

Active Ingredients Conference
Palais de Congr s, Paris
17th-18th June 2003.

Anthony C. Dweck

Personal Care Magazine 4, 3, p.47-49. Paris perspectives on Naturals

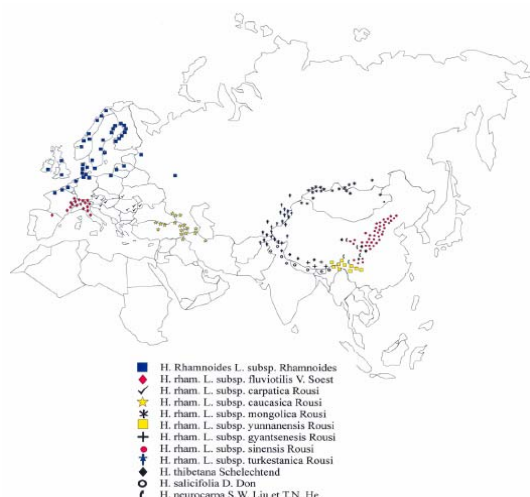
It was a hot Paris that provided the venue for the 4th Active Ingredients Conference in the newly refurbished Palais de Congr s.

Tuesday 17th June 2003

The conference was opened by Anthony Dweck who set the scene for the coming two days. It was a time to look at foreign cultures, ethnopharmacy, ethnobotany and the ethnic way in which plants are used. It was also a time to look at consumer perceptions and it was important to look at areas outside of our industry like botanic gardens such as the new venture in Cornwall – the Eden Project – for ideas and understanding of the consumers’ connection with naturals. The role and direction of some companies selling in the natural’s market was invited and the perception and definition of the natural concept was also important. During the next two days we should examine some new materials that have come onto the market, look at methods of producing them, analysing them and reviewing their efficacy. He said “at the end of the two days the person attending should go away with at least two if not a lot more ideas for the future of their product developments.

The keynote speaker was the eminent Head of Centre of the School of Pharmacy, University of London, Prof Michael Heinrich who shared one of his experiences relating to the investigation of the medicinal plants used in Mexico. He very quickly demonstrated with his superb slides, this was not the glamorous picture painted by the session’s chairman. It was often a rough and dirty ride into the wilds of the rain forest in order to find this knowledge and on arrival one had the uphill struggle to gain trust and establish lines of communication. The conversion of some tribes to Christianity meant that their healing art was branded as evil and the knowledge was no longer passed down or even spoken about. As time passes, so more and more of the knowledge is lost.

Chemilab Essor who represent Southern Cross Botanicals told of their new sandalwood oil that was being derived from the Australian source of this timber. In an



interesting presentation they showed that this oil shared the same properties of the Indian variety that was now in short supply. Southern Cross Botanicals are attempting to supply a sustainable source of the heartwood timber from which this oil is extracted.

Dr. Baoru Yang gave a very interesting paper on the effects of Sea Buckthorn oil which grows from China in the Far East,

through Mongolia and round the Russian Steppes into Finland where Aromtech are based.

She reviewed the classic uses of the plant in the regions where it grew – the properties included: promote wound healing, regeneration of skin, to reduce inflammation, improve blood circulation, treat sputum and cough, improve digestion and to treat gynaecological disorders. The critical CO₂ material had been studied in modern times for atopic eczema and as an analgesic in skin irritations and complaints.

The author presented a paper on ways to protect the skin from the effects of ageing and ways in which skin damage could be repaired. This paper was published in last month's edition of Personal Care Magazine.

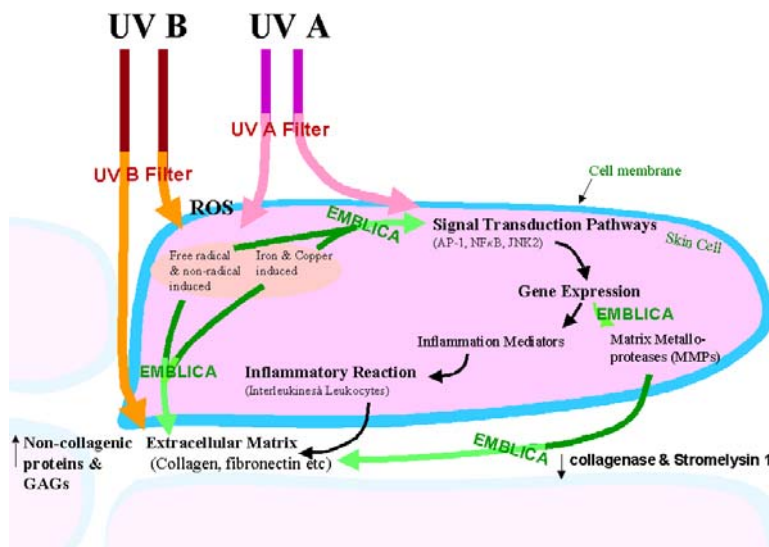
Patricia Burtin of CEVA (Centre d'Etudes et de Valorisation des Algues) in France gave a fascinating paper on the various coloured seaweeds. The unsaponifiable fraction was investigated as a source of antioxidants and found to contain carotenoids, tocopherol, phytosterols, triterpenes, fucoxanthin and lutein to name but a few. A fascinating and useful mix was obtained when the four chosen species were blended together.

The final paper of the morning was one that I had seen as a poster in the IFSCC Congress in Edinburgh last year. It should have been accepted as a paper, but maybe there was less interest in innovative botanicals amongst the selectors. The loss to one conference was the gain to ours and this was a very well crafted and delivered paper. The paper explained the role of nitric oxide in the blood system, the functions of other globins in the human body and went on to discuss a plant derived globin called Leghemoglobin. The presentation discussed how symbiotic nodules were formed on the roots of these leguminous plants by anaerobic bacteria present in the soil. These anaerobic bacteria limit oxygen and reactive oxygen species (ROS) inside the symbiosomes. The new material isolated from these nodules is called Glycine max (Soybean) Symbiosome Lysate and was found to be a potent free-radical scavenger in anti-aging and anti-stress cosmetic lines. It was said "the control of nitric oxide free radicals can lead to amelioration of the damage that can occur when these free radicals build up in the skin".

After lunch, Prof Enzo Berardesca talked on the subject of antioxidants and free radical scavengers for the protection of the skin. He referred to the studies carried out by himself and Dr. G. Primavera using α -lipoic acid (a material that occurs naturally, but in this case was synthetically produced). They proved that ROS (Reactive Oxygen Species) can have a role in stratum corneum damage during experimental contact irritation and that powerful antioxidants (like lipoic acid) can be helpful in protecting the skin from environmental insults.

There was a good deal to be said about meeting old friends at the Active Ingredients Conference because many of the Italian contingent who came to Paris had been at the Nutri-Cosme-Ceutical conference organised in Rome last year (February 2002) by Prof. Morganti.

Indeed, after my own paper in Rome, I had the great pleasure to be the moderator for the next speaker who was Dr Ratan Chaudhuri. To have me moderate your paper once



is bad enough, but to have it happen twice is just bad luck! Ratan had considerably increased our knowledge of *Phyllanthus emblica* or *Emblica officinalis* since his presentation in Rome. Dr Chaudhuri showed that photoaging of the skin is a complex biologic process affecting various layers of the skin with major changes seen in the connective tissue of the dermis. The natural shift

toward a more pro-oxidant state in intrinsically aged skin can be significantly enhanced following UV-irradiation. He demonstrated that Emblica has been shown to reduce UV-induced erythema and has excellent free-radical quenching ability, chelating ability to iron and copper and no pro-oxidation activity as well as MMP-1 and MMP-3 inhibitory activity. Possibly, Emblica interferes UV/ROS initiated signal transduction pathways of matrix metalloprotease induction. A stolen slide from his presentation shows graphically how this process is represented. A properly constituted *Phyllanthus emblica* extract (Emblica) may provide great value as a stand alone photoprotective agent or when used in combination with sunscreens for skin care products of the future.

To take us up to tea, we were delighted to invite another good friend to the lectern in the form of Dr Karl Lintner of Sederma. This was a most fascinating lecture and described how a bacterium was collected from a most unpleasant and toxic environment close to a sulfurous and heavy metal toxin-rich underwater hot geyser or hydrothermal vent. The activity of the *Thermus thermophilus* ferment (TTF), consisted of thermostable antioxidant and detoxifying enzymes, and also had cell differentiation stimulating activity (involucrin, ceramide production) via energy processing (ATP synthesis). It represented a novel approach to improving the epidermal structural integrity and functionality. To protect the skin against environmental aggression and to insure its moisture retaining capacity, it was now possible to stimulate the endogenous mechanisms that prevent and repair damage, in addition to supplying topically administered ceramides, antioxidants, biomimetic enzymes and other active ingredients. An important step in autogenous skin care has now been achieved.

After tea, Nicole Beyer from Merck took the stand and told us how they had investigated a material found in the harsh salt desert regions and extracted a material called ectoin. They had investigated the effect of Ectoin on the UVA-induced signaling cascade from the cell membrane to the expression of skin-related pro-inflammatory genes and found a protective influence of Ectoin against UVA-induced mitochondrial DNA damage. It also had benefits in terms of protection of the skin's

immune system and reduced the formation of sunburn cells and also reduced damage of DNA under UV stress.

Dr. Jean-Luc Contet-Audonneau from Laboratoires Sérobiologique gave a paper entitled “A new concept for an active ingredient against skin aging”, which described the effect of an Indian material called *Vigna aconitifolia* on the protection of the skin. *Vigna aconitifolia* extract presented a high potential to protect human skin cells from aging and this potential could be mediated by a booster activity on cell metabolism. This active extract could prevent apoptotic cell lesions and provided an anti-aging effect against deprivation of growth factors to keratinocytes and fibroblasts and so stimulated skin regeneration.

Claude Dal Farra of the Vincience Research Center looked at a Date Palm extract which offered the quintessence of the fruit of *Phoenix dactylifera*: seven compounds with regenerative, anti-oxidizing, firming, and soothing properties, extracted from the kernel: phytosterols, phytosteroids, ursolic acid, isoflavones, policosonols, pro-vitamin A and vitamin E. This extract is rich in phytohormones, and in studies they investigated the anti-aging properties of Date Palm kernel extract in comparison with DHEA. They evaluated the anti-wrinkle effect of Date Palm kernel extract by performing both a double-blind clinical study on the wrinkles of the eye area, and a comparative study with DHEA on *ex vivo* skin.

It was concluded from the first day that the conference had shown how the study of plants from around the world could tackle the problems experienced by all of us as we aged and were exposed to the sun and everyday life.

Wednesday 18th June 2003

The chairman for the day was Dr Ratan Chaudhuri, who with superb efficiency and temporal precision guided us through the day with confident ease.

The keynote speech for the day was provided by Sue Minter, who formerly was the Curator of the Chelsea Physic Garden in London and who had taken up a new position at the Eden Project in Cornwall. She showed us how this new venture built in an old china clay pit had captured the imagination of the public and made this one of the most successful ventures of the Millenium. The problem was all about connecting, because people do not connect with the natural things around them any more – they are there for us, but we do not need to know how or why they are there! The re-connection for people has been a success. When the public visit the gardens they see the plants they are now in context, whether it be an example of growing, or a method of harvesting, or a method of conversion to something the people would recognise in their foodstore or pharmacy. It was a wonderfully illustrated lecture and I for one have been given an invitation to visit and contribute which I shall be following up in August.

Mrs Susan Curtis of Neal's Yard Remedies gave an interesting insight into their business and how they were seeking to make the products more natural, safer and as kind to the environment as possible. They were striving to be organic and to be at the leading edge of the “green” movement. This involved looking for natural preservatives and Pauline Hillie had done some excellent work in this area that was helping to take their business forward.

A very good friend of mine, Anna Gwilt of Primavera Aromatherapy Products had kindly allowed herself to be pressurised into giving a paper. It was a delight to hear about the early days of aromatherapy and the pioneering days of the work done on essential oils. The chests of the French delegates positively swelled with pride as we heard about Dr Jean Valnet and the two Frenchwomen, Micheline Arcier and Danielle Ryman, who were both trained by an Austrian biochemist the late Margeurite Maury. Anna herself studied under Micheline Arcier with Pierre Franchomme and Dr Daniel Penoel were the early educators in this emerging field of essential oils. The size, shape and electrical charge of aromatic molecules dictate their behaviour and function. From study of the molecular make up their pharmacological action, predictions and treatment protocols can be devised.

After tea and a superb start to our second day, we were treated to another well-known colleague and icon of our industry – Dr. Pierfrancesco Morganti, who is always a delight to meet and listen to speak. He gave two papers, because sadly Prof. Giuseppe Salvatore was unavoidably detained on another matter. However, Pierfrancesco made sure we had a picture to see of him in the presentation! The first talk was about market sizes and the growth of the naturals sector. It was also about the definition of naturals and later raised many questions about who is running our industry in Europe. Clearly, the inclusion of a whisper of an extract in our product does not constitute natural. We need to agree a figure of 90-95% for a product to be considered legally natural. This makes a good starting point for discussion and I ask readers to remember where they first saw this statement. Moreover the development of these *natural cosmetics* has to be focused on its real effect and performance, health safety being its central concern. This means that only safe raw material and active ingredients has to be utilized. Finally they must be environment-friendly.

The paper from Prof Salvatore dictated the main herb used must contain substances which are functional in cosmetics. They must be contained in adequate quantities also in their extracts; the solvent and process (according to cases referred to by ratio Extracts/Crude Drug, E/D, or Solvent/Crude Drug, S/D) must be suitable in order to dissolve the active ingredients (or the phytocomplex) and obtain an extract that can be practically used (tincture; fluid, soft or dry watery or hydroalcoholic extracts; generic glycolic, butyl or greasy extracts; supercritical extracts); the prepared extract must be chemically characterized and standardized in order to meet specific requirements for a constant chemical composition, a chemical and microbiological purity and stability to be used in large quantities for phytocosmetic preparations.

To take us into lunch we had a paper that described the latest range from Alban Muller based on organically grown tomato, cucumber, carrot, eggplant, lettuce and sweet green pepper.

The first lecture of the afternoon was about a soy derived lecithin derivative or phospholipid Isocell[®] Slim (a patented mixture of caffeine carefully combined with phospholipids and a salicylic acid salt). The Isocell[®] Slim concept made it possible to stabilize and dissolve caffeine in aqueous solutions, even at 5% concentrations, without adding alcohol, giving an optimum cutaneous absorption rate without drying out the skin. Tests showed many physiological benefits of phospholipids. They combined hydrating, restructuring and soothing properties. Moreover, they were well known as penetration enhancers.

Dr Giancarlo Guglielmini of Sinerga described Potassium Caproyl Tyrosine which is a water soluble material that is used where a tan magnifying effect is required with significant efficacy. He described in detail the tests that had been carried out to substantiate the enhancement of tanning enhancement claims made for this product.

Indena were represented by another long standing colleague Dr Aldo Cristoni who gave an interesting paper on plant materials that had effect on venous blood flow and the capillary blood flow in connective tissue. The well-known *Aesculus hippocastanum* and *Ruscus aculeatus* were described, but surprisingly he also mentioned *Centella asiatica* a plant not so often associated with anti-oedema and reduction in tissue swelling through water retention. It was shown to reduce venous insufficiency, improve the reduction of wrinkles and depth of wrinkles. In another surprise Dr Cristoni showed that esculin – a component of Horse Chestnut increased the capillary perfusion and therefore was useful in a number of hair loss conditions and would influence the anagen-catagen-telogen-dystrophic anagen cycle associated with hair thinning and loss. Proanthocyanidin a potent antioxidant was also present in Horse Chestnut and had skin benefits that were demonstrated through a number of human studies. This was a huge paper and sadly there was no time for questions.

In the final session, we had a fine concluding set of speakers.

John Whitehead of the Botanical Extract Consultancy told us of the extraction pitfalls and techniques involved in extraction – it is amazing how often we take these things for granted and forget what problems can occur if the plant is not extracted properly and carefully.

Dr Pierre Bernard-Savary of Club de CCM made me realise just how far thin layer chromatography had progressed since my early days of producing the worst plates ever seen in a laboratory (10% success rate at best!). This paper was beautifully illustrated, packed with excellent information, completely lucid and delivered in a fascinating presentation that ran to the minute.

The final paper was given by Dr Werner Voss of Dermatest, who brought us all back to earth from our dreams of perfect natural products and who expertly pointed out that plants can be just as irritant and allergenic as any other chemical composition. He showed us exactly the reactions that plant materials could induce in some patients and it was a useful but sad jolt to bring caution and reality back to what had been a dream of a conference.

There is no doubt that this was an excellent conference. The plethora and diversity of papers left us all thunderstruck and inspired – there could be no delegate or participant who could not have taken home at least a few wonderful ideas for the future.