A PREVIOUSLY UNDESCRIBED SPECIES OF *MENACANTHUS* (Mallophaga: Menoponidae) FROM BOBWHITE QUAIL[1]

J. S. WISEMAN
State Department of Health, Austin, Texas

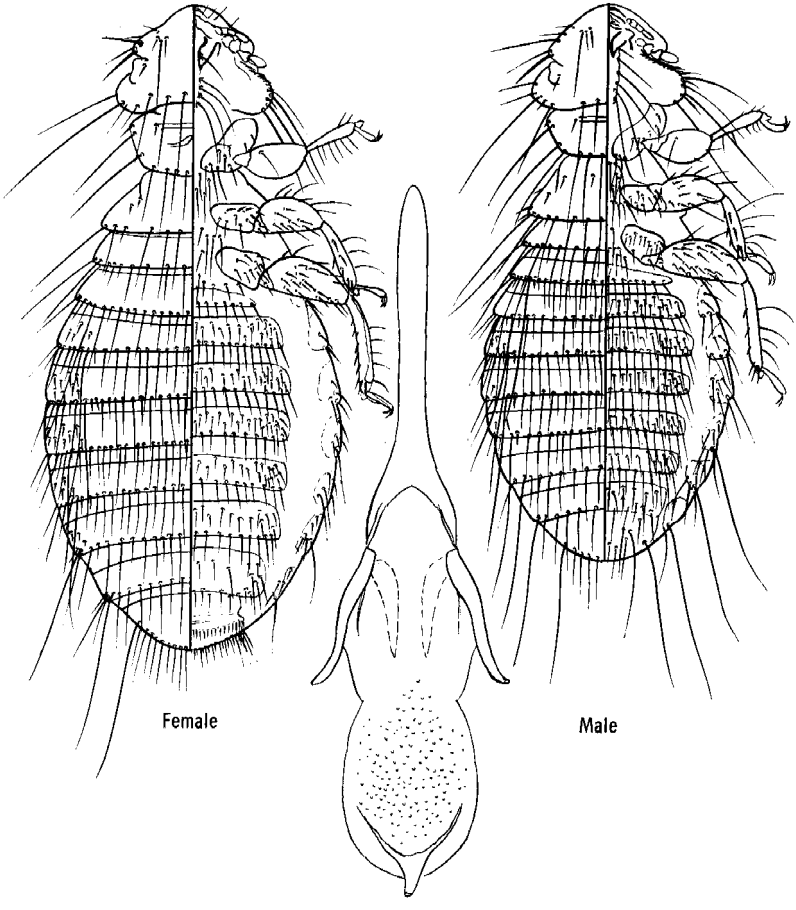
ABSTRACT

Menacanthus **pricei** n. sp. from the Bobwhite quail in Texas, Oklahoma, Mississippi, and North Carolina is described and illustrated.

In North America north of Mexico the genus *Menacanthus* Neumann, 1912, is known from hosts belonging to the avian orders Galliformes, Piciformes, and Passeriformes. Emerson (1964) lists 30 species of *Menacanthus* from this area; 18 of these have passeriform type hosts, four galliform type hosts, three piciform type hosts and, for five species, the type host is unknown. Dr. Emerson states that a complete review of the genus would probably reduce some of the presently recognized forms to synonyms as well as revealing that additional, Old World, species also occur in North America. Hopkins and Clay (1952) gave the number of known world species of *Menacanthus* as 114 and, in Additions and Corrections to the Check-List of Mallophaga (1953, 1955), listed an additional 18 species. This total (132) does not include *M. aurocapillus* Carriker 1958.

A new species of *Menacanthus*, taken from Bobwhite Quail in Texas, Oklahoma, Mississippi, and North Carolina, is herewith described and illustrated. This louse has been encountered by earlier workers but remained undescribed. M. A. Price, for example, found it on Bobwhite Quail in Brazos and Navasota counties, Texas, in 1949–50 and B. G. Hightower and R. B. Eads recovered it from this host in Zavala County, Texas, in 1951. Emerson (1951) recorded it from *Colinus v. virginianus* collected in Oklahoma. Peters (1936) listed *Menacanthus* sp. from Eastern Bobwhite collected in Maryland, Ohio, and Virginia, and Parmalee (1952) reported *Menacanthus* sp. in a study of Bobwhite Quail in Brazos, Grimes, and Navasota counties, Texas, with the observation that it comprised the least percentage of the four mallophagan species parasitizing this host, the others being, in decreasing order of abundance, *Goniodes ortygis* Denny, 1842, *Oxylipeurus clavatus* (McGregor, 1917), and *Colincola numidiana* (Denny, 1842). Lehman (1953) and Hightower et al. (1953) noted the same relative abundance of species on Bobwhite Quail collected in Kleberg and Willacy counties, Texas. Wallmo (1956) reported a *Menacanthus* sp. from Scaled Quail, *Callipepla squamata* (Vigors), collected in the Trans-Pecos region of Texas. I have not examined the specimens referred to by Peters and Wallmo and cannot assert that they are of the species to which this paper is devoted.

[1] Accepted for publication May 15, 1967.



Menacanthus pricei n. sp. Plate I

In a study of the dynamics of the Bobwhite Quail in the West Texas Rolling Plains, Matador Wildlife Management Area, Cottle County, Texas, conducted from June 1961 to April 1962 by the then Texas Game and Fish Commission, I examined 52 healthy adult Bobwhite Quail for ectoparasites. A total of 372 chewing lice were found, viz., 151 *O. clavatus* on 33 birds; 141 *G. ortygis* on 40; 55 *C. numidianus* on 17, and 25 *Menacanthus* sp. on 21. Four of the quail had no Mallophaga and only two were parasitized by all four species. Of the 21 birds that yielded *Menacanthus* sp., 12 had only immature forms.

Menacanthus **pricei**, sp. n

MALE. Length 1.74 mm., length of head 0.31 mm., width across temples 0.53 mm., greatest abdominal width 0.74 mm. Shape, chaetotaxy, and genitalia as illustrated. FEMALE. Length 2.19 mm., length of head 0.34 mm., width across temples 0.59 mm., greatest abdominal width 0.99 mm. Shape and chaetotaxy as illustrated.

The male genital apparatus is not heavily sclerotized; basal plate only moderately long, narrow, of nearly equal width throughout except for characteristic posterior widening; paramera prominent and well developed, long, gently undulate, of near equal width throughout their length except near apices which are pointed and directed somewhat laterally; prepucial sac large, beset with numerous small teeth and, in mounted specimens, frequently extruded well beyond posterior margin of abdomen.

Type Host: The Bobwhite Quail, *Colinus virginianus* (L.), Galliformes:Phasianidae. According to the A.O.U. Checklist (1957), five subspecies of *C. virginianus* occur in North America north of Mexico.

Type Material: Holotype male and allotype female taken from *C. virginianus* ssp. undetermined, prob. *texanus*, by B. G. Hightower in Zavala County, Texas, February 7, 1951, and mounted in balsam on individual slides. Paratypes consisting of five male and 14 female specimens mounted in balsam on 17 slides and taken from the type host collected in Zavala and Kleberg counties, Texas, (February 7, 1951; January 12, 1951), by B. G. Hightower; by K. C. Emerson in Oklahoma (February 10, 1945); by E. W. Stafford in Mississippi (December 12, 1937); by C. S. Brimley in North Carolina (February 18, 1897); and by myself in Cottle County, Texas (October 23, 1961). The holotype and allotype will be deposited in the U. S. National Museum; paratypes in the British Museum (Natural History) and in the collections of K. C. Emerson and the author.

I am grateful to C. J. Stojanovich, National Communicable Disease center, Atlanta, Georgia, for preparation of illustrations accompanying this description and to K. C. Emerson for furnishing paratypes from Oklahoma, Mississippi, and North Carolina. This species is named for M. A. Price, Associate Professor of Entomology at Texas A & M University who has contributed in many ways towards a better knowledge of Texan ectoparasites.

LITERATURE CITED

American Ornithologists' Union. 1957. Check-list of North American birds. 5th ed. American Ornithologists' Union. Ithaca, N. Y. 691 p.

Emerson, K. C. 1951. A list of Mallophaga from gallinaceous birds of North America. J. Wildl. Manag. 15(2):193–195.

———. 1964. Checklist of the Mallophaga of North America (North of Mexico) Part II, Suborder Amblycera. Dugway Proving Ground, Dugway, Utah. 104 p.

Hightower, B. G., Lehman, V. W., and R. B. Eads. 1953. Ectoparasites from mammals and birds on a quail preserve. J. Mammal. 34(2):368–271.

Hopkins, G. H. E., and Clay, T. 1952. A checklist of the genera and species of Mallophaga. Brit. Mus. (Nat. Hist.). London. 362 p.
———. 1953. Additions and corrections to the check list of Mallophaga. Ann. Mag. Natur. Hist., Ser. 12, VI, 434–448.
———. 1955. Ibid., Ser. 12, VIII, 177–190.
Lehman, V. W. 1953. Bobwhite population fluctuations and vitamin A. Trans. 18th North Am. Wildl. Manag. Inst., Washington, D. C. pp. 229–235.
Parmalee, P. W. 1952. Ecto- and endoparasites on the bobwhite: their numbers, species, and possible importance in the health and vigor of quail. Trans. 17th North Am. Wildl. Conf., Wildl. Manag. Inst., Washington, D. C. Pp. 174–187.
Peters, H. S. 1936. A list of external parasites from birds of the eastern part of the United States. Bird Banding 7(1):9–27.
Wallmo, O. C. 1956. Ecology of scaled quail in west Texas. Mimeographed, Texas Game and Fish Commission, Austin, Texas. 2 p.

A MALE *CORYDALUS CORNUTUS* (Neuroptera: Corydalidae) WITH ANTENNAL AND TARSAL TRIPLICATED ANOMALIES[1]

RICHARD J. ELZINGA[2]

ABSTRACT

External and internal structure of two triplicated appendages on a male dobsonfly were studied. Injury, resulting in incompletely severed appendages with subsequent production of two wound surfaces, is the probable explanation for the anomalies.

During the summer of 1962, an adult male dobsonfly with triplicated antennal and tarsal anomalies was collected in Manhattan, Kansas by Dr. Charles W. Pitts of the Department of Entomology, Kansas State University. Specimens with triplicated appendages, although rarely observed, have been described with increasing frequency in other insect orders, but none has previously been recorded from Corydalidae. Moreover, this neuropteran insect possessed not one but two such anomalies. Both were on the right side of the body; one was the antenna and the other the hind leg.

Antenna (Figs. 1, 2). This anomaly was of special interest because a completely bifurcated condition occurred at the base, resulting in two independent appendages within a single enlarged socket (Fig. 2). Both were movable and derived muscles (promotors and retractors) for each proximal segment from the tentorium. The first appendage was a normal antenna, at least in external appearance, size, musculature, and tracheation (Kelsey, 1954).

[1] Contribution No. 923, Department of Entomology, Kansas Agricultural Experiment Station, Kansas State University, Manhattan, Kansas. Accepted for publication May 31, 1967.
[2] Associate Professor.