NOTES AND EXHIBITS

Arthropods collected from Birds of the Punjab

INTRODUCTION

Wild as well as domesticated birds are attacked by ectoparasites belonging to half a dozen different groups which cause them harm either by communicating disease or by direct injury. Constant irritation caused by crawling or biting, gnawing or puncturing by these pests, intensified by the birds scratching themselves, brings about nervousness and restlessness, loss of sleep, aversion to feeding and a general run down condition, thereby rendering them more susceptible to various diseases. In the course of an investigation of the food-habits of birds undertaken at the Agricultural College, Lyallpur, several of these parasites were incidentally collected by the author at the suggestion of Prof. M. Afzal Husain. This report is based on a study of that collection.

Acarine Parasites.—Ticks and mites are perhaps the most destructive group of ecto-parasites attacking birds. They are responsible for the skin irritation known as itch or scabies and produce intense prurience or insatiable desire for scratching. Some of them are known also to transmit fatal diseases.

Mites.—These acarids are small, greyish or dark-red, pyriform, ovate or round creatures, with eight slender, jointed legs. Their normal food is the blood of the host, which they draw by means of their sharp piercing mouth-parts. Continuous loss of blood sometimes proves fatal. The victim is not killed outright, but slowly dies of exhaustion. According to their habits, they are divisible into two groups, viz., (1) those, in which only certain stages of the life-history are passed on the host, or only a part of the day is spent on the host, i.e., temporary parasites; and (2) those, which live continuously on the host, i.e., permanent parasites.

The temporary parasites swarm over the roosting birds during night and suck blood. A flock of fowls, infested with these mites, is badly run down, without theoulterers being aware of the cause of the trouble. The infested birds become droopy, pale and listless and in severe cases stop laying eggs. The chickens and brooding hens often die. The Tropical Poultry Mites, Liponyssus bursa (Berlese) and Liponyssus sylvianum (C. & F) and the Common Poultry or Roost Mite [Dermanyssus gallinae (Linn.)] are common examples of this type and were collected from various places in the Punjab. The first two species are also suspected to be transmitters of 'Fowl Spirochaetosis'.

The Scaly Leg Mite (Cnemidocoptes mutans R & L) and the Depluming Mite (Cnemidocoptes gallinae Rt.), are commonly distributed in the hilly and submontans regions of the old province of Punjab. These mites are minute, round creatures which excavate horizontal and tortuous burrows in the skin, beneath the scalee on legs and at the base of feathers and feed and reproduce in the tunnels so made. These are permanent parasites.

With best compliments,
for criticism and favour of exchange.
From
M. Atiq-ur-Rahman Ansari
The following different type of mites (*Neoschongastia* sp.: Trombiculidae) was collected from the Yellow-billed Magpie—*Urocissa f. flavirostris* (Blyth); the White-Cheeked Bulbul—*Molpastes l. leucogenys* (Gray), the Himalayan Whistling Thrush—*Myophonus coerulescens temminckii* (Vigors); the Himalayan Starling—*Sturnus vulgaris humili* Brooks; the Common Myna—*Acridootheres tristis* (Linn.); the Common Indian House Sparrow—*Passer domesticus indicus* Jard. and Selby.; the Pariah Kite—*Milvus migrans govinda* Sykes; the Indian Ring Dove—*Streptopelia d. decaocta* (Frival.); the Common Domestic Fowl—*Gallus g. domesticus* Linn.; the Black-Winged Stilt—*Himantopus h. himantopus* (Linn.) and the Green Sandpiper—*Tringa ochropus* Linn. The specific identification of these forms is not yet available to me. Some of the species of *Neoschongastia* probably transmit ‘Scrub Typhus’ in human beings.

**Ticks.**—Numerous specimens of the Fowl Tick or Blue Bug—*Argas (persicus Oken) minutus* Koch were collected from the House Hen (Amritsar, Dharwad, Gurdaspur, Bijnor, Delhi, Lahore, Lyallpur, Montgomery). They are stoutly built, eight-legged, oval-bodied creatures. The adults are nocturnal feeders, while the juvenile stages live on the host. Severely infested birds exhibit weakness of legs, drooping wings, paleness of combs and wattles, and cessation of egg laying, and finally, on account of loss of blood, they may die. Moreover the ticks transmit a fatal disease—‘Fowl Spirochaetosis’. Several hundreds of these ticks were collected from a deserted poultry farm in Lahore on the 20th May 1948. The last tick of this collection died on the 3rd January 1950, surviving starvation for about 595 days in the laboratory, and it could not be ascertained how long the house had remained deserted, prior to collection.

**Insect Parasites**

*Hippoboscidae.*—The ‘louse flies’ are blood sucking, degenerate, louse-like, winged or wingless flies, parasitic on mammals and birds. Their structure is greatly modified in accordance with an ecto-parasitic life. The body is dorso-ventrally flattened, polished and of tough consistency, a feature facilitating their movements among feathers. They feed by thrusting their sharp mouth-parts into the skin and suck blood. Their legs are inserted far apart on the sternum, the claws are highly developed and toothed or spined for enabling them to cling to the host. They cause their hosts much physical annoyance. Wanch (1910, *Ent. Rdschr.*, 27, p. 127) gives a lively account of the type of annoyance and embarrassment caused to the birds by these flies. These parasites do not ordinarily leave the host until it dies. Two ‘louse flies’, namely *Pseudolynchia canariensis* (Macq.) and *Ornithoica* sp. were collected from the Rock Pigeon—*Columba livia intermedia* Strick and the Bank Myna—*Acridootheres ginginianus* (Lath.) respectively. An interesting example of phoresy between these Hippoboscids and Mallophaga has also been observed (Atiquur Rahman Ansari, 1946, *Bombay Nat. His. Soc.*, 46 p. 509–16).

**Coleoptera.**—*Tribolium castaneum* Hbst. (Tenebrionidae) and *Sitodrepa panicea* Linn. (Anobiidae) were collected from the Common Pariah Kite—*Milvus migrans*
govinda Sykes. The presence of these insect pests of stored products on feathery vertebrates is not accidental because certain of the Dermestidae are known to infest bird and rodent nests (Hinton, 1943). The larvae of the Dermestids have been recorded injuring and even killing young birds. The larvae of the Black Carpet Beetle—Attatgenus piceus (Oliv.) have been recorded breeding in chimppunk nests in California, and in Germany the sparrow nests are the chief sources of household infestation of this pest (Hinton, 1943, Proc. Roy. ent. Soc., London, 18, p. 354). In rare instances the larvae of this stored-product pest have been recorded to cause physical discomfort to human beings by their presence in the nasal passages and sinuses (Ligget, 1931, J. Amer. Med. Assoc. 26, p. 157). The larvae of both Dermestes bicolor Fab. and D. lardarius Linn. are not uncommon in pigeon lofts in Germany where they have been recorded attacking and even killing young pigeons, ducklings and chickens by boring into their wings (Hinton, 1943). Spector (1943, Ent. News, 54, p. 224) used feather baits to capture beetles (Scarabaeidae).

The Drug Store Beetle—Sitodrepa panicea, feeds practically on all dried plant and animal products and its presence in a kite’s nest is not accidental. The presence of Tribolium castaneum still awaits explanation.

Psocids.—These are small or minute, gray, whitish or brownish insects with rather soft, stout bodies and long antennae, and in some cases furnished with delicate membranous wings. They are usually seen among books and papers. The flour meal, various cereal products, collections of insects and other dried natural history specimens are their frequent haunts. Many occur outdoors, on tree trunks, under bark, in birds’ nests, etc. Several specimens belonging to this group were obtained from the Himalayan Starling—Sturnus vulgaris humii Brooks and the Common Teal—Nettion c. crecca (Linn.).

Mallophaga.—About one hundred and twenty-three species of Mallophaga belonging to fifty-four genera representing fifty-five species (22 genera) of Amblycera and sixty-eight species (32 genera) of Ischnocera were recorded from the Punjab. A systematic account of these is being published elsewhere [Proc. nat. Inst. Sci., 1946, 12, p. 253, and 1950, 16, in press].

During these investigations, it was noticed that more individuals, are usually free from parasites among “rare birds than among the very common birds. I actually failed to find any species of Mallophaga upon any of the following birds occurring but rarely in Lyallpur: (1) Punjab Gray-Tit (Parus major planorum Hart.: Paridae), (2) Northern Indian Stone Chat (Saxicola caprata bicolor Syk.: Turdidae), (3) Strickland’s Chat (Oenanthe opistholecuca Stricke: Turdidae), (4) Isabelline Chat (Oenanthe isabellina Tem. and Sch.: Turdidae), (5) Indian Paradise Bird (Tchirrea p. paradisi Linn.: Musicipaidae), (6) Baybacked Shrike (Lanius vittatus Valenc: Laniidae), (7) Indian Common Wood-Shrike (Tephorodornis p. pondiceriana Gmel.: Laniidae), (8) Indian Tailor-Bird (Orthotomus s. suturis Forst.: Sylviidae, (9) Green Willow-Warbler (Acanthopneuste n. nitidus Blyth: Sylviidae),

"Indian J. Ent., 11"
(10) Common Swallow (Hirundo r. rustica Linn.: Hirundinidae), (11) Indian Wire-tailed Swallow (Hirundo smithii filifera Stephens: Hirundinidae), (12) Ashy-Crowned Finch-Lark (Pyrhrulauda grisea Scop.: Alaudidae), (13) Indian Purple Sunbird Leptocoma a. asiatica Lath.: Nectarinidae), (14) European Wyneck (Lynx t. torquilla Linn.: Picidae), (15) Northern Crow Pheasant or Common Coucal (Centropus s. sinensis Steph.: Cuculidae), (16) Eastern Steppe-Eagle (Aquila n. nipalensis Hodg.: Falconidae), (17) Indian Shikra (Asturadius dussumieri Temm., Falconidae), (18) Northern Besra Sparrow-Hawk (Accipiter virgatus affinis Hodg.: Falconidae), (19) Indian Little Button-Quail (Turnix sylvatica dussumieri Temm.: Turnicidae), (20) Chinese Little Ringed Plover (Charadrius d. dubius Scop.: Charadriidae) and (21) Night Heron (Nycticorax n. nycticorax, Linn.: Ardeidae). The number of individuals examined in each of the aforesaid cases was very small indeed (4–6) and it is extremely probable that some of these negative findings may have to be modified when investigated further.

The Mallophaga are wingless, dorso-ventrally flattened, ectoparasites with large broad head and filiform and exposed or capitate and concealed antennae. The mouth parts are of the biting type. These insects attach their eggs to feathers and live continuously on their hosts, generation after generation, never leaving them except during actual contact between birds, for instance during copulation, brooding and huddling together on perches, when these parasites migrate from one bird to another. These lice, unlike human lice, feed upon dry skin, parts of feathers, and clots of blood and their injury is largely due to irritation or itching caused by the crawling of the insect on the body of the host and the persistent nibbling and gnawing of the skin. The bruises caused may become infected with pathogenic organisms with serious results. The Common Poultry Louse—Lipeurus caponis Linn. is suspected to transmit the ‘Depluming Disease’ in poultry (Kaup, 1920). Harrison (1931) recorded an instance of a Jay which was rendered flightless by depluming lice and Dutton (1920) referred to a biting louse (Menopon sp.) of Cylpeus affinis as the intermediary host of the Filarial worm—Filaria cyspsi Th.

It has been observed, that Mallophagan parasites of different birds are quite distinct and constitute a well-defined group, and in most cases have only one true host. This character is of very great value and throws ample light on ‘bird phylogeny’.

Siphonaptera.—Several specimens of the Stick-tight Flea—Echidnophaga gallinacea (West) were collected from the House Hen—Gallus g. domesticus Linn. It frequently occurs in immense numbers and is one of the most annoying pests of poultry. It is a small, dark coloured flea and also attacks dogs, cats, rabbits, ducks, turkeys, guinea-fowl and man.

Miscellaneous.—I have not come across any bugs (Cimicidae) attacking birds, though they are common in human dwellings in Sialkot, Lahore and Rawalpindi.

A caterpillar was also collected from the Common pea-fowl—Pavo cristatus Linn. I regarded it a trespasser, but Dr. M. S. Mani, Department of Zoology,
St. John's College, Agra, informs me that he has also observed similar caterpillars and they are suspected to feed upon plumage. Denny (1842) also recorded an instance of a large white maggot, which was found in the large quill feathers of the Harpy Eagle—*Harpia destructor*.

The losses caused to poultry-men, directly or indirectly, by the parasites mentioned above, if carefully computed, may exceed a million rupees. These pests deserve a thorough study in respect of their control, and the organisation of a 'united front' is apparently needed if a growing menace to the poultry industry is desired to be removed. The existing state of affairs is serious and calls for the united effort and close co-operation of Entomologists, Parasitologists and Physicians.

M. ATIQUR RAHMAN ANSARI,
Institute of Hygiene and Preventive Medicine,
6. Bird-Wood Road, Lahore.

---

The Indian House-sparrow, *Passer domesticus indicus* Jard. & Selby, as a serious orchard and wheat pest in Baluchistan

The writer observed the house sparrow as a serious pest in orchards and wheat fields when he visited Baluchistan during the summer of 1943 to investigate a new wheat pest, *Eurygaster maura* Linn. Thousands of sparrows are commonly found visiting the fruit trees especially when peaches, apples, pears, plums, nectarines, grapes, mulberries, etc., get into the ripening stage during the period—April to September. Raw or unripe fruits such as pears and peaches, which are usually hard in the beginning, are temporarily free from their attack, but once they get ripe, they too are at the mercy of these birds. Ripe peaches, apricots and cherries, which are generally soft, are much more commonly attacked than the rest. Apart from the fact that these birds indirectly do good to the fruit-grower by clearing away from his gardens many kinds of insects, which are likely to cause serious damage to fruits and fruit-trees, they are equally responsible for the destruction of a large number of ripe fruits named above, as well as vegetables and flowers. The damaged products are rendered unsuitable for marketing.

Among the cereals attacked, wheat is the foremost. The pest begins to attack the ears from the time they set (March-April) and continues its attentions throughout the harvesting and threshing season (June-July).

These birds breed twice in the year, i.e., in spring and autumn. They generally build shapeless nests with miscellaneous collections of materials, *viz.*, straw, wool-rags, etc. In each nest 4-6 eggs are generally found in the season. The nests are seldom found on fruit trees, but are often noticeable on willows (*Salix* spp.), growing along the margins of the gardens. The most favourite places for nest-building are the wheat-stubbles left in harvested fields, sides of *karézes* (under-

---

"Indian J. Ent., 11"