

Comparing Notes: Adding Soul Back into Fragrances

Perfumers Jill Costa and Pierre Nuyens on creative and technical problem solving for functional and fine fragrance

Comparing Notes is a continuing exchange of perfumer insights into raw materials, formulation techniques, finished fragrances and experiences in the fragrance industry. Browse past editions at www.perfumerflavorist.com/magazine/pastissues.

Genet Absolute: Creating a “Real Flower”

For Jill Costa, a perfumer with Bell Flavors & Fragrances, genet absolute is a “personal material.” A decade ago, Costa, an American, moved to Holland. Every morning, like many natives, she rode her bike to work through heather fields. It was winter, a dreary, colorless time of year. In the spring, however, everything changed. All of a sudden, she says, the fields sprouted with countless yellow flowers, “the most beautiful plants I’d ever seen.”

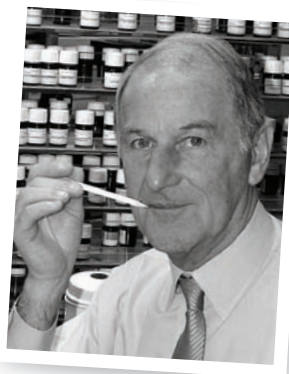
“When you don’t have much light,” says Costa, “it seems the color yellow becomes brighter. It draws you.” She later learned that these were broom, or genet, plants, similar to the Spanish variety used by the fragrance industry. During this time Costa learned about wine and had her “first good sauterne.” Returning to the United States where she worked with many naturals, she first encountered genet absolute/broom absolute (CAS# 8023-80-1), which evoked both her experience in Holland and the sauterne.

“It was sauterne wine and honey,” says Costa, passing out blotters of the material in a 10% solution. This particular material is the product of Bell Europe’s ingredient specialties, which date back to the former Schimmel & Co. in Germany. “If you put honey [facets] into a fragrance it’s really interesting,” says Costa. “There’s a honey aspect, and a powdery, dry, mimosa aspect. It’s a little bit fruity, which is important for hedonics.”

Calling it the ultimate material, Costa employs genet absolute to add sweetness and florality to compositions, in addition to tobacco and hay notes. “I’m using it



Jill Costa



Pierre Nuyens



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in a lot of my compositions at very low levels, usually in 1% solution in a fine fragrance. On the skin it can be a little overwhelming, even in a 1% solution. You still get the effect. It’s expensive, but in a 1% solution it’s something that’s reasonable.”

While the material can be used in fruity and sweet compositions, Costa’s colleague at Bell Europe, perfumer Pierre Nuyens, explains that it is also valuable in floral compositions, bringing “a natural effect and different character to compositions.” When using singular notes such as ethyl linalool, says Costa, “just a touch of genet makes it a real flower.”

Rootanol: Earthy Effects for Woody, Floral and Fruity Scents

When it comes to bringing unique effects to fragrances, Nuyens is partial to the red beetlike nuances of Rootanol (patchouli cyclohexanol; CAS# 67634-11-1). “It’s a unique material in that it has an earthy factor,” says Nuyens. “It fits very well with woody materials like patchouli, vetiver, etc. It also has a fruity aspect from the red beet. I’ve made some very interesting accords with fruity materials.”

Nuyens and Costa explain that the ingredient can be deployed in combination with cassis

About the Perfumers

“Every day I learn different things,” says **Pierre Nuyens**. “It’s always a challenge to find the right fragrance for the customer.” Early on, Nuyens chose a life of chemistry over architectural ambitions, eventually holding positions at Naarden and Quest before joining Bell Europe. Over the years, Nuyens has worked on a diverse range of projects, including consumer products for Latin American markets, a *Madeleine* fragrance used in both the Paris Metro and London Tube, and Versace’s *Time for Pleasure* and Aquolina’s *Pink Sugar*.

Nuyens says his creativity continues to be fueled by technical challenges and evolving ingredient limitations related to regulatory constraints and customer requests. “Customers are looking for cheaper and cheaper fragrances,” he notes, adding that meeting these price guidelines requires creativity and technical know-how. “I am confident in the future of our [profession],” he says, “because we are still searching for new ideas, new molecules, new materials—new opportunities for the perfumer.”

“It’s a great career,” says **Jill Costa**. A PhD chemist who began in fabric care product development at P&G, Costa quickly realized she preferred the lab-centric life of a perfumer. Her career led her to Dragoco (now Symrise), IFF and Charabot, before arriving at Bell Flavors & Fragrances. An olfactive jack-of-all-trades, she has done technical and creative perfumery, matching projects, and chromatography. She has done consumer product fragrance formulation for both domestic and overseas markets, in addition to fine fragrances, including a scent for golfer Annika Sorenstam called *Annika*.

An expert in wrestling with complicated bases, Costa notes that her experience—and that of her colleagues—tends to be more valuable than degrees. This is especially true as customer demands evolve. Today, she says, “People really seem to want all-natural blends or fragrances that have INCI names.” In addition, she says, product developers have become increasingly conscious of the final product and how it will be affected by the addition of the fragrance—hedonically and technically.

Both Costa and Nuyens describe fragrance development as a team endeavor encompassing sales and marketing staff, the technical team and the customer working together to set realistic goals and product parameters. “As a perfumer,” says Costa, “you like to have the end product, but half the fun for me is the process—to mix things together, to smell it, to say, ‘Wow, this worked’ or ‘It didn’t work.’ I learn something new every day.”

and red fruity notes, as well as in floral modifications. Rootanol also allows formulators to partially recreate or evoke natural patchouli facets in fine fragrance (*fougère* and oriental) and functional products (particularly fabric softeners). In combination with cedarwood and common sandalwoodlike molecules such as sandela, Javanol and Bacdanol, Rootanol can generate some of the complexity and naturalness of Indian sandalwood.^a “I was amazed,” says Nuyens of his Rootanol experiments. “It changed my [sandalwood] composition completely. At the beginning it was rich and creamy, but had no top. When you smell real sandalwood, it has a woody top and floral notes.” Through trial and error, Nuyens eventually solved this issue with just one part of Rootanol.

Nuyens has also used the ingredient in fruity accords, particularly a peach apple accord for a shower gel. Costa notes, “I was working on a fine fragrance with a grapefruit top. The customer really wanted ‘grapefruit.’ But, as I added more and more grapefruit—using some synthetic materials to extend the life of the grapefruit—it became a little bit too much like a hard surface cleaner, too functional.” She resolved this with Rootanol. “It takes away the ‘cleaner’ aspects.”

Seeking Fullness: Tonka and Benzoin

“It’s very difficult to have a sweet vanilla note without discoloration,” says Costa, presenting blotters of benzoin and tonka products. The materials presented during this session—with the internal names Fixoresine Benzoe A and Fixoresine Tonka A—generally do not impart discoloration in alcoholic solutions, personal care products and detergents. In addition, they are effective at low doses. Costa uses 10 parts or fewer of benzoin in most formulations, and even less than that of tonka. “When the materials are concentrated, you can also use them in functional perfumery at very low dosages,” she says, “because it’s liquid it is easy to handle, especially in the lab and production.”

Costa continues, “For me, the benzoin has such a sweet character; it’s very useful when you have a sweet composition. Usually you’re using vanilla or vanillin and that does make a discoloration in most products. With this [material] you don’t have such a discoloration factor.” In addition, she says, “Vanilla and vanillin can seem very gustative—almost edible.” On the other hand, she says, “This [benzoin] has a sweetness and a kind of edibility, but there’s a warmth, which can be an advantage when you don’t want to be quite so gourmand.”

Nuyens has used benzoin extracts in oriental and chypre fine fragrances and functional fragrances such as shower gels and shampoos. “The Fixoresines are very long-lasting in compositions,” he says. “The *benzoe* is fuller than vanilla or vanillin; it has a lot of [facets] coming from nature. It’s a real sweet, natural, warm vanilla smell.” Costa adds, “There’s a sort of buttery aspect to it—almost towards toffee and caramel, but without being so burnt, without being quite so edible. In mass-market

^aRootanol is a trademark of Bell Flavors & Fragrances; Javanol is a trademark of Givaudan; Bacdanol is a trademark of IFF.

Formulas within Formulas: Functionality and Aesthetics

The fragrance of Johnson's Baby Powder effectively set the olfactive benchmark for baby products. Over the decades the signature scent, formulated by Bell Flavors & Fragrances since its acquisition of Synflour Scientific Laboratories in 1983, has been reformulated only slightly as regulatory requirements have evolved. However, says perfumer Jill Costa, "In the end, the exact same character remains—it smells like 'clean baby.'"

She adds, "It's a very linear fragrance, and because there are so many naturals and extracts in it, it creates a subtle top note. And then you have this heliotropin center with some geranium, a little caraway on top; and you've got this cedary, powdery [aspect] underneath. It's very recognizable and technically functional. Not only is it hedonically pleasing to people, it functions beautifully. That's why it's been a success on the market for so long—it works and people love it."

Mike Natale, Bell's director of marketing, describes the fragrance's formula as very long and detailed, characterizing it as "formulas inside of formulas." Perfumer Pierre Nuyens adds, "The construction of this fragrance is so complete. It contains so many facets." These include jasmine and ylang-ylang notes, sweetness, and floralcy.

"Back when this formula was developed," says Costa, "more perfumers were using accords they made themselves. They put in their ylang accord, geranium accord ... and by the time you got all those accords in there, someone told me the formula is 33 pages long." In contrast, she says, "Today I do direct addition and do [at most] 65 ingredients for a fine fragrance and maybe 40 for something else." Despite this, she points out that the unique accords created and added to the baby powder formula by the perfumers of earlier decades combined to create highly unique nuances that were markedly effective. The olfactive DNA of this creative process remains in the fragrance, she adds. "If you ever try to linearize it, it's not as nice." Costa has seen linearized baby powder formulas and concluded that, "Even though you can't say to somebody, 'You can smell that microscopic amount of tonka or benzoin or something,' by the time you take out all those tiny pieces you lose the soul."

Nuyens finds the scent very sweet and powdery, constructed around base notes such as coumarin,



vanillin, musk, even sandalwood. "It's a reassuring accord," he says. "It has a gently edible aspect. It lasts a very long time and is a complete smell. That's a quality of a real fragrance: Everybody recognizes it."

Costa adds, "Because we smell it in other products like lotions, and even shaving cream, I think it always stays in the consumer's mind, this basic smell. That's why it hasn't gone away. It's reassuring. It smells good. I know if I do a fine fragrance, especially for women, and want it to be just really nice, I have to use some sort of heliotrope and some kind of sweetness. And, by the time you add a rose, geranium, woody, musky, sweet [scent], it comes off as baby powder—just like when you mix eugenol and spearmint you get 'toothpaste.' You can put more top note on, you can change the ratio a bit inside—no matter what you do with it, you recognize that part of it when the drydown comes to the baby part. It's there. It's really a neat fragrance to work with because you can twist it all different ways and it's still recognizable."

fine fragrances it's really a fixative. You get it on your skin and it has warmth and sweetness and a life that doesn't exist exactly with vanilla."

For Nuyens, meanwhile, tonka is reminiscent of a particular French apple pastry, encompassing caramel and chickory notes. He finds it warm, but with tempered sillage, blending well in rose fragrances. (Tonka, he notes, figures prominently in the floral *Fleur du Mâle*.) "You can use tonka in combination with coumarin," he says, "because it gives you a more natural effect. It [also] gives this warm,

ambery, sweet, balsamic effect, with a touch of hay."

He concludes, "It's always good to enrich your [synthetic] composition with some natural materials to offer fullness. It makes a big difference."

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