

# ICATS NEWS

AUTUMN 2019

ICATS  
International Centre for Aroma Trades Studies



## EDITOR'S NOTES

DEIRDRE MAKEPEACE

As a relatively new member of the ICATS team the last year has been a journey of discovery, attending some of the exceptional events run by the industry and gaining an understanding of the specialised yet far-reaching nature of this industry.

ICATS' qualifications may have had their roots in the need for managerial, commercial and technical development of industry professionals but the last year has emphasised the need for a global view of issues such as environmental sustainability, the consumer driven need for clarity on ingredients and the continued drive for 'naturals'. These are all issues that are being incorporated into the evolving

syllabus. The world in which we operate is increasingly focusing on the big picture of feeding a growing population in a changing climate. The professionals within the flavour and aroma industries need to respond to changing conditions but they can also contribute innovatively to some of the solutions.

Throughout this ICATS News we summarise some of those innovations as the industry tackles topical issues innovates through new product development. We hope you enjoy reading it. As always, please don't hesitate to contact us with any stories that you would like to see covered.



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FEAT

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## IFEAT ICATS DIPLOMA AND CERTIFICATE

The core qualification is the masters level Diploma but increasingly, students are opting to study for the more concise Certificate or completing a selection of modules to meet individual CPD requirements.

To date there have been 138 enrolments on current Diploma programme and ICATS students come from a wide range of roles within the sector including producers, brokers, processors, compounders, manufacturers or retailers. They also come from the four corners of the world. The programme is delivered through distance learning with a network of professional tutors supporting students on a one-to-one basis and to an individually agreed timetable. Students receive a study pack that includes relevant module workbooks and copies of core text books to support their studies. There are 13 modules in total in the full Diploma and each one is assessed by a work-related assignment. There are specialist modules for the flavour and the fragrance pathways but the majority of the modules are common to both pathways. The one-to-one teaching approach allows students' professional roles to be reflected in the assignments, generating a portfolio of professional work that is clearly contextualised to the workplace.

## WELCOME TO ICATS



### Global units:

- 1 Foundation science and mathematics
- 2 Odour and flavour language
- 3 Aroma materials of natural and synthetic origin
- 6 Safety, regulatory and environmental issues
- 7 Operations, logistics and QA
- 8 Marketing and business environment
- 9 New Product Development
- 10 Project management
- 12 Financial and management issues
- 12 Research methods and dissertation proposal
- 13 Dissertation

### Fragrance pathway:

- 4 Fragrance creation and evaluation
- 5 Application of aroma materials

### Flavour pathway:

- 4 Flavour creation and evaluation
- 5 Application of flavouring materials

## THE ICATS TEAM

The ICATS headquarters is in the University of Plymouth Campus in the UK from where a core team of staff is supported by a wider virtual team that delivers the full portfolio of educational services including the Diploma Programme, workshops, and other educational initiatives.

Dr Ali Green (Director of Studies)

Dr Tony Curtis (Founder and Principal Tutor)

Sharon Heard (Student Experience, Finance and Administration)

Peter Whipps (Tutor and Past President BSP)

John Forbes (Tutor)

Professor Dave Harwood (IFEAT / ICATS External Examiner)

Deirdre Makepeace (Chartered Institute of Marketing Examiner) (Author and Tutor)

John Wright (ICATS Author and Industry Expert)

Dr Brian Lawrence (ICATS Author and Industry Expert)

John Ayres (ICATS Author and Past President BSP)

## IFEAT MEDAL-WINNING ICATS STUDENT 2017/18

### Darrell Willson

We would like to extend our congratulations to the IFEAT Medal-winning student of 2017-18 Darrell Wilson. This annual award is given to the student that has achieved the highest standard of work across the IFEAT ICATS Diploma and recognises the high standard of work and commitment of the student. Here Darrell describes his career to date and the role that studying for the Diploma has played in his progress,

I got into the fragrance industry quite by chance, the existence of a whole world of perfume creation having sadly passed me by in my youth. After gaining a BSc in Chemistry I worked in fine chemical manufacturing for three years, first at Alfa Aesar then at Endeavour Speciality Chemicals, where I worked on high-impact flavour and fragrance ingredients, which opened my eyes to the world of fragrance. So when I was relocating to Manchester, a position at Fragrance Oils looked intriguing, despite still not knowing a great deal about the majority of the fragrance industry! Eventually I accepted a role in the Evaluation department, panel testing fragrances and raw materials in applications to assist the evaluators and perfumers. In this role I gained a lot of insight about the industry, through the job itself and out of curiosity (or as some would say nosiness!).

Fragrance Oils had already told me about the ICATS course, and as a bit of a bookworm I was keen to start.



The course gave me the compulsion to gain a better awareness of parts of the business I had not encountered as well as more depth to the understanding I was accumulating at work. By the time I reached the end of the course Fragrance Oils had given me the chance to begin training in functional perfumery, where I could put to use some of the knowledge I now have. I think studying for the IFEAT diploma really accelerated my progress and I appreciate Fragrance Oils' continued support in giving me the opportunity to learn and train. Being awarded the accolade of Best Student was an unexpected surprise but a great honour, a significant milestone on what will hopefully be a long and enjoyable journey.

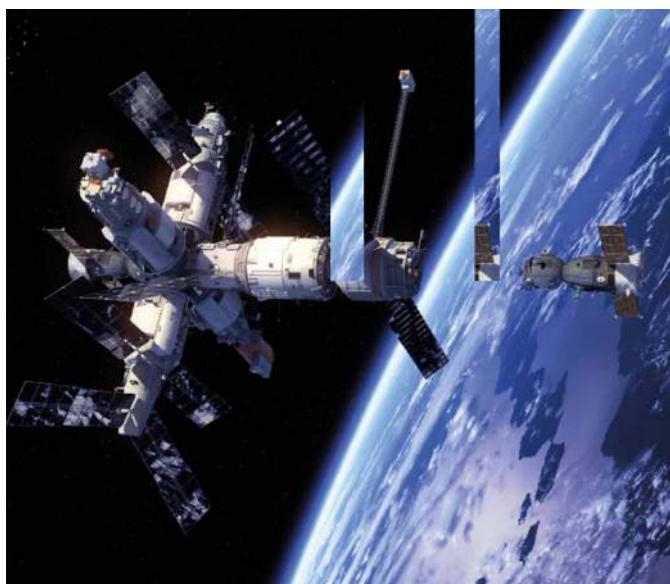
# IN THE NEWS

## WELLBEING: AN INDUSTRY HOT TOPIC

TONY CURTIS

July this year has been a month of both celebration and future watch. 50 years ago, man landed on the Moon. The airwaves and the newsprint have been full of documentaries and papers have produced souvenir editions. Speculation has been widespread about a Moonbase as a staging post to land man on Mars. Much has been made about the challenges and engineering problems. Not least the famous line 'We have a problem'. That time it was solved but it is sobering to remember that during the development phase three people died. I have listened/viewed many of these programmes and read various printed articles. A common theme was the enduring spirit of mankind to explore. This got me thinking and remembering an article from the Autumn 2014 edition of the ICATS News Letter: Antony Jinman (then Explorer in Residence at Plymouth University) wrote on flavour in the Arctic.

It is one thing to feed people for a few days on a Moon landing, something else to feed them for months on the International Space Station or on the months it will take to get to Mars. See the FlavourTalk article on page 24 where Professor Andy Taylor, Project Coordinator of the European Space Agency describes their contribution to work in the field. Medical historians write about the problems of vitamin deficiency confronting early sailing expeditions; this was still a major concern on Darwin's voyage of discovery where he crystallized his theory of evolution. Different nutritional issues may have paid a part in Franklin's 1845 expedition's problems where



129 were lost in attempting to discover the North West Passage. Accounts of Scott's expedition to the Antarctic also discuss the importance of food and nutrition. This includes the frightening need to consume a comparatively enormous number of calories under these conditions.

Here I return to the issue of wellbeing. Antony in his article wrote:

*Nutrition is everything in an expedition. A high-calorie diet provides the necessary fuel required to sustain you both mentally and physically. However, food is not simply the provider of the physical energy required to get your body through the day; in addition to sustenance, the right food will sustain the mind and morale – putting you in a good frame of mind and ensuring you've got something to look forward to at the end of each day.*

That is the historic context; where are we today? Anorexia has become a problem of increasing concern in some countries. We now have a new tool, not available in the 20th century, genetic analysis of large numbers of people. It has long been known that some diseases are caused by specific genetic problems. The statistical analysis of large databases allows us to now probe more diffuse and complex problems. Work, recently reported in the general press, has shown that there is a genetic correlation to anorexia. There may be physical and nutritional components to the condition but mind and body are intimately connected and all our five senses contribute to our welling. Feeling good is not just the right number of calories with the right collection of minerals and vitamins. Nor is mental wellbeing just in the mind.

Just on cue, as so often, the New Scientist comes up with a timely review lead article *Everything you know about Nutrition is wrong: Convoluted studies, Cherry-picked evidence, Contradictory advice* (New Scientist 13th July 2019, page 32 – 35). Diet is a notoriously difficult area to research and the double-blind test gold standard of medical research is just not possible in long-term studies of people's eating habits. If the collection of data is problematic, so is the analysis. The article reports on a Chirag Patel examination of a National Health and Nutrition Survey on vitamin E supplements. Depending on which mix of 13 confounders are used, differing results can emerge.

What are we to make of all this information? One clear conclusion is that how we attain and retain wellbeing is complex. In our review of John Wright's book we report his reservations about the 'silver bullet' solution to flavour creation challenges. Answers are likely to come from a systems view of how the various contributing factors can be considered e.g. you may have a genetic linkage to a condition but it may not necessarily be triggered in a specific case. Our Aroma Trades is in the business of helping wellbeing by appropriate stimulation of our senses (e.g. odour and flavour). Given the complex and diffuse nature of the area, answers may come from unexpected directions. As always do read and listen widely, in the end it is rewarding.



Dr Tony Curtis



Space food image : By NASA - [http://www.nasa.gov/audience/formedia/presskits/spacefood/gallery\\_jsc2003e63872.html](http://www.nasa.gov/audience/formedia/presskits/spacefood/gallery_jsc2003e63872.html)

# THE WRIGHT APPROACH

## PEOPLE

JOHN R WRIGHT

**We follow the globe-trotting career of creative flavourist John Wright as he shares some words of wisdom on finding your way in the corporate world.**

I started my career in a local beverage compound branch of Duckworths, now part of Cargill. I chose it mainly because it was local. As a chemist I had not really decided exactly which direction my career would take but I quickly became fascinated by the complexity of the flavour part of their business. Every other aspect of their business was interesting but could be learnt fairly quickly. Flavours were much more challenging.

After a few years I moved to London to join PFW and then BBA, much larger and much more specialized flavour companies. The challenge then was to find the most effective way to learn. Pretty much everybody knew more than me but the trick was to find flavourists who enjoyed sharing information. They were not always the most obvious or least intimidating personalities. I probably learnt most from Michael Seidman, a mercurial character and a born contrarian. He was quite a challenging person to work for and had a patience level perilously close to zero.



John Wright's IFEAT Flavour Course

After that learning period (thankfully punctuated by a few commercial successes) I spent several years in charge of the small flavour lab in BBA Montreal. That was a chance to flower in a smaller environment. It also forced me into the discipline of covering literally every aspect of the business. If a customer wanted a soap fragrance, I had to create it. If a salesperson was off sick, then I had to fill in. I also saw how much more open and competitive companies were in North America than in Europe and how much easier it was to do business. There were simply less barriers to success. Go for it!

After Montreal I moved back to BBA London. My Canadian "Jack of all Trades" experience proved very valuable, especially in the area of working closely with sales, something I had not been able to develop at PFW. At that time BBA was expanding quickly in continental Europe and I became very involved in Denmark, the Netherlands, France, Belgium and, especially, Germany. Management responsibility grew slowly, starting off with Flavour Creation, adding Applications, QA, and finally Marketing. Marketing was my first real challenge. It was the first area that I had not been trained in. It is quite a different experience managing an area where you do not know the basics and forces you into a much more healthy approach to management. Delegating as much as possible quickly becomes very attractive! I ended up my time in the UK with a number of years running BBA's European flavour business. Making loads of money is great fun. I also had the great good fortune to start my long involvement with the MIT Innovation lab and another long-running collaboration with Allured Publishing, writing articles and eventually books.

BBA was floated on the US stock market and in 1995 I moved to New Jersey to take charge of R&D. BBA was acquired by IFF in 2000 and I took charge of Global Creation and Applications. Throughout all this time in management I kept a fair portion of my time working strictly on flavour creation. This was primarily for the selfish reason that I enjoyed it so much but it was also helpful to keep yourself, at least to some extent, grounded in reality and not company politics. After I left IFF in 2007 I have had the great experiences of working with many diverse enterprises. MIT in Portugal on wine, Synthite in Kerala on spice extracts and flavour creation, Kraft and Mondelez in New Jersey on flavour creation and gum and candy, Medallion in New Jersey on flavour creation for tea and coffee, Quintis in Oz on sandalwood and Wacker in Munich on chemical development, to name just a few.

Looking back on this extremely rich and varied career it is interesting to ask myself "where did I have most fun?" The simple answer is creating flavours. It was a very good choice of career, very satisfying to a creative temperament, never faced with the same project twice, always keenly aware that you only knew half (at best) of what there was to know.

That answer, however, is too simple and needs to be filled out a little. We are all uniquely different personalities and I personally found commercial success to be very satisfying. It is great to see products with your flavour on the shelf and it is great to work as part of a team in a win-win situation that benefits both the flavour supplier and the customer.

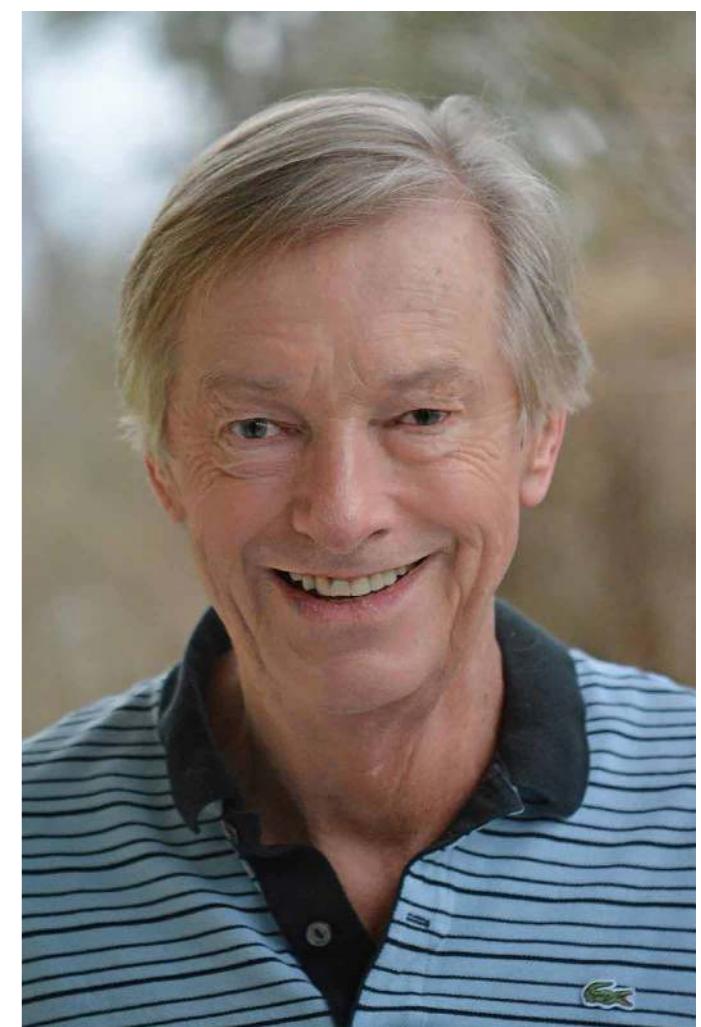
At one stage of my career I became convinced that company politics inevitably increased in direct proportion to company size and that smaller was always intrinsically better. Now I have had experience of a great many more diverse companies I am not so sure. Politics seems to be a key part of a company culture that is quite hard to change and not necessarily directly related to size. Whichever way you look at it, working in a company with a collaborative culture is a great deal more fun than trudging around in a political quagmire.

My advice to trainees starting out down the challenging but rewarding path to becoming a flavourist is firstly to take great care choosing your company. Some companies take an active role in training flavourists and inevitably acquire very positive reputations in this area. Do your online research. Some companies are very commercially agile and adapt well to change, so look at their company reports over the past few years. Look out for core listings with major customers. They are hard to win and often imply competence. Beware of unreasonable restrictions on your ability to freely work elsewhere in the future. They often are a reflection of a high staff turnover.

The hardest choice is between a big company and a small company. Both have their advantages. The big company may be technically more sophisticated and may be a better choice if you can avoid being trapped in a small niche. Smaller companies have the advantage of encouraging involvement in everything, so it is partly a matter of temperament. One aspect of the choice may be a consideration of future career moves. It is very easy to move from a big company to a small company. The reverse is not so much the case, so it may be best to start off in a bigger company.

Big companies also should afford the opportunity to move around. Again, this is a matter of temperament. If you are comfortable with change it is very good to be in a company that has numerous locations. They will often find it excruciatingly challenging to get people to move, even on a temporary basis. If you volunteer you will be in a good spot. Working in different countries broadens your horizons, makes you see cultural idiosyncrasies (especially your own) in their proper perspective and is always a good career move.

Whatever your choice, never lose sight of the simple fun of making flavours and the pleasure of a complicated puzzle well solved (at least for the moment).



John Wright

# FROM NICHE TO NICHE, THE EVOLUTION OF FRENCH PERFUMERY

MICHAEL EDWARDS

MANDY BURNS

Michael Edwards' 'Fragrances of the World' guidebooks have been described as 'the only comprehensive, historically accurate, factually reliable and artistically consistent database of fragrances in existence.' There was therefore quite a buzz at this year's BSP One Day Symposium in May 2019 (see event report on page 10) around his presence and a high level of anticipation for his keynote presentation.

Edwards proved to be a wonderful speaker, with the names of industry "icons" that he knew personally and dropped casually into the conversation. His book has been updated with eight new chapters and new 'legends' added, eventually settling on a range of 45 iconic French perfumes from Fougère Royale 1882 to Portrait of a Lady in 2010.

It was clear that the initial spur for the writing of the original book was his passion for perfume but also in response to the question, 'why did perfumers never speak about their work like artists or musicians, for example?' They were, he felt, 'people of the shade', largely invisible and unacknowledged. Edwards acknowledged Guy Robert and Edmond Roudnitska who opened doors for him in terms of meeting and interviewing other creative perfumers.



Michael Edwards with Virginie Daniau

Historic perfumers that made an impression included Paul Parquet, 'a genius' and 'one of the greatest perfumers of his generation', according to Ernest Beaux. Parquet is still widely regarded as the founder of modern perfumery. Following closely on Parquet's coat tails was Aimé Guerlain, 'another genius' producing Jicky in 1889, a 'masterpiece of contrast and balance' which heralded the modern Orientals. The perfume was named after his brother's son and this was not so unusual in a time when male and female perfumes were interchangeable.

Edwards believed that Francois Coty was much underestimated in the perfumery world and there is still a question mark over whether the three extraordinary perfumes attributed to him were actually his creations, namely L'Origan, Eau de Chypre and Emeraude. It was pointed out, however, that no one else has ever claimed these perfumes for themselves but the question does remain. Edwards considers that Coty's lack of official training made him bolder in terms of trying new accords and distillation methods. His career was fascinating and his influence wide ranging, for example, he was the first to use market research and to look at more attractive packaging/bottling. Members of Coty's staff went on to found Lancôme and Dior and even Saint Laurent was backed financially by someone who had started out with Coty. Although Coty died a bankrupt, his legacy lived on.

Edwards also asked the question, 'without Coty would Jacques Guerlain have been so creative?' Guerlain created L'Heure Bleu in 1914 for his wife Lily, Mitsouko in 1919 'perfected the modern chypre', Shalimar for the Paris Exhibition in 1925 and his last creation Vol de Nuit in 1934. It was felt that Guerlain lost his creative muse when his wife died.

In 1921 there was Ernest Beaux with No 5 although it is thought that the jasmine inspired scent was created before Ernest Beaux ever met Coco Chanel. This perfume started as a niche perfume, very highly priced and with limited distribution, only mass produced after the war. Coco is a perfume that Edward's felt was 'so contemporary' even today. Interestingly, he mused that No 5 may have been influenced, to some degree, by Coco Chanel's involvement with the Grand Duke Dmitri Pavlovitch as Beaux had worked for the Russian Royal Family.

In the years when the stock exchange collapsed came Joy, created as a gift from Patou to clients in America who had lost some of their wealth and could no longer travel to Paris to buy. Henri Almeras created Joy in 1930 and was told to use the most expensive materials available for it. It became available in 1934. Je Reviens, by Maurice Blanchet, came along at a similar time and this remains one of Edward's favourite perfumes.

In 1944 Edmond Roudnitska created Femme – a wedding gift from Marcel Rochas to his wife. Only 109 bottles were made originally. Germaine Cellier 'a woman who did what she wanted' created Bandit in 1944, Fracas in 1948 and then Vent Vert. Fracas was the last of the great niche perfumes from this 'darling of American socialites'. After the second world war, women were given gifts of perfume as never before and more floral based perfumes entered the market e.g. Francis Fabron with L'Air du Temps and Diorissimo, 'a marvellous perfume' by Roudnitska. Roudnitska presented Diorissimo to Christian Dior who liked the perfume but was a superstitious man and to him Lily of the Valley was a fetish. If the flowers were not in bloom he would have them embroidered onto fabrics.

The 1960s saw the first of the celebrity fragrances with Madame Rochas, created by Guy Robert, leading the way. These were perfumes with wide appeal and easy to wear; it was the time of Fidji by Joséphine Catapano. The latter inspired Charlie which changed the world of fragrances as women started to buy perfumes for themselves rather than relying on men buying it for them. So came the era of Calandre for Paco Rabanne and of Dioressence, pioneering fruity florals, followed by Oscar and Chloe. In 1977 came Opium by Raymond Chaillan with Jean-Louis Sieuzac; opulent and oriental with a bottle inspired by samurai legend. The name caused great consternation at its launch and it became black market for a time. It was the first major blockbuster but was accused, by Estee Lauder, of being 'Youth Dew in tassles'.



In 1979 there was Nahema for Guerlain 'like a perfume version of Ravel's Bolero'. Sophia Grojsman, a prolific perfumer, created Paris for YSL and also Tresor for Lancôme. Women were changing, with renewed interest in woody Orientals and strong chypre notes and fragrances like Escape, Obsession and Poison became popular.

With Thierry Mugler and Angel we entered 'a world of the fair – candy floss, lights and sawdust'. At the end of the 90's Calice Becker created J'adore and Jacques Polge's Coco Mademoiselle overtook Chanel 5 in popularity with No5 almost in danger of being discontinued.

Edwards concluded by celebrating the rise of artisan fragrances which have proliferated rapidly since 2009, taking us right up to Dominique Ropion and Portrait of a Lady in 2010.

An absolutely riveting keynote by Michael Edwards and I'm sure those not familiar with his will be desperate to read the new edition. It was a privilege to be there to meet the man and hear his address.

The 33rd edition of Fragrance of the World is available from September 2019.

# BSP ONE DAY SYMPOSIUM

37TH BRITISH SOCIETY OF PERFUMERS, ONE DAY SYMPOSIUM, WHITTLEBURY HALL HOTEL, UK, MAY 16TH 2019

MANDY BURNS

After quite a lengthy and sustained journey, ICATS Administrator, Sharon Heard and I were able to trace many members of the BSP already setting up at the Hall as we arrived on the 15th. It was great to catch up with people informally in this lovely venue and to be able to network with colleagues before formal proceedings began. The theme of the event this year was '**Sustainability in the Fragrance Industry**' and this topical issue had resulted in a record attendance with many delegates unable to secure a place.

In her introduction to the day, outgoing BSP President, Virginie Daniau, explained that increasing consumer demand for changes in packaging and for a lower carbon footprint were leading to changes in the industry and she believed that the industry should work on the premise that



BSP President David Whittaker with Steve Mallen, Chairman of President's charity, The MindEd Trust

responding appropriately and effectively to these issues would increase sales.

Michael Edward's presence as keynote speaker generated tangible excitement as we all settled to hear about his life, experience and latest book, "From Niche to Niche, The Evolution of French Perfumery". His engaging and engrossing discourse lived up to all expectations and deserves a fuller report, which you can find on page 8 of this ICATS news.

The day progressed with group presentations and presenters this year included Camille Diener and Christine Gladieux for Robertet, Frederique Remy and Julien Von Eben-Worlee for Floral Concept, Dr Peter Van Der Schaft for Axxence Aromatic GMBH, Marcus Betzer for Symrise and Paul Pieschl for IFF.

For Symrise, Marcus Betzer first took us on a Perfumer's Picnic where three perfumers discussed some of the influences on their work and also on sustainability. After the 'picnic' and a videoed walk through a forest, we were able to sniff products on beautifully presented tables in a variety of applications. The first, for us, was Ysamber K – woody, ambery and fruity with citrus top notes. This adds fresh, clean aspects when used in products. The second was Catryl - aromatic and herbaceous with hints of juniper berry, violet and even orris notes; a good top note booster and made with 100% renewables. The final presentation was on the elegant and lively Symroxane with tobacco, woody and vertiver notes.

Axxence claimed that 'we bring nature to your creations'. Axxence produces for both the flavour fragrance industries. Dr Peter Van Der Schaft outlined the history of the business and their aim to extend facilities using processes that are 'green in, green out', controlling the natural status right through the supply chain. We were presented with an array of coloured liquids in test tubes which led to much discussion around the tables as each tube was sniffed and analysed.

IFF was, they said, 'accelerating a positive impact on the planet'. It was emphasised that customers increasingly expect that the product should be good for themselves



Virginie Daniau, Past President

and the planet and that the fragrance creators are increasingly aware of the consequences of their creations. Millennials are prepared to pay a premium for renewables so the key thing is regeneration with no waste. IFF now use a leaf logo in their catalogue to show which ingredients are 100% renewable and are trying to increase the number. Four key ingredients were presented on the day: Prismantol – a spicy, ginger, cardamom scent with smooth creaminess, Aquaflora, introduced in 2018 and a very important part of the IFF portfolio, it is mostly used in fine fragrances adding a white flower, watermelon tone but is also very useful in, for example, fabric conditioner giving a "clean laundry" smell, Floral Super – not new but being re discovered, giving high impact even at 1% and used in fine fragrance (Nirvana) with fruity top notes and a fresh cyclamen floral note on a musky base, Edenolide - a 'new musk' being used in 3000 applications. It has been a struggle to find musk so this is a material made at a perfect time and at relatively small cost (£40 per kilo).

Robertet added effervescence and sparkle with their FIZZY presentation 'for a tingling on the nostrils!' The first up was a black pepper from Madagascar - fresh and pungent with leathery and smoky notes. The company works to preserve natural resources and to train the locals they work with in the use of technology. Elemi Heart - from the Philippines, harvested at the beginning of the rainy season and collected very quickly. As a resin it was used by the ancient Egyptians. It is very zingy and spicy with a pink peppery note and a hint of ginger.

Juniper NHS (NHS = Natural Head Space, a kind of extraction with a very mild process). Robertet has a large range of juniper products, mostly from Turkey and harvested in August to November, taking two years to mature. Their involvement produces work for local farmers and their families in remote villages and has raised health and safety standards, particularly in relation to equipment. Of course, it also provides long term employment for the area. There are many applications for aromatic juniper and

it smells gorgeous, with characteristics of cedar wood, pine, fruitiness and of course gin.

Timur pepper comes from Nepal; although this is a very poor country there are timur trees in abundance. They see their work there as a very important partnership offering a fair price and providing a much needed source of income for the region in their need to compete with their much larger neighbour, India. It is a lovely berry with a grapefruity smell and very zesty. Apparently, if you put it on the tongue it will paralyse it and may have a botox effect on the skin!

The blackcurrant buds on show were from France, harvested November to January and supporting locally harvested fields. The company also offers technical support to the cooperatives. This is a new product for them and has a lovely, freshly picked smell.

We were greeted by beautiful scents as we entered the Floral Concept room. This is a family business, passionate about the sustainability of natural ingredients, stressing the importance of working with farmers and being very conscious of biodiversity. They see sustainability as a



Robertet's FIZZY presentation

mix of economic, environmental and social influences and work to encourage ethical business with respect for all stakeholders. They believe that this approach, giving strong support to local producers and contributing to the health and education of communities that they work with, brings the reward and return of a regular source of products and high quality standards.

They are based in Grasse and produce natural raw materials for both flavours and fragrances. Their range includes absolutes, CO<sub>2</sub> extracts, essential oils, specialties and resinoids. A brief introduction was followed by a fascinating presentation on some examples of their work.

In India, they have long term relationships with a family owned company for tuberose, mimosa, jasmine and other flowers. They give a guarantee of purchasing the concretes for the producers which gives local families a stable income. With tuberose this involves picking 67 million flowers, by hand before noon! The company always select the best quality. Blackcurrant buds are from France and their supply involves a five year engagement with producers in Burgundy, providing a secure crop for farmers and incentive to keep planting as there is a guarantee of revenue.

The company has recently entered a new collaboration in the Amazon rainforest. Rosewood has been a species under threat of survival. This collaboration, a distillery in a small community, aims to sustain the rosewood resource and provide a livelihood for the farmers. There has been a programme of reforestation and more and more farmers are getting involved. The work is having a very positive effect on the local community, creating jobs and increasing the income of the population as well as providing the company with a sustainable source of a very high quality, pure product.

After a very interesting and thought provoking day we enjoyed dinner and the awards ceremony welcoming David Whitaker as the incoming President.



#### BSP FRAGRANCE EXCELLENCE AWARDS

The British Society of Perfumers hosts annual Fragrance Excellence Awards in which fine fragrances and consumer products are judged by industry peers – members of the society. The award ceremony was held at the BSP One Day Symposium and the 2019 winners are:

- Nancy McConkey Award for best Feminine Fine Fragrance: **Gucci Guilty Abs Femme Parfum**, Firmenich
- Tony Pettifer Award for best Masculine Fine Fragrance: **Declaration by Cartier EdP**, Cartier in-house
- Beverley Bayne Award for best Unisex Fine Fragrance: **Ombre Leather by Tom Ford EdP**, Givaudan
- David G Williams award for best Personal Care Fragrance: **Lynx Unity Body Spray**, Unilever
- Tony Dallimore award for Best Personal Wash Fragrance: **Imperial Leather Let's Flamingle body Wash**, Cussons
- David Cartwright award for best Fabric Care Fragrance: **Comfort Heavenly Nectar Fabric Softener**, Unilever
- Evelyn Speller award for best Home Care Fragrance: **Fairy Apple Orchard Dish Wash Liquid**, P&G
- Mike Parrott award for Best Air Care Fragrance: **White Company Ginger Candle**, Phoenix
- Marianne Martin award for best Hair Care Fragrance: **TRESemme Collagen +Fullness Shampoo**, Unilever

# BSP LONDON EVENTS

## TWO EVENING EVENTS FROM THE BSP IN LONDON

### ALISON GREEN

In recent years, the British Society of Perfumers have been expanding and developing the educational lectures that they present in both London and Manchester, UK. I was able to get to London from Plymouth for two excellent events that were not only informative, but also incredibly enjoyable and a real feast for the senses.

Both events took place in the library of the Royal Society of Chemistry, just off Piccadilly in Burlington House, also home to the Royal Academy of Arts and many other learned societies. As you can see, the setting was beautiful and gave a real sense of the rich scientific history that underpins the aroma trades.

In November 2018, I attended a wonderfully fragrant event where Virginie Danau, then President of the British Society of Perfumers gave a detailed overview of the best new fine fragrance releases. The evening was fully subscribed as an eager bunch of perfumery professionals and enthusiasts waited to smell the best of the best in new releases and to discover what was on trend for the year. Virginie's slick presentation combined expert commentary on perfume formulations, target markets and unique selling points integrated with opportunities to smell each fragrance under discussion and view marketing material. Each table of delegates was 'serviced' by a BSP committee member who dipped all the smelling sticks at a vast rate of knots in order to keep up with the plethora of new creations in the various market places: unisex, female and male. There



were many more perfumes targeting the lucrative unisex market, with traditional gender stereotyping less obvious than in the past. Across all sectors there were common fragrance trends, the most prominent being leathery and tangerine/mandarin notes. I would highly recommend BSP events for anybody with an interest in fine fragrance and perfumery marketing as it provides an unparalleled expert analysis of the marketplace.

In January 2019, I returned to London and the Royal Society of Chemistry for what proved to be a complete contrast to the Fine Fragrance event: Speed Smelling presented by IFF-LMR, a subsidiary of International Flavors and Fragrances. Based on the concept of speed dating, the delegates moved between a series of eight tables, each one offering a presentation on a different 'on trend' market, new extract/material, new geographic location, new botanical or ethical consideration within a set time governed by a bell. The presentations were interactive, with a fun activity or game on each table and a set of playing cards to collect with a few given out on each table at the end of the time – no pressure there then?! I thoroughly enjoyed this event as it gave all the delegates on each table, who represented a wide cross section of the aroma trades with perfumers, flavourists, compounders, manufacturers and marketers all present to name but a few, to get to know each other as well as learning about some fascinating new ventures from IFF-LMR. We moved from organic certified oils to a new look at 'mystical' resinous oils and then from Blockchain sustainability initiatives to completely new aroma ingredients to name only half of the tables. This novel approach to marketing provided a highly enjoyable experience as well as presenting many new initiatives, ingredients and concepts that have sustainability and ethical concerns at their heart as well as providing good quality and innovative aroma materials for the market.

The new season of British Society of Perfumers lectures begins in September and promises, as ever, to offer a wide range of entertaining and authoritative sessions for the industry. I would highly recommend these events in London and Manchester not only for CPD but also for meeting others from the industry in the UK. Please see the British Society of Perfumers website for details of upcoming events.

# BSP WORKSHOP WEEKEND

## BRITISH SOCIETY OF PERFUMERS & ICATS WORKSHOP WEEKEND, MARCH 2019

ALISON GREEN

In March it was my pleasure to be invited, once again, to help to facilitate the BSP Workshop Weekend in conjunction with main organiser David Whitaker (BSP & Eternis Fine Chemicals) and Penny Williams (Orchadia). Held at Whittlebury Hall in Northamptonshire, the weekend provides introductory training to those new to the industry or those wishing to join the aroma trades in the creative process within the fragrance industry as well as an opportunity to work as part of a syndicate on a new product launch including fragrance creation and marketing. Experts from industry and education were also on hand to present lectures on technical, historical and business aspects of this complex field of work.

This year's workshop was fully booked, with delegates from across the industry (creative perfumery, academia, raw materials, QC, sales and marketing) and some travelling internationally to be there. Delegates were split into syndicate groups, taking care that each group had a mixture of skills and that people were not placed with their colleagues. They were then presented with a professional-style brief to create a niche brand fragrance that targeted millennials. These millennials could be located in the EU (groups had to decide precisely where if they felt this was key to their market positioning) and the brand had to be positioned at mid-market – aspirational 'masstige'. The key word that they needed to interpret was the term 'Equality' which had to form the inspiration for their brand, but they

were free to develop a fragrance inspired by any aspect of equality for which they felt there was a clear market position and potential demand. In addition to creating their unique fragrance, each syndicate group had to present a timed professional pitch to the judges where they would not only present the perfume, but also explain their customer profiling, brand concept and the channels (paid, owned and earned) where they would market their new product.

As if all this creative work were not enough, delegates were also given a whistlestop perfumery education by some of the best in the business including Virginie Danau (BSP President and owner of Parfum Parfait) on the history of fragrance, David Whitaker on synthetic raw materials and presentation skills, Roger Duprey (BSP and retired Senior Perfumer Givaudin) on natural raw materials, Penny Williams (Orchadia) on regulatory issues and odour language and families, including a smelling session.

On Saturday evening after dinner, there was a highly informative Q&A session led by Peter Malton (Chief Perfumer Ungerer UK) and Steve Nicol (Senior Perfumer, IFF USA) on life as a perfumer. Both explained their journey into the industry, their career progression and what appealed to them about the aroma trades. Delegates were then able to ask anything about career opportunities and key qualities that could lead to individual success in the aroma trades. Peter and Steve showed their passion for the aroma trades and their commitment to helping those new to the industry as well as sharing some excellent anecdotes from their careers.

Before continuing with their syndicate work on Sunday morning, delegates were led in a mindfulness session by Virginie Danau to focus their concentration before returning to their teams. Once there, and working hard on their perfume creation and presentations, the facilitators and additional BSP members, all experts from industry, were on hand to offer advice to the groups and troubleshoot any potential problems.

All groups were nervous ahead of their final presentations, but I can honestly say after many years of assisting with the workshops, this was the best year yet, with presentations and fragrances of a very high standard.



William Spencer and David Whittaker



David Whittaker with the winning teams

As judges, we were given very clear criteria by David. Obviously, the quality and suitability of the fragrance was key as well as its balance and sustainability (35 marks). Market research and the subsequent marketing plan was vital too as, however good a fragrance is, it must be purchased in order to be a viable product. The new product must reach the target market who in turn must be motivated to buy it and connect with the idea/concept (50 marks). Finally, the delegates were assessed on their presentation skills (15 marks). Judging proved to be really challenging with such high standards so, with no clear overall winners, two teams were selected:

Team 3 – Elephants: Daniel Strube, Ella Horton, Emma Evans, Matthew Kearns and Stephanie Wilkinson

Team 4 – Penguins: Beverley Moore, Gaynor Cowan, Katharina Flohr, Kelly Betts, Lucy Lund, Robert Begbie



We also awarded a copy of Tony Curtis and David Williams' seminal textbook *Introduction to Perfumery* to the best individual participant from a non-winning team: William Spencer of Emerald Kalama Chemical at Widnes.

I would highly recommend this excellent opportunity to anyone at the early stages of their career in the aroma trades. As this year's event was so successful, the British Society of Perfumers has now decided to run the workshop annually rather than biennially with next year's dates (March 13 - 15 2020) already in the calendar. Please check their website and book early to avoid disappointment for this hugely popular event.

Images Helen Hill BSP

# IFEAT 2018

CARTEGENA, 'LAS AMERICAS', COLOMBIA,  
9-13 SEPTEMBER 2018

DEIRDRE MAKEPEACE AND SHARON HEARD

The theme for this year's IFEAT conference, 'Las Americas', was the essential oils, flavour and fragrance markets in Central and South America, Caribbean, Mexico and the Amazon. The Colombian city of Cartagena was the perfect destination as its busy port is a key hub linking all of these countries with the rest of the world. Cartagena is also a popular beach destination for Colombians but in the humid, rainy season it becomes a busy destination for world class conferences. The city's old town is encircled by 11km of walls, telling of its 16th century founding by the Spanish and hard fought battles fought over the continent's trade.

ICATS had set up stall next to the IFEAT registration desk in the main conference foyer and so it was a busy week with lots of interest in the courses. It is always good to hear that it continues to fill a gap for aspiring managers making their way in the industry.

The Latin American flavour of the event was instantly experienced by the 1,200 delegates at the conference drinks reception when a warm welcome was extended by conference Chairman Raoul Amigos from Paraguay, followed by colourful entertainment from a troupe of Colombian dancers and musicians.

This is an event that is all about forging, building and cementing the business relationships that will see the trade through the challenges of the years to come. It also brings academics and business professionals together to share understanding of the key issues that can be tackled



only by working together. The conference programme was planned to highlight some of those issues and the excellent work that goes on around the globe to build a sustainable industry against the ever changing conditions in the business and natural environments.

## Day One:

Keynote speaker Elena Novas, Vice President Regional General Manager of International Flavors and Fragrances (IFF), highlighted the sector's challenges and opportunities perfectly with a snapshot of South American trends from IFF's research. Novas introduced the concept of 'a product for me' as consumers take a DIY approach to finding the right formulations and ingredients to suit their individual tastes and preferences. Consumers, more than ever before, now have direct access to ingredients. They share tips and recipes with friends, mirroring the kitchen table culture as preferences and ideas are shared between generations and between friends. Marketers will recognise how this culture of individuality and introspection is evident in many other sectors where organisations 'co-create' products with their customers. This trend has also fostered a new generation of independent start-up businesses, supported by social media and fulfilling niches, largely unchallenged by competition from major players.

Further trends identified in the research were the demand for luxury and for naturally sourced ingredients with small local producers meeting the consumer's desire for both heritage and trust in the products they consume. And as Novas added, businesses need to consider "...how do we honour this trust?"

Summarising the industry perspective Elena stated that 'transparency is the only way' and described the IFF's 'Blockchain' traceability initiative that aims to give consumers reliable information on the sustainable and ethical production 'from crop to bottle' of the products they buy. Such a model of absolute traceability could of course challenge cherished relationships within the current supply and distribution chain.

Citrus in South America was the focus of the next three presentations:

Antonio Juliano Ayres, General Manager of Fundecitrus, an association maintained by Brazilian citrus growers and



juice manufacturers to foster the sustainable development of the citrus industry, presented fascinating and terrifying statistics relating to the spread and impact of 'citrus greening – the worst disease in the world'. Brazil is the number one grower of oranges in the world, producing 288 billion boxes of fruit and creating 200,000 direct and indirect jobs. Greening is a bacterial disease spread by Psyllids insects that reduces yields. 90% of trees in the Florida groves are affected to varying degrees reducing production there by 70%. The impact in Brazil has been managed much more proactively, with support from Fundecitrus. A range of strategies is being used to mitigate the potentially devastating impacts and these include the removal of infected trees, insecticides and biocontrols. The incidence of the disease in Brazil has been limited to 18% of trees and overall the sector continues to see productivity rise. The powerful approach of using the best scientists in the world has enabled the industry to 'declare war against greening'.

Andy Blum, Vice President of Citromax, and Sergio Dávalos, Commercial Manager of Cota Ltda, moved the focus to Argentinian lemon peel oil, an ingredient that appears in many household and food and beverage products. The production here is unusual in that the lemons are grown predominantly for processing as there is a limited domestic market for fresh fruit and infrastructure issues from the growing region make the export of fresh fruit logistically challenging. Andy and Sergio, parked their competitor roles and shared a number of key issues facing production. The first was climate, with more frequencies of temperatures in excess of 38C which result in increased fruit drop. Agricultural residues also need to be carefully managed and, although organic production can mitigate this, the resulting yields are considerably lower. Exchange rates and punishing levels of inflation in the Argentinian economy are two further factors that present problems to producers and traders in the global marketplace. At the time of the conference the currency had just undergone a 30% devaluation and interest rates were at 60% and as Andy concluded: 'the economic situation is one of the biggest challenges we face today.'

Norberto Antonio Rodriguez Zenteno, Director General of Frutech International de Mexico, presented the final part of South America's citrus story focusing on the challenges facing the Lime industry in Mexico, particularly diseases including HLB and CVT, known as the 'sadness of citrus fruits'. The changing global markets were described with larger production regions in USA and Brazil seeing production falling as a result of drought, hurricanes and frosts but also real estate development in Florida, reducing land available. This has left Mexico in a position to fill some of that gap as the 'boutique' grower.

The second session of Day One focused on the Colombian marketplace. Colombia is the 2nd largest grower of fresh flowers in the world, after Holland, producing largely for the US market and there is potential for that same success to be carried into the essential oils industry. Professor Dr Elena E. Stashenko from the Industrial University of Santander, Colombia introduced this topic with the fact that only 7.2% of Colombia's richly diverse land is cultivated, with essential oils representing only a tiny fraction of this. Yet the country, the 2nd most biodiverse country in the world after Brazil, is a net importer of essential oils. The academic community is undertaking valuable research into these opportunities e.g. the impact of flower maturity and time of picking on ylang ylang essential oil productivity, the quality and yield vs. altitude of the growing of mountain oregano and the distillation and production processes, both large and small scale, that could unlock the key to building the essential oils sector in Colombia.

Luis Alberto Asturias, Founder partner of Aromas Naturales S.A. presented a picture of essential oil production in Guatemala. From Lemon grass in the coastal plains to cardamom in the country's mountainous north, Guatemala's essential oils industry is relatively mature but has been squeezed to a degree by more lucrative and less labour intensive crops such as sugar cane. Further challenged by the growth of synthetics, this sector is now however beginning to benefit from the increase in demand for natural ingredients.



Professor Dr Lauro E.S. Barata

Dr Juan Elizalde, research and development manager for Cramer then took the delegates on a 'tour' of the South American flavours featuring the top national dishes of Colombia, Peru, Chile, Brazil and Argentina. At each dish he introduced the flavourings that shape its distinctiveness, e.g. the lactones, ketones, acids and pyrazines in Brazil's Pao de Queijo, a cheese bread eaten at breakfast.

Aldemar Castano is a marketing and law expert who considered further the economy and market opportunities of Colombia. He highlighted the country's key role linking North, South and Central America with excellent sea and air cargo infrastructure. It is the 4th largest economy in South American and is showing annual growth in the fragrance and flavour sector of 5-7%. Big multinationals Firmenich, Symrise, Lucta and Girauda account for 60% of production but there is still a strong presence from local companies. In a clear message to IFEAT delegates, he summarised that Colombia has significant biodiversity, is easy to do business with and offers significant opportunities to build exports from a small but expanding sector.

#### Day Two:

Antonella Corleone, Louise Kapor and Alistair Hitchin (chair) presented the IFEAT AGM. The executive reported on a busy year with the IFEAT membership growing to 615 member companies. Successful events held during the year were reported on including the previous IFEAT 40th anniversary conference in Athens, which attracted 1237 delegates from 59 countries. A study is underway into the socioeconomic impacts of the sector is underway and IFEAT continues to support for education through the flavour course offered by Reading University, IFEAT's own postgraduate course run by ICATS based at the University of Plymouth and sponsorship programmes enabling students to attend IFEAT events.

ICATS' Sharon Heard presented an update that celebrated both the first graduate to follow the flavour route through the qualification as well as the first student to complete the flexible 60 credit qualification.

Michael Torre, on behalf of Reading University, presented an update on Reading's flavour course, a 3-week intensive course. 14 completed the course in 2017 bringing the total since the course launch to 170 students from 145 countries.

The educational and personal development impact of study tours was very evident in an excellent video by Tina Carne, presenting details of the June 2018 Spanish Study Tour on 15-23 June 2018 which you can watch here <https://ifeat.org/events/>.

The IFEAT Medal was awarded to Professor Lauro ES Barata of the Federal University of Western Para, Brazil for his contribution to the sector. Professor Barata has tutored over 4,000 students in his 40 year academic career and his IFEAT Medal Lecture on the scents of the Amazon started with nostalgic reminiscences from his childhood of the scents of the plants of the forests. The Amazon forest has more than one thousand species of aromatic plants, compared with just six native to France. Rosewood timber has been exploited heavily with few mature trees remaining but sustainable production processes have been developed to extract the oils from leaves and twigs, not the wood itself. The subject area is rich in studies and science but poor in terms of the development of technology for commercialised production and Professor Barata sees this as a key priority for the future. A further priority must be to find sustainable uses for waste products. Seven million tonnes of cocoa shells are left in the rainforest each year and could be transformed into aromatic or colouring products and further studies are underway to scope the aromatic potential of fruits such as Abrico and Cupuacu. Professor Barata's work continues in the search for anything that, as he says, 'can help my dear rainforest'.

Robin Van Loon, founder of Camino Verde, presented an engaging overview of his charity's work in Peru with a story that started with the Rosewood 'goldrush'. Images of the destruction of forest trees with chainsaws and bulldozers are easy to visualise but it is the human cost that drives this charity's work and ultimately it is the people that hold the key to the success of any regeneration initiatives. In addition to planting rosewoods for sustainable essential oil production, Camino Verde has run programmes planting a further 25 species, 4 of which have shown potential and one is now in production. As Van Loon explains 'we must know our sources, from forest to fragrance', but more than that, it is the opportunity to cultivate the human relationships that are very much part of the rainforest's ecosystem.

Iguatemi Costa, Senior Scientific Manager of Natura followed the 'forest to bottle' theme, telling the story of this global cosmetic giant, a major Brazil-based beauty brand which has 7,000 employees and 1.7m home-based sales consultant in a direct selling model. Perfumery is a big part of the business and Costa describes the

ethos as 'a more Latin way of doing perfumes'. 18% of their ingredients come from the Amazon basin and the company works with over 4000 families in the production chain. Costa talked through one example of sustainable production, in Brazil's Atlantic forest biome, where the company collected 142 samples, 12 of which were identified as having potential and 5 species were selected for onward development, from cuttings and seed propagation, transfer from nursery, field trials and then into final growing areas.

The conference focus then moved more towards the socio-economics of the sector.

Sven Ballschmeida Global Trade, Executive Director of IOFI (International Organisation of the Flavor Industry) posed himself the question 'quo vadis' – where next? He presented a potted history of global trade from the Hanseatic League of 1159, to the formation of the World Trade Organisation in 1995 and the latest on recent trade disputes and retaliations affecting the industry. In answering the question of 'what next?' he presented his take on the issues and priorities:

- The need for market access across the world
- Full implementation of the Nagoya Protocol, an agreement promoting the fair and equitable sharing of benefits arising from the utilisation of genetic resources.
- Promote the IOFI Code of Practice
- Promote the global rules of trade of the WTO
- Improve networking and create alliances within the industry to achieve all of the above

Martina Bianchini, President of IFRA (the International Fragrance Association) started with a reminder that delegates were meeting at the place of the creation of the 2000 Cartagena Protocol on biosafety, an international agreement ensuring the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology. Bianchini shared the vision of IFRA; a world where people enjoy the socio-economic, environmental and cultural values of fragrance, referring to the 3Ps model of sustainability, People, Planet and Profit. She outlined the organisation's strategic priorities and how these translate into IFRA's priorities of providing value throughout the chain, from regulation to sustainability and transparency. IFRA has appointed global consultancy PwC to scope a project that will map the socio-economic impact of this value chain from growers, processors and manufacturers through downstream manufacturers of end products (fragrance, personal care, home care and industrial/institutional) to retailers, consumers and other end users.

Jean Francois Quarre, EFEQ spoke on the topic of essential

oils and pesticides and the moral and legal obligation to question the quality of the raw materials produced and traded. This is against a complex backdrop of regulations that vary across the world. He referred to the recent legal case of Monsanto and glyphosate as one example that is currently in the limelight.

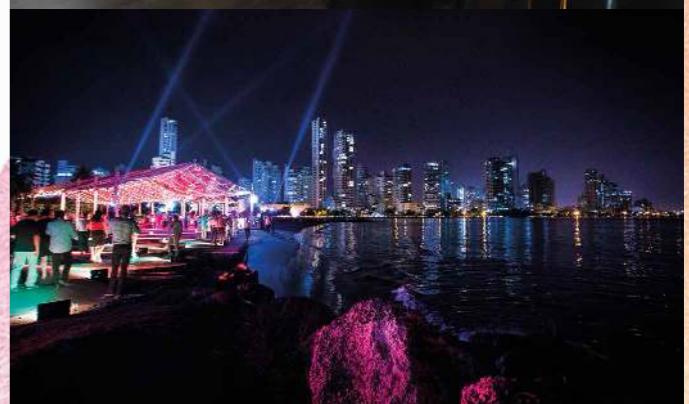
The IFEAT 2018 'Las Americas' theme could be summarised as focusing on the need for trust and transparency in a complex and ever-changing trading world. Throughout the conference there were excellent examples of scientific research, collaborative working and inspirational projects all aiming to protect both the people in the value chain and the ecosystems on which the fragrance and flavour trades depend.

Cartegena and the Colombian people offered IFEAT members and guests the warmest of Latin American welcomes and showcased a country that, despite challenges, is very much open for business.

#### IFEAT Fragrance Course:

Part of the conference programme was ICATS' fragrance course which attracted 30 delegates from around the world, some new to the intricacies of perfumery. Marianne Martin led the group on a tour through key ingredients and their use in some iconic perfume brands as well as the perfumer's practice and odour language.

Images : Kate Parkinson for IFEAT and Deirdre Makepeace



# IFRA UK FRAGRANCE FORUM

## SCENTIMENTAL: FRAGRANCE ON THE MIND

ALISON GREEN

### IFRA UK AT THE WELLCOME COLLECTION OCTOBER 2018

It was a real treat to attend the 2018 IFRA UK Fragrance Forum at the new venue of the Wellcome Collection in London. IFRA UK provided a platform for authoritative speakers who are pioneers within the world of aromas across a diverse field that ranged from practical medical application to art and its impact on global pollution! Each year IFRA focuses on a broad theme, with this year's focus being on the connection between scent and mental health and wellness, including the link between olfaction and neurodegenerative diseases. The event was timed to coincide with World Mental Health Day, which provided a thought-provoking backdrop against which to view world-leading research and projects that are making a critical difference to people's quality of life across the world.

All the presentations were fascinating, but to explore each one in sufficient depth to do the subject justice is not possible, so I have selected two contrasting topics as the focus for this piece to give a sense of the day.

After a short introduction from Lisa Hipgrave, the Director of IFRA UK, Session One kicked off with a fascinating presentation entitled The Smell of Parkinson's. There has been a good deal of publicity about the synaesthete Joy Milne, who noticed that the body aroma of her husband had changed. He was later diagnosed with Parkinson's Disease (PD), a devastating neurodegenerative disease for which there is no cure and they attended a support group



IFRA audience at the Wellcome Collection

where she noticed that a number of PD sufferers also had the same specific body aroma. Her ability as a "super smeller" able to detect PD, brought her to the notice of scientists working on detection and treatment of PD.

If the 'smell of PD' could be assessed using clinical trials and the aroma chemicals isolated, this could prove to be medically significant for a number of reasons; diagnosis could occur at an earlier stage, enabling pharmaceutical intervention and the efficacy of the treatment in slowing the illness could be gauged. Two scientists at the cutting edge of this work, who work with Joy Milne, presented their work for the first time at the Fragrance Forum: Dr Tilo Kunath (University of Edinburgh) and Prof. Perdita Barran (University of Manchester).

Dr Kunath had developed systematic testing which involved PD sufferers and a control group who wore t-shirts, which were subsequently cut into two pieces for randomised blind testing and the aroma was assessed by super smellers like Joy. A number of important conclusions were drawn:

- The accuracy was pretty good, in fact one individual from the control group was determined to smell as if they were diagnosed with PD and were sadly diagnosed with it after the trial
- The odour was not in armpits of the t-shirts but on the collar so was actually produced by sebum as opposed to sweat

As a consequence of these initial tests a number of new investigations could be devised including GCMS analysis of the sebum and also assessing why the sebum in PD sufferers might have a unique odour – what process was causing it?

The pathology of PD includes a condition called seborrhoea, which is an increase in the production of sebum, thereby giving the skin of individuals a 'waxy' appearance. This is thought to be linked to the protein  $\alpha$ -synuclein, which can affect skin pathology, specifically lipids thus leading to a unique skin microbiome and thus a change in skin aroma. Interestingly, if a patient is given L-DOPA medication, then seborrhoea is reduced and so does the odour because less sebum is produced

The complex skin microbiome is obviously different for PD sufferers indicating an abnormal combination of viruses, bacteria, fungus and mites in hair follicle. A key avenue of current research is exploring an altered yeast population of seven species of malassezia yeast, with first signs showing a significant difference between control groups and those with PD.

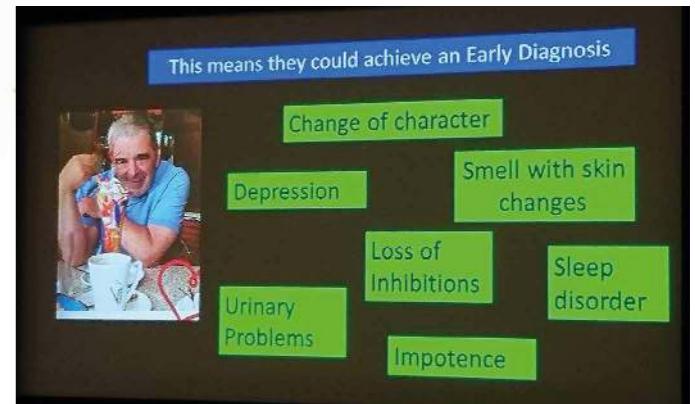
Understanding the phenomena surrounding the  $\alpha$ -synuclein pathology and its effect on skin microbiome is doubly important because as well as affecting skin appearance, it also leads to an increased risk of malignant melanoma in PD patients.

Milne gave a very moving presentation about her experience with her husband, Les, and the phenomenon of being not only a synaesthete, but also a super smeller. She had first noticed a difference in Les's skin smell in 1982/83 and he was eventually diagnosed in 1994. Clearly, the earlier the diagnosis, the earlier that drugs can be given to ameliorate the symptoms. She has now honed her skill and is able to smell the different stages of PD, which ideally needs some kind of treatment before stage three. She feels that this work is her husband's legacy and is committed to helping with the research as much as she can in his memory.

Prof. Barran is working on a project with Parkinson's UK, a national charity that supports PD patients and their families. She is using the science of metabolomics in order to explore the pathology of PD; this means looking at the chemical traces left by metabolites after chemical processes in the body. Thus, the study aims to develop a diagnostic process using volatiles to identify markers that can aid the early detection of PD but they are still awaiting confirmation of funding to develop their work further.

Metabolomics is complex and developing field which can look at the endo-biome from biofluids or biopsies but can also look at volatilome, examining proteins and mRNA. Given the revelation that PD leads to a marked difference in the aroma of the sebum, analysis of this volatilome is the focus of the proposed study. The ultimate goal is not only to detect an early predisposition for PD but also to identify prognostic biomarkers and a 'perturbation in pathway dynamics'. As the disease progresses, later biomarkers can be affected by nutrition, drugs and surgical intervention, so the volatilome produced by the metabolites in the earliest stages of PD is absolutely key.

The framework for the study utilises 27 collection sites in the UK where they already have 847 recruits that include both control and PD sufferers. Samples will then be put through Headspace analysis thereby combining an olfactograph and chromatograph as well as assessment by a super smeller.



Les Milne alongside the typical symptoms of PD

At this early stage, several useful conclusions have already been reached: firstly, there are metabolites on the surface of PD sufferers that are different to the control group consisting of volatile or semi-volatile compounds. These metabolites probably have a musky/fruity odour but are not composed of a single compound. The group of compounds can change composition according to disease progression and pharmaceutical intervention, but sometimes remain unchanged in some individuals.

The next stage for this vital work is to make use of the highly trained noses of medical detection dogs and also expand the study to include a wider cohort. This cohort would be targeted to include at risk groups, such as those with REM sleep disorder. However, it could also be used to assess the efficacy of medication in slowing the progress of the disease in those already diagnosed with PD. Since there is no cure for PD at the moment, slowing the progression of this devastating disease as early as possible is the focus for scientists working in the field.

These presentations were so inspiring and will undoubtedly give hope to many. Although Milne's story is tinged with sadness and loss, her amazing ability to smell the disease that tragically killed her husband has given a happier future to many who suffer from PD and their families. Who knows, perhaps the secret of the volatilome will actually provide clues to reverse the disease completely in the future?



Lizzie Ostrom, Pollution Pods

The other presentation in focus here is on an art installation: **Pollution Pods: why we need smells to bring us down** by Lizzie Ostrom & Dr Michael Pinsky.

The big question that the Norwegian University of Science and Technology in Trondheim (NTNU) wanted to address when they approached artist Dr Michael Pinsky as part of the Climart initiative was "can problematic smells be used for good?" The problem that many climate campaigners face is that although global consumerism directly leads to extreme levels of pollution in the developing world, the consumers themselves are not directly exposed to it.

We all know that emotive images such as those depicting plastic pollution can have an effect, but it is known that the rational brain has a way of distancing the individual from visual imagery and many traditional marketing campaigns addressing environmental pollution have not been effective because of their reliance on pictures alone.

Ostrom has herself undertaken some work on the effect of prolonged exposure to specific smells (although the rather more pleasant one of lemon) and there is clear evidence that the trigeminal nerve is affected thereby

leading to a change in thought processes. Pinsky was tasked by NTNU with somehow conveying the 'smell' of specific polluted environments in order to demonstrate how the people living there might be affected by exposure to that aromascape. A good deal of work has been done on smellscapes in recent years and it is well known that places have a distinctive smell, with the local environment producing a complex combination of aromas. Pine forests, flower meadows and crashing surf on a sunny beach are all popular aromas that are 'recreated' for laundry products and air fresheners. The challenge was then to see if a far less pleasant smellscape could be recreated within a piece of art in order to provoke a change in thinking amongst consumers and decision makers in the west.

As you can see from Pinsky's sketchbook, he had numerous ideas that in theory looked incredibly promising. However, he ran into some snags, which is where he contacted Ostrom or 'Odette Toilette', to help navigate through the complex world of aromas, fragrance and perfume chemistry. Some rather obvious challenges needed to be faced: it is very challenging to transport air, and even if you could, many of the chemicals and particulates in polluted air are highly toxic and would present numerous health concerns for any visitors to the installation. In addition, PVC (which they had envisaged to construct the geodesic domes) has its own aroma, which would need to be somehow 'cancelled out'. Pinsky also wanted to replicate the heat and humidity found in the original locations to truly replicate the 'real' experience; these also affect odour quality and intensity and need to be considered in any attempt to recreate a smellscape. Ostrom approached IFF about synthesising the aromascape and also wanted to exploit Headspace analysis in order to identify specific aroma chemicals present in the polluted air to locate safe alternatives with a near identical smell.



Dr Michael Pinsky, Pollution Pods

Eventually the scents and heat/humidity of five particular locations were reconstituted in a synthetic safe way within the domes: the cleanest air from Norway, London, New Delhi, Beijing and Sao Paolo, with the last three having the poorest air quality in the world.

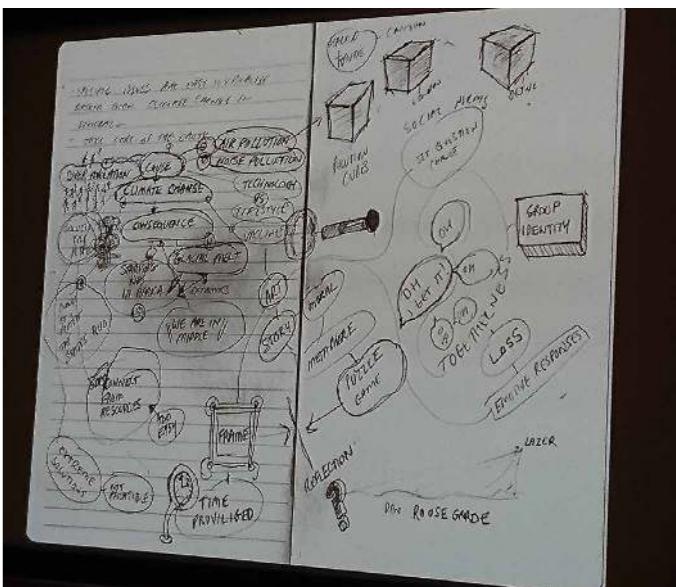
The installation was first set up in Norway, then Somerset House in London and then transported to Geneva for policy makers to experience. People could move through the domes together and discuss the aromas as they progress because specific pollution from each place had a unique fragrance also affected by the heat and humidity. IFF's fragrances were complex and along with the climatic controls within the pods, would be as representative as possible of the air people in those places had to breathe. As part of the presentation, we were given two samples to smell: Sao Paolo which had strong notes of diesel and acetic acid while Beijing had acetic acid, rotting fruit, sulphur and birch tar. The smelling strip samples we smelled had complex fragrances with many different notes, similar to a fine fragrance, but provoked a completely different set of emotions: revulsion and disgust. My immediate response was pity and to some level guilt that our own consumerism was condemning the poor souls in those polluted cities to live with such repulsive and dangerous air. I'm sure I was not alone as all of those sitting around me were discussing exactly the same set of emotions thus proving that the art work was highly effective in making us stop and think about the results of our purchases.

The lectures that I have not had a chance to discuss were by Dr Latha Velayudhan (Kings College, London), who gave a fascinating presentation on how olfaction can be used in the diagnosis and treatment of Alzheimers and a highly informative paper by Prof. Keith Wesnes (University of Exeter) and Dr Keith Moss (University of Northumbria) on aromatic herbs and how they affect cognitive function through the olfactory system. For more information on these and the papers I have written up, please contact IFRA UK.

In addition to the brilliant lectures the Fragrance Forum gave us a great opportunity to catch up with some of our students as well as promote all that ICATS has to offer to those present from across the industry. Sharon Heard and Kate Smith did a fantastic job of manning the ICATS stall and providing details of our modules to the attendees.

Thanks to Lisa Hipgrave and all at IFRA UK for your continued support and endorsement of the ICATS course as well as sourcing such excellent speakers for a fascinating day of learning. We all look forward to this Autumn's event on 15th October 2019 at the Wellcome Collection, London.

Images IFRA and Alison Green



Dr Pinsky's planning sketchbook



IFRA audience, Pollution Pod scents

# AMSTERDAM FLAVOUR TALK EXHIBITION AND CONFERENCE, MARCH 2019

MANDY BURNS

## TABLE TOP SPLENDOUR AT TWO AMAZING FLAVOUR FILLED DAYS

Everyone seems to agree that this is fast becoming THE flavour event in the annual calendar and exhibitors certainly pulled out all the stops this year.

### TABLE TALK EXHIBITION

Day one consisted of table-top exhibitions from flavour suppliers from around the world, showcasing new creations and products. Twenty eight tables graced the magnificent setting of St Olaf's Chapel and many had been turned away. In-between sessions we had the pleasure of greeting delegates who visited the ICATS stand.

Themes that tended to be constant across the table-top exhibitions were the response to the growing rise of veganism, flavours enabling the reduction of salt and sugar, issues around regulation, halal and of course cost, quality, purity, sustainability and provenance. This article includes a small selection of the products being exhibited.

Robertet, processing raw materials from over 60 countries, showcased five main flavours in the sort of stunning presentation we have come to expect from this company. The first was a rice milk – choco oning – with a sweet, creamy, powdery flavour made from beans from the Ivory coast, Ghana and Guinea and a new product, rice bran absolute made from seeds grown in France and made to enhance dishes such as fried rice with a slightly floral nuance. Next up was a sweet ambrette liquid – floral, woody and musky in its notes. The zesty tingle orange had its origin in Spain in an essential oil and produced a sweet and fresh, slightly herbal effect. They also showed a Nepal pepper with blackcurrant absolute and a spicy note.

Omega emphasised the 100% purity with full traceability, in some cases right back to a single farmer. Some of the flavours were tasted in gummy bear sweets and these included blood orange kiinote; Spanish saffron, spicy and warm; Hibiscus Juniper, trendy for low and no alcohol products; Inca Berry and Yuzu a highly prized product currently giving a mandarin/grapefruit/touch of lime effect. Basil kii note worked very well in dark chocolate and the citrusy timut pepper has been found useful to mimic alcohol.

Besmoke is fascinating specialist company that has a natural smoke manufacturing facility where no flavours are used. Everything is done with pure smoke technology to manipulate grill and umami flavour enhancements. They smoke a very wide range of ingredients including salt and oils and work to reduce the acridity of the smoke, promoting the more delicate volatiles. We tasted smoked water as a base, followed by a medium strength which gave a lighter more delicate flavour and the third was lighter still and aimed at the beverage industry e.g. whiskey, alcohol-free drinks and botanicals such as a smoky ginger ale. The company is currently sponsoring two PhD students at Reading to look further into smoke volatiles. The smokey session concluded with Hawaiian pizza flavoured crisps where the smoked effect impacts on both flavour and longevity on the palate.

Citrusmade is something very special. This is a very young company, two-years-old, but Dr Filippo Badalamenti has over 25 years of experience in the industry. The passion really comes through and you can nearly feel the Sicilian sun in their trading range of essential oils and aromas. They showcased five top quality essential oils: lemon with a high citril content, mandarin was from Palermo, blood orange oil - gorgeous with juicy, sweet notes, bergamot oil processed in Sicily and pink, sweet and juicy grapefruit from Sicily.

Capua, by contrast, has been run by the same family since 1880 in southern Italy but it stands out internationally for quality and innovation, supplying citrus to both the flavour and the fragrance sectors. The company has a strong sustainability ethos with a clutch of environmental sustainability accreditations. Most of its producers are small family farms or co-operatives and this presents a comprehensive approach to economic and social sustainability, with regional suppliers on long-term contracts with an improved level of resilience during potentially volatile times in the agricultural sector.

In summary, the 28 companies exhibiting at FlavourTalk 2019 were able to demonstrate new products to well over 50 individual buyers and industry specialists at an event that is very successful in building both knowledge and networks.



### FLAVOUR TALK CONFERENCE

Day two of the event was a conference with the theme **Flavour and Health: The Role of Flavour in Healthy Living**. The morning session was chaired by Craig Duckham, CD and R&D Consultancy Services Ltd.

Professor Andy Taylor, Project Coordinator at the European Space Agency lifted off on a fascinating trip with his talk **To Mars and Back: the role of flavour**. Historically, it has been shown that one of the key factors in any successful expedition is the food and space exploration is no exception. In our article on page 4 you can read more of the importance of nutrition and flavouring in providing physical and mental well-being on such expeditions. USA's President Trump has expressed a will to explore Mars, using the moon as a training ground for independent living and as a base for onward travel to Mars. This has triggered a NASA strategy to study the effects of microgravity, radiation and isolation in human behaviour in space and for returning to earth. The nutritional aspects are key and the European Space Agency is contributing to this global work.

A crew of six, travelling for over 32 months to Mars, would need to carry a cargo of 12 tonnes of food with a shelf life of five years. There are many unknowns including radiation levels and the ability to grow food. Much of what we do know is learned on the ISS where the air pressure is 1 bar – the same as earth. Prof Taylor referred to research, Human Adaptation to Space Flight [www.nasa.gov](http://www.nasa.gov) which looked at the energy intake of a space mission and the role of nutrition. Recent research states that astronauts on the ISS only consume 80% of the required daily calories and that most lose weight during missions, suggesting that the senses are not being stimulated in the normal way.

The questions raised are driving the research of Team 'TASTY' (Terrestrial and Space Taste Study), the European group which is studying sensory properties of space food – presentation, packaging and texture. Prof Taylor concluded that there were many challenges in space – weight, time and the limited number of astronauts concluding that 'NASA can't send humans to Mars until it gets the food right'.

**Tasty Foods for an Ageing Population – Challenges and Perspectives** was the topic addressed by Professor Wender Bredie, Head of Food Design and Consumer Behaviour at the Department of Food Science, University of Copenhagen. Professor Bredie's research suggests that from age 50 nutritional needs start to change in order for people to maintain muscle mass and bone strength but that the changes vary widely. Older people range from those who are still active and independent to those who become more incapacitated and with possible attendant problems such as loss of sensory function or difficulties in swallowing. At the far end of the spectrum are those totally dependent on nursing care. This is set against a backdrop of growth in the global 60+ population (1 billion at the moment) and the anticipated growth in those over 80 (estimated to be 1 billion by the year 2029). There is therefore, a need for food that is interesting, nutritional, attractive and appetising from a sensory perspective.

When senses change e.g. olfaction, taste or irritation, this can increase the challenges and again there can be immense variation. Olfactory impairment follows clear trends with 62.5% of 80-97 year olds exhibiting some loss as a result of a combination of physical changes in the nasal passages and changes in neuro-transmitter efficiency. It is crucial, therefore, to try and make meals more attractive to the independent elderly to encourage



early adaptation, as well as ensuring adequate nutritional intake for those dependent on care. These changes relate to flavour compensation, visual appeal, preferred meal composition and food for those with dysphagia or small appetites.

**Exploring the Neuroscience of Flavour** was the title of Pauline Foster's presentation. Foster and Brown Research Ltd work closely with Split Second Research and Foster began by stating that around 30,000 new consumer products are launched each year but 80% of them fail. She argues that innovators are getting it wrong and that neuroscience may help in encouraging companies to think of multisensory ways to influence customer perception of value, preference and appeal. Foster suggested that limitations in flavour testing panels may, in part, be to blame for high failure rates 'There are three things we do know (about testing panels). People don't always tell the truth, people don't think how they feel and people don't always do what they say'.

For her, congruence is the key; when things are congruent there is a sense of acceptance and pleasantness in the brain. By contrast, when a product is incongruent you get 'suppression' in different areas of the brain. She used packaging as an example - flavours were perceived as stronger in curved rather than straight edged glasses. Drinks in glass bottles are perceived as sweeter but drinks in plastic are perceived as fizzier. In the same way, symbols and markings can have a profound effect. In her research for Heineken it was discovered that drinks with a star on the packaging were perceived as fizzier. In a similar vein, popcorn in a red bowl was perceived as sweeter and cola in a white can was perceived as not as sweet as the traditional coke despite no difference in actual content.

Forster proposes that apparent failure of traditional sensory panels can be explained by the two decision routes we follow – implicit and explicit decision making. Implicit is a quick, ancient and emotional response whereas explicit is a more, considered, logical based

route. Current research using sensory panels focuses on the explicit decision making but loses out on the emotional, involuntary and associative responses that inform implicit decisions. Foster and Brown has devised a method of measuring implicit responses to stimuli through a quick fire response programme that could supplement product acceptance testing and would be a much cheaper alternative to FMRI scanning.

**The Little Shop of Parosmia Horrors** was the title of a very unusual presentation by Chrissie Kelly, of Ab Scent, focusing on parosmia, a term used to describe health conditions that distort the sense of smell. Smell loss affects 5% of the population and can be the result of viruses, infection, chronic rhinitis or sinusitis or head injury. For example it can be indicative of onset of Parkinson's disease 12 years before other symptoms become evident. What is probably less well known is that its effects can be long term and with serious consequences affecting not only sensory enjoyment of food, but also social and relationship interactions. Some sufferers experience severe depression or anxiety. Kelly herself has suffered for seven years from this little researched condition and likened it to bereavement with social withdrawal, safety issues e.g. the inability to smell gas and social anxiety e.g. worries about body odour. It can at times be accompanied by phantosmia, smells that are not there. Weight loss is common as some people find everything disgusting and may eat very little.

Kelly now refers to herself as an 'expert by experience' and, wanting to connect with others to share that experience, she has set up a web site and Facebook group to discuss what she describes as 'smell training'. Through this she has identified trends in what people found disgusting in food e.g. bacon (but not salami or ham), eggs (although egg whites were considered worse than yolks), coffee and foods from the onion family difficult (although onions can be acceptable if cooked or caramelised). Peanuts were often a no-no but almonds and cashews ok. Some sufferers find things like scented candles and cleaning materials impossible to tolerate. Ironically, none of the sufferers she has come across so far have any problem with poo. It is totally benign to them and actually smells biscuity!

Through the AbScent website, sufferers can take part in smell training to help to develop awareness of neural networks and other self-help strategies such as smell mindfulness and good self-care regimes.

<https://abscents.org>

#### Vaping: Two contrasting perspectives

The last two presentations of the conference addressed the potentially controversial subject of inhaling flavours. Professor David Baines, of Baines Food Consultancy

voiced the concerns of the flavours industry and of the Committee of the UK Flavour Association, thought to be reflecting a global perspective on the issue. Baines conceded that ecigarettes may be safer than actual cigarettes, but this does not mean that inhaling flavour is safe. The key issue is that flavouring substances used in ecigarettes have been toxicologically evaluated and approved but for ingestion and not for inhalation. The effects of inhalation are not yet known and there is concern that companies could be involved in litigation if there are eventual health issues associated with flavours in vaping liquids.

There is also concern about the growing number of young people possibly becoming addicted to vaping. 1 in 6 children between the ages of 11 and 18 in the UK has tried vaping and in the US the figure is 1 in 5. Fruit flavourings are the most popular followed by tobacco flavour with coffee, menthol, peppermint and cake/bakery flavours also popular. Younger consumers preferred the fruit/desert flavours, raising concerns that they are being used as a first route into cigarettes rather than a tool to stop smoking tobacco. There are thousands of flavours in use and hundreds of brands so this is a big business.

In research, some of the chemicals involved have been linked to fatal diseases, some suggesting that there could be possible consequences for airways and lungs and respiratory and immune systems. Professor Baines also made the point that some of the essential oils used, like peppermint and menthol, may include chemicals that are not regarded as safe for inhaling with possible carcinogenic effects or exposure to pesticide residues. The British Medical Journal has suggested that it is only a matter of time before any negative impacts become clearer.

Professor Baines concluded that although ecigarettes are regarded as beneficial (reducing tobacco smoking), trade bodies cannot support the use of flavourings approved for ingestion and not inhalation. Exposure through vaping is habitual rather than random, increasing any possible negative impacts and flavours and branding directed at younger users present additional concerns. In summary there is a clear need regulation and that trade bodies in the UK and US flavour industry cannot currently risk endorsing the use of flavours for inhaling.

**Arash Behmanesh of Euro Vapor Ltd** presented the view from the ecigarette industry. His company, supplies vaping liquids and is now one of the largest manufacturers of vaping liquids in the EU. Vaping, he explained, is entirely customer led and has rapidly increased in popularity from a 7m market in 2011 to an expected over £55m by 2021, representing a 19% annual increase. Many believe it is less harmful than smoking cigarettes and the two key motivators are health and cost.

Hearing the flavour organisations' reservations and concerns, he referred to research in 2016 in which it was suggested that inhalation of diacetyl was neither new nor unique to vaping, arguing that exposure was 750 times higher in smoking than vaping. Dr Marc Siegal, a Fox News Medical Analyst, had also noted that there has been an attempt to demonise vaping. There seems no doubt that there is a need for meaningful research; without it there was a void filled by sensationalism.

Behmanesh went on to consider legal concerns i.e. what happens in 30 years if a vapour is shown to cause health problems; would that lead to compensation claims? It is thought that repercussions are unlikely because vaping does not enjoy the brand loyalty of tobacco and no particular flavouring makes vaping habitual, so there is no prolonged use of a single product. In terms of regulation he considers that they fall under the General Product Safety Regulations and are compliant with the Tobacco Product Directive. As an industry they take steps to actively discourage non-smokers from taking up vaping and also to prevent under age sales, particularly through retailers (the majority of e-cigarettes are sold in vaping shops).

In his conclusion, Behmanesh acknowledged the concerns of the flavours industry but argued that, in his opinion, it was better for there to be more mutual understanding and engagement around future research and development to identify safer alternatives.

The two final presentations formed a very thought-provoking and balanced debate to conclude a day packed with topical and controversial issues for the flavour sector. The day also had fascinating presentations from Jamie Rice, Director of Marketing and Food Development at Foodtrending. [www.foodtrending.com](http://www.foodtrending.com) and Dr Rebecca Ford, Associate Professor in Sensory and Consumer Science at the University of Nottingham.



# BOOK REVIEWS

DR TONY CURTIS

## FUNDAMENTALS OF FRAGRANCE CHEMISTRY

Charles S. Sell

2019 Wiley - VCH

Paperback £65.99 ISBN 978 3 527 34577 9



Charles S. Sell

### Fundamentals of Fragrance Chemistry



For many years Charles Sell's book 'Understanding Fragrance Chemistry' has been a bedrock of required reading for serious students of Perfumery. 'Fundamentals of Fragrance Chemistry' is the successor to this book. This is more than just a new edition; it embraces new developments and issues and is set to continue to be a cornerstone for students building their knowledge and understanding of our science and industry.

As always, I find it invidious to have to select specific chapters for comment when every one is so worthy of discussion. The Editor gives me space for three samplings of this outstanding addition to our bookshelves.

I have recently become interested in photography. My favourite book on the subject is my dogeared Langford's 'Basic Photography: The guide for Serious Photographers'. This does not start with mega-pixels but on fundamental

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issues such as perspective, how images are captured and perceived etc. 50 years ago, when I started my research career in the Aroma Trades, we had nothing. We played chemical roulette and made new molecules and hoped we would hit the olfactory jackpot. Charles in a paper<sup>1</sup> explains we still are not able to odour design molecules. However, our knowledge of how we smell molecules has exploded in the 21st century. Charles provides an informed snapshot of our current state of understanding and knowledge.

In my public lectures an often-asked question is 'Do people, perceive odours in the same way?' I live dangerously in such lectures and often do a live audience experiment. You give every member of the audience a smelling strip dipped with eugenol. The question you ask is not 'Can they identify the odour' but 'What do you feel about this odour?' In the UK (if it works – this is a live

experiment!) around 50% will say they do not like it. It reminds them of Dentists. The other 50% will say they like it and it reminds them of Christmas, mulled wine, Christmas pudding and spiced apple pie. Eugenol is of course a major constituent of clove oil. This is a nature – nurture type of experiment. Here we will set aside the nurture aspect. To consider the question 'Do you smell what I smell?' Chapter 13 -The Mechanism of Olfaction explains, in an accessible way, why we do not necessarily smell a material in the same way as another person.

The chapter also investigates another experiment I have seen conducted by John Ayres in his Fragrance Creation Workshops. The way he expressed it was  $1 + 1 \neq 2$ . You give people two smelling strips of rose and jasmine. You then give them a mixture (the trick is to get the proportions right!) and the perception is not either of rose or jasmine but muguet. This is analogous to the mixing of primary colours to get the colour perception of green. 50 years ago, we had not the slightest idea why we observed this effect: just how accords work. We still do not have a complete picture but we now have some understanding of how odour receptors work (we do not all have the same set – we do not necessarily smell what others individuals smell) and the signal process in the brain of their output to perceive an overall olfactory effect. We are on our way to better understandings!

Almost every day we read of concerns about 'fake news'. A Google search will bring up a storm of hits on almost any subject you can think of. Any researcher or student needs to have a mechanism of managing this mountain of material to dig out relevant accurate information. Chapter 16: 'Chemical Information' addresses this issue. Charles signposts the more reliable peer reviewed sources. For the newcomer to Chemistry he explains how the mystical CAS Number will guide, like a laser, to specific molecular information. I particularly applaud his comment that though laser searches are fine that:

*Browsing in original journals takes time, but it is the only way for a researcher [or student] to see everything there is there and to make up their own mind on its relevance or otherwise for their work.*

Past readers of my reviews will remember I almost always end up with a plea to readers to spend a little of their precious time reading around the subject. In the end it is always rewarding to gain the broader perspective and greater insight that this brings. In a past edition of the ICATS News Letter I reviewed (on its 50th anniversary of its publication) the seminal work that ignited the green movement: Rachel Carson's 'Silent Spring'. A particular feature of her work was the meticulous attention to provide firm evidence for the [then] conventional standpoint [that persistent pesticides were a major danger to the environment]. This area is now plagued with 'fake news'. On one side we have the 'Global warming is an

invention. Let's burn as much fossil fuel as we like!' and the alarmist 'Unnecessary fragrances are polluting our world', on the other you do not need facts or evidence; you just have to shout loud enough and Twitter away! Charles brings some much-needed perspective in Chapter 17 'Towards a Sustainable Future'. This year, as we have investigated such things as registering the ICATS Trade Mark (now successfully completed), I have often been heard to say 'The devil is in the detail'. I now want to add another axiom to discourse 'The devil is in the definition!'. Do not enter into a debate until you have an agreed definition. As a Scientist I would also add 'Having defined, how do we measure?'. This chapter is an essential read for everyone concerned with the broader issues of the Aroma Trades (both Flavours and Fragrance), whatever their point of view. The chapter starts on precisely the right note with its introduction 'What is Sustainability?'. To go along with my Scientists' assertion, you have to measure and bring numbers in, I especially appreciated the observation in the section 'Synthetic Fragrance Ingredients B: Environment Impact':

*To put the industry in context the total volume of fragrance oil produced annually is about 300,000 tonnes, just enough to half-fill a super tanker, whereas trees are estimated to release 100,000 000 tonnes of isoprene into the atmosphere each year.*

To go back to Rachel Carson's critical point this would still be a major problem if fragrance materials were POPs (Persistent Organic Pollutants). Aroma materials that are found to be POPs are IFRA prohibited. To enter into a debate in this arena one must have an understanding of environmental fate and biodegradation routes. It is then possible to enter into a debate as to what are problematic materials and how the issue can be resolved. In the section 'Synthetic Fragrance Ingredients D: Finding the Balance' Charles provides a good overview. I can think of no better way to conclude this book review than with his comment in this section:

*For any activity to be sustainable, it must take into consideration economic, social and environmental factors, and it is always difficult to decide where the best balance lies between various courses of action.*

This is a student affordable book at £65.99. It is not only of value to students but with parts such as Chapter 17 it provides a good review of developing aspects of our industry that all professionals in the industry must be conversant with. I will repeat my plea to our readers – do read round the subject – it is always rewarding! To make decisions and to debate one must be informed.

1. Sell. C.S. (2006), On the unpredictability of odour. *Angew. Chem. Int. Ed.* 45 (38): 6254 – 6261

# BOOK REVIEWS

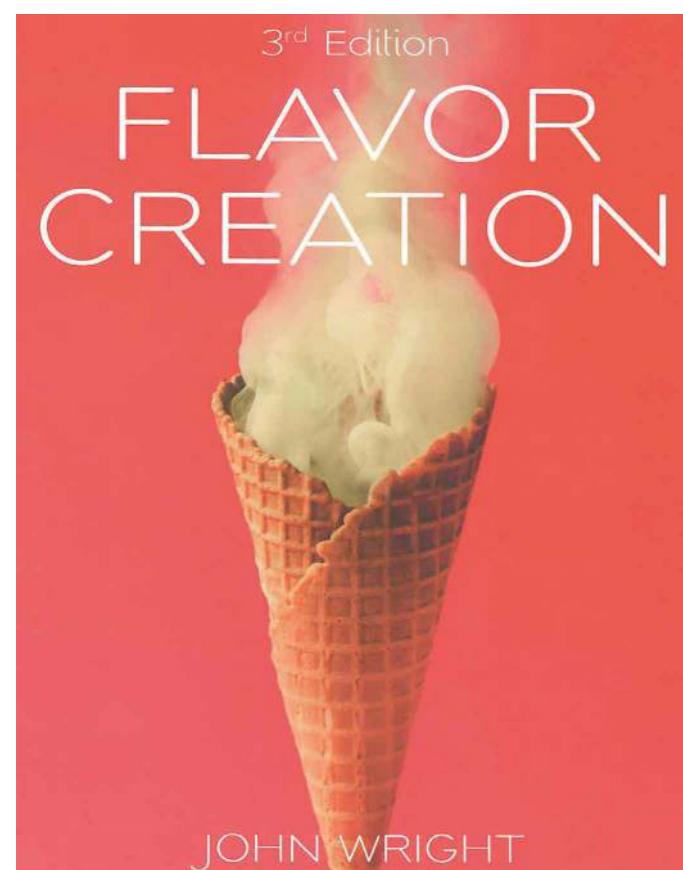
DR TONY CURTIS

## FLAVOUR CREATION (3rd Edition)

John Wright

2019 Paperback £248.44, Hardcover £272.93

ISBN 978 0 46 475183 0



Over a decade ago I was asked by IFEAT to expand the old IFEAT undergraduate Perfumery programme, not only into a postgraduate (MBA style) programme but also to embrace both the Flavour & Fragrance aspects of the Aroma Trades. This would have been an impossible task without the participation of world-renowned authors such as Brian Lawrence, John Ayres and John Wright. John Wright authored the ICATS Modules on Flavour Creation and Application of Flavours to Flavoured Products. He is the world's leading presenter on Flavour Creation and has over many years run the IFEAT Conference Workshop on Flavours. See page 6 of this News Letter where we profile this outstanding contribution to the Aroma Trades.

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I was particularly drawn to, Chapter 8: Flavour Matching. In the Perfumery area many writers discuss fragrance creation. Very few discuss the matching brief such as: 'Can we have something like Chanel 5 but that works in white soap'. There is an old saying that 'A little knowledge is dangerous.' Too often people with superficial knowledge think all you have to do is a GC – MS run and the computer will print out the appropriate formula. There is too much 'fake news' about how AI (artificial intelligence) and 'expert computer systems' will replace the creative process. Well we are not there yet! You find citral in a flavour. Is it added natural citral (isolated from an essential oil), is it a component from a whole oil used in the formulation or

from synthetic citral? The raw GC – MS print out will not give you the answer. Matching (flavour or perfumery) is a forensic process with a lot of creativity (plus a lot of practical experience!). John is disarmingly honest about the 'political' flavour matching request. In discussing the short deadline matching brief John writes:

*The short deadline is the clue. In all too many instances the matching request was simply a means of pressuring the existing supplier on price and would never have resulted in a sale.*

This is not just an academic treatise, although it is academically rigorous. There is a lifetime of hard practical experience in flavours between its covers. Too often the inexperienced will see a brief in technical terms. After all, the stability and applications issues are challenging enough! There are always the political and commercial contexts to consider as well. In the last edition of the ICATS News Letter we reviewed 'FOOD INDUSTRY R&D: A New Approach' which also covered the political dimensions of NPD (new product development). Another welcome and essential section is Chapter 12: Legislation. Most of the fashion press provide exciting cover to fragrance creation and never give any cover to regulatory affairs. You can do much as you like on an oil painting. There is no amount of blue colour you can't use, if you want! Flavours and fragrances are not like that. Not a hint of IFRA recommendations in the tabloid press for perfumes. Much of my lecturing at University was in International Marketing. My practical experience came from 25 years of working in the Aroma Trades with its global consumer markets and supply chains. John gets stuck in on the very first page of this chapter. What is safe and legal? Well it all depends (of course) as you might expect. An LD50 is an LD50. There should be no problem about a simple set of global regulations to govern food safety and flavours. Dream on! In just on 20 pages he gives a vivid personal overview of its nature and complexity. For readers not familiar with this quagmire of regulation I think John's comment on the AFT regulations sum things up nicely:

*AFT Regulations: As if things were not complicated enough, flavours for alcoholic drinks are regulated in the United States by the Bureau of Alcohol, Tobacco, Firearms and Explosives (AFT).*

Well of course just what you expect! I managed BBA's UK Formulation Control Unit for some time. We had, even over 25 years ago, two people full time to check formulations and advise customers about local safety and labelling requirements. Natural, organic and sustainable were not the major issues, reflected in complex legislation, that they are now. After all you do not want to confuse your WONF (with other natural flavours) with your GRAS (generally recognized as safe) regulations. Elsewhere in this News Letter I have said the 'Devil is in the detail'. Recently ICATS had to check-

out a UK VAT (value added tax) issue. The expert we consulted cheerfully said they would consult this year's UK Government guidance notes – these run to over 10,000 pages! In ICATS we do believe people should, be financially literate. It is not possible for them to be expert in taxation issues in, even just one country, it is a full-time role. It is the same for safety and regulatory affairs, the practising Aroma Trades professional must have a sound overview to talk to the experts and to intelligently use the available computer systems that allow the efficient and effective management of this labyrinth of complexity. After the heavy but necessary coverage of regulations Chapter 13 Elysium is a joy. This is the capstone of this monumental work (all 449 pages). Here John provides a 50-year perspective of the past with a pointer to the future, with great care not to be nostalgic. A CIM (Chartered Institute of Marketing) exam question was to invite students to discuss the difference between a Product led company and a Marketing led company. What should the driving force be? Over an enthralling few pages of focused comment he wittily and insightfully considers some of the driving forces: Creative, Applications, Research, Operations, Finance, Marketing or Sales. This is just a warm-up to considering the types CEO (Chief Executive Officer) aspects: Visionary Leader, The Next Bright Idea, The Launch Question, The Common Touch, The Hair Shirt, Team Building, The Sharp End, Industry Experience, Silver Bullet, Restructuring, Flavourists are People Too and Fixed Idea.

*It is odd how many times the words 'Silver Bullet' come up in conversation. Silver bullets are especially attractive tools for CEOs to ward off questions from their directorial boards. They sound good and the details are often close to incomprehensible, which suits all involved.*

This book is a suitable testament to a lifetime of experience in the industry. I well remember in 1969 the publication of Steffen Arctander's Perfume and Flavour Chemicals (Aroma Chemicals). This was expensive but many Perfumers and Flavourists purchased a copy to have close to the right hand when creating flavours or fragrances. After 50 years of use my copy is starting to disintegrate. I feel this too will be a 'Must have personal copy' for Senior Flavourists. Every laboratory engaged in making flavour materials, creating flavours or using flavours should have a copy of this book. John has not only brought his vast knowledge and experience to this publication but also his effervescent enthusiasm for the topic. This is not a bedtime read, but an essential reference source to all professionals in the flavour area of the Aroma Trades.



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