

ALARM PHEROMONE IN DERMATOPHAGOIDES PTERONYSSINUS AND D. FARINAE (ACARI: PYROGLYPHIDAE): INTERSPECIFIC EFFECTS.

VAN ASSELT L.

Dermatophagoides farinae and *D. pteronyssinus* are two common house dust mites, taxonomically related, responsible for a great number of allergies among people. We have previously demonstrate, the existence of an alarm pheromone in squashed *D. farinae*, while living *D. pteronyssinus* did not elicit specific behaviour in the presence of squashed conspecifics. In this study we attempted to understand why *D. pteronyssinus* did not react to squashed conspecifics. In other words, is the absence of *D. pteronyssinus* behaviour due to a pheromonal deficit of the mite, or to an inability to percept the pheromone? To answer to this question, we investigate the effects of squashed *D. farinae* and *D. pteronyssinus* on living heterospecifics. Ten individuals of the same species and of the same sex, were squashed on one extremity of an olfactometer. Behaviour of individuals of the opposite species, confronted with the squashed mites, was observed. Males and females *D. farinae* escaped when in presence of squashed *D. pteronyssinus* while *D. pteronyssinus* did not escape when in presence of squashed *D. farinae*. In conclusion, we suggested that this behaviour reflects the presence of an ancestral alarm pheromone in *D. pteronyssinus*. The alarm behaviour could be a primitive function. In the evolution *D. pteronyssinus* would have loose the ability to detect the pheromone but continue to synthesize the semiochemical.

P55

P56 THE COURTSHIP BEHAVIOUR OF TWO SUBSPECIES OF THE ALPINE NEWT, TRITURUS A. ALPESTRIS AND T. A. CYRENI (AMPHIBIA, CAUDATA): AN EVOLUTIONARY PERSPECTIVE.

Mathieu DENOËL

Some differences are enhanced in the behaviour of the two subspecies. In qualitative level, they are weak, and concern amplitude and structure variations of a common behaviour. Within the same subspecies, amplitude and structure variations exist also, and particularly during the behaviour named *distal fan*. We think this behavioural modulation could be the foundation of a Behaviour Evolution and Isolating mechanism. Female is indeed sensitive to these variations: in this way communication is possible between transmitter and receiver. The new variants problem is thus resolved. In quantitative level, several divergences were discovered. These concern frequencies and transitions of some behaviours. The *T.a.alpestris* male can easily enter in spermatophore transfer phase without positive response of female. In order to attract this latter, he executes worm-like movements: in this way he lures a negative female. On the contrary, *T.a.cyreni* enters more rarely in the spermatophore transfer phase when female is not receptive. Therefore he uses little the lure system. In spite of differences, behavioural hybridization is likely: the sperm is transferred from a male of a subspecies to a female of the other. Moreover the observed differences are in a lower level than between separate species, *T. vulgaris* and *T. helveticus*. In conclusion, the present data confirm the existence of two distinct subspecies (and maybe semi-species) *T.a.alpestris* and *T.a.cyreni* as detected by previous authors using allozyme and osteological analysis.



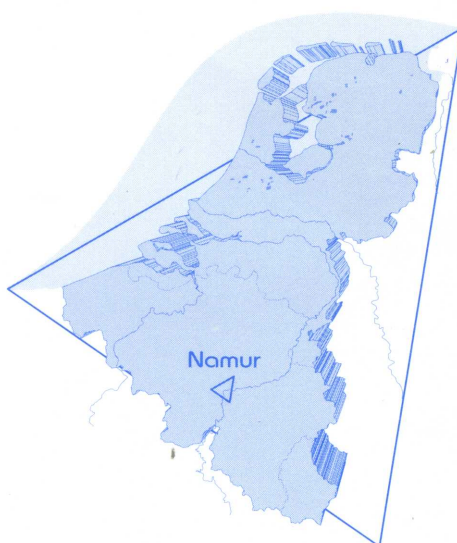
FACULTES UNIVERSITAIRES NOTRE-DAME DE LA PAIX
NAMUR

THIRD BENELUX CONGRESS OF ZOOLOGY

Adaptation, from molecules to communities

NAMUR

November 8 & 9, 1996



**Scientific Programme
Lecture and Poster Abstracts
List of Participants**

Annual meeting of the Young Scientists of the Benelux

under the sponsorship of

SRZB/KBD (Belgium) - KNVD (Holland) - ABIOL (Luxembourg)