/26.vii.1950."

The pupal period in Agra is 5 days in July and in Madras Mani¹ recorded the same to be 3 days in July.

***Spatholobomyia*, nom. novum.**

I propose this new name to *Heliodiplosis* Felt² [Genotype *Heliodiplosis spatholobi* Felt reared from the leaf gall on *Spatholobus gyrocarpus* (Wall.) Benth, from Philippines], which is preoccupied by *Heliodiplosis*. Haeckel³ (*Radiolaria*, *Rhizopoda*, *Protozoa*).

¹Mani, M. S., *Rec. Ind. Mus.*, XXXVI, p. 429 (1934).

²Felt, E. P., 1918. *Philip. Jour. Sci.* XIII, p. 291.

³Haeckel, E., 1887. *Rep. Voy. Challenger—Zool.* XVIII, p. 445.