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The ectoparasite fauna of feral pigeon populations in Hungary

Dr. Lajos RÓZSA

Department of Parasitology and Zoology,
University of Veterinary Science, Budapest, Hungary

"The ectoparasite fauna of feral pigeon populations in Hungary "
- Rózsa, L. - Parasit. hung., 23: 115-119. 1990.

ABSTRACT. A faunistical study of ectoparasites was carried out in 1988 on two feral pigeon populations in an urban and in a farmland area of Hungary. Samples consisting of 120 birds each were collected in both areas. The data of occurrence of *Columbicola columbae columbae*, *Campanulotes bidentatus compar*, *Bonomiella columbae*, *Hohorstiella lata* (Mallophaga) and *Mesonyssus melloi*, *Dermanyssus gallinae*, *Dermoglyphus columbae*, *Falculifer rostratus*, *Diplaegidia columbae* (Acarina) are described.

KEY WORDS: ectoparasite, feral pigeon, *Columba livia*, Mallophaga, Acarina, Hungary

INTRODUCTION

The domestic pigeon (*Columba livia* var. *domestica*) is one of the very few domestic animal species which has a feral variety widely distributed all over the world.

A good knowledge of the pathogenic agents of feral populations is needed to understand the epidemiology of diseases of the domestic stocks. The aim of this study was to identify the ectoparasite fauna of feral pigeons in Hungary.

Similar faunistical studies have been carried out e.g. in Egypt (SELIM et al. 1968), in Czechoslovakia (CERNY 1970) in the USA (BROWN 1971) and in Yugoslavia (KULISIC 1988).

MATERIALS AND METHODS

Two sample areas were chosen in order to represent different environments maintaining different biological communities. One of them was an urban area in the inner city of Budapest, and the other was a scarcely inhabited farmland area near Kerekegyháza, in Hungary.

Table 1. Prevalence (P) and mean intensity (I) of the most common ectoparasite species.

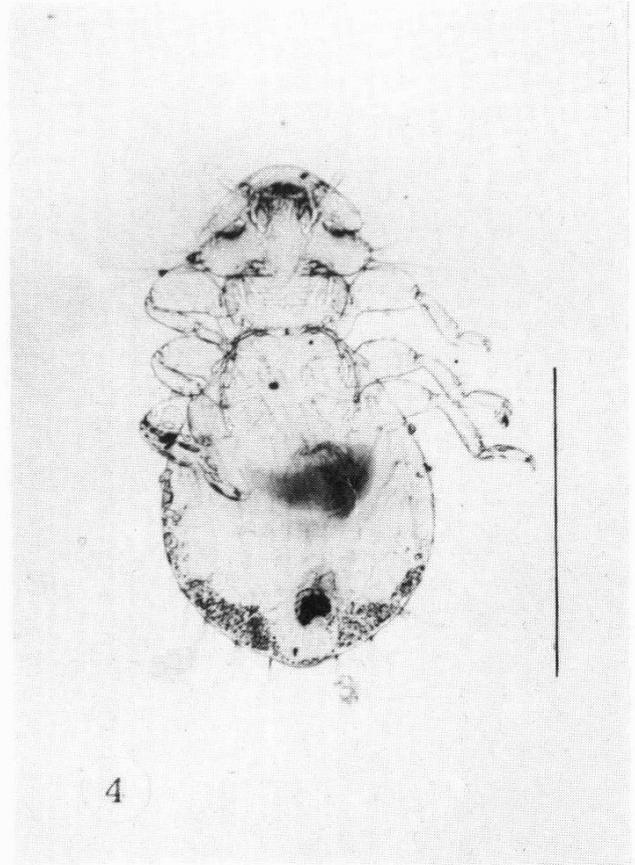
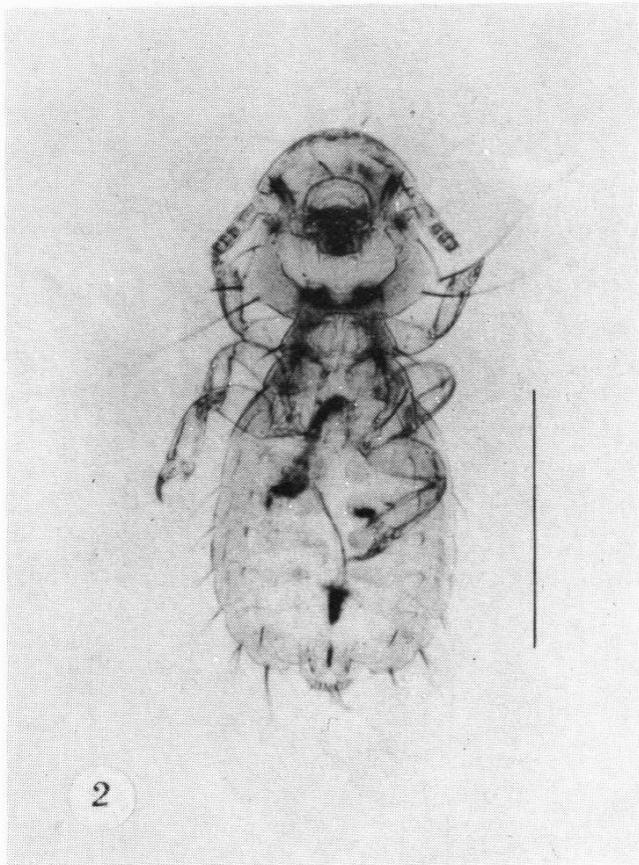
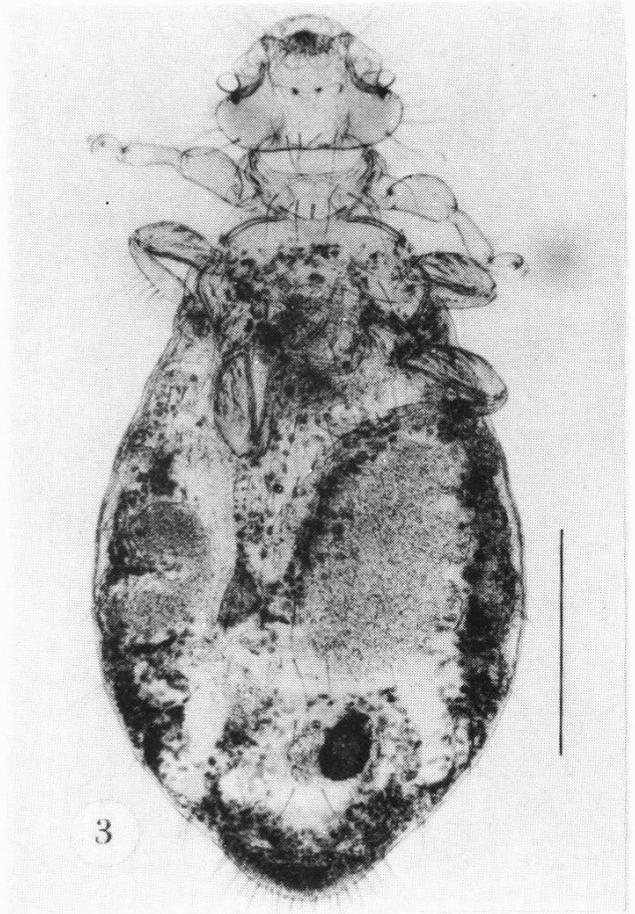
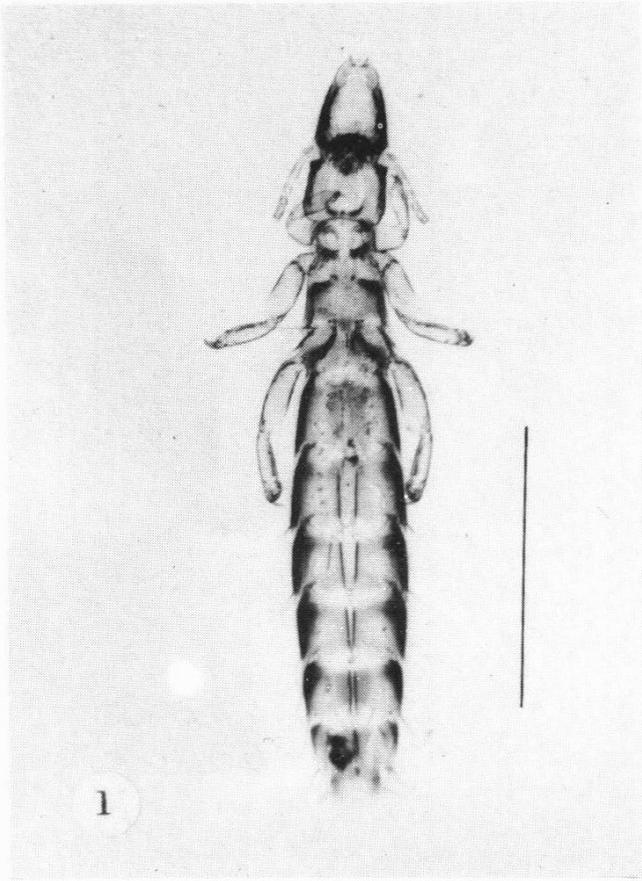
	Farmland		City	
	P	I	P	I
<i>Columbicola columbae columbae</i>	92	17.9	97	16.6
<i>Campanulotes bidentatus compar</i>	77	5.4	71	4.9
<i>Mesonyssus melloi</i>	23	7.9	42	10.3

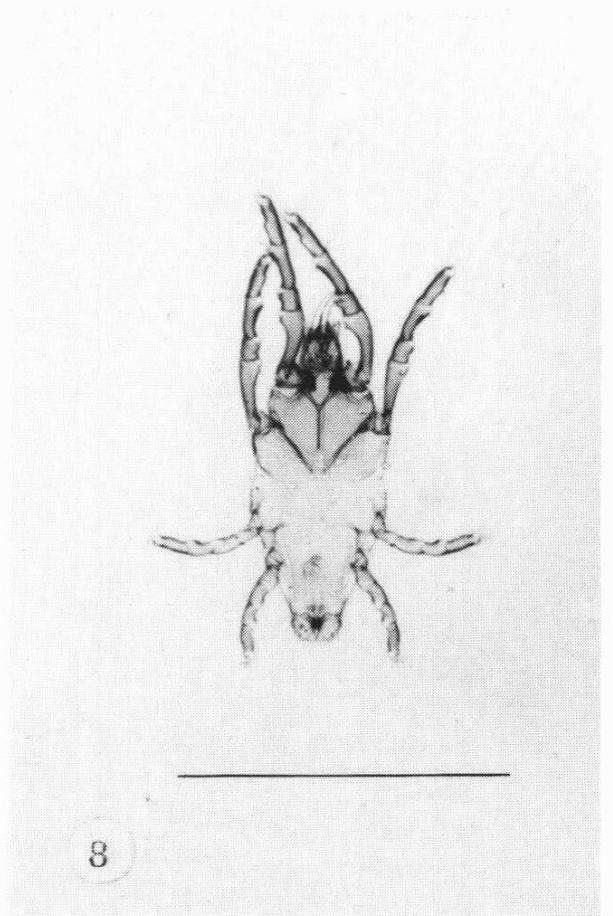
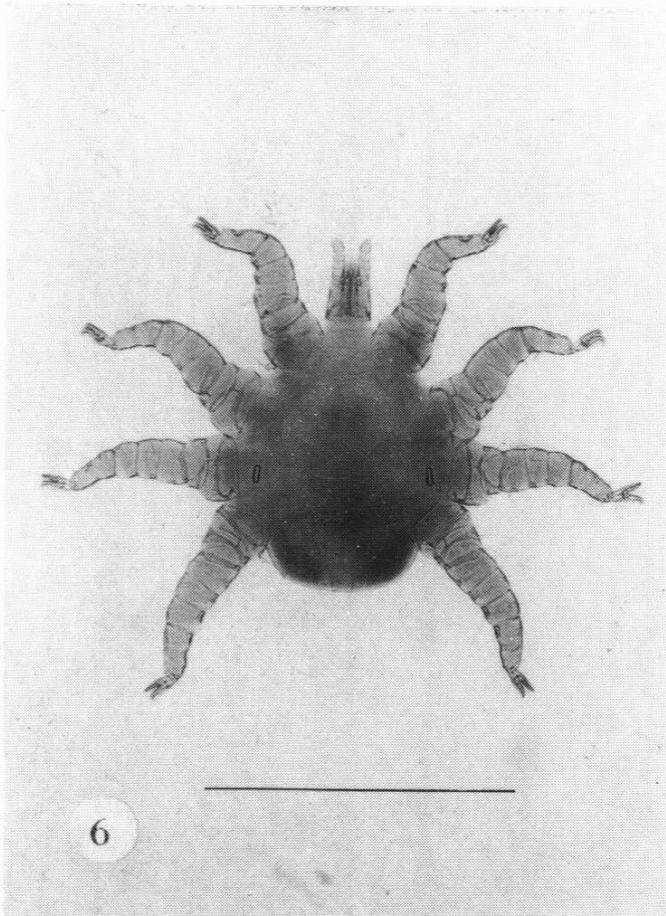
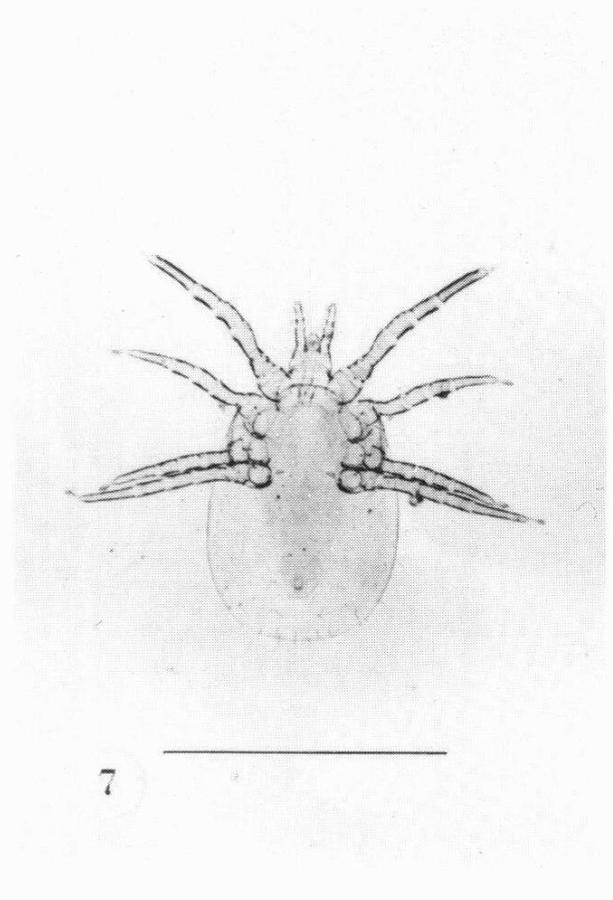
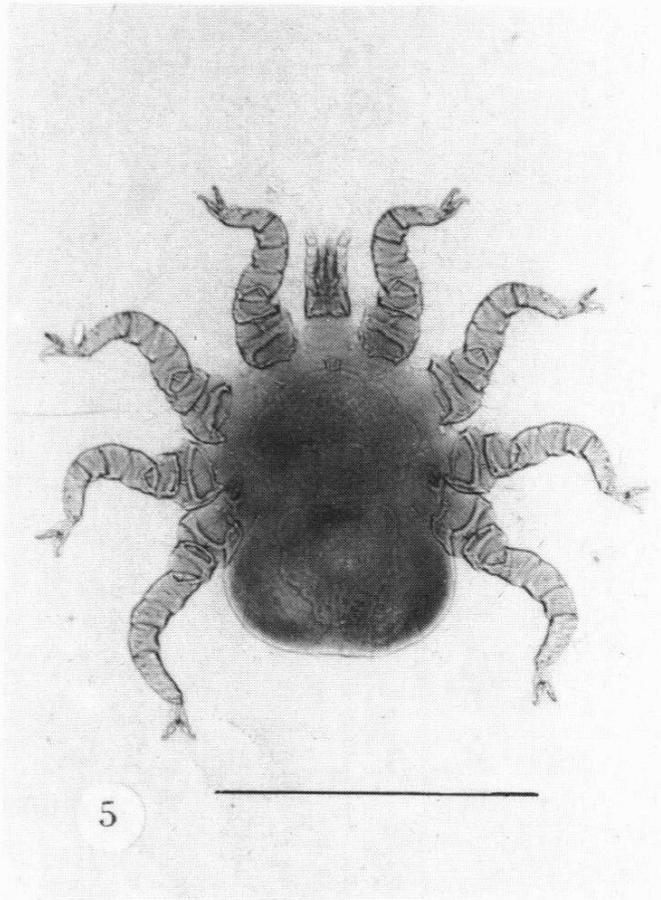
Table 2. Number of specimens of three mite species.

	Farmland	City
<i>Dermanyssus gallinae</i>	5	8
<i>Dermoglyphus columbae</i>	7	4
<i>Falculifer rostratus</i>	27	10

Legend to the figures

- Fig. 1: *Columbicola columbae columbae*, imago, female scale bar 1.0 mm
 Fig. 2: *Campanulotes bidentatus compar*, imago, male scale bar 0.5 mm
 Fig. 3: *Bonomiella columbae*, imago, female scale bar 0.5 mm
 Fig. 4: *Hohorstiella lata*, nymph scale bar 1.0 mm
 Fig. 5: *Mesonyssus melloi*, imago, female scale bar 0.5 mm
 Fig. 6: *Mesonyssus melloi*, nymph scale bar 0.5 mm
 Fig. 7: *Dermanyssus gallinae*, imago, female scale bar 1.0 mm
 Fig. 8: *Falculifer rostratus*, imago, male scale bar 1.0 mm
 Fig. 9: *Dermoglyphus columbae* scale bar 0.5 mm
 Fig. 10: *Dermoglyphus columbae*, with eggs in opisthosoma scale bar 0.5 mm
 Fig. 11: *Diplaegidia columbae*, imago, male scale bar 0.2 mm
 Fig. 12: *Diplaegidia columbae*, imago, female scale bar 0.2 mm





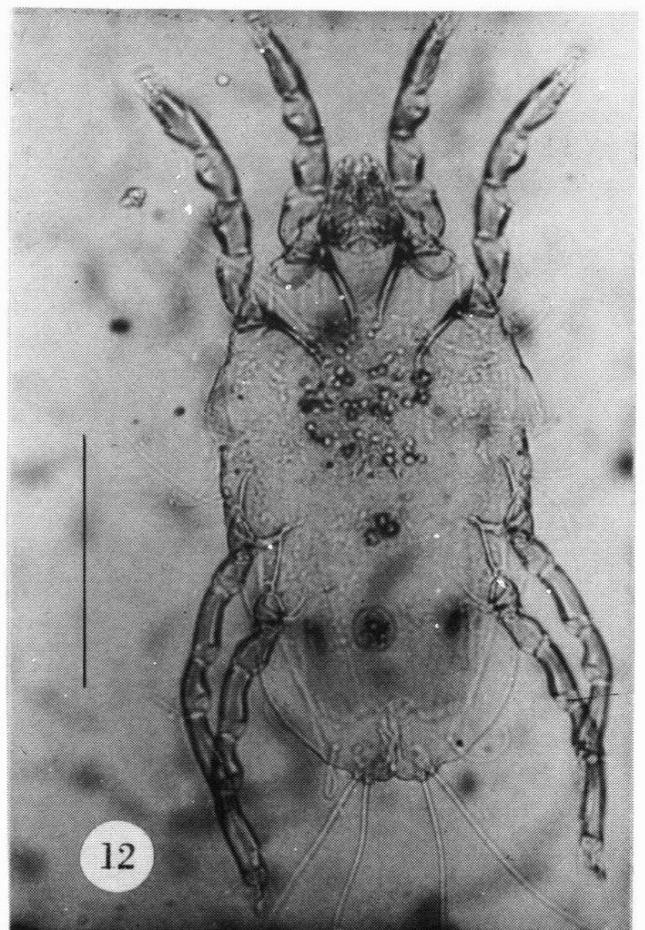
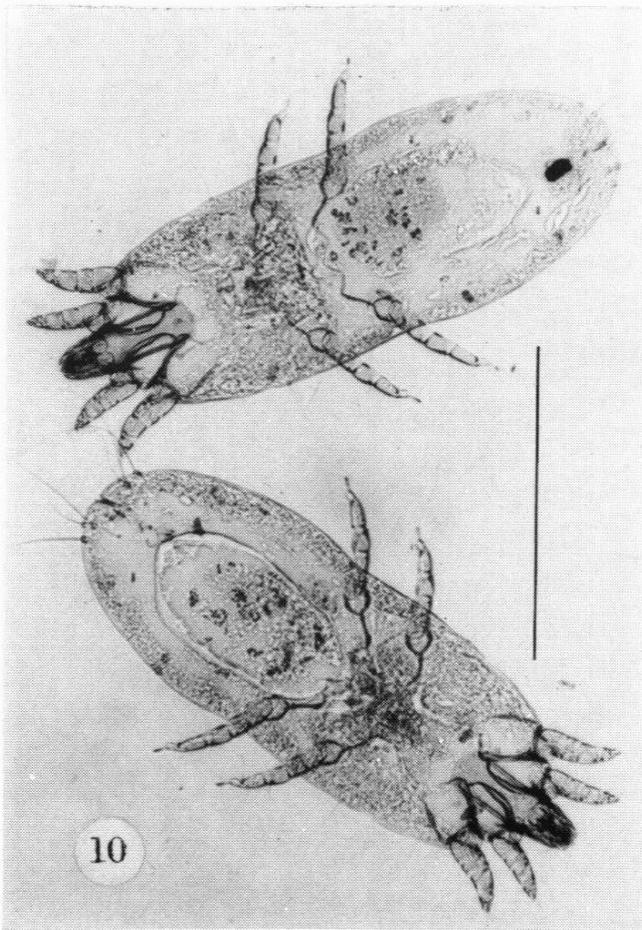
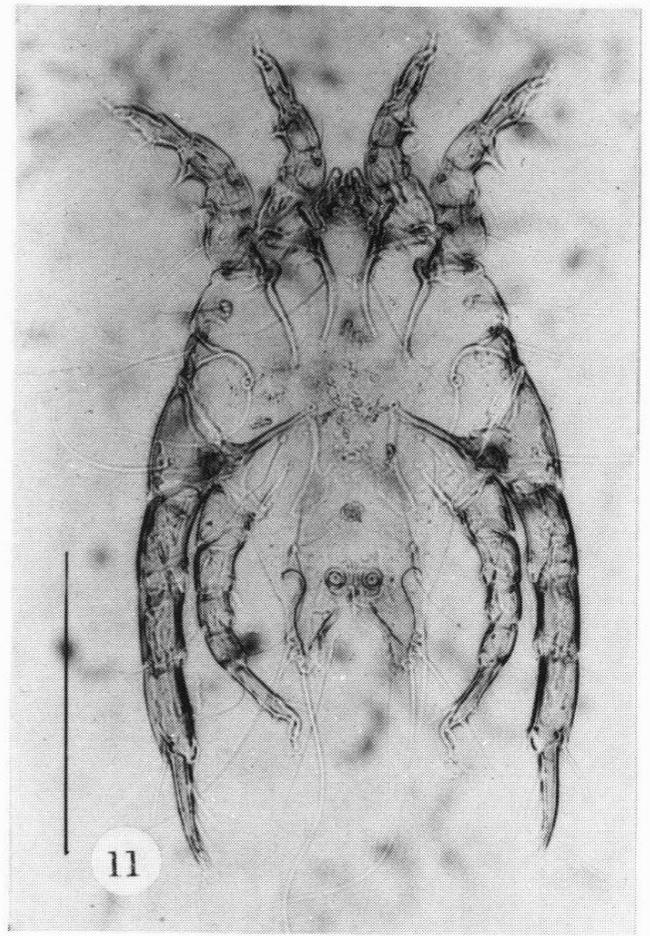
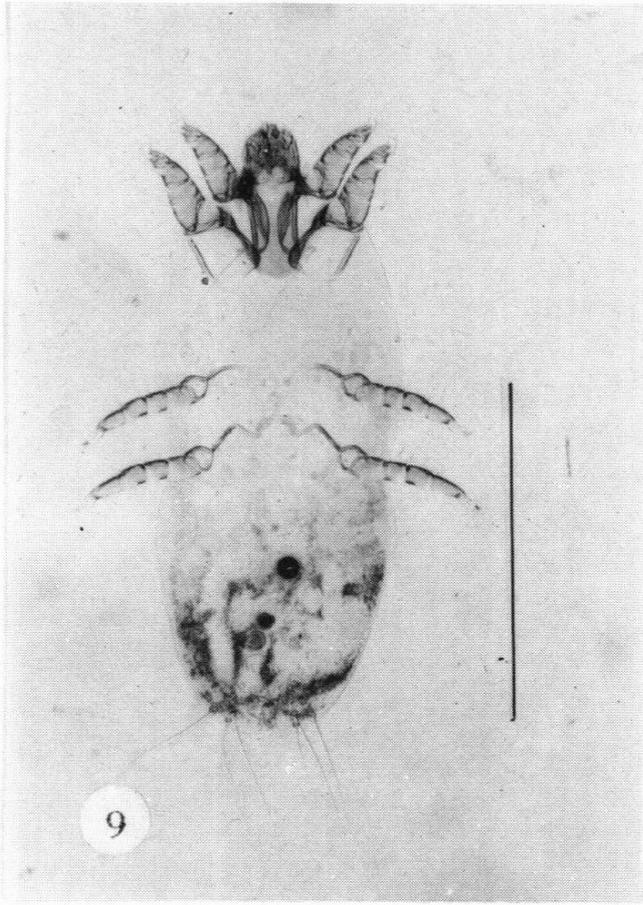


Table 3. Number of birds belonging to four categories of infestation with *Diplaegidia columbae*.

	Farmland	City
no individuals	32	120
several individuals	39	0
several dozens of individuals	36	0
several hundreds of individuals	13	0

One hundred and twenty birds each were collected in both areas throughout 1988. The birds were captured by mistnet in the roofs or by traps at feeding sites. Nestlings and temporary ectoparasites inhabiting nests were not involved in the study.

The captured birds were caged for a few days (max. 7) and killed with CO₂.

Nasal mites (*Mesonyssus melloi*) were collected by visual examination of the nasal passages.

The number of feather-mites (*Diplaegidia columbae*) was estimated visually, the levels of infestation were categorized as: no mites (0), several (1), several dozens (2), or several hundreds (3) of individuals.

Biting lice were collected manually by thorough examination of the plumage. It took at least 10 minutes per bird, or much more in cases of heavy infestation. In fact not all parasites were collected, so the numbers of lice are rather estimations.

The identification of louse species was based on the work of ZLOTORZYCKA et al. (1974) and RIBBECK (1972). Mite species were identified according to the works of DUBININ (1951), KRANTZ (1978), MACCHIONI and MARCONCINI (1976), UBEDA-ONTIVEROS et al. (1978) and ZAMUDIO (1988).

RESULTS

1. MALLOPHAGA

Four species of biting lice were identified during the survey. The prevalence and the mean intensity of the two dominant species, *Columbicola columbae columbae* (L., 1758) (Fig. 1) and *Campanulotes bidentatus compar* (Nitzsch, 1838) (Fig. 2) are presented in Table 1.

Nine specimens of *Bonomiella columbae* Emerson, 1957 (Fig 3) were collected in Budapest and one in the farmland area.

Twenty-four individuals of *Hohorstiella lata* (Piaget, 1880) (Fig. 4.) were collected in Budapest.

2. ACARINA

Mesonyssus melloi (Castro, 1948) (Figs 5-6) was the only nasal mite species identified during the survey. Its prevalence and average intensity are shown in Table 1.

A few specimens of *Dermanyssus gallinae* (De Geer, 1778) (Fig. 7) *Dermoglyphus columbae* (Sugimoto, 1942) (Figs 9-10) and *Falculifer rostratus* (Buchholz, 1869) (Fig. 8) were collected in both areas (Table 2).

Diplaegidia columbae (Buchholz, 1869) (Figs 11-12) was not found in Budapest at all while it was the most abundant arthropod species in the farmland area. Since it was not feasible to count all these mites, four categories of infestation have been defined on the base of the estimated number of specimens (Table 3).

DISCUSSION

To the author's knowledge, the biting louse *Bonomiella columbae* has not been recorded previously in Hungary. Since the present study seems to be the first survey of parasitic mites of pigeons in Hungary, practically all the mite species mentioned here are new to our fauna, with *Dermanyssus gallinae* as the only exception.

The ectoparasite fauna of the two feral pigeon populations proved to be quite similar, except the occurrence of *Diplaegidia columbae* which species was absent from Budapest but numerous in the farmland area.

ACKNOWLEDGEMENT

The author wishes to thank Dr. Éva MURAI, Dr. Tibor KASSAI, Dr. László PAPP and Ferenc PÁL SZABÓ for their valuable help.

RÓZSA, L.: Elvadult házigalamb populációk ektoparazita faunája Magyarországon

A szerző faunisztikai vizsgálatot végzett 1988-ban egy városi és egy mezőgazdasági területen az ott élő elvadult házigalambok ektoparazita faunájának megismerésére. A vizsgálat során egy év alatt 120-120 madár került begyűjtésre a két területről. A dolgozat a *Columbicola columbae columbae*, *Campanulotes bidentatus compar*, *Bonomiella columbae*, *Hohorstiella lata* (Mallophaga) és a *Mesonyssus melloi*, *Dermanyssus gallinae*, *Dermoglyphus columbae*, *Falculifer rostratus*, *Diplaegidia columbae* (Acarina) fajok fényképeit és előfordulási adatait közli.

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Received: 10. May, 1990.

Dr. RÓZSA, L.

Department of Parasitology and Zoology
University of Veterinary Science
H-1400 Budapest, P.O. box 2.

HUNGARY