

# Newsletter

June 2005

Welcome to the latest edition of the IGIS newsletter. On 9th June, IGIS sponsored an evening event, the New Frontiers of Taste, held as part of the Cheltenham Festival of Science. This newsletter provides an outline of the event summarising topics discussed and the public's response.

## Cheltenham Festival of Science

The Cheltenham Festival of Science is the largest annual public science festival in Britain. The Festival seeks to respond to the public's interest in scientific issues and features a wide range of attractions designed to appeal to every age group. Consisting of a five day programme, it involves a total of 75 events and attracts more than 27,000 visitors every year. Further information relating to the festival can be found at:

<http://www.cheltenhamfestivals.org.uk>

## New Frontiers of Taste

As part of a programme to disseminate information about umami, IGIS in association with the Umami Information Center, sponsored an evening 'New Frontiers of Taste'. Held in the Pittville Pump Room (see picture below), the event was targeted at the general public and aimed to build awareness and create positive coverage surrounding umami and glutamate.



Led by Kathy Sykes, the event featured a panel of leading taste and food experts including: Chef and owner of the recently nominated 'best restaurant in the world' Heston Blumenthal; Head chef of London's Umu restaurant, Ichiro Kubota; BBC TV presenter and food writer, Stefan Gates; Professor in Experimental Psychology, Edmund Rolls and a team of sake specialists, Isake. With such a diverse panel of experts the aim of the evening was to explore the science of taste, with each panellist discussing their experience of umami.

## The Bento Box

To create an interactive event each audience member was provided with a Japanese-style bento box (see below). The box contained six containers

with tasting samples that were used throughout the evening to illustrate the



panellists' discussions. The tastings proved to be a highlight of the evening allowing the audience to experience new taste sensations whilst introducing them to the concept of umami. The contents of the boxes included: jelly beans, a kombu candy, a dish of bonito flakes, cucumber and ponzu sauce, sun-dried tomato, Parmesan cheese and two sweets courtesy of Heston Blumenthal.

## Dashi Demonstration

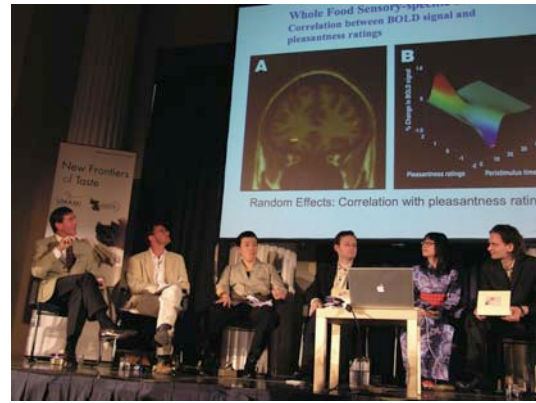
During pre-event drinks, Ichiro Kubota provided the arriving audience with a dashi demonstration. Ingredients used in the preparation of the stock were laid out on the

table for the public to examine. The informal master class provided the perfect opportunity to ask the head Chef questions about the dish and the foreign-looking ingredients.



### An Introduction from Kathy Sykes

Welcoming the audience, Kathy began with an experiment to demonstrate the effect that our senses have on our perception of flavour. She asked the audience to hold their nose whilst eating a jellybean, then to eat one with their nose uncovered. When eating the second sweet the audience experienced a burst of flavour, Kathy explained how this showed the importance that not just our sense of taste, but also our sense of smell has on the way we perceive the flavour of food. Kathy also provided the audience with their first experience of umami by inviting them to eat a kombu candy, which contains a high concentration of umami. An extremely foreign taste for Westerners, the candy was not hugely popular. However, it did provide an effective method for demonstrating the essence of umami.



### The Science from Professor Edmund Rolls

Focusing on the latest research into pleasant taste representations in the human brain, Professor Rolls described how cognitive states can influence the brain's reaction to odours. In one of the experiments an odour (isovaleric acid) was delivered to a number of subjects, sometimes labelled as 'cheddar cheese' and other times as 'body odour'. Results showed that how the odour was described produced different reactions in the section of the brain where pleasure is represented. Rolls used this experiment to demonstrate the influence that descriptions of foods and, potentially, contextual settings can have on a person's appreciation of food. He described further research showing that the pleasantness of the taste of umami is represented in the brain's orbitofrontal (secondary) taste cortex and that the taste of glutamate (umami) plays an important role in influencing our appetite and satiety. According to Rolls we find the umami taste to be pleasant when we are hungry, however this lessens as we become full to the point of satiety, when we no longer find it as appetizing.

### The Cynic's View - Stefan Gates

Stefan Gates represented the more cynical point of view. Stating that he found it difficult to identify umami as a distinct, separate taste. Stefan recounted one quest to experience umami in Japan. Taking a piece of the finest blue fin tuna, he then marinated it with other umami-rich seasonings, including bonito flakes and soy sauce. Stefan pointed out that this failed to enhance the flavour of the tuna and only succeeded in



making the dish taste salty. At this point, the other panellists interjected to point out that the creation of an umami based dish depends on a delicate balance of flavours. Umami cannot be used in too large a quantity, as it will then cease to be appetizing.

Stefan then moved on to explore a number of food myths, discussing recent research carried out into people's reactions to various foods.

### Kyoto Cuisine

The third panellist was Ichiro Kubota, head Chef of London's first restaurant offering Kyoto



style cuisine. Kubota explained how umami is essential to his cooking. He pointed out that we are first exposed to the taste as infants with mother's breast milk rich in

umami. Therefore, the fifth taste plays an essential role in the development of our palates influencing what we find appetizing. Kubota provided a brief master class on dashi, explaining about each of the umami rich ingredients (kombu, dried shiitake mushrooms and niboshi). He stressed that the amount of umami in the dish is key to ensuring that the overall flavour is balanced. To illustrate his talk, Kubota invited the audience to mix bonito flakes, ponzu sauce and cucumber, each of which were supplied in the bento boxes, to allow them to experience a real umami hit. Finally, to demonstrate that umami is not confined to Japanese food, the audience were asked to try some Parmesan cheese and sun-



dried tomatoes from their tasting samples both of which represent familiar tastes and are naturally rich in umami.



### Food and Sake Pairing

Isake is a company, founded by Kumiko Ohta, Xavier Chapelou and Jean-Louis Naveilhan, which promotes premium sake. The trio explained how understanding the science behind the drink allows the perfect food and sake pairing. It was explained, that throughout the production process the content of amino acids including glutamate and nucleotides increases. When paired with umami-rich food, the nucleotides then combine with the glutamate in the food to produce a synergistic umami effect. This explains why eating foods such as veal, tuna, tomatoes and cheese when drinking sake produces a perfect combination of flavours. After the event Isake demonstrated the powerful combination of sake and food. By inviting the audience to taste some premium sake, before eating a piece of chocolate. Jean-Louis explained "the amino acids present in the sake reveal the true taste of the chocolate, and bring out the delicate flavour."



### The Future of Food with Heston Blumenthal

An evening that discussed the science of food was appropriately concluded by the master of molecular gastronomy - Heston Blumenthal. On the subject of umami, Heston explained that MSG is in fact umami in its purest form. He pointed out that there tends to be an

unwarranted negative perception of monosodium glutamate and explained to the audience that umami is also naturally present in many foods. Heston mentioned that although the term umami may not be fully understood by those outside Japan we very often choose foods that are naturally high in umami such as pizza with cheese and tomatoes.

Providing a glimpse into the future of food, Heston predicted, "in a few years time you'll be able to go into a hotel room, and press a button and change the colour of the room, or the smell, to suit your mood." According to Heston, the future will involve multi-sensory stimulation. He described recent research into contextual eating,



pointing out how food eaten on holiday never tastes the same when consumed back home. This leads to the idea that it's not just the taste of food which influences the pleasure we gain from it - it is important to take into account the factors that influence all our senses at a certain moment in time. In the future, Heston considered, it may be possible to create meals that not only stimulate our sense of taste, but also our other senses, thereby creating an even more pleasurable dining experience. Then, Heston invited the audience to try the final tasting in their bento boxes - two sweets that he created. The first sweet was beetroot flavour, whereas the second, Heston pointed out, was identical except for the addition of tartaric acid. This simple addition flipped the flavour

from beetroot to blackcurrant. Heston used this tasting to illustrate how knowledge of the science



behind food can open our eyes to entirely new possibilities.

## Feedback

More than 250 people attended the event. The evening was primarily targeted at the general public, but the audience also included food and science professionals and members of the media. The majority of the audience arrived with very little or no knowledge of umami. Everyone who attended was provided with a questionnaire so that they could provide feedback on the event. The response was extremely positive with many feeling that the evening had broadened their knowledge of science and food and opened their minds to new taste sensations. The overwhelming feeling was that further information on this subject would be greatly received!



The event provided an excellent opportunity to educate the public and create some extremely positive media coverage about umami.