THE MALLOPHAGA (BITING-LICE) RECORDED FROM THE PACIFIC ISLANDS.

BY GORDON B. THOMPSON.

This paper is the fifth of a series devoted to listing the ecto-parasitic insects recorded from Pacific Island hosts and contains check-lists and host-lists of the Mallophaga recorded for the most part from birds (domestic and wild).

Following the principles laid down in the previous lists, I have only cited references which have some bearing on the species and records relative to the Pacific Islands. Most of the references have been checked against the originals.

It is quite obvious from a glance at the lists which follow that our knowledge of the Mallophaga parasitic on the innumerable birds which abound in the Pacific regions is extremely poor. A vast amount of collecting is necessary and should be done as soon as possible, as many of the birds are nearing extinction. The Mallophaga parasitic on birds of the interesting Galapagos Is. have received more attention than those from any other of the island groups, but even these are not well known. Nothing, except for a revision of a few species by Ferris, has been published on the lice of Galapagos Is. birds since about 1906. Kellogg, in association with other workers, has contributed most towards our present-day knowledge of them, but unfortunately until such time as further material is available which can be worked out in conjunction with Kellogg's collection no important advances can be made. Kellogg has drawn attention to the phenomenon known as straggling and seems perfectly satisfied, as shown by his extraordinary lists of hosts upon which some of the lice were said to have been taken, to accept it as being of common occurrence in the case of the parasites of the Galapagos birds. I am not prepared to believe that straggling occurs on these islands to anything like the extent to which it is stated. From my own experience of collecting I know full well how easy it is to produce artificial examples of straggling. The report on the Mallophaga of Hawaiian birds by Kellogg and Chapman contains some very remarkable instances of straggling which seems to me to be merely the result of carelessness on the part of the collectors. However, these remarks are made merely as a warning to future collectors.

It is interesting to note that the paper by Kellogg and Chapman on the Mallophaga of Hawaiian birds was published twice, once in the Journal of the New York Entomological Society and again in Vol. III (pp. 305-321) of the Fauna Hawaiiensis. Some years

ago this struck me as being rather odd, so I wrote to Dr. R. C. L. Perkins, F.R.S., for an explanation. He replied, saying that it was an extraordinary thing that this paper should have been published in the Fauna Hawaiiensis, for to the best of his knowledge a good collection of Mallophaga was made in the Hawaiian Is. during the time of his associations there and that they were never worked out and, moreover, that after numerous efforts were made to locate this material it has never yet been found. Assuming that the collection mentioned by Dr. Perkins was made, it is a very great pity that it has been lost, as I understand that some of the birds from which lice were collected are now almost, if not entirely, extinct. Maybe they will be found one day.

The check-list of the Mallophaga is divided into two parts. The first part deals with the lice recorded from domestic animals, the second with the lice of wild birds. Collections of lice from domestic animals would greatly increase the first list, which at present contains a very poor representation of both parasites and localities.

In dealing with the Mallophaga I have endeavoured to give correct synonymy, some of which is new, and also to place species in their correct genera. I am fully aware that such papers as the present one do little to increase our knowledge of the systematics of the group in question, but at the same time I do feel that it is a convenient opportunity of bringing to light references to species which may be overlooked, etc. It is to be hoped, however, that this paper may have the desired effect, and that is to make a strong appeal to those in a position to collect conscientiously the Mallophaga of the birds of the Pacific Islands.

In the case of the Mallophaga of birds of the Hawaiian Islands I have only given the references to Kellogg and Chapman's earlier paper published in 1902.

The host-list is also divided into two parts. The first part contains only those birds recorded from islands outside the Galapagos group, the second is concerned exclusively with the Galapagos avifauna. In almost every case I have brought the host names up to date with the aid of Mathews' 'Systema Avium Australasianarum' and Swarth's 'The Avifauna of the Galapagos Is.'* In the first host-list I have omitted any obvious cases of straggling. In the second part I have, perhaps somewhat rashly, endeavoured to give a corrected host-list of the parasites. It would be quite useless to repeat Kellogg's host-lists, since they contain so many obvious records of stragglers. Under each parasite, in the earlier

* Occ. Pap. Calif. Acad. Sci., 1931, XVIII, pp. 1-299.

part of the paper I have suggested the probable true hosts of each parasite and the host-list is made up for the most part from my suggestions. There are cases where I have refrained from expressing any opinion as to the host. In the case of the *Geospiza* spp., *Nesomimus* spp., *Cactospiza* spp., *Certhidea* spp., etc., it is at present almost impossible to say which are their true parasites, so I have listed nearly all the lice recorded from them. A few of the birds from which Kellogg and his associates recorded Mallophaga have created some difficulty in their interpretation. I am not prepared to say what they meant by *Fregata aquila,* for instance, so I have merely interpreted it as *Fregata* sp. A number of parasites are recorded from *Anas versicolor.* According to Swarth (1931) there is only a single record of the capture of this bird on the islands, and even that is open to doubt. The bird is an Argentine species. Only two species of Anatidae are listed as occurring in the Galapagos Is., *Querquedula discors* (Linn.) and *Paecilonetta galapagensis* Ridgway. The former species is listed on the basis of a single specimen. It seems, therefore, probable that Kellogg's records from *Anas versicolor* really refer to *Paecilonetta galapagensis* Ridgway, which has been recorded on numerous occasions from all the islands except Narborough. There are records of Mallophaga from *Speotyto* sp. and *Corvus* sp., but I can find no reference to any such birds from the Galapagos Is.

Species Parasitic on Domestic Animals.

1. *Menopon gallinae* (Linn.).

Pediculus gallinae Linn., 1758, Syst. Nat., p. 613.

P. trigonocephalus v. Olfers, 1816, De vegetativis et animatis corporibus in corporibus animatis reperiundis commentarius, Berlin, Pt. I, p. 90.

Menopon pallidum Nitzsch in Burmeister, 1838, Handbuch der Entomologie, ii, p. 440.

M. gallinae (Linn.), Ferris, 1924, Parasitology, XVI, p. 57, f. 1.

This is a common parasite of the domestic fowl, which is its true host. Jepson (1911, Rept. Econ. Entom., Dept. Agric. Fiji, Council Paper 25, p. 30) recorded it on fowls in Fiji. Buxton (1928, Researches in Polynesia and Melanesia, London, p. 54) and Waterston (1928, Insects of Samoa, Pt. VII, fasc. 3, p. 83) recorded it from domestic fowls at Apia, Samoa. Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) recorded it from turkey and guinea-hen at Honolulu and from chicken at Waipio and Honolulu.

2. *Menopon phaeostomum* Nitzsch.

Menopon phaeostomum Nitzsch in Giebel, 1866, Z. ges. Naturw. XXVIII, p. 391.

The true host of this species is the peacock. Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) recorded it from a guinea-hen at Honolulu.

3. *Eomenacanthus stramineus* (Nitzsch).

Menopon stramineum Nitzsch in Giebel, 1874, Insecta Epizoa, p. 291.

M. biseriatum Piaget, 1880, Les Pédiculines, p. 469, Pl. 37, f. 2.

Eomenacanthus biseriatus (Piaget), Uchida, 1926, J. Coll. Agric., Tokyo, IX, p. 30.

This common parasite occurs on both chicken and turkeys. Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) recorded it from chicken at Honolulu.

4. *Trichodectes canis* (De Geer).

Ricinus canis De Geer, 1778, Mémoires pour servir à l'histoire des Insectes, Stockholm, VII, p. 81, Pl. 4, f. 16.

Trichodectes latus Nitzsch in Burmeister, 1838, Handbuch der Entomologie, ii, p. 436.

This species is the true parasite of domestic dogs. Swezey (1931, Proc. Hawaiian ent. Soc., VII, p. 361) recorded it from a dog in Honolulu.

5. *Bovicola* spp.

There has been so much confusion regarding the lice of goats that it would be unsafe to say which species as at present recognised are referred to by past records. The *Trichodectes* spp. occurring on goats are now placed in the genus *Bovicola*.

Jepsón (1911, Rept. Econ. Entom., Dept. Agric., Fiji, Council Paper 25, p. 30) recorded *Trichodectes climax* Nitzsch from goats in Fiji. Johnston and Harrison (1912, Trans. N.Z. Inst., XLIV, p. 373) recorded *T. climax* Nitzsch from domestic goats on the Kermadec Is.

6. *Goniodes dissimilis* Nitzsch.

Goniodes dissimilis Nitzsch in Denny, 1842, Monographia Anoplurorum Britanniae, p. 162, Pl. 12, f. 4.

Another common parasite of domestic fowls. Jepson (1911, Rept. Econ. Entom., Dept. Agric., Fiji, Council Paper 25, p. 30) recorded it as common on fowls in Fiji. Buxton (1928, Researches in Polynesia and Melanesia, London, p. 54) and Waterston (1928,

Insects of Samoa, Pt. VII, fasc. 3, p. 83) recorded it from domestic fowls at Apia, Samoa.

7. *Goniodes meleagridis* (Linn.).

Pediculus meleagridis Linn., 1758, Syst. Nat., p. 613.

Goniodes stylifer Nitzsch in Burmeister, 1838, Handbuch der Entomologie, ii, p. 432.

This species is a common parasite of turkeys. Van Dene (1909, Ann. Rept. Hawaiian Agric. Exp. St., p. 36) recorded it from turkeys on the Island of Molokai, Hawaiian Is. Swezey (1922, Proc. Hawaiian ent. Soc., V, p. 37) recorded it from a turkey. Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) recorded it from chicken at Waipio, Hawaiian Is.

8. *Goniocotes gigas* Taschenberg.

Goniocotes gigas Taschenberg, 1879, Z. ges. Naturw. LII, p. 104, Pl. 1, f. 10.

This large species seems to be a normal parasite of guinea-fowls but is frequently found on domestic fowls. Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) recorded it from chicken at Waipio, Hawaiian Is.

9. *Goniocotes hologaster* Nitzsch.

Goniocotes hologaster Nitzsch in Burmeister, 1838, Handbuch der Entomologie, ii, p. 431.

Another common parasite of chicken which is also found on guinea-fowls. Recorded by Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) from chicken and turkeys at Honolulu.

10. *Lipeurus caponis* (Linn.).

Pediculus caponis Linn., 1758, Syst. Nat., p. 614.

A parasite of domestic fowls. Buxton (1928, Researches in Polynesia and Melanesia, London, p. 54) and Waterston (1928, Insects of Samoa, Pt. VII, fasc. 3, p. 83) recorded it from domestic fowls at Apia, Samoa. Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41) recorded it from chicken in Honolulu.

11. *Lipeurus gallipavonis* (Geoffroy).

Pediculus gallipavonis Geoffroy, 1762, Histoire abrégée des Insectes, Paris, II, Pt. 2, p. 600.

This species is a parasite of turkeys, and has been recorded from these hosts in Honolulu by Illingworth (1928, Proc. Hawaiian ent. Soc., VII, p. 41).

12. *Lipeurus heterographus* Nitzsch.

Lipeurus hetehographus Nitzsch in Giebel, 1866, Z. ges. Naturw. XXVIII, p. 381.

Jepson (1911, Rept. Econ. Entom., Dept. Agric. Fiji, Council Paper 25, p. 30) recorded this common parasite of domestic fowls from Fiji.

ANALYSIS OF MALLOPHAGA RECORDED FROM DOMESTIC ANIMALS.

Name of parasite.	Names of Islands.			
	Hawaiian Is.	Fiji Is.	Samoa.	Kermadec Is.
Menopon gallinae (Linn.)	×	×	×	—
M. phaeostomum Nitzsch	×	—	—	—
Eomenacanthus stramineus (Nitzsch)	×	—	—	—
Trichodectes canis (De Geer)	×	—	—	—
Bovicola spp. (of Goats)	—	×	—	×
Goniodes dissimilis Nitzsch	—	×	×	—
G. meleagridis (Linn.)	×	—	—	—
Goniocotes gigas Taschenberg	×	—	—	—
G. hologaster Nitzsch	×	—	—	—
Lipeurus caponis (Linn.)	×	—	×	—
L. gallipavonis (Geoffroy)	×	—	—	—
L. heterographus Nitzsch	—	×	—	—

(*To be continued*)

SETODES LUSITANICA McL.: A CADDIS-FLY NEW TO BRITAIN.

BY THE REV. PROFESSOR L. W. GRENSTED, M.A., D.D., F.R.E.S.

On July 1st I took a single specimen of this species on one of the main concrete columns supporting the bridge over the Thames at Goring. During the following week I took six more specimens, and it is obvious that the species is there in some numbers. It is mainly to be found on and about the big willows on the island in the middle of the stream, and as these are very inaccessible it is not likely to suffer much from collectors. This species, described in 1884, and taken by Mr. M. E. Mosely in some numbers in France and Corsica, is new to the British list of Trichoptera.

May I take this opportunity of recording also the occurrence of *Stenophylax rotundipennis* Brauer, of which my son last year took six or seven specimens in the Oxford district. This should be looked out for by collectors in September along the Thames valley. It is one of the rarest European species, and there is hardly a definitely known locality for it. It would be interesting to know whether it has a wide distribution in the Thames valley. I can also add another locality for *Metalype fragilis* Pict., which occurred in large numbers last year at Bourton-on-the-Water, Gloucestershire.

32 Charlbury Road,
Oxford.
July 7th, 1938.