# PARASITES OF THE WATER PIPIT (ANTHUS SPINOLETTA ALTICOLA) FROM MONTANA

By Nicolaas A. M. Verbeek and W. Patrick Carney

During the summers of 1963 and 1964, in the course of field work on the Beartooth Plateau, Park County, Wyoming and Carbon County, Montana, at an elevation of ca 3550 m, we preserved parasites from 52 adult specimens of the Water Pipit (*Anthus spinoletta alticola*). Since there is a paucity of information about the parasites of this species in North America, we thought it important to publish the results and to present a compilation of known parasites (Table 1).

*Mallophaga.*—The earliest comprehensive listing of North American Mallophaga (Kellogg, 1899) does not report any lice from the genus *Anthus*. A subsequent compilation (Malcomson, 1960) does mention two species: *Bruelia corydalla* (Host: *Anthus pratensis*) from Iceland (Timmermann, 1950) and *Ricinus japonicus* (Host: *Anthus s. japonicus*) from Japan (Uchida, 1915). Gross (1937) recorded *Philopterus subflavescens* (Host: *A. s. rubescens*) from the coast of Labrador. Hopkins and Clay (1952), however, regard *subflavescens* as a descriptive phrase and not as a name, and thus do not list the genus *Anthus* as host of the genus *Philopterus*. Recently, Balát (1955) found three species of Mallophaga (*Philopterus hanzaki, Ricinus japonicus* and *Menacanthus* sp.) on *A. s. spinoletta* from the Tatra Mountains of Czechoslovakia.

On the Beartooth Plateau we found four of the 52 pipits infested with *Ricinus japonicus*, two with *Menacanthus* sp. and one with both *Menacanthus* sp. and *Bruelia* sp.. Specimens of these lice have been deposited in the collections of the Department of Entomology, University of Minnesota. The present known distribution of Mallophaga from the genus *Anthus* is shown in Table 2.

*Acarina.*—In 1964 five birds were sacrificed in search of nasal mites. Two of these five birds, both females, contained respectively 16 and six *Ptilonyssus* sp.. Neither Pereira and Castro (1949) nor George (1961) list the genus *Anthus* as host for the genus *Ptilonyssus*. The specimens are deposited in the collection of the Department of Zoology, University of Montana.

*Nematoda.*—Two of the 52 adult birds were infested with *Diplotriaena ozouxi*. The parasites were located in the body cavity and air sacks in the region of the trachea and gizzard. The same species was reported by Spasskaja (1949) for the Tree Pipit (*Anthus trivialis*) from Western Siberia. The specimens are deposited with the collection of the Department of Zoology, University of Montana (U of M 778-779-780).

*Acknowledgments.*—For identification of specimens we thank Dr. R. D. Price, University of Minnesota (Mallophaga); Dr. G. M. Clark and C. M. Clifford, Rocky Mountain Laboratory, Hamilton, Montana (Acarina) and Dr. R. C. Anderson, Ontario Research Foundation for confirming our nematode identification. We also

TABLE 1. ANNOTATED LIST OF WATER PIPIT (ANTHUS SPINOLETTA) METAZOAN PARASITES

| | | Host | Location | Source |
|---|---|---|---|---|
| TREMATODA | *Urotochus rossittensis* | *A. s. petrosus* | West of Wales | Williams, 1960, 1961 |
| | *Plagiorchis notabilis* | *A. s. petrosus* | Scotland | Nicoll, 1909 |
| | *Spelotrema claviforme* | *A. s. petrosus* | Scotland | Nicoll, 1909 |
| ACANTHOCEPHALA | *Prosthorhynchus cylindraceus* | *A. spinoletta* | West of Wales | Williams, 1961 |
| CESTODA | *Anoncotaenia arhyncha* | *A. s. japonicus* | Saghalin | Yamaguti, 1958 |
| | *Anomotaenia borealis* | *A. spinoletta* | West of Wales | Williams, 1961 |
| NEMATODA | *Capillaria* sp. | *A. spinoletta* | West of Wales | Williams, 1961 |
| | *Diplotriaena ozouxi* | *A. s. alticola* | Wyoming-Montana | This paper |
| SIPHONAPTERA | *Ceratophyllus borealis* | *A. spinoletta* | Finland | Nordberg, 1935 |
| | | | Fair Isle, Scotland | Williamson, 1955 |
| | | | Czechoslovakia | Rosicky, 1959 |
| | *Ceratophyllus gallinae* | *A. spinoletta* | Finland | Norberg, 1935 |
| | | | Fair Isle, Scotland | Williamson, 1955 |
| | | | ? | Costa & Hathaway, 1946 |
| | *Ceratophyllus balati* | *A. spinoletta* | Czechoslovakia | Rosicky, 1955 |
| | *Ceratophyllus frigorus* | *A. spinoletta* | Caucasus Mts. | Darskaja, 1950 (c. f. Anderson, 1959) |
| | *Dasypsyllus gallinulae gallinulae* | *A. spinoletta* | Fair Isle, Scotland | Williamson, 1955 |
| MALLOPHAGA | **Philopterus subflavescens* | *A. s. rubescens* | Labrador | Gross, 1937 |
| | *Philopterus hanzaki* | *A. s. spinoletta* | Czechoslovakia | Balát, 1955 |
| | *Menacanthus* sp. | *A. s. spinoletta* | Czechoslovakia | Balát, 1955 |
| | *Menacanthus* sp. | *A. s. alticola* | Wyoming-Montana | This paper |
| | *Bruelia* sp. | *A. s. alticola* | Wyoming-Montana | This paper |
| | *Ricinus japonicus* | *A. s. spinoletta* | Czechoslovakia | Balát, 1955 |
| | *Ricinus japonicus* | *A. s. japonicus* | Japan | Uchida, 1915 |
| | *Ricinus japonicus* | *A. s. alticola* | Wyoming-Montana | This paper |
| ARACHNIDA | *Ptilonyssus* sp. | *A. s. alticola* | Wyoming-Montana | This paper |
| DIPTERA | *Ornithomyia fringillina* | *A. spinoletta* | Skokholm, Scotland | Stansfield, 1955 |
| | *Ornithomyia avicularia* | *A. spinoletta* | Skokholm, Scotland | Stansfield, 1955 |

*Not recognized as a species by Hopkins and Clay (1952).

TABLE 2. DISTRIBUTION OF THE MALLOPHAGA OF THE GENUS ANTHUS

| Mallophaga | *A. s. spinoletta* | *A. s. alticola* | *A. s. japonicus* | *A. pratensis* |
|---|---|---|---|---|
| *Philopterus hanzaki* | + | | | |
| *Menacanthus* sp. | + | + | | |
| *Ricinus japonicus* | + | + | + | |
| *Bruelia* sp. | | + | | |
| *Bruelia corydalla* | | | | + |
| Location | Czechoslovakia | Montana-Wyoming | Japan | Iceland |
| Source | Balát, 1955 | This paper | Uchida, 1915 | Timmermann, 1950 |

wish to acknowledge the help of Miss Judith Humphrey, Beltsville Parasitological Laboratory, for her assistance in locating references. In 1963 the field work was supported by a grant from the Chapman Memorial Fund, American Museum of Natural History and a Louis Aggassiz Fuertes Research Grant, Wilson Ornithological Society. Support from a National Science Foundation grant, administered by Drs. R. D. Taber and R. S. Hoffmann, is gratefully acknowledged for the summer of 1964. We thank Dr. F. A. Pitelka for some editorial suggestions.

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Received May, 1967.

## COLOR-DYEING ALBATROSSES

By W. L. N. Tickell

During recent expeditions to Bird Island, South Georgia ($54_0$ 00'S. 38°05'W.) where albatrosses have been studied since 1958 (Tickell and Cordall 1960; Tickell 1962; Tickell, Pinder and Clagg 1965), Wandering Albatrosses *Diomedea exulans* have been colored with plumage dye to obtain data upon their distribution at sea. This technique was originally developed for white geese in the United States, but its application to sea-birds has presented different problems.

Many of the questions that are asked about the pelagic distribution of sea birds are clearly unanswerable by the traditional