



The Arizona Bark Scorpion

Tyler Hoelscher

Disclosures

I have no financial
relationships to report



Case 1

11yo male

Woken up by pain in R arm

Father checked bed and found

Persistent pain, paresthesias

PCC called



ARIZONA
Poison and Drug
Information Center



Case 2

4yo male

Stung by small yellow scorpion at home

Severe pain, abnormal movements, copious secretions

Taken to urban ED

Tachycardic, tachypneic, agitated

Treated with ativan x3, glycopyrrolate

Became hypoxic, intubated, transferred to tertiary pediatric center





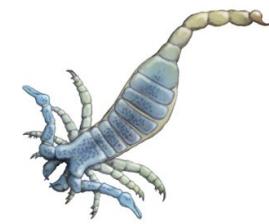
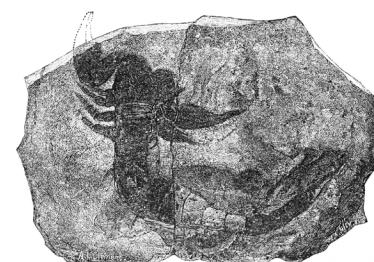
Scorpions

Arachnida

Worldwide distribution

Silurian period

Not many changes to body plan
since then



Palaeophonus

Manus

Patella

Femur

Median eyes

Carapace

Walking legs

Metasomal segment I

Metasomal segment II

Metasomal segment III

Metasomal segment IV

Metasomal segment V

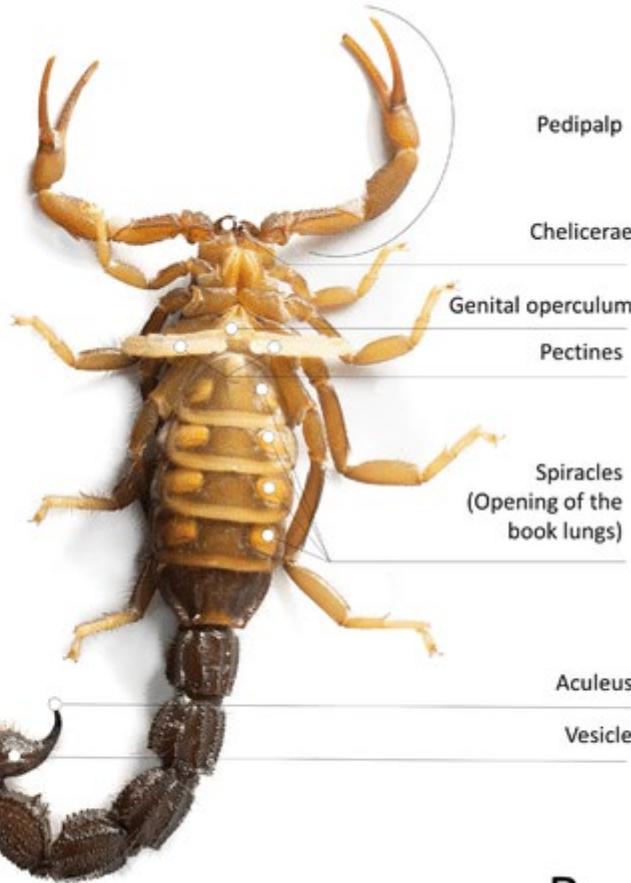


A

Prosoma
Mesosoma

Metasoma
Telson

Opisthosoma



B



Gigantometrus Swammerdami



Centruroides Sculpturatus







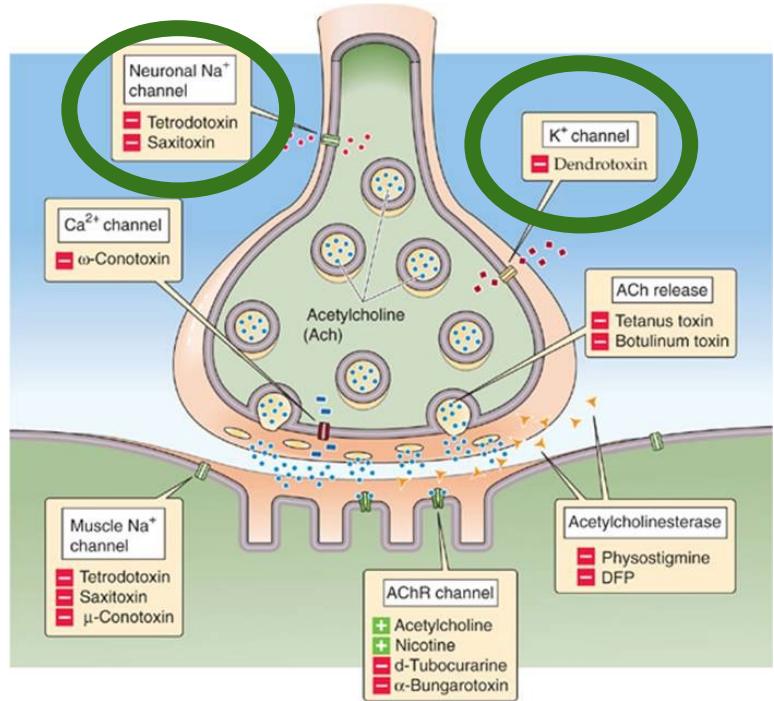
Venom

α -Toxins: Sensitizes/activates Mammalian Voltage-Gated Na Channels

β -Toxins: Also Sensitizes/activates Mammalian Voltage-Gated Na Channels (*Centruroides*)

Ktx: Inhibits K⁺ inflow

Calcins: Open cardiac RyR



Scorpionism

Local Pain

Neuronal excitation

Heart failure+Pulmonary edema

Shock, respiratory failure, death

Secretory complications, cytotoxicity

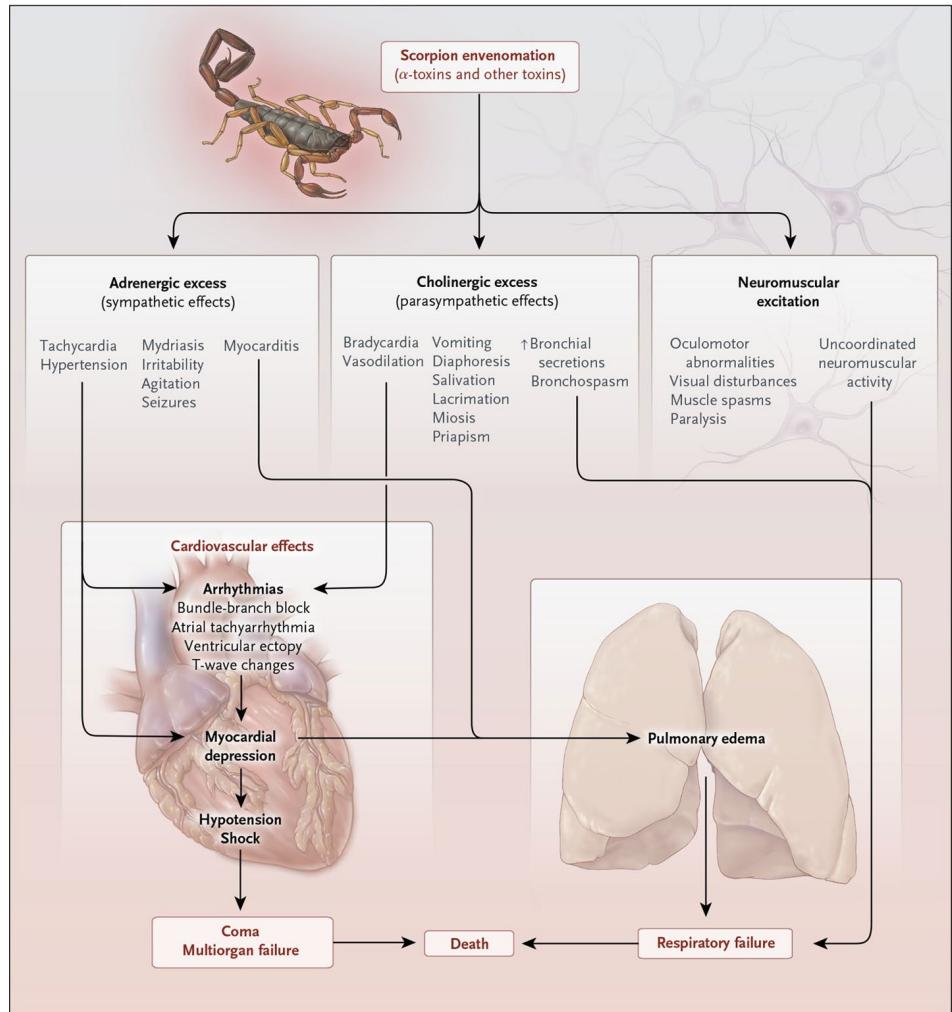


Table 1. Treatment of Scorpion Stings According to Clinical Grade.*

Clinical Grade or Class	Clinical Effects	Treatment
1	Local effects only	Analgesia, local anesthesia
2	Autonomic excitation	Antivenom, prazosin
	Agitation and anxiety	Oral benzodiazepines
3	Pulmonary edema	Admission to intensive care unit, noninvasive or mechanical ventilation, antivenom, vasodilators (e.g., prazosin), in some cases nitroglycerin†‡
	Hypotension and cardiogenic shock	Antivenom, dobutamine infusion†
	Severe neuromuscular excitation (associated with centruroides species)	Antivenom, benzodiazepine infusion†
4	Multiorgan failure, including coma, seizures, and end-organ damage caused by hypotension	Supportive care, mechanical ventilation, inotropes (e.g., dobutamine), benzodiazepine infusion

* These data are based on a number of previously reported grading systems and interventions.^{8,11,12,14,21,22}

† The benefit of antivenom is less clear when severe systemic envenomation is well established.¹

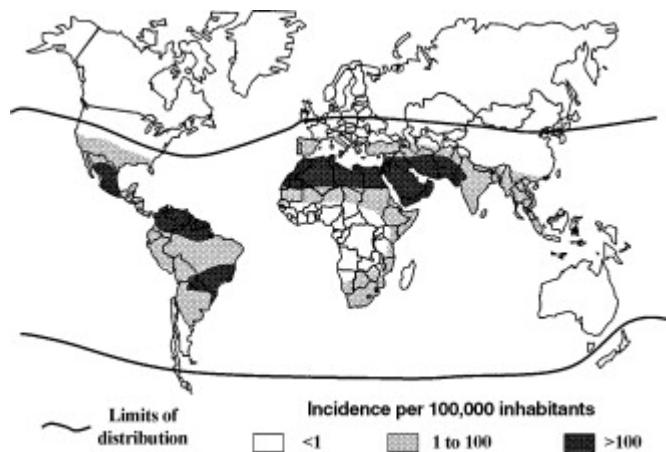
‡ The role of intravenous vasodilators is not well defined; these drugs must be used with caution when administered to patients with established hypotension and when administered in combination with dobutamine.²

Epidemiology

Warm weather

Synanthropy

Ambush predators



North America

Centruroides Spp.

Primarily neurotoxic venom

Mexico > USA



Arizona Bark Scorpion: *Centruroides Sculpturatus*



Centruroides infamatus

Local Pain

Neuromuscular agitation

Cholinergic excess - Hypersalivation, lacrimation, vomiting

Rare mortality



Centruroides Nigrimanus



Pt presentation

2yo child presents with agitation

“Started crying and choked on strawberry milk”

Unconsolable in triage, difficulty obtaining vitals signs

Exam:











Centruroides Noxius



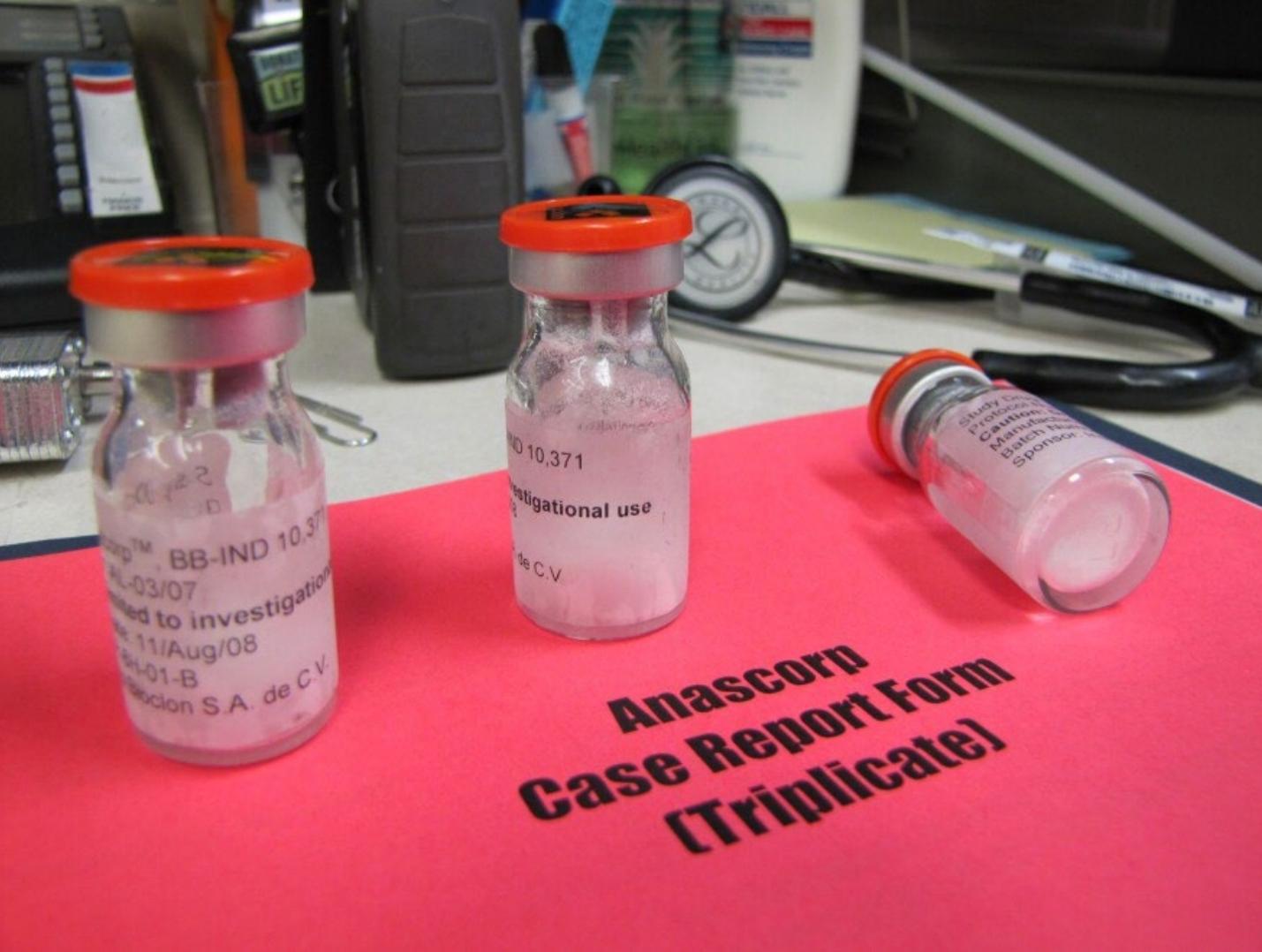
Centruroides Limpidus



Centruroides Suffusus



Centruroides Tecomanus



**Anascorp
Case Report Form
(Triplicate)**

Antivenom Basics

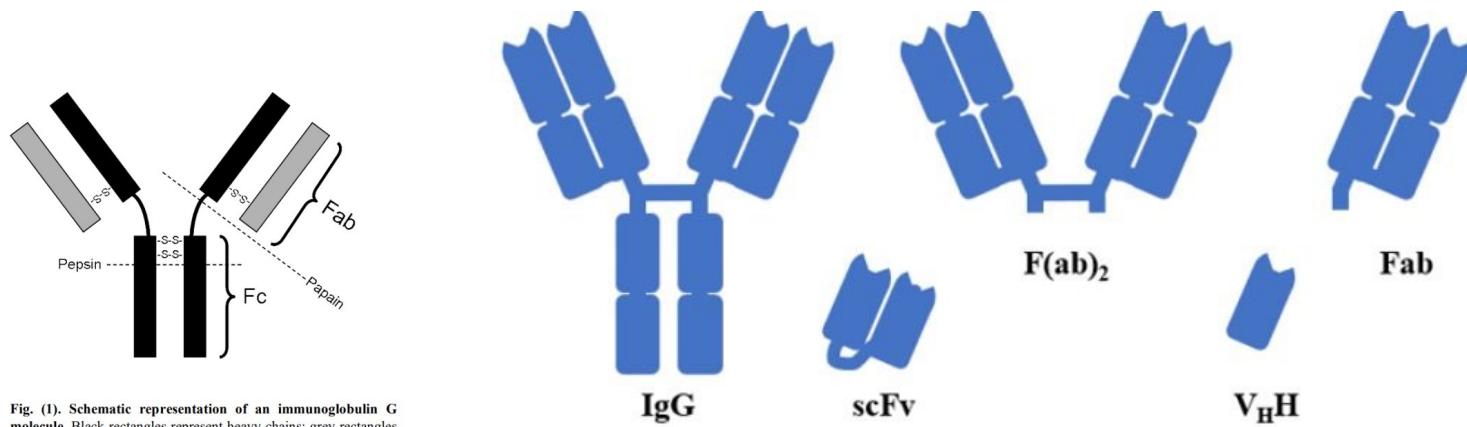
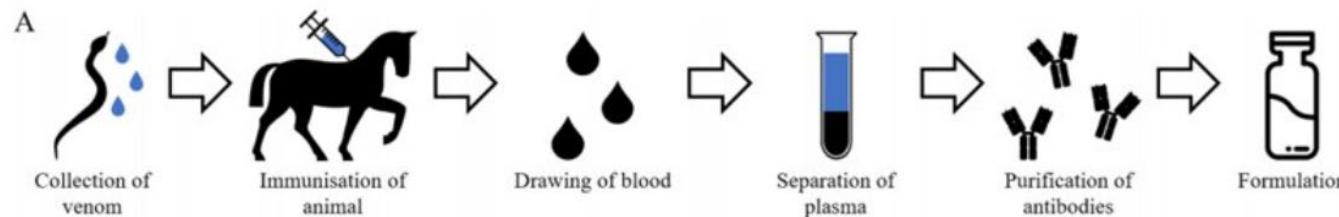


Fig. (1). Schematic representation of an immunoglobulin G molecule. Black rectangles represent heavy chains; grey rectangles represent light chains.

US Antivenom

Mexico “MyN” 1940s

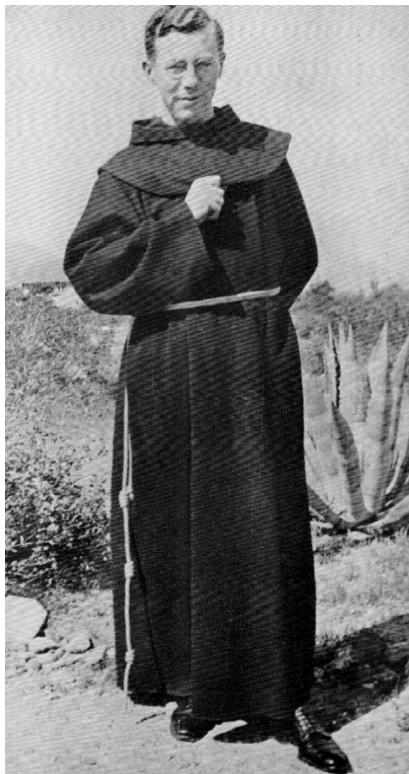
Father Emmett McLoughlin
- St. Monica's

Dr. Herbert Stahnke - ASU
1950s

Stahnke Era ends - 1999

Meanwhile in Mexico -
Alacramyn

2011 Anascorp





Grade one	Pain and/or paresthesias local to sting site
Grade two	Pain and/or paresthesias remote from sting site
Grade three	Either cranial nerve or somatic skeletal neuromuscular dysfunction
Grade four	Both cranial nerve and somatic skeletal neuromuscular dysfunction

Each grade may involve any or all lower grade findings. (Data from Curry et al.¹⁶⁷)

All patients: Analgesia, update tetanus, 6 hr observation

3 Vial loading dose, additional 1-2 vials as needed up to 5

Benzos

Adults

Scorpion mimics

Sources

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