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A NEW MITE SPECIES (HYPOPUS) OF GENUS *LACKERBAUERIA* (ACARINA: ACARIDAE) FROM PAKISTAN

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Lackerbaueria lahoriensis, n.sp. has deen collected and described from Pakistan. A comprehensive key covering all the known species along with similarity matrix and phenogram are also given.

Genus *Lackerbaueria* was erected by Zakhvatkin in 1941 and he designated *L. cribratissima*, n. sp. as its type species. Baker (1962) added two new species in this genus. The authors have collected a new species from Pakistan which is decribed in this paper.

KEY TO SPECIES OF GENUS *LACKERBAUERIA*

(Hypopi)

1.	Hysterosomal setae serrate ; tarsus IV with one leaf - like seta	*L. krobeni* Baker
	Hysterosomal setae not serrate ; tarsus IV with more than one leaf-like setae	2
2.	Propodosoma with pattern ; tarsus I with more than one leaf-like setae ; tarsus IV with a very long seta	3
	Propodosoma without pattern ; tarsus I with one leaf-like seta ; tarsus IV without long seta	*L. amerieana* Baker
3.	Seta *scs* present ; gnathosoma segmented ; tarsus I with two sensory rods	*L. lahoriensis*, n sp.

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Seta *scs* absent ; gnathosoma not segmented
tarsus I with one sensory rod ... ... *L. cribratissima* Zachvatkin

Lackerbaueria lahoriensis, new species
(Fig. 1.)

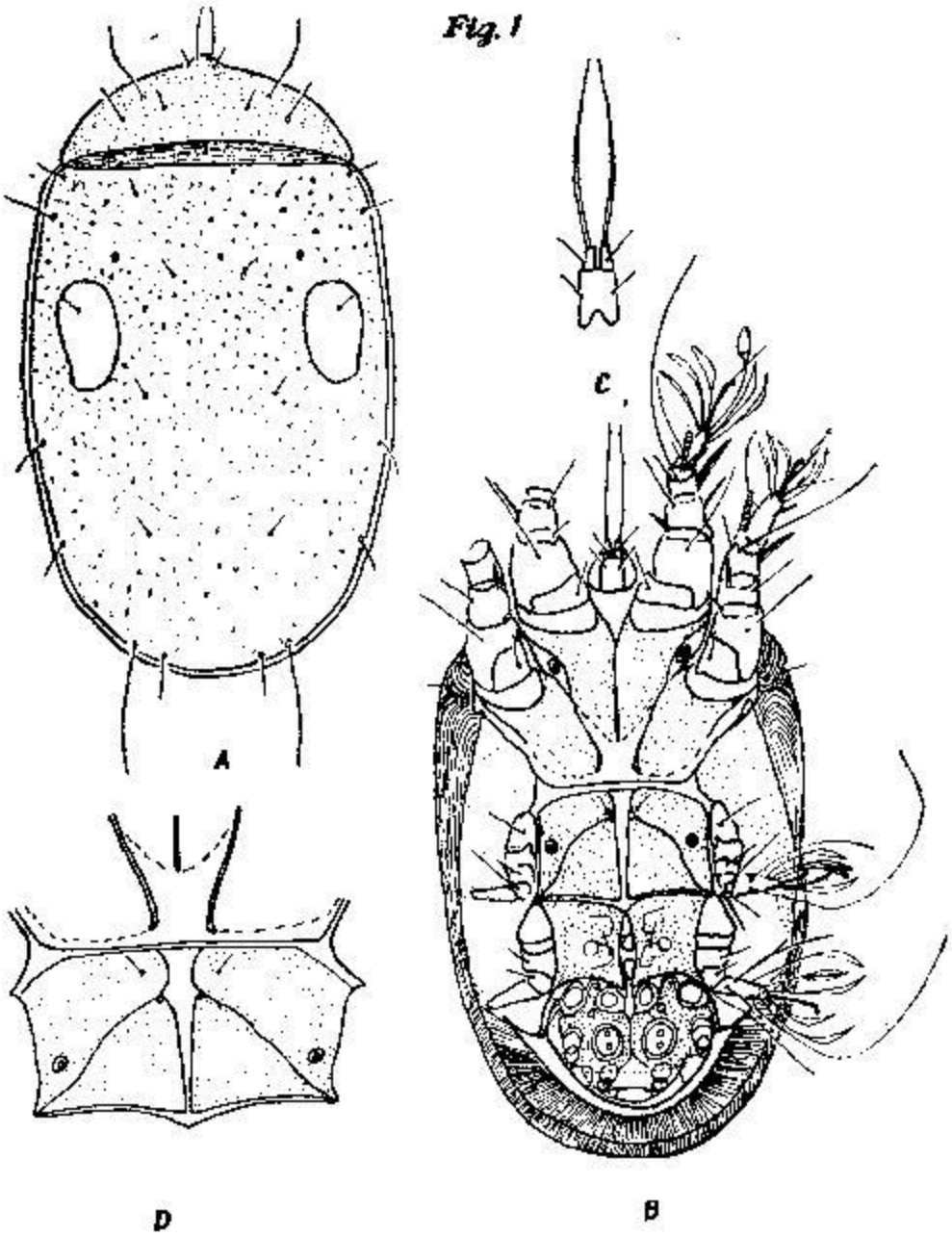
HYPOPUS

Dorsum: Body 260μ long, 179μ wide. Body divided into propodosomal and hysterosomal shields. Propodosomal shield 52μ long, 149μ wide (maximum), pitted laterally and anteriorly; setae *vl*, *ve*, *scl*, *sce*, *scs* 13μ, 6μ, 8μ, 11μ, 18μ long, respectively; *scl-scl*, *sce-sce*, *scl sce* 31μ, 78μ and 21μ apart, respectively; setae *sci* and *sce* anterior in position, making semi-circular line broadly (Fig. 1A) Hysterosomal shield 218μ long, 179μ wide (maximum), pitted laterally and posteriorly transverse lines marginally. Lateral and posterior margins turn towards venter; setae 11 pairs, 1 pair visible pores; setae measuring : *d1* = *d2*=*d3* = *d4* = 8μ; *hi* 10μ; *he* 13μ; L_1 8μ, L_2 11μ, L_3 11μ; *sae* 18μ, *sai* 11μ long; *d1- d2*, *d2- d2*, *d3- d3*, *d4- d4*, 78μ, 47μ, 66μ and 68μ apart; *d1- d2*, *d2- d3*, *d3- d4* 40μ, 64μ and 62μ apart: L_1 - L_1 125μ apart. Hytserosomal shield overlaping propodosomal shield up to 13μ; overlaping area with dots and wavy transverse striations (Fig. 1A).

Venter: Gnathosoma fused pedipalpi two segmented, distal part bifurcated, 24μ (basal 18μ, distal 6μ long), a pair of arista, 32μ long: 2 pairs small setae (Fig. 1C). Apodeme (*ap1*) y-shaped continuing with sternum 1(*st1*). Sternum (*st1*) free, 44μ long. Apodeme 2 (ap2) free, a membranous line meeting apodeme 3(ap3) and forming a closed area. Apodeme *3(ap3)* meeting apodeme *4(ap4)*. Apodeme *4(ap4)* (*ap4*) meeting medially making straight line. Sternum 2 (*st 2*) continuing with apodeme *4(ap4)* and apodeme 5 (*ap* 5) separately on either side, 45μ long, smooth. Apodeme 5(*ap5*) sternum 2(*st2*) and posterior line between sterum 2(*st2*) and apodeme 5(*rp5*) making a closed, smooth, triangular area. Coxal setae 1 pair, simple, 8μ long in encircled area of apodeme 4 (*ap 4*) and apodeme 5(*ap5*). Coxal fields I and II not closed by apodemes but by membranous lines running along with apodeme 2(*ap 2*) and apodeme 3(*ap3*); coxal fields III and IV closed. Genital shield as shown in figure 1D, dotted, elongated genital slit, 2 pairs genital suckers, a pair of genital setae, each mesaid to disc *di*3. Coxal discs *di 1*, *di 2*, *di 3* present, *di 3* in genital shield. Suctorial

shield 47μ long, 78μ wide, pitted, anterior margin concave medio-anteriorly, rounded posteriorly, latero-posteriorly with a sclerotized, pointed, bifurcated piece; 1 pair functional, 1 pair anal suckers, 1 pair each of lateral and posterior conoids (Fig. 1B).

Fig. 1



Legs: Four pairs, strongly stubby measuring I-IV 96μ, 96μ, 47μ and 47μ in length, respectively (trochanter base to tarsus tip). Setae and solenidia on legs segments: Coxae 0-0-0-0, trochanters 1-1-1-0, femora 3-3-1-1, tibiae 2-2-2-2 tarsi 13-11-8-8. Tarsi I and II 29μ and 26μ long, respectively. Seta vF on femora I, II and IV 29μ, 29μ and 16μ long, absent on femur III. Seta *s* on tarsi I-IV measuring 27μ, 18μ, 18μ and 18μ in length, respectively. Seta *mG* on genua I and II, *hT* on tibiae I and II lancit-shaped, 10μ, 18μ, and 13μ long, respectively. Seta Q, a seta on genu I, a solenidion on genu II 26μ and 10μ long, respectively. Tarsi I and II each with solenidion (*w 1*), 18μ and 18μ long, respectively. Tarsi I-IV provide with 1 cup-shaped + 5 leaf-like; 1 cup-shaped + 5 leaf-like; 1 lancit-like ; + 4 leaf-like ; 1 lancit-like + 4 leaf-like setae, respectively (Fig. 1B).

Type: Holotype hypopus collected from Lahore dry Dates, on 25. vii. 1984 (Ashfaq, Mustafa and Chaudhri) and deposited in Acarology Research Laboratory, Department of Entomology, U. A. F.

Remarks: This new species is closely related to *L. cribratissima* but the following points separate them.

1. Seta *scs* absent in *cribratissima* but present in this new species.
2. Gnathosoma not segmented in *cribratissima* but segmented in this new species.
3. Sternum 2(*st2*) free posteriorly in *cribratissima* but not free in this new species.
4. Genital seta lateroid to disc (*di3*) in *cribratissima* but mesiad in this new species.
5. Lateral suckers anterior to anal ones in *cribratissima* but at same level in this new species.
6. One sensory rod on tarsus I in *cribratissima* but 2 sensory rods present on tarsus I in this new species.

DISCUSSION

The phenogram of the species of the genus *Lackerbaueria* Zakhvatkin manifests a single cluster (Fig. 2). The species *americana* and *cribratissima*, with

Table 2. *Matrix showing percentage of similarity in species of genus Lackerbaueria Zakhvatkinsis*

		krombeni	americana	cribratissima	lahoriensis
1.	*krombeni*	X			
2.	*americana*	67	X		
3.	*cribratissma*	40	67	X	
4.	*lahoriensis*	0	34	53	X

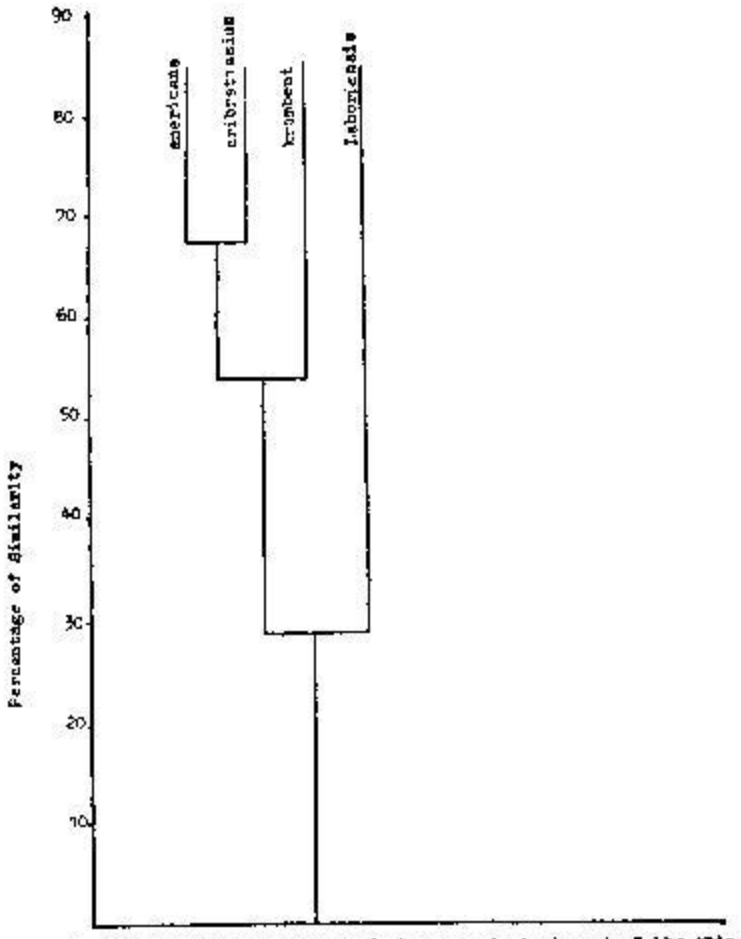


Fig. 2. Phenogram of species of the genus Lackerbaueria Zakhvatkin

Table 1. *Comparison of characters in species of genus Lackerbaueria Zakhvatkin*

Characters	*krombeni*	*americana*	*cribratizelma*	*lahoriensis*
1. Hysterosomal setae serrate.	+	—	—	—
2. Propodosoma without pattern	+	+	—	—
3. Lateral sucker anterior to anal of suctorial shield	+	+	+	—
4. Tarsus I with two sensory rod	—	—	—	+
5. Leg IV tarsus with a very long seta,	—	—	+	+
6. Sternum 2(*st2*) free	+	+	+	—
7. Propodosomal & Hysterosonal setae of same length	+	—	+	—
8. Seta *scs* present	—	—	—	+
9. Gnathosoma not segmented	+	+	+	—
10. Genital seta, present on outer side	+	+	+	—
11. Gnathosoma protrude beyund body	+	+	—	—
12. One leaf like seta on tarsus I	+	+	—	—
13. One leaf like seta on tarsus II	+	—	—	—
14. One leaf like seta on tarsus III	+	—	—	—
15. One leaf like seta on tarsus IV	+	—	—	—

the highest level of shared affinity (67%) constitute the pair while the species *krombeni* linked at 53.5% level of phenetic similarity with aforesaidpair. Such a pattern of shared affinity could possibly be due to the fact that the species *americana* and *cribratissima* were collected from the same host, wasps. These are thus having ectoparasitic habit on the same host. The same may be taken as true in the case of *krombeni*, also collected from the wasp., the host mentioned already. This further establishes that species under study are ecologically related and share the same host.

The species *lahoriensis* collected from dried dates(a vegetative host) show a very low level of shared affinity (29%) with the cluster of the afore said three species.

These studies lead us to conclude that although the type of the host and the stage of its putrifaction varies, yet species could become associated to one another, Inspite of the fact that biochemical process of plant and animal matter differs significantly still could imply that there is a wide range of flexibility of adoptation of these species to hosts, both of animal and plant origin. The low level of similarity between taxa *lahoriensis* and *americana cribratissima* and *krombeni* would further show that the sample is rather heterogeneous. This is also not of a sufficiently substantial size to bring but more definitive associations.

This would suggest much further work on the common and specific parasitic mites where hosts may be common (plants or animals) or divergent (only plants and only animals).

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