

Original Article**New Records of some Phthiraptera (chewing lice) of birds from urban areas of Hyderabad, Sindh, Pakistan**

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Abstract

Chewing lice (Phthiraptera: Amblycera, Ischnocera) have been examined on common wild and captive birds of Hyderabad during 2013-2015, mainly from urban areas. Chewing lice of both suborders Amblycera and Ischnocera included family Menoponidae and Philopteridae respectively were reported from different localities of Hyderabad city. It was the first chewing lice survey that has been carried out in the region, which reported eight species of Menoponidae and eleven species of Philopteridae. These species were *Campanulotes compar* (Burmeister, 1838), *Colpocephalum turbinatum* (Denny, 1842), *Columbicola columbae* (Linnaeus, 1758), *Hohorstiella lata* (Piaget, 1880) on pigeons and doves; *Brueelia subtilis* (Nitzsch, 1874), *Menacanthus eurysternus* (Burmeister, 1838) and *Sturnidocus refractariolus* (Zlotorzycza, 1964) on house sparrow; *Goniodes dissimilis* (Denny, 1842), *Lipeurus tropicalis* (Peters, 1931), *Menacanthus pallidulus* (Neumann, 1912), *M. stramineus* (Nitzsch, 1818) and *Menopon gallinae* (Linnaeus, 1758) on domestic fowls; *Brueelia saliemi* (Ansari, 1957), *Colpocephalum fragili* (Denny, 1842) and *Myrsidea splendenticola* (Klockenhoff, 1973) on house crow; *Anaticola crassicornis* (Scopoli, 1763) from wild goose; *Brueelia nebulosa* (Burmeister, 1838) and *M. eurysternus* (Burmeister, 1838) from common myna and bank myna; *Neopsittaconirmus lybartota* (Ansari, 1947) from Indian Parakeet; *Degeeriella regalis* (Giebel, 1866) from black kite. All were new records from Hyderabad. Bank myna was recorded as new host for *M. eurysternus* and black kite was reported first time harbouring *Degeeriella regalis* from Pakistan.

Keywords: Phthiraptera, new records, Hyderabad, Sindh, Pakistan.

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INTRODUCTION

Phthiraptera (Haeckel, 1896) consist of four suborders, Anoplura (Leach, 1815), Amblycera (Kellogg, 1896), Ischnocera (Kellogg, 1896) and Rhynchophthirina (Ferris, 1931); the Amblycera and Ischnocera are found on birds. The suborder Amblycera is divided into seven families, viz. Abrocomophagidae (Emerson and Price, 1976), Boopiidae (Mjöberg, 1910), Gyropidae (Kellogg, 1896), Laemobothriidae (Mjöberg, 1910), Menoponidae (Mjöberg, 1910), Ricinidae (Neumann, 1890) and Trimenoponidae (Harrison, 1915; Lakshminarayana, 1979; Palma and Barker, 1996; Price *et al.* 2003). The Ischnocera consist of two families, Philopteridae (Burmeister, 1838), parasitizing all orders of birds and Trichodectidae (Kellogg, 1896), that is exclusively mammalian infesting family (Clay, 1950; Hopkins and Clay, 1952; Lakshminarayana, 1979; Lakshminarayana *et al.*

1980; Ledger, 1980; Palma and Barker, 1996; Price *et al.* 2003). There is not much sufficient work done on chewing lice in Pakistan except that of few publications by Ansari (1951a; 1951b; 1955; 1956a, 1956b), Sychra *et al.* (2007) and Naz *et al.* (2009; 2012). The present study has been conducted to know the new varieties and new records of chewing lice of birds and to update the faunal data on the suborder Amblycera and suborder Ischnocera (order Phthiraptera) on common birds in urban areas of Hyderabad (Latifabad, Qasimabad, Heerabad, Baldia and Sadar). In this study, the new data on chewing lice are to recover from different birds in different regions of Sindh. It is the continuation of the series of presenting data on chewing lice from Sindh, Pakistan (Naz *et al.* 2011; Naz and Rizvi, 2012a; 2012b). This work is to recover more new records in the fauna of chewing lice from common wild and captive birds in different regions of Sindh, Pakistan, presently from urban areas of district Hyderabad

and to find out more data on chewing lice to contribute the new facts about lice taxonomy.

MATERIAL AND METHOD

Different common birds were collected for the examination of their chewing lice from different localities of Hyderabad (Table I) in the period of 2014-15. Hyderabad is situated at the elevation of 13 meters from sea level with 25°22'45"N-68°22'06"E with 2nd largest urbanization of Sindh Province. The city is surrounded by the rural areas of Jamshoro, Kotri and Hosri, represented by a good variety of avian fauna in the countryside (PBS, 1998). All bird species were identified by Ali and Ripley (1989), Robert (1991), Grimmett *et al.* (1998) and Hassan (2001). Their lice were recovered from them with the help of fumigation chamber (Sychra, 2005; Naz *et al.* 2012). All the specimens of lice were mounted in permanent microscopic slides through the standard method of maceration in 10% KOH and dehydration in ascending grads of ethanol from 20% to absolute, cleared with clove oil and finished with xylol. The lice were permanently mounted in Canada balsam following the method of Palma (1978) and Naz (2008). The chewing lice species were identified by using the latest literature (Biu *et al.*, 2007; Adam *et al.*, 2009; Dik *et al.*, 2009; Arya *et al.*, 2010; Dik and Halajian, 2012), mainly Price *et al.* (2003) which was followed for more literature. All specimens of chewing lice were maintained in the Advanced

Parasitology Laboratory, Department of Zoology, University of Sindh, Jamshoro, Pakistan (APL-DZUSJ). Measurements were taken in millimeters by using ocular micrometer.

RESULTS

Presently the two suborders of Avian Phthiraptera including two families Menoponidae and Philopteridae are represented by following species of chewing lice that have been collected from the common wild and captive birds (Table I) from Hyderabad city for the first time, as it is the first survey of these species from the region. The chewing lice species (Table II) were measured in millimeters (n=3) their mean sizes are given in Table III.

Suborder Amblycera (Kellogg, 1896)

Family Menoponidae (Mjöberg, 1910)

Colpocephalum fregili (Denny, 1842)

Allocolpocephalum frugilegi (Zlotorzycza, 1964); *A. lanidorum* (Zlotorzycza, 1964); *Colpocephalum bengalensis* (Ansari, 1955); *C. ellipticum* (Piaget, 1880); *C. elongatum* (Piaget, 1880); *C. fregili* (Denny, 1842); *C. laurencei* (Ansari, 1955); *C. semicinctum* (Rudow, 1866); *C. splendens* (Ansari, 1955); *C. subaequale* (Burmeister, 1838); *C. trimaculatum* (Piaget, 1880).

Material examined: 26 ♂, 38 ♀, on *Corvus splendens* Vieillot; Hyderabad. 18-vii-2014, 25-ii-2015, 31-iii-2015; leg. Naz, S., lodged at APL-DZUSJ, Pakistan.

Table I: List of birds, examined during the present survey

Birds Order	Bird Host Species	No. of Hosts Examined
Columbiformes	Rock Pigeon <i>Columba livia</i>	15
	Collared Dove <i>Streptopelia decaocta</i>	05
Anseriformes	Wild Goose <i>Anser anser</i>	04
Galliformes	Domestic Fowl <i>Gallus gallus</i>	17
	Common Myna <i>Acridotheres tristis</i>	08
	Bank Myna <i>Acridotheres ginginianus</i>	06
Passeriformes	House Crow <i>Corvus splendens</i>	18
	House Sparrow <i>Passer domesticus</i>	10
Psittaciformes	Indian Parakeet <i>Psittacula krameri</i>	03
Falconiformes	Black Kite <i>Milvus migrans</i>	01
Total birds examined		87

Colpocephalum turbinatum (Denny, 1842)

Colpocephalum turbinatum (Denny, 1842); *C. abruptofasciatum* (Mjöberg, 1910); *C. ailurum* (Nitzsch, 1861); *C. bicinctum* (Nitzsch, 1861); *C. caudatum* (Giebel, 1874; Piaget, 1880,

1885); *C. dissimile* (Piaget, 1880, 1885); *C. intermedium* (Piaget, 1880); *C. latifasciatum* (Piaget, 1885); *C. osborni* (Carriker, 1903); *C. oxyurum* (Nitzsch, 1861); *C. subflavescens* (Piaget, 1880); *C. tricinctum* (Nitzsch, 1861); *C.*

wernecki (Orfila, 1959); *Neocolpocephalum gypae* (Qadri, 1935); *N. tricinctum* (Eichler, 1941); *Vulturigogus eugenii* (Eichler and Zlotorzycska, 1963); *V. femellus* (Eichler and Zlotorzycska, 1963).

Material examined:

Eight ♂, six ♀, on *Columba livia* Gmelin; Hyderabad. 20-ii-2014, 02-iii-2014; leg. Rajpar, A.A., lodged at APL-DZUSJ, Pakistan.

Table II: Chewing lice species, reported during the present survey

Suborder	Family	Louse Genus	Species	Host	
Amblycera	Menoponidae	<i>Colpocephalum</i>	<i>fregili</i>	<i>Corvus splendens</i>	
			<i>turbatum</i>	<i>Columba livia</i>	
		<i>Hohorstiella</i>	<i>lata</i>	<i>Columba livia</i>	<i>Streptopelia decaocta</i>
				<i>Acridotheres ginginianus</i>	<i>A. tristis</i>
		<i>Menacanthus</i>	<i>eurysternus</i>	<i>Passer domesticus</i>	<i>Gallus gallus</i>
				<i>Gallus gallus</i>	<i>Gallus gallus</i>
				<i>Gallus gallus</i>	<i>Gallus gallus</i>
			<i>gallinae</i>	<i>Gallus gallus</i>	<i>Corvus splendens</i>
			<i>splendenticola</i>	<i>Corvus splendens</i>	<i>Anser anser</i>
			<i>crassicornis</i>	<i>Anser anser</i>	<i>Acridotheres tristis</i>
		<i>Brueelia</i>	<i>saliemi</i>	<i>Acridotheres tristis</i>	<i>Corvus splendens</i>
				<i>Corvus splendens</i>	<i>Corvus splendens</i>
Ischnocera	Phloptoridae	<i>Campanulotes</i>	<i>subtilis</i>	<i>Passer domesticus</i>	
			<i>compar</i>	<i>Columba livia</i>	
			<i>columbae</i>	<i>Columba livia</i>	
			<i>columbae</i>	<i>Streptopelia decaocto</i>	
		<i>Degeeriella</i>	<i>regalis</i>	<i>Milvus migrans</i>	
		<i>Goniodes</i>	<i>dissimilis</i>	<i>Gallus gallus</i>	
		<i>Lipeurus</i>	<i>tropicalis</i>	<i>Gallus gallus</i>	
		<i>Neopsittaconirmus</i>	<i>lybartota</i>	<i>Psittacula krameri</i>	
		<i>Sturnidoecus</i>	<i>refractariolus</i>	<i>Passer domesticus</i>	

***Hohorstiella lata* (Piaget, 1880)**

Menopon latum (Piaget, 1880); *Hohorstiella lata* (Eichler, 1940).

Material examined

Two ♂, fifteen ♀, on *Columba livia* Gmelin, *Streptopelia decaocta* (Frivaldszky); Hyderabad. 22-ii-2014, 02-iii-2014; leg. Rajpar, A.A., lodged at APL-DZUSJ, Pakistan.

***Menacanthus eurysternus* (Burmeister, 1838)**

Pediculus pyrrhulae (Panzer, 1798); *Menopon eurysternum* (Burmeister, 1838); *M. sittae* (Giebel, 1866); *M. annulatus* (Giebel, 1874); *M. persignatus* (Kellogg and Chapmann, 1899); *M. picae* (Piaget, 1880); *M. parvulus* (Piaget, 1880); *M. meniscus* (Piaget, 1880); *M. spinosus* (Piaget, 1880); *M. germanus* (Piaget, 1880); *M. dubius* (Piaget, 1880); *M. gracilis* (Piaget, 1880); *M. spiniferus* (Piaget, 1885; Carriker, 1949b); *M. tibialis* (Piaget, 1885); *M.*

difficilis (Carriker, 1903); *M. monochromateus* (Kellogg and Paine, 1914); *Menacanthus microsceli* (Uchida, 1926); *M. subspinosus* (Uchida, 1926); *M. tristisi* (Qadri, 1935); *M. mutabilis* (Blagoveschtchenskii, 1940; Eichler, 1953b); *M. remizae* (Blagoveschtchenskii, 1940); *M. minusculus* (Blagoveschtchenskii, 1940); *M. dicruri* (Eichler, 1947); *M. cornicis* (Blagoveschtchenskii, 1948); *M. safedgul* (Ansari, 1951); *M. gulabimaina* (Ansari, 1951); *M. himalayicus* (Ansari, 1951); *M. pflegeri* (Eichler, 1953b); *M. schildmacheri* (Eichler, 1953b); *M. festivus* (Eichler and Zlotorzycska, 1963); *M. pius* (Eichler and Zlotorzycska, 1963); *M. polonicus* (Eichler and Zlotorzycska, 1963); *M. wipszyckii* (Eichler and Zlotorzycska, 1963); *M. inscitus* (Zlotorzycska, 1965); *M. kevei* (Sasvári-Schäfer, 1966); *M. chabaroviensis* (Fedorenko, 1978); *M. volkovi* (Fedorenko, 1978); *M. grandis* (Fedorenko and Lunkaschu, 1987); *M. tichodrome* (Rékasi, 1995).

Material examined

Eight ♂, fifteen ♀, on *Passer domesticus* (Linnaeus), *Corvus splendens* Vieillot, *Acridotheres tristis* (Linnaeus) and *A. ginginianus* (Latham), Hyderabad. 07-iii-2014, 25-ix-2015; leg. Rajpar, A.A. and Chandio, A.H., lodged at APL-DZUSJ, Pakistan. First time reported on genus *Acridotheres* from Hyderabad, Sindh, Pakistan.

***Menacanthus pallidulus* (Neumann, 1912)**

Menopon pallidulum (Neumann, 1912); *Menacanthus pallidulus* (Hopkins and Clay, 1952).

Material examined

Thirteen ♂, eighteen ♀, on *Gallus gallus* (Linnaeus), Hyderabad. 21-iii-2014; leg. Rajpar, A.A., lodged at APL-DZUSJ, Pakistan.

***Menacanthus stramineus* (Nitzsch, 1818)**

Pediculus meleagridis (Panzer, 1798); *Liotheum stramineum* (Nitzsch, 1818); *Menopon biseriatus* (Piaget, 1880); *Zemiodes zumpti* (Eichler, 1944).

Material examined

Two ♂, two ♀, on *Gallus gallus* (Linnaeus), Hyderabad. 21-iii-2014; leg. Rajpar, A.A., lodged at APL-DZUSJ, Pakistan.

***Menopon gallinae* (Linnaeus, 1758)**

Pediculus gallinae (Linnaeus, 1758); *Nirmus trigonocephalus* (Olfers, 1816); *Liotheum pallidum* (Nitzsch, 1818); *Menopon productum* (Piaget, 1880); *M. brevipes* (Piaget, 1885); *M. subaequale* (Piaget, 1885); *M. longicephalum* (Kellogg, 1896); *M. lunanale* (Eichler, 1947).

Material examined

Seven ♂, four ♀, on *Gallus gallus* (Linnaeus), Hyderabad. leg. Naz, S., lodged at APL-DZUSJ, Pakistan.

***Myrsidea splendenticola* Klockenhoff, 1973**

Myrsidea splendenticola (Klockenhoff, 1973).

Material examined

Sixteen ♂ twenty two ♀, on *Corvus splendens* Vieillot, Hyderabad. 05-iii-2014; leg. Rajpar, A.A., lodged at APL-DZUSJ, Pakistan. First time reported from Pakistan.

Suborder Ischnocera (Kellogg, 1896)**Family Philopteridae (Burmeister, 1838)*****Anaticola crassicornis* (Scopoli, 1763)**

Pediculus crassicornis (Scopoli, 1763; Kasiev, 1977); *P. anatis* (Schrank, 1781); *Philopterus squalidus* (Nitzsch, 1818); *P. temporalis* (Nitzsch, 1818); *Lipeurus squalidus* (Nitzsch, 1818; Denny, 1880; Giebel, 1880; Piaget, 1880); *L. sordidus* (Giebel, 1866); *L. rubromaculatus* (Rudow, 1870); *L. gracilis* (Giebel, 1874); *L. penelopes* (Müller, 1927); *Columbicola ewingi* (Qadri, 1935); *Anaticola zunkerii* (Kéler, 1937); *A. hopkinsi* (Eichler, 1954); *A. dafilensis* (Carriker, 1956); *A. waltraudae* (Eichler and Vasjukova, 1980).

Material examined

Six ♂, eight ♀, on *Anser anser* (Linnaeus), Hyderabad. 21-03-2014; leg. Rajpar, A. A. and Chandio, A. H., lodged at APL-DZUSJ, Pakistan.

***Brueelia nebulosa* (Burmeister, 1838)**

Nirmus nebulosus (Burmeister, 1838); *Brueelia chitlatilyar* (Ansari, 1955); *Spironirmus nebulosus* (Zlotoryzcka, 1964); *Docophorus ochroleuca* (Nitzsch, 1874); *Brueelia nebulosa* (Hopkins and Clay, 1952).

Material examined

The 5 ♂, 9 ♀, on *Acridotheres tristis* (Linnaeus), Hyderabad. 07-iii-2014, 08-v-2015; leg. Rajpar, A. A., lodged at APL-DZUSJ, Pakistan.

***Brueelia saliemii* (Ansari, 1957)**

Brueelia saliemii (Ansari, 19570).

Material examined

33 ♂, 48 ♀, on *Corvus splendens* Vieillot, Hyderabad. 21-iii-2014, 18-vii-2014, 25-ii-2015, 31-iii-2015; leg. Naz, S. and Rajpar, A. A., lodged at APL-DZUSJ, Pakistan.

***Brueelia subtilis* (Nitzsch, 1874)**

Nirmus subtilis (Nitzsch, 1874); *Brueelia subtilis obligate* (Eichler, 1954); *Brueelia subtilis* (Eichler, 1972).

Material examined

The 5 ♂, 7 ♀, on *Passer domesticus* (Linnaeus), Hyderabad. 24-iv-2015; leg. Rajpar, A. A. and Chandio, A. H., lodged at APL-DZUSJ, Pakistan.

***Campanulotes compar* (Burmeister, 1838)**

Goniocotes bidentatus (Scopoli, 1763); *Goniodes compar* (Nitzsch, 1818; Denny, 1842;

Giebel, 1842; Piaget, 1842; Neumann, 1909; Neveu-Lemaire, 1919; *Gonicocotes compar* Burmeister, 1838; Harrison, 1916; *G. formosanus* Sugimoto, 1929).

(Giebel, 1866; Kellogg, 1896; Neumann, 1909); *L. antennatus* (Giebel, 1874); *Philopterus baculus* (Nitzsch, 1818); *Phagopterus columbae* (Freire and Duarte, 1944); *Nirmus claviformis* (Olfers, 1816); *N. filiformis* (Olfers, 1816).

Material examined

The 21 ♂, 27 ♀, on *Columba livia* Gmelin; Hyderabad. 22-ii-2014, 02-iii-2014; leg. Rajpar, A.A. and Chandio, A.H., lodged at APL-DZUSJ, Pakistan.

***Columbicola columbae* (Linnaeus, 1758)**

Pediculus columbae (Linnaeus, 1758); *Lipeurus bacillus* (Nitzsch, 1818); *L. baculus*

Material examined

The 27 ♂, 36 ♀, on *Columba livia* Gmelin, *Streptopelia decaocta* (Fridvaldszky), Hyderabad. 22-ii-2014, 02-iii-2014; leg. Rajpar, A.A. and Chandio, A.H., lodged at APL-DZUSJ, Pakistan.

Table III: Measurements of Chewing Lice species (in mm), collected from Hyderabad, Sindh, Pakistan.

Louse Taxon	Total length	Head length at mid-line	Head width at antenna	Prothorax length at mid-line	Prothorax width	Metathorax/ Pterothorax length	Metathorax/ Pterothorax width	Abdominal length
<i>A. crassicornis</i> ♂	3.20	0.725	0.340	0.190	0.35	0.485	0.480	1.80
<i>A. crassicornis</i> ♀	3.650	0.765	0.360	0.220	0.370	0.520	0.580	2.390
<i>B. nebulosa</i> ♂	1.15	0.277	0.195	0.070	0.117	0.147	0.267	0.595
<i>B. nebulosa</i> ♀	1.587	0.30	0.210	0.080	0.185	0.142	0.277	1.055
<i>B. saliemii</i> ♂	1.67	0.435	0.365	0.17	0.30	0.19	0.46	0.85
<i>B. saliemii</i> ♀	1.861	0.495	0.435	0.130	0.316	0.244	0.468	1.003
<i>B. subtilis</i> ♂	1.51	0.35	0.207	0.10	0.165	0.15	0.25	0.912
<i>B. subtilis</i> ♀	1.68	0.375	0.225	0.107	0.177	0.162	0.28	1.037
<i>C. compar</i> ♂	1.08	0.37	0.295	0.075	0.220	0.170	0.285	0.490
<i>C. compar</i> ♀	1.342	0.40	0.330	0.105	0.270	0.075	0.340	0.825
<i>C. fregili</i> ♂	1.358	0.31	0.323	0.121	0.312	0.155	0.398	0.772
<i>C. fregili</i> ♀	1.575	0.316	0.326	0.135	0.30	0.162	0.437	0.962
<i>C. turbinatum</i> ♂	1.340	0.244	0.31	0.135	0.302	0.135	0.372	0.805
<i>C. turbinatum</i> ♀	1.645	0.282	0.307	0.127	0.312	0.145	0.446	1.087
<i>C. columbae</i> ♂	2.267	0.510	0.217	0.172	0.212	0.297	0.275	1.287
<i>C. columbae</i> ♀	2.625	0.540	0.232	0.160	0.220	0.295	0.280	1.665
<i>D. regalis</i> ♂	2.01	0.54	0.352	0.160	0.27	0.185	0.43	1.125
<i>D. regalis</i> ♀	2.365	0.56	0.40	0.190	0.27	0.175	0.47	1.44
<i>G. dissimilis</i> ♂	2.176	0.696	0.826	0.198	0.472	0.649	0.687	0.962
<i>G. dissimilis</i> ♀	2.931	0.799	0.949	0.208	0.559	0.364	0.806	1.560
<i>H. lata</i> ♂	1.50	0.335	0.472	0.20	0.365	0.132	0.478	0.768
<i>H. lata</i> ♀	2.02	0.357	0.536	0.232	0.425	0.128	0.685	1.195
<i>L. tropicalis</i> ♂	3.305	0.725	0.504	0.245	0.39	0.399	0.593	2.01
<i>L. tropicalis</i> ♀	3.30	0.755	0.496	0.207	0.405	0.395	0.66	2.055
<i>M. eurysternus</i> ♂	1.51	0.26	0.333	0.183	0.385	0.198	0.391	0.836
<i>M. eurysternus</i> ♀	1.550	0.272	0.382	0.175	0.360	0.1875	0.490	0.900
<i>M. pallidulus</i> ♂	1.527	0.312	0.380	0.200	0.377	0.147	0.408	0.906
<i>M. pallidulus</i> ♀	1.531	0.312	0.393	0.196	0.410	0.150	0.496	0.881
<i>M. stramineus</i> ♂	2.895	0.367	0.535	0.277	0.542	0.192	0.590	1.915
<i>M. stramineus</i> ♀	2.550	0.400	0.540	0.235	0.560	0.185	0.620	1.940
<i>M. gallinae</i> ♂	1.647	0.285	0.365	0.170	0.360	0.115	0.540	1.017
<i>M. gallinae</i> ♀	1.950	0.320	0.360	0.190	0.420	0.145	0.625	1.235
<i>M. splendenticola</i> ♂	1.647	0.285	0.365	0.170	0.360	0.115	0.540	1.017
<i>M. splendenticola</i> ♀	1.847	0.394	0.440	0.185	0.410	0.145	0.625	0.760
<i>N. lybartota</i> ♂	1.38	0.365	0.227	0.08	0.195	0.175	0.225	0.731
<i>S. refractariolus</i> ♀	1.457	0.447	0.347	0.102	0.250	0.157	0.377	0.751

***Degeeriella regalis* (Giebel, 1866)**

Nirmus regalis (Giebel, 1866); *N. appendiculata* (Piaget, 1880); *N. curvilineata* (Kellogg and Kuwana, 1902); *N. incerta* (Piaget, 1885); *N. pseudophaea* (Carriker, 1903); *N. vittata* (Giebel, 1874).

Material examined

Seven ♂, twelve ♀, on *Milvus migrans* (Boddaert), Hyderabad. 16-iv-2014; leg. Rajpar, A. A., lodged at APL-DZUSJ, Pakistan.

***Goniodes dissimilis* (Denny, 1842)**

Goniodes dissimilis (Denny, 1842; Piaget, 1880).

Material examined

5 ♂, 8 ♀, on *Gallus gallus* (Linnaeus), Hyderabad. 21-iii-2014; leg Rajpar, A. A. lodged at APL-DZUSJ, Pakistan.

***Lipeurus tropicalis* (Peters, 1931)**

Lipeurus tropicalis (Peters, 1931).

Material examined

7 ♂, 7 ♀, on *Gallus gallus* Linnaeus, Hyderabad. 04-iv-2014, 15-v-2014; leg. Naz, S., lodged at APL-DZUSJ, Pakistan.

***Neopsittaconirmus lybartota* (Ansari, 1947)**

Psittaconirmus lybartota (Ansari, 1947).

Material examined

2 ♂, on *Psittacula krameri* (Neumann), Hyderabad. 4-viii-2014; leg. Naz, S.; lodged at APL-DZUSJ, Pakistan.

***Sturnidoecus refractariolus* (Zlotorzycza, 1964)**

Rostrinirmus refractariolus (Zlotorzycza, 1964); *Sturnidoecus refractariolus* (Eichler, 1944).

Material examined

The 5 ♀, on *Passer domesticus* (Linnaeus), Hyderabad. 24-iv-2015; leg. Naz, S., lodged at APL-DZUSJ, Pakistan.

DISCUSSION

About every bird carries its particular and specific type of ectoparasite on its body. Chewing lice are reported to infest every species of birds and found on their specific hosts. Birds carry different types of ectoparasites on them

like chewing lice, mites, some ticks and flies (Emerson, 1973; Marshall, 1981; Garbarino *et al.* 2013). In Sindh region, there is a splendid variety of birds (Roberts, 1991; Hassan, 2001), that may harbor their different species of chewing lice, but in Sindh region, the study on chewing lice had been remained very neglected group since last half decade; had been done a very little by Ansari in the region of Faisalabad (previously Lyallpur) (1951a; 1951b; 1955; 1956a; 1956b) however after almost half a century Kakarsulemankhel (2010), Kakarsulemankhel *et al.* (2010), Naz and Rizvi (2012a; 2012b) and Naz *et al.* (2010; 2011; 2012) have reported new host records and new species from Quoetta (Balochistan) and Karachi (Sindh) respectively.

The present study is indeed a necessity to know the chewing lice fauna of Pakistan. In continuation of exploring more varieties of chewing lice on variable avian hosts, this is the contribution towards knowledge on chewing lice fauna of Hyderabad region for the first time. During the study it has been observed that *Menacanthus eurysternus* was reported from *Acridotheres ginginianus* for first time from Hyderabad, however it was previously recorded from *A. tristis* and *Passer domesticus* (Price, 1975) but the present host is reported as new host record from the observed host. The Myna louse, *Brueelia nebulosa* (Burmiester) has been recorded first time from this host in the region, however it was previously recorded from Common Starling, *Sturnus vulgaris* by Burmeister (1838), similarly *Colpocephalum fregili* was first reported from Pakistan infested to *Corvus macrorhynchus* (Ansari, 1956a) but presently it has been recovered from *C. splendens* in the region, having put new host on record in this study. *Degeeriella regalis* was also first time reported from Pakistan, put new record of the country.

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