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A New Genus and three New Species of Phyllocephalinae (Pentatomomorpha: Pentatomidae) from Pakistan with Notes on their Zoogeography and Phylogeny [1] [2]

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Abstract

A new genus an three new species of the subfamily Phyllocephalinae are described from Sind, Punjab and Gilgit in the northern region of Pakistan with special reference to their metathoracic scent gland ostioles and male and female genitalia. The new genus is compared with its closest ally *Randolotus* DISTANT and on the basis of the above characters and considering their zoogeography, the phylogeny of the new taxons is also briefly discussed.

Introduction

Except GHAURI (1969) and HAMEED and ABBASI (1972) the Oriental Phyllocephaline fauna has entirely been neglected in the literature after DISTANT (1902 and 1908). The above authors also in their faunistic approach appear largely concerned with descriptions of species. It is in the above light, not strange that since DISTANT (1902) no generic or supergeneric category within the subfamily has been proposed in the literature. Similarly the systematic position of the subfamily has also remained disputed in literature (AHMAD and KHAN 1973) so much so, that LESTON (1954) accorded it a tribal status whereas MIYAMOTO (1961) has advocated for a familial status for the group.

The present new genus with remarkably elongated body, with long and anteriorly projected paraclypeae, with elongated and triangular scutellum, shorter peritremes of the metathoracic scent gland ostioles

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[2]) Mr. RIAZUL HAQUE, former A.R.O. of the above project in sincerely acknowledged for helping us in some of the diagrams used in the present paper.

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and long blade of parameres, usually distinctly longer than the stem, probably forms a natural group together with *Randolotus* DISTANT, *Megarhynchus* LAPORTE and probably *Dechelorhinus* STÅL within the subfamily Phyllocephalinae. The formal description of the group and the assignment of other related genera should await the completion of revisional studies on the subfamily, which is under progress.

About 200 specimens representing three species from various areas of Sind, Punjab and Gilgit in Northern areas were collected during various expeditions in 1974—75 on *Arundo donax* L. For the study of male genitalia the pygophore was removed in 10 % KOH solution and was warmed on a bench lamp for 15 minutes. It was then, washed with tap water and was dissected and inflated under LEITZ binocular microscope in the same medium. The examination of various structures and their drawings were made placing these on the cotton threads immersed under glycerine with the help of eye peice graticule. The genitalia were preserved in microvials with a drop of glycerine, pinned with the specimens. — For female genitalia the abdomen was removed from the base and was warmed in 10 % KOH on a bench lamp for 25 minutes. The spermatheca was dissected out in water after the drawings of the terminalia were made and examined in 70 % ethanol with a drop of glycerine. The abdomen was dried and was reattached with the specimen. The spermatheca was preserved in a microvial with a drop of glycerine pinned with the specimen.

The measurements of various structures and of the body were taken with the help of a micromillimeter slide of alteast five males and five females of each new taxon, if available. In the description alongwith measurements of holotype the range found in the population was also given. The holotype and paratypes were so labelled and were deposited at USNM, Washington, Hamburg Museum and Zoological Institute, West Germany, at Zoological Museum, University of Karachi and in the collection of the present first author.

Dinocoris **new genus**

Light ochraceous except 4th and 5th antennal segments, latter, posterior half of apical labial segment, anterio-lateral margins of scutellum, outer areas of corium and veins of membrane black, eyes with reddish tinge, ocelli pink.

Body elongate, several times longer than broad, head less than twice longer than broad, almost parallel-sided, anterior of head excluding eyes at least more than twice longer than posterior of head including eyes, paraclypeae much longer than clypeus, former usually fused beyond latter, eyes short sessile with outer margins convex, bucculae with inner margins anteriorly concave and posteriorly distinctly rounded, antennae distinctly passing beyond apex of head with antenniferous tubercles not visible from above, 2nd segments much longer than 3rd, pronotum anteriorly and laterally deflected, broader than long and usually distinctly shorter than head length with anterior margin broader than the width of head across the eyes, anterior angles spinose, lateral margins serrate, humeral angles rounded with posterior lobes usually prominent, anterior and posterior

margins markedly concave with posterior margins subequal to width of scutellum, latter somewhat triangular, medially raised, apical lobe much narrower than the base, mesosternum carinate, metathoracic scent gland ostioles with a sharply ovate aperture, peritreme short, blade-shaped, evaporatoria usually with posterior margin indistinctly marked, abdomen convex beneath, unarmed at base, longer than broad, connexiva distinctly exposed at repose, reflexed and recurved, spiracles lense-shaped, located at anterio-lateral margins, anterior located in the middle, posterior ones closer to anterior margin, in males 8th located on the lateral angles of 8th sternum but in females 8th placed on anterio-inner margins of 8th paratergites, in males posterior margin of 7th abdominal sternum markedly concave with lateral angles somewhat rounded.

Male genitalia: Pygophore somewhat quadrate broader than long, proctiger with sides and apical margin convex, parameres with longer curved blade, aedeagus with a pair of finger-like usually vertical thecal appendages, with dorsal membranous conjunctival appendage having a markedly constricted rounded lobe at the apex, with a pair of slender basal and a pair of lobe-like dorso-lateral conjunctival appendages, horizontal penal lobes well developed, almost Y-shaped, vesica short, hardly extending beyond the fused stem of the latter.

Female genitalia: In females posterior margin of seventh abdominal sternum medially, somewhat inverted 'V' or 'U'-shaped with lateral angles subacute. 8th paratergites much longer than either 9th paratergites or 1st gonocoxae and medially fused, 9th longer than 1st gonocoxae, usually wide apart, elongated but falling much short of the apical margin of fused 8th paratergites, triangulin prominent, spermathecal bulb rounded with 2 or 3 finger-like processes, pump region elongated and shorter than length of the distal duct of spermatheca, median dilation usually elongated oval, somewhat dumble-shaped, proximal duct much longer than the distal spermathecal duct.

Comparative Note: The present genus is most closely related to *Randolotus* DISTANT in having elongated body, elongated and anteriorly projected paraclypeae and other characters noted in the introduction but can easily be separated from the same by its longer antennae which certainly pass beyond apex of head and by its markedly serrated lateral margins of pronotum as compared to shorter antennae, never passing beyond apex of head and smooth lateral margins of pronotum in *Randolotus* DISTANT.

Type species *Dinocoris sindellus* new species

KEY TO THE SPECIES

1. Anterior of head excluding eyes, distinctly more than 3 times length posterior of head including eyes, posterior pronotal lobes (Figs. 2, 3) prominent, length of head about 1/2 or at least more than a 1/4 again length pronotum; in males ventro-posterior margin of pygophore uniformly concave without prominent ventro-lateral lobes (Figs. 10 & 12), in females ventro-posterior margin of 8th paratergites concave, apices of 9th paratergites rounded, latter comparatively narrowly separated with fused apical margin of triangulin rounded. (Figs. 24, 26) 2

— Anterior of head excluding eyes distinctly less than 3 times length posterior of head including eyes, posterior pronotal lobes indistinct (Fig. 1), length of head only 1/4 again length pronotum; in males ventro-posterior

margin of pygophore only medially concave with prominent, ventro-lateral lobes (Fig. 8), in females ventro-posterior margin of 8th paratergites truncate, apices of 9th paratergites acute, wide apart with fused apical margin of triangulin truncated (Fig. 22) . . . . . *azhari* new species.

2. Anterior of head excluding eyes distinctly more than 4 times length posterior of head including eyes, apex scutellum subacute, usually membrane of hemelytra distinctly passing beyond abdomen; in males dorso-lateral lobes of pygophore apically truncated (Fig. 10), blades of parameres with subacute apices (Fig. 18), in females posterior margin of triangulin medially slightly notched (Fig. 24), spermathecal bulb with 3 finger-like processes (Fig. 25) . . . . . *punjabensis* new species.

— Anterior of head excluding eyes distinctly less than 4 times posterior of head including eyes, apex of scutellum broadly rounded, membrane of hemelytra hardly (Fig. 3) reaching apex of abdomen; in males dorso-lateral lobes of pygophore with acute apices, blades of parameres with lobe-like rounded apices, in females posterior margin of triangulin medailly rounded (Fig. 26), spermathecal bulb with 2 finger-like processes . . . . . *sindellus* new species.

Dinocoris azhari new species (Fig. 1)

Colouration: Pronotum usually (Fig. 1) with a posterio-median light-coloured patch continuous with scutellum.

Head: With outer margins of paraclypeae medially concave, anterior of head excluding eyes less than 2½ times length posterior of head including eyes, length of head only a ¼ again length pronotum, outer posterior paraclypeal lobes adjacent to eyes very small, almost indistinct, antennae with 3rd segments ½ or nearly ½ length of 4th, length of segments I 0.50 mm (0.50—0.65 mm), II 0.95 mm (0.95—1.10 mm), III 0.45 mm (0.45—0.55 mm), IV 0.80 mm (0.80—1.0 mm), V 1.50 mm (1.40—1.55 mm), antennal formula 3:1:4:2:5, labium with ½ of the 2nd segment extending beyond bucculae (Fig. 31), length of segments, I 0.50 mm (0.50—0.60 mm), II 0.30 mm, III 0.60 mm (0.60—0.70 mm), IV 0.50 mm (0.50—0.55 mm), labial formula 2:1:4:3, length of anterior portion of head excluding eyes 2.90 mm (2.85—3.40 mm), length of posterior portion of head including eyes 1.10 mm (1.10—1.25 mm), width including eyes 2.70 mm (2.60—2.60 mm), interocular distance 2.00 mm (2.00—2.35 mm), interocellar distance 1.40 mm (1.00—1.40 mm).

Thorax: Pronotum with posterior lobes indistinct, length 3.10 mm (3.10—3.55 mm), width 5.90 mm (5.85—6.70 mm), scutellum only slightly less than ½ again length head, with apical lobe round, length 5.80 (5.50—6.60) mm, width 3.40 mm (3.40—4.00 mm), metathoracic scent gland ostioles, with peritreme somewhat elongated, blade-like with outer margin sub-acute (Fig. 28), membrane of hemelytra subequal to length abdomen in males and passing ½ of the 7th abdominal tergum in females, distance base scutellum-apex clavus 7.80 mm (7.80—8.60 mm), apex clavus-apex scutellum 2.70 mm (2.70—3.20 mm), apex scutellum-apex abdomen including membrane 5.00 mm (5.00—6.20 mm).

Abdomen: 7th abdominal sternum except first two sternites in males broader and slightly longer than the length of rest of the abdominal sternites separately but in females subequal to the rest of the abdominal sternites, total length ♂ 17.90 mm (17.70—17.90 mm), ♀ 20.80 mm (20.50—20.80 mm).

Male genitalia: Pygophore (Figs. 7, 8) with dorso-median surface comparatively broadly projecting posteriad with dorso-lateral lobes sub-rounded, dorso-lateral inner processes with truncated apices, ventro-posterior margin deeply arched medially with prominent ventro-lateral truncated lobes, parameres (Fig. 15) with comparatively short blades, rounded at apices, outer margin with a bunch of setae near base of the blades, theca (Figs. 13, 14) with dorsal, somewhat vertical, thin finger-like lobes, dorsal membranous conjunctival appendage constricted near apex, latter produced knob-like but short of penal lobes in length, 2 pairs of dorso-lateral membranous conjunctival appendages present, 1st (basal) sub-horizontal, thin, finger-like, only slightly longer than 2nd latter rounded knob-like, penal lobes fused medially with smooth V-shaped dorso-median distal margin, vesica ventrally only slightly passing beyond ventrally fused margin of penal lobes.

Female genitalia (Figs. 22, 23): Ventro-posterior margin of 7th abdominal sternum somewhat shallow, of inverted 'V'-shape, with latero-posterior lobes smoothly rounded, 1st gonocoxae with apical margins medially convex, comparatively wide apart, 8th paratergites with posterior margin sub-straight, 9th wide apart with acute apices, directed posteriad, triangulin with fused posterior margin sub-straight, spermathecal blub

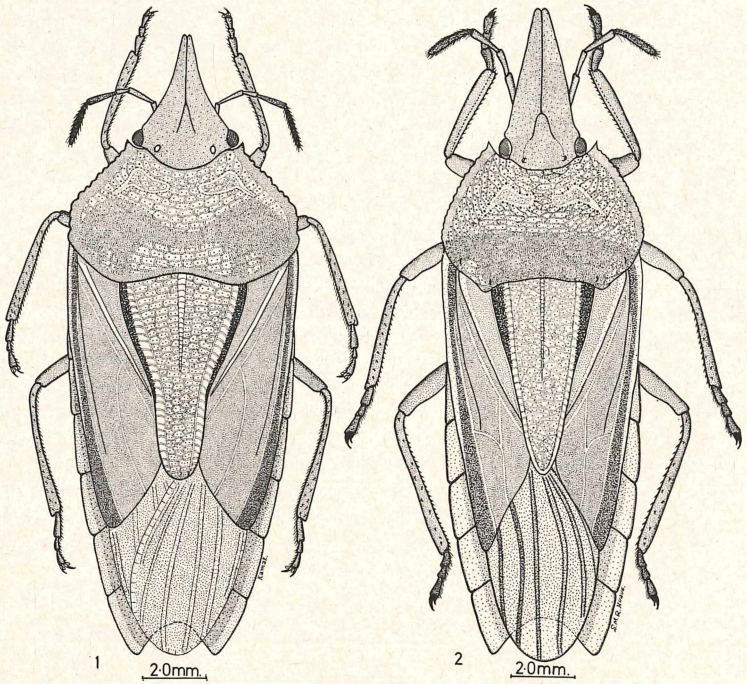


Figure 1: *Dinocoris azhari* new species; 1, Dorsal view.
Figure 2: *Dinocoris punjabensis* new species; 2, Dorsal view.

(Fig. 23) with 2 finger-like processes, proximal duct before median dilation almost transparent, sclerotization minute ring-like.

Material examined: Holotype ♂, Gilgit: Gacuth on *Arundo donax* L., 11—8—1975; leg. Azhar A. Khan, in Natural History Museum, Department of Zoology-Entomology, University of Karachi. Paratypes: 1 ♂, 2 ♀, of the same data as holotype, in the above museum, at USNM and at Hamburg Mus.

Comparative Note: This species appears isolated in the genus for it lacks distinct posterior lobes of pronotum and possesses a shorter head which is only 1/4 again the length of pronotum.

Dinocoris punjabensis new species (Fig. 2)

Colouration: Pronotum without a posterio-median light-coloured patch (Fig. 2).

Head: With outer margins of paraclypeae sub-straight, anterior of head excluding eyes more than 4 times length posterior of head including eyes, length of head only slightly less than 1/2 again length pronotum, posterior outer paraclypeal lobes adjacent to eyes prominent, comparatively larger, antennae with 3rd segments usually more than 1/2 again length of 4th, length of segments I 0.55 mm (0.55—0.60 mm), II 1.05 mm (1.00—1.20 mm), III 0.50 mm (0.50—0.60 mm), IV 0.80 mm (0.80—1.00 mm), V 1.50 mm (1.50—1.60 mm), antennal formula 3:1:4:2:5, labium with 2nd segment only slightly extending beyond bucculae (Fig. 32), length of segments I 0.50 mm (0.50—0.60 mm), II 0.30 mm (0.30—0.35 mm), III 0.70 mm (0.70—0.80 mm), IV 0.50 mm (0.50—0.60 mm), labial formula 2:4:1:3, length of anterior portion of head excluding eyes 3.70 mm (3.40—4.60 mm), length of posterior portion of head including eyes 0.90 mm (0.80—1.10 mm), width including eyes, 2.60 mm (2.50—3.10 mm), interocular distance 2.00 mm (1.90—2.40 mm), interocellar distance 1.40 mm (1.30—1.90 mm).

Thorax: Pronotum with posterior lobes prominent, length of pronotum 3.20 mm (2.85—3.50 mm), width 5.50 mm (5.35—6.50 mm), scutellum about a 1/4 again length of head, with apical lobe sub-acute, length 5.70 mm (5.20—6.80 mm), width 3.30 mm (3.20—3.90 mm), metathoracic scent gland ostioles, with peritremes blade-like and outer margin somewhat pointed (Fig. 29), membrane of hemelytra usually subequal to abdomen in males and passing the posterior margin of 7th abdominal tergum in females, distance base scutellum-apex clavus 7.60 mm (7.30—9.00 mm), apex clavus-apex scutellum 2.80 mm (2.70—3.20 mm), apex scutellum-apex abdomen including membrane 4.60 mm (4.60—7.00 mm).

Abdomen: 7th abdominal sternum except Ist two sternites in males broader and equal to the length of rest of the abdominal sternites separately but in females slightly shorter than the rest of abdominal sternites, total length ♂ 17.90 mm (17.40—18.00 mm), ♀ 21.25 mm (21.20—23.00 mm).

Male genitalia: Pygophore (Figs. 9, 10) with dorso-median surface broadly projecting posteriad with dorso-lateral lobes truncated, dorso-lateral inner processes with truncated apices, ventro- posterior margin sinuated medially with prominent ventro-lateral subacute lobes, parameres (Fig. 18) with comparatively longer blades, pointed at apices, theca (Figs. 16, 17) with dorso-lateral somewhat vertical, thin finger-like

lobes, dorsal membranous conjunctival appendage constricted near apex, latter produced knob-like but longer than penal lobes in length, 2 pairs of dorso-lateral membranous conjunctival appendages present, 1st (basal) sub-horizontal, thin finger-like, subequal to 2nd, latter pointed, penal lobes, fused medially with cup-shaped dorso-median distal margin, vesica slightly passing beyond ventrally fused margins of penal lobes.

Female genitalia: (Figs. 24, 25): Ventro-posterior margin of 7th abdominal sternum somewhat deeper, of inverted 'V'-shape with latero-posterior lobes smoothly rounded, 1st gonocoxae with apical margins sub-straight, wide apart, 8th paratergites with posterior margin concave, 9th comparatively closer to each other with rounded apices directed posteriad, triangulin with fused posterior margin medially notched, spermathecal bulb (Fig. 25) with 3 finger-like processes, proximal duct before median dilation with highly sclerotized portion cup-like.

Material examined: Holotype ♂, Sind: Sukkur, on *Arundo donax* L., 9—3—1974. leg. Azhar A. Khan, in Natural History Museum, Department of Zoology-Entomology, University of Karachi. — Paratypes: 5 ♂, 5 ♀, Pumjab: Chunia, Sind: Sukkur on *Arundo donax* L., 9—3, 14—5—1975, leg. Azhar A. Khan, Imtiaz Ahmad, Syed Riazul Haque, in the above museum at USNM, at Hamburg Mus. and in Ahmad's coll. — Other materials: 6 ♀ Punjab: Lyallpur on *Arundo donax* L., 16—3—1975; leg. M. Rahim, Ali Khan, M. Aslam, in above museum and Ahmad's Coll.

Comparative Note: This species shares prominent posterior lobes of pronotum and other characters as listed in the key with *sindellus* new species but can easily be separated from the same by having apical lobe of scutellum acute as compared to rounded in *sindellus* and other characters noted in the description.

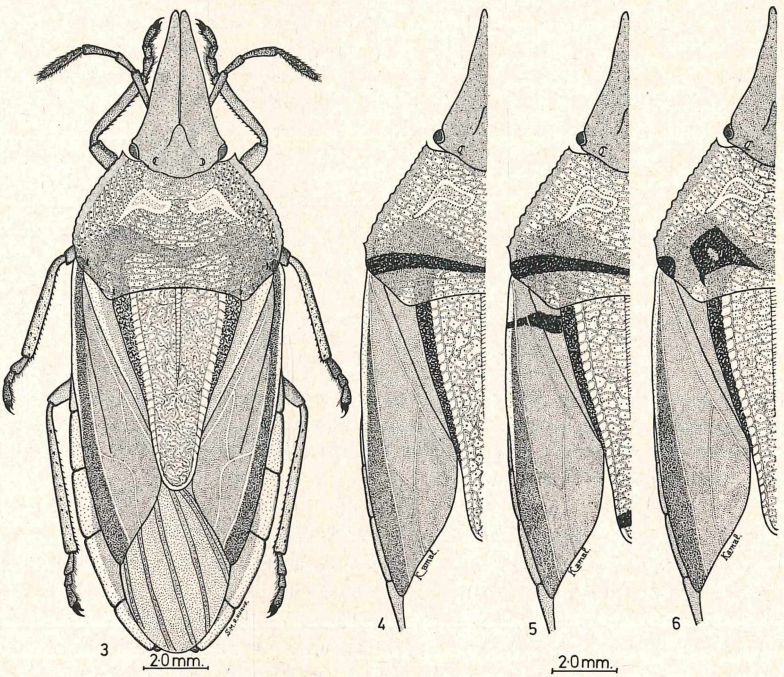
Dinocoris sindellus new species (Fig. 4—6)

Colouration: Head usually with a posterio-median light-coloured patch continuous with scutellum.

Head: With outer margins of paraclypeae somewhat sinuate, anterior of head excluding eyes distinctly less than 4 times length posterior of head including eyes, head length at least about 1/2 again length pronotum, outer posterior paraclypeal lobes adjacent to eyes small but distinct, antennae with 3rd segments 1/2 or nearly 1/2 length of 4th, length of segments, I 0.50 mm (0.50—0.60 mm), II. 1.00 mm (0.95—1.25 mm), III 0.45 mm (0.40—0.70 mm), IV 0.85 mm (0.80—1.00 m), V 1.50 m (1.40—1.70 mm), antennal formula 3:1:4:2:5, labium with 2nd segment only slightly extending beyond bucculae (Fig. 33), length of segments I 0.55 mm (0.50—0.60 mm), II 0.35 mm (0.30—0.40 mm), III 0.65 mm (0.65—0.90 mm), IV 0.45 mm (0.45—0.65 mm), labial formula 2:4:1:3. Length of anterior portion of head excluding eyes 3.40 mm (3.40—4.20 mm), length of posterior portion of head including eyes 0.90 mm (0.90—1.30 mm), width including eyes 2.60 mm (2.60—2.80 mm), interocular distance 2.00 mm (2.00—2.30 mm), interocellar distance 1.30 mm (1.30—1.50 mm).

Thorax: Pronotum with posterior lobes prominent, length of pronotum 3.00 m (3.00—3.0 mm), width 5.50 mm (5.50—5.60 mm), scutellum

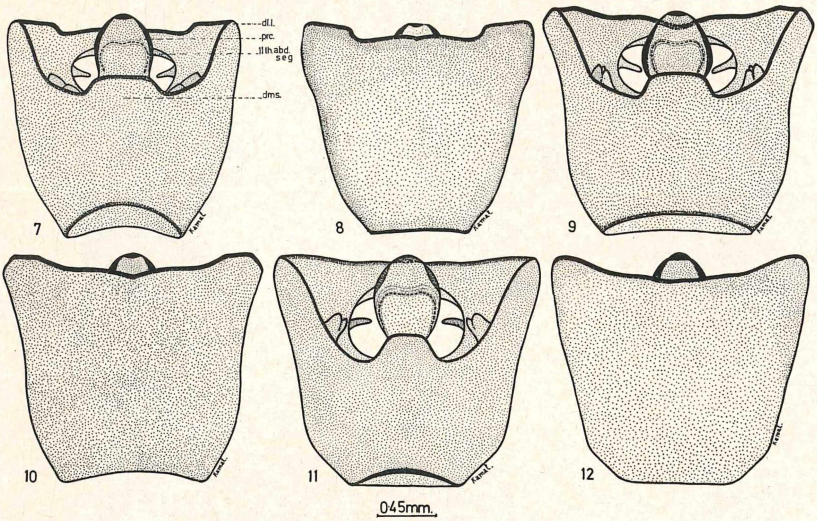
about 1/4 again length head, with apical lobe rounded, length 5.60 mm (5.60—6.70 mm), width 3.20 mm (3.10—3.90 mm), metathoracic scent gland ostioles, with peritreme blade-like and outer margin rounded (Fig. 30), membrane of hemelytra slightly shorter than abdomen in males and hardly passing posterior margin of 7th abdominal tergum in females, distance base scutellum-apex clavus 6.00 mm (6.80—8.50 mm), apex clavus-apex scutellum 2.70 mm (2.70—3.20 mm), apex scutellum-apex abdomen including membrane 5.00 mm (4.70—6.60 mm).



Figures 3—6: *Dinocoris sindellus* new species; 3, Dorsal view, 4—6 variations.

Abdomen: 7th abdominal sternum except first two sternites, in males slightly longer in length than the rest of the abdominal sternites separately but in females shorter than the rest of the abdominal sternites. Total length ♂, 17.90 mm (17.70—20.00 mm), ♀ 22.40 mm (20.60—22.40 mm).

Male genitalia: Pygophore (Figs. 11, 12) with dorso-median surface narrowly projecting posteriad with dorso-lateral lobes tapering, latter pointing posteriad, dorso-lateral inner processes curved with truncated apices, ventro-posterior margin signuate with prominent ventro-lateral pointed lobes, parameres (Fig. 21) with comparatively longer blade, rounded at apices, theca (Figs. 19, 20) with dorsal somewhat thick, thumb-like lobes, dorsal membranous conjunctival appendages constricted near the apex, latter produced knob-like but equal to penal lobes in length,



Figures 7—8: *Dinocoris azhari* new species; Pygophore, 7, Dorsal view, 8, Ventral view.

Figures 9—10: *Dinocoris punjabensis* new species; Pygophore, 9, Dorsal view, 10, Ventral view.

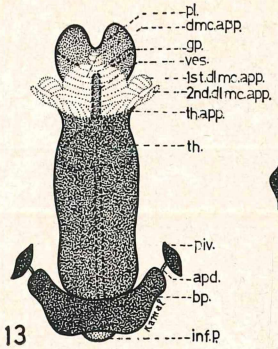
Figures 11—12: *Dinocoris sindellus* new species; Pygophore, 11, Dorsal view, 12, Ventral view.

two pairs of dorso-lateral membranous conjunctival appendages present, Ist (basal) horizontal, finger-like, more than twice the length of 2nd, latter globular, penal lobes with V-shaped dorso-median distal margin, vesica slightly passing beyond ventrally fused margin of penal lobes.

Female genitalia: (Figs. 26, 27) Ventro posterior margin of 7th abdominal sternum medially more shallow, of somewhat inverted 'U'-shape, latero-posterior lobes sub-acute, Ist gonocoxae with apical margins medially concave, meeting each other, 8th paratergites with posterior margin sinuated, 9th only narrowly apart with rounded apices, latter curved inwardly, triangulin with fused posterior margin medially notched, spermathecal bulb (Fig. 27) with 2 finger-like processes proximal duct before median dilation ring-like.

Colour variation: The colour patterns of *Dinocoris sindellus* new species from various localities of Sind are given in figures 4 to. 6.

Material examined: Holotype ♂ Sind: Tandojam on *Arundo donax* L., 5—1—1975. leg. Moizuddin, in Natural History Museum, Department of Zoology-Entomology, University of Karachi. — Paratypes: 10 ♂, 10 ♀, Sind: Sajawal, Tandojam, Lakhmir, Ghulamullah, Bandhi on *Arundo donax* L., 16, 17—2, 6—3, 1, 6, 8, 15, — 7—1974, 5—1, 23—2, 11—5—1975; leg. Imtiaz Ahmad, M. Afzal, Nazeer Ahmad Rana, Ali Khan, M. Rahim, Azhar A. Khan, Moizuddin, Dino, in above museum, at USNM, at Hamburg Mus. and in Ahmad's Coll. — Other materials: 41 ♂, 86 ♀



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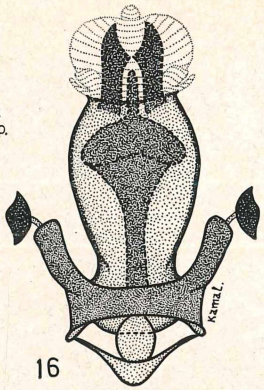

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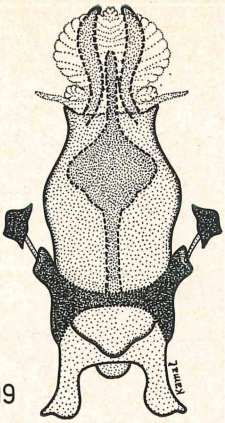

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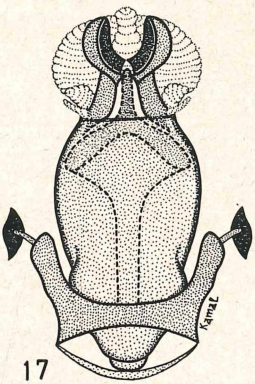

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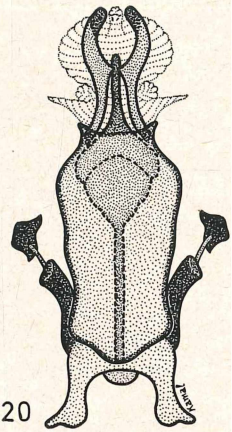

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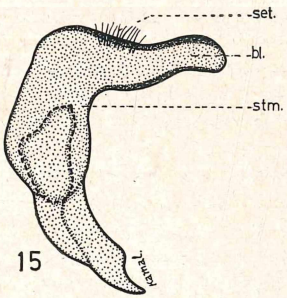

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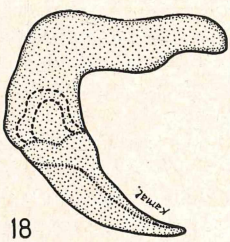

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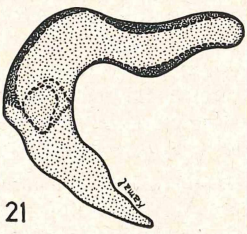

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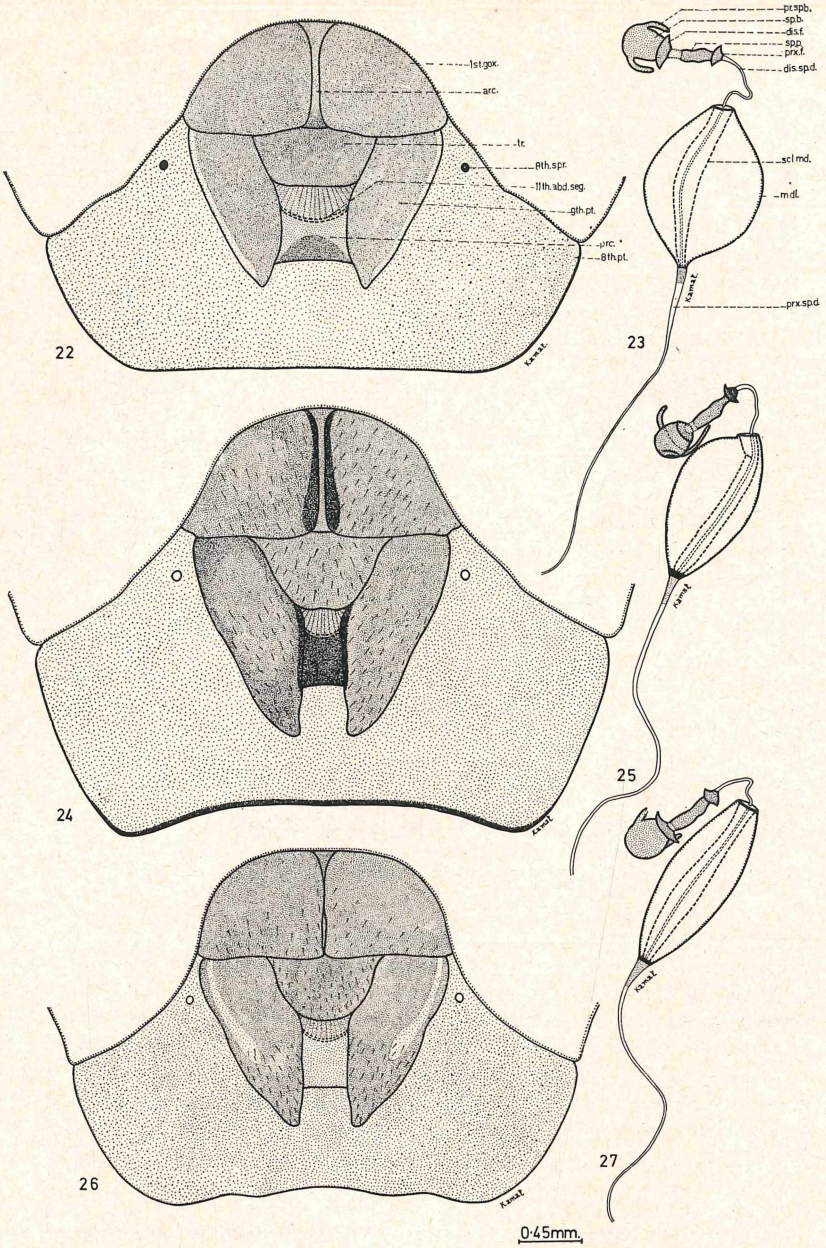
0·30mm.

Figures 13—15: *Dinocoris azhari* new species; aedeagus, 13, Dorsal view, 14, Ventral view, Paramere, 15, Inner view.

Figures 16—18: *Dinocoris punjabensis* new species; aedeagus, 16, Dorsal view, 17, Ventral view, paramere, 18, Inner view.

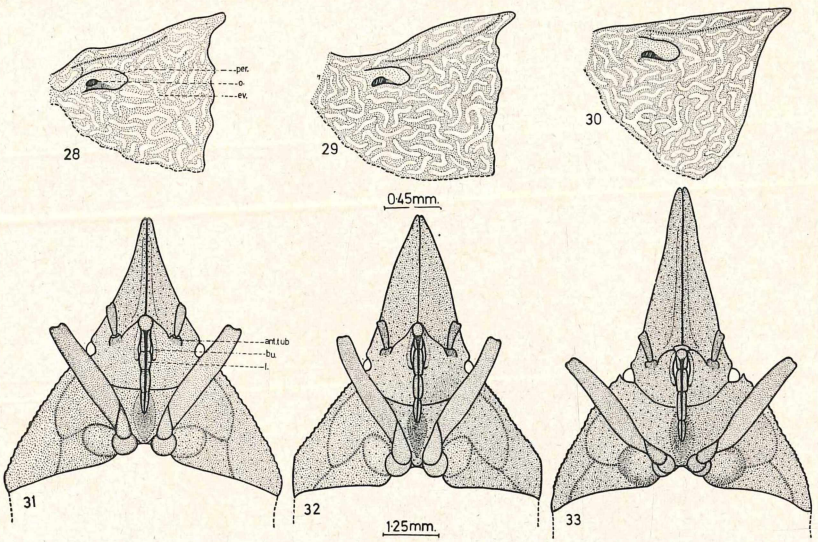
Figures 19—21: *Dinocoris sindellus* new species, aedeagus, 19, Dorsal view; 20, Ventral view, paramere, 21, Inner view.



Figures 22—23: *Dinocoris azhari* new species; 22, Female terminalia, 23, spermatheca.

Figures 24—25: *Dinocoris punjabensis* new species 24, Female terminalia, 25, spermatheca.

Figures 26—27: *Dinocoris sindellus* new species; 26, Female terminalia, 27, spermatheca.



Figures 28: *Dinocoris azhari* new species; 28, Metathoracic scent gland, ostioles, Ventral view.

Figures 29: *Dinocoris punjabensis* new species; 29, Metathoracic scent gland ostioles, Ventral view.

Figures 30: *Dinocoris sindellus* new species; 30, Metathoracic scent gland ostioles, Ventral view.

Figures 31: *Dinocoris azhari* new species; Head and pronotum, 31, Ventral view.

Figures 32: *Dinocoris panjabensis* new species; Head and pronotum, 32, Ventral view.

Figures 33: *Dinocoris sindellus* new species; Head and pronotum, 33, Ventral view.

Sind: Sajawal, Tandojam, Lakhmir, Ghulamullah, Bandhi on *Arundo donax* L., 5—1, 16, 17—2, 6—3, 14—5, 1—6, 24—11, 1, 6, 7, 8—12—1974, 2, 23—2, 24, 30—3, 11—5, 14—6, 19—7—1975, leg. Imtiaz Ahmad, M. Afzal, Nazeer Ahmad Rana, Ali Khan, M. Rahim, Azhar A. Khan, Moizuddin, M. Aslam, S. Riazul Haque, Dino, in above museums and Ahmand's Coll.

Comparative Note: This species is closely related to *punjabensis* as noted above but can easily be separated from the same by having 2 finger-like processes in spermathecal bulb and other characters as listed in the key.

Zoogeography and Phylogeny

The present new genus with distributional ranges extending southwest into Thatta-Sajawal road in the Lower Sind and Sukkur in the upper Sind and Lower Punjab and into Gilgit in the northern regions of Pakistan appears most closely related to *Randolatus* Distant reported from Hardawar in the north west India.

DISTANT (1902) included his genus with *Diplorhinus* AMYOT et SERVILLE in the same couplet of his „Synopsis of genera" with „head as long as pronotum or longer" having eastward distributional range in Assam and Burma. At the same time the above author also showed his genus closely related to *Dichelorhinus* STÅL, an Ethiopian genus without mentioning the point of similarities and differences.

All the above genera including the present genus and *Magarhynchus* LAPORTE known from Assam, Burma, Malaysia and China are separated from all other phyllocephaline genera in having elongated body form (somewhat elongately oval in *Diplorhinus* STÅL) a long head, which is as long as or longer than pronotum and paraclypeae projecting forward in front of clypeus and much longer than the latter with plate-type of ovipositor in the female. The above characters have been considered primitive by SLATER and AHMAD (1964), AHMAD (1965), ABBASI and AHMAD (1971), and AHMAD and SHADAB (1975) in various Pentatomomorpha (sensu LESTON *et. al.* 1954).

The formal description of the group and the recognition of the ancestral type within the group must await further analysis of the group and indeed a detailed analysis of the entire subfamily Phyllocephalinae which is under progress. For the moment it could be tentatively suggested that the present new genus *Dinocoris* and *Randolotus* DISTANT (also having north western distributional range) are most closely related and have probably evolved from the same ancestral stock on the basis of the characters listed under introduction and comparative note.

With-in the present genus the species *punjabenis* and *sindellus* distributed in lower Punjab and upper Sind and various areas of lower Sind appear most closely related, in having more developed and elongated paraclypeae, prominent posterior lobes of pronotum, head only a little less than half again longer than the pronotum and 9th paratergites of females, placed somewhat closer to each other. *Sindellus* having southward distributional range in the areas of lower Sind, with rounded apex of scutellum, comparatively shorter hemelytra, hardly reaching apex of abdomen, shorter paraclypeae and with 2 finger-like processes instead of 3 in *punjabensis* in the spermathecal bulb, appears more specialized.

On the other hand *azhari* restricted in Gilgit in the northern region of Pakistan appears endemic. It shares with *sindellus* two finger-like processes in the spermathecal bulb and probably has specialized in several other characters as noted in the key and description.

References

ABBASI, Q. A. and AHMAD, I., 1971: A new Palearctic species of a little known genus *Orthoschizops* SPINOLA 1852, (Heteroptera, Pentatomidae Halyini) from Pakistan. — Pakistan. J. Zool. **3** (2): 169—173.

AHMAD, I., 1965: The Leptocorisinae (Heteroptera: Alydidae) of the world. — Bull. Brit. Mus. (Nat. Hist.) Ent. Suppl. **5**: 1—156. London.

AHMAD, I. and KHAN, S. A., 1973: Studies on the comparative morphology of scent apparatus and alimentary organs of some stink bugs (Pentatomidae: Pentatominae) of Pakistan with reference to phylogeny. — Bull. Inst. r. Sci. Nat. Belg. **49** (9): 1—55, Bruxelles.

AHMAD, I. and SHADAB, M. U., 1975: Comparative external cephalic morphology of some coreoids (Heteroptera: Coreoidea) with reference to their phylogeny. — Pak. J. Sci. Ind. Res. (in press).

DISTANT, W. L., 1902: The Fauna of British India including Ceylon and Burma. Rhynchota **1** London.

— , 1908: The Fauna of British India including Ceylon and Burma. Rhynchota **4** London.

GHAURI, M. S. K., 1969: Notes on the genus *Schyzops* SPINOLA 1837 (Phyllocephalinae, Pentatomidae, Heteroptera). — J. nat. Hist. 3: 597—602.

HAMID, A. and ABBASI, Q. A., 1972: Phyllocephalinae *Amyot* and *Serville* 1843 (Heteroptera, Pentatomoidea) of West Pakistan. — J. Zool. **4** (2): 173—183.

LESTON, D., 1954: Notes on the Ethiopian Pentatomoidea (Hemiptera): XVII Tessaratominae, Dinidorinae and Phyllocephalinae of Angola. — Publ. cult. Diam. Angola **24**: 13—22. Dundo.

LESTON, D., PENDERGRAST, J. G., SOUTHWOOD, T. R. E., 1954: Classification of the terrestrial Heteroptera (Geocorisae). Nature **174**: 91—92. London.

MIYAMOTO, S., 1961: Comparative morphology of alimentary organs of Heteroptera with the phylogenetic consideration. Sieboldia **2**: 197—259.

SLATER, J. and AHMAD, I., 1964: The mole bugs of the genus *Spalacocoris* (Hemiptera: Lygaeidae). — Pacif. Insects, **6**: 730—740.

Key to Abbreviations

1st dlmc. app.	first dorso-lateral membranous conjunctival appendage
Ist gox.	first gonocoxa.
2nd dlmc. app.	second dorso-lateral membranous conjunctival appendage
8th pt.	eighth paratergite
8th spr.	eighth spiracle
9th pt.	ninth paratergite
11th abd. seg.	eleventh abdominal segment
ant. tub.	antenniferous tubercle
apd.	apodeme
arc.	arcus
bl.	blade
bp.	basal plate
bu.	bucculae
dis. f.	distal flange
dis. sp. d.	distal spermathecal duct
dl. l.	dorso-lateral lobe
dm. c. app.	dorsal membranous conjunctival appendage
dms.	dorso-median surface
ev.	evaporatoria
gp.	gonopore
inf. p.	inflatory pump
l.	labium
m. dl.	median dilation
o.	ostiole
per.	peritreme
piv.	pivot
prc.	proctiger
pr. sp. b.	process of spermathecal bulb

prx. sp. d.	proximal spermathecal duct
prx. f.	proximal flange
set.	setae
scl. m. d.	sclerotized median duct
sp. b.	spermathecal bulb
sp. p.	spermathecal pump
stm.	stem
th.	theca
th. app.	thecal appendage
tr.	triangulin
ves.	vesica