

Seven new species of the genus *Salka* Dwor.
(Hemiptera: Auchenorrhyncha: Cicadellidae: Typhlocybinae)

Семь новых видов рода *Salka* Dwor.
(Hemiptera: Auchenorrhyncha: Cicadellidae: Typhlocybinae)

Irena Dworakowska
И. Двораковская

201 4930 Bennett Str. Burnaby BC V5H 2G9 Canada. E-mail: dwor_2000@hotmail.com
№ 201 4930 ул. Беннетт, Барнаби BC V5H 2G9 Канада.

KEY WORDS: Hemiptera, Auchenorrhyncha, Cicadellidae, Typhlocybinae, Erythroneurini, *Salka*, new species.

КЛЮЧЕВЫЕ СЛОВА: Hemiptera, Auchenorrhyncha, Cicadellidae, Typhlocybinae, Erythroneurini, *Salka*, новые виды.

ABSTRACT. Seven new species: *Salka kerzhneri* and *S. emeljanovi* from Myanmar, *S. byrneae* and *S. jonesi* from Nepal; *S. torjania*, *S. unicerca* and *S. dentata* from N Borneo are described.

РЕЗЮМЕ. Описывается 7 новых видов: *Salka kerzhneri* и *S. emeljanovi* из Мьянмы, *S. byrneae* и *S. jonesi* из Непала; *S. torjania*, *S. unicerca* и *S. dentata* с Северного Борнео.

Introduction

The Oriental genus *Salka* Dworakowska, 1972 was reviewed 12 years ago [Sohi & Mann, 1994] and three more species described from Sikkim [Dworakowska, 1994].

The material examined is deposited in the following collections: MM — Moravian Museum (Brno, Czech Republic), BM — British Museum of Natural History (London, UK), and NMNHL — The National Museum of Natural History (Leiden, Netherlands).

Systematic part

Salka kerzhneri Dworakowska **sp.n.**
Figs 1–11

MATERIAL. Holotype, ♂, Myanmar, Ze Yar 1000 m to Wa Zar Dum 850 m, forest paths and open cultivated areas, 13.II.1998, H. Nickel (MM). Paratype, ♀, same data as holotype (MM).

DESCRIPTION. Dorsal side of head and thorax beige to sordid beige, with large central blackish-brown patch on vertex. Pronotum sordid brown medially, darker posteriorly, with narrow grayish fascia at hind margin. Basal triangles and adjoining area dark sordid brown. Face pale, with two slightly fuscous streaks running from the blackish apical patch and merging on anteclypeus. Fore wing brownish, with clavus

and wax-field darker and caudal half of c cell as well as 1st, 2nd and 4th apical cells lighter. Abdomen in both sexes blackish-brown. In female the bristles on pygofer dark, sternite 7 at least three times longer than 6th sternite (in dried specimen), produced in the middle, slightly lighter medially at the caudal margin. Legs dark sordid beige.

Body length. ♂ — 3.35 mm., ♀ — 3.40 mm.

DIAGNOSIS. Male terminalia characteristic by the shape of long, branched apical penis processes and two little latero-dorsal lamellae in apical third of almost straight penis stem, relatively short and narrow dorsal pygofer process and tapering narrow caudal part of paramere, with very narrow, elongate praeapical lobe.

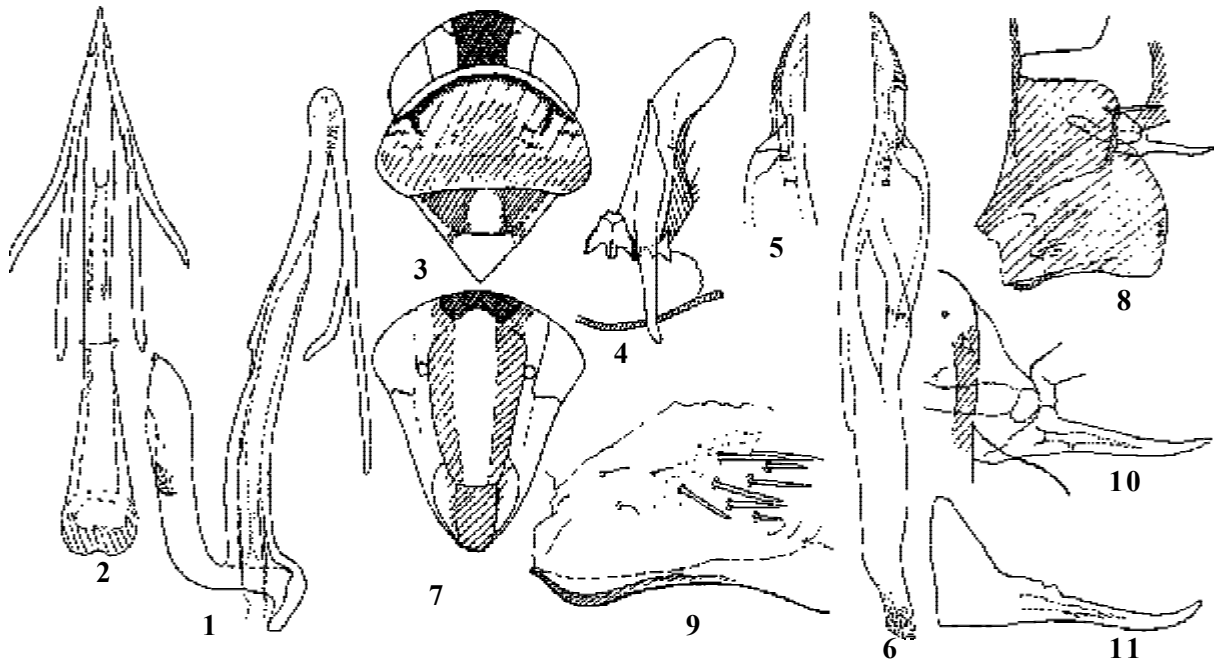
COMPARISON. The new species resembles *S. ramosa* Sohi et Mann [Sohi & Mann, 1994] from Java. It differs from the latter by apical penis processes almost straight when in lateral view, their short branches longer and delicately serrate at apex, dorsal pygofer appendage narrower and less curved and caudal part of paramere narrower, with subapical tooth undiscernible. The illustration of dorsal pygofer appendage of *S. ramosa* based on new material is given in Fig. 23.

ETYMOLOGY. The name is formed in honour of Dr. I.M. Kerzhner.

Salka emeljanovi Dworakowska **sp.n.**
Figs 12–22

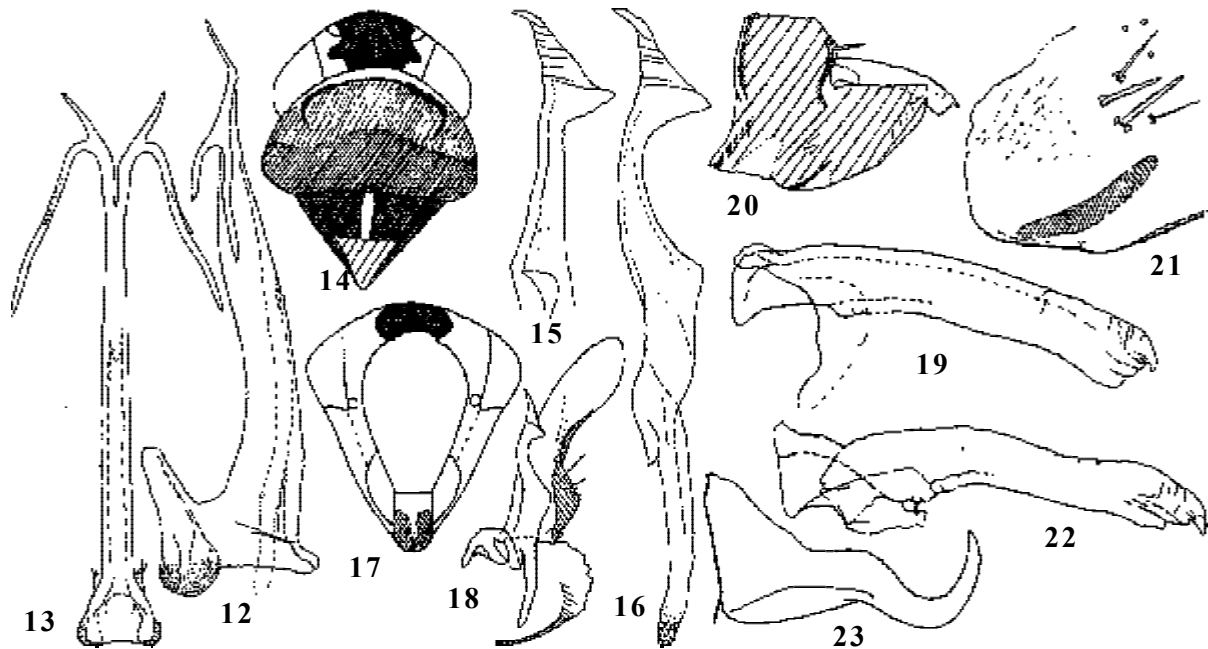
MATERIAL. Holotype, ♂, NW Myanmar, San Gaung, 600–800 m, forest path, 12.II.1998, H. Nickel (MM). Paratypes: 3 ♀♀, same data as holotype (MM).

DESCRIPTION. Vertex and anterior part of pronotum light beige, with large lobate blackish patch in centre of vertex. Most of pronotum brown, with two arcuate marks in its antero-lateral parts and caudal third darker. Scutum centrally and most of scutellum sordid beige, with large blackish-brown patches covering basal triangles. Face short, light beige, with apical parts of anteclypeus blackish-brown and the apical patch even darker. Fore wing dark brown, with the wax-field darker and the distal part of c cell being the only lighter part of the wing. Pigmentation of female slightly reduced in comparison to that of male. Sternite 7 of female twice as long as 6th sternite, triangularly produced caudad, blackish, with sordid brown background of caudal half, with broad blackish border-



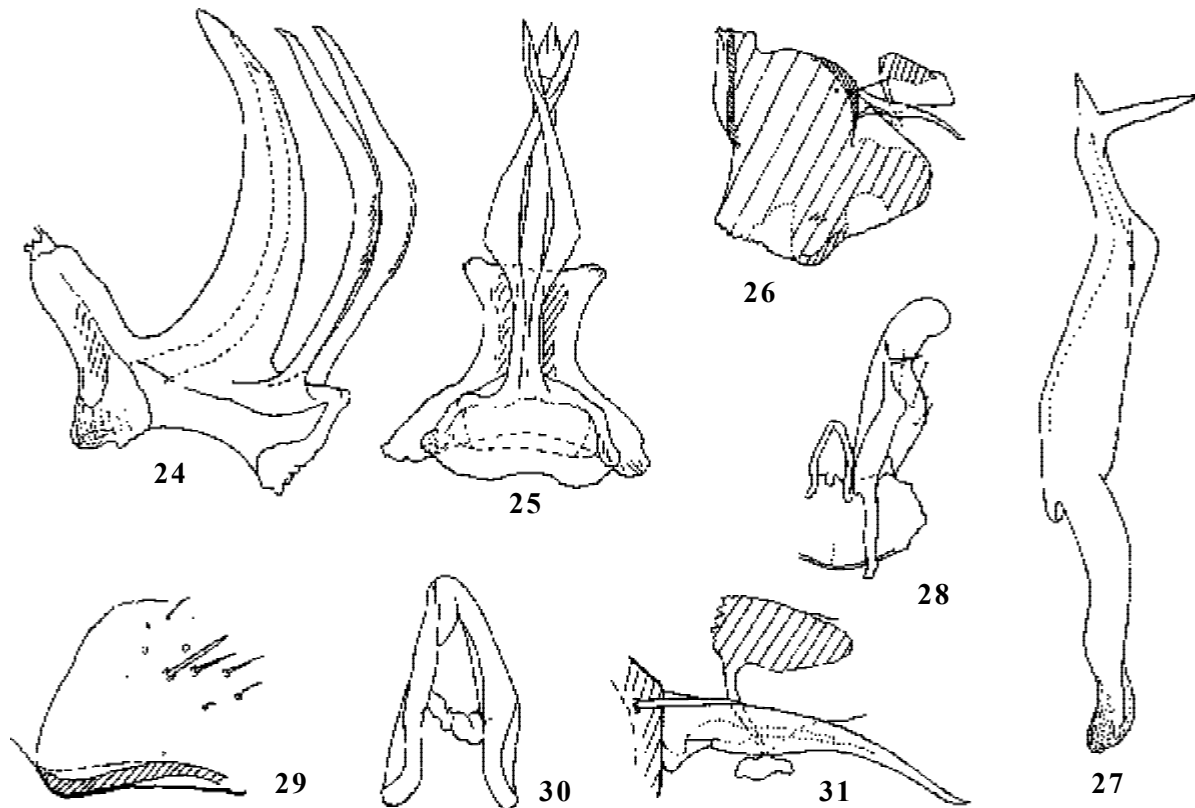
Figs 1–11. *Salka kerzhneri* sp.n.: 1 — penis, lateral view; 2 — penis, posterior view; 3 — head and thorax of male, dorsal view; 4 — proportions of subgenital plate, paramere, connective and s 9; 5 — caudal part of paramere; 6 — paramere; 7 — face; 8 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 9 — antero-ventral angle of pygofer; 10 — dorsal pygofer appendage with its setting; 11 — dorsal pygofer appendage isolated.

Рис. 1–11. *Salka kerzhneri* sp.n.: 1 — пенис, сбоку; 2 — пенис, сзади; 3 — голова, переднеспинка и щиток самца, сверху; 4 — размеры субгенитальной пластинки, парамера, коннектива и стернита 9; 5 — каудальная часть парамера; 6 — парамер; 7 — лицо; 8 — форма и паттерн пигментации пигофора, его придатка и основания анальной трубки; 9 — антеро-вентральный угол пигофора; 10 — дорсальный придаток пигофора и окружающие его части; 11 — изолированный придаток пигофора.



Figs 12–23. *Salka* spp.: 12–22 — *Salka emeljanovi* sp.n.; 23 — *S. ramosa* Sohi & Mann.; 12 — penis, lateral view; 13 — penis, posterior view; 14 — head and thorax of male, dorsal view; 15 — caudal part of paramere; 16 — paramere; 17 — face; 18 — proportions of subgenital plate, paramere, connective and s 9; 19, 23 — dorsal pygofer appendage isolated; 20 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 21 — antero-ventral angle of pygofer; 22 — dorsal pygofer appendage with its setting.

Рис. 12–23. *Salka* spp.: 12–22 — *Salka emeljanovi* sp.n.; 23 — *S. ramosa* Sohi & Mann.; 12 — пенис, сбоку; 13 — пенис, сзади; 14 — голова, переднеспинка и щиток самца, сверху; 15 — каудальная часть парамера; 16 — парамер; 17 — лицо; 18 — форма субгенитальной пластинки, парамера, коннектива и стернита 9; 19, 23 — изолированный дорсальный придаток пигофора; 20 — форма и паттерн пигментации пигофора, его придатка и основания анальной трубки; 21 — антеро-вентральный угол пигофора; 22 — дорсальный придаток пигофора и окружающие его части.



Figs 24–31. *Salka byrneae* sp.n.: 24 — penis, lateral view; 25 — penis, posterior view; 26 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 27 — paramere; 28 — proportions of subgenital plate, paramere, connective and s 9; 29 — antero-ventral angle of pygofer; 30 — connective; 31 — dorsal pygofer appendage with its setting.

Рис. 24–31. *Salka byrneae* sp.n.: 24 — пенис, сбоку; 25 — пенис, сзади; 26 — размеры и паттерн пигментации пигофора, его придатка и основания анальной трубки; 27 — парамер; 28 — форма субгенитальной пластинки, парамера, коннектива и стернита 9; 29 — антеро-вентральный угол пигофора; 30 — коннектив; 31 — дорсальный придаток пигофора и окружающие его части.

ing of lateral margins and diamond-shaped black patch at apex. Legs light beige except protibiae brown.

Body length. ♂ — 3.25 mm., ♀ — 3.30–3.70 mm.

DIAGNOSIS. Male terminalia characteristic by long, three-branched apical penis processes, paramere slim, with long caudal part terminated in triangular lamella, elongate pygofer side and dorsal pygofer appendage long, broad, with caudal margin coarsely serrate. Basal abdominal apodemes of 3rd male's sternite narrow and relatively long, reaching 4th sternite.

COMPARISON. The new species resembles *S. spinosa* Sohi et Mann [Sohi & Mann, 1994] from NE India. It differs from the latter by much longer pygofer, three-branched apical penis processes and by paramere slimmer, with its caudal part longer.

ETYMOLOGY. The name of the new species is formed in honour of Dr. A.F. Emeljanov.

Salka byrneae Dworakowska sp.n.

Figs 24–31

MATERIAL. Holotype, ♂, E Nepal, Taplejung Distr., above Sangu, 6200', mature mixed forest, 25–28.X.1961, R.L. Coe (BM). Paratypes: 5 ♂♂, 5 ♀♀, same data as holotype; 1 ♀, Sangu, 6200', mixed vegetation by stream in gully, IX.–X.1961; 2 ♂♂, 1 ♀, below Sangu, 6000', by stream in shady ravine, 30.X.1961; 1 ♂, above Sangu, 6500', edge of mixed forest, 17.X.–1.XI.1961; 1 ♂, Arun Valley, below Tumlingar, west bank of River Sabhaya, 1800', 22.XII.1961; 1 ♂, 1 ♀, between Sangu and Tamrang, 5200', damp cliff in deep river gorge, I.–II.1962, R.L. Coe (BM).

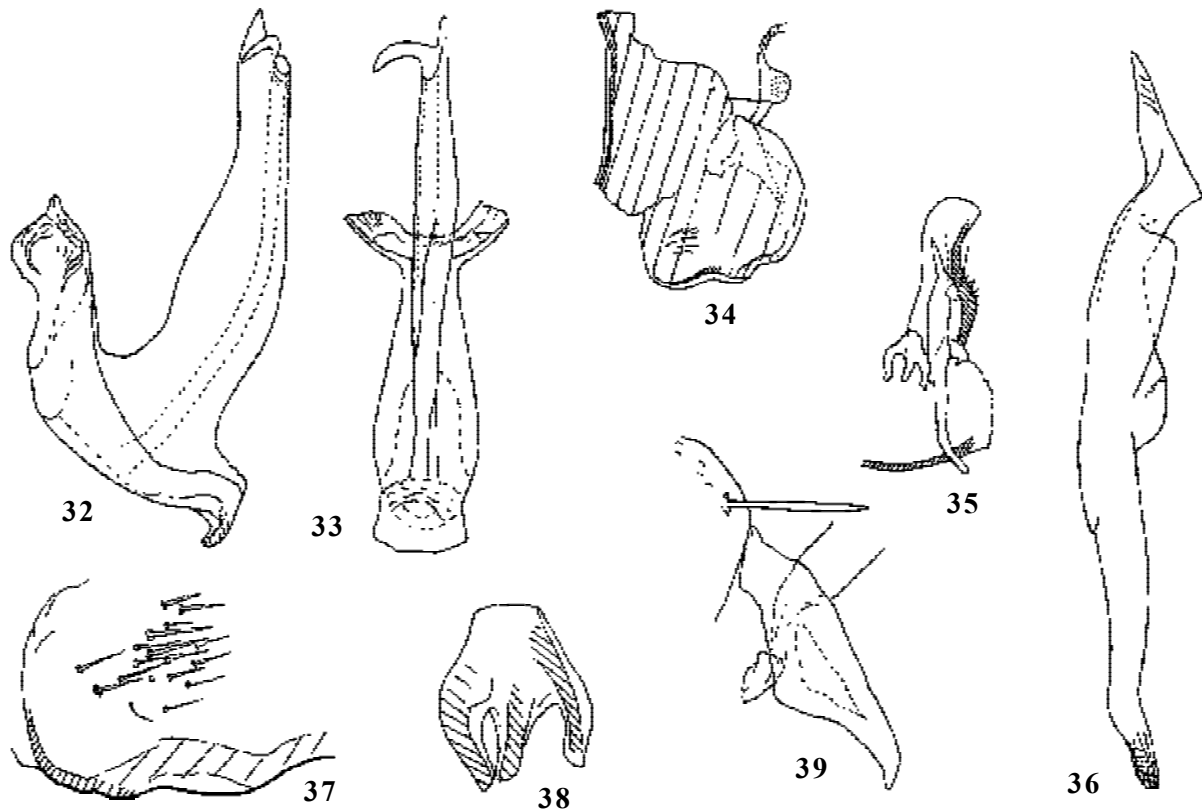
DESCRIPTION. Vertex laterally whitish at base, light brown anteriorly, with large lobate central blackish-brown patch. Face with sides of frontoclypeus and whole anteclypeus sordid light brown, sordid beige laterally, antennae and lateral margins of anteocular area paler, the medial streak in upper part of frontoclypeus and borderings of lateral frontal sutures whitish. Pronotum sordid brown antero-laterally, grayish in centre and posteriorly, sordid beige anteriorly. Basal triangles dark brown. Centres of scutum and scutellum sordid whitish, hind part of scutellum brownish-grey. Fore wing sordid brown, with wax-field darker.

Body length. ♂ — 3.20–3.50 mm., ♀ — 3.00–3.25 mm.

DIAGNOSIS. Male terminalia characteristic by sickle-shaped basal penis processes crossing each other subterminally, crane head like caudal part of paramere and by dorsal pygofer appendage tapering.

COMPARISON. The new species resembles *S. kokarda* Sohi et Mann [Sohi and Mann, 1994] from NE India (Bengal) in general structure of all parts of male terminalia. It differs from the latter by penis processes situated close to the stem, longer and differently shaped, by dorsal pygofer appendage narrower and longer and by the extensions on caudal part of paramere more diversified. Setae at antero-ventral angle of pygofer lobe is slightly differentiated toward macrosetae in the new species while in *S. kokarda* it consists of feeble microsetae only.

ETYMOLOGY. The name of species is formed after Ms. A.B. Byrne.



Figs 32-39. *Salka jonesi* sp.n.: 32 — penis, lateral view; 33 — penis, posterior view; 34 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 35 — proportions of subgenital plate, paramere, connective and sternite 9; 36 — paramere; 37 — antero-ventral angle of pygofer; 38 — connective; 39 — dorsal pygofer appendage with its setting.

Рис. 32-39. *Salka jonesi* sp.n.: 32 — пенис, сбоку; 33 — пенис, сзади; 34 — форма и паттерн пигментации пигофера, его придатка и основания анальной трубки; 35 — размеры субгенитальной пластинки, парамера, коннектива и стернита 9; 36 — парамер; 37 — антеро-вентральный угол пигофера; 38 — коннектив; 39 — дорсальный придаток пигофера и окружающие его части.

Salka jonesi Dworakowska sp.n.

Figs 32-39

MATERIAL. Holotype, ♂, E Nepal, Taplejung Distr., above Sangu, 6200', mature mixed forest, 25-28.X.1961, R.L. Coe (BM). Paratypes: 1 ♂, 1 ♀, same data as holotype (BM).

DESCRIPTION. Head sordid beige, with blackish-brown central patch on vertex (its borders almost straight) and brownish-beige infuscations on sides of its anterior margin. Face with apical blackish patch, large brown patches in lower parts of anteoocular areas and with base and centre of anteclypeus and frontoclypeus (except its lighter centre) slightly brownish. Dorsal side of thorax sordid brown except a semilunar beige stripe along anterior margin of pronotum. Fore wing sordid brown, wax-field darker.

Body length. ♂ — 2.75 mm., ♀ — 2.70 mm.

DIAGNOSIS. Male terminalia characteristic by a jar-shaped penis stem (in lateral aspect) terminated in a short dorsal lamella and short curved process and by paramere with long apical extension.

COMPARISON. The new species resembles *S. lobata* Dwor. from Taiwan differing from the latter by other shape of penis stem and absence of small lamellae along it, paramere with prominent praeapical lobe and elongate apical extension in short caudal part and the apical two third of subgenital plate compact.

ETYMOLOGY. The name is formed after Mr. C.D. Jones.

Salka torjania Dworakowska sp.n.

Figs 40-49

MATERIAL. Holotype, ♂, Malaysia, SW Sabah, nr Long Pa Sia (West), 1050 m, 25.XI.-8.XII.1987, malaise trap, C. v. Achterberg (NMNHL). Paratype, ♀, same data as holotype (NMNHL).

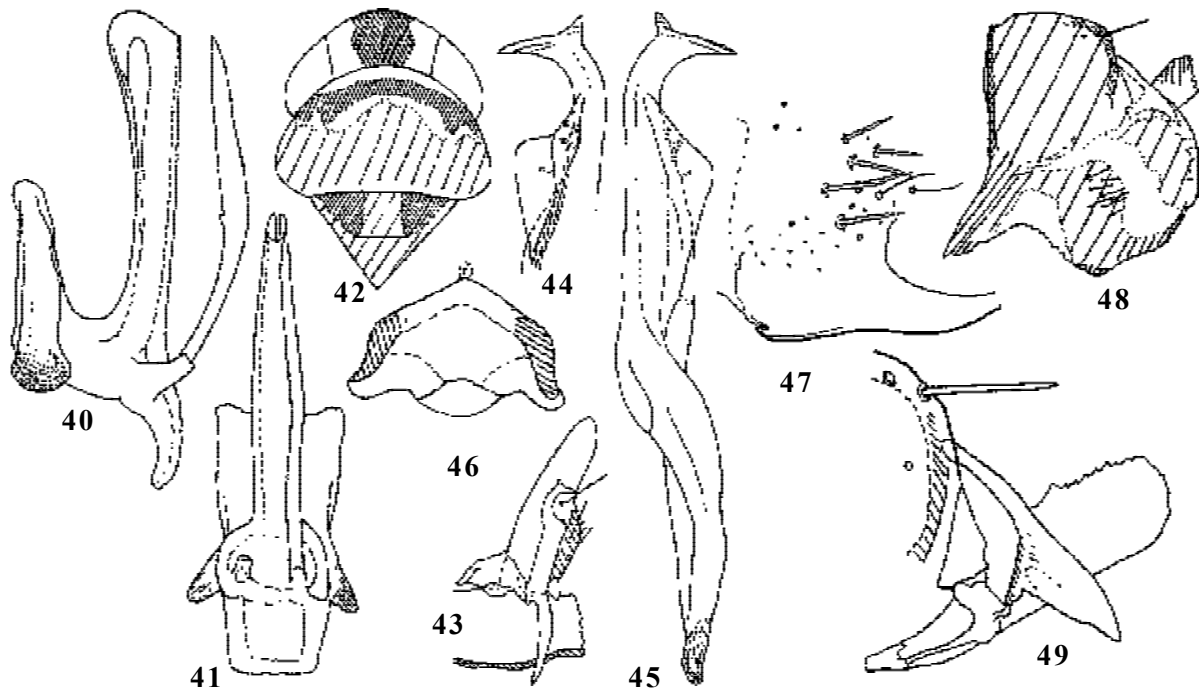
DESCRIPTION. Head beige. Vertex medially with large blackish patch (Fig. 42) which passas on face where it became emarginated in midline. Pronotum beige, with an ochre tint anteriorly, an arcuate transverse fascia consisting of four beige patches at about midlength flanked with dark brown anteriorly and brown-greyish posteriorly. Scutum and scutellum brown, basal triangles dark brown. Fore wing sordid brownish, with costal margin, wax-field and costal area cephalad of it dark brown, other margins and veins apically infuscate, caudal half of c cell slightly lighter.

Body length. ♂ — 3.20 mm., ♀ — 3.10 mm.

DIAGNOSIS. Male terminalia characteristic by shape of penis, with the stem laterally compressed apically what shows in side view as a truncate lamella and by slightly curved basal penis processes being as long as the stem and by paramere with short apical extension and long subapical tooth.

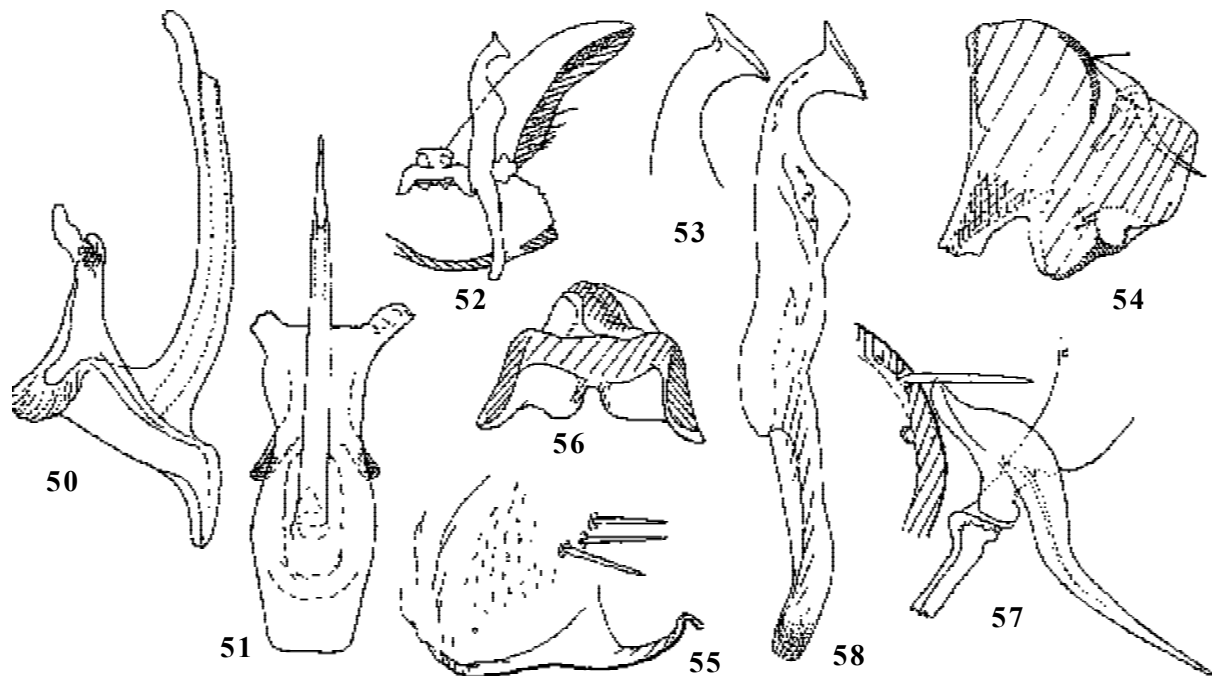
COMPARISON. There is close resemblance of the general features of *S. torjania* sp.n. and the new species described below.

ETYMOLOGY. The name is an arbitrary combination of letters, Nominativus Substantivum.



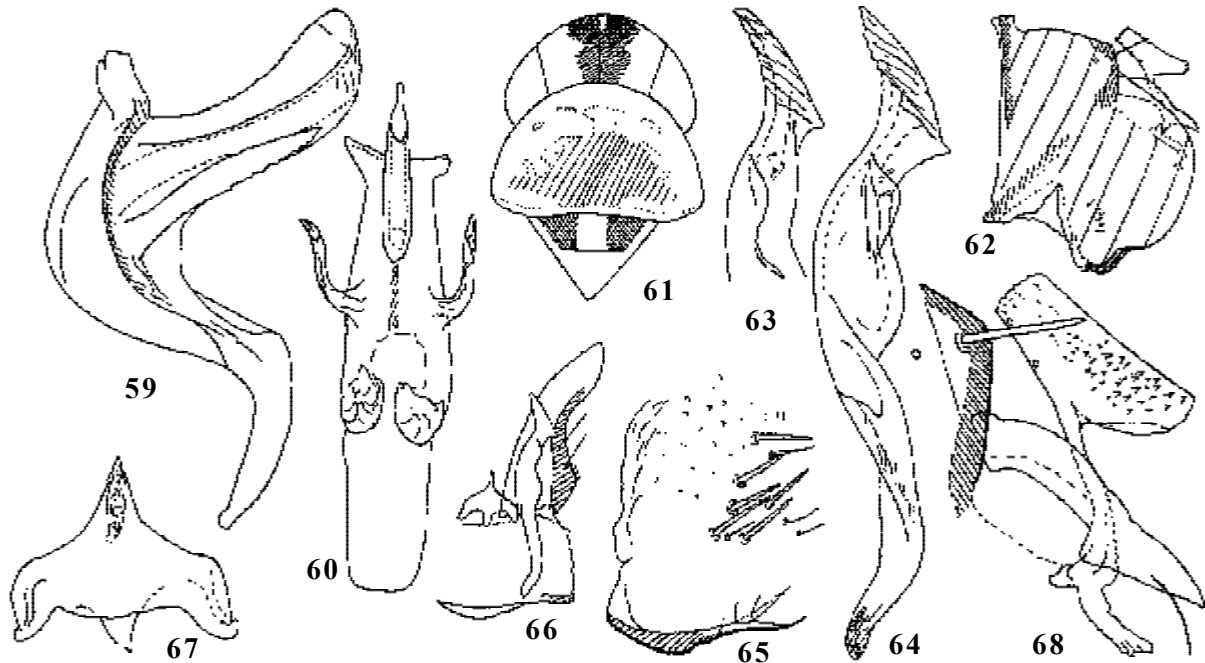
Figs 40–49. *Salka torjania* sp.n.: 40 — penis, lateral view; 41 — penis, posterior view; 42 — head and thorax of male, dorsal view; 43 — proportions of subgenital plate, paramere, connective and s 9; 44 — caudal part of paramere; 45 — paramere; 46 — connective; 47 — antero-ventral angle of pygofer; 48 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 49 — dorsal pygofer appendage with its setting.

Рис. 40–49. *Salka torjania* sp.n.: 40 — пенис, сбоку; 41 — пенис, сзади; 42 — голова, переднеспинка и щиток самца, сверху; 43 — форма субгенитальной пластинки, парамера, коннектива и стернита 9; 44 — каудальная часть парамера; 45 — парамер; 46 — коннектив; 47 — антеро-вентральный угол пигофора; 48 — форма и паттерн пигментации пигофора, его придатка и основания анальной трубки; 49 — дорсальный придаток пигофора и окружающие его части.



Figs 50–58. *Salka unicerca* sp.n.: 50 — penis, lateral view; 51 — penis, posterior view; 52 — proportions of subgenital plate, paramere, connective and s 9; 53 — caudal part of paramere; 54 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 55 — antero-ventral angle of pygofer; 56 — connective; 57 — dorsal pygofer appendage with its setting; 58 — paramere.

Рис. 50–58. *Salka unicerca* sp.n.: 50 — пенис, сбоку; 51 — пенис, сзади; 52 — форма субгенитальной пластинки, парамера, коннектива и стернита 9; 53 — каудальная часть парамера; 54 — форма и паттерн пигментации пигофора, его придатка и основания анальной трубки; 55 — антеро-вентральный угол пигофора; 56 — коннектив; 57 — дорсальный придаток пигофора и окружающие его части; 58 — парамер.



Figs 59–68. *Salka dentata* sp.n. 59 — penis, lateral view; 60 — penis, posterior view; 61 — head and thorax of male, dorsal view; 62 — proportions and pattern of pigmentation of pygofer, its appendage and base of anal tube; 63 — caudal part of paramere; 64 — paramere; 65 — antero-ventral angle of pygofer; 66 — proportions of subgenital plate, paramere, connective and s 9; 67 — connective; 68 — dorsal pygofer appendage with its setting.

Рис. 59–68. *Salka dentata* sp.n. 59 — пенис, сбоку; 60 — пенис, сзади; 61 — голова, переднеспинка и щиток самца, сверху; 62 — форма и паттерн пигментации пигофора, его придатка и основания анальной трубки; 63 — каудальная часть парамера; 64 — парамер; 65 — антеро-вентральный угол пигофора; 66 — форма субгенитальной пластинки, парамера, коннектива и стернита 9; 67 — коннектив; 68 — дорсальный придаток пигофора и окружающие его части.

Salka unicera Dworakowska sp.n.

Figs 50–58

MATERIAL. Holotype, ♂, Malaysia, Sarawak, Gunung Mulu Natl. Park, Long Pala nr Base Camp, lowland forest, 29.X.1977, N.M. Collins (BM). Paratypes: 1 ♀, III–IV[1977], N.M. Collins (BM); 2 ♂♂, Brunei, Ulu Temburong, 300 m, II–III.1982, M.C. Day (BM).

DESCRIPTION. Externally very similar to *S. torjania* sp.n., but lighter. Fore wing with r cell and 3rd apical cell distinctly darker than the surrounding areas.

Body length. ♂ — 3.00–3.40 mm., ♀ — 3.00 mm.

DIAGNOSIS. In male terminalia the most characteristic is long, almost tubular penis stem terminated in short apical dorsal lamella, caudal part of paramere with short apical extension and short subapical tooth and by dorsal pygofer appendage long, curved, tapering, with pointed apex.

COMPARISON. The new species resembles *S. torjania* from which it differs by rather tubular penis stem without basal processes, short subapical tooth on paramere and dorsal pygofer appendage differently shaped and about twice longer.

ETYMOLOGY. The name is after the short subapical tooth on paramere in form of a single horn.

Salka dentata Dworakowska sp.n.

Figs 59–68

MATERIAL. Holotype, ♂, Brunei, Ulu Temburong ridge, II–III.1982, M.C. Day (BM). Paratypes. 1 ♂, 1 ♀, same locality and date as holotype, alt. 300 m. (BM).

DESCRIPTION. Vertex and dorsal side of thorax sordid beige, with sordid brownish or brown streak in middle of vertex terminated on separate blackish-brown patches anteriorly extending on face. Face light beige, with two blackish-brown patches apically. Pronotum brown anteriorly, brownish-grey caudally, with a narrow transverse fascia at hind

margin grey. Basal triangles dark brown or brown. Fore wing brownish-beige, costal margin and wax-field dark brown, other margins and veins in apical third, infusate.

Body length. ♂ — 2.50 mm., ♀ — 2.85 mm.

DIAGNOSIS. Male terminalia characteristic by large atrial rim, penis stem short and laterally compressed, with accompanying prominent atrial processes, pygofer side short and high, with very short free part of dorsal pygofer appendage and caudal part of paramere short, with large broadened apical extension and minute subapical tooth.

COMPARISON. This species does not bear close resemblance to any other species described so far.

ETYMOLOGY. The name is emphasizing the characteristic shape of the paramere, with subapical extension in form of a pointed tooth.

ACKNOWLEDGEMENTS. I am grateful to Dr. Herbert Nickel for his Myanmar collection, to Dr. C. van Achterberg for the courtesy of enabling me to do research on the collection in museum in Leiden and to the authorities of the British Museum (Nat. Hist.) for the same.

References

- Dworakowska I. 1994. Typhlocybinæ (Auchenorrhyncha: Cicadellidae) of Sikkim, a preliminary survey // *Folia Entomologica Hungarica*. Vol.55. P.93–215.
- Sohi A.S. & Mann J.S. 1994. A review of the genus *Salka* Dworakowska, with description of eighteen new species (Insecta: Auchenorrhyncha: Cicadellidae: Typhlocybinæ) // *Entomologische Abhandlungen Staatliches Museum für Tierkunde Dresden*. Vol.56. P.31–53.