

Artists, Authors, Correspondents, and Photographers Index

- Adamec, Lubomír 7
Bednar, Bruce Lee 92
Bogner, J. 2
Clarke, Charles 126
Clayton, Colin H. 90
De Witte, John 41, 42
D'Amato, Peter 3, 35, 63, 103
Fantus, Michael 116
Gagliardo, Ron 50
Jellson, Alan S. 130
Kiat, T.W. 133
Koshikawa, Yukio 92
Logoteta, Larry 120
Lum, W.C. 133
McRoberts, Michael 48
Marthaler, Olivier 94
Mazrimas, Joe 2, 95, 96, 119, 139
Meyers-Rice, Barry Allan 122
Novotná, R. 16
Paniago, Mário 33
Pierson, Bruce 49, 121
Rischer, Heiko 106
Rivadavia, Fernando 23, 26, 29, 34, 46, 47, 51, 54, 134, 137
Roth, R.B. 34
Sacilotto, Rob 124
Scholl, Bill 19, 23
Schnell, Don 32, 62, 102, 133
Schlauer, Dr. Jan 67
Sheridan, Phil 19, 23, 39
Studnicka, Miloslav 15
Sullivan, JM. 133
Tanabe, Naoki 49
Wistuba, Andreas 106
Wix, Loyd 112
Wong, David 10
Yeo, Joseph 93
Zimmer, Carl 34
-

Is the Most Beautiful *Drosera* in the World Brazilian?

by

Fernando Rivadavia, Soshigaya Foreign Students House, Apt 202-A
4-24-1 Kami-Soshigaya, Setagaya-Ku Tokyo 157, Japan

Drosera villosa is usually considered the most beautiful Brazilian *Drosera*, mostly because it is the only Brazilian species of *Drosera* known among CPers. Few people grow *D.villosa* and even fewer have ever even set eyes on any other native Brazilian species such as *D.graminifolia*, *D.montana*, or *D.communis*. I have traveled much around Brazil in search of CPs and have seen all of the known (plus a few unknown) native *Drosera* species, except for those native to northern Brazil, in the vast Amazon region and in the highlands of the northern borders (like the tepuis of the Roraima highlands). There are quite a few fantastic species in Brazil, like *D.chrysolepis*, which forms stems up to 40cm in height and the pretty *D.sessilifolia*, a close relative of *D.burmanni*. Yet *D.villosa* still beats them all when it comes to beauty. It is quite a thrill to find a wild colony of *D.villosa*, the rosettes full of strap-shaped leaves (which under strong sunlight may become a deep wine-color), setting on a carpet of green mosses. The rosettes are usually up to 6 or 7cm in diameter, but I have found plants up to 13cm across.

D.villosa grows from the state of Rio Grande do Sul in southern Brazil to the state of Bahia in the northeastern part of the country. Along this species' vast range, there are various different forms which will surely become new varieties, subspecies, or even separate species in the future. *D.villosa* will pass through a small taxonomical revolution, hopefully in the near future, as all these forms are sorted out. One of these new varieties was discovered in northern Minas Gerais state around the small village of Grão Mogol, just east of the city of Montes Claros. My first contact with this new

variety was at the University of São Paulo Herbarium (SPF) in early '91, but I only went to see them in the wild in mid '94.

The village of Grão Mogol was founded by diamond miners and was supposedly named after a famous Asian diamond. Much of the highlands around Grão Mogol has been completely overturned by the devastating methods employed by the miners over the past century or two. Luckily, the local vegetation is extremely hardy and eventually covers up the disturbed areas, though the signs are never completely erased. It is called "campo rupestre" vegetation here in Brazil and consists mostly of low plants growing on top of sandstone highlands on rocks and/or in sand.

Like many other places I dream of visiting in Brazil, Grão Mogol is in a very poor and isolated region, not to mention far from my home in São Paulo, thus going alone by car was out of the question. I spent a few years traveling to other places of easier access, often with organized groups, until I got the experience (and courage) to go to Grão Mogol on my own. I also had to get accustomed to spending long hours or even days on old busses, without anyone to talk to and help pass the time.

I agree it is dangerous to go hiking alone over unknown mountain ranges, but most places I want to go to nowadays are not known to tourism agencies and unfortunately I have not yet found a hiking companion patient enough to wait around constantly as I stop to photograph, herborize, and collect live CPs. Also, after a few years of hiking experience, it is harder to find people who can keep up a quick, steady pace all day long over rocky terrain. My addiction to CPs keeps me blind to all the adversities and pushes me on, the experience and courage accumulating. I have luckily always had a good sense of direction which never (well, hardly ever) lets me down. I usually just choose a place on a map, get the necessary busses to arrive there, and then I just start hiking up the mountains.

I had never traveled as blindly as I did on my first trip to Grão Mogol in June '94, without knowing what to expect of the place, where to stay, and even how to get there! Luckily, the only real difficulty I had was finding this new variety of *D.villosa*. Location data accompanying herbarium specimens were as good as they could be, which too often is far from enough. I was not sure in what type of habitat to find these plants and I spent a few difficult hours crossing thick, prickly vegetation and dying of thirst (it was tremendously hot and sunny and my water soon ran out) before I finally found this new *D.villosa* (and water) just when I was about to give up the search.

This new variety will soon be formally published and named *D.villosa* var. *graomogolensis*. The herbarium specimen had seen were spectacular, but still did not prepare me for what I found. I have tried to explain (unsuccessfully) to a few correspondents the emotion I felt when I discovered these plants. This is surely the most wonderfully beautiful *Drosera* known in Brazil and maybe the world! Though there are magnificent South African and Australian species, these have annual cycles and completely disappear for a few months of each year, while *D.villosa* maintains its rosettes full of leaves all year round.

The most outstanding feature of this new variety is that it slowly builds a column of dead leaves as the stem grows upwards to around 10cm or 15cm in height, while the typical form is rather prostrate. The rosettes are very compact, up to around 9cm in diameter and are a magnificent deep-red color. In strong contrast are the snow-white hairs covering the undersides of the leaves (which are also present on normal *D.villosa*) and seen on the curled-up leaves in the center of the rosettes. I found these plants at a grassy seepage on a hillside at around 700m of altitude, growing by a small rivulet and on the edge of a few rocks jutting through this marsh. They formed extremely compact groups, which only helped multiply the magnificence of the individuals. Many *D.villosa* var. *graomogolensis* were growing into the rivulet,

with the rosettes bobbing on the surface of the water and roots anchoring the trailing stems, which in these conditions reached over 30cm in length!

At this same site I also found a few *Utricularias*, *Genlisea aurea*, *G. repens*, plus three other species of *Drosera*. This was the first site where I found four *Drosera* species growing together in Brazil. Another surprise was that I found my first native natural *Drosera* hybrid, a cross between *D. montana* and a new species which I discovered at the Emas National Park in '91 (see CPN 21:3) and which I have been calling *D. sp.* "Emas". I ended up spending four hours at this site and only left because it was already getting late and I still had a long way to walk back.

In August, a few of the *D. villosa* var. *graomogolensis* I had collected two months earlier began flowering and I decided to return as soon as possible to Grão Mogol to catch these plants flowering in the wild. In September I was back there, once more aghast as I walked around and drooled over the fabulous *D. villosa* var. *graomogolensis*, now with red peduncles reaching 50cm in height and bearing large pink-lilac flowers over two centimeters in diameter! Unfortunately colors do not carry on too well into cultivation, due to weaker sunlight, and native *Drosera* soon turn greenish. Even the flowers are lighter in color under artificial conditions.

During this second trip to Grão Mogol, I witnessed pollination of a native Brazilian *Drosera* in the wild for the first time. This was being carried out by a small, green bee on flowers of *D. graminifolia*. The following day I saw this same species of bee plus common honeybees buzzing around *D. montana* plus *D. villosa* var. *graomogolensis* flowers and was even able to photograph the green bee on a flower of the latter.

A few months later, as soon as my classes were over for the summer vacation in December, I was off to northern Minas Gerais again. I returned to Grão Mogol, but I first went to two even tinier villages just south of Grão Mogol: Itacambira and Botumirim. My main objective was to find more *D. villosa* var. *graomogolensis* and to collect their seeds. Though I searched extensively around both new places, I only turned up one site with this species at each place (like at Grão Mogol).

At Itacambira I found a large colony growing in slightly humid sandy soil on a hillside at around 1250m of altitude, under the semi-shade of *Lavoisiera* sp. (Melastomataceae) bushes up to 160cm in height, a habitat quite different from the one at Grão Mogol! The *D. villosa* were concentrated around the bases of these bushes and a few other plants, where it is probably more humid. As an unfortunate result of the shadier conditions, the *D. villosa* were all green or reddish-green, and not beautifully colored like the ones at Grão Mogol.

Water flows abundantly all year round at the *D. villosa* site in Grão Mogol, even though most natural springs disappear during the winter in this region. Looking at this new site at Itacambira, I would have guessed it dried up totally during the dry season, if it were not for the presence of *D. villosa* var. *graomogolensis*. Examining their stems, I was surprised not to find any burned leaves (which I later observed on stems of the plants found at Botumirim), showing that bushfires normally do not pass through this site during the dry season. A curious detail is that the leaves of that *Lavoisiera* sp. are shaped very amazingly like VFT traps!

At Botumirim I only found a small colony of *D. villosa* var. *graomogolensis* growing next to a stream at around 1300m in mushy soil composed mostly of decaying organic matter mixed with some sand. These were not very big, but were nicely colored in their sunny location. Wildfires had swept the Botumirim highlands a few months earlier and had obviously damaged quite a few CP populations, including these *D. villosa*. Here most of the plants were young individuals growing from the roots at the base of stems killed by wildfires during some previous dry season. Even these young ones showed signs of burned leaves on their stems from more recent fires.

The dry season was strong in '94 and I saw places where even *Sphagnum* had been burned!

Unfortunately I was not able to explore the Botumirim region too well due to heavy rains. In the resulting fog, I got lost like I never had before in my life and wasted half a day trying desperately to find my way down from the mountains and back to Botumirim. I almost spent a cold, wet night on top!

Back at Grão Mogol for the third time in six months, I was sad to find my favorite CP site in Brazil full of sad-looking *D. montana* and *D. villosa* var. *graomogolensis*, probably a result of the pouring rains which had been beating down on them (and me) over the past few days, though maybe they were still recovering from the energy spent during the flowering season. I collected lots of *D. villosa* peduncles at Grão Mogol and Itacambira, but sadly these were long dead and all spent of seeds. Better get there earlier next year! I did notice that my plants in cultivation produced practically no seeds at all and it seems like even the wild ones produce few seeds. Luckily though, I have discovered that it is not difficult to reproduce *D. villosa* var. *graomogolensis* by leaf cuttings.

So now, after reading about *D. villosa* var. *graomogolensis* and seeing a few pictures, do any of you have a better candidate for "Miss *Drosera*"?

References:

- 1.) **Degreef, J.D.** 1990. Evolutionary Patterns in *Drosera*. Carnivorous Plant Newsletter. Vol. 19: 1&2, p.11-16.
- 2.) **Diels, L.** 1906.



Figure 1. *Drosera villosa* var. *graomogolensis* 1250 m. at Itacambria, Brazil. Note marcescent leaf growth pattern. Photo by Fernando Rivadavia. See article in this issue.



Figure 2. *Drosera villosa* var. *graomogolensis* flower being pollinated by small green bee at Grao Mogol. Photo by Fernando Rivadavia. See article in this issue.

- A. Engler (ed.) Das Pflanzenreich 26 Heft IV. Leipzig.
- 3.) **Rivadavia, F.** 1992. Carnivorous Plants of the Brazilian Cerrado. Carnivorous Plant Newsletter. Vol. 21: 3, p.54-59.
- 4.) **Saint-Hilaire, A.** 1824. Droseraceae in Histoire des Plantes les plus Remarquables du Brésil et du Paraguay.