

Arthropod-Bites (Stings) - >50 Years Experience Including Failure

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Year / Location: Offender	Action(s)
1959ff / Germany, Bonn: „mosquitoes“*	-/-
1962ff / Italy, near Pisa: scorpions, spiders, mosquitoes, mice	Pyrethrum smoke spirals, Spray, Traps
1976 / Germany, Leverkusen: mosquitoes	DEET
1978 / Austria, Neusiedler See & Burgenland: mosquitoes	botanic repellents
1979 / Germany, Bonn: Harvest mites*	identification, avoidance
1983ff / Europe, US-America: Pesticide Resistance	ecological prevention concept
1987ff / Europe, US-America: <i>Borrelia burgdorferi</i>	Integrated Pest Management
1993ff / Europe, Germany: biocide risks	holistic minimization concept
2002 / Germany, Kaiserslautern area: / ticks and <i>Borrelia spec.</i>	molecular genetics risk management
2009ff / Europe, USA, Brasil**, Tunisia: arthropod stings (bites)	<i>Insect Protection Sheet</i> experience
2013 / Germany, Pilgrim Sanctuary: mysterious bites (stings?)	personal protection
2014	
/ Switzerland, Basel: bird mites	mite itch experience (hopefully healthy mites from healthy pigeons)
/ Germany, Pilgrim Sanctuary: Tropical rat mites	holistic mite management concept
2015 / Bonn: Harvest mites*	personal protection
2016 / Germany, Düsseldorf: mosquitoes	collect mail to www.mueckenatlas.de for identification

* family garden, always the same (1959-2015)

** NOT for *Loxosceles* spiders (*Ana Eugênia de Carvalho Campos*, personal communication)

How to Protect Yourself from Arthropod-Bites (Stings) - Review and Hands-on Guidance

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„The difference between theory and practice is in practice bigger than in theory.“
Karl Valentin

Arthropods in question

- most dangerous animal (world) **mosquito**
- most dangerous animal (Germany) **tick**
- flying: **mosquitoes, flies**
- walking: **ticks, mites**

Challenge: realistic for implementation and sufficient

Barriers, Protection

textiles, screens, surface modification, clothes, repellent, glue

Removal, Collection

- Traps Without and with chemistry: Light, smell, moisture, hideaway, monochrome surface, for individual stages, species - a world for itself.
- flag, tile, animal
- vacuum cleaner, aspirator (exhaustor), vacuum gun

flying vs walking Arthropods

Chemical repellent experience

Icaridin, Permethrin, DEET, Cocos/Neem, (Soja+Vanilla, Clove, Peace pipe, ...)

selected ages of chemical repellents

<i>Name</i>	<i>date of „birth“</i>	<i>age [years]</i>
<i>Picaridin=Icaridin=Saltidin=Hepidanin=Bayrepel</i>	<i>1999</i>	<i>17</i>
<i>Permethrin</i>	<i>1977</i>	<i>40</i>
<i>DEET</i>	<i>1946</i>	<i>70</i>
<i>Neem</i>	<i>~3000 b.C.</i>	<i>5000</i>

Resistance prophylaxis without or with switch - both has pro's and con's

new (1983ff): exclusion, synergies, education, monitoring, habitat modification, e.g. temperature, moisture, availability

Personal protection, status of August 2016

Textiles: light, wide, neck/wrists tight; spray outer clothes with Permethrin; Insect protection sheet; walking Arthropods: include shoes (textile) or rubber boots with double side sticky tape

Skin, limited to face, hair, hands outside: Coco nut oil / Neem (98:2%, smell requires some getting used to, DEET***, if with others (until adapted).

*** *Limitations : oral toxicity, dermal ~ on moistened skin, plastic solubility, synergies with other chemicals*

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