

Thysanoptera dermatitis

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ABSTRACT

Thysanoptera dermatitis is caused by the bite of small (1–2 mm) insects (generally thrips). Thrips usually feed on the juices of vegetables but if they reach human skin they can suck the epidermal lymph after biting. The cutaneous lesions formed are small pink and itchy papules localized mainly on the trunk and the arms. Diagnosis is only possible by demonstrating that the insect is present inside one of the lesions of the skin. Thysanoptera dermatitis is often misdiagnosed as mosquito bites. Although self-resolving in a few days, Thysanoptera dermatitis should be known not only for the cultural and scientific training of the dermatologist but also to add more detailed diagnostic information to the generic diagnosis of 'entomodermatosis' and to confirm the benign evolution of the bites.

Key words: entomodermatitis, insect dermatitis, thrips, *Thysanoptera* bites

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Introduction

Thrips are tiny insects characterized by an oblong brown body, with two pairs of thin, fringed wings giving the name to this order of insects (*Thysanoptera*) (fig. 1); nevertheless, some species are apterous.¹ Occasionally, thrips are able to bite human skin, causing small erythematous papules, moderately itchy, mainly on exposed skin. Thrips are difficult to demonstrate because of their small dimensions. We report a case of Thysanoptera dermatitis in which the insect was embedded in the skin.

Case report

A 30-year-old man sought dermatological advice in September 2003 for an itchy cutaneous eruption that appeared 15 days after a visit to China as a tourist. The patient had a negative history and revealed eight small erythematous-papular, moderately infiltrated, very itchy, newly arisen lesions, localized on the anterior surface of the chest (fig. 2). They resolved after a few days.

After careful observation with a lens, a small black spot was observed in the centre of a papule. A curette shave biopsy was performed and stereomicroscopic examination revealed a very small, thin insect embedded in the epidermis. It was extracted and set between two glass slides for identification. Although the insect was damaged, it was possible to recognize the structure of

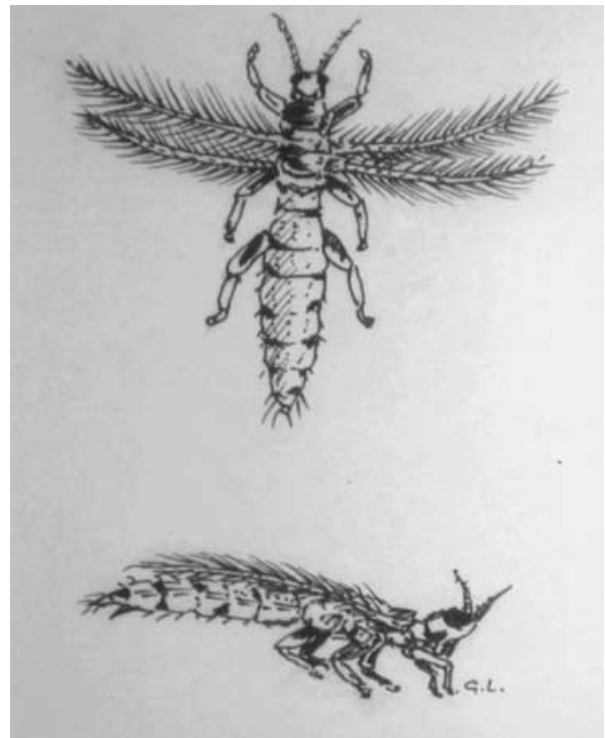


fig. 1 Thrips (*Thysanoptera*).



fig. 2 Small erythemato-papular lesions caused by thrips.



fig. 3 Insect of the Thripidae family obtained from a lesion of the patient.

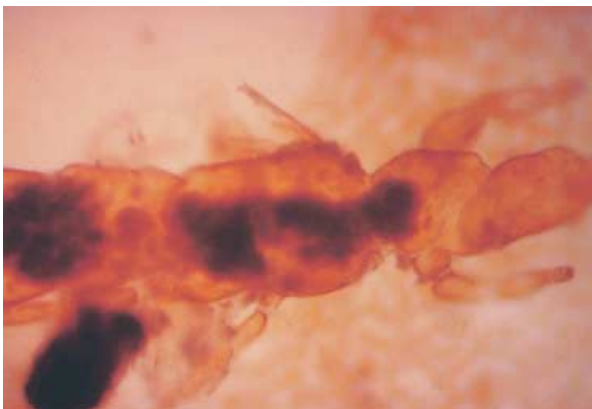


fig. 4 Enlargement of part of fig. 3 showing broken wings of the insect belonging to the genus thrips.

a *Thysanopter*. Owing to the loss of almost all of the wings, it was not possible to recognize the exact species but it was confirmed to be a thrips (figs 3 and 4). The dermatitis regressed in 5–6 days after application of a steroid cream.

Discussion

Thysanoptera are common, cosmopolitan, very small insects (1–2 mm long) in temperate regions, but reaching 15 mm in length in tropical regions. The head bears two short antennae; the buccal apparatus is asymmetrical with a short rostrum composed of the superior and inferior lips. Their stiletos are composed of maxillae and the right mandible, while the left mandible is absent. The stiletos perforate vegetables and their juices are sucked out by the rostrum.²

Thysanoptera visit and pollinate many flowers. More than 5000 species are known, most of them being phytophagous, while others attack small insects or feed on mushrooms or on decaying organic substances.

The biological cycle of *Thysanoptera* lasts 11–36 days. These insects are generally unknown and difficult to see in temperate regions because of their small size.

Some species are agricultural pests as well as causing disease in ornamental plants, tobacco (*Thrips tabaci*) and cereals (*Thrips cerealium*). *Kokothrips robustus* causes small silvery erosions on the pods of peas. Most European species belong to the *Thripidae* family. Their larvae may hibernate. Despite their small size and delicate wings they are good migrators.

Most common pathological events due to thrips depend on the accidental penetration of these small insects into nasal cones, auditive ducts or the conjunctivae.³ *Thysanoptera* are attracted to natural juices and humidity and take refuge from dryness, so they can be attracted to the sweat of animals and of humans. In this case when they reach the skin they cause small pink or red papules asymptomatic or mildly itchy and burning. Some species (*Karriothrips glaripes*) have been reported to suck the blood of animals⁴ but there are no recent studies concerning this behaviour.

The first revision of the literature on thrips dermatitis was made in 1936 by Bailey.⁵ In Europe very few cases were observed whereas hundreds of manifestations caused by thrips were described over 7 years on US soldiers in Hawaii.⁶ The lesions were characterized by small erythematous papules circumscribed by an anaemic halo due to a vasoconstriction lasting 6–10 days and leaving no residual mark. The lesions were mainly localized on the face, neck and arms but also sometimes on the thorax and thighs. The manifestations were moderately itchy but not accompanied by fever. In one case generalized mild lymphadenopathy was present. The aetiology of those lesions was contested by Aeling, who suspected the bites of haematophagous diptera, probably nocturnal mosquitoes.⁷ However, *Thysanoptera* dermatitis is described as an entity in some books on entomological dermatology.^{1,8,9}

Thrips are not cited as vectors of pathogenic agents for man but they are possible vectors for phytopathogenic viruses and bacteria. It has been suggested that the increased cutaneous temperature and some components of the sweat (capric acid, hexanoic acid, lactic acid) can favour insect bites.⁹

The histological picture of the lesions is aspecific and similar to other entomodermatoses: scant epidermal alterations, dermal oedema and modest lymphocytic infiltrate, mainly perivascular with rare extravascular erythrocytes and the absence of eosinophils.

Our case is noteworthy for its rarity. The exact diagnosis was possible because of demonstration of the aetiological agent in a lesion.

Bibliographic citations of Thysanoptera dermatitis are very scarce and the main causes are the following.

- 1 Cutaneous lesions caused by *Thysanoptera* are not pathognomonic.
- 2 The insects are difficult to demonstrate because of their very small dimensions and because they generally leave the skin soon after sucking.
- 3 The knowledge of entomological lesions is sometimes poor.
- 4 It is difficult to differentiate the lesions caused by *Thysanoptera* from those due to other biting insects such as mosquitoes and sandflies.

As a final comment on our case, we believe that the thrips infestation of the patient was not contracted, as he believed, during his journey in China, as a 15-day interval before manifestation of the disease is too long to support this hypothesis. It is much more likely that the infestation took place in his garden 1 or 2 days before the appearance of the cutaneous lesions.

Thysanoptera dermatitis is undoubtedly more common than referred to in medical reports in relation to the large diffusion of these insects and to the increasing tendency of people to frequent the countryside in the warm season. Humans are only occasional victims without consequences as the bites are self-resolving.

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