
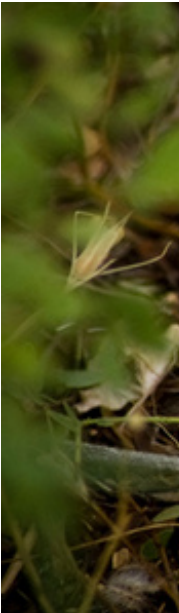




Eyes squirt blood: horned lizard

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Regal Horned Lizard (*Phrynosoma solare*) / brdavids / License 



 1 of 2
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Regal Horned Lizard (*Phrynosoma solare*) / brdavids /

Blood-filled sinuses within the eye sockets of horned toads squirt blood at predators after a rapid increase in pressure breaks the sinuses' thin walls.

Biomimicry Taxonomy



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Biomimetic Application Ideas

Hydrostatic pressure pumps.

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Summary

"Among the most famous, and spectacular, performers of autohemorrhaging are three species of North American desert-dwelling lizard, *Phrynosoma cornutum*, *P. coronatum*, and *P. solare*, which are commonly known (albeit inaccurately) as horned toads...If the predator is still not intimidated, however, and persists in its attack, the lizard has one final, and quite grotesque, defense mechanism. It uses a series of thin-walled, blood-filled spaces called sinuses found within its eye sockets. When the lizard rapidly increases the blood pressure within these sinuses, it causes the sinus walls to break suddenly. The blood is then forced out in jet-like squirts of crimson droplets. Sometimes, the force with which the lizard squirts this eye-ejected blood is so powerful that it can send sprays shooting up to distances of 4 feet (1.2 m). This bizarre squirting can be repeated several times if necessary, which is usually sufficient to frighten off any predator. Also, the squirted blood may contain a distasteful chemical, which would act as an additional deterrent to potential predators." (Shuker 2001:128)

Watch video

About the inspiring organism



Phrynosoma

Phrynosoma

Organism/taxonomy data provided by:

Species 2000 & ITIS Catalogue of Life: 2008 Annual Checklist

Bioinspired products and application ideas

Application Ideas: Hydrostatic pressure pumps.

Industrial Sector(s) interested in this strategy: Mechanical engineering

References

Shuker, KPN. 2001. The Hidden Powers of Animals: Uncovering the Secrets of Nature. London: Marshall Editions Ltd. 240 p.