

On a New Species of Genus *Lasioerythraeus* and New Record of *Pollux workandae* Southcott (Prostigmata: Erythraeidae) from Pakistan

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Abstract.- Genus *Lasioerythraeus* and species *Pollux workandae* (Prostigmata: Erythraeidae) were first time reported from Pakistan. *Lasioerythraeus setarius* n.sp. is described and illustrated from a larva, collected from a weed, *Setaria viridis* L. (Poaceae). A key to the larval species of *Lasioerythraeus* is provided.

Key words: Erythraeid mites, *Lasioerythraeus setarius*, new species.

INTRODUCTION

Genus *Lasioerythraeus* Welbourn and Young, 1987 (Erythraeidae) is known only from larvae. Five species of this genus have been hitherto described worldwide, viz., *L. shirleyanneae* (McDaniel and Bolen, 1981) from Texas, USA; *L. johnstoni* Welbourn and Young, 1987, from Mississippi, Washington (USA) and Dominican Republic; *L. whitcombi* (Smiley, 1964), from Arkansas, USA; *L. cardonensis* Haitlinger, 2008, from Margarita Island, Venezuela and *L. saboorii* Khanjani, Raisi and Izadi, 2011, from eastern Iran (McDaniel and Bolen, 1981; Welbourn and Young, 1987; Haitlinger, 2004 & 2008; Khanjani *et al.*, 2011). Three species viz., *L. johnstoni*, *L. saboorii* and *L. shirleyanneae* were found as ectoparasites on tarnished plant bug, *Lygus lineolaris* (Hemiptera: Miridae), *Aphis punicae* (Hemiptera: Aphididae), plants and unknown hosts, respectively (McDaniel and Bolen, 1981; Welbourn and Young, 1987; Haitlinger, 2004; Khanjani *et al.*, 2011), while *L. whitcombi* and *L. cardonensis* were found in cotton fields and herbaceous plants respectively (Haitlinger, 2008; Smiley, 1964). The sixth species of genus *Lasioerythraeus* was collected from a weed, *Setaria viridis* (L.) as free living from district Layyah, Punjab, Pakistan and is being described as a new species.

Genus *Pollux* Southcott, 1961 (Erythraeidae) comprises 4 species, *P. cristatus* (Womersley, 1934)

and *P. workandae* Southcott, 1961 from Australia, *P. kovalamicus* Haitlinger, 2002 from India and Indonesia and *P. walii* Kamran, Afzal and Raza, 2010 from Pakistan (Womersley, 1934; Southcott, 1961; Haitlinger, 2002, 2010; Kamran *et al.*, 2010). All species have been based on larvae. *Pollux workandae* Southcott was first time recorded from Pakistan.

MATERIALS AND METHODS

Mites larvae were collected from *Setaria viridis* L. (Poaceae) by shaking the leaves of plants on a white piece of paper. Mites moving on paper were picked with help of camel hair brush and preserved in small vials having 70% alcohol. Preserved mite specimens were sorted and mounted on glass slides permanently by using Hoyer's medium with help of microscope. Slides of mite specimens prepared by using Hoyer's medium were examined under phase contrast microscope (DM2500, Leica®, Germany). Drawings and illustrations were made using a drawing tube (Olympus®, Japan) attached to the microscope. Final processing was done with Adobe Illustrator (Adobe Systems Incorporated, USA) based on scanned images. All measurements are in micrometres (µm). Magnification scale is also given along with each drawing. The terminology and abbreviations were adopted from Welbourn and Young (1987) and Goldarazena and Zhang (1998). Measurements of the holotype and 2 paratypes are presented in Table I.

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Table I.- Metric data of *Lasioerythraeus setarius*, new species larva.

Character	Holotype	Paratype 1	Paratype 2	Character	Holotype	Paratype 1	Paratype 2
IL	550	555	551	Ti I	205	204	204
IW	350	352	349	Ge I	150	151	148
L	62	63	63	Tfe I	93	95	89
W	80	82	80	Bfe I	125	125	126
AW	60	61	58	Tr I	50	51	50
PW	69	70	71	Cx I	62	63	63
AA	9	9	9	Leg I	797	798	793
SB	10	10	10	Ta II(L)	100	102	99
ISD	47	47	49	Ta II(H)	25	26	24
AP	25	26	27	Ti II	195	198	193
AL	80	82	84	Ge II	128	129	130
PL	80	82	84	Tfe II	80	83	80
ASE	90	91	93	Bfe II	100	102	103
PSE	90	91	93	Tr II	54	52	55
DS	50-83	52-85	50-81	Cx II	100	101	102
PDS	50-55	52-56	50-55	Leg II	757	767	760
1a	78	80	80	TaIII (L)	117	115	117
2a	45	46	44	TaIII (H)	23	22	21
Or	15	15	16	Ti III	200	205	204
Bs	13	14	14	Ge III	163	165	161
1b	82	83	83	Tfe III	125	125	126
GL	125	127	123	Bfe III	125	126	115
PaScFed	65	66	64	Tr III	62	62	63
PaScGed	68	70	69	Cx III	87	88	88
Ta I(L)	112	109	113	Leg III	879	886	874
				IP	2433	2451	2427

The type specimens as mounted on glass slides are deposited at Acarology Research Laboratory, department of Agri. Entomology, University of Agriculture, Faisalabad, Pakistan.

Lasioerythraeus setarius, new species
(Fig. 1)

Diagnosis

Larva with the following characters: fD = 42; fV = 12; fn Tr 1-1-1; fn BFe 4-4-3; fn TFe5-5-5; fn Ge 9-9-8; AL=PL=80-84; PSE=PSE=90-93; fPp = 0-B-B-BBN- ω ζ5N, IP = 2433 holotype, 2427-2451 paratypes.

Larva (Holotype)

Dorsum

Idiosoma oval in shape, smooth, 550 long, 350 wide. Total length from tips chelicerae to posterior end of idiosoma 690. Scutum present dorsally on idiosoma, wider than long, 80 wide, 62 long, densely punctate entirely, somewhat rounded, slightly flate anteriorly and carries two pairs of sensillae and two pairs of scutalae. Both sensillae

(ASE and PSE) equal in length, 90 long, very finely barbed (ciliated) on their entire lengths and with pointed ends. Circular lines surround both sensillae. AA=9, SB=10, ISD=47. AL and PL scutalae equal in length, 80 long, very finely barbed with pointed tips. AL scutalae lie slightly anterior to the level of ASE bases. PL scutalae lie slightly posterior to middle of scutum and far off distance anterior to the level of PSE bases. AW=60, PW=69, AP=25 (Fig.1A). Two pairs of eyes present on idiosoma dorsally, slightly behind from scutum, anterior pair, 15; posterior pair 13 μm across. Dorsal setae on idiosoma, 21 pairs, all with pointed tips, very finely barbed and ranging in lengths from 50-83, PDS=50-55. Setae on posterior part of idiosoma shorter than remaining setae on dorsum. fD=42 (Fig.1A).

Venter

Idiosoma ventrally with one pair of finely barbed sternalae 1a between coxae I, 78 μm long; one pair of sternalae 2a slightly behind the coxae II, 45 long; six pairs of setae behind the coxae III. All ventral setae finely barbed and with pointed tips. fV=12; NDV=42+12=54. Coxae I-III each with one

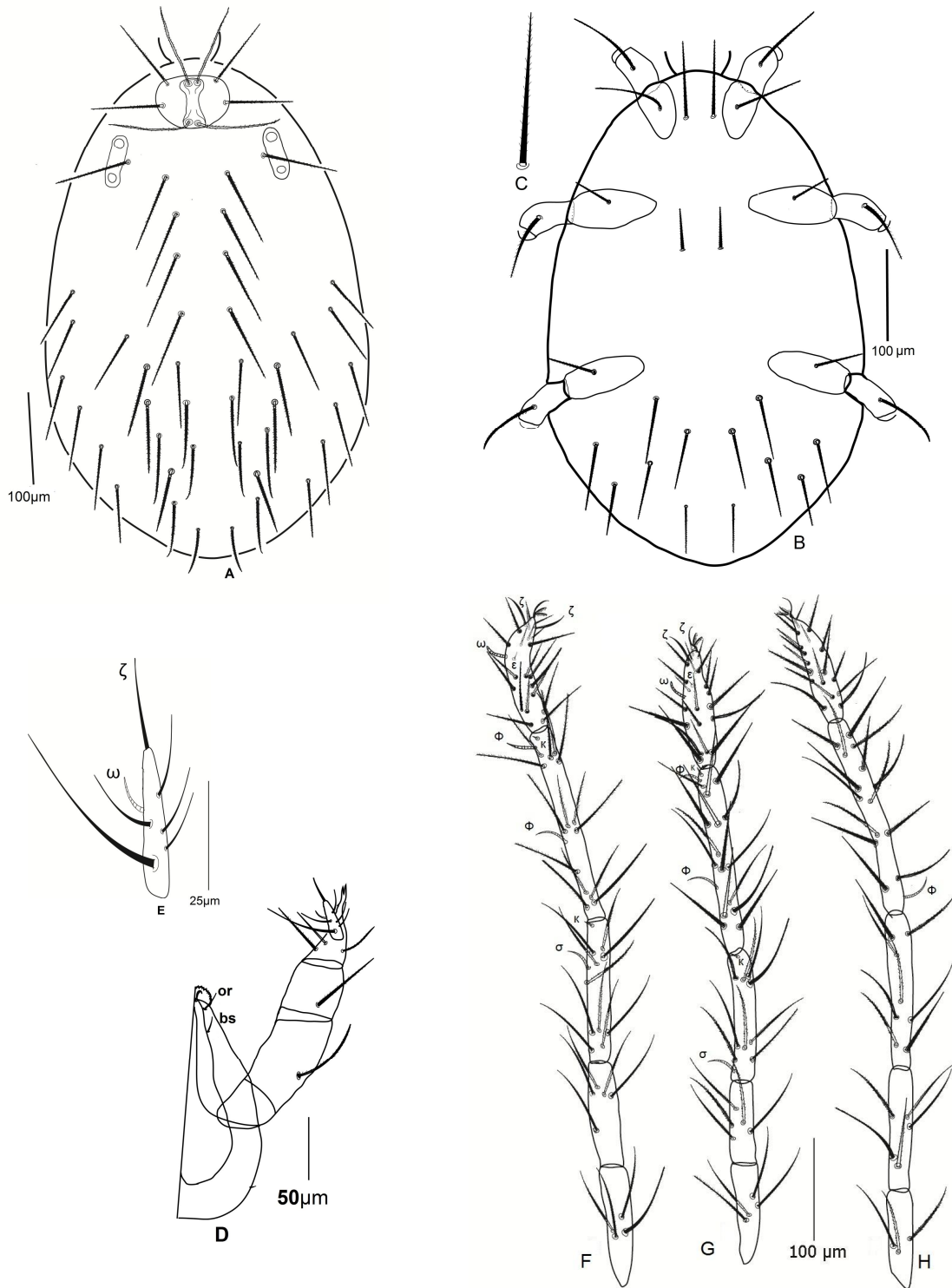


Fig. 1. *Lasioerythraeus setarius* new species; Larva, A, dorsum; B, venter; C, shape of setae 1a and 2a; D, gnathosoma; E, palptarsus; F, legI; G, legII; H, legIII (Femur- tarsus)

coxala, all coxalae finely barbed and having pointed tips. Coxala-I (*1b*) the longest one, 80 long, almost two times longer than coxalae II (*2b*) and 1.8 times longer than coxalae III (*3b*), *2b* 42, *3b* 52 long (Fig.1B).

Gnathosoma

Cone shaped and compact with simple (smooth) Galaelae and hypostomalae, 12 and 18 long respectively, supercoxalae present, minute 5 long, palp femur and palpgenu each with one barbed and pointed tipped setae, palptibia with 2 barbed and one nude setae, palptarsus with one apical eupathidium 24 long, one solenidion 12 long and 5 nude setae including one long basal seta (Fig. 1E). Palp tibial claw bifurcate (Fig.1D).

Palp setal formula

fPp: 0-B-B-BBN- ω ζ5N

Legs

Three pairs, all legs longer than body length; leg III the longest one, legs I-III measuring 797, 757 and 879 long, respectively. IP= 797+757+879= 2433 (Fig. 1F-H).

Leg setal formula

Leg I: Ta-1ω, 1ε, 2ζ, 20B; Ti-2, 1κ, 14B; Ge-1 σ, 1κ, 9B; Tfe-5B; Bfe-4B; Tr-1B; Cx-1B; Leg II: Ta-1ω, 1ε, 2ζ, 20B; Ti-2, 1κ, 15B; Ge-1 σ, 1κ, 9B; Tfe-5B; Bfe-4B; Tr-1B, Cx-1B; Leg III: Ta-19B; Ti-1, 14B; Ge-8B; Tfe-5B; Bfe-3B; Tr-1B; Cx-1B

Etymology

The new species name is derived from the genus name of host plant *Setaria viridis* on which holotype larva was collected.

Types

Holotype larva was collected from chak no. 283/T.D.A., 22 km east of district Layyah (Punjab) on 09-07-2005 (Muhammad Kamran) from foxtail grass (*Setaria viridis* L.). Paratypes 2 larvae, collected from the same as holotype. Holotype larva and 2 paratypes are deposited in Acarology Research Laboratory, Department of Agri-

Entomology, University of Agriculture, Faisalabad.

KEY TO WORLD SPECIES OF GENUS *LASIOERYTHRAEUS* WELBOURN AND YOUNG, AFTER KHANJANI, RAISI AND IZADI 2011, WITH MODIFICATION

1. fD 40–44, IP 1903–2433 2
fD ≥ 120, IP 2934 *L. cardonensis* Haitlinger
2. PL 65–67, PSE 67–76, GeI with 8 normal setae 3
PL 75–80, S 90–107, GeI with 9 normal setae 4
3. AL> PSE> PL, ASE 55, PW 95, IP 2106, W115
..... *L. johnstoni* Welbourn & Young
AL> PL> PSE, ASE 63, PW 84, IP 1903, W 139
..... *L. shirleyanneae* (McDaniel & Bolen)
4. AL> PL, PSE> ASE, IP 2156–2239, fV=16
..... *L. saboorii* Khanjani, Raisi and Izadi
AL=PL, PSE=ASE, IP 2433, fV=12 *L. setarius* n. sp.

Subfamily Balaustiinae Southcott, 1961

Genus *POLLUX* Southcott, 1961

Pollux workandae Southcott, 1961:559; Haitlinger, 2002: 173.

New record

4 larvae, chak no. 283/ TDA, Layyah, Punjab, Pakistan, foxtail grass, *Setaria viridis* L. (Poaceae), 5-10-2005; 2 larvae, Rhodo Sultan, Jhang, Punjab, Pakistan, *Setaria viridis* L., 15-10-2006.

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