

# Urticaria caused by the slug caterpillar *Latoia vivida* (Lepidoptera: Limacodidae)

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Larvae of the moth *Latoia vivida* (family Limacodidae) have spiny tubercles which cause sharp pain and subsequent urticaria upon contact with human skin. This study describes the sting's clinical consequences and evaluates the effect of various pharmacological modifiers on the clinical response.

*L. vivida* is widely distributed in South Africa, except for the Cape Province and most parts of the Orange Free State (Pinhey 1975). In urban gardens the slug caterpillars usually live on privet, rose and prune leaves. The caterpillars are light green in colour and approximately 2,5 cm long in the final larval stadium. A striking feature is the pointed hollow tubercles armed with prominent spines. A single large poison cell occupies the greatest part of the tubercle lumen. Some of the spines possess setae but most terminate in sharp stylets (Fig. 1). Upon contact the distal portion of the spine breaks off and releases poison into the



Fig. 1 Lateral view of the slug caterpillar *Latoia vivida* to show spiny tubercles arranged in longitudinal rows. Note lack of abdominal legs.

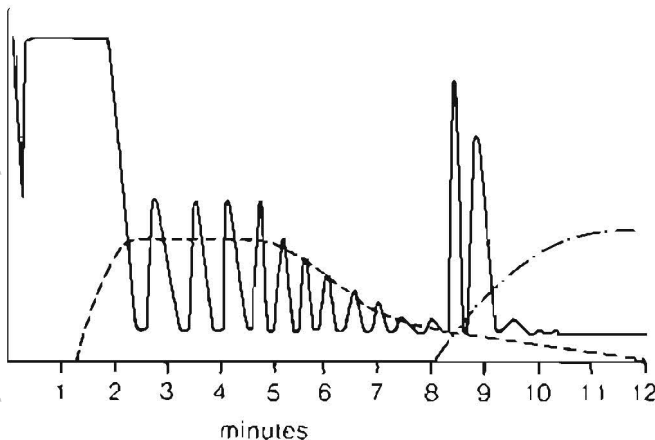


Fig. 2 Diagrammatic representation of pain sensation against time after skin contact with slug caterpillar venomous spines. The height of the graph is arbitrary.

— burning pain; --- paraesthesia; and ···· itch.

skin. Each spine can function effectively only twice (Gilmer 1925).

On contact with the skin there is a sharp jabbing pain which quickly reaches a maximum intensity. The pain gradually subsides and is followed by a poorly circumscribed paraesthesia and local itchiness (Fig. 2). An urticarial reaction becomes apparent after 8 min, reaches a maximum 25 min after contact with the poison, and disappears within 2 h with no constitutional side effects. Test fields on the skin of a volunteer were topically pre-treated with various pharmacological agents including antihistamine, atropine, theophyllin and a corticosteroid. When the live caterpillar was allowed to sting the test areas the reaction was blocked by the antihistamine and the corticosteroid.

Histamine and histidine alongside some unidentified substances were demonstrated on thin layer chromatography.

These were separated with butanol-acetic acid against a set of 20 pure concentrates of known amino acids, dried and stained with ninhydrin for inspection under ultra-violet light.

Several Lepidoptera larvae produce irritating and sometimes dangerous toxins (Picarelli & Do Valle 1971). Most of the species cause burning pain and a rash or urticaria. Although various substances have been identified in the toxins of these caterpillars (Picarelli & Do Valle 1971; Rothschild, Von Euw & Reichstein 1972), little is known about the venom of the Limacodidae. Histamine is common in many toxin-producing insects and invertebrates, and its presence in the slug caterpillar is not surprising. It alone cannot be responsible for the intense pain and symptomatic results (Valle, Picarelli & Prado 1954). This was confirmed by comparing the effects of slug caterpillar toxin extracts and histamine on small superficial cuts in the skin. Acetyl choline, proteins and proteolytic enzymes may be candidates for evoking the characteristic burning sensation (Goldman *et al.* 1960; Beard 1963; Frazer 1965; De Jong, Bleumink & Nater 1975).

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