

**A VENEZUELAN OUTBREAK OF VENOMOUS ACCIDENTS PRODUCED BY  
CENTIPEDES (*SCOLOPENDRA GIGANTEA* LINNAEUS 1758)  
(SCOLOPENDROMORPHA: SCOLOPENDRINAE)**

**UN BROTE EPIDEMICO DE ACCIDENTES VENENOSOS CAUSADOS POR  
CIEMPIES (*SCOLOPENDRA GIGANTEA* LINNAEUS 1758)  
(SCOLOPENDROMORPHA: SCOLOPENDRINAE) EN VENEZUELA**

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SUMMARY

We are reporting accidents caused by centipedes from Capaya town, Miranda state, Venezuela, in a circumstance that we could define as epidemic. Five human cases of envenomation by *Scolopendra gigantea* Linnaeus 1758 occurred in 3 months are described (November 98 to February 99). Patients presented an intense local pain, erythema, paresthesias, edema and functional impotence. From 5 to 7 days they had ad integrum restitution. Extremities were the most frequent bite localization. The entire captured specimens in connection with these human accidents were lone mature animals. All these patients referred that their accidents occurred during sleeping time. Treatment included local ice, systemic corticosteroids, and administration of antihistamines and analgesics, as needed conforming to severity of the lesions

RESUMEN

En este trabajo se reporta un grupo de envenenamientos causados por ciempiés (*Scolopendra gigantea* Linnaeus 1758) acaecidos en el pueblo de Capaya, Estado Miranda, Venezuela, en una circunstancia que podríamos definir como epidémica. Se describen cinco casos humanos de envenenamiento que se desarrollaron en el período de 3 meses (de noviembre de 98 a febrero de 99). Los pacientes presentaron un intenso dolor local, eritema, parestesias, edema e impotencia funcional. Tuvieron una restitución *ad integrum* de los síntomas entre 5 y 7 días. La localización más frecuente de la mordedura fue en las extremidades. Todos los ejemplares capturados en relación con estos accidentes humanos fueron animales adultos. La totalidad de los pacientes refirieron que sus accidentes fueron durante las horas de sueño nocturno. El tratamiento incluyó hielo local, corticosteroides sistémicos y administración de antihistaminas y analgésicos, de acuerdo a la severidad de las lesiones.

**Keywords:** *Scolopendra*, centipedes, venom, envenomation,

**Palabras Clave:** *Scolopendra*, ciempiés, veneno, envenenamiento.

## INTRODUCTION

There is very little literature about the effect of centipede venom on animals and humans (Machado-Allison & Rodriguez-Acosta 1998). The *Scolopendra* genus is broadly distributed in the tropical areas of the world, they are of great size, reaching up to 30 cm long; they are frequently found under trash, stones, in piles of wooden (Bücherl 1971). They possess appendixes called telopodites with gland producers of venom. This venom causes an intense pain that can remain several hours and rarely producing a serious accident. There is brief citation on biochemical characteristics of centipede venom (Kano 1983; Mohamed *et al.*, 1983). Well-documented deaths caused by these animals are not described and there are not data to evaluate an eventual seriousness in most of the accidents.

The purpose of this study was to investigate an outbreak of scolopendromorphs human envenomations. This report describes the clinical symptoms and the peculiarities from 5 envenomed humans bitten by centipedes seen in a small town during three months. As far as we know this is the first international described outbreak of envenoming caused by this kind of animals.

## MATERIALS AND METHODS

Methods of investigation included general history and physical examination of all patients, complete inspection of the houses and surroundings and entomological examination of the scolopendrids. The neighborhood was inspected to corroborate the cause of the outbreak. We also described the appearance and activity of the centipedes that were collected for identification.

**Region:** Capaya town is situated 70 km east from Caracas located into a tropical forest near the piedmont of La Costa Range and has had permanent residents for 4 centuries. About 16.000 Creole people live in the town, receiving tourists each weekend and increasing the population near 15% during holiday's season. The recorded patient information included age, sex, date of bite, bite location, time from bite to consultation, and the presence of local or systemic symptoms (Table 1).

## RESULTS

From November 1998 to January 1999 (dry season) 5 people from a small town located in a tropical forest of Barlovento, Miranda State, Venezuela, referred extensive pain and a traumatic and venomous dermatomyositis lesions in the stung site caused by centipedes (*Scolopendra gigantea*).

**Cases reported:** In this study, only those cases where the scolopendrids were identified have been included. In all cases, the centipedes were available for confirmatory identification by entomologist. The cases are summarized in Table 1. All five patients reported having skin lesions after the accident. Lesions predominantly occurred on legs but some patients referred the bite on the face and the hand. All presented double bite marks and the distance between the two marks ranged from 5 to 9 mm. Total of these centipedes accidents occurred at home, usually on the bed when patients were sleeping. We found that three patients were bleeding by the bite punctures. Treatment included local ice, systemic corticosteroids, systemic analgesics, antihistamines, tetanus prophylaxis, as needed conforming to the lesions severity.

## DISCUSSION

Evidence from this study, in comparison with studies in the last ten years, suggest that the incidence of centipedes-bites is increasing in rural and urban areas (Mohri *et al.*, 1991; Lin *et al.*, 1995). This may a result of scolopendrids habitat loss, there is a widely held belief among experienced toxinologists that many venomous animals are migrating because loss of their natural sanctuaries (Pifano & Rodríguez-Acosta, 1996). *Scolopendra gigantea* has been described in Venezuela, Jamaica, Trinidad-Tobago, Colombia, Chile and Brazil (Bücherl 1971).

Describing the effects of scolopendrids bites on humans, a described case categorically accomplished the criteria that the reported effects were caused by *Scolopendra gigantea* venom: a *Scolopendra* biting a patient was observed; the centipede was caught and identified by our



entomologists. Very few bitten case reports produced by scolopendrids are available from Western Hemisphere literature (Gelbier & Kopkin 1972; Logan & Ogden 1985; Mumcuoglu & Leibovici, 1989).

All authors coincide in describing a clinical picture of intense pain, edema, erythema, itching, local heat and bite marks of red-purplish color,

completely resolving in a week. No series of scolopendrids bitten are available from South America. No case report had been described in Venezuela. No outbreak had previously reported either in Venezuela or elsewhere.

The scolopendrids venom is very poorly studied, but at least in some species, contains histamine, hyaluronidase, polypeptides, benzokinin derivatives,

and proteinases (Kano 1983). Three of these cases presented prolonged hemorrhages by bite punctures, which makes suspect a hemorrhagic activity in the Venezuelan scolopendrid venom. This activity is being studied in experimental animals in a parallel project where 0.5 gland injected intramuscularly, killed all C57/BL mice of 18-22 gm body weight in 15 seconds.

All scolopendromorphs are venomous; but as they are basically nocturnal, their earliest reflex, when emerging into sunlight, is to retreat to the dark. Under these basis even the largest tropical (*Scolopendra gigantea*) scolopendrids seem to be comparatively inoffensive to humans, bites occurring very infrequently and without serious consequences

in people (Bücherl, 1971). This is one of the reasons that we considered interesting this outbreak. Factors contributing to this outbreak included a period of heavy dry season, forest proximity of houses, inadequate insect and arachnids screening of litters. The best procedure to control these animals is clearing vegetation at 50 m distance from houses.

First aid therapy comprehend soap cleansing and infiltration of the bite with a local anaesthetic solution, local ice. Systemic corticosteroids, antihistamines and analgesics may also be administered, as needed conforming to the lesion severity. Anti-tetanus prophylaxis should be conducted (Machado-Allison & Rodriguez-Acosta 1998).

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