Opuntia sulphurea in Northwest Argentina

Author(s): Judy Pigue
Source: Cactus and Succulent Journal, 85(5):206-209.
Published By: Cactus and Succulent Society of America
DOI: http://dx.doi.org/10.2985/015.085.0503
URL: http://www.bioone.org/doi/full/10.2985/015.085.0503

JUDY PIGUE[1]

Opuntia sulphurea in northwest Argentina

Growing various opuntioids has been a hobby of mine for years. While walking though the 2005 CSSA Scottsdale Convention Rare Plant Auction display, I saw an unfamiliar *Opuntia* with a large, round, thick, glaucous-green pad with protruding extra-coarse, long, white twisted spines. It was *Opuntia sulphurea* and it was 'love at first sight'. Unfortunately, I didn't end up with the winning bid, but I knew it was an *Opuntia* I wanted to add to my collection, and if possible, some day see in habitat.

Opuntia sulphurea is the most widespread of all the Argentine opuntias. It grows in arid areas from the low plains to the high Andes Mountains. It is recorded in the northern two-thirds of the country, from the province of Río Negro north to southern Bolivia (though it is not recorded from the significantly wetter eastern-most provinces).

Opuntia sulphurea can be found over a broad geographical area with diverse environments and is therefore a variable species. In addition to the typical form, Ritter described two subspecies from Bolivia, ssp. *brachycantha* having 2–6 spines per areole and ssp. *spinibarbis*, having 4–8 spines per areole. In *The New Cactus Lexicon*, both of these are simply referred to *O. sulphurea*.

Kiesling and Ferrari (2005) list three varieties: var. *sulphurea* occurs from the province of Mendoza north to Catamarca and has yellow fruit, var. *hildemannii* grows in the far northwest into southern Bolivia and has red fruit, and var. *pampeana* grows in the central part of the country. These varieties are not mentioned in *The New Cactus Lexicon*.

O. sulphurea is a low growing shrub with elliptic to ovoid pads measuring 15 to 20 cm long and 10 to 13 cm wide. The tubercles are strongly marked, conferring a corrugated aspect on the pads. The areoles are rounded to oval, 4 × 3 mm, furnished with white wool, aging to grey, and with a crown of light brown glochids; practically all areoles are spiny. Young areoles have one or two conical leaves, light brown, around 2 mm. Young spines are described as pink with a red base and brown point, aging to long coarse greyish-white with a light brown point, though we saw dark spined populations as well. The mature spines are often twisted, and can reach 75 mm long.

O. sulphurea has diurnal sulphur-yellow flowers along the edge of the pads during the summer. Flowers measure about 30–35 mm high and 50–55 mm in diameter, with a pericarpel of 25–30 mm, with very few areoles on the upper part. The external tepals are light green with a brown point. The intermediate tepals are spatulate, yellow with a green median stripe and a reddish-brown point. The internal tepals are canary-yellow to stronger yellow. The throat is pale yellow to greenish-yellow. The filaments are white, the anthers light yellow, and the style is white. The stigma is pale green to greenish-yellow, with 8–9 lobes of 4 mm. The fruit are yellowish to reddish and around 35 mm long. The seeds are about 4 mm in diameter and brownish-yellow.

My desire to see *Opuntia sulphurea* in habitat, along with many other genera of cacti and succulents, was realized when I was one of the ten participants of the 2012 CSSA-sponsored terrific trip to northwestern Argentina, lead by Guillermo Rivera. I arrived in Córdoba on Thursday, October 25th, along with some other members of the group to do some sightseeing during the day on Friday. Saturday morning we began our two-week journey northwest to the Argentina-Bolivia border and city of La Quiaca, allowing three days to get back to Córdoba in order to begin the trip home November 10.

On Saturday morning, we began our trip north making numerous stops to look at various *Gymnocalycium*, *Echinopsis* and *Parodia* species along with bromeliads and other vegetation. After lunch, we continued on, still in Córdoba province. About mid-afternoon we pulled off the highway and stopped at Dique El Cajón, a large reservoir at about 950 m elevation. Guillermo showed us a few more plants, then sent us out to explore on our own. While looking around, there they were, *Opuntia sulphurea*, growing in a rocky, grassy area. The spines weren't as coarse, long and twisted as I was expecting but still it was a nice enough clump with new pads forming (Fig. 1).

After spending the night in the town of Cruz

[1]email: JJCACTUS2142@msn.com

1. *Opuntia sulphurea* near Dique El Cajón, Córdoba province, with rather short, slender straight spines.

del Eje, on Sunday morning we left early driving west toward another reservoir, Dique Pichanas, also at about 950 m elevation. We made a stop to see a large *Stetsonia coryne* in bloom. In the same area were blooming *Opuntia sulphurea* (Fig. 2). After leaving this area we continued on through the white salt flat near the border with La Rioja, now at a lower elevation, about 570 m. It was getting much warmer and brighter. The *O. sulphurea* were getting spinier. *Tephrocactus articulatus* was becoming abundant. Climbing up out of the agricultural valleys and heading toward the rocky hills the road became steeper, the scenery more dramatic, and the *O. sulphurea* spines were starting to develop a slight twist.

2. *Opuntia sulphurea* near Dique Pichanas, Córdoba province, with buds and open yellow flower.

Monday morning we departed Anillaco and continued through monotonous scrubland. The landscape was changing as we started going up in elevation. We looked at many cacti but no *Opuntia sulphurea* until after lunch, when one was spotted with extra long spines and a nice paler yellow flower (Fig. 3). We were now at just over 1000 m elevation.

Tuesday morning we headed west toward the San Francisco Pass leading into Chile. We made numerous

3. *Opuntia sulphurea* beyond monotonous scrubland with extra-long spines and paler yellow flower.

4. Group enjoying red sandstone hills and numerous cacti outside Cafayete in Salta province.

5. *Opuntia sulphurea* near Cafayette, Salta province with extra-long twisted spines.

plant stops but saw no *O. sulphurea*. Before crossing into Chile, our driver Gustavo turned the bus around and we headed east toward Fiambala, making a few more short stops. On Wednesday morning in Catamarca province we saw a few plants of *Opuntia sulphurea*, but nothing significantly different from what we had previously seen; there were no plants at our afternoon stops in Salta province.

We spent the night in Cafayete in Salta province and Thursday morning we headed up into eroded red sandstone hills. (Fig. 4) I could immediately tell this was going to be a good day. Cacti were everywhere among the loose red rock: *Tephrocactus molinensis*, *T. weberi*, *Echinopsis thionantha*, *Parodia microsperma* ssp. *horrida*, *Gymnocalycium spegazzinii* with outstanding spination and the *Opuntia sulphurea* I'd been hoping to see, the ones with the extra-long twisted spines (Fig. 5). At other locations, there were plants with long dark reddish brown spines growing in chains across the dry rocky area (Fig. 6). We were now above 1500 m.

The next couple of days we looked at very nice cacti, succulents and landscape, more like tropical rainforest, from early morning to almost dark, but I didn't see another *O. sulphurea* until Saturday. It was growing along with a red flowering *Tunilla corrugata* northwest of Campo Quijano in Salta province, at nearly 1700 m.

Monday morning Guillermo had arranged for our group to visit Pucará de Tilcara at 2350 m in Jujuy province, where there was a municipal botanical garden and restored Indian ruins. This site had the densest, nicest population of *O. sulphurea* (Fig. 7) growing along with *Echinopsis atacamensis* ssp. *pasacana* seen on the whole trip. We wondered if these were growing naturally or had been derived from human activities.

Tuesday morning we left Tilcara and headed north in Jujuy province. We stopped near Churquiaguada to explore for plants, seeing *Echinopsis ferox*, *Oreocereus*

6. *Opuntia sulphurea* near Cafayette, Salta province with brown spines growing in chains across the dry rocky area.

7. One of the densest, nicest populations of *Opuntia sulphurea* seen growing inside Pucará de Tilcara.

9. *Opuntia sulphurea* at the last stop of the trip in southeastern Catamarca province.

trollii, *Maihueniopsis glomerata*, *Austrocylindropuntia shaferi*, *Tephrocactus nigrispinus*, *Cumulopuntia boliviana*, *Parodia maassii* and *Opuntia sulphurea* (Fig. 8). Continuing down the road we saw an incredible rock formation called the Devil's Backbone. We ended the day in La Quiaca at the border of Argentina and Bolivia. Some of us walked over into Bolivia and the border town of Villazón. Later we had our daily debriefing, a late dinner and were then off to our rooms. We reached our highest elevation today, 3682 m (12,129 ft).

The last three days of the trip were spent driving back toward Córdoba, making numerous stops to look at plants. In some instances, we stopped in new areas; in others we revisited places that we had already explored, now seeing plants blooming that had been previously in bud. Our last stop in southeastern Catamarca province was a nice way to end my plant exploration in Argentina. The area was full of blooming *O. sulphurea* (Fig. 9) along with large trees of *Opuntia quimilo* and abundant *Tephrocactus articulatus* (the *papyracanthus* form) along with other cacti. Here we were at less than 200 m elevation.

Seeing cacti and succulents growing in their natural habit is an invaluable experience. *Opuntia sulphurea* with its widespread population is a good example. I had only seen *O. sulphurea* growing as a low compact shrub. I had never seen it growing as a low, long chain of horizontal pads until this trip, and plan to do some additional research.

8. *Opuntia sulphurea* near Churquiaguada in Jujuy province.

References

Hunt, DR., NP. Taylor, and G. Charles. 2006. *The New Cactus Lexicon*. DH Books, Milborne Port, UK.

Kiesling, R, and O. Ferrari. 2005. 100 Cactus Argentinos. Albatros, Buenos Aires.

Lambert, JG. 1997. Cacti of Argentina (2nd edition). Concordia-Roeselare, Belgium.