# **Biodiversity And Population Dynamics of Dust Mites**

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**Abstract:** Mites are living organisms having cosmopolitan distribution and have free to parasitic mode of life. They are microscopic and belong to the largest Arthropods. According to their habit and habitat they are of different types like plant mites, gall mites, animal mites, poultry mites etc. They dwell in dust accumulating in carpets, bedding, fabrics, furniture and poultry. They are negatively phototactic. Mites are allergens too causing allergies, eczema, asthma, rhinitia, bronchitis etc to human and animals. Humidity and temperature are the most important factors that regulate the dust mite population. Common house dust mite population can be influenced by housekeeping practices. They are killed by predators in nature and by direct exposure to sunrays. As house dust mites are widely distributed, a lot of work has been done on the seasonal dynamics and distribution. The maximum literature available in library, journals, books and internet sites have been cited and studied for the diversity of dust mites and tried to summarize here.

Keywords: Dust mites, cosmopolitan, allergens, factors, influence and diversity.

# I. Introduction

Mites are the micro and macro living organisms, have cosmopolitan distribution, free to parasitic mode of life. Mites are among the oldest of all terrestrial animals with fossils known from the early Devonian, nearly 400 million years ago  $^{1}$ (Norton *et al.*, 1988)[1]. They are found everywhere and eat flakes of skin in addition to other things.

- 1. Taxonomy & Habitat: Mites are tiny structured creature, belonging to the largest phylum Arthropoda, and are the most diverse representatives. Mites belong to Class Arachnida, Subclass Acari, Order Acarina. Most of the mites are the members of the family pyroglyphidae (Colloff. 2007; 2009)[2]. Mites are distributed everywhere and have plasticity in habitat. Most of the mites are microscopic size. Many of the mites live freely in the soil or water (fresh or marine), but a large number of mites species live as parasites on plants, animals (invertebrate & vertebrate), some are predators while others are beneficial symbionts (Holliday *et al.*, 2000)[3]. About 48,200 species of mites have been described. A large number of mites are found in the dust of home, offices, hospitals and other human and animal environment. They live in bedding and carpets and feed on skin shed by person, mice and pets (Nayer *et al.* 1974)[4]. They live in our rugs, furniture, mattresses, and other areas where organic detritus and high level humidity is accumulated.
- 2. Types of mites: according to the habit and habitat mites are of different types. They are plant pest mite including spider mites (Bolland H. R. et al., 1997)[5], thread footed mites and gall mites (Yutaka Saito. 2009)[6]. etc.; animal mites such as demodex mites (family demodicidae) living in or near hair follicle, sarcoptic mange mite (family sarcoptidae) that burrow under the skin; insect mite (family tarsonemidae); dog and cat mite etc; poultry dust mites; house dust mites and storage mites. Some are very harmful to human and cause diseases such as clover mites, itch mites harvest mites etc. Kern (1921)[7] discovered *Dermatophagoides pteronyssinus* in house dust as allergen in U.S.A. 8 Miyamota *et al.* (1969)[8] found *D. farinae* as common floor dust mite. Prevalence of two most common species of *Dermatophagoides, d. farinae and d. pteronyssinus* (Hughes 1961)[9] established in the house dust samples of India. Dust mites are cosmopolitan in distribution accumulating in carpets, bedding, fabrics and furniture's. In the world 36 species of house dust mites have been reported, out of which 29 have been reported in India.

Dust mites are also present in poultry dust. Bird mites feed on bird's blood dwelling near bird's nest and poultry house. Mites are negatively photo tactic, the anterior-lateral regions of the body being sensitive to light (Murton and Madden. 1977)[10].

3. Morphology & Life cycle: Mites are minute sac like animals without body division. They are small sized, microscopic with translucent bodies, measuring 420 micrometers in length and 250-320 microns in width, adult mites are creamy blue and rectangle or oval in shape. Mouth parts produce a head like structure bearing a pairs of chelicerae and a pair of padipalps. Four pair legs are found, Eyes and antenna are absent. The whole body bears long hairs and setae (Thompson *et al.* 1958)[11]. Dust mites are poikilothermic animals so the length of their life cycle varies with the temperature. Female lay eggs at the rate of 1-3 per day depending upon the environmental condition (Hart, 1998)[12]. The stages in the life cycle are the egg, a

six legged larva protonymph, eight legged nymph stage tritonymph and adult male and females (Arlian, 1989)[13].

- Mites and Allergy: about 10 million people suffer from different allergy type like allergies, eczema, asthma, 4. rhinitia, bronchitis etc. In India Rao et al. (1973)[14] at Bhilai, 15 Nayar et al (1974)[15] and Krishnarao et al (1982)[16] at Bangalore, Tripathi and Parikh (1984)[17] at Bombay, Tilak and Jogdand (1989)[18] at Aurangabad have worked on house dust mite allergy. The allergens are some enzymatic proteins present in mite debris or skin faeces in the form of dry pellets which deposit on skin by dust mites which makes allergy or irritation on human skin; inhale of pellets mediate sensitization of bronchial hyper responsiveness causing bronchitis (Carlos et al. 2011)[19]; in the bed of asthmatic patients Dematophagoides mites were found in abundantly (Saha 1994)[20], and their serum contained significantly higher IgE concentrations (Sun and Lue 2000)[21]. Perennial allergic rhinitis is a common chronic disorder that results most frequently from sensitivity to house dust mites (Sheikh and Hurwitz. 2003)[22]. Mahesh et al. (2005)[23] suggested a possible association of house dust mite sensitivity with chronic urticaria. Poddar et al. (2006)[24] carried out a systematic survey on the prevalence of total mites and four common allergic mites in the city of Kolkata. Marina et al. (2007)[25] indicated that along with dermatophagoides, blomia tropicalis is also found common and abundant allergen responsible for asthma and rhinitis from house dust mite in some part of the world. Magnus Wickmam (1991)[26] and Levin (2004)[27] studied the house dust mite sensitization in children.
- 5. Factors regulating dust mite frequency: Environmental factors like temperature, rainfall and relative humidity are found to determine the indoor mite's population. Walters and Proctor, (1999)[28] found a significant association between the presence of mites and the relative humidity, any condition which help to maintain high humidity increases the house dust mite population. Live mites were seen only when the relative humidity had been above 50% during the month of collection (Andrew *et al.* 1979)[29]. Relative humidity also affects the development and growth of the mite population (Zheltikova. 1985)[30]. Tilak and Jogdand (1989)[18] worked on the impact of environment on the occurrence of house dust mites in different localities of Aurangabad and reported highest percent contribution of house dust mite is recorded during rainy season in the month of September under congenial environmental conditions, when the temperature was around 25<sup>0</sup> C and range of humidity was between 75% and 85%. The highest concentrations of house dust mites within homes are usually in areas of high use such as beds, furniture and carpeted floors in areas where humans shed skin (Korsgaard. J. 1998)[32]. Feeding rate and allergen production is directly influenced by the relative humidity; mites feed, multiply, and produce more faecal matter at higher relative humidity than at lower ones (Arlian, 1992[33]; Channa Basavanna, 1995)[34].

The house dust mites are extremely sensitive to minimal variations in microclimate (Cadman A. *et al.* 1998)[35], numbers of mites fluctuate according to season. In temperate climates, mite's density follows a seasonal cycle which corresponds to relative humidity with highest mite levels in summer and early fall seasons characterized by high humidity. Pyroglyphids were highest in summer and lowest in winter; glycyphagids were highest in autumn and lowest in spring Murrey And Zuk, 1979[36]; Chew *et al*, 1999[37]; and Chaudhary *et al*, 2011)[38].

6. Housekeeping practices & Control: The population of house dust mites can be influenced by housekeeping practices. Regular vacuuming, replacing carpets, covering mattresses and pillows in plastic and lowering humidity can reduce mite population. The RCC type of buildings supports maximum dust mites population, followed by Assam type (semi- RCC) buildings, and the lowest count was observed in the wooden houses (Sharma *et al.* 2011)[39]. The concentration of house dust mites in the patient's dwellings was also associated with the age of the patients and increased with increasing number of persons in the households (Hallas and Korsgaard, 1997)[40].

Mites are killed by predators in nature. Effective management of mites is possible through better cleaning practices, proper waste diposal methods from dwelling and application of disodium octaborate tetrahydrate (DOT) (Codina *et al*, 2003)[41]. Other than this, herbs specially seeds of kranj, caster and neem is also utilized as extract in controlling these harmful dust mites (Khatri *et al*, 2011)[42].

## II. Dust mites diversity

The seasonal distribution of different acaroids mite species may differ with the major limiting factors like temperature, humidity and eating habits. The determining species composition and diversity of mite community's in house ecosystem also differ. Comparing to the field and the forest, in human living area including house and working place, mites showed less bio-diversity. Here presenting list of work done on dust mite's diversity in different regions/ countries/states/cities related to the habit and habitat. We tried to cover maximum dominant group and families of acaroids species. (TABLE.)

### III. Conclusion

Mites are microscopic living organisms having cosmopolitan distribution, included in arthropods, having free to parasitic life on plants and animals. They are abundantly found in the dust of homes, offices, hospitals, poultry farms, etc. they live in bedding, carpets, our rugs, furniture, mattresses. They are versatile from plants to animals. Some mites are harmful to human and cause allergy diseases such as eczema, skin rashes, wheezing, coughing, fatigue, headache, asthma, rhinitis (common chronic disorder), and bronchitis in adults, women and children. The frequency of dust mites are regulated by the environmental factors like temperature, rainfall and relative humidity. Under these congenial environmental conditions the dust mite population increases. They are extremely sensitive to minimal variations in microclimate fluctuating according to season following a seasonal cycle. Indeed the population of house dust mites can be influenced by the housekeeping practices like regular vacuuming, replacing carpets, covering mattresses and pillows by plastic, proper waste disposal methods from dwellings, and lowering humidity. Dust Mites are killed by the predators in nature and when exposed to direct sunrays. By applying chemicals like disodium octaborate terahydrate (DOT), Lindane, malathion, DDT, locally available seeds like kranj, castor and neem. Dust mites are seasonal dynamic and widely distributed in human habitat and work environment and produce very harmful allergens. Though small, dust mites have a huge impact on society. A large percentage of the population has been affected by them; hence multiple industries have developed to produce wide varieties of products for cleaning, dust protection, treatment and reduction of dust mites and to reduce the number of people that suffer from symptoms associated with dust mites. Farther studies and researches on dust mites may be the field of interest for forth coming scholars.

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SI.N	Region (Country/	Habitat	Dominant group/Families	Dominant genera/ species	Reference
	state/ City)				
1.	Copenhagen, Denmark	Residences of patients with atopic diseases	Pyroglyphidae, Glycyphagidae Cheyletidae	Dermatophagoides pteronyssinus, D. farinae, Euroglyphus maynei. Acoropsisdocta,Berlese, Cheyletuseruditus,Schrank, Cheyletus trouessarti Oudemanns, AcarussiroL.,Glycyphagus privatus Oudemans	Milhim et al., 1972 [43]
2.	Brazil.	House dust	22 sps. Glycyphagidae, Pyroglyphidae, Cheyletidae, Acaridae, Bdellidae, Tydeidae, Chortoglyphidae, Raphignathidae, Ascidae,	Dermatophagoides pteronyssinus, Dermatophagoidesfarinae, Cheyletus eruditus, Glycyphagu sp.	Rasa and Flechtman, 1979 [44]

#### **Table:** List of some work on Dust mites diversity

Onbdet      Onbdet      Pyroglyphids      Krishna Rao et Astgranta and one of Pyroglyphida      Pyroglyphids      Krishna Rao et al. 1981        4      India Lucknow, Barjeeling, Shilong & Patienty and Cherropurgi, Debegahr, Jamma Bellin, Marking and Bellin, Mar				Ган I		
3      Karnataka      House dust      23      Sps. 5      familes      of      skigmata      and one of Prosignata        4      India      Lucknow, Itaman houses (Healthy Dermatophagoides      India      Rishi Ram et al.      India      Lucknow, Itaman      Rishi Ram et al.      1983        5      Bonbay      Fluman houses (Healthy Delta)      Chortoglyphidas (1-species), Itaman, Dermatophagoides      Dermatophagoides      Parikh      1983        6      Karnataka      Human nouses (Healthy Proglyphidae, Interference, Inte				Oribatei		-
Astgrant      and      or      pl. 1981        4      India      Lucknow, Darjeefing, Shling and Chernqunji, Dibugsh, Jamma & Reshnir      Human houses (Healthy Chortogyphidae (1 species) Discretions, D. farina, Chortogyphidae (1 species) Discretions, D. farina, Stephenir      Discretions, D. farina, Discretions, D. farina, Chortogyphidae, Checkes)      Discretions, D. farina, Discretions, D. farina, Stephenir      Tiputh      and Discretions, D. farina, Stephenir      Discretions, D. farina, Stephenir      Soundarranjan Discretions, Stephenir        7      Cool hilly region of Tamil Nadu      Brood chamber of Apis Stephenir      Pyroglyphidae, Discretions, Stephenir      Discretions, Stephenir      Soundarranjan Discretions, Stephenir      Soundarranjan Discretions, Stephenir	3	Karnataka	House dust	<b>23</b> Sps. 5 families of	Pyroglyphids	Krishna Rao et
India      Lacknow, Deriveting, Shilong, Participation, Shilong, Participation, Shilong, Participation, Shilong, Participation, Shilong, Participation, Shilong, Participation, Jamma, Dhili, humin, and Pali, humin, and Participation, palinae, f. Participation, paline, f. Partinae, palinae, f. Partinae, palinae, f. Participation,				Astigmata and one of		<i>al.</i> , 1981
and      Lastanow      Immun houses      Instantion      Instantion <td>4</td> <td>T., 1'</td> <td>U</td> <td>Prostigmata</td> <td>Democratication</td> <td>Dist: Dama et al</td>	4	T., 1'	U	Prostigmata	Democratication	Dist: Dama et al
and Cherraptonii.    Procession    Procession    Procession      5    Bourbay    Human nouses (Healthy Apatients with bronchial ashman)    Pyroglyphidae, (Tspecies)    D. furing    Paring      6    Kamataka    Human and animal    11 species under 8 genes    D. pteronyssinus, D. furing, pyroglyphidae,    D. pteronyssinus, D. furing, processinus, and D. tetal. 1987 [45] furing, furing, Hirstia domicola, patients of asthma d. Calcatta    Soundararanjan processinus, and D. tetal. 1987 [45] furing, processinus, and D. tetal. 1987 [45] furing, furing, Hirstia domicola, processinus, and D. tetal. 1987 [45] furing, furing, Hirstia domicola, processinus, furing, furing, Hirstia domicola, processinus, furing, furing, Hirstia domicola, furing, Hirsti	4	Darieeling Shilong	Ruman nouses (Healthy	10 sps. Acaridae (7 species)	Dermatophagolaes	(1983) $(1983)$
Dibugath, Jamua Re Kashmir and Delhi.      Givesphagidae (7 species)        5      Bombay      Human houses (Healthy & Pationt with bronchial asthma)      Pyroglyphidae, (1 species)      D. farina D. pteronyssinus, D. farinae, Banhana      Tipathi and (1984)1[7]        6      Karnataka      Human and animal houses      In species under 8 genen Pyroglyphidae, (2 species)      D. farinae D. pteronyssinus, D. farinae, Bandhabar and A. griffstsi, D. gallinae , T. (1987)[45]        7      Cool hilly region of Tamil Nadu      Brood chamber of Apis cerana.      varoaidae Pyroglyphidae, (2 species)      Dermatophagoides pteronyssinus and D. farinae, Hirstia domicola.      Soundararanjan pteronyssinus and D. farinae, Hirstia domicola.      Soundararanjan pteronyssinus and D. farinae, Hirstia domicola.      Modak er al. precoryssinus and D. farinae, Hirstia domicola.        9      Paun, argentina.      Soil sample      Orbatid      Zygoribanda lata, Z. pyroglyphidae, diseases      Perduar mires- tranae, Hirstia domicola.      Berry 1998 [48] Typholorous coclenitalis, and Norsciulas fallactes; Zygoribanda lata, Z. phongate.      Dengeri and alzael, 1992        10      Northwest      Injurios plant feeding mites.      Pyroglyphidae, Cheyletidae Pyroglyphidae, Cheyletidae Pyroglyphidae, Cheyletidae Pyroglyphidae, Cheyletidae Puronyssinus, Cheyletus sp. phon, Acaridae      Perturophagoides pteronyssinus, Cheyletus sp. phonae, Chirci, 2003 (Signaphagoides pteronyssinus, Cheyletus sp. phonae, Chirci, 2003 (Signaphagoides pteronyssin		andCherrapunii	a ration()	Chortoglynhidae (1-species),	pieronyssinus, D. jurina,	(1965)
K    Kashmir    and    Labidophoridae (1 species)      5    Bombay    Human houses (Healthy ashma)    Pyroglyphidae,    D. forring    Parkh (1984)[17]      6    Karnataka    Human and animal    11 species under 8 genera which belong to 6 families    D. pteronysinus, D. furince, Masavanna    Valandikar and Basavanna      7    Cool hilly region of Tamil Nadu    Brood chamber of Apis    varoaidae    Dermarphogoides Dermarphogoides    Soundararanjan Detronysinus and D. et al. 1987 [45]      8    Threedistricts of Parganas, Bardfdaman and diseases    Bed & Bed room of Pyroglyphidae,    Pyroglyphidae, Dermarphogoides    Modak et al. pteronysinus and D. et al. 1987 [46]      9    Paun, argentina.    Soil sample    Orbatid    Zygoribatula lata, Z aclataria    Denegri and alzuel, 1992 [46]      10    Norhwest    Injurios plant feeding mites.    Metaseiulus, stigmaeidae    anticle, percentialis, and Neoscillus fallaces, itrangidae    Dermarphogoides pretorysinus, and D. j. 199 [49]    Laxni and Haq, alzuel, 1992 [49]      11    Kearfa    Office, Hotels, Houses    Pyroglyphidae, Cheyleidae, diversing fallaces, itrangidae    Dermarphogoides pretorysinus, Claughphus, stigmaeidae    Dermarphogoides pretorysinus, Claughphus, stigmaeidae    Dermarphogoides pretorysinus, Claughphus, stigmaeidae    Dermatophagoides pretorysistus		Dibugarh Jammu		Glycyphagidae (7 species) and		
Dethi.      Immuno bousses      Pyroglyphidae, astmma)      Detroition (1984)1171        6      Karnataka      Human housses (Health) & Putient with bronchial astmma)      Pyroglyphidae, Pyroglyphidae,      D. forrine Detroitions, D. furtime, E. moynei, C. Bertesei, B. ropiculas, S. meshtit,      Valandikar and (1987)[45]        6      Karnataka      Human and animal houses      It species under 8 genera Pyroglyphidae,      D. forrine Detroitions, C. bertesei, B. ropiculas, S. meshtit,      Valandikar and (1987)[45]        7      Coot hilly region of Tamil Nadu      Brood chamber of Apis Cerana.      varoaidae      Dermatophagoides perconystimus and D. farinae, Hirstia domicola.      Soundararanjan perconystimus and D. farinae, Hirstia domicola.      Modak et al. perconystimus and D. farinae, Hirstia domicola.        8      Threedistrics of asthma diseases      Soil sample      Orbatid      Zygorihauda lata, zigmaeidae      Z. perconystimus and D. farinae, Hirstia domicola.      Modak et al. perconystimus and L.      Denegri and alzael, 1992        10      Northwest      Injurios plant feeding mites.      Metasciulus, stigmaeidae      ambliseius, figuephylidae, Cheyletidae      Percentrophagoides perconystimus, Blomin toropicalis, Malayaug/phasa, Karodyphas,		& Kashmir and		Labidophoridae (1 species) and		
S      Bornbay      Human houses      Human and animal ashma)      Pyroglyphidae, Pyr		Delhi.				
& Patient with bronchial astmma)      Derivation      Derivation      Parish (1984)[17]        6      Karnataka      Human and animal houses      11 species under 8 genera which belong to 6 families. <i>E. mayrei</i> , <i>R. tripicalis</i> , <i>S. nebbiti</i> .      D. pteronyssimus, <i>E. mayrei</i> , <i>R. tripicalis</i> , <i>S. nebbiti</i> .      Parish (1987)[45]        7      Cool hilly region of Tamil Nadu      Brood chamber of <i>Apis</i> <i>Cerna.</i> varroaidae      Dermatophagoides pteronyssimus and <i>D.</i> <i>pteronyssimus</i> . <i>Ptedator mites</i> .        9      Paun, argentina.      Soil sample      Orbatid <i>Dyperonysteronys</i>	5	Bombay	Human houses (Healthy	Pyroglyphidae,	D. farina	Tripathi and
astma)      process under 8 genera      D. preromyssina, D. farinae, Valandikar and Basavanna houses        6      Karnataka      Human and animal houses      H species under 8 genera      D. preromyssina, D. farinae, T. (1987)[45]        7      Cool hilly region of Brood chamber of Apis varroaidae      Pyroglyphidae,      S. mesbuii.      S. nesbuii.        7      Cool hilly region of Brood chamber of Apis varroaidae      Dermatophagoides      Soundatraranjan pteronyssinus and D. et al. 1987][45]        8      Threedistricts of patients of astma diseases      Bed we Bed room of pyroglyphidae,      Dermatophagoides      Modak et al. 1987][46]        9      Paun, argentina.      Soil sample      Orbatid      Zygoribatula lata, Z. and lata, 1992 [46]      Dengri and alzeel, 1992 [47]        10      Northwest      Injurios plant feeding mites.      Proglyphidae, Glycyphagidae      Dermatophagoides lataria and lazel, 1992 [49]        11      Kearla      Office, Hotels, Houses      Pyroglyphidae, Glycyphagidae      Dermatophagoides lataria and Haq, pteronystinas, Chelychus, Astroacyphynas, Chelyphas, Astroacyphynas, Chelyphas, Astroacyphynas, Chelyphas, Astroacyphynas, Chelyphas, Chelyphas, Astroacyphynas, Chelyphas, Astroacyphynas, Chelyphas, Astroacyphynas, Chelyphas			& Patient with bronchial		D. pteronyssinus	Parikh
6      Karnataka      Human and animal houses      11 species under 8 genera which belong to 6 families. <i>E. mayrei</i> , <i>R. griffusti, D. gulinea, T. longior, T. rutrescentiae, C. berlesei, B. tropicalis, <i>S. neshtii.</i>      Valandikar and Basavanna        7      Cool hilly region of Tarmi Nadu      Brood chamber of <i>Apis</i> <i>Cerana.</i>      varoaidae      Dermanophagoides prime, <i>B. tropicalis,</i> <i>S. neshtii.</i>      Soundarraranjan <i>permyssinus</i> and <i>D. firrine.</i>      Soundarraranjan <i>et al.</i> 1987 [45]        8      Threedistricts      6      Bed &amp; Bed room of patients of asthma diseases      Pyroglyphidae, diseases      Dermanophagoides <i>permyssinus</i> and <i>D. firrine.</i>      Soundarraranjan <i>permyssinus</i> and <i>D. firrine.</i>      Soundarraranjan <i>permyssinus</i> and <i>D.</i> <i>firrine.</i>      Soundarraranjan <i>permyssinus Colestiaus</i> <i>fallace</i>      Soundarraranjan <i>permyssinus Colestiaus</i> <i>fallace</i>      Soundarraranjan <i>permyssinus Colestiaus</i> <i>fallace</i>      Soundarraranjan <i>permyssinus Colestiaus</i> <i>fallace</i>      Soundarraranjan <i>permyssinus Colestiaus</i> <i>fallace</i>      Soundarraranjan <i>permyssinus Colestiaus</i> <i>fallace</i>      Deferminatiantra <i>Colestiaus</i> <i>farinue.</i>      Soundarraranja <i>tar</i></i>			asthma)			(1984)[17]
bouses      which belong to 6 families.      E. maynei, A. griffusi, D. gallinae, T. Iongior, T. rutrescentiae, C. berlesei, B. tropicalis, S. nesbiti,      Basavanna A. griffusi, D. gallinae, T. (1987)[45]        7      Cool hilly region of Tamil Nadu      Brood chamber of Apis Cerana,      varoaidae      Dermatophagoides peromyssinus and D. farinae, Bardolhaman and Calcatta      Soundararanjan et al. 1987 [45]        8      Threedistricts Parganas, Bardolhaman and Calcatta      Bed & Bed room of Parganas, Bardolhaman and Calcatta      Pyroglyphidae,      Dermatophagoides peromyssinus and D. farinae, Hirstia domicola.      Soundararanjan et al. 1987 [45]        10      Northwest      Injurios plant feeding mites.      Orbatid      Zygoribatula tata, Z elongate.      Z Denegri and alxee, 1992        11      Kearla      Office, Hotels, Houses      Pyroglyphidae, taridae      Preduor      mites- tropicalis, Malayagiphus, Rizoglyphus, Acaridae      Dermatophagoides pteromyssinus, Bimia tropicalis, Malayagiphus, Rizoglyphus, Rizoglyphus, Chegiphus, Rizoglyphus, Chegiphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Riz	6	Karnataka	Human and animal	11 species under 8 genera	D. pteronyssinus, D. farinae,	Valandikar and
Pyroglyphide,    A. griffusi, D. galinae, T.    [1987](45]      Pyroglyphide,    A. griffusi, D. galinae, T.    [1987](45]      Procession, C. Beresei, B.    Transi Nada    Brood chamber of Apis    varoaidae    Dermatophagoides      Parganas, Barddhaman and Calcata    Bed & Bed room of Pyroglyphidae,    Dermatophagoides    Modak et al.      Parganas, Barddhaman and Calcata    Soil sample    Orbatid    Zygoribatula lata, Z. alzuel, 1992    Denegri and alzuel, 1992      10    Northwest    Injurios plant feeding    Metasciulus, ambltseius, tigmacidae    Preduor    mites-      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Cheyletidae    Dermatophagoides plant, argentina, Azaridae    Laxmi and Haq, Byrglyphidae, Cheyletidae    Dermatophagoides plant, argentina, Azaridae    Laxmi and Haq, Byrglyphidae, Cheyletidae    Dermatophagoides plant, Karchana- burglyphidae, Cheyletidae    Chylens malaccenus, D. plant feeding flyphidae, Cheyletidae    Dermatophagoides plant, Karchana- burglyphidae, Cheyletidae    Dermatophagoides plant, Karina Alagoides plant, Kirzoglyphus, Caloglyphus, Calogly			houses	which belong to 6 families.	E. maynei,	Basavanna
1    Longior, T. T. rutrescentiae, C. berlesei, B. ropicalis, S. neshiti.    Soundaranajan perconyssinus and D. farinae, Barddhanan and Calcatta    Soundaranajan et al. 1987 [45]      8    Threedistricts of Parganas, Barddhanan and Calcatta    Bed & Bed room of patients of asthma diseases    Pyroglyphidae, Dermatophagoides patients of asthma diseases    Dermatophagoides perconyssinus and D. farinae, Hirstia domicola.    Modak et al. Perconyssinus diseases      9    Paun, argentina.    Soil sample    Orbatid    Zygoribatula elongate.    Denegri and alzuel, 1992 [46]      10    Northwest    Injurios plant feeding mites.    Metaseiulus, sigmacidae    amblseius, Predator    Predator    mites- trophysical and alzuel, sigmacidae    Laxmi and Haq, Dermatophagoides perconyssinus, and elongate.    Laxmi and Haq, 1999 [49]      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagida Acaridae    Dermatophagoides perconyssinus, and alzuel, and Accervisis    Laxmi and Haq, 1999 [49]      13    Western Thong Pha Phum, Kanchana- buri    Stored food products    Pyroglyphidae, Cheyletidae    Dermatophagoides perconyssinus, Cheylephags    Insung perconyssinus, Cheylephags    Soleiman An and Radinejad J (2002)[51]      14    Description    Bacterial desease in Poultry red mite    Dermatophagoides perconyssinus, Cheyletus sp. (2002)[51]    Deleman and Accervisis and perconyssinus, Cheyletus s				Pyroglyphidae,	A. griffutsi, D. gallinae , T.	(1987)[45]
Image: Second					longior,	
B. tropicalis, S. nesbiti, S. numerical description Permatophagoides paramas, BardManan and Calcata      Soundararanjan S. Soundararanjan D. et al. 1987 [45] at al. 1987 [45]        8.      Threedistricts of paramas, BardManan and Calcata      Bed & Bed room of patients of asthma diseases      Pyroglyphidae, Dermatophagoides paramas, BardManan and Calcata      Modak et al. 1991 [46]        9.      Paun, argentina.      Soil sample      Orbatid      Zygoribatula elongate.      Lata, Z. elongate.      Denegri and alzael, 1992 [47]        10.      Northwest      Injurios plant feeding mites.      Metaseiulus, stigmacidae      ambltseius. and Neoseiulus fallacies, Zezelli nali, Acaridae      Predator tropicalis, Malayagiphus, Ricoglyphus, Ric					T. rutrescentiae, C. berlesei,	
7    Cool hilly region of Tamil Nadu    Brood chamber of Apis    varroaidae    Dermatophagoides pteronyssinus    Soundararanjan pteronyssinus    Soundararanjan et al. 1987 [45]      8    Threedistricts    of    Bed & Bed room of paranas, and Calcata    Pyroglyphidae,    Dermatophagoides pteronyssinus    Modak et al. pteronyssinus    Modak et al. pteronyssinus    Impute preonyssinus    Denegri    Andak      9    Paun, argentina.    Soil sample    Orbatid    Zygoribatula    Lata,    Z    Denegri    and alzael,    1992 [46]      10    Northwest    Injurios plant feeding mites.    Metaseiulus, sigmacidae    ambltseius, pyroglyphidae, Glycyphagidae    predutor    mites.    Berry 1998 [48]      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae    Dermatophagoides pteronyssinus, Blomia    Laxmi and Haq, pypolyphus, Acaridae    Dermatophagoides pteronyssinus, Cloighyphus, Acaridae    Permatophagoides pteronyssinus, Cloighyphus, Acaridae    Porglyphidae, Chyletus malaccemus, D, pteronyssinus, Cloighyphus, Alaeyag/phus, Ricglyphus, Clocyphagus      12    Haryana Punjab    Stored food products    Pyroglyphidae, Cheyletidae    Dermatophagoides pteronyssinus, Cheyletus sp. (2002)[51]    Insung pteronyssinus, Cheyletus sp. (2002)[51]    Dermatophagoides pteronyssinus, Cheyletus sp. (2003)[5					B. tropicalis,	
Production      Flood chambe of April (S) Tamil Nealu      Determinity regiones      Dotation and annual preronyssinus and D. farinae.      Determitophagoides      Dotatia annual preronyssinus and D. farinae.      Determitophagoides      Modak et al. preronyssinus and D. farinae.      Demegri and alzael, 1992        9      Paun, argentina.      Soil sample      Orbatid      Zygoribatula elongate.      Denegri and alzael, 1992      Denegri and alzael, 1992      Denegri and alzael, 1992        10      Northwest      Injurios plant feeding mites.      Metaseiulus, sigmacidae      Metaseiulus, and Neosciulus fallacies, Zezelli mali.      Laxmi and Haq. 1999      Laxmi	7	Cool billy marion of	Dread shamber of Ania	vomosidos	S. nesolitt.	Coundonomian
11    Tamina and the second of the second o	/	Cool milly region of Tamil Nadu	Carana	varioaidae	nteronyssings and D	soundararanjan et al. 1987 [45]
8      Threedistricts      of parganas, Barddhaman      Bed      & Bed      ref      Dermatophagoides peronsystims      Modak      et al.        9      Paun, argentina.      Soil sample      Orbatid      Zygoribatula lata, Calcata      Injurios      Denegri      and alzuel, 1992      Exportion			Ceruna.		farinae	et al. 1987 [45]
WestBengal(24)    patients of asthma diseases    progryphilaet    Demographilaet    Demographilaet      9    Paun, argentina.    Soil sample    Orbatid    Zygoribatula    lata, Z.    Denegri    and alzuel, 1992      10    Northwest    Injurios plant feeding mites.    Metaseiulus, stigmaeidae    ambltseius, stigmaeidae    Predator    mites.      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Giycyphagidae    Dermatophagoides pteronyssinus, Blomia tropicolids    Laxmi and Haq, pteronyssinus, Caloglyphus, Austroglyphus, Caloglyphus, tropicolids    Laxmi and Haq, pteronyssinus, Cheyletus sp.    1999 [49]      13    Western Thong Pha Phum, Kanchana- buri    Pyroglyphidae, Cheyletidae Phum, Kanchana- buri    Pyroglyphidae, Cheyletidae Prunophagoides    Dermatophagoides pteronyssinus, Cheyletus sp.    Cohirci, 2003      14    Description    Bacterial desease in domestic fowl.    Pyroglyphidae, Cheyletidae Dermatophagoides    Dermatophagoides pteronyssinus, Cheyletus and Rafinejad J (2008)[53]    Douglas et al, 2001[51]      16    Egypt.    School    Pyroglyp	8	Threedistricts of	Bed & Bed room of	Pyroglyphidae.	Dermatophagoides	Modak <i>et al</i>
Parganas. Barddhaman and Calcatta    diseases    furinae, Hirstia domicola.    furinae, Hirstia domicola.    furinae, Hirstia domicola.      9    Paun, argentina.    Soil sample    Orbatid    Zygoribatula lata, 2 langel, 1992    Denegri and alzuel, 1992      10    Northwest    Injurios plant feeding mites.    Metaseiulus, ambltseius, stigmacidae    Predator    mites.      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae    Dermatophagoides tropicalis.    Laxmi and Haq, pteromystinus, Rizoglyphus, Caloglyphus, Austroglyphus, Glycyphagidae    Dermatophagoides tropicalis.    Laxmi and Haq, pteromystinus, Rizoglyphus, Caloglyphus, Rizoglyphus, Caloglyphus, Austroglyphus, Glycyphagidae    Dermatophagoides pteromystinus, Cheyletus malaccenus, D. pteromystinus, Cheyletus sp.    Putatunda et al., pteromystinus, Cheyletus sp.      13    Western Thong Pha Phum, Kanchana- buri    House mites    Pyroglyphidae Cheyletidae    Dermatophagoides pteromyssinus, Cheyletus sp.    Putatunda et al., pteromyssinus, Cheyletus sp.      14    Description    Bacterial desease in domestic fowl.    Pyroglyphidae, Cheyletidae    Dermatophagoides pteromyssinus, Cheyletus and AL 2003[53]    Soleiman M and Rafinejad 1 (2009)[53]      16    Egypt.    School    Pyroglyphidae, Acarophenacidae, Chyletias atores.    Dermatophagoides farinae, al. (2009)[53]    Sulainan A. Acaroph	0	WestBengal(24	patients of asthma	i jiogijpinano,	pteronyssinus and D.	1991 [46]
Barddhaman      and        9      Paun, argentina.      Soil sample      Orbatid      Zygoribatula      lata,      Z      Denegri      and        10      Northwest      Injurios plant feeding mites.      Metaseiulus, ambltseius, stigmaeidae      Predator      mites.      Berry 1998 [48]        11      Kearla      Office, Hotels, Houses      Pyroglyphidae, Glycyphagidae      Dermatophagoides      Laxmi and Haq, pteronyssinus, Blomia      1999 [49]        12      Haryana Punjab      Stored food products      Pyroglyphidae, Cheyletidae      Chyletus malaccenus, D      Putatunda et al., pteronyssinus, Glycyphagus        13      Western Thong Pha      House mites      Pyroglyphidae Cheyletidae      Dermatophagoides mteronyssinus, Cheyletus sp.      [2002]51]        14      Description      Bacterial desease in Pyroglyphidae, Cheyletidae      Dermatophagoides mteronyssinus, Cheyletus and Rafinejad J (2008)[53]      [2009]54]        16      Egypt.      School      Pyroglyphidae, Pyroglyphidae, Cheyletidae      Dermatophagoides mteronyssinus, Cheyletus malaccenus, D. farina, Cheyletus malaccensis and Rafinejad J (2008)[53]        16      Egypt.      School      Pyroglyphidae, Cheyletidae Dermatophagoides farinae, al (2009)[54].      Sulaiman A, carophenascitae ch		Parganas,	diseases		farinae, Hirstia domicola.	
Calcatta      Calcatta      Denegri and alzuel, 1992 [47]        9      Paun, argentina.      Soil sample      Orbatid      Zygoribatula elongate.      Lata, Z elongate.      Denegri and alzuel, 1992 [47]        10      Northwest      Injurios plant feeding mites.      Metaseiulus, ambltseius, stigmaeidae      Predator mites- Typhlodromus occdentallis, and Neoseiulus fallacies, Zezelli mali.      Berry 1998 [48]        11      Kearla      Office, Hotels, Houses      Pyroglyphidae, Glycyphagidae Acaridae      Dermatophagoides tropicalls, Malayaglyphus, Rizoglyphus, Glycyphagus      Laxmi and Haq, pteromyssinus, Blomia tropicalls, Malayaglyphus, Rizoglyphus, Glycyphagus        12      Haryana Punjab      Stored food products      Pyroglyphidae, Cheyletidae Phum, Kanchana- buri      Dermatophagoides pteromyssinus, Cheyletus sp.      D Putatunda et al., pteromyssinus, Cheyletus sp.        13      Western Thong Pha Phum, Kanchana- buri      Pyroglyphidae, Cheyletidae      Dermatophagoides pteromyssinus, Chyletus sp.      Chirici, 2003        14      Description      Bacterial desease in domestic fowl.      Pyroglyphidae, Cheyletidae      Dermatophagoides pteromyssinus, D. farina, d. (2009)[53]      Soleiman M melaccerisis        16      Egypt.      School      Pyroglyphidae, Pyroglyphidae, Dermatophagoides farinace, chermatophagoides farinace, chyletus malaccenus, datacerus and ala		Barddhaman and				
9      Paun, argentina.      Soil sample      Orbatid      Zygoribatula elongate.      lata, langet.      Z polagate.      Denegri and alzuel, 1992      Jonegri (47)        10      Northwest      Injurios plant feeding mites.      Metaseiulus, stigmaeidae      ambltseius, reprint of the construction of the co		Calcatta				
10    Northwest    Injurios plant feeding mites.    Metaseiulus, ambltseius, stigmaeidae    Predator mites- mites- mites- graduation stigmaeidae    Berry 1998 [48]      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae Acaridae    Dermatophagoides pleromyssinus, Blomia tropicalis, Malayaglyphus, Rizoglyphus, Caloglyphus,	9	Paun, argentina.	Soil sample	Orbatid	Zygoribatula lata, Z.	Denegri and
10    Northwest    Injurios plant feeding mites.    Metaseiulus, stigmaeidae    ambltseius, mites.    Predator    Berry 1998 [48]      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae    Dermatophagoides pteronyssinus, Rizoglyphus, Rizoglyphus, Rizoglyphus, Glycyphagus    Laxmi and Haq, pteronyssinus, Rizoglyphus, Rizoglyphus, Glycyphagus      12    Haryana Punjab    Stored food products    Pyroglyphidae, Cheyletidae    Dermatophagoides pteronyssinus, Chyletus malaccenus, D. pteronyssinus, Cheyletus sp.    Insung (2002)[51]      13    Western Thong Pha Phum, Kanchana- buri    Bacterial desease in domestic fowl.    Poultry red mite    Dermatophagoides pteronyssinus, Cheyletus sp.    Insung (2002)[51]      14    Description    Bacterial desease in domestic fowl.    Pyroglyphidae, Cheyletidae    D. pteronyssinus, Chyletus malaccerisis    Soleiman M and Rafinejad J (2008)[53]      16    Egypt.    School    Pyroglyphidae, Cheyletidae Dermanyssidae    Dermatophagoides pteronyssinus, D. farina, al. (2009)[54].    Douglas et al. pteronyssinus, D. farina, al. (2009)[54].      17    Hawaii    Human houses    Pyroglyphidae, Chyletus    Dermatophagoides pteronysinus, D. farina, al. (2010)[55]    Douglas et al. pteronysinus, sp.      18    Jeddah governorate wills and departmental stores.    Local chicken    Pyrog					elongate.	alzuel, 1992
10    Northwest    Injurios plant feeding mites.    Metaseiulus, stigmaeidae    ambltseius, predator mites.    Berry 1998 [48]      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae Acaridae    Dermatophagoides    Laxmi and Haq.      11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae Acaridae    Dermatophagoides    Laxmi and Haq.      12    Haryana Punjab    Stored food products    Pyroglyphidae, Cheyletidae    Chyletus malaccenus, D. Putatunda et al., pteronyssinus, Cheyletus spi.    Putatunda et al., pteronyssinus, Cheyletus spi.      14    Description    Bacterial desease in domestic fowl.    Pyroglyphidae, Cheyletidae    Dermatophagoides    Insung (2002)[51]      15    Iran.    Dust from hotels & Inn    Pyroglyphidae, Cheyletidae Dermanyssinus, Chyletus spi.    Soleiman M and Rafinejad J (2008)[53]      16    Egypt.    School    Pyroglyphidae, Cheyletidae Dermatophagoides    Dermatophagoides pteronyssinus, D. farina, al. (2009)[54].    Cheyletus malaccenus, and al. (2009)[54].      18    Jeddah governorate    Wheat floor, bakeries, mills and departmental stores.    Pyroglyphidae, Cheyletidae Acarophenaxitae, Chyletus malaccenus, Butaiman A.    Acarophenax tribolii, and AL. Nasser Chyletus malaccenus, Chyletus malaccenus, Chyletus malaccenus, Chyletus malaccenus, Chyletus malaccenus, Chyletu						[47]
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11    Kearla    Office, Hotels, Houses    Pyroglyphidae, Glycyphagidae    Dermatophagoides    Laxmi and Haq, pteronyssinus, Blomia      12    Haryana Punjab    Stored food products    Pyroglyphidae, Cheyletidae    Dermatophagoides    Putatunda et al., netronyssinus, Clocyphagus      12    Haryana Punjab    Stored food products    Pyroglyphidae, Cheyletidae    Dermatophagoides    Putatunda et al., pteronyssinus, Cheyletus malaccenus, D.    Putatunda et al., pteronyssinus, Cheyletus spi.      13    Western Thong Pha Phum, Kanchana- buri    House mites    Pyroglyphidae Cheyletidae    Dermatophagoides pteronyssinus, Cheyletus spi.    Insung (2002)[51]      14    Description    Bacterial desease in domestic fowl.    Poultry red mite    Dermanyssus gallinae, (2003)[53]    Chirici, 2003      15    Iran.    Dust from hotels & Inn    Pyroglyphidae, Cheyletidae    D. pteronyssinus, Chyletus melaccensis    Soleiman M and Rafinejad J (2008)[53]      16    Egypt.    School    Pyroglyphidae, Cheyletidae Dermanyssidae    Dermatophagoides pteronyssinus, D. farina, al. (2009)[54].    Douglas et al., (2009)[54].      17    Hawaii    Human houses    Pyroglyphidae, Acaridae    Dermatophagoides pteronyssinus, 20    Douglas et al., (2011)[56]      18    Jeddah governorate stores.<			mites.	stigmaeidae	Typhlodromus occdentallis,	
Level      Description      Description      Bacterial      Office, Hotels, Houses      Pyroglyphidae, Glycyphagidae      Dermatophagoides tropicalis, Malayaglyphus, Rizoglyphus, Calgolyphus, Austroglyphus, Glycyphagus      Laxmi and Haq, 1999 [49]        12      Haryana Punjab      Stored food products      Pyroglyphidae, Cheyletidae      Chyletus malaccenus, D. pteronyssinus, Burin      Putatunda et al., 1999 [50]        13      Western Thong Pha Phum, Kanchana- buri      House mites      Pyroglyphidae Cheyletidae      Dermatophagoides pteronyssinus, Cheyletus sp.      Insung (2002)[51]        14      Description      Bacterial desease in domestic fowl.      Poultry red mite      Dermatophagoides pteronyssinus, Cheyletus sp.      Chrici, 2003        15      Iran.      Dust from hotels & Inn      Pyroglyphidae, Cheyletidae Dermatyssidae      D. pteronyssinus, Chyletus melaccerisis      Soleiman M and Rafinejad J (2008)[53]        16      Egypt.      School      Pyroglyphidae, Dermatyssidae      Dermatophagoides pteronyssinus, D. farina, chevietus malaccensis and Dermatophagoides      Douglas et al, 2010[55]        18      Jeddah governorate      Wheat floor, bakeries, mills and departmental stores.      Pyroglyphidae, Acaridae      Dermatophagoides gallinae, chevietus malaccenus, Blattisocius kegani      Sulaiman A. Acarophenax tribolii, Acaridae      Dermatophagoides g					and Neoseiulus fallacies,	
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Image:	-	871		Dermanyssidae	pteronyssinus, D. farina,	al. (2009)[54].
Image: constraint of the constra				-	Cheyletus malccensis and	
17    Hawaii    Human houses    Pyroglyphidae,    Dermatophagoides pteronyssinus,    Douglas et al, 2010[55]      18    Jeddah governorate    Wheat floor, bakeries, mills and departmental stores.    Pyroglyphidae,    Dermatophagoides farinae, Acarophenax tribolii, and A.L. Nasser    Sulaiman A. and A.L. Nasser      19    Malawi    Local chicken    Pyroglyphidae,    Dermatophagoides gallinae, cnemidocoptes mutans    Banda, 2011[57]      20    Vilnius Lithuania    houses    Pyroglyphidae,    Dermatophagoides gallinae, cnemidocoptes mutans    Dautartiene. nteronyssinus, D farina    A [58]					Dermanyssus sp.	
18    Jeddah governorate    Wheat floor, bakeries, mills and departmental stores.    Pyroglyphidae, Acarophenacidae, Chyletidae, Acarophenacidae, Chyletus malaccenus, Blattisocius tarsalis and Blattisocius keogani    Sulaiman A. and A.L. Nasser      19    Malawi    Local chicken    Pyroglyphidae, Pyroglyphidae, Acarophenacidae, Chyletus malaccenus, Blattisocius tarsalis and Blattisocius keogani    Banda, 2011[57]      20    Vilnius Lithuania    houses    Pyroglyphidae, Pyroglyphidae, Acarophenasi Acarophena	17	Hawaii	Human houses	Pyroglyphidae,	Dermatophagoides	Douglas et al,
18    Jeddah governorate    Wheat floor, bakeries, mills and departmental stores.    Pyroglyphidae, Acarophenacidae, Chyletidae, Acarophenax tribolii, Acarophenax tribolii, and A.L. Nasser    Sulaiman A. and A.L. Nasser      19    Malawi    Local chicken    Pyroglyphidae, Pyroglyphidae, Acarophenacidae, Chyletidae, Acarophenax tribolii, Blattisocius tarsalis and Blattisocius keogani    Banda, 2011[57]      20    Vilnius Lithuania    houses    Pyroglyphidae, Pyroglyphidae, Acarophenax tribolii, Acarophenax tribolii, Blattisocius tarsalis and Blattisocius keogani    Dermatophagoides gallinae, Chyletus tarsalis and Blattisocius keogani      20    Vilnius Lithuania    houses    Pyroglyphidae, Acarophenax tarsalis and Chyletus tarsalis and Blattisocius keogani    Dautartiene. Acarophenax tarsalis and Blattisocius keogani					pteronyssinus,	2010[55]
mills and departmental stores.    Acarophenacidae, Chyletidae, Acarophenax tribolii, and A.L. Nasser      Acaridae    Chyletus malaccenus, Blattisocius tarsalis and Blattisocius keogani      19    Malawi    Local chicken      20    Vilnius Lithuania      houses    Pyroglyphidae,      Pyroglyphidae,    Dermatophagoides mutans      2011[57]	18	Jeddah governorate	Wheat floor, bakeries,	Pyroglyphidae,	Dermatophagoides farinae,	Sulaiman A.
stores.    Acaridae    Chyletus malaccenus, Blattisocius tarsalis and Blattisocius keogani    (2011)[56]      19    Malawi    Local chicken    Pyroglyphidae,    Dermatophagoides gallinae, cnemidocoptes mutans    Banda, 2011[57]      20    Vilnius Lithuania    houses    Pyroglyphidae,    Dermatophagoides nteronvssinus D farina    Dautartiene. A [58]			mills and departmental	Acarophenacidae, Chyletidae,	Acarophenax tribolii,	and A.L. Nasser
Blattisocius  tarsalis  and Blattisocius    19  Malawi  Local chicken  Pyroglyphidae,  Dermatophagoides gallinae, cnemidocoptes mutans  Banda, 2011[57]    20  Vilnius Lithuania  houses  Pyroglyphidae,  Dermatophagoides  Dautartiene. nteronvssinus D faring  A [58]			stores.	Acaridae	Chyletus malaccenus,	(2011)[56]
Image: Product of the second secon					Blattisocius kaogeni	
20  Vilnius Lithuania  houses  Pyroglyphidae,  Dermidopingotiaes gatinde,  Data [57]    20  Vilnius Lithuania  houses  Pyroglyphidae,  Dermatopingoties  Dautartiene.	10	Malawi	Local chicken	Pyroglyphidae	Dermatonhagoides gallingo	Banda
20 Vilnius Lithuania houses Pyroglyphidae, Dermatoropres matures Dattartiene. <i>Dermatophagoides</i> Dautartiene. <i>Interopyssinus D faring</i> A [58]	17	Ivialawi		i yiogiypindae,	cnemidocontes mutans	2011[57]
nteronvssinus D farina A [58]	20	Vilnius Lithuania	houses	Pyroglyphidae	Dermatophagoides	Dautartiene
		- Innus Ennouniu			pteronyssinus. D. farina	A.[58]