

FOUR NEW SPECIES OF PLATYGASTERID PARASITES HYMENOPTERA OF GALL MIDGES FROM INDIA¹

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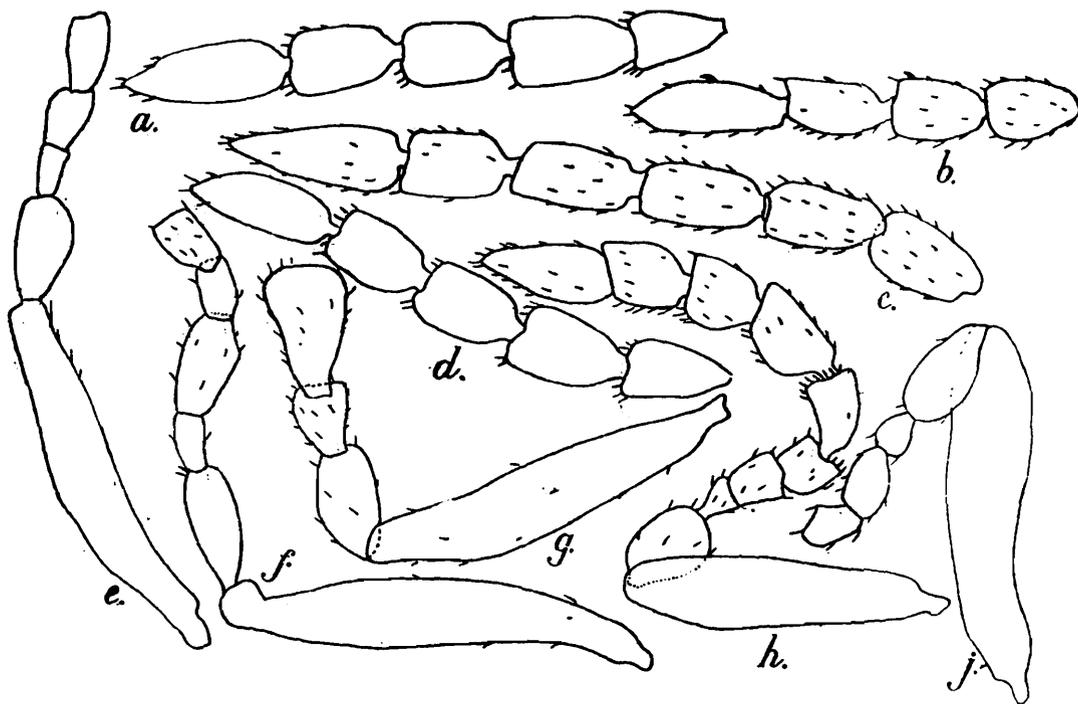
This paper contains descriptions of four new species of Platygasteridae (Serphoidea), parasitic on gall midges (Itonididae : Diptera) from India. The holo- and allotypes are deposited in the collections of the Zoological Survey of India, Indian Museum, Calcutta and the paratypes are in the collections of the School of Entomology, St. John's College, Agra. I am indebted to Prof. M. S. Mani for guidance.

Platygaster salvadorae, sp. nov.

Male.—Head black, very sparsely and finely pubescent; viewed from above (Text-fig. 4a) strongly transverse, nearly as wide as thorax, breadth two and a half times the median length, ocellar region transversely and slightly irregularly striate, interocellar space twice the ocellular, twice the front ocellar, vertex very slightly convex, transversely striate, striae not very irregular, margined, occiput transversely striate; viewed from above broadly oval, frons not pubescent, very closely and finely punctate, face very finely and closely punctate, very slightly convex, clypeus not discrete, slightly convex, mandibles bidentate, the teeth with blunt and slightly darker and unequal tips, reddish-brown, eyes naked, inner orbital borders parallel, labial palpi short, uniarticulate, maxillary palpi biarticulate, long, antenna (Text-fig. 1c & g) inserted much below the middle of face, very close to the mouth, with ten segments, dark reddish-brown, fairly hairy, scape long, nearly three and a half times as long as broad at its broadest region, slightly narrowed at the extremities, longer than the three following segments combined, without a lamellate expansion, pedicel wider apically than at base, length nearly one and two-thirds the width at the widest region, first funicular segment nearly half the length of the pedicel, second segment longer than the first, very slightly longer but stouter than the pedicel, third and fourth segments equal to each other, nearly cylindrical, nearly twice as long as thick, very slightly longer than the pedicel, fifth, sixth and seventh segments nearly equal in all proportions, terminal segment longer than the penultimate, uniformly broad up to the apical one-fourth, tapering to a blunt tip toward the apex, length a little over three and a half times the width, club of fifth to tenth segments; viewed from side oval, height one and a half times the thickness, gena short, transversely striate, one-fourth the length of the eye, temples one-fourth the width of the eye in the middle.

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Thorax black, raised much above the level of the head, shiny, pronotum shiny, sparsely setose, mesonotum rugulose, without pubescence or setae, slightly convex, scutellum strongly convex, very prominent, semicircular, rugulose, propodeum produced in the form of a hood. Wings pubescent, without veins, fore wing a little over two and a half times as long as broad, with a very short marginal fringe, hind wing with two frenal hooks, with a marginal fringe of about one-fourth the thickness of the wing, rest of the details as in the figure (Text-fig. 3a). Legs short, tarsi five-segmented, coxae brownish-black, trochanters brownish-yellow, femur darker than trochanters, brownish-black, tibiae slightly darker than the yellowish-brown first four tarsi, fifth tarsal segment darker than the rest; coxa of the front leg shorter than both the trochanters combined, femur a little over twice or twice the length of the trochanters, broadest in the middle, tibia slender but slightly



TEXT-FIG. 1.—a. *Polygnotus ramachandrai*, sp. nov., terminal five antennal segments of ♂; b. *Proleptacis fici*, sp. nov., terminal four antennal segments of ♀; c. *Platygaster salvadorae*, sp. nov., terminal six antennal segments of ♂; d. *Polygnotus ramachandrai*, sp. nov., terminal five antennal segments of ♀; e. *Polygnotus ramachandrai*, sp. nov., first five antennal segments of ♂; f. *Proleptacis fici*, sp. nov., first six antennal segments of ♀; g. *Platygaster salvadorae*, sp. nov., first four antennal segments of ♂; h. *Platygaster salvadorae*, sp. nov., antenna of ♀; j. *Polygnotus ramachandrai*, sp. nov., first five antennal segments of ♀.

longer than the femur, nearly half the length of the rest of the tarsi combined, twice the length of the second tarsal segment, terminal tarsal segment longer than the penultimate. Claw stout, evenly curved, dark brown, simple, shorter than the empodium. Abdomen with six tergites, dark brown to black, first tergite much shorter than the second, the latter three-fourths the length of the abdomen, three and a half times as long as the first, rest of the tergites much shortened.

Length 0.55 mm.

Female.—Head black, very sparsely pubescent on the gena only, without any projection between the antennae; viewed from above strongly transverse, twice as wide as the thorax, breadth a little less

than two and a half times the median length, ocellar region irregularly and transversely striate, interocellar space thrice the ocellular, twice the front ocellar, vertex slightly convex, transversely rather shallowly striate, margined, occiput transversely striate; viewed from front nearly circular, frons very finely pubescent, rather rugulose, shiny, face very finely pubescent, very shallowly and closely punctate, slightly convex, clypeus not discrete, slightly convex, sparsely hairy, mandibles reddish-brown, bidentate, the teeth with blunt and unequal tips, eyes naked, inner orbital borders parallel, labial palpi short, unarticulate, mandibular palpi biarticulate, long, antenna with ten segments, inserted very close to the mouth, darker than in ♂, sparsely hairy, rest of the details as in the figure (Text-fig. 1*h*); viewed from side oval, height a little over one and half times the thickness, gena short, sparsely pubescent, one-fourth the length of the eye, temples one-fourth the width of the eye in the middle.

Thorax black, shiny, raised much above the level of the head, pronotum and mesonotum shiny, rugulose, without pubescence, convex, mesopleura with a cluster of hairs in the middle posteriorly, scutellum semicircular, prominent, convex, rugulose, propodeum fairly pubescent. Wings as in ♂. Legs similar but slightly longer than those of the ♂. Abdomen with six tergites, dark-brown to black, fuciform, first tergite much shorter than the second, the latter occupying the major length of the abdomen, nearly four times the length of the first, rest of the segments much shortened. Ovipositor concealed.

Length 0.6 mm.

Holotype.—1 ♂ and *Allotype*.—1 ♀ dissected and mounted on slide Nos. $\frac{1935}{H3}$ & $\frac{1936}{H3}$. "Reared from gall No. 168 on stem of *Salvadora persica* Linn. S. N. Rao Coll. Agra, 27. iii. 1950".

Host.—*Thomasiniana salvadorae* Rao.

The relationship of this species to the other two known Indian species is given in the following key, modified from Mani¹.

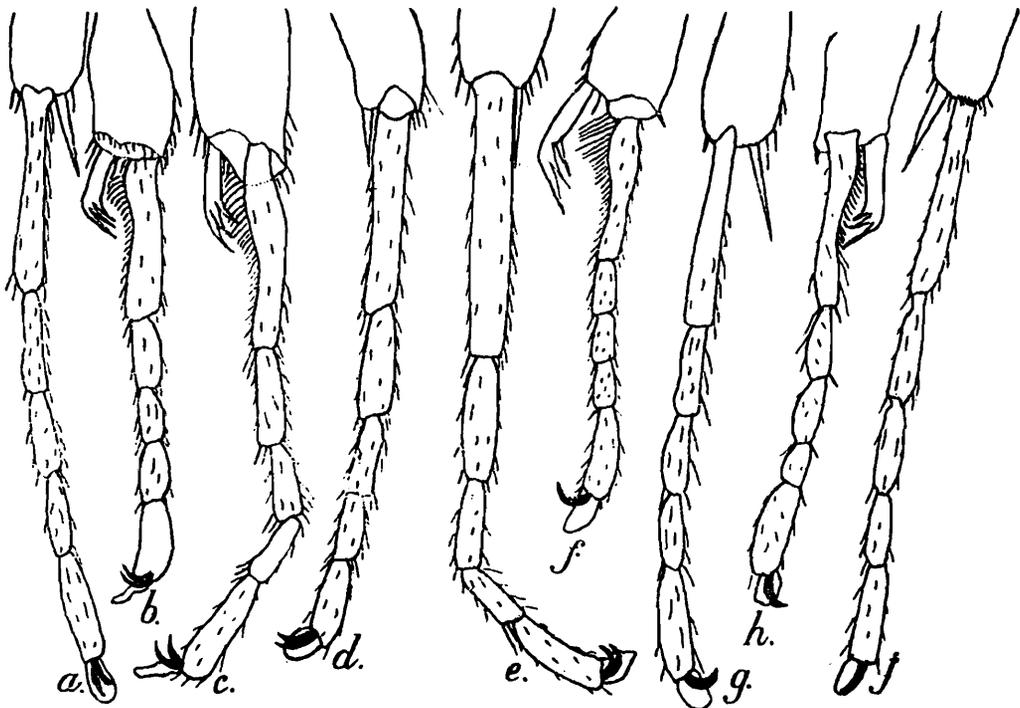
1. Scutellum somewhat elongate; fourth antennal segment of the ♀ twice as long as thick, longer than fifth; club absent *tibialis* Kieffer.
Scutellum not elongate; fourth antennal segment not as above; club present 2
2. Legs uniformly yellow; scutellum strongly transverse; wings with very long marginal cilia: body brown *oryzae* Cameron.
Legs brownish-black, yellowish-brown in parts; scutellum semicircular; wings with very short marginal fringe; body black .. *salvadorae*, sp. nov.

***Proleptacis fici*, sp. nov.**

Female.—Head black, slightly wider than thorax, transverse; viewed from above roughly rectangular (Text-fig. 4*d*), breadth a little over one and a half times the median length, ocellar region shiny, leathery, slightly convex, interocellar space twice the front ocellar, posterior ocelli very close to the eyes, vertex convex, leathery, margined, occiput excavate; viewed from front nearly circular, frons leathery, shiny, not pubescent, slightly convex, face leathery, not pubescent, nearly

¹Mani, M. S., *Cat. Ind. Ins.* XXVI, p. 34 (1941).

deplanate, clypeus not discrete, very sparsely hairy, slightly convex, mandibles reddish-brown, stout, bidentate, with blunt and unequal tips, eyes naked, inner orbital borders nearly parallel, maxillary palpi biarticulate, labial palpi uniaarticulate, antenna inserted much below the middle of face, very close to the mouth, with ten segments, brown, fairly hairy, scape long, longer than the four following segments combined, not lamellate, club of four segments, rest of the details as in figures (Text-fig. 1*b* & *f*); viewed from side oval, height a little over twice the thickness, gena long, nearly half the length of the eye, temples short, half the width of the eye in the middle.



TEXT-FIG. 2.—*a.* *Polygnotus ramachandrai*, sp. nov., tip of hind tibia and tarsi of ♂; *b.* *Platygaster salvadorae*, sp. nov., tip of fore tibia and tarsi of ♀; *c.* *Platygaster salvadorae*, sp. nov., tip of fore tibia and tarsi of ♂; *d.* *Platygaster salvadorae*, sp. nov., tip of hind tibia and tarsi of ♀; *e.* *Platygaster salvadorae*, sp. nov., tip of hind tibia and tarsi of ♂; *f.* *Proleptacis fici*, sp. nov., tip of fore tibia and tarsi of ♀; *g.* *Proleptacis fici*, sp. nov., tip of hind tibia and tarsi of ♀; *h.* *Polygnotus ramachandrai*, sp. nov., tip of fore tibia and tarsi of ♀; *j.* *Polygnotus ramachandrai*, sp. nov., tip of hind tibia and tarsi of ♀.

Thorax black, not compressed laterally, slightly raised above the level of the head, pronotum shiny, mesonotum shiny, closely punctate, parapsidal furrows indistinct, slightly convex, without pubescence, with a cluster of hairs posteriorly, scutellum convex, large, sparsely hairy, with one thorn posteriorly, much shorter than the mesonotum, without a nipple, propodeum with a hood-like elevation, wings pubescent without veins, fore wing two and a half times as long as broad, with a marked marginal fringe, hind wing with two frenal hooks, with a marginal fringe of about one-third the width of the wing, rest of the details as in figure (Text-fig. 3*g*). Legs short, tarsi five segmented, coxae dark brownish-black, trochanters brownish-yellow, femora brown, tibiae slightly lighter than the femur, first four tarsal segments brownish-yellow, terminal tarsal segment darker than the rest, fore coxa nearly equal to the length of the two trochanters combined, femur twice the length of the trochanters, broad in the middle, tapering towards the

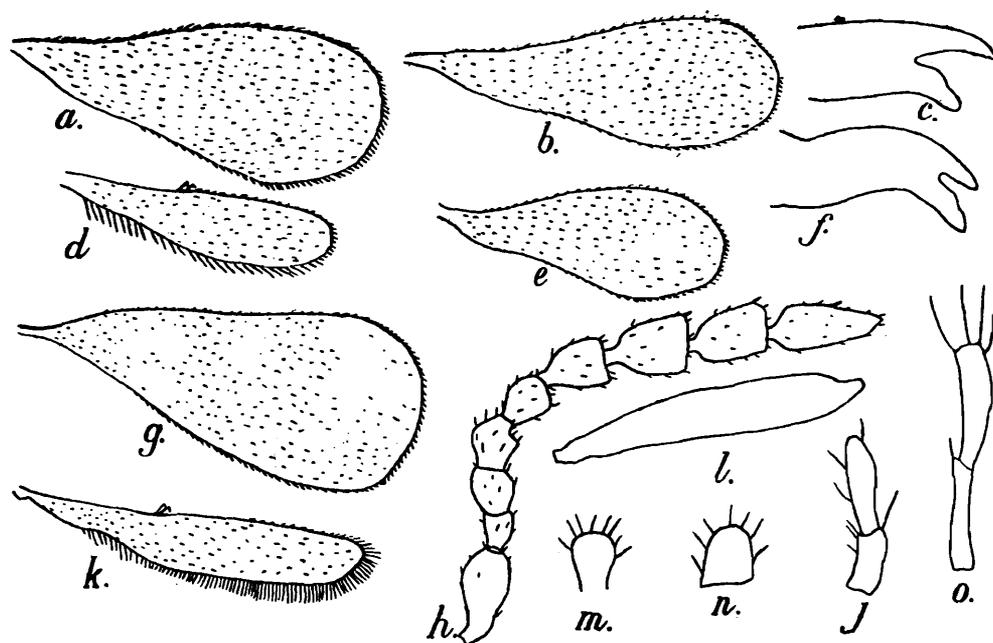
extremities, tibia as long as but slender than femur, with a trifid apical spur, first tarsal segment longest, shorter than the rest of the tarsal segments combined, but equal to the length of the three following segments, terminal segment longer than the penultimate, claw pale yellow, evenly curved, rather stout, simple, shorter than empodium. Abdomen with six tergites, dark brown to black, first tergite much shorter than the second, the latter nearly three-fourths the length of the abdomen, rest of the tergites much shortened, ovipositor concealed.

Length 1.1 mm. *Holotype*.—1 ♀ dissected and mounted on slide

1937
No. —. “Reared from gall No. 264 on leaf of *Ficus glomerata* Roxb.
H3

S. N. Rao Coll. Agra, 21. iv. 50”

Host.—*Dyodiplosis fici* Rao



TEXT-FIG. 3.—a. *Platygaster salvadorae*, sp. nov., fore wing of ♀; b. *Polygnotus ramachandrai*, sp. nov., fore wing of ♂; c. *Platygaster salvadorae*, sp. nov., mandible of ♀; d. *Platygaster salvadorae*, sp. nov., hind wing of ♀; e. *Proleptacis oryzae*, sp. nov., fore wing of ♀; f. *Proleptacis oryzae*, sp. nov., mandible of ♀; g. *Proleptacis fici*, sp. nov., fore wing of ♀; h. *Proleptacis oryzae*, sp. nov., antenna except the scape of ♀; j. *Proleptacis oryzae*, sp. nov., maxillary palpi of ♀; k. *Proleptacis fici*, sp. nov., hind wing of ♀. l. *Proleptacis oryzae*, sp. nov., scape of antenna of ♀; m. *Platygaster salvadorae*, sp. nov., labial palpi of ♂; n. *Proleptacis oryzae* sp. nov. Labral palpi of ♀; o. *Platygaster salvadorae* sp. nov. maxillary palpi ♂.

This is the first record of the genus from India. This species differs from the two known species from the world in the proportions of the antennal and palpal segments, the lighter colour of the legs and in the hind tibial spur being three-fourths the metatarsus.

Proleptacis oryzae, sp. nov.

Female.—Head dark brown, very sparsely pubescent; viewed from above (Text-fig. 4e) transverse, slightly wider than thorax, breadth twice the median length, ocellar region slightly convex, transversely and

slightly irregularly striate, interocellar space nearly twice the ocellular, one and a half times the front ocellar, vertex very slightly convex, margined, transversely striate, slightly deplanate; viewed from front nearly circular, frons shiny, not pubescent, smooth, very slightly convex, face nearly deplanate, sparsely pubescent, closely minutely and shallowly punctate, clypeus discrete, convex, sparsely pubescent, mandibles reddish-brown, bidentate, stout, with the teeth unequal and blunt at tip, eyes naked, inner orbital borders sub-parallel, labial palpi short, unarticulate, nearly cylindrical, (Text-fig. 3n), maxillary palpi (Text-fig. 3j) biarticulate, long; antenna inserted much below the middle of face, very close to the mouth, with ten segments, scape yellow, very long, longer than the following five segments combined, eight times as long as thick, broadest at the apical three-fourths, pedicel and the following few segments pale brown, club segments brown, pedicel wider apically than at base, length a little over twice the breadth, one-fourth the length of the scape, first funicular segment much shorter and slender, a little over one-third the length of the pedicel, wider at apex than at base, length a little greater than the width at apex, second segment sub-cylindrical, slightly wider at apex, length one and a half times the width at apex, third segment subglobose, length a little less than one and one-third the width, fourth segment nearly equal to but slightly slender than the preceding, club of four segments, all except the first club segment with a lateral spine, rest of the details as in the figures (Text-fig. 3h & l); viewed from side oval, height twice the breadth, gena short, one-fourth the length of the eye, temples large, half the width of the eye, transversely striate.

Thorax brown to dark brown, slightly raised above the level of head and abdomen, laterally compressed, without parapsidal furrows, mesonotum large, convex, longitudinally striate, propleura leathery, shiny, scutellum strongly convex, smaller than mesonotum, roughly triangular, with rounded corners, sparsely hairy, with one posterior thorn, propodeum thickly hairy. Wings finely pubescent, without any venation, fore wing with a very small marginal fringe, two and a half times as long as broad, hind wing narrow, long, with a marginal fringe of about one-third the width of the wing. Legs uniformly yellowish-brown, front legs shorter than the hind ones, tarsi five segmented, fore coxa as long as broad, narrowed toward the apex, trochanters slightly longer than coxa, femur twice as long as the trochanters, widest in the middle, tips tapering, a little over thrice as long as thick, tibia slender, wider at apex, very little shorter than the femur, with a trifid apical spur, first tarsal segment longest of all, nearly seven times as long as thick, second segment two-fifths the first, and two and a half times its own thickness, third segment slightly stouter than the second, terminal segment nearly twice the length of the penultimate claw pale yellow, evenly curved, stout, shorter and nearly equal to the empodium. Abdomen dark brown, nearly fusiform, with six tergites, first tergite much shorter, second occupying nearly half the length of the abdomen, rest of the tergites much shortened, ovipositor concealed.

Length 0.75 mm.

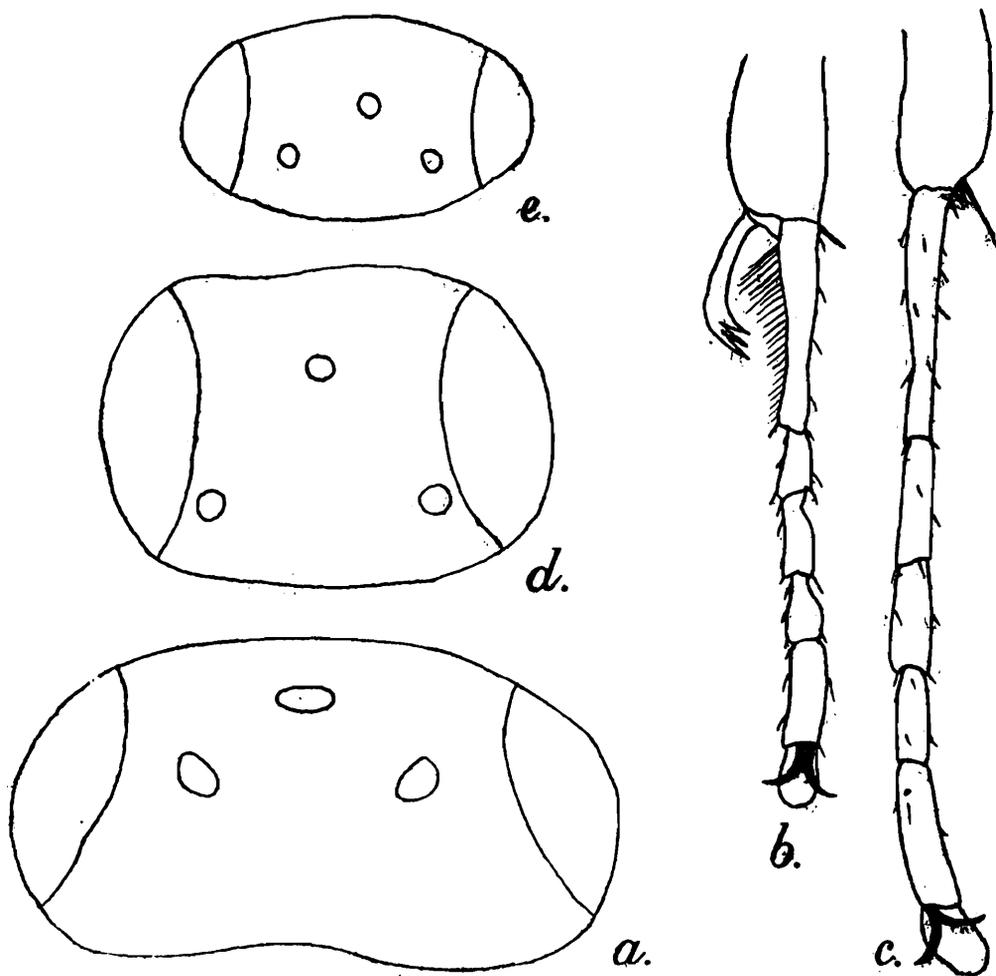
Male.—Similar in all essential characters to the ♀ except for the smaller size, slender legs, narrower abdomen and paler antenna.

Length 0.69 mm.

Host.—*Pachydiplosis oryzae* Mani.

Holotype.—1 ♀ and *Allotype*.—1 ♂ dissected and mounted on slide Nos. $\frac{1938}{H3}$ & $\frac{1938}{H3}$ “Central Rice Research Institute, Cuttack, PAR.-V on grubs of *Pachydiplosis oryzae* Mani, P. Israel Coll. 24. ix. 49”

This species is described from specimens received for identification from Mr. P. Israel, Entomologist, Central Rice Research Institute, Cuttack.



TEXT-FIG. 4.—a. *Platygaster salvadorae*, sp. nov., head seen from above of ♂; b. *Proleptacis oryzae*, sp. nov., tip of fore tibia and tarsi of ♂; c. *Proleptacis oryzae*, sp. nov., tip of hind tibia and tarsi, of ♀; d. *Proleptacis fici*, sp. nov., head seen from above of ♀; e. *Proleptacis oryzae*, sp. nov. head seen from above of ♀.

This species is distinguished from *P. fici* Rao by the following characters: body brown; posterior ocelli away from the eye; clypeus discrete; antenna yellow; thorax slightly compressed laterally; legs uniformly yellowish-brown; second abdominal tergite only half the length of the abdomen.

This is the first record of the genus from India.

Polygnotus ramachandrai, sp. nov.

Male.—Head dark brown; viewed from above transverse, nearly as wide as the thorax, breadth one and a half times the median length, ocellar region very closely and minutely punctate, ocelli not very prominent, interocellar space a little less than the ocellular, four times the front ocellar, vertex convex, transversely shallowly striate, margined, occiput excavate; viewed from front nearly circular, frons not pubescent, nearly smooth and shiny, clypeus indistinctly discrete, slightly convex, mandible reddish-brown, unidentate, long, pointed, eyes, naked, innerorbital borders subparallel, labial palpi long, uniaarticulate, maxillary palpi biarticulate, antenna inserted much below the middle of face, very close to the mouth, with ten segments, yellowish-brown, very sparsely hairy, scape long, nearly five and a half times as long as the breadth at the broadest region, extremities slightly narrowed than the middle region, longer than the four following segments combined pedicel subcylindrical, nearly twice as long as broad, two-fifths the length of the scape, first funicular segment half the pedicel, much slender twice as long as broad, broader apically than at base, second segment shorter but stouter than the preceding, one and a half times as long as broad, rest of the details as in figures (Text-fig. 1a & e); viewed from side oval, height one and three-fourths the thickness, gena short, nearly one-fourth the length of the eye, temples one-fourth the width of the eye in the middle.

Thorax dark brown, on a level with the rest of the body, shiny, pronotum shiny, parapsidal furrows wanting, mesonotum shiny, very closely and minutely punctate, very slightly deplanate, scutellum strongly convex, semicircular, rounded posteriorly, without a thorn, smaller than mesonotum, very sparsely hairy. Wings pubescent, without veins, fore wing two and a half times as long as broad, without any marginal fringe. Legs yellowish-brown, throughout, long, tarsi five segmented, fore legs shorter than the hind ones, fore coxa nearly rounded, trochanters equal in length to the coxa, femur a little over two and a half times the length of the trochanters combined, lanceolate, thrice as long as thick, tibia three-fourths the femur, slender, nearly thrice as long as thick at the distal region, with an apical trifid spur, tarsi five articulate, first tarsal segment longest of all, a little less than the following three segments combined, nearly six times as long as thick, penultimate segment shortest of all, terminal segment twice the length of the penultimate, claw simple, evenly curved, light yellow, shorter than the empodium. Abdomen with six tergites, not very long, brown, first tergite much shorter than the second, the latter occupying nearly three-fourths the length of the abdomen, rest of the tergites much shortened.

Length 0.79 mm.

Female.—As in ♂ in all essential characters, except for the stout legs, antennae and abdomen and very slightly darker and larger body.

Length 0.82 mm.

Holotype.—1 ♂ and *Allotype*.—1 ♀ dissected and mounted on slide Nos. $\frac{1940}{H3}$ & $\frac{1941}{H3}$. “Parasites from gall on *Andropogon schoenanthus*, Y. R. Rao Coll. Coimbatore, 5. xii. 1916.”

This species is described from specimens received for identification by Prof. Mani from Rao Bahadur Y. Ramachandra Rao in 1930. I associate the name of the collector with this species. Ramakrishna Ayyar¹ recorded an unnamed species of *Polygnotus* as parasitic on *Pachydiplosis oryzae* Mani in South India. This is the first species of the genus to be described from India.

¹ Ramakrishna Ayyar, T. V. *Bull. Ent. Res.* XVIII p. 76 (1927).