

A NEW CHICKEN LOUSE (MALLOPHAGA:
PHILOPTERIDÆ) FROM THE
CANAL ZONE

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Three lots of biting lice collected from the heads of domestic chickens in the Canal Zone were found to include an undescribed species with a peculiar, sharply angulated head. These lice are described below as representing a new species. It was surprising to find the new louse and the tropical head louse, *Lipeurus tropicalis* Peters,² in each of these three lots of material. The common chicken head louse, *L. heterographus* Nitzsch, found in many parts of the world, was not present. We have previously found that where the tropical head louse occurs it entirely replaces the common head louse and is the only louse found on the heads of the chickens, so this is an unusual record.

Lipeurus angularis n. sp.

Described from 13 individuals collected from the heads of domestic chickens in the Canal Zone as follows: One male and two females from Pedro Miguel, Canal Zone, 1931, by L. H. Dunn (Bishopp No. 18437), from chickens in the market; one male and six females from Mt. Hope, Canal Zone, May 15, 1934, by F. C. Bishopp (Bishopp No. 22104), from chickens in a farmer's flock; and two males and one female from Balboa, Canal Zone, May 19, 1934, by F. C. Bishopp (Bishopp No. 22105), from chickens in a poultry dealer's flock, the chickens having been raised in nearby Panama.

DESCRIPTION OF MALE

Head about three-fourths as wide as long, angulated in front, slightly wider across temples than before trabeculae. Temples broadly rounded, with one long and one very short seta on each side. Posterior edge of head only slightly concave. Eyes clear and protruding, with a rather short dorsal seta. Mandibles with expanded base and rather unusual size. Color light brown, with dark brown lateral borders, fading to almost colorless at forward edge of head. Clypeal suture with peculiar fold-like rounded points. Antennae about as long as head is wide, reaching, if extended backwards, to posterior edge of prothorax. First

¹Contribution from the Division of Insects Affecting Man and Animals, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

²Peters, H. S. *Entomological News*, Vol. XLII (1931), pp. 195-199.

segment enlarged, slightly longer than segments 3, 4, and 5 combined, and bearing no process. Segment 2 about half as long as segment 1; segment 3 extended into a dorsal inwardly projecting hook, as shown in Fig. 1a.

Thorax about three-fifths as long as the head, pale brown in color with dark brown lateral margins. Prothorax about two-thirds as wide as head, and about twice as wide as long, the sides only slightly diverging

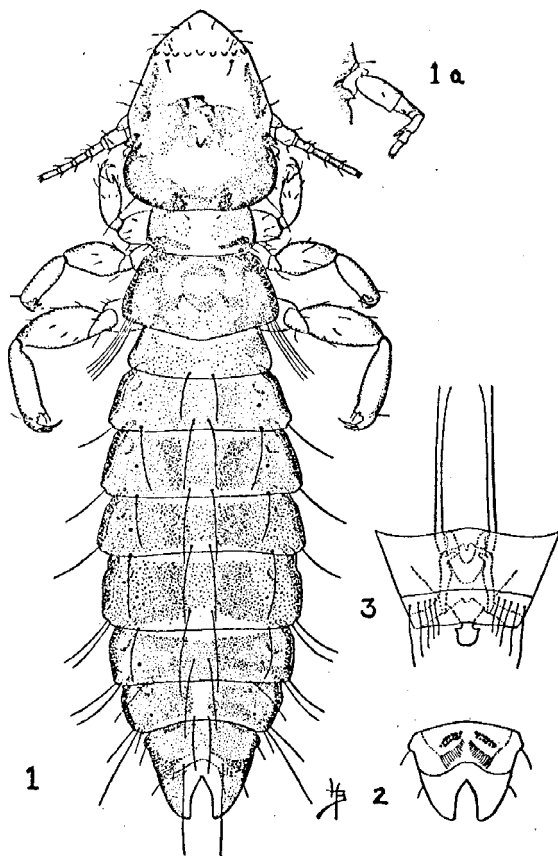


Fig. 1. *Lipceurus angularis* n. sp. Female, dorsal, $\times 38$.
 Fig. 1a. Antenna of Male, $\times 38$.
 Fig. 2. Posterior part of female abdomen, ventral, $\times 38$.
 Fig. 3. Male genitalia, dorsal, $\times 76$.

posteriorly, the posterior edge slightly convex and with a seta at each latero-posterior rounded angle. Pterothorax slightly broader than head and half again as long as prothorax, sides diverging posteriorly, with rounded latero-posterior angles. Posterior edge slightly angulated on the abdomen, with a group of four long setae in a cleared area near each side. Legs pale with brown borders. Fore legs short, with the coxae

narrowly separated; middle and hind legs longer, hind legs longest and with widely separated coxae.

Abdomen of nine segments, elongate, widest at fourth segment, which is about one-third wider than the head. Ninth segment about three-fifths as wide as segment 8, with posterior edge slightly concave. From the sternum of the eighth segment there is a peculiar heavily sclerotized ball-like projection, studded with small spines on its surface, extending ventrally and posteriorly to the ninth segment, appearing as part of the genitalia and possibly functioning with it in copulation. Genitalia distinctive, edges of basal plate thickened and appearing as two rods extending forward into the sixth segment, endomerall plate horse-shoe-shaped, parameres separated and lying almost parallel, as shown in Fig. 3. Dorsal setae about the same as shown on the female in Fig. 1 and in Fig. 3. Light brown in color with dark brown pleurites forming a lateral band somewhat interrupted at the sutures. Lighter brown median markings, a clear space at the sutures, and a small clear area inside the lateral bands in which the small spiracles are situated on segments 2 to 7 inclusive.

DESCRIPTION OF FEMALE.

Head slightly larger than in male. Antennae reaching, if extended backwards, slightly beyond posterior edge of head. Segment 1 swollen but equal in length to segment 2; segments 3 and 4 equal but shorter than 1 or 2; segment 5 slightly longer than 3 or 4.

Thorax and legs as in the male, except slightly larger.

Abdomen slightly longer and broader than that of the male. As shown in Fig. 1. Segment 9 deeply bilobed and bearing two combs of short setae ventrally, as shown in Fig. 2.

Average measurements in mm.

	Male Length	Female Length
Head.....	0.63	0.70
Thorax.....	.40	.45
Abdomen.....	1.22	2.62
Totals.....	2.25	2.77

Type Host.—*Gallus domesticus*, chicken.

Type Locality.—Balboa, Canal Zone.

Type Slide.—Cat. No. 50787, U. S. National Museum.

The *holotype* male and the *allotype* female on the type slide were collected from chicken at the type locality on May 19, 1934, by F. C. Bishopp (Bishopp No. 22105) and are deposited in the U. S. National Museum. The *paratypes* are in the collection of the Bureau of Entomology and Plant Quarantine.

This species is very unusual in the sharply angulated front of the head, the very peculiar ball-like projection from the eighth sternite of the male, and the very deeply bilobed ninth abdominal segment of the female. This bilobed segment may

function in some way with the ball-like projection of the male during copulation.

L. angularis is easily distinguished from other lice found on the chicken. The head is more pointed and the size is smaller than in *L. tropicalis*, which is found commonly on the chickens in many tropical countries. It is also easily distinguished from the common head louse, *L. heterographus*, by the angulated front, the genitalia, and the posterior part of the female abdomen.

NOTE.—Since sending this paper to the editor I have received the following paper: "On a New Mallophaga (*Lipeurus denticlypeus* n. sp.) From the Formosan Fowl," by Masaatsu Sugimoto, from "Taiwan no Chikusan" (Animal Industry in Formosa), Vol. II, December, 1934. The description of this new species is written entirely in the Japanese language. Sugimoto's *L. denticlypeus* appears to be very close to my *L. angularis* but is slightly larger in size. It will be necessary to compare specimens of the two species to determine whether or not they are the same. It is quite interesting to find such similar lice on the heads of domestic fowls on opposite sides of the world.—H. S. P.

Biology for Today

High School teachers of Biology will do well to acquaint themselves with this new text in the field. It was written, according to the author's statements, after long experience and considerable study in the mechanics of textbook composition. The discussions are about equally divided as to plant and animal material. The style is simple. The non-technical vocabulary is limited largely to the "seven-thousand level" of Thorndyke's word list. There is a conscious effort to present an analysis of the scientific method of procedure and thought, and to stimulate the student to follow it in working with problematic situations as presented in the text and illustrations. Various biological principles are stated and labelled as such, and the student is asked to state them from time to time for himself. The student is asked to state hypotheses relative to certain situations and then to test these in various ways.

Aside from a few unfortunate instances, the book is relatively free from teleological statements. The chapters on behavior, on health and hygiene, on the conservation of natural resources and wild life, and Biology for leisure time, are especially commendable.

A work book and a series of objective tests accompany the text.

—J. W. PRICE.

Biology for Today, by Francis D. Curtis, Otis W. Caldwell, and Nina Henry Sherman. xvi+692 pp. Boston, Ginn & Co., 1934.