

ON A COLLECTION OF PSYLLIDS (HOMOPTERA : PSYLLIDAE) FROM SHILLONG, KHASI HILLS*

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ABSTRACT

Five Psyllid species, viz. *Cicidopsylla schimae* Kieffer, *Euphyllura eastopi* Mathur, *Psylla murrayi* Mathur, *P. viburni* Loew, and *Triozza gigantea curta* Mathur have been recorded for the first time from Meghalaya, India and a new Psyllid genus *Cryptotriozza* with *C. mathuri* sp. nov. as type species has been described from the state.

INTRODUCTION

Very little information is available in literature concerning the Psyllid fauna of Meghalaya, a state adjacent to the North Eastern boundary of Bangladesh in North Eastern India. Mathur (1975) in his monograph on the Psyllidae of the Indian sub-continent reported the occurrence of only two species in the state, viz. *Livia khaziensis* Heslop-Harrison and *Acizzia indica* Heslop-Harrison. In course of survey carried out in 1976-1977, a number of Psyllid specimens could be collected from various parts of Shillong. The collection comprised of six different Psyllid species, including one gen. et. sp. nov. and another five which are all new records from Meghalaya. These have been dealt with in the present paper along with notes and illustration. Type material of the new species has been deposited in the National Zoological collection.

SYSTEMATIC ACCOUNT

Key to subfamilies

- 1. Head very deeply cleft in front between the antennae ; forewing with more than usual marginal cells..... Ciriacreminae.
- Head not unusually cleft in front ; forewing with only the usual two marginal cells 2
- 2. Forewing with a cubital stem, i. e., media and cubitus with a common stem : basal tarsal segment of hind legs with two claw like spines at apex Psyllinae.
- Forewing without a cubital stem, radius, media and cubitus diverging from a common point or, cubitus branching separately ; basal tarsal segments without claw like spines at apex..... Trioziinae

Subfamily CIRIACREMINAE

Genus *Cicidopsylla* Kieffer

Cicidopsylla schimae Kieffer

Cicidopsylla schimae Kieffer, 1905, *Ann. Soc. Sci. Bruxelles*, : 165.

* Part 14 of "A preliminary study of the Insect fauna of Meghalaya."

Material examined : 1 ♀, adult, collected on 15. iv. 1977 ex *Schima walllichii* Chois, at Risha colony, Shillong.

Distribution : India, West Bengal (Kalimpong) and Meghalaya (Shillong).

Remark : Present study extends the distribution of this species further eastwards from earlier records of its occurrence in Bengal.

Subfamily PSYLLINAE

Key to the genera of the subfamily Psyllinae

1. Forewing strongly rhomboidal and thickened ; genae produced into two transverse, contiguous lobes, on the same plane with vertex *Euphyllura* Foerster

—Forewing elongate ovate and hyaline ; genae produced into two subconical, divergent lobes, which are markedly produced in front of vertex *Psylla* Geoffroy

Genus *Euphyllura* Foerster

Euphyllura eastopi Mathur

Euphyllura eastopi Mathur, 1973, *Oriental Ins.*, 7 (4) : 519.

Material examined : 1 ♂, 1 ♀, adults, collected on 24. vi. 1976 ex unidentified host plant, at Okland road, Shillong.

Distribution : India, Himachal Pradesh (Manali) and Meghalaya (Shillong).

Remarks : Present study extends the distribution of this species in North Eastern India. The nymphs cause heavy infestation on young foliage and yield profuse sticky whitish wooly secretion on the back surfaces of leaves (Pl. V), and remain covered by the same.

Genus *Psylla* Geoffroy

Key to the species of the genus *Psylla* Geoffroy

1. Hind tibiae without a basal spur..... *P. murrayi* Mathur
—Hind tibiae with a basal spur
.... *P. viburni* Loew

Psylla murrayi Mathur

Psylla murrayi Mathur 1975, *Psyllidae of the Indian subcontinent*, : 268.

Material examined : Sev. exs., ♂♂ and ♀♀, adults and reared from nymphs, collected between March to October, 1978, ex. *Citrus acida* Korels, *C. auranticum* L. and *C. medica* L. Risha colony, Shillong.

Distribution : India, Uttar Pradesh (DehraDun) and Meghalaya (Shillong).

Remarks : First described from New Forest, DehraDun, this species was so far known to infect only wild plant *Marraya koenigii* Spreng. It was revealed to be a serious pest of various cultivated Citrus plants in Shillong in course of present investigation. A detailed study on the biology of this species will be published elsewhere.

Psylla viburni Loew

Psylla viburni Loew, 1876, *Verh. zool. bot. Ges. Wien.*, 26 : 194.

Material examined : 1 ♀, adult, collected on 23. vii. 1977, ex *Salix* sp., at Fisheries compound, Shillong.

Distribution : India, Himachal Pradesh (Chopal) and Meghalaya (Shillong) ; widely distributed from Central Europe to Japan.

Remarks : This widely distributed species has been reported here for the first time from Eastern India and also from new host plant, earlier having been known to feed upon *Viburnum* sp.

Subfamily TRIOZINAE

Key to the genera of the subfamily Triozinae

1. Cubitus branching separately ; radius and media fused at base forming a long petiole
 Genus *Cryptotrioza* nov.
- Radius, cubitus and media branching from a common point *Trioza* Foerster

Cryptotrioza gen. nov.

Body large and stout. Head including eyes narrower than thorax, deflexed ; post ocellar region moderately swollen ; front ocellus visible from top ; genal cones moderately large, separated at base, diverging apically and subrounded at apex ; vertex subquadrate, broader than long ; median suture prominent, grooved ; eyes large, hemispherical ; antennae long, nearly four times as long as the width of eyes, 10 segmented and thickly pubescent. Thorax large, arched. Pronotum narrow, collar like, convexly rounded. Prescutum as long as broad ; scutum a little broader than long ; scutellum nearly twice as broad as long ; pleural suture oblique, not extending to middle of lateral extremities of pronotum ; epimeron a little shorter than episternum. Legs slender ; hind tibiae with one or two basal spur and four apical black spines situated on inner side except one, which is situated on outer side ; basal tarsal segment of hind leg without apical spine. Wings hyaline, membranous ; forewing acute at apex, cubital petiole (M+Cu) wanting, cubitus branching separately, media fused with radius at base, the common petiole thus formed is a long one, covering half the distance from origin of cubitus and branching of radius ; Rs. long, extending nearly twice as long as the second. Hindwings considerably shorter than forewings.

Type-species : *Cryptotrioza mathuri* sp. nov.

The genus is very close to *Trioza* Foerster

1848 in general features, but differs from the same in the presence of a long petiole formed by the fusion of radius and media at base. In this character *Cryptotrioza* resembles some species of the genus *Ceropsylla* Riley 1883, but the petiole is distinctly much longer in *Cryptotrioza* and these two genera are also markedly distinct in relative length of the vein Rs.

Cryptotrioza mathuri sp. nov.

Material studied : *Holotype* ♂, mounted on slide, reared from nymph, collected on 24. vi. 1976, ex *Simplocos* sp. at Risha colony, Shillong. (Regd. No. E.R.S./Z.S.I. A1/4759) ; *Allotype* ♀, other data same as *Holotype* (Regd. No. ERS/ZSI. A1/4760) ; *Paratypes* 2 ♀ ♀, unmounted other data same as *Holotype* (Regd. No. ERS/ZSI. A1/4761 and 4762). *Holotype* and *Allotype* deposited in the National Zoological collection, Zoological Survey of India, Calcutta. *Paratypes* in the collection of the Eastern Regional Station, Z S.I., Shillong.

Measurements (in mm).

Length of body, in ♂ 3.75 ; in ♀ 3.6-4.5

Length of forewing, in ♂ 5.2 ; in ♀ 4.8-5.5.

Width of head with eyes 1.0

Width of vertex between eyes 0.55

Length of antennae 3.5-4.0.

Colouration : Beautiful grass green when alive, changing to yellowish in preserved specimens ; eyes black, fore and middle pair of legs brownish, hind legs whitish.

Structure : Body large and stout. Head (Fig. 1A) including eyes smaller than thorax, finely and sparsely pubescent ; vertex subquadrate, depressed medially, concavely raised to either eye on sides, convexly sloping downwards posteriorly a little, more markedly so in front ; posterior margin arquate with slightly swollen postocular lobes ; anterior ocellus visible from above ; median suture at

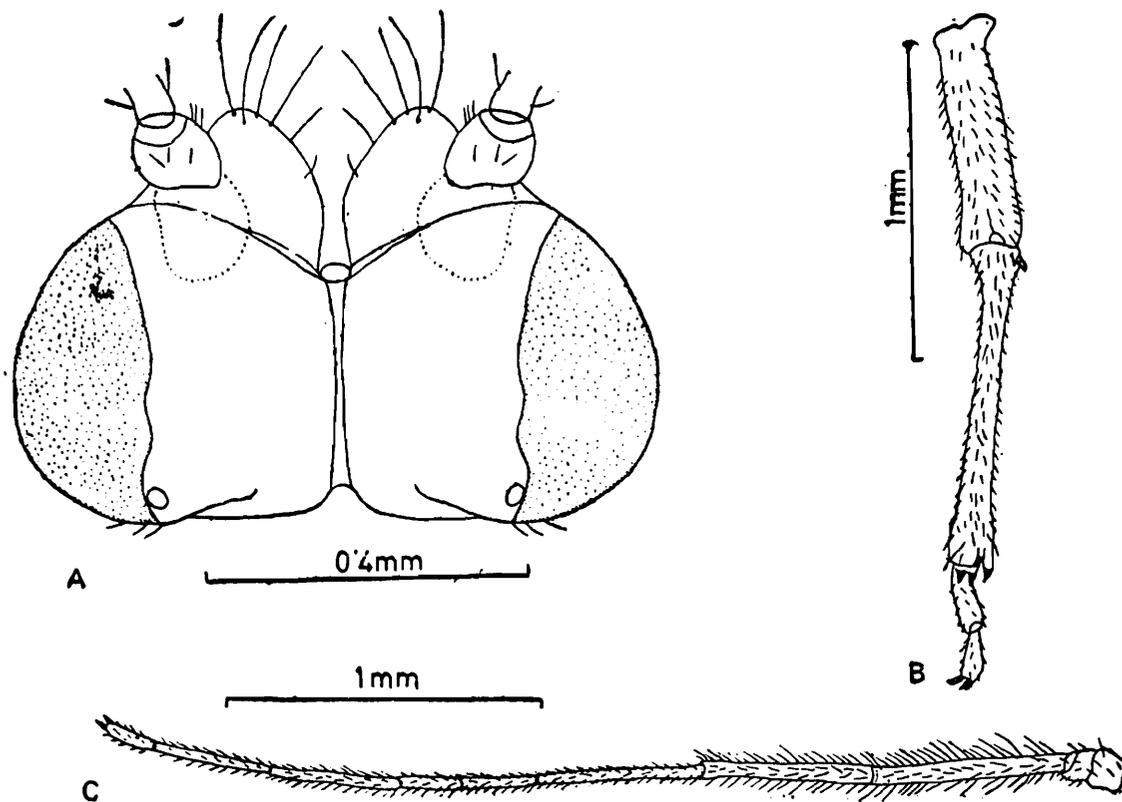


Fig. 1. (A—C) *Cryptotrioza mathuri* gen. et sp. nov. ; A—head in dorsal view ; B—hind tibiae in lateral view ; C—antenna in lateral view.

base of anterior ocellus markedly by a short subacute impression on either side ; genal cones moderately large, with longer setae than on vertex, separated at base, diverging apically and subrounded at apex ; eyes large, hemispherical.

Antennae (Fig. 1C) long, 10 segmented, thickly pubescent ; 3rd segment longest and little longer than the segments 4th, 5th, 8th and 9th, which are subequal and nearly twice in length than the segments 6th, 7th and 10th, which are again subequal to each other.

Thorax moderately arched, finely and sparsely pubescent. Prothorax of nearly equal length throughout, convexly rounded ; prescutum nearly as broad as long, broadest in centre, markedly rounded anteriorly, less so

posteriorly ; scutum a little broader than long, slightly smaller than prescutum in length ; scutellum broadly transverse, nearly twice as broad as long.

Legs long (Fig. 1B) ; fore and middle legs moderately thickly pubescent, hindlegs distinctly much less so ; hind tibiae with a row of 6-7 comblike subapical hairs, a small basal and four conspicuous spurs at apex with thick black tooth, of which one is subapical and three are apical ; in addition a smaller accessory basal tooth usually present ; middle and hind femora with subapical thick setae on either side ; basal tarsal segment a little longer than the apical on all legs, without apical spine ; meracanthus narrowly triangular.

Forewings (Fig. 2A) very large, hyaline,

nearly two and a half times as long as broad, broadest across about middle of the wing, apex acute ; costal margin with regularly spaced short hairs ; the basal vein, radius and R_1 , thick and dark brown, the membrane narrowly on either side of the same is also so ; the inner margin brownish in basal half, rest of the veins yellowish ; three distinct small triangular clouding of points along inner margin, one each at the centre of each marginal cell and another in between these two ; details of venation as stated for genus.

Hindwings (Fig. 2B) a little more than half the length of forewing, its membrane clouded with minute points, the costal margin near base bearing 5-6 moderately long setae.

Genitalia : Male genital segment much

smaller than abdomen. Anal valve (Fig. 3A) 0.40 mm long, anterior margin almost straight, posterior margin subtriangular ; outer surface in posterior half beset with long setae. Parameres (Fig. 3C) 0.30 mm long, strongly bowed in lateral view, ending in a short, thick black tooth. Aedeagus and sperm pump as shown in Figs 3B and 3D respectively.

Female genital segment (Fig. 3E) more than half the length of abdomen. Both plates broad basally and narrowed caudally, sparsely beset with long setae. Apex of dorsal plate subacute, that of ventral plate acute. Circum-anal ring with a double ring of pores. Ovipositor acutely pointed.

Distribution : India, Meghalaya (Shillong).

Remarks : This new species with distinctive large and stout body infects young leaves of *Simplocos* sp. from last week of May and

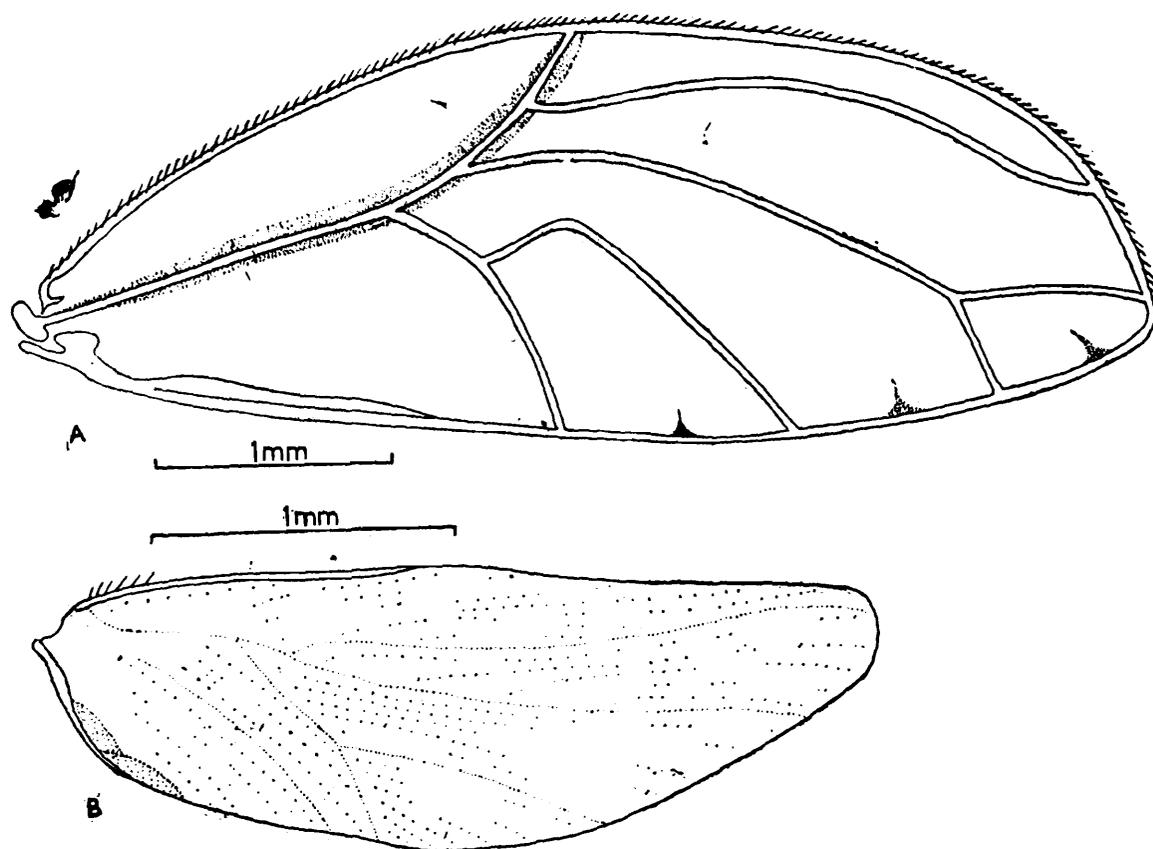


Fig. 2. *Cryptotriosa mathuri* gen. et sp. nov. A—forewing ; B—hind wing ;

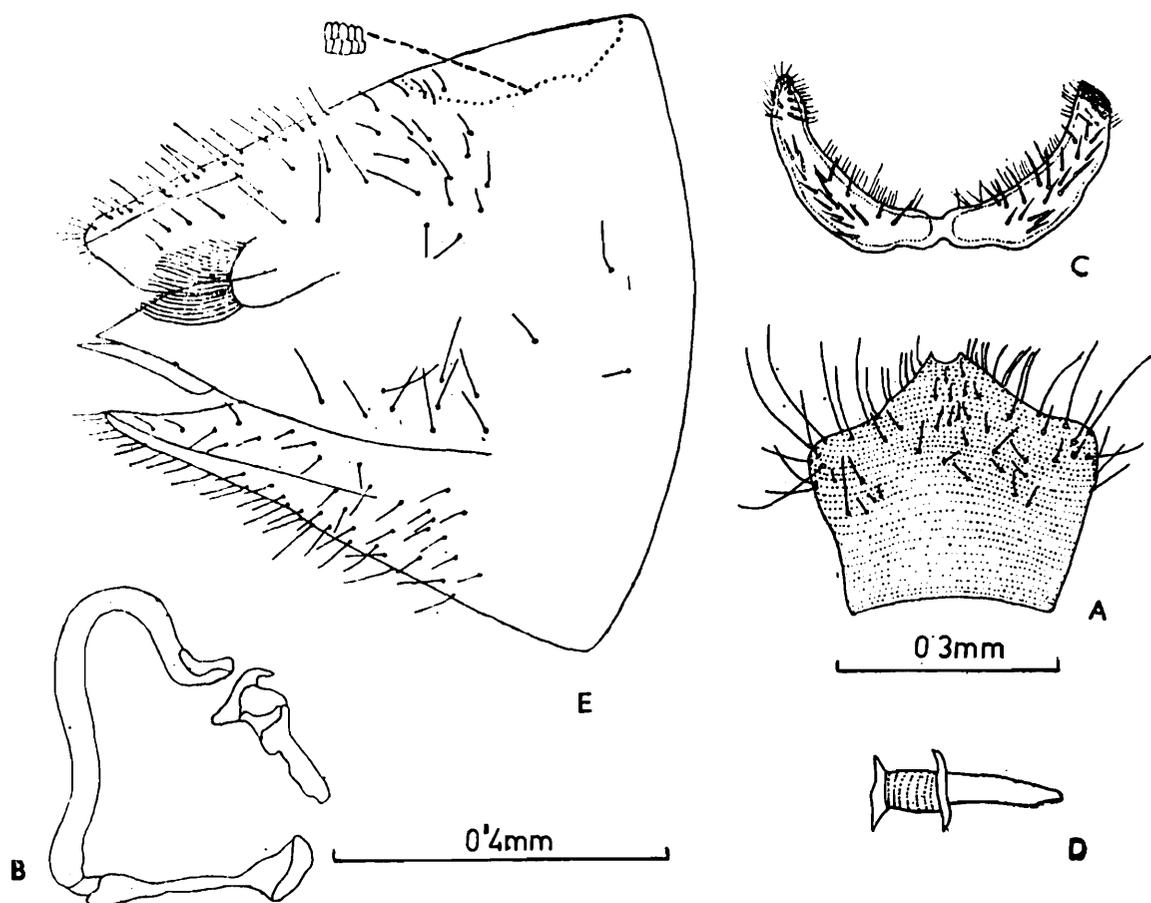


Fig. 3. *Cryptotrioza mathuri* gen. et sp. nov. (A—D) male genitalia ; A—anal valve ; —aedeagus ; C—parameres ; D—sperm pump ; E—female genitalia in lateral view. [Fig. (A & C) and (B, D & E) are drawn on same scale]

the infection becomes over by the first week of June. The nymphs harbours inside the longitudinally curled leaves. The final instar nymphs emerged into adults in the laboratory between 24 to 72 hours of collection.

The new species is dedicated to Lt. Dr. R. N. Mathur.

Genus *Trioza* Forester

Trioza gigantea curta Mathur

Trioza gigantea curta Mathur, 1975, *Psyllidae of the Indian subcontinent*, : 375.

Material examined : 4 ♂♂, 6 ♀♀, adults

and reared from nymph, collected on 15 and 18. iv. 1977, ex. *Schima wallichii* Chois, at Risha colony, Shillong.

Distribution : India, West Bengal (Darjeeling), Meghalaya (Shillong).

Remarks : Present study extends the distribution of this subspecies further eastwards from its earlier distributional record in West Bengal. Its host plant was unrecorded so far. The nymphs are free living and aggregate on the back surfaces of leaves. The newly emerged flies are pale green in colour and unmarked, thus differing from the adults which are marked conspicuously with black.

ACKNOWLEDGEMENTS

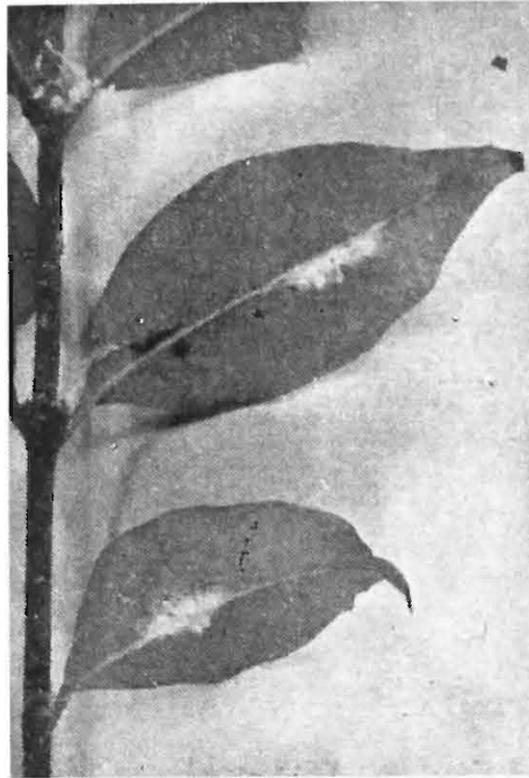
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Woolly secretion yielded by the nymphs of
Euphyllura eastopi Mathur