

NOTE ON THE HOUSE DUST MITES IN CZECHOSLOVAKIA

The responsibility of mites of the family Pyroglyphidae, especially of the genus *Dermatophagoides* Bogdanov, 1864, for the origination of allergic asthma and rhinitis is generally known and confirmed. The problems of biology and ecology of these mites, however, have not been definitely elucidated yet, particularly as far as the data from Central Europe are concerned.

The mites of the genus *Dermatophagoides* have been found first in Czechoslovakia in connection with skin diseases. In 1958 these mites were isolated from skin affections on neck and face as well as from clothes of a neglected female patient suffering from dermatitis of un-

known etiology. With regard to circumstances under which the mite was found, the senior author identified it as *Dermatophagoides scherehewskyi* Bogdanov, 1864. The case remained unpublished.

More mites, belonging to the same species, were found on a female patient suffering from alopecia areata. The mite was stated to be the causative agent of the disease (Tománek J., Čas. lék. českých 10: 311—312, 1960). In 1966 the occurrence of the same mite species was eventually intercepted at the Parasitologia, laboratory of the First Clinic of the Medical Faculty in Prague, namely by means of adhesive tape applied to various body parts of

Table 1. A survey of examined and positive house dust samples from different microhabitats in Czechoslovakia, collected between January and May 1972

	Horse-hair mattresses	Mattresses stuffed with seaweed or forest	Mattresses stuffed with card wool (wadding)	Molitan mattresses	Sofas, upholstered furniture	Carpets, floors	Offices, warehouses	Total	Maximum number of mites in 1 g of house dust	Average number of mites in a positive sample
A total of samples examined	23	32	2	6	11	7	2	83		
Pyroglyphidae	8	16	2	—	7	1	—	34	68	25.7
<i>Dermatophagoides farinae</i>	5	16	2	—	4	—	—	27	58	24.5
<i>D. pteronyssinus</i>	3	1	1	—	4	1	—	10	16	6.6
Other mites	5	8	1	—	3	7	2	25	27	6.1
<i>Hypoaspis aculeifer</i>	—	—	—	—	—	—	1	1	3	3
Gamasoiden undet.	—	1	—	—	—	—	—	1	1	1
<i>Tyrophagus putrescentiae</i>	1	7	1	—	3	6	—	18	6	1.8
<i>Thyreophagus entomophagus</i>	1	—	—	—	—	—	—	1	1	1
<i>Acarus farris</i>	—	2	—	—	—	—	—	2	22	16.5
<i>Acarus siro</i>	—	—	—	—	—	1	—	1	2	2
<i>Glycyphagus domesticus</i>	2	—	—	—	—	—	—	2	1	1
<i>Anoetus laboratorium</i>	—	—	—	—	—	1	—	1	1	1
Hypopi undet.	1	2	—	—	—	—	—	3	3	2.7
<i>Cheyletus eruditus</i>	—	1	—	—	—	—	—	1	1	1
Oribatei	—	1	—	—	—	—	2	3	2	1.7

patients. All the mites found are considered to be the species *Dermatophagoides pteronyssinus* (Trouessart, 1897), as confirmed by the analysis of J. E. M. H. van Bronswijk.

In recent years the species *Dermatophagoides farinae* Hughes, 1961 has been found in flour and *Euroglyphus longior* (Berlese, 1897) in grain and dry clover (Žďárková E., J. Stored Prod. Res. 3: 155—175, 1967).

Our studies on mites of the genus *Dermatophagoides* were at first directed at the frequency of their occurrence in house dust in homes and social institutions in Czechoslovakia. Dust was collected in paper bags primarily from mattresses by vacuum cleaner. 1 g of dust was processed by current flotation method using lactic acid, including sifting, as described by Spieksma F.T.M. and Spieksma-Boozeman M.I.A. (Acarologia 9: 226—241, 1967). The results obtained during the period between January and May 1972 are shown in Table 1.

While comparing our finds with the results of similar studies conducted in different countries by Cunnigton A.M. (Acta Allerg. 22: 411, 1967), Haarlov N. and Alani M. (Ent. scand. 1: 301—306, 1970), Larson D. G., Mitchell W. F. and Wharton G. W. (J. Med. Ent. 6: 295—299, 1969) and Bronswijk J. E. M. H. van and Sinha R. N. (J. Allergy 47: 31—52, 1971) it is interesting to note that our finds correspond rather with the results of studies conducted in Canada and USA than with the data from England, Holland, Denmark or Japan: this coincidence with the Canadian and American results is reflected in the distinct dominance of *Dermatophagoides farinae* Hughes, 1961 and the absence of *Euroglyphus maynei* (Cooreman, 1950) in our material, if compared to the dominance or balance of *D. pteronyssinus* (Trouessart, 1897) and presence of *E. maynei* in the materials from other countries. A definitive elucidation of these facts on the basis of our present material

would be premature, but it may be supposed that the requirements of both species for microclimate of environment are different and therefore their occurrence in different microhabitats (mattresses, upholstered furniture, carpets) as well as geographic regions is dissimilar. The requirements of *D. pteronyssinus* for temperature and humidity and its interaction with other species occurring in the house dust have been presented by Bronswijk J. E. M. H. van, Schoonen J. M. C. P., Berlio M. A. F. and Lukoschus F. S. (Res. Popul. Ecology, Kyoto 13: 67—79, 1971). From the aspect of this study differences between the lowland seaside climate of England, Holland, Denmark or Japan and the drier Central-European climate of Czechoslovakia may seem to be essential for the occurrence ratio of *D. farinae* and *D. pteronyssinus* in the house dust in different microhabitats. Likewise the seasonal dynamics of both species may be different, and their occurrence ratios may consequently vary during the year.

It is not surprising that the incidence of pyroglyphid mites in social institutions (old age homes) is considerably higher than in private houses, reflecting different living standards. While the mites of the genus *Dermatophagoides* were found in 56.7 % of samples collected in social institutions (including 66.1 % of samples from mattresses), they occurred in only 39 % of samples from private houses (including 42.8 % of samples from mattresses).

The mites of the species *Dermatophagoides farinae* were also found in bags containing discarded hair and moustache from hairdresser's and barber's. From 11 samples examined the mites were found in 3 cases.

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