



Search WorldCat

Search

[Advanced Search](#) [Find a Library](#)
[<< Return to Search Results](#)
[Cite/Export](#)
[Print](#)
[E-mail](#)
[Share](#)
[Permalink](#)
[Add to list](#)
[Add tags](#)
[Write a review](#)

Rate this item:

1

2

3

4

5

Stem Surface Injuries of Several Species of Columnar Cacti of Ecuador 1

Author: [Lance S Evans; Annarita Macri](#) Affiliation: [Laboratory of Plant Morphogenesis, Biology Department, Manhattan College, Bronx, NY 10471](#)

Edition/Format: Article : English

Publication: The Journal of the Torrey Botanical Society, v135 n4 (10 2008): 475-482

Database: BioOne

Other Databases: [Elsevier](#)

Summary: Previous research has shown that identical scale and bark injuries occur on stems of 16 species of columnar cacti in North and South America. For all 16 species, areas with scale and bark injuries on stems were greater on equatorial-facing surfaces than on polar-facing surfaces. Moreover, percentages of stem areas with injuries were well correlated with relative amounts of annual sunlight exposure. Cacti with high levels of scale and bark injuries had high levels of mortality. Previous data have shown that at the Equator, about 1.4 times more incident light occurs on west-facing and east-facing surfaces (equatorial surfaces) than on north-facing and south-facing (polar-facing) surfaces. Herein we determined the percentages of stem areas with scale and bark injuries on equatorial-facing (east and west) and polar-facing (north and south) surfaces of four species of columnar cacti in Ecuador (near the Equator). Specifically, percentages of trough areas with scale and bark injuries were determined for stems of *Jasminocereus thousarii* on the Galapagos Islands, Ecuador. For our analysis, data from all four cactus species were pooled. Chi-square tests showed that average injuries on equatorial surfaces were greater than average injuries on polar surfaces. For the pooled data, injuries on equatorial-facing surfaces were 1.4 times greater than on polar-facing surfaces. Therefore, the 1.4 times greater injuries on equatorial-facing surfaces compared with polar-facing surfaces was coincident with the 1.4 times greater incident light on equatorial surfaces than on polar surfaces for cacti at the Equator. Taken together with previous data, the data of this study show that at least 20 species of long-lived columnar cactus species in the Americas have almost identical scale and bark injuries even though they exist from 32° N to 32° S. Ratios of equatorial vs. polar injuries are well correlated with ratios of PAR (photosynthetically active radiation) for equatorial and polar surfaces. Moreover, the ratio of injuries on equatorial vs. polar surfaces were highly correlated with the latitudes of this study. [Read less](#)

Rating:

(not yet rated)

0 with reviews - Be the first.

Search this publication for other articles with the following words:

Search
[Borrow / obtain a copy](#)

Find a copy online

Links to this journal/publication

[View full text](#)

Find a copy in the library

Enter your location: Find libraries

Displaying libraries 1-6 out of 691

Show libraries holding [just this edition](#) or narrow results by [format](#)

<< First < Prev 1 2 3 Next > Last >>

Library	Held formats	Distance	
1. University of New Mexico-Main Campus Albuquerque, NM 87131 United States	 Journal / Magazine / Newspaper	8 miles MAP IT	Library info Search at this library Add to favorites
2. Fort Lewis College John F. Reed Library Durango, CO 81301 United States	 Journal / Magazine / Newspaper	162 miles MAP IT	Library info Ask a librarian Add to favorites
3. New Mexico State University Las Cruces, NM 88003 United States	 Journal / Magazine / Newspaper	202 miles MAP IT	Library info Add to favorites
4. Eastern New Mexico University Golden Library Portales, NM 88130 United States	 Journal / Magazine / Newspaper	205 miles MAP IT	Library info Add to favorites
5. University of Texas at El Paso El Paso, TX 79968 United States	 Journal / Magazine / Newspaper	237 miles MAP IT	Library info Add to favorites
6. University Library Colorado State University - Pueblo CSU - Pueblo Library Pueblo, CO 81001 United States	 Journal / Magazine / Newspaper	244 miles MAP IT	Library info Add to favorites

<< First < Prev 1 2 3 Next > Last >>

Details

Document Type: Article

All Authors / Contributors: [Lance S Evans; Annarita Macri Affiliation: Laboratory of Plant Morphogenesis, Biology Department, Manhattan College, Bronx, NY 10471](#)

ISSN: 1095-5674

OCLC Number: 4630494158

Language Note: English

Notes:

Research Article

The authors are grateful for the Catherine and Robert Fenton Endowed Chair to L.S.E. for financial support for the research.

Awards:**Abstract:**

Previous research has shown that identical scale and bark injuries occur on stems of 16 species of columnar cacti in North and South America. For all 16 species, areas with scale and bark injuries on stems were greater on equatorial-facing surfaces than on polar-facing surfaces. Moreover, percentages of stem areas with injuries were well correlated with relative amounts of annual sunlight exposure. Cacti with high levels of scale and bark injuries had high levels of mortality. Previous data have shown that at the Equator, about 1.4 times more incident light occurs on west-facing and east-facing surfaces (equatorial surfaces) than on north-facing and south-facing (polar-facing) surfaces. Herein we determined the percentages of stem areas with scale and bark injuries on equatorial-facing (east and west) and polar-facing (north and south) surfaces of four species of columnar cacti in Ecuador (near the Equator). Specifically, percentages of trough areas with scale and bark injuries were determined for stems of *Jasminocereus thousarii* on the Galapagos Islands, Ecuador. For our analysis, data from all four cactus species were pooled. Chi-square tests showed that average injuries on equatorial surfaces were greater than average injuries on polar surfaces. For the pooled data, injuries on equatorial-facing surfaces were 1.4 times greater than on polar-facing surfaces. Therefore, the 1.4 times greater injuries on equatorial-facing surfaces compared with polar-facing surfaces was coincident with the 1.4 times greater incident light on equatorial surfaces than on polar surfaces for cacti at the Equator. Taken together with previous data, the data of this study show that at least 20 species of long-lived columnar cactus species in the Americas have almost identical scale and bark injuries even though they exist from 32° N to 32° S. Ratios of equatorial vs. polar injuries are well correlated with ratios of PAR (photosynthetically active radiation) for equatorial and polar surfaces. Moreover, the ratio of injuries on equatorial vs. polar surfaces were highly correlated with the latitudes of this study.

Reviews**User-contributed reviews**

[Add a review](#) and share your thoughts with other readers. Be the first.

Tags

[Add tags](#) for "Stem Surface Injuries of Several Species of Columnar Cacti of Ecuador 1". Be the first.