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Author: Basiuk, Vladimir A.

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Spines growing outside areoles in a *Gymnocalycium vatteri* specimen

Anomalous sites of spine growth were noticed in one specimen of *Gymnocalycium vatteri*. The specimen was grown from seed, received from Kakteen-Haage (Germany) in August 1986, and germinated in December 1986 (Kiev, Ukraine, neon light indoor greenhouse). From May 1988 to August 2003, the plant was grown on a windowsill. In August 2003, it was brought to Mexico City, and until

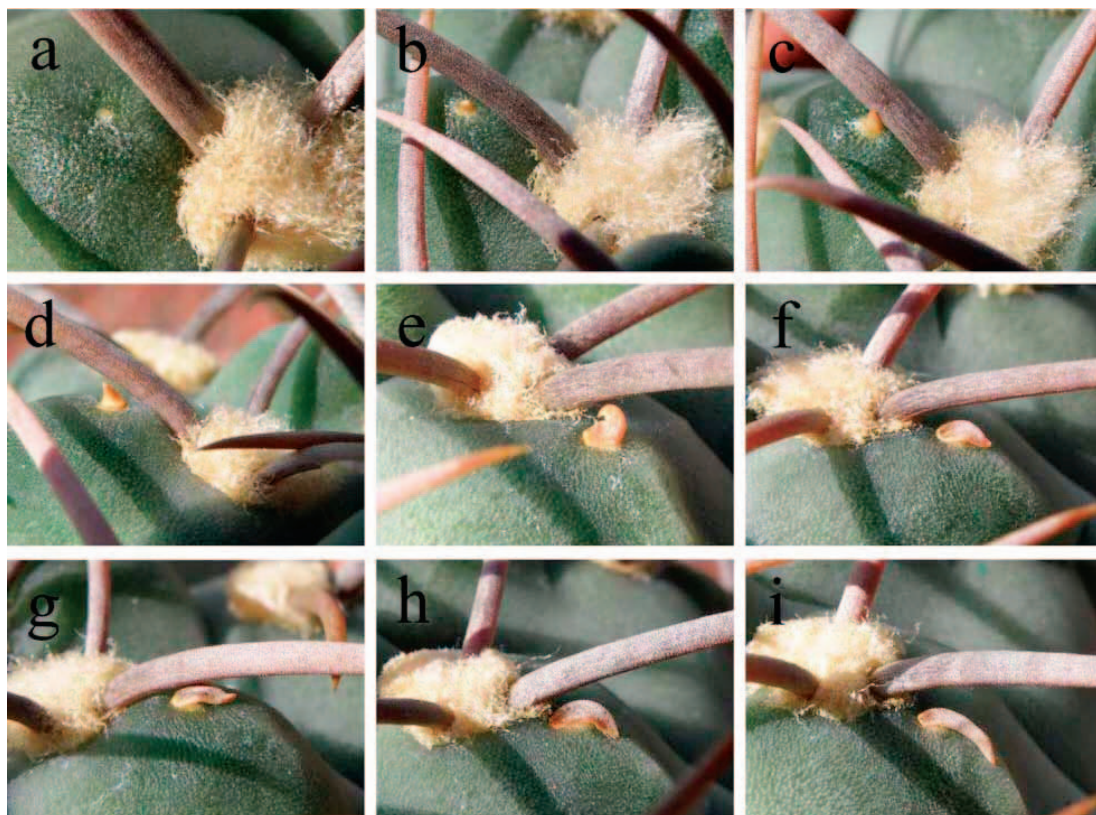
January 2006 was again grown on a windowsill. From January 2006 until the present, it is in an open-air greenhouse (state of Morelos, Mexico).

This year, an anomalous emergence of small secondary spines was noticed outside areoles. Figure 1 shows the specimen. Namely, these spines appear ca. 2–3 mm below one-year-old areoles,

* Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México, Circuito Exterior C.U., 04510 México, D.F., Mexico
Phone: (52) 55 56 22 47 39, ext. 2224 Fax: (52) 55 56 22 46
93 E-mail: basiuk@nucleares.unam.mx



1 General view of the specimen of *Gymnocalycium vatteri*: the secondary spines (marked with red circles) appear below one-year-old areoles, but are absent at younger ones. Photo: V. A. Basiuk.



2a–i Images illustrating different development stages of the secondary spines: **a** the spot where a spine will appear; **b, c** young spines, conical shaped and shorter than 1 mm; **d** a young spine of ca. 1 mm, starting to bend; **e** a spine bent to the direction opposite to normal one; **f, g** tilde-shaped spines, about 3 mm long; **h, i** the oldest secondary spines found, ca. 4 and 5 mm long, respectively. Photos: V. A. Basiuk.

without having any visible connection with the latter. Figure 2 shows different development stages of these secondary spines. First, the site where a spine will appear can be found as a small spot on epidermis (Figure 2a). The youngest spines detectable are conical, and shorter than 1 mm (Figure 2b, c). After reaching 1 mm in length, the young spine starts to bend (figure 2d). In most cases, the

bending is outward from the plant apex (figures 2f–i). More rarely, the hook-shaped spines bend toward the apex (figure 2e). ‘Normally’ oriented, more mature spines can be tilde-shaped (figure 2f, g) or just curved (figure 2h, i). The longest/oldest secondary spines found reach 5 mm in length.

The origin of this phenomenon is, so far, unclear. 🌵

LITTLE BITS OF PEOPLE HISTORY by Chuck Staples, CSSA Historian

Nathaniel Lord Britton (1859–1934) was the US geologist and botanist on the Geological Survey of New Jersey 1978–84. He founded the Botanical Society of America in 1893 and its president 1898 & 1920. Britton was a founding member of the New York Botanical Garden 1896–29. He was appointed research associate of the gardens from 1912 while

working as senior partner with Joseph Nelson Rose (1862–1928) on *The Cactaceae* book project. Britton was Honorary President of CSSA from when it was founded in 1929 and was its first Life Member. The NY Botanical Garden

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