

Passiflora

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sub sole sub umbra virens



IN THIS ISSUE:

'Discovering French Guiana'
'The Athens of Germany'
'Passiflora Obsession Disorder'
'Hawaiian Lilikoi' and more

Letter From the Editor

An embryo plant, a supply of nutrients, and a protective coat. This seemingly simple assembly of parts, one we call “seed”, was nevertheless one of the most important advancements in the evolution of plants. The “invention” of the seed goes way back in time. They start appearing in the fossil record, in a very primitive form, during the Late Devonian period, about 385 million years ago. Until then, existing plants reproduced through either vegetative methods (asexual) or through spores (e.g. ferns). The seed made the embryo more resistant to the environment and provided a more effective means of propagation (e.g., spore dissemination is too random and relatively inefficient). The real breakthrough came later, in the Early Cretaceous period, with the appearance of flowering plants, the Angiosperms. The name stems from Classic Greek and literally means “bottle seed”, referring to the fact that these plants produce seed within an enclosure, the fruit. The appearance of the fruit was likely a major factor in the explosive dissemination of angiosperms, an event that Darwin called an “abominable mystery”. The production of flowers and seed-bearing fruits promotes genetic diversity (e.g., through cross-pollination) and complex animal-plant interaction (e.g., destruction of germination inhibitors in the digestive tract, dispersion of seed over larger areas, specialized pollinators). Ultimately it promotes complexity in an ecosystem.

Commercially, however, seed is hardly ever used to propagate plants. Vegetative propagation methods, such as by cuttings, are more popular as they preserve the characteristics of the mother plant, and make it easier and faster to produce new plants, and, of course, it is the only legitimate way to propagate hybrids. Yet, to preserve species under cultivation it is important to maintain a diverse genetic pool, with several clones of the same species being grown in the same or different collections. Genetic diversity is what makes individuals of the same species not exactly the same. Some will have slightly lovelier flowers, others will be more resistant to parasites or disease. In case of infection, some plants may die but others may be naturally immune. This why it is so important to invest in producing true species seed with cultivated plants, especially for those under threat in their natural habitats. The example of *Pasiflora parritae*, comes to mind. For several years the only known clone of the plant in existence was kept at the Strybing Arboretum at San Francisco, in the United States. However all attempts to set fruit with true *parritae* seed failed. The survival of the species was at risk. Then, a few years ago, a few more plants were found in Colombia and now several clones exist in the Bogotá Botanical Garden and in farms near Bogotá. Thanks to the dedication of several growers it was possible to produce the first true *parritae* seed and they are currently being disseminated. We may be witnessing a major step in the preservation of *Passiflora parritae* for future generations.

So, enjoy growing *Passiflora*, whether species or hybrids, but if you have a chance to produce true species seed, you can make an important contribution to the conservation of those species by growing from seed and by disseminating the seeds to other collectors.

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EDITOR & PUBLISHER

Myles Irvine

ASSOCIATE EDITORS

Shawn Mattison

Luís Lopes

CREATIVE DESIGN

Martin Murray

CONSULTANT

Eric Wortman

We invite submissions from all *Passiflora* enthusiasts, from cartoons, garden tales, recipes and growing tips to articles about new species and hybrids and reports of wild collecting trips. Please contact any of the editorial team above. Even if you have not written anything before we are here to help.

Articles in any language are welcome but will usually be translated and published in English only for reasons of space. We reserve the right to edit or refuse articles but ask contributors to note that we are not set up to offer scientific peer review. Please note that contributors will currently not be paid. Letters to the editor for publication are also welcome.

Note that new species should first be submitted to the appropriate scientific botanical journals so that the validity of the name is established, after which time we may carry an article about them. If you wish to formally register a hybrid, which is optional, you should apply to the Passiflora Cultivar Registrar who, if your application is accepted, will publish your hybrid in the Passiflora Society International Journal & Newsletter.

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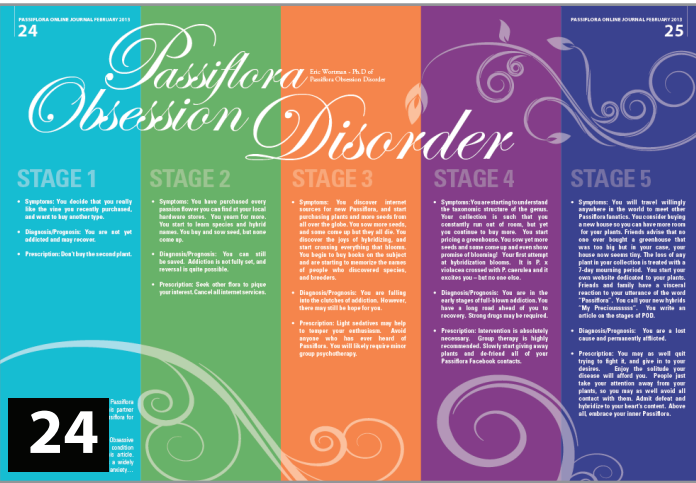
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Discovering French Guiana

By
Jean-Jacques Segalen

Some readers will of course know about French Guiana as this is one of the few European territories where passionflowers grow abundantly in the wild. It is European because it belongs to France although it is located in South America and borders Brazil in the South and Surinam (former Dutch Guiana) in the West. To be exact it is set between 2° and 5° of Northern latitude and between 51° and 54° of Western longitude. First settled by the French in 1604, full-scale colonization only started in 1620 and was complicated because of the climate and many illnesses, plus conflicts with the indigenous American peoples who had been inhabiting the area for around 5000 years. The first major French settlement was at Cayenne in 1643. The colony was at various times controlled by the Dutch, English, French, and Portuguese until French rule was restored in 1817.

It is now one of the 100 French Departments, and with some 225 000 inhabitants over an area of 83634 square kilometers it is the most sparsely populated with 2.7 people per square kilometer. Most people live on the coast where the main city of Cayenne can be found. About 65 kilometers further up the coast is Kourou, a city that still bears the sinister memories of the penal colony, the infamous Devil's Island, and today features the Guiana Space Centre, France and ESA's main spaceport. The population is a mix of Creole, French, Chinese, Hmongs, Caribbeans, Haitians, Amerindians, Brazilians, Surinamese and Bushinenges (descendants of former African slaves who hid in the forest). There are an estimated 30 000 to 60 000 illegal aliens, many working in the forest seeking gold and who release large amounts of quicksilver in the rivers hence inducing serious pollution.

Some savannah and swamps can be found along the Northern coast but most of the land (some 94%) is covered with primary forest, a part of the Amazonia. This is typical equatorial forest with a canopy at about 25 to 35 m high (75 to 105 feet) dominated by 'emergent' trees up to 50m (150 feet) or more. The very dense foliage allows only 1% of the sunlight to reach the ground so the underneath is rather dark and not dense as few plants can adapt to such low light levels. They are mostly ferns, orchids, mosses, dwarf palm trees and rhizomatous plants such as gingers and heliconias. Passionflowers do not enjoy such darkness and are only found in clearings--either natural ones, made by falling trees, or man-made clearings such as roads, trails or spaces created by wood-cutting activities. The climate is hot and humid with 3 to 5m (10 to 16 feet) of rain per year, and an average temperature of 27°C all year round, so you can almost see plants growing right before your eyes! In this relatively small area there are an estimated 440 000 species of animals and plants, an incredible paradise for any serious nature lover. The forest hosts about 1300 different species of trees and a sole hectare (a square of 100m by 100m) will have between 80 and 200 different tree species while the same surface of temperate forest would only offer 3 to 6 tree species! Trees are usually covered with climbers, lianas, epiphytes such as bromeliads, orchids, mosses and the like, which offer protection and food to many animals and insects. This all results in an incredible concert of live, booming songs - blowing, cracking, shouting and squeaking. The forest can be pretty noisy!



Plant hunters paradise

I have had the dream of exploring the Amazonian forest for many years but this is not exactly Covent Garden and many people get lost there every year, even if they know the place and its dangers. Some never come back. So

when I was contacted and offered to go there with people living in contact with the forest for years I could not resist the offer! The deal was to go there and teach some people how to safely climb in the canopy in order to take pictures of birds and frog species that never leave the highest branches. Being myself a fully certified arborist it was a unique chance, so I immediately prepared my gear and purchased airplane tickets. I then flew first to Paris (11 hours flight as I live on Reunion island, near Madagascar), then to Cayenne (8 hours), then grabbed a collective taxi to Saint-Georges de l'Oyapock (another 6 hours) and at last sat down and relaxed, sipping a beer by the Oyapock River which separates French Guiana and Brazil. On the following morning we packed the car and drove along to the Saut Maripa trail towards some giant trees my new friend Johann wanted to climb. During the two hours it took us to zigzag on the trail between flooded holes and fallen trees I spotted various large colorful birds, a couple of snakes and an uncountable diversity of trees, bushes, vines, herbs, among them a couple of bright red passion flowers. Christian Feuillet has confirmed that these were

P. glandulosa, see page 9, found in a typical location on a forest track in the 'Montagne de Fer' on the commune of Mana, 200 km from Cayenne on road n°1. He notes that it has a very variable flower habit. It has flowers in 3 kind of settings:

1. Along leafy stems.

2. At the end of leafy stems (no more branches to grab on) the hanging terminal part has progressively reduced internodes, leaves reduced to short-petiolate 3-5 mm long blades, smallish tendrils and regular flowers.

3. From old woody stems, raceme-like stems (like 2 above, but with long internodes and without basal leafy segment) could be several feet long and occasionally grow into a leafy stem at apex if light conditions improve.

Once at the end of the trail we had to haul all our equipment (harnesses, access ropes, karabiners, split-tails and other useful gizmos) until we reached our goal, a giant chawari tree. This nice *Caryocar glabrum* seemed at first sight to grow to some 40m high and was topped by a *Ficus* species which had grown over it; this is interesting as many canopy birds feed on the wild figs. The first branches were about 30m high and this is where we had to set the access rope which requires some practice. We use a special device that looks like a giant sling-shot in order to throw a small weighted bag attached to a string over the chosen branch.

© 2011 Jean-Jacques Segalen



Once the bag comes back down successfully we attach the main rope to the string, haul it over and back down. Then a clever friction knot is installed and I can start worming my way up.

In this case, the climbing was nothing similar to what I am used to on Reunion Island where cyclones prevent trees from getting too big. I had to keep going up, through branches and falling vines, higher up until I could not see the ground anymore, and I was still only half-way there. The light was getting brighter and I could see and hear more birds now. I also spotted some blooming orchids and saw whole branches covered with bromeliads. After some more grunting and sweating I reached the top and managed to secure myself on the main trunk, stepping on a branch large enough to lay out a table and have dinner on it! I attached a few webbing loops to hold my backpack, camera, water bottle and various paraphernalia, attached an extra rope to make things more comfortable for the followers and climbed a little higher while waiting for the rest of the gang.

Once all were up we relaxed, found comfortable spots and stayed quiet with cameras ready. Soon enough birds started coming. They looked somewhat puzzled to see new unusual creatures, but as we remained motionless they started feeding and enjoying life again. A very nice toucan koulík, *Selenidera piperivora*, suddenly arrived and put on a real show, hiding behind a large branch and poking out its beak, then hopping closer, piping at us and all the while gulping ripe fruits. Then I saw a stunning tiny poison dart frog, which had jumped out of the bromeliad in which it was swimming. *Ranitomeya ventrimaculatus* is only 2cm (0.79 inch) long and as it belongs to the *Dendrobates* family. I did not play with it. These frogs are reputed to produce especially effective venom that is used by the indigenous people for hunting. Once the toucan was gone, another set of birds came and happily fed, soon to leave and be replaced by a different species. After some three hours up in the green sky we had to decline, as daylight was waning, and we knew it would soon be pretty dark at ground level where we had to make it to the car before night. On the way to the main trail we spotted a couple other giant trees that we decided to visit during the following days. Over the next two weeks, we kept strolling through the paths and climbing trees until Johann became fully accustomed to the various tools and security practices in order to keep going up and down safely.

The other passion flower I encountered in my travels is *P. aff gabrielliana**, see page 10, which was found growing alongside a road in Awala-Yalimapo in the North-West of French Guiana, close to Surinam and this was at some three hundred meters from the shore.

My next mission will be in the North of French Guiana, this time close to the Surinamese border, with scientists who study tropical bats. There are about 100 different species in French Guiana, some feed on insects, some on fruits, some on nectar (including that of *Passiflora* species), some eat fish, some are carnivorous and some drink blood from either cattle or humans. But I do not want to induce nightmares amongst readers so this will be for another time maybe!

Jean-Jacques Segalen is a Paris-born plant lover who has settled on Reunion Island some twenty years ago and now shares his time between plant growing for seed production, tree surgery and tree climbing, travels and enjoying life! He has recently published 'Tropical plants & fruits of Mauritius & the Reunion islands' <http://www.barbadine.com/pages/livrejjGB.html> and <http://www.barbadine.com/pages/livrejj.html>.



Passiflora glandulosa

*Passiflora gabrielliana*

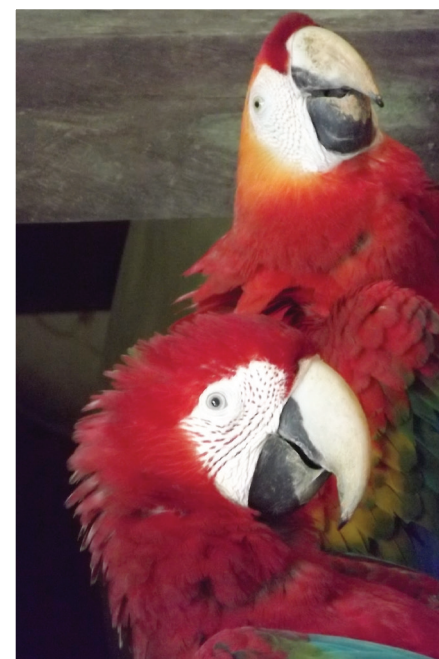
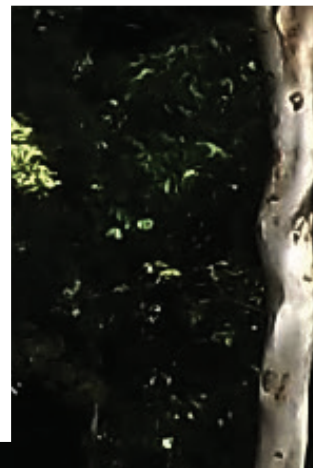
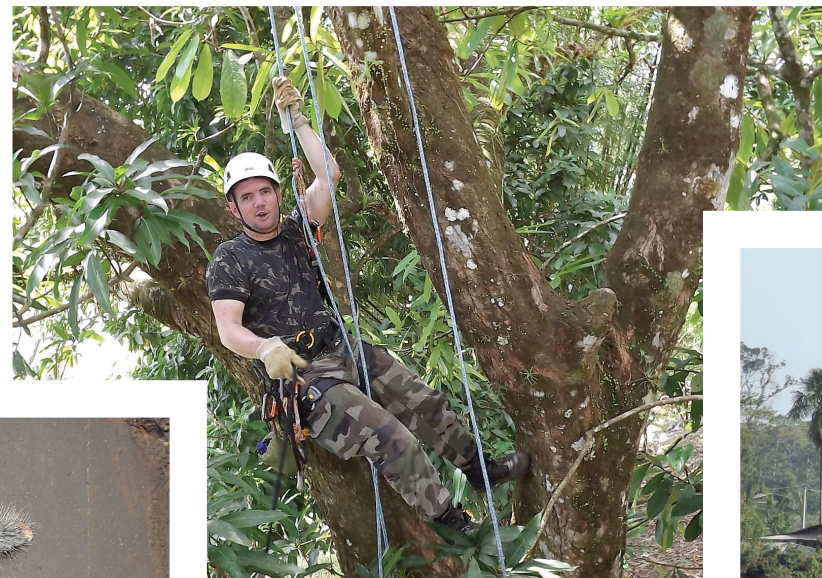
*Editor's note. *Passiflora gabrielliana* sp. nov was first described by John Vanderplank in 2000 in the *Passiflora International Society Journal* [1] and later published with Cor Laurens in *Curtis's Botanical Magazine* [2], He comments 'It was found by Cor Laurens during his visits to French Guiana in 1997, 1999 and November 2000. Several plants were found growing along roadside verges near the Rivières des Cascades at Tonnegrade, and also near Sinnamary in Circad Territory and near Roura beside the Crique Gabrielle, after which it is named.'

There is a slight query about whether the plant pictured is *P. gabrielliana* or possibly one of the new *Laurifoliae* that David Rignon (Cacao, Fr. Guiana) wants to describe. This reminds us how important it is to take as many pictures as possible of all aspects of a plant and of course specimens for taxonomists to study.

1. Spring 2000. *Passiflora*. Vol. 10, No. 1. 5.

2. Vanderplank, J. and Laurens, C. (2006), 564. *PASSIFLORA GABRIELLIANA*. *Curtis's Botanical Magazine*, 23: 237–242.





All images © Jean-Jacques Segalen
except the toucan © Johann Tascon

Letter to the editor

From Dr L.A.King

The Editor, Passiflora Online Journal

Dear Sir:

Following the original description by Lemaire [1] in 1847, it is generally recognised that "*P. amabilis*" is a hybrid of *P. alata* and *P. racemosa*. As a 'botanical hybrid', it should strictly be named *P. ×amabilis* as shown in the 2001 Checklist for the genus *Passiflora* [2] and the 2003 *Passiflora* Register [3]. It is less clear if it is an artificial hybrid or one that occurs naturally. Some authorities [3] have noted that *P. ×amabilis* has been lost from cultivation. In his recent description of *P. ×amabilis*, Kuenthe [4] claims that it reappeared in The Netherlands in 2003 in the form of the hybrid *P. 'Wilgen Heintje'*, created by Piet Moerman. Since all modern crosses of *P. alata* and *P. racemosa* should include the epithet *P. ×amabilis* in addition to the cultivar name, then that 2003 hybrid is correctly known as *P. ×amabilis 'Wilgen Heintje'*.

However, the situation is less straightforward. There is an old hybrid of the same parentage, namely *P. ×cardinalis*, that has been in cultivation at the Royal Botanic Gardens, Edinburgh since 30 June 1920. In 2006, I grew a cutting from this plant; the flower (Figure 1) looks similar to old descriptions of *P. ×amabilis* and the modern *P. 'Wilgen Heintje'*. According to the records held at Edinburgh, the original plant was obtained from "Louis Van Houtte Pere". This is the nursery set up by the well-known plant breeder Louis van Houtte in the 19th Century in Brussels.

There is a further hybrid of *P. alata* and *P. racemosa* that also pre-dates *P. ×amabilis* '*Wilgen Heintje*'. Known as *P. 'Stockumer Rot'*, it was created in 2002 by Bettina Ulmer [5], and again looks remarkably similar to the other hybrids described above.

On a related matter, Kuenthe [4] states that *P. 'Wilgen Heintje'* "...has been proven to be self-perpetuating...". I'm not sure I understand what that means. If it refers to the fact that *P. 'Wilgen Heintje'* can be propagated from cuttings then that is hardly novel. But if it means that *P. 'Wilgen Heintje'* is self-fertile, sets seeds and those seeds come true then, for a hybrid of two such distinct species, that would be truly remarkable.

Leslie A King

23 March 2013



Figure 1 *P. ×cardinalis* © 2012 L. A. King

Figure 1 (above). *P. ×cardinalis*, an old hybrid of *P. alata* and *P. racemosa*

[1] C. A. Lemaire, (1847). *Passiflora amabilis* (Hybrida), Flore des Serres 3: t. 209

[2] A. Frank and E. Kugler, (2001). Hybriden und Sorten der Passionsblumen: Eine Checkliste der Gattung *Passiflora*, Passiflorunde, Sonderheft Nr. 2

[3] J. Vanderplank (on behalf of the Passiflora Society International), (2003). The International *Passiflora* Register

[4] Y. Kuenthe, (2013). Studies on *Passiflora amabilis*: the man-made natural hybrid. *Passiflora* Online Journal, Issue 3, 18-21

[5] B. Ulmer and T. Ulmer, (2005). Farbatlas Passionsblumen/Colour Atlas Passionflowers, Formosa Verlag, Witten, Germany

Passiflora in the Athens of Germany

By Sylk Schneider

"There are few places that inspire more interest, in those who have paid any attention to German literature, than the city of Weimar. It has been called 'The Athens of Germany'". These words we find in William Jacobs remarkable book, "A View of the Agriculture, Manufacture, Statistics and State of Society of Germany" edited by John Murray 1820 London. Even more than the literature William Jacob admired the gardening activities of the Duke of Weimar and the activities of editor Friedrich Justin von Bertuch.

And indeed in the first part of the 19th century the small city of Weimar was famous not only for literature but for its gardens and gardening culture as well. The knowledge of plants was admirable, a good conversation often was about plants. The journals and newspapers used to give information about the plants that were flowering and letters consisted of discussions about plants. Goethe, the most famous poet of Germany, was so interested in botany that he wrote "Metarmorphose der Pflanzen" (Metamorphosis of Plants). Observing the development of plants, he wrote in November 1822 to Carl August the Duke of Weimar,

"A Passionflower stands before me of the most miraculous formation, it is not possible to admire it enough, it highly delights by confusing ones mind."

The Duke himself was a great botanist, member of the Royal Horticultural Society and lover of exotic plants. The Garden of Belvedere was well known. The Duke not only spent a huge amount on his gardens but sent his gardeners, at his expense, to England, France and Holland. New knowledge about hothouses and orangeries and botany came to Weimar from all over Europe and the world in this manner. The objective of the Duke was to possess the newest and most exotic plants.

One of the garden directors of Weimar was Friedrich Justin Bertuch. William Jacob tells us about Bertuch and his activities “Under this influence of a free press, there has grown up here a private establishment, which comprehends the whole process of the manufactory of books and maps, from the collecting materials for composing them to the binding and selling them. The Landes-Industrie-Comptoir belongs to a gentleman of great merit and perseverance, who is connected with his son-in-law, a man of great talents, learning, and enterprise. The building resembles a palace, both in extent and elegance of exterior; within it, besides the residences of the partners, there are dwellings for the various persons who are engaged in literature, or the occupations connected with it; four hundred persons.... These comprehend several respectable writers engaged in works of general circulation, or in the composition of periodical publications, engravers, copper-plate and letter-press printers, and painters.

The principal proprietor of this concern is a great horticulturist... The large garden belonging to this gentleman, and attached to the establishment, was laid out with taste, and the greenhouses and forcing-houses, which contained many curious exotic plants, were managed with an attention to economy in the use of fuel that I much admired.”

Bertuch was the editor of many journals related to gardening and horticulture such as “Der Teutsche Obstgärtner” (The German Fruitgardener) or the “Allgemeine Teutsche Garten Magazin” (Common German Journal of Gardening) These copper plates were published in the “Fortsetzung des Allgemeinen Teutschen Garten Magazins” in 1822.

These passionflowers were described :

- *Passiflora filamentosa*
- *Passiflora glauca*
- *Passiflora incarnata*
- *Passiflora peltata*
- *Passiflora quadrangularis*
- *Passiflora racemosa*
- *Passiflora rubra*



The information about these plants came generally from the Royal Horticultural Society and the Linnaen Society. Bertuch himself had a little pinery (a hothouse or area where pineapples are grown.) and he recommended in his journal planting some *Passiflora* varieties behind the pineapples for their beauty and their fruits.

Bertuch probably copied the plates from the “THE BOTANICAL REGISTER CONSISTING OF Coloured figures of EXOTIC PLANTS, CULTIVATED IN BRITISH GARDENS; WITH THEIR HISTORY AND MODE OF TREATMENT. THE DESIGNS BY SYDEMHAM EDWARDS, FELLOW OF THE LINNEAN SOCIETY.” But as he had one of the best copper gravures the copies are brighter and of better quality than the London originals. Two magnificent examples are presented here (courtesy of Stadtmuseum Weimar, the Museum of the Town of Weimar)

Passiflora quadrangularis: Plate7 in Fortsetzung des Allgemeinen Deutschen Gartenmagazins, Weimar 1822. The following description of *Passiflora quadrangularis* was published in Volume 1, London 1815.

‘Before it was cultivated in this country by Ph. Miller in 1760; and is pretty general in our hot-houses, where it sometimes ripens the fruit. This is nearly as large as, but more oblong than a swan’s egg, with a thick soft spongy rind, smooth and of a dull yellow-green on the outside, lined within by a loose membranous sack filled with a mass of pulpy-coated seed. The sack is easily parted from the rind, and the pulpy contents are eaten at the dessert, mixed with wine or without. The pulp is watery, rather fragrant, and is said to have a grateful taste, something between sour and sweet. The bloom is the largest and handsomest of any species known to us; and is usually produced abundantly about August or September. We have mentioned in the preceding article what is esteemed the best mode of treatment for the tropical species of the genus. Our drawing was made at Bayswater, in the hot-house belonging to the Comtesse de Vandes; the richest, we believe, in plants of this family, of any in England.’

Passiflora racemosa: Plate 15 in Fortsetzung des Allgemeinen Deutschen Gartenmagazins, Weimar 1822. The following description of *Passiflora racemosa* was published in Volume IV, London 1820.

‘Before this fine species blossomed, we believe, for the first time in our country, at the nursery of Messrs. Loddiges, Hackney, and has



Goethes Gartenhaus © Weimar GmbH Guido Werner

been already figured in the “Botanical Cabinet,” a work edited by those ingenious and industrious horticulturists to record the rare and curious plants which flower in that extensive collection. It was there that we had the opportunity of taking the present drawing from a sample cultivated in a hothouse where the use of tan has been discontinued, and its agency supplied by the introduction of steam.

The plant is indigenous of the Brasils, and was observed by the late Mr. E. J. A. Woodford growing wild in the shade of the

woods, near the shore, at the distance of about a league from the city of Rio Janeiro« By this gentleman it was brought to Lisbon, cultivated there, and through his means communicated to Professor Brotero, by whom a drawing and description of it were transmitted to the Chinese Society of London, both of which appear in the twelfth volume of the Transactions of that body. The species is distinguishable among the others by the long leafless racemes, that terminate the branches, and which have procured it the name of *Martyrio cachudo* (bunch-flowered Passionflower) among the Brazilian colonists.’

Weimar still is a garden city today, perhaps better described as a city in a garden. The Park on the river Ilm is a beautiful traditional English garden. In Belvedere Park, which contains the Orangery, several garden exhibitions are held over the year like the Camelia Exhibition. In Belvedere as well as in the Tiefurt Park and in the Ettersburg Park there are beautiful castles to be visited.

In the Park at the Weimarahalle, the former Bertuch Garden, several summer concerts are held each year. The house of

Bertuch today is the city museum of Weimar. Some beautiful romantic gardens in Weimar are Goethe’s garden at the “Stern”, the Garden at Kirms-Krackow-House and the Garden at Herder House.

More information: <http://www.weimar.de/en/tourismus/sights/parks-and-gardens/>

Sylk Schneider, German author, curator at the Stadtmuseum Weimar. www.goethebrasil.de

Passiflora Party Animal

From Myles Irvine

Like my other polyploid hybrid released in 2011 *Passiflora* 'Silly Cow', see *Passiflora* Online Journal Issue 3 2013, this is a product of my programme to produce hardy *Passiflora* cultivars.

Passiflora 'Party Animal' is a large vigorous free flowering vine and is hardy to -8°C 18°F or lower. The flowers are sturdy, upright, lightly perfumed, up to 10cm in diameter with strong corona filaments and petals; the flower is quite *P. caerulea* like but fully reflexes; the flowers stay open for two days. The androgynophore and well formed anther filaments are light green with very light violet speckling at the end of the filaments. There is little pollen present on the anthers. The style is solid dark maroon fading to green at the tips with heavy maroon speckling. The petals and sepals are wide and white; the sepals are fleshy with green abaxial surfaces and long, claw-like awns. Protecting the androgynophore, the inner corona filaments are dark maroon, almost black and eyelash-like with a thin band of white at the base; there are then two rows of tiny upright corona filaments with dark maroon tips; then a gap and a third tiny row merging into two rows of strong outer corona filaments of 5cm and 6cm in diameter, both with three equal width bands of dark maroon, white then blue with white flecks to the apex. The bracts are 3cm x 2.3cm; peduncles variable up to 12cm often quite upright from the foliage; the stems are maroon and strong; there are attractive, shiny, leathery, dark green leaves up to 15cm x 20cm with three to more, usually five, well-separated lobes. The leaves have slightly wavy edges and strong green veins; petiole 7cm or more; usually 2-4 3mm long petiole glands variable in position from midway onwards and often paired. Stipules 2.4cm x 1cm.

Named in July 2011 in honour of my dear friend Simona Kristova.

For wholesale enquiries in the UK and Europe please contact Nick Reece at Jackdaws' Field Nursery <http://www.jackdawsfield.co.uk>.

© Myles Irvine



© Jan Kuzel

Passiflora Obsession Disorder

Eric Wortman - Ph.D. of
Passiflora Obsession Disorder

STAGE 1

- **Symptoms:** You decide that you really like the vine you recently purchased, and want to buy another type.
- **Diagnosis/Prognosis:** You are not yet addicted and may recover.
- **Prescription:** Don't buy the second plant.

STAGE 2

- **Symptoms:** You have purchased every passion flower you can find at your local hardware stores. You yearn for more. You start to learn species and hybrid names. You buy and sow seed, but none come up.
- **Diagnosis/Prognosis:** You can still be saved. Addiction is not fully set, and reversal is quite possible.
- **Prescription:** Seek other flora to pique your interest. Cancel all internet services.

STAGE 3

- **Symptoms:** You discover internet sources for new *Passiflora*, and start purchasing plants and more seeds from all over the globe. You sow more seeds, and some come up but they all die. You discover the joys of hybridizing, and start crossing everything that blooms. You begin to buy books on the subject and are starting to memorize the names of people who discovered species, and breeders.
- **Diagnosis/Prognosis:** You are falling into the clutches of addiction. However, there may still be hope for you.
- **Prescription:** Light sedatives may help to temper your enthusiasm. Avoid anyone who has ever heard of *Passiflora*. You will likely require minor group psychotherapy.

STAGE 4

- **Symptoms:** You are starting to understand the taxonomic structure of the genus. Your collection is such that you constantly run out of room, but yet you continue to buy more. You start pricing a greenhouse. You sow yet more seeds and some come up and even show promise of blooming! Your first attempt at hybridization blooms. It is *Passiflora x violacea* crossed with *P. caerulea* and it excites you – but no one else.
- **Diagnosis/Prognosis:** You are in the early stages of full-blown addiction. You have a long road ahead of you to recovery. Strong drugs may be required.
- **Prescription:** Intervention is absolutely necessary. Group therapy is highly recommended. Slowly start giving away plants and de-friend all of your Passiflora Facebook contacts.

STAGE 5

- **Symptoms:** You will travel willingly anywhere in the world to meet other *Passiflora* fanatics. You consider buying a new house so you can have more room for your plants. Friends advise that no one ever bought a greenhouse that was too big but in your case, your house now seems tiny. The loss of any plant in your collection is treated with a 7-day mourning period. You start your own website dedicated to your plants. Friends and family have a visceral reaction to your utterance of the word "*Passiflora*". You call your new hybrids "My Precioussssss". You write an article on the stages of POD.
- **Diagnosis/Prognosis:** You are a lost cause and permanently afflicted.
- **Prescription:** You may as well quit trying to fight it, and give in to your desires. Enjoy the solitude your disease will afford you. People just take your attention away from your plants, so you may as well avoid all contact with them. Admit defeat and hybridize to your heart's content. Above all, embrace your inner *Passiflora*.

Eric Wortman is the President of the Passiflora Society International. Together with his partner Crystal, he specializes in breeding *Passiflora* for increased hardiness and vigor.

Editors note: We recognise that Obsessive Compulsive Disorder is a serious condition and hope no one is offended by this article. Coincidentally, *Passiflora incarnata* is a widely used natural treatment for both OCD and anxiety...

Got Lilikoi?

By Gail Hercher



Here in Hawaii, you can always find a tower of pineapples in the supermarket, but you'll never see a pyramid of lilikoi (Hawaiian for passion fruit), even though it's one of our favorite fruits! Bartenders require it for exotic drinks, bakers want it for special cakes, Aunties need it for shortbread cookies, cottage industries use it to make jams, jellies, and face creams and local emporiums rely on it for Hawaiian shave ice, sorbet and ice cream. Everyone has at least one favorite lilikoi recipe, but there are few commercial growers of lilikoi in Hawaii. This is definitely not Ecuador where it's possible to buy 55-gallon drums of parchita (as passionfruit juice is called there).

So where do people get this treasured *Passiflora* fruit? With luck, a trip to a farmer's market or roadside stand will yield a few lilikoi; otherwise, people cadge them from a neighbor's fence or grow them in their garden. Several different passion flower species grow in Hawaii gardens and forests: *P. edulis* Sims, *P. edulis flavicarpa*, *P. ligularis*, *P. quadrangularis*, *P. laurifolia*, and *P. tarminiana*. For eating, however, the fruit of *P. edulis* Sims (purple) and *P. edulis flavicarpa* (yellow) are the favorites. Yellow passion fruit grows very well at low elevations from sea level to 2500 feet; purple does better at higher elevations.

P. edulis Sims, the purple variety, was first planted on the Hawaiian island of Maui in the late 1870's by Eugene Delemar who brought them from Australia. He planted them on his sugar plantation in an area still known as 'Lilikoi Gulch,' after which the fruit obtained its Hawaiian moniker. The plant was taken to other islands of the then Territory of Hawaii (Oahu, Kauai, Hawaii, Niihau, Maui, Molokai). At least one mele (Hawaiian song) was written about lilikoi and before long a lilikoi dessert was part of the Hawaiian lu'au. It was even viewed mistakenly as a distinctly 'Hawaiian' plant. Many Islanders still don't realize that lilikoi, under different names, grows all over the world in tropical climates. Lilikoi first became popular during the sugar cane and pineapple plantation days when it grew wild on fences and dead trees and workers could pick a fruit off the vine, squeeze it in half between their knees, 'suck up' the pulp to quench their thirst, and savor the sweet/tart taste.

Yellow lilikoi from *Passiflora edulis flavicarpa* did not start to supplant the purple form until 1923 when Mr. E.N. Reasoner from Oneco, Florida donated Australian seed he had collected to the Hawaiian Agricultural Experiment Station (University of Hawaii). This new variety, more pest resistant than the purple lilikoi and bearing abundant fruit within two years, prompted a few farmers in Pupukea, Oahu (North of Honolulu) to plant



Wild, high lilikoi vine, growing on tree

it on a large scale for what they hoped would be a profitable return. They attempted to can passionfruit nectar during the 1930's but their efforts were discontinued after the bombing at the Hawaiian port of Pearl Harbor and the entry of the US into World War II in 1941.

Lilikoi farming didn't really catch on again until close to a decade after the war ended. In 1951, the University of Hawaii chose this fruit as the most promising crop for development, by 1953 there were 50 acres of lilikoi growing on the big island of Hawaii, and by 1955 there were at least 500 acres of lilikoi cultivation on the Hawaiian Islands. Farmers thought they had found an ideal crop: yellow passionfruit was virtually pest free, easily pollinated by the ever-present carpenter bee, produced abundant fruit within two years and yielded 40,000 pounds of fruit per acre with 35% juice content. Purple passionfruit in contrast averaged less than 10,000 pounds of fruit per acre with a juice content of 25%. Island producers were predicting a mainland US market of 2 million pounds of juice per year. In addition, lilikoi didn't have to be 'picked.' Instead, the fruit just dropped to the ground when ready (!) which made for easy work compared to hot and nasty work of harvesting pineapple or sugar cane. On top of all that, depending on location, elevation, and conditions, the plants could produce fruit twice a year or even year round!

Island publications helped fan the fires of excitement over this promising, new crop. May, 1954, saw the publication of a paper entitled "The Development of a Machine To Extract Juice from Passion Fruit" at the Hawaii Agricultural Experiment Station (University of Hawaii) and newspaper headlines in the

Honolulu Star Bulletin and Honolulu Advertiser chronicled lilikoi's rise to glory: "Passion Fruit Market Booms" (1954); "Big Islanders to Set up Lilikoi Processing Plant" (1955); "Passion Fruit Looming As Basis of \$25 Million Industry for Islands" (1955); "Formation of Industry-Wide Passion Fruit Group Urged" (1956). Attendees at the national (USA) Ice Cream Convention in 1956 were even told that passion fruit was the best new flavor to be introduced to the ice cream trade in a half century!

Through the 1950s, farmers in Hawaii became increasingly excited about lilikoi. By 1956 there were twenty-seven lilikoi growers on the island of Oahu with four processing plants, and by 1958, 1200 acres in the Territory were devoted to growing passion fruit. During this boom time, however, different headlines told another story as the challenges facing lilikoi growers became evident. For example: "Passion Fruit Industry Worried" (Advertiser, April 25, 1956) enumerated the problems as follows: "with more than 500 commercial passion fruit growers in the Territory and eight processing companies, the problem of coordinating marketing, advertising and promotion [is] too complicated." Beyond that, the article explained, the volume of lilikoi being produced was not sufficient to justify the costly processing machinery. A final blow to the industry came as the farmers of Southern California had increasing success growing passion fruit—they had the right climate without the geographic challenges faced by farmers in Hawaii.

Meanwhile, during the end of the lilikoi boom in Hawaii, a curious study was carried out by Frank Scott at the University of Hawaii. He tried to understand the demographics of the



Farmer's Market Basket of lilikoi

local market for lilikoi juice. His research, 'Preferences For Frozen Passion Fruit Juice By Racial Groups In Kailua, Oahu' (Agricultural Economics Report #29) showed that 72% of Hawaiians and part Hawaiians, 53% of Caucasians, 31% Japanese and 58% of all others liked lilikoi juice 'exceptionally well.'

Unfortunately, Scott's study did nothing to help State agricultural officials, growers, processors and distributors break the marketing bottleneck. Increasingly, local people chose to buy less expensive juices, farmers stopped growing lilikoi and processing plants closed. Once again, people who wanted lilikoi had to grow their own or pick them in the wild.

Today, 60 years later, Scott's 'research' would probably show that nearly everyone likes lilikoi juice 'exceptionally well' and that Hawaii is ready (again) for lilikoi farming. Now there's a market for lilikoi because people travel, have tried unusual and exotic foods and are eager for new tastes. In addition, local folks take cooking (and eating) seriously and spend money in Hawaiian restaurants where internationally trained chefs present new dishes on their 'fusion' menus, many featuring passionfruit.

Hawaii's current population is just over one million and growing, and land competition is fierce. As former pineapple and sugar cane plantations zoned 'agricultural,' are converted to 'residential' for housing developments. Citizens, farmers,

environmentalists and locavores (people interested in eating locally, rather than eating food that has been transported long distances to market) are now in constant battle with developers, urging the legislature to save agricultural land in order to grow food for local consumption. Hawaii currently imports 90% of its food and, because it is the farthest major settlement on Earth from any other land mass, shipping fees add a lot to the cost of food. This helps explain why Hawaii is the most expensive place to live in the United States.

Happily, people are finally realizing that a major part of the solution to the high cost of living is to 'grow local, eat local.' Environmentalists, farmers and many agricultural organizations hope that this idea and the growing trend toward profitable 'niche farming' (coffee, vanilla, macadamianuts, salad greens, special fruits) will keep agricultural land open and housing development at bay.

Ken Love, President of Hawaii Tropical Fruit Growers and producer of his own line of lilikoi products, says that "Farmers in Hawaii can't grow enough lilikoi!" Let's hope that the near future will see the revival of larger-scale lilikoi cultivation in Hawaii. The resource is already here, the market certainly exists, now we need a few brave farmers willing to navigate the fierce land competition and invest in lilikoi! Until then, we will have to continue to frequent farmer's markets, cadge them from neighbor's fences, hunt for them in the wild, and grow our own!



Lilikoi Cheese Bar, \$3.00



Farmer's Market Basket of lilikoi

Lilikoi Sorbet

1 ¾ cup sugar
¼ cup fresh lilikoi juice
2 cups water
1 egg white

Mix the first 3 ingredients. Freeze. Add the egg white to the frozen mixture and blend well. Refreeze and serve.

No Bake Lilikoi Squares

1 ¼ cups graham crackers, crushed.
¼ cup butter, melted
4 cups (1 qt.) frozen vanilla yogurt, softened
1 cup lilikoi juice

Mix graham crumbs with butter in bottom of 9 in. square pan. Beat yogurt and lilikoi juice until blended. Spread onto crust. Freeze 5 hours or until firm. Top with dollop of whipped cream and mint leaf.

Gail's Mai Tai

(makes 2 drinks)

2 oz. rum
2 oz. lilikoi juice
1 oz. lemon juice
1 oz. simple syrup
1 oz. Grand Marnier
2 oz. Diet Coke

Fill shaker loosely with ice. Add ingredients except for Coke. Shake until very cold. Pour into 2 martini glasses. Top with 1 oz. Coke each. Garnish with cherry and pineapple. Umbrella optional.

Gail Hercher, artist, teacher and writer, lives in Honolulu where she grows yellow lilikoi on her fence and picks purple lilikoi in the wild. She's passionate about lilikoi and hopes that her forthcoming cookbook, 'Got Lilikoi?' encourages Hawaii farmers to grow more of this amazing fruit. She is available to speak to groups when she's on the mainland and brings a great slideshow. Contact her at lilikoihawaii@aol.com or www.lilikoihawaii.com.



Lilikoi Cafe's Lilikoi Crepe



Gail's Mai Tai

Unreleased polyploid with *Apis mellifera*
(Western honey bee). © Myles Irvine 2012



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