STUDIES ON ISCHNOGERAN MALLOPHAGA INFESTING BIRDS IN THE PANJAB

Department of Parasitology, Institute of Hygiene and Preventive Medicine, 6, Birdwood Road, Lahore (Pakistan)
[Continued from Indian J. Ent., 20 (1) : 62]

24. Sturnidoecus chilchil, sp. nov. (Text figs. 85—92)

Male: The tergal plates are approximate. Dorsal abdominal chaetotaxy very long. Sternal plates not well formed. Ventral chaetotaxy arranged in two sub-marginal and median rows. Genital armature characteristic, as shown in the figure. Parameres with modified tips.

Holotype (male): preanennal region 0.23×0.38 mm., hind head 0.23×0.54 mm., prothorax 0.11×0.29 mm., pterothorax 0.24×0.42 mm. and abdomen 0.82×0.65 mm.

Chaetotaxy:

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Type host: The Common Babbler—Argya c. caudata (Dumont)

25. Sturnidococcus guldum, sp. nov. (Text-figs. 93—99)

Text-figs. 93-99: Sturnidococcus guldum, sp. nov. 93: Ventral and dorsal antenna of aspects of male, 94: male, 95-96: two views of mesosomal plate, 97: antenna of male, 98: mandible, 99: portion of the genital plate of female showing vulvar chaetotaxy.

This is a very typical species and does not resemble any form so far described from Pyenontotidae. The tergal plates are approximate. The abdominal chaetotaxy is profuse.

Type host: The Red Vented Bulbul—Molpestes haemorhous intermedius (Jordon)
26. *Sturnidocus intercessor* (Giebel)

_Dacophorus intercessor_ Giebel, 1874, _Insecta Sinica_, 99.

Several specimens of this species were obtained from the Indian Black Drongo—
_Dicerus macrocercus peninsularis_ Ticehurst.

27. *Sturnidocus viridale*, sp. nov. (Text-figs. 100-104)

In this species, the male genitalia is very characteristic. The basal plate is about 8 times as long as the parameres. The mesosomal plate is heart-shaped.

_Holotype (male):_ preantennal region 0.21 × 0.29 mm., hind head 0.22 × 0.39 mm., prothorax 0.09 × 0.31 mm., pterothorax 0.16 × 0.36 mm. and abdomen 0.72 × 0.56 mm.

_Allootype (female):_ preantennal region 0.21 × 0.29 mm., hind head 0.23 × 0.39 mm., prothorax 0.09 × 0.31 mm., pterothorax 0.17 × 0.31 mm. and abdomen 0.89 × 0.55 mm.

_Type host:_ The Indian Crested Lark—_Galerida cristata chendoola_ Franklin

28. *Sturnidocus irritans*, sp. nov. (Text-figs. 105—109)

This species is very easily separated from other species by the shape and size of dorsal anterior plate, pterothorax in general and pleural plates in particular. The pleural plates are club-shaped and of uniform thickness throughout. The tergal plates are well formed and approximate. Almost all the abdominal segments are furnished with 3—5 long hairs. Venter is also equally hairy. Genitalia typical.

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Holotype (male): preantennal region 0.29 × 0.39 mm., hind head 0.26 × 0.48 mm., prothorax 0.11 × 0.29 mm., mesothorax 0.18 × 0.14 mm., and abdomen 0.93 × 0.65 mm.

Allotype (female): preantennal region 0.29 × 0.39 mm., hind head 0.27 × 0.49 mm., prothorax 0.11 × 0.29 mm., mesothorax 0.32 × 0.44 mm. and abdomen 1.10 × 0.66 mm.

Type host: The Indian Bush Chat—Saxicola torquata indica Blyth

29. Sturnidoecus saleimi, sp. nov. (Text figs. 110—117)

Male: This species differs from the allied species in the shape of the head, pleural plates and abdominal chaetotaxy. The genitalia is typical. The basal plate is considerably dilated apically. The mesosomal plate is transverse. Parameres are very short structures. Proximal heads of parameres are greatly modified.

Female: The female is similar to the male. Vulvar plate is beset with 9 small setae on both sides.
**Holotype (male):** preantennal region 0.21×0.33 mm., hind head 0.20×0.41 mm., prothorax 0.89×0.32 mm., pterothorax 0.14×0.36 mm. and abdomen 0.99×0.59 mm.

**Allotype (female):** preantennal region 0.20×0.53 mm., hind head 0.22×0.45 mm prothorax 0.09×0.32 mm., pterothorax 0.18×0.36 mm. and abdomen 0.99×0.64 mm.

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**Text-figs. 110-117:** *Sturnidocoides salcini*, sp. nov. 110: Ventral and dorsal aspects of male, 111: genital armature of male, 112-114: different views of mesosomal plate, 115: paramere, 116: ventral and dorsal aspects of last abdominal segments of female, 117: genital plate of female showing vulvar chaetotaxy.

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**Chaetotaxy:**

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*Type host:* The Pied Chat—*Oenanthe picata* Blyth

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30. *Sturnidococcus atticus*, sp. nov. (Text-figs. 118—119)

In this species pterothorax is very strongly angulate posteriorly. Tergal plates well developed and almost run right across the segments. Pleural plates well built and characteristic.

*Holotype (female)*: preantraneous region 0.23 × 0.35 mm., hind head 0.27 × 0.49 mm., prothorax 0.09 × 0.20 mm., mesothorax 0.24 × 0.41 mm., and abdomen 0.69 × 0.60 mm.

*Type host*: The Western Red Spotted Blue Throat—*Cyanosylvia s. suecica* (Linn.)

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31. *Sturnidococcus capitis*, sp. nov. (Text figs. 120—128)

*Male*: This species is very hairy, with well formed approximated tergal plates. The male genitalia is with short and broad basal plate. The mesosomal plate and parameres are very characteristic as shown in the figure.
Female: It resembles the male. The pterothorax is angulate posteriorly whereas in male it is broadly convex on the abdominal segment.

Holotype (male): preantennal region 0.22 × 0.38 mm., hind head 0.29 × 0.55 mm., prothorax 0.09 × 0.36 mm., pterothorax 0.11 × 0.45 mm. and abdomen 0.76 × 0.64 mm.

Allotype (female): preantennal region 0.25 × 0.33 mm., hind head 0.30 × 0.41 mm. prothorax 0.09 × 0.33 mm., pterothorax 0.19 × 0.36 mm. and abdomen 0.74 × 0.51 mm.

Chaetotaxy:

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Type host: The Brown-backed Indian Robbin—*Saxicoloidea fulicata cambainensis* (Latham)

32. Sturnidoecus pastoris (Denny)


This is one of the most familiar species and was recorded from the Rosy Pastor [*Pastor roseus* (Linn.)]. The specimens referred to here were also collected from the type host.

33. Sturnidoecus sturni (Schrank)


This species was described from the Starling (*Sturnus vulgaris* Linn.) and the specimens before us were collected from the Himalayan Starling (*Sturnus vulgaris humei* Brooks).

34. Sturnidoecus affinis (Piaget)

*Docophorus affinis* Piaget, 1880, *Pediculines*, 67, pl 5, fig. 3.

The true host of this species is *Acridothere s fuscus javanicus* Cabanis. The specimens we are referring to this species were taken off the Common Indian Mynah (*Acridothere s t. tristis* Linn.). Further studies of this host will probably provide more data and clear the identity.

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35. *Sturnidocus bambou*, sp. nov. (Text-figs. 129—136)

**Male:** This species resembles *Sturnidocus affinis*, from which it can be easily separated by the general abdominal chaetotaxy, pleural plates and the male genitalia. In *Sturnidocus affinis* the parameres are almost twice as long as the mesosomal plate. In our specimens the parameres are short, squat and do not extend beyond the posterior margin of the mesosomal plate. The parameres of the two species also differ in the details of the proximal heads.

**Female:** The genital plate is very characteristic, with two sclerotised button-like structures in the middle.

**Holotype (male):** preantennal region 0.24 × 0.30 mm., hind head 0.20 × 0.43 mm., prothorax 0.09 × 0.22 mm., pterothorax 0.17 × 0.34 mm. and abdomen 0.63 × 0.45 mm.

**Allotype (female):** preantennal region 0.25 × 0.33 mm., hind head 0.28 × 0.49 mm., prothorax 0.09 × 0.26 mm., pterothorax 0.18 × 0.42 mm. and abdomen 0.78 × 0.68 mm.

**Type host:** The Bank Mynah—*Acridotheres ginginianus* (Lath.)

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36. *Deggecriella masumae*, sp. nov. (Text-figs. 137-143)

This species differs from other deggecriellids in the male genitalia and in the shape of the head. The basal plate is oblong and narrow, about seven or eight times as long as the parameres. The details of the mesosomal plates are very characteristic. The proximal heads of the parameres are specific.

**Holotype (male):** preantennal region 0.25×0.38 mm., hind head 0.24×0.41 mm., prothorax 0.10×0.25 mm., pterothorax 0.20×0.35 mm. and abdomen 1.01×0.54 mm.

**Allotype (female):** preantennal region 0.26×0.38 mm., hind head 0.26×0.42 mm., prothorax 0.10×0.25 mm., pterothorax 0.17×0.41 mm. and abdomen 1.27×0.54 mm.

**Type host:** The larger falcon—*Falco jugger* Gray.

Text-figs. 137-143: *Deggecriella masumae*, sp. nov.
137: Ventral and dorsal aspects of male,
138: genital armature of male, 139: two different views of mesosomal plate, 140: mandiblles, 142: ventral and dorsal aspects of last abdominal segments of female, 143: genital plate of female showing vulvar chaetotaxy.

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37. *Degeeriiella splendida*, sp. nov. (Text-figs. 144—151)

This species differs from the allied species in the shape of the head, abdominal chaetotaxy and male genitalia. The basal plate is about five times as long as the parameres. The parameres are short, but with well-developed proximal heads.

**Holotype (male):** preantenal region 0.23 × 0.32 mm., hind head 0.24 × 0.37 mm., prothorax 0.09 × 0.23 mm., pterothorax 0.14 × 0.35 mm., and abdomen 0.99 × 0.51 mm.

**Allotype (female):** preantenal region 0.23 × 0.35 mm., hind head 0.27 × 0.39 mm., prothorax 0.10 × 0.26 mm., pterothorax 0.16 × 0.35 mm. and abdomen 1.27 × 0.51 mm.

**Type-host:** The Himalayan Kestrel—*Cerchnois tinnunculus interstinctus* McClell.

**Text-figs. 144-151:** *Degeeriiella splendida*, sp. nov.  
38. Deggecriella beaufacies, sp. nov. (Text-figs. 152—155)

This species resembles Deggecriella masumae, sp. nov. from which it can be easily separated by the shape of the head. Male genitilia is very long and slender. The mesosomal plate is longer than broad. The tips of the parameres are highly sclerotised.

**Holotype (male):** pre antennal region 0.26 x 0.31 mm., hind head 0.23 x 0.36 mm., prothorax 0.09 x 0.22 mm., pterothorax 0.18 x 0.36 mm. and abdomen 1.01 x 0.49 mm.

**Allotype (female):** pre antennal region 0.26 x 0.35 mm., hind head 0.28 x 0.42 mm. prothorax 0.09 x 0.26 mm., pterothorax 0.49 x 0.45 mm. and abdomen 1.28 x 0.61 mm.

**Type host:** The White Eyed Buzzard Eagle—Butastur teesa (Frankl.)

39. Deggecriella vittata, (Ciebel)

Nirmus vittata Giebel, 1874, Insecta epizoa, 127,

This species was described from Milvus migrans migrans (Boddaert). Our specimens were collected from the Common Indian Pariah Kite (Milvus migrans govinda Sykes).

Text-figs. 152-158: Deggecriella beaufacies, sp. nov.


40. Strigophilus rostratus (Burmeister)

Docophorus rostratus Burmeister, 1838, Hambd. Ent., 2:427

It is one of the long known species and was described in 1838 from Tyto a. alba (Scopoli). Our specimens are from the Indian Barn Owl (Tyto alba stretens Hartert).

41. Strigophilus nudipes, (Piaget)

Docophorus nudipes Piaget, 1880, Pediculines, 26, pl. 1, fig. 6.

Piaget described this species from Asio f. flammus (Pontoppiden). The specimens referred to here were collected from the Long-eared European Owl (Asio otus otus "Indian J. Ent., 20")
42. Strigiphilus cursor (Burmeister)

*Docophorus cursor* Burmeister, 1838, *Handb. Ent.,* 2:426

This species from *Asio f. flammus* (Pontoppidan) was described earlier than the above species. A few specimens from *Asio otus otus* Linn. in our collection closely resemble this species.

43. Strigiphilus goniocercus (Eichler)


This is the *Nomen Novum* for *Docophorus heteroceros* Nitzsch, which was described from *Bubo b. bubo* (Linn.). We collected several specimens of this species from the Great Horned Owl (*Bubo bubo bengalensis* Franklin).

44. Strigiphilus strigis (Pontoppidan)

*Pediculus strigis* Pontoppidan, 1763, *Danske Atlas,* 1: 699, pl. 30

This species is probably the earliest louse described from the family Asionidae. The type host of this louse is *Bubo bubo bubo* (Linn.). We refer to this species the collection obtained from the Indian Horned Owl (*Bubo bubo bengalensis* Franklin).

45. Strigiphilus boomae, sp. nov. (Text figs 159-160)

This species differs from the allied forms in the shape of the head, distinct and considerably narrow clypeus, III appendiculate antennal segment, form of pterothorax and general abdominal chaetotaxy.

**Holotype (female):** preantennal region 0.27x0.39 mm., hind head 0.28x0.48 mm., prothorax 0.09x0.26 mm., pterothorax 0.20x0.45 mm. and abdomen 0.99x0.61 mm.

**Type host:** The Central Indian Collared Scop Owl—*Otus bekkemoena plumipes* (Hume).
46. Cuculicola concolor, sp. nov. (Text-figs. 161–168)


Holotype (male): preantennal region 0.22 × 0.31 mm, hind head 0.23 × 0.34 mm, prothorax 0.05 × 0.14 mm, pterothorax 0.18 × 0.32 mm, and abdomen 0.99 × 0.48 mm.

Allotype (female): preantennal region 0.21 × 0.31 mm, hind head 0.25 × 0.34 mm, prothorax 0.06 × 0.14 mm, pterothorax 0.18 × 0.32 mm, and abdomen 1.01 × 0.44 mm.

Type host: The Indian Pied Crested Cuckoo—Clamator j. jacobinus (Dodd.)


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47. *Cuculicola jamilae*, sp. nov. (Text-figs. 169—177)

In this species the shape of the head, pterothorax, general chaetotaxy and male genitalia are considerably distinct from other *Cuculicola*. The basal plate is long and broad, mesosomal plate transverse. Parameres are rod-like structures. Female genital plate sinuous posteriorly, beset with 8-9 small marginal setae.

**Holotype (male):** Preantennal region 0.16×0.20 mm., hind head 0.20×0.25 mm., prothorax 0.08×0.18 mm., pterothorax 0.14×0.22 mm. and abdomen 0.81×0.36 mm.

**Allotype (female):** Preantennal region 0.18×0.23 mm., hind head 0.18×0.28 mm., prothorax 0.09×0.18 mm., pterothorax 0.15×0.27 mm., abdomen 1.00×0.41 mm.

**Type host:** The Indian Koe!—*Eudynamus s. scolopaceus* (Linn.)

**Text-figs. 169-177**: *Cuculicola jamilae*, sp. nov.
169: Dorsal and ventral aspects of male,
48. *Cuculoecus distinctus*, sp. nov. (Text-figs. 178—181)

This species differs from the allied forms in the shape of the head, pleural plates, tergal plates, abdominal chaetotaxy and male genitalia. The male genitalia is elongate with subparallel sides. Mesosomal plate is rectangular, solid piece with typical central sclerotisation. Parameres are short, tooth-like structures with typical proximal heads.

**Holotype (male):** preantennal region 0.22×0.37 mm., hind head 0.25×0.40 mm. prothorax 0.06×0.22 mm., pterothorax 0.16×0.32 mm. and abdomen 0.62×0.49 mm.

**Allotype (female):** preantennal region 0.24×0.37 mm., hind head 0.26×0.44 mm., prothorax 0.11×0.22 mm., pterothorax 0.23×0.37 mm. and abdomen 0.71×0.57 mm.

**Type host:** The Indian Pied Crested Cuckoo—*Clamator j. jacobinus* (Bodd.)

Text-figs. 178-181: *Cuculoecus distinctus*, sp. nov.
178: Ventral and dorsal aspects of male.
179: Genital armature of male.
180: Median sclerite of mesosomal plate.
181: Paramere.

49. *Upupicola upupae* (Schrank)

*Pediculus upupae* Schrank, 1803, *Fauna Boica*, 189.

This is one of the most familiar species and was described from *Upupa epops epops* Linn. The present specimens were obtained from the Indian form of this species (*Upupa epops orientalis* Stuart Baker).
50. *Aleeceoecus annularis*, sp. nov. (Text figs. 182—186)

This species differs from other species of the genus from the ratio of the preantennal region and the hyaline area, shape of the head, pterothorax and abdominal chaetotaxy. Male genitalia with long feeble sclerotised basal plate. Endomeral plate heart-shaped with long tubular penis protruding beyond the posterior margin. Parameres well developed, short, sickle-shaped, with characteristically modified proximal heads.

**Holotype (male):** preantennal region $0.19 \times 0.32$ mm., hind head $0.27 \times 0.48$ mm., prothorax $0.09 \times 0.29$ mm., pterothorax $0.19 \times 0.43$ mm. and abdomen $0.77 \times 0.56$ mm.

**Allotype (female):** preantennal region $0.25 \times 0.35$ mm., hind head $0.27 \times 0.52$ mm., prothorax $0.09 \times 0.31$ mm., pterothorax $0.19 \times 0.47$ mm. and abdomen $1.01 \times 0.66$ mm.

**Type host:** The Egyptian White Breasted King Fisher—*Halcyon s. snyrnensis* Linn.

Text-figs. 182-186: *Aleeceoecus annularis*, sp. nov. 182: Ventral and dorsal aspect of male, 183: portion of the male, 184: tip of the genital armature of male, 185: portion of forehead showing characters, 186: dorsal and ventral aspects of the last abdominal segments.
51. *Alcedoidea nigrohia*, sp. nov. (Text-fig. 187)

In this species the body is very feebly sclerotised. The tergal and pleural plates are not well formed. The abdomen chaetotaxy is characterised.

**Holotype (male):** preantral region $0.30 \times 0.47$ mm, hind head $0.27 \times 0.67$ mm, prothorax $0.13 \times 0.34$ mm, pterothorax $0.26 \times 0.59$ mm and abdomen $0.89 \times 0.79$ mm.

**Allotype (female):** preantral region $0.30 \times 0.44$ mm, hind head $0.31 \times 0.58$ mm, prothorax $0.11 \times 0.29$ mm, pterothorax $0.22 \times 0.57$ mm, and abdomen $1.21 \times 0.81$ mm.

**Type host:** The Egyptian White Breasted King Fisher—*Halyocn s. smyrnensis* Linn.

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52. *Capraiella sabzak*, sp. nov. (Text figs. 188–194)

This species differs from other *Capraiella* in the shape of the head, pterothorax and abdominal chaetotaxy. The male genitalia is oblong, with elongate basal plate.

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Basal plate is about six times as long as the mesosoma plate. Mesosomal plate heart-shaped. Parameres arched, with typical proximal heads.

**Holotype (male):** preantennal region 0.31×0.41 mm., hind head 0.27×0.47 mm., prothorax 0.11×0.26 mm., pterothorax 0.17×0.42 mm. and abdomen 1.09×0.62 mm.

**Allotype (female):** preantennal region 0.31×0.41 mm., hind head 0.29×0.47 mm. prothorax 0.13×0.26 mm., pterothorax 0.14×0.41 mm. and abdomen 1.26×0.69 mm.

**Type-host:** The Indian Roller—*Coracias b. bengalensis* Linn.

53. *Capraeiella masumae*, sp. nov. (Text-fig. 195)

In this species the head is elongate, front is truncate and clypeal signature is squarish. The Tergal plates are with one row of long hairs, alternating with one small hair. Very profusely hairy. Pleural plates very feeble.

**Holotype (female):** preantennal region 0.29×0.42 mm., hind head 0.31×0.56 mm., prothorax 0.17×0.34 mm., pterothorax 0.29×0.49 mm. and abdomen 1.16×0.81 mm.

**Type host:** The Indian Roller—*Coracias b. bengalensis* Linn.

54. *Columbicola fulmeiki* Eichler


This species is recently described by Eichler (1942) from *Streptopelia chinensis tigrina* (Temminck). We refer to this species the specimens obtained from the Indian Spotted Dove—*Streptopelia chinensis suratensis* (Gmel.)

55. *Columbicola thezerosae*, sp. nov. (Text figs. 196—203)

This species differs from other *Columbicola* in the shape of the head, III antennal segment, general abdominal chaetotaxy and details of male genital armature. The parameres are delicate, long structures, with characteristic proximal heads.
Holotype (male): preantennal region 0.27×0.17 mm., hind head 0.20×0.20 mm., prothorax 0.09×0.15 mm., mesothorax 0.09×0.16 mm., metathorax 0.18×0.19 mm. and abdomen 1.16×0.22 mm.

Allotype (female): preantennal region 0.30×0.17 mm., hind head 0.23×0.25 mm., prothorax 0.11×0.18 mm., mesothorax 0.10×0.19 mm., metathorax 0.19×0.22 mm. and abdomen 1.56×0.36 mm.

Type host: The Indian Little Brown Dove—*Streptopelia senegalensis cambayensis* (Gmell.)

56. *Columbicola confusissimus* Eichler


Eichler (1947) proposed this name for *Columbicola b. baculus* from *Streptopelia decaocto decaocto* (Fridvaldszy). We obtained several representatives of this species from the type host.


Text-figs. 204-210: *Columbicola hopkinsi*, sp. nov. 204: dorsal aspect of male, 205: forehead enlarged to show flattened and protrusible spines and a recurved hair, 206: antenna of male, 207: mandible, 208: two views of mesosomal plate, 210: last abdominal segments of female.

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57. Cebu Nicola bapthiae, sp. nov. (Text-figs. 204–210)

This species has narrower but slightly longer Clypeal region. III antennal segment is very characteristic. Mesosomal plate heart-shaped. Parameres extremely delicate.

Holotype (male): preantennal region 0.27 × 0.17 mm., hind head 0.20 × 0.19 mm., prothorax 0.09 × 0.15 mm., mesothorax 0.08 × 0.19 mm., metathorax 0.17 × 0.22 mm., and abdomen 1.21 × 0.19 mm.

Allotype (female): preantennal region 0.29 × 0.19 mm., hind head 0.24 × 0.21 mm., prothorax 0.09 × 0.15 mm., mesothorax 0.09 × 0.19 mm., metathorax 0.14 × 0.22 mm., and abdomen 1.46 × 0.26 mm.

Type host: The Indian Red Turtle Dove—Oenopopelia t. tranquebarica (Herm)

58. Coloceras aegypticum (Kellogg et, Paine)

Goniocotes aegypticum Kellogg et Paine, 1911, Bull. Ent. Res., 2: 148, pl.5, fig.2-2a

This is one of the best known Goniocotes. It was described from Columba livia domestica Linn. Our specimens were obtained from the Indian Blue Rock Pigeon (Columba livia intermedia Strick).

59. Coloceras lativentre (Uchida)


Uchida (1916) gave this name to the specimens obtained from Streptopelia chinensis chinensis (Scopoli). We collected the representatives of this species from the Indian Spotted Dove (Streptopelia chinensis suratensis Gmelin).

60. Coloceras soforticus Eichler

Coloceras soforticus Eichler, 1950, Doriania, 1: 3, figs. 1-2.

The true host of this species is the Indian Ring Dove (Streptopelia decaocta decaocta Frivaldszky). The specimens referred to here were also collected from the type host.

61. Campanulotes compar (Burmeister)


This is very familiar Gonioletes from the Domestic Pigeon (Columba livia domestica Linn.). The specimens referred here were taken off the Indian Blue Rock Pigeon (Columba livia intermedia Strick).

62. Falcolipeurus gallivalerioi, Eichler

Falcolipeurus gallivalerioi Eichler, 1941, Schweiz Arch Tierheilk., 83: 180. fig. 1.

This species was described from the Himalayan Griffon Vulture (Gyps Himalayensis Hume). Our specimens were also obtained from the type host.

63. Craspidorrhynchus spatulatus (Giebel)

Docephorus spatulatus Giebel, 1874, Insecta Epizoa, 73.

Giebel described it from Milvus migrans migrans (Boddaert). Our specimens were obtained from the common Indian Pariah Kite (Milvus migrans goynthia Sykes).
64. **Craspedorhynchus chiquerae**, sp. nov. (Text-figs. 211-212)

The head is truncate. Clypeal signature squarish, confined to the presutural region. Tergal plates entire, feebly sclerotised. Pleural plates club-shaped, narrow posteriorly and broad anteriorly.

**Holotype** (male): presutural region 0.11 × 0.29 mm., preantennal region 0.30 × 0.40 mm., hind head 0.29 × 0.50 mm., prothorax 0.09 × 0.31 mm., pterothorax 0.19 × 0.49 mm. and abdomen 1.11 × 0.69 mm.

**Type host:** The Red Headed Merlin—*Fulco c. chiquera* Daudin

65. **Cardulleps scalaris** (Piaget)

*Nimus scalaris* Piaget, 1889, *Pediculinae*, 190, pl. 17, fig. 2

Several specimens of this species were collected from the type host the Ruff and Reeves [*Philomachus pugnax* (Linn.)].

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Text-figs. 211-212: *Craspedorhynchus chiquerae*, sp. nov. 211: Ventral and dorsal aspects of female, 212: portion of the last abdominal segments showing ventral chaetotaxy.


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66. Laniaceps holophasus (Burmeister)

This species was described from the Ruff and Reeves [*Philornis pusnax* (Linn)] and the specimens referred to here were also obtained from this bird.

67. Laniaceps hasainii, sp. nov. (Text-figs. 213-220)

This species is separated from the allied forms by the shape of the head, slender body with subparallel sides and male genitalia. The basal plate is short and narrow. Parameres are long, curved, rod-like structures, of the shape of a scythe blade. Meso- somal plate well formed, projecting as far as the tip of the parameres.

**Holotype (male):** preantennal region 0.16×0.16 mm., hind head 0.17×0.20 mm., prothorax 0.09×0.14 mm., pterothorax 0.15×0.17 mm. and abdomen 0.77×0.33 mm.

**Allotype (female):** preantennal region 0.14×0.16 mm., hind head 0.18×0.20 mm., prothorax 0.08×0.14 mm., pterothorax 0.15×0.17 mm. and abdomen 0.92×0.36 mm.

**Type host:** The Little Stint—*Erolia minuta minuta* Leist.

68. Quadraceps lotus (Nitzsch)

The type host of this species is Cream Coloured Courser (*Cursorius cursor cursor* (Latham)). We obtained several examples of this species from this bird shot in Lahore.

69. Quadraceps dasi Tandan

Several specimens of this species were collected from the Indian Red Wattled Lapwing (*Lobivenellus i. indicus* Bodd.).

70. Quadraceps semifissus (Nitzsch)

Several specimens of this species were obtained from the Black Winged Stilt [*Himantopus h. himantopus* (Linn.)].

71. Quadraceps hemichrous (Nitzsch)

The specimens of this species were collected from the Black Winged Stilt [*Himantopus h. himantopus* (Linn.)].

72. Quadraceps ochropi (Denny)

This species was described from the Green Sand Piper (*Tringa ochropus* Linn.). The specimens before us were also collected from the type host.
73. *Quadrecesis lahorensis*, sp. nov. (Text-figs. 221—226)

In this species the preantennal region is about as long as the hind head. Clypeal signature is large. Parameres are well developed, dagger-like structures with simple proximal heads.

**Holotype (male):** preantennal region 0.18×0.20 mm., hind head 0.17×0.28 mm., prothorax 0.09×0.18 mm., pterothorax 0.14×0.26 mm., and abdomen 0.73×0.38 mm.

**Allotype (female):** preantennal region 0.20×0.19 mm., hind head 0.19×0.25 mm., prothorax 0.09×0.16 mm., pterothorax 0.17×0.21 mm., and abdomen 1.01×0.33 mm.

**Type host:** The Ruff and Reeves—*Philomachus pugnax* Linn.

74. *Anaticola magnificus*, sp. nov. (Text-figs. 227—234)

This species differs from the allied forms in the shape of the head, III antennal segment and male genital armature. The blunt tubercular processes on the VIII abdominal sternite of female ear-shaped.

**Holotype (male):** preantennal region 0.26×0.27 mm., hind head 0.30×0.38 mm., prothorax 0.18×0.26 mm., pterothorax 0.42×0.38 mm., and abdomen 1.67×0.48 mm.

**Allotype (female):** preantennal region 0.26×0.27 mm., hind head 0.34×0.38 mm., prothorax 0.11×0.26 mm., pterothorax 0.45×0.38 mm., and abdomen 1.77×0.52 mm.

**Type host:** The Ruddy Sheldrake—*Cassarca ferruginea* (Vroeg.)

75. *Anaticola sordidus* (Giebel)


This species was recorded by Giebel (1866) from the Common Duck (*Anas crecca* Linn.). We obtained several examples of this species from the same host.

76. *Anaticola fuligulae* (T. Muller)


The type host of this species is the Common Pochard [*Nyroca ferina* (Linn)]. The specimens referred to were obtained from the type host.

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77. Anatoecus diffinis (Cummings)


Cummings described it from the Common Pochard [Aythya ferina (Linn.)]. Our collection was also obtained from the Dun Bird.

78. Anatoecus regina, sp. nov. (Text-figs. 235—237)

This species resembles Anatoecus icterodes (Nitzsch) from which it can be separated by the pterothoracic chaetotaxy and shape of the head.

Holotype (female): prescutural region 0.11 x 0.17 mm., preantennal region 0.24 x 0.31 mm., hind head 0.22 x 0.43 mm., prothorax 0.11 x 0.27 mm., pterothorax 0.13 x 0.37 mm. and abdomen 0.77 x 0.55 mm.

Type host: The Ruddy Sheldrake—Casarca ferruginea (Vroeg).

79. Iulifrons ferrugineus (Linn.)


It is one of the best known louse from the Coot (Fulica a. atra Linn.). We obtained several specimens from the type host.


Text-figs. 235-237: Anatoecus regina, sp. nov. 235: Ventral and dorsal aspects of female, 236: portion of the head showing heavy spines, 237: last abdominal segments enlarged.
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