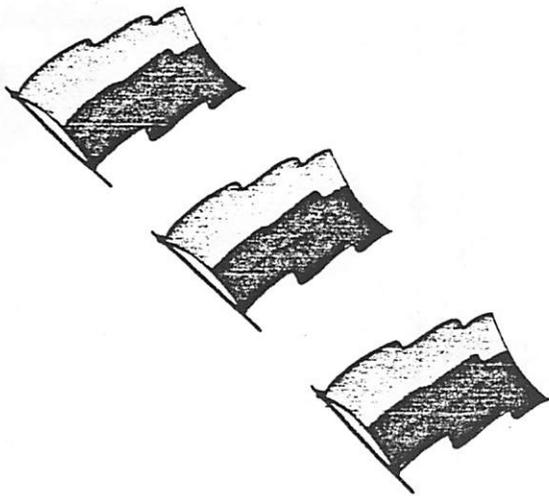


text and photos by Barbara Bader



Bader '83

POST HARVEST
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Close up of Colombia

The April 14 issue of Florists' Review contained part I of "How the Colombians do it," the story of the author's recent trip to Colombia with a group of US wholesalers and retailers. They visited growers in Colombia and their corresponding importers in Miami. Part I gave a brief overview of the history and current state of Colombia's flower growing industry and then went on to focus on the people, methods and crops at Continental Farms in Miami and one of its Colombian affiliate farms, Flores de los Andes.

Though hundreds of miles of deep blue sea lie between Miami and South America, the farms I visited in Colombia (see part I) were united with their import operations in Miami by more than telexes, pesos and dollars. The style and personality of each also seemed to join them. A visitor might not know at first which firm Flores del Rio works with, but a moment's consideration of that farm's style and atmosphere would lead to the proper conclusion: Riverdale Farms. Barry Gottlieb of Continental and John Vaughan of Flores de los Andes exemplified their firms' restless excitement and aggressiveness, just as Carlos Sanchez and

Maqui Lanao of Riverdale seemed modest yet proud of their firm. Walking and talking our way through the Miami facility, they gave the feeling that although what they do is top-notch, it was just a day's work all the same. A visit the next day to Flores del Rio was like walking into the same play acted on a different stage.

Sanchez, Riverdale's shipping manager and cooling expert, moves flowers into the small facility one day and out the next. Flowers are usually at about 50°F when they arrive, but Sanchez lowers their temperature to 32° or 33°F in two hours with the help of a mobile precooling system. The cooler is 30 or 31 degrees F, but the flowers won't freeze, Sanchez says, because they can survive temperatures as low as 28° or 29°F. "It's a copy of an OSU (Ohio State University) cooler," Sanchez says. "It's primitive, but effective."

Inside the cooler, boxes of flowers are stacked at the sides of a large fan to form a tunnel. Vents in the boxes are opened and a large canvas is spread over the top. Then the fan is turned on, cool air is sucked through the boxes and temperatures drop quickly.

"In one hour the temperature

drops from 50°F to 32°F. Without the fan, it takes one day to lower the temperature that much. Then it takes more time to drop the temperature the right amount: about four or five days."

Precooling minimizes the amount of ethylene flowers give off. Because high amounts of ethylene decrease shelf life, Riverdale considers it important to measure the ethylene given off by its flowers. To measure ethylene levels, three blooms are placed in a closed jar and left for three hours. Then a Snoopy ethylene detector samples the gas in the jar. An ethylene level of 5 parts per billion is considered high. By testing ethylene levels, Sanchez can predict how long flowers will last in the shop.

Riverdale is the distributor of SuperCarnations and SilverCarnations, both trademarked names for Flores del Rio flowers after they're given their respective special treatments. Why has so little been heard lately about SuperCarnations? "Last year, we had trouble with botrytis," says Maqui Lanao, assistant to Riverdale's president, Monk Terry. "But now we're back to SuperCarnations again. This year they're good."

Riverdale uses Tampa Airlines to transport its flowers from Bogota.

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Tampa specializes exclusively in flower shipping. When flowers arrive in Miami, they are moved immediately on pallets to the cooler. At 8 am, quarantine and customs officials check them. Then they are loaded into refrigerated trucks for the trip to Riverdale's cooler. Riverdale also uses Avianca and Eastern.

Flores del Rio

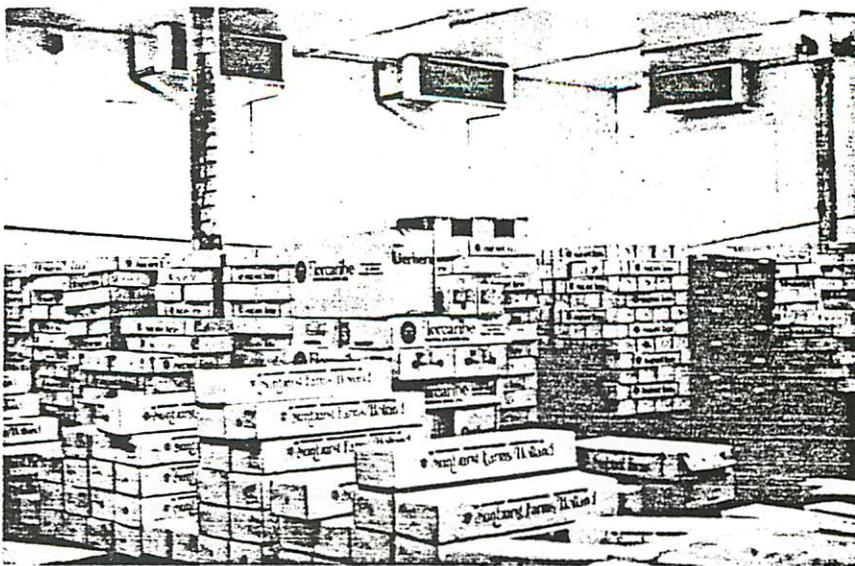
Maria Eugenie Gomez and Pedro Arreaza at Flores del Rio picked up the tour where Lanna and Sanchez left off. The same sense of humble pride set the tone at the farm as it did in Miami at Riverdale. Flores del Rio's main crop is carnations, but some statice is grown, too. The farm used to produce gypsophila, but discontinued the crop.

Although the recipe that makes carnations into SuperCarnations remains a secret, we were allowed to see the flowers during their transition as they soaked up the chemicals that will help them live longer lives. SilverCarnations are treated in a silver solution but are sold at the same price as other carnations. SuperCarnations, however, command two to three cents more per flower. Flores del Rio markets everything through Riverdale, although they will sell direct. There is a 40 to 60 percent profit, depending on the season.

The farm roots its own cultivars for production, but buys its material from a meristem lab. Some are allowed to flower to check for mutations and color. Each plant produces about 2½ flushes. Before any new crop is planted, the medium is steam sterilized. Mother crops are grown in a medium of ash and rice hulls.

"We can store an unrooted cutting for about three months," Gomez says. "We must take cuttings constantly and accumulate them to have enough. A cutting takes about three weeks to root."

"We are constantly replanting," adds Arreaza. "This location was chosen carefully because our crops are in the ground. Soil is tested monthly. We send samples to labs in California and Florida. We make changes based on the results."



The Sunburst storage cooler in Miami has 15,000 square feet of space for the approximately 20 different varieties it processes.

Flowers are precooled for 45 minutes and shipped to the US the same day. Blooms destined for European markets are cut a day or two earlier and stay at the farm an extra day due to flight schedules.

Flores del Rio employs 250 workers on its 14 hectares (about 40 acres). All the workers in the grading room were women and all the work is done by hand. Workers start out in the field and may eventually be trained as graders.

"People play the biggest part in our success," Gomez claims. "We have a special sense of justice and what work is. Our workers are given a chance to advance and develop.

"In the past, the peasants moved away from the land to the cities. Now they stay. We have incentive programs which are attractive." Benefits to Flores del Rio workers amount to 1.6 percent over wages.

Flores del Rio markets its less-than-prime flowers on the domestic market, as do the other growers. The money is in the US market, however, so the best flowers always go to Miami.

"There are more splits (imperfect carnations) on the national market," says Arreaza. "We sell to florists and wholesalers. A retailer pays about one-half-cent per carnation. A bunch of 25 will go for anywhere from 25 to 70 pesos. (The exchange rate was 68 pesos to one dollar.) A consumer can buy a dozen carnations for 50 to 100 pesos. Colombia has lots of flower stands."

Sunburst Farms

Sunburst Farms in Miami is one of

the largest of the Colombian importers. Mike Felsher, president of Sunburst, recently moved the company to new and larger facilities that reflect its growth.

A quick tour through the facility ends up at its enormous new cooler. "We have in excess of 15,000 square feet of cooler," says Felsher, "but we'll need more. We need a lot of space because we process more than 20 different products in here and each requires different handling. There has to be enough room to move around."

Temperatures in trucks are already in the 40-degree range before flowers are loaded. "The key is to keep them cold," Felsher says.

Like Continental Farms, Sunburst imports more than just Colombian product. Dutch flowers also flow through Sunburst channels and the business even has its own representative bidding at the Aalsmeer Auction.

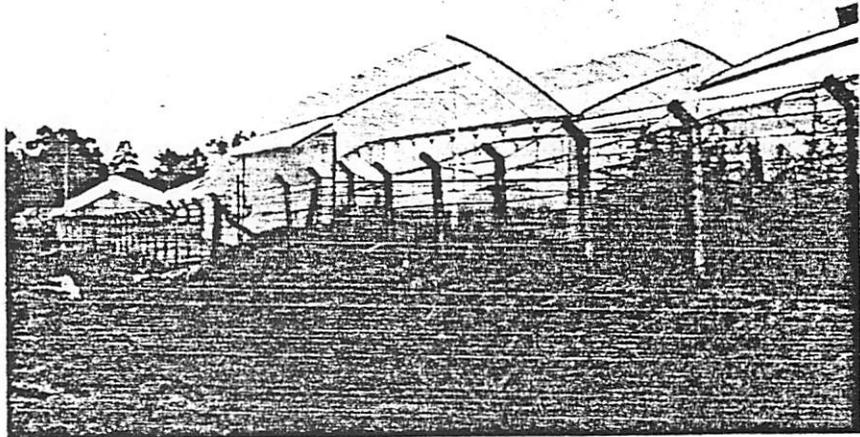
Felsher is intent on continuing to increase Sunburst's efficiency. He points out that, although they still write up orders manually, they'll be using more computer printouts in the near future.

Felsher led an informal discussion with our group of wholesalers and retailers to find out what his customers and potential customers think is wrong with his product.

A common gripe from US retailers is that the Colombian flowers don't open properly. "I'm not sure why, but my manager's not very happy with the way the carnations open," admitted Charles Schroeder, a Wisconsin retailer. "If they're not being



Workers replace poly sheeting at Sunburst's Floracaribe farm.



The barbed wire surrounding Sunburst's Floramerica farm reflects the often shaky political environment in Colombia.

handled right, then it's because we're not getting proper instructions."

Felsher explained that carnations are cut differently in Colombia than in California and that they cut tighter for the European market. "But Sunburst cuts *almost* like they do in California."

Carmen Cosentino, retailer and wholesaler from Auburn, NY, suggested packing care instruction sheets with each box of flowers in Bogota. Felsher replied that the cost of paper and printing of the sheet would be prohibitive. "The Society of American Florists offers such information. The Flower Council of Holland has a flower-handling chart, too. I think a trade magazine is a good place to distribute the information efficiently."

Utica, NY, retailer Bill Waszkiewicz praised Sunburst carnations and minicarnations. "I use the proper procedures and they open in six to eight hours. I think they're better than other product. But lately, I've had bad luck with South American roses. I'm using roses from California and local growers."

Felsher agreed that there are often problems with roses. "We're testing 35 varieties right now," Felsher said. "Some will continue and some won't. 'Visa' can be difficult and doesn't open as well as some, but it's a good traveler. We're looking for a better rose, but 'Visa' is still best."

Floramerica and Floracaribe

Sunburst has three farms in Colombia, two near Bogota and one near Medellin. The entire Sunburst enterprise is owned by Samuel Lie-

berman, an Argentinian living in Panama, according to Mario Camacho, Floracaribe's president. Lieberman is a businessman who got his start in the international trade selling watches.

Both Floracaribe in Medellin and Floramerica in Bogota have the aura of pioneers that have succeeded, yet must continue to expand and refine themselves. It's the same atmosphere that a visitor senses at Sunburst offices in Miami.

Floramerica is one of the original Colombian flowers farms developed to grow primarily for export to the US. It has its own tissue culture labs for making new varieties particularly suited to growing conditions in Bogota. The entire process, until a plant is selected with no variation, takes about four or five years, according to Julio Amador, a Floramerica tissue culture expert. All materials are carefully tested for viruses and undergo heat therapy prior to meristemming. Mottled virus is seen most, according to Amador.

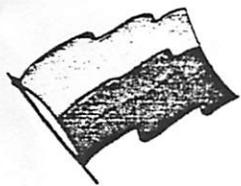
Floramerica grows mostly carnations, roses and mums, up to 50 percent of which goes to the US. However, Peter Hannaford, president of the farm, is developing a more diverse crop base. He says they choose their varieties by combining Dutch and Colombian knowledge of what's selling. Floramerica grows alstroemeria for example, but the Dutch control all the rootstock. "The royalties on our alstroemerias cost us about \$6 per square meter," Hannaford says. "And they take about four months to flower." Floramerica is constantly looking for better varieties of their

main crops, too. "We have 30 varieties of carnations and are testing another 30," Hannaford says. "We have about 22 mini varieties with about 40 more being tested. Varieties available are constantly changing. Micros are going to be big but they're just getting started. About 20 percent of our production is carnations."

As one of the oldest Colombian farms, Floramerica has been replacing the euclayptus structures over the years as the wood rots. Now, however, steel is being used to replace the wood. Mother blocks are already housed under poly supported by steel structures. It's a strong statement of permanence, change and progress.

Peter Samper conducted us through the vast greenhouses. According to Samper, Floramerica employs 1,500 workers. Samper explained that Floramerica is committed to helping its country develop by taking its responsibilities as an employer seriously. The firm sponsors or helps with many incentive programs such as night school, day-care centers and housing. He emphasizes that, although employers can fire workers at any time and for any reason during the first two months, Floramerica prefers to invest in training and promoting permanence.

Floramerica does not use refrigerated trucks to transport flowers to the airport. By 5 pm, Samper says, the temperatures around Bogota are already dropping to about 40 or 45 degrees. Because they are precooled for 24 hours at 32 degrees, the trip to the airport does not require extra cooling.



Floramerica carnations are cut and boxed dry to prevent botrytis problems. Attention to quality of the delicate flowers is evident in Samper's carnation grading room. A conveyor of his own invention carries bunches of carnations through the process so that much handling is eliminated. Flowers enter in bunches hanging upside down from hooks on the conveyor, and are carried in this way around the large room past the workers who reach up, unhook some flowers, and continue their work. "I copied it from a chicken factory about five years ago," Samper says. "It's cheaper than other kinds of conveyors which can cost \$10,000. This cost \$1,500 and there is no bruising of the flowers because nothing touches them."

The farm uses no mechanical graders and doesn't expect to in the future. "We could cut labor in half, but the quality would drop considerably," Samper explains.

Automation shows up in forms that US tourists take for granted. For example, flowers that used to be carried from the field by hand or by horsecart are now transported in covered carts powered by small tractors.

What can we expect from Floramerica? Diversification. "Next year, watch for our gerberas, freesias and

A new approach to pest control—vacuuming leafminers at Floracaribe.



nerines," Peter Hannaford said as he prepared to leave us to go supervise the drilling of a 15,000-foot-deep well.

Gerberas are also a crop to watch for from Sunburst's Medellin farm, Floracaribe. Medellin's climate is warmer than Bogota's and is especially suited to growing mums. So Mario Camacho, president of Floracaribe, grows a lot of mums. With a total of 24 hectares (about 60 acres), his farm has about 3,000 beds in production with another 430 beds for mother stock.

At this time only a small portion of the farm is devoted to gerberas, alstroemerias or other Dutch-type crops. Floracaribe agronomists are still testing and experimenting to find the best types of gerberas for Medellin conditions that will not attract pests such as leafminer, yet will stand up to shipping to Miami. "Leafminers like the gerbera 'Clementine', for example" explains Camacho. "To control them we can only vacuum because insecticide burns the plant. Such things must be considered when choosing varieties."

"Gerberas stand in water one day and night or, at the least, for four hours," Camacho says. Thirty varieties are being grown at the farm, but most go to the domestic market at this time. "They're not yet profitable for us. We aren't losing money, but we're not making money on them either." The equatorial sun makes colors of Colombian gerberas particularly intense.

Other indications of the trend toward diversification included bouvardia, alstroemeria, cut ferns, such as

Harvest time at Floral—workers grade the mums in the field before transporting them to a shipping facility.



FLORISTS' REVIEW

Holly leather leaf, Boston and Reuscus.

But most of Floracaribe's houses are filled with thousands of mums. After mums are cut in the field they are brought to the packing room in containers of deionized water. A conveyor transports full boxes into the cooler where they wait to leave the farm at 3 am for the trip to Medellin airport. No refrigerated trucks are necessary because the night air is so cool. The flight to Miami leaves at 7 am.

Like its sister farm, Floramerica, Floracaribe is going over to steel structures as the old cypress and pine ones wear out.

Three flushes are taken from each mother plant: the first at five weeks, the second at nine weeks, and the third at 15 weeks. Cuttings are bought once a year from Yoder Bros. (Yoder Andes started up in August of last year in Bogota.) Between plantings, all beds are steam sterilized. Sterilizers were built at the farm. The medium is made from rice hulls, cow manure and mulch. Clean, healthy mother blocks are maintained by enforcing sanitary procedures. For example, each cutter dips the knife in iodine to sterilize it between each cut. Water for plants is chlorinated to prevent botrytis.

Camacho expresses a deep sincerity toward his responsibilities as an employer. His immediate response when asked about automation went back to the role of Colombian flower farms in the continuing development of the country. Not only does he fear that more automation would diminish quality, but he knows that it

and cut back substantially the number of workers he would employ—and neither of these results constitute his direction. The importance of the flower farms to the Colombian economy is measured in terms of employment as well as dollars. So, although Floracaribe does have automatic irrigation equipment, for example, Camacho does not foresee any extensive forays into labor-saving devices.

Camacho is willing, therefore, to pay 22 men to carry large vacuums on their backs and spend their days traveling the hundreds of aisles through the mum beds vacuuming up leafminers through a large hose. The opening in the hose is wide enough to fit over the plants without distributing them. It's a novel approach to pest control, but not applicable in US greenhouses because of the labor involved.

Camacho says he'd put more men on leafminer patrol if necessary, but the problem is controlled. Four hundred yellow sticky traps are used to monitor the situation. Chemicals are used too, but must be changed often as the bugs become tolerant.

Floral

Similar leafminer patrols were in force at Floracaribe's neighbor, Floral, Ltda., owned by Miguel Fernando Calle. Floral is a very small farm, about 10 acres, specializing in cushions and pompons. It is the only farm Calle owns. The farm's product is imported to the US through Florida Evergreen in Miami.

Luis Neira, the farm's new technical manager, says that Medellin mum quality is better than Bogota's because the climate and growing times are different, resulting in larger heads.

Neira was hired away from another small Medellin farm and is excited by the challenge of improving methods at Floral. He says his main immediate goals are to improve the organization of the farm and to control a big leafminer problem. Leafminer damage was evident throughout the greenhouses, but so were yellow sticky traps and the vacuum patrols. Neira hopes to educate the workers to recognize problems and inform him of them so he can develop plans to solve them.

Despite the pests, a few weeds here and there, and an as yet imperfect system, the US wholesalers and retailers were impressed with Floral.

MAY 5, 1983

The 180 flower farms of Colombia have had a big effect on the Colombian economy. "Seventy percent of the workers are women," says Jorge Uribe, executive manager of ASOCOLFLORES, the export growers' organization. "The flower industry has been revolutionary. Most workers are non-skilled, non-educated. Now they can find work and have a double income. After five years many can even buy houses."

Seventy percent of the flowers exported go to the US, so actions taken by US growers to boost tariffs are carefully noted by the Colombians. "Actions by the US have hurt us," Uribe admits. "I think we must try to see trade relations globally. Look at the figures for trade between our countries. Colombia imports \$2 billion worth of goods from the US (agriculture, manufactured goods, computers and technology), yet we export only \$650 million to the US. It's not balanced. We have a deficit of more than one billion dollars.

"We must protect ourselves by promoting exports. It's basic free trade. If Colombia has the ideal climate for growing flowers, then the world should let Colombia compete and buy our flowers as we've been dependent on the US for our technology. We import cuttings, technology and equipment from the US, Holland, Israel and Germany. We must develop our own industries."

ASOCOLFLORES has plans for starting a US public relations arm similar to the Flower Council of Holland. Mario Nannetti, vice-president of the exporter's association, says the project is still in the planning stages

Farewell to Colombia—a worker shoulders a bucket of calla lilies and heads for home after a long day.

