

Exclusion in Nigeria of chickens and guinea-fowls from the host range of *Menacanthus stramineus* (Mallophaga : Insecta)

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Exclusion au Nigéria de poulets et de pintades dans la liste des hôtes de *menacanthus stramineus* (mallophaga : insecta) - L'auteur rapporte les résultats d'un recensement national des mallophages, parasites des pintades, dindons et poulets au Nigeria. Cette étude révèle que *Menacanthus stramineus* épargne les poulets et les pintades alors qu'il est universellement présent chez les dindons, souvent en quantité pathogène. *Mots clés* : Poulet - Pintade - Dindon - *Menacanthus stramineus* - Mallophage - Hôte.

INTRODUCTION

Menacanthus stramineus (Nitzsch 1818) is common on chickens and turkeys in many parts of the world including Canada, Mexico, United States, Europe, Australia, Turkey, East Africa and South Africa, and also generally attacks other gallinaceous hosts such as guinea-fowls, pea-fowls, quails and pheasants (3).

It is particularly of considerable economic importance on chickens when present in large numbers, causing decreased egg production (2, 4) weight loss, reduced clutch size, reduced feed consumption and egg size (2).

This paper reports of an investigation into the occurrence of this parasite on chickens, turkeys and guinea-fowls the most economically important domestic birds of Nigeria. The aim is to assess its possible role in production.

MATERIALS AND METHODS

Collections of lice were made from May 1970 to

April 1972 and from October 1977 to October 1979 from 1,105 chickens, 122 turkeys and 750 guinea-fowls. Collections were made from well scattered areas of the country and included birds of various age groups and birds that were dead just before the examination, slaughtered birds for parasitic investigation, or just treated to remove lice and released.

Both the feathers and the plucked feathers were thoroughly searched for the presence of lice in the case of slaughtered or dead birds that were examined. Most of the birds were examined alive, the lice and other ectoparasites secured from them by the application of insect powder (sevin) followed by rubbing and ruttling off the feathers the ectoparasites falling on a thick white paper. The lice were fixed in 70 p. 100 alcohol and identified microscopically following their clearing in lactophenol or polyvinyl alcohol.

Determination of *Menacanthus stramineus* was based on the characters described by EMERSON (3).

RESULTS

No single *M. stramineus* was present among the specimens of lice recovered from any of the domestic chickens and guinea-fowls, even though a thorough and careful search was made for it (Table I).

In contrast, the parasite was very prevalent among turkeys. It was recovered from 116 out of the 122 turkeys examined. Often infestations were heavy, over 40,000 specimens being found on each of about 20 birds. They were often the cause of somnolence, reduced vigour, retarded growth or associated with other conditions such as scaly leg mite, *Cnemidocoptes mutans* (Robin and Lanquetin 1859), in old birds, and causing death.

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TABLE I Prevalence of *Menacanthus stramineus* and other lice recovered from chickens, guinea-fowls and turkeys in Nigeria.

Species of lice	Percentage of chickens infested	Percentage of guinea-fowls infested	Percentage of turkeys infested
<i>Menacanthus stramineus</i>	0	0	95
<i>Menacanthus pallidulus</i>	32	0	0
<i>Menacanthus cornutus</i>	63	61	0
<i>Menopon gallinae</i>	62	0	0
<i>Amyrsidea powelli</i>	60	63	0
<i>Numidicola antennata</i>	0	61	0
<i>Goniodes gigas</i>	50	73	0
<i>Goniodes dissimilis</i>	35	0	0
<i>Goniodes fimbriatus</i>	0	72	0
<i>Chaelopistes meleagridis</i>	0	0	53
<i>Gonicotes gallinae</i>	81	80	0
<i>Numidilipeurus tropicalis</i>	83	82	0
<i>Lipeurus caponis</i>	53	61	0
<i>Lipeurus gallipavonis</i>	0	0	14
<i>Cuclotogaster occidentalis</i>	12	22	0

DISCUSSION

The complete absence of *M. stramineus* on birds other than the turkeys was remarkable. This was particularly so of chickens, which are commonly attacked by this louse elsewhere (3). Even where there was likelihood of some close association with the turkeys which were universally infested, no single *M. stramineus* could be detected on such chickens. Under such close association, non-gallinaceous birds such as ducks and geese which are not normal hosts of the louse are even infested at least for sometime elsewhere (3).

It is noteworthy that the absence of this louse on chickens in Ibadan, in western Nigeria, had earlier

been noted and highlighted by CASWELL (1) based on an extensive survey there. Although subsequently listed as being among the lice present in another survey at Ibadan by SHOYINKA and LIBBY (6), it is now certain from extensive collections from the same area by the present writer that SHOYINKA and LIBBY were in reality referring to *Menacanthus cornutus* (Schrommer 1913) a species which has a striking superficial resemblance to *M. stramineus* and was not included in the list by these workers.

Reference to the literature from abroad, however, indicates that this curious host specificity observed in the present study, may by no means be peculiar to Nigeria, but occurs in other areas especially so of other parts of West Africa. For example, recent collections of lice from neighbouring Benin, Chad, Cameroon and Niger Republics by the author showed complete absence of the louse on hosts other than turkeys. Earlier limited observations by TENDEIRO (7) too indicated that the same may apply to Guinea Bisau, Principe and Sao Thome, the parasite being exclusively limited to turkeys.

It is clear therefore that just as *M. stramineus* may have a wide host range in parts of the world so too it may have a very restricted host range in other parts.

In these circumstances therefore, *M. stramineus* behaves similarly to certain ticks, for example, *Argas persicus* (Oken, 1818), which infests numerous bird species and domestic fowl in Iran, Afghanistan and southern USSR, but in other parts of the world is usually or entirely confined to domestic fowl (5).

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FABIYI (J. P.). Exclusion en Nigeria de pollos y pintadas en el inventario de los huéspedes de *Menacanthus stramineus* (Mallophaga : Insecta). *Rev. Elev. Méd. vét. Pays trop.*, 1986, **39** (3-4) : 367-376

In the course of a country-wide survey of Mallophaga of guinea-fowls, turkeys and chickens in Nigeria, *Menacanthus stramineus* was not found on chickens and guinea-fowls although it was universally present on turkeys, often in pathogenic numbers. *Key words* : Chicken - Guinea-fowl - Turkey - *Menacanthus* - Mallophaga - Host - Nigeria.

El autor da los resultados de un censo de los malofagos, parásitos de los pintadas, pavos y pollos en Nigeria. Se nota que no se encuentra *Menacanthus stramineus* en los pollos y las pintadas mientras que es universalmente presente en los pavos, a menudo en cantidad patógena. *Palabras claves* : Pollo - Pintada - Pavo - *Menacanthus stramineus* - Malofago - Huésped - Nigeria.

REFERENCES

1. CASEWELL (G. H.). Insects and other arthropods affecting livestock on the Faculty Farm - A preliminary report. Ibadan, University College, Faculty of Agriculture, 1959. pp. 21-22. (Division Report n° 5.)
2. DEYANEY (J. A.). Effects of chicken body louse, *Menacanthus stramineus* on caged layers. *Poult. Sci.*, 1976, **55** : 430-435.
3. EMERSON (K. C.). Mallophaga (chewing lice) occurring on the domestic chicken. *J. Kans. ent. Soc.*, 1956, **29** : 63-79.
4. GLESS (E. E.), RAUN (E. S.). Effects of chicken body louse infestation on egg production. *J. econ. Ent.*, 1959, **52** : 358-359.
5. HOOGSTRAAL (H.), LIM (B. L.), ANASTOS (G.). *Haemaphysalis* (*Kasieriama*) *bispinosa* Neumann (*Ixodoidea* : *Ixodidae*) : evidence for consideration as an introduced species on the Malay peninsula and Borneo. *J. Parasit.*, 1969, **55** : 1075-1077.
6. SHOYINKA (S. A.), LIBBY (J. L.). The effect of management systems on poultry lice in Ibadan. *Niger ent. Mag.*, 1967, **1** : 40-43.