

ON THE LEAFHOPPERS (HOMOPTERA, AUCHENORRHYNCHA)

OF THE INNER TIEN SHAN

G. K. DUBOVSKIY and M. T. TURGUNOV

Geomorphologically the Central Tien Shan is divided into two major parts: the Issyk Kul basin and the Inner Tien Shan. The ridge portion of the Terskey Alatau Range is the boundary of the two regions. The main differences between the regions are the large range of heights in the first and the comparatively non-rugged topography in the second.

Despite the considerable absolute altitudes, the Inner Shan has the appearance of a moderately low mountain region. The gentle slopes predominate, the crests of the mountain ridges are levelled, there are broad flat valleys between the ridges (the Tien Shan *syrty*) etc. This topographic pattern is slightly disturbed on the western edge of the region where there is

Table 1
Auchenorrhyncha of the Inner Tien Shan

Species	Collection points										
	Otkak	Naryn	Atbashi	Aktai	Ugut	Dyurbel'd-zhin	Ozgorush	Kongorchok	Koshgöbë	Kazarman	Karakain
Tettigometridae											
<i>Tettigometra vitellina</i> Fieb.									+	+	+
<i>T. eremi</i> Lindb.										+	+
<i>Tettigometra</i> sp.											+
Cixiidae											
<i>Oliarus leporinus</i> L.		+							+	+	
<i>O. pallens</i> Germ.	+	+									
<i>O. concolor</i> Fieb.											
Dictyopharidae											
<i>Dictyophara europaea</i> L.		+									
<i>Chanithus hastatus</i> Kusn.					+					+	
<i>Ch. scolopax</i> Osh.					+						
<i>Haumavarga fedtschenkoi</i> Osh.		+								+	+
<i>Nymphogergerius dimorphus</i> Osh.	+									+	
<i>Mesogergerius</i> sp.							+		+		
<i>Elysiaca ferganensis</i> Osh.									+		
Issidae											
<i>Caliscelis wallengreni</i> Stål					+						
<i>Ommatidiotus dissimilis</i> Fall.							+			+	
<i>Hysteropterum montanum</i> Fieb.	+	+									
Delphacidae											
<i>Asiraca clavicornis</i> F.	+										
<i>Kelisia ribauti</i> Wgn.							+				
<i>Euconomelus lepidus</i> Boh.				+	+					+	
<i>Euides alpina</i> Wgn.	+										
<i>Delphax orientalis</i> Lnv.	+						+	+			
<i>Chloriona unicolor</i> H. S.				+			+			+	+
<i>Stenocranus minutus</i> F.										+	+
<i>Megamelus</i> sp. n.										+	+
<i>Laodelphax striatella</i> Fall.										+	+
<i>Chlorionidea bromi</i> Em.									+	+	+
<i>Muirodelphax aubeti</i> Perr.	+		+	+			+	+	+	+	
<i>Javesella pellucida</i> F.			+						+		
<i>Ribautodelphax ochvata</i> Vilb.	+		+						+		
Cicadidae											
<i>Cicadatra querula</i> Pall.	+										
<i>Cicadetta</i> sp.	+										
Cercopidae											
<i>Lepyronia coleoptrata</i> L.	+	+		+			+	+	+	+	+
<i>Philaenus spumarius</i> L.	+	+		+	+		+	+	+	+	+
<i>Paraphilaenus notatus</i> M. R.			+						+	+	
<i>Neophilaenus lineatus</i> L.	+								+	+	
<i>N. haupti</i> Zachv.	+		+	+	+		+			+	
Membracidae											
<i>Gargara genistae</i> F.	+										

Table 1 (cont.)

Species	Collection points										
	Otrik	Naryn	Arbashi	Aktal	Ugut	Dynubel'd-zhin	Ozgonush	Kongocchok	Kosh'tebe	Kazarmen	Karakain
Cicadellidae											
<i>Parabolocratus glaucescens</i> Fieb.	+										
<i>Paradorydium lanceolatum</i> Burm.											
<i>Aphrodes turkestanicus</i> Dub.	+					+				+	
<i>A. bicinctus</i> Schrk.	+	+	+	+	+		+	+	+	+	
<i>Stroggylocephalus agrestis</i> Fall.	+						+	+	+	+	
<i>Evacanthus asiaticus</i> Osh.	+	+									
<i>Cicadella viridis</i> L.					+		+	+	+	+	
<i>Oncopsis obstructa</i> Dlab.											
<i>Macropsis validiuscula</i> Dub.	+					+		+	+	+	
<i>M. persimilis</i> Dub.	+					+		+	+	+	
<i>M. abdullaevi</i> Dub.	+							+	+	+	
<i>M. ibragimovi</i> Dub.	+									+	
<i>M. asiatica</i> Dub.											
<i>M. elaeagnicola</i> Dub.					+					+	
<i>M. cyanescens</i> Dub.					+					+	
<i>M. mulsanti</i> Fieb.	+				+		+				+
<i>M. emeljanovi</i> Dub.	+									+	
<i>M. grossa</i> Dub.	+									+	
<i>M. formosa</i> Dub.											
<i>Hephalus nanus</i> H. S.	+	+					+	+	+	+	
<i>M. unicolor</i> Lindlb.					+		+	+	+	+	
<i>Macropsidius dispar</i> Fieb.							+	+	+	+	
<i>Anaceratagallia venosa</i> Föhl.					+		+	+	+	+	
<i>A. laevis</i> Rib.											
<i>Anaceratagallia</i> sp.	+										
<i>Sahlbergottetix mesasiaticus</i> Dub.	+						+				
<i>Idiocerus turkestanicus</i> Dub.	+	+									
<i>I. herrichi</i> Kbm.		+									
<i>I. applicativus</i> Dub.		+									
<i>Idiocerus</i> sp. n.						+					
<i>I. ambigenus</i> Dub.	+	+									+
<i>Rhytidodus tenebricans</i> Dub.					+						
<i>R. viridiflavus</i> Dub.					+						
<i>Erythroneura amseli</i> Dlab.	+	+						+	+	+	
<i>Helionidia jazartensis</i> Osh.					+						
<i>Eupteryx orientalis</i> Lnv.	+	+								+	+
<i>Eu. demessa</i> Dlab.											
<i>Eu. artemisiae</i> Kbm.		+							+		
<i>Linnavuoriana roseipennis</i> Osh.										+	
<i>L. apunctata</i> Dlab.										+	
<i>Edwardstana rosae</i> L.	+	+									
<i>E. froggati</i> Bak.	+	+									
<i>Edwardstana</i> , sp. n.	+	+									
<i>Chlorita viridula</i> Fall.	+	+									
<i>Ch. tamaninii</i> Wgn.	+	+	+								+
<i>Ch. aclydifera</i> Dlab.											
<i>Eremochlarita tessellata</i> Leth.	+	+			+		+	+	+	+	+
<i>Empoasca meridiana</i> Zachv.		+									
<i>Kyboasca bipunctata</i> Osh.		+								+	
<i>K. ulmicola</i> Zachv.	+	+									
<i>Kybos niveicolor</i> Zachv.		+				+		+	+	+	
<i>K. mesasiaticus</i> Zachv.	+	+				+		+	+	+	
<i>K. auricillatus</i> Dlab.	+	+				+		+	+	+	
<i>Notus flavipennis</i> Zett.	+							+	+	+	
<i>Dikraneura micantula</i> Zett.						+		+	+	+	
<i>Batrachomorpus irroratus</i> Lew.	+	+						+	+	+	+
<i>Goniagnathus turkestanicus</i> Kusu.					+						
<i>G. rugulosus</i> Hpt.										+	
<i>Opsius tigris</i> Leth.										+	
<i>O. pallasi</i> Leth.					+					+	
<i>Neoliturus fenestratus</i> H. S.							+			+	
<i>Neoliturus guttulatus</i> Kbm.	+	+	+		+		+	+	+	+	
<i>Circulifer opacipennis</i> Leth.	+	+								+	
<i>Pseudophlepsius conma</i> Hpt.					+		+	+	+	+	
<i>Balclutha rosea</i> Scott		+					+	+	+	+	+
<i>B. punctata</i> Thub.		+	+				+	+	+	+	+
<i>B. rhenana</i> Wgn.		+	+							+	+
<i>Macrosteles variatus</i> Fall.	+	+	+		+					+	+
<i>M. laevis</i> Rib.	+	+			+		+	+	+	+	
<i>M. cristatus</i> Rib.	+										
<i>M. alpinus</i> Zett.		+								+	
<i>M. lividus</i> Edw.	+							+	+	+	
<i>M. sordidipennis</i> Stål	+							+	+	+	
<i>Deltocephalus pulicaris</i> Fall.	+										
<i>Recilia horvathi</i> Then											+
<i>Fieberiella macchiai</i> Lnv.	+									+	
<i>Platymetopus minor</i> Vilb.	+	+								+	
<i>P. rostratus</i> H. S.	+									+	
<i>P. undatus</i> Deg.	+	+								+	
<i>Platymetopus</i> , sp. n.	+	+								+	+
<i>Idiodonus cruentatus</i> Panz.	+	+					+			+	+
<i>Lamprotettix</i> sp.			+								
<i>Allygus ferganensis</i> Em.		+					+				
<i>Phlepsidius</i> sp.	+										
<i>Stenometopiellus sigillatus</i> Hpt.											+
<i>S. macilentus</i> Horv.	+										
<i>S. tesquorum</i> Em.										+	
<i>Elymana sulphurella</i> Zett.	+	+									
<i>Cicadula quadrinotata</i> F.	+										
<i>C. flori</i> J. Sahlb.	+										
<i>C. frontalis tianshanica</i> , Gub. sp. n.	+						+			+	+
<i>Callistrophia</i> , sp. n.	+										
<i>Athysanus argentatus</i> F.	+		+	+			+			+	+
<i>Handianus imperator</i> Dlab.	+	+	+							+	+
<i>Scleroracrus decumanus</i> Kontk.	+	+								+	+
<i>Limotettix luteolus</i> Em.											+
<i>L. striola</i> Fall.	+										+
<i>Laburrus</i> , sp. n.											+

Table 1 (cont.)

Species	Collection points										
	Ottuk	Naryn	Atbashi	Aktal	Ugut	Dyrbel'dzhin	Ozgorush	Kongorchok	Koshtabé	Kazarman	Karakain
<i>L. handirschi</i> Mats.	+	+					+	+	+	+	+
<i>L. pellax</i> Horv.	+	+									
<i>Euscelidus mundus</i> Hpt.		+					+				
<i>Euscelis plebejus</i> Fall.	+	+						+			
<i>Eu. seriphidii</i> Em.		+	+							+	
<i>Artianus interstitialis</i> Germ.										+	
<i>Doraturopsis heros</i> Mel.				+	+					+	
<i>Doratura impudica</i> Horv.											
<i>D. homophyla</i> Fl.	+			+						+	+
<i>D. concors</i> Horv.	+									+	
<i>Aconurella diplachnis</i> Em.											+
<i>Paralimnus major</i> Em.	+			+			+			+	
<i>P. angusticeps</i> Zachv.	+			+	+		+		+	+	
<i>P. efferatus</i> Dlab.										+	
<i>P. tenebrosus</i> Dub.	+									+	
<i>P. minor</i> Kusn.				+	+		+				
<i>P. elegans</i> Em.				+							
<i>Mogangina</i> sp. n.			+						+		
<i>M. bromi</i> Em.										+	
<i>Arocephalus orientalis</i> Dub.	+	+									
<i>A. longidus</i> F.	+	+									
<i>Psammotettix comitans</i> Em.							+			+	
<i>P. dealbatus</i> Em.										+	
<i>P. alaticus</i> Dub.	+	+	+				+	+			
<i>Psammotettix</i> , sp. n.				+			+	+			
<i>P. vilbastei</i> Dub.	+										
<i>P. striatus</i> L.	+		+								
<i>P. alienus</i> Dhlb.	+		+								
<i>P. provincialis</i> Rib.	+	+					+	+	+	+	
<i>P. dubovskii</i> Vilb.	+			+			+	+	+	+	
<i>P. confinis</i> Dhlb.	+							+	+	+	
<i>Mogangella straminea</i> Dlab.								+	+	+	
<i>Adarrus oshanini</i> Em.	+							+	+	+	
<i>A. multinotatus</i> Boh.	+									+	
<i>Pinumius areatus</i> Stål									+		
<i>Calamotettix flavescens</i> Em.				+			+		+	+	
<i>Diplocolenus abdominalis</i> F.	+	+					+	+	+		
<i>D. tianshanicus</i> Em.	+	+									
<i>D. frauenfeldi</i> Fieb.	+	+					+		+	+	
<i>Sorhoanus medius</i> M. R.	+	+							+	+	
<i>S. pratensis</i> Em.			+						+	+	
<i>Rhoanans hypochlorus</i> Fieb.			+						+		
<i>Enantiocephalus cornutus</i> H. S.	+	+									
<i>Mocuellus hordei</i> Em.	+										
<i>M. collinus</i> Boh.	+		+				+	+	+	+	
<i>M. psathyrostachydis</i> Em.	+										
<i>Mocuellus</i> , sp. n.	+										

deep Naryn intermontane area; the Naryn River, the main feeder of the Syr Darya, has cut its bed deep into the deposits of this depression (Murzayev et al., 1958).

The leafhoppers of the Central Tien Shan have been little investigated and the leafhopper fauna of its southern part, the Inner Tien Shan, remains completely unknown.

The present study has been based on collections made in July–August 1967 at different points in the Inner Tien Shan: Ottuk, Naryn, Atbashi, Aktal, Ugut, Dyrbel'dzhin, Ozgorush, Kongorchok, Koshtyube, Kazarman and Karakain. The insects were collected on the floodplain of the Naryn River, in upland swampy pastures (sazy), on the southeastern and southern slopes of the Moldotau Range, the northwestern slopes of the Naryntau and Atbashi Ranges, the northern slopes of the Dzhamantau, the southern, western and northern slopes of the Akshytrak Mountains and the northeastern slopes of the northern part of the Fergana Range on grasses, shrubs and trees. They were taken at heights of between 600–700 and 2500–2800 m above sea level. B. Kosimov, a third-year student in the biological faculty of Andizhan Pedagogical Institute gave assistance with the collecting.

We append a table of the species of leafhoppers of the Inner Tien Shan, in which we indicate the collection points. It is evident from the Table that 182 species of Auchenorrhyncha belonging to 9 families have been recorded in the Inner Tien Shan; 9 species and 1 subspecies are new to science.

Comparison of the Auchenorrhyncha of the Inner Tien Shan with those of the Fergana Valley, which have been more fully studied (Dubovskiy, 1966) shows that there is some similarity in the species represented. Disregarding new species and species identified only down to the generic level, we find that 144 of 166 species are shared in common by these neighboring regions. Only 22 species from the Inner Tien Shan are

absent from the Fergana Valley: *Ribautodelphax ochreata* Vilb., *Eupteryx artemisiae* Kbm., *Chlorita viridula* Fall., *Goniagnathus turkestanicus* Kusn., *Macrosteles variatus* Fall., *M. cristatus* Rib., *M. alpinus* Zett., *M. sordidipennis* Stal, *Platymetopius undatus* Deg., *Idiodonus cruentatus* Panz., *Stenometopiellus tesquorum* Em., *Aconurella diplachnis* Em., *Paralimnus elegans* Em., *Arocephalus longidus* F., *Psammotettix dealbatus* Em., *Mogangella straminea* Dlab., *Adarrus multinotatus* Boh., *Calamotettix flavescens* Em., *Diplocolenus tianshanicus* Em., *Sorhoanus pratensis* Em., *Mocuellus hordei* Em., *M. psathyrostachydis* Em. These are mainly European-Siberian species and species from Kazakhstan and the Altay which apparently penetrated into the Inner Tien Shan from the North across the Central Tien Shan. At all events, we found all of them in the area around Issyk Kul and in other districts of the Central Tien Shan.

No difference was discovered in the qualitative composition of the Auchenorrhyncha of trees and shrubs in the Inner Tien Shan and the Fergana Valley (all the Tien Shan species are found in the Fergana Valley; see Dubovskiy, 1966), with the exception of the occurrence in the Naryn depression of a new species of the genus *Idiocerus* on willow (*Salix*).

LITERATURE CITED

- DUBOVSKIY, G. K. 1966. Auchenorrhyncha of the Fergana Valley. Uzbek "Fan" Press, Tashkent.
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<i>L. pellar</i> Horv.	+	+									
<i>Euscelidus mundus</i> Hpt.		+									
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<i>D. homophyla</i> Fl.	+			+							+
<i>D. concors</i> Horv.	+										
<i>Aconurella diplachnis</i> Em.											+
<i>Paralimnus major</i> Em.	+			+							
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<i>P. efferatus</i> Dlab.											
<i>P. tenebrosus</i> Dub.	+										
<i>P. minor</i> Kusn.				+	+						
<i>P. elegans</i> Em.				+							
<i>Mogangina</i> sp. n.		+							+		
<i>M. bromi</i> Em.										+	
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<i>Psammotettix comitans</i> Em.							+			+	
<i>P. dealbatus</i> Em.											
<i>P. alaicus</i> Dub.	+	+	+								
<i>Psammotettix</i> , sp. n.				+			+	+			
<i>P. vilbastei</i> Dub.	+										
<i>P. striatus</i> L.	+										
<i>P. alienus</i> Dhlb.	+		+								
<i>P. provincialis</i> Rib.	+	+					+	+	+	+	
<i>P. dubovskii</i> Vilb.	+			+							
<i>P. confinis</i> Dhlb.	+										
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<i>A. multinotatus</i> Boh.	+										
<i>Pinumius areatus</i> Stål				+							
<i>Calamotettix flavescens</i> Em.							+			+	
<i>Diplocolenus abdominalis</i> F.	+	+						+	+	+	
<i>D. tianshanicus</i> Em.	+	+									
<i>D. frauenfeldi</i> Fieb.	+	+									
<i>Sorhoanus medius</i> M. R.	+						+		+	+	
<i>S. pratensis</i> Em.	+								+	+	
<i>Rhoananus hypochlorus</i> Fieb.		+									
<i>Enantiocephalus cornutus</i> H. S.	+	+							+		
<i>Mocuellus hordei</i> Em.	+										
<i>M. collinus</i> Boh.	+		+							+	
<i>M. psathyrostachydis</i> Em.							+	+		+	
<i>Mocuellus</i> , sp. n.	+										

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