

CTPA ANNUAL CONFERENCE NOTES
ARE YOUR PRODUCTS ENVIRONMENTALLY FRIENDLY

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Introduction

Welcome to you from the year 2296, through the use of sophisticated technology we have developed mental telepathy that can span back through time, and so I am able to speak to you through the one you call the fat git! However, I must say that using this receiver is a bit like putting digital Nicam stereo through an old and defective deaf aid. I will endeavour to do the best that I can.

Today I am going to address the question of whether your products were environmentally friendly. The answer is that they were not, nor was your culture, nor was your whole attitude to the planet. You raped and pillaged the earth of all its assets, polluting and dumping as you went, your "if in doubt throw it out" policy was criminal. You spent or should I say you squandered, the family silver and for that I have been asked by our esteemed President, the All-Seeing One, Master of West and East, ruler of all Continents and lands except Tonga and the Isle of Wight to curse you. This I will do later with pleasure.

Wasteful people bear a social stigma, just like smokers did in your day. Even the meat eaters are outcasts, because breeding of livestock places a huge burden on our arable land and causes shortages of staple grain foods. The land shortage is so great these days and fuel in such short supply, that all of us now plant our gardens out to fruit and vegetables, if we want to supplement those little luxuries. We dig for victory every day.

The keeping of cats and dogs is considered a selfish and eccentric occupation in our time. The amount of food fed to those animals would have easily sustained much of the third world with valuable nutrition and yet you encouraged them to proliferate and even foul the very streets that you walked down. You are indeed a very strange era of people.

Your industry was not the main offender, in fact we look back on the history of the cosmetic and toiletry industry and the way in which it was used as a scapegoat to ignore the larger industrial issues with mild amusement.

Incidentally, you might like to know what happened to your industry over the few hundred years since this conference. The MCA took over shortly after the 23rd Amendment to the Cosmetic Products Safety Act in 2014. All products now come under the Medicines Act, and that includes herbal products, toothpastes, dietary

supplements and vitamins, sun products and even colour cosmetics. All manufacturers require a Manufacturing License, Warehousing License and all products require a Marketing Authorisation, although they did create a new category for non-physiological products. This was excellent for the quality of the industry, but a very large number of smaller companies went under.

It now takes about five years to launch a new product, which means that cosmetics as a fashion accessory no longer exists. This is not really a problem for us, because **fashion** does not exist any more, since the need for durability and reliability has meant that clothes need to be more functional and last longer. Looking at fatty here, I could almost believe that he is one of us - no fashion sense at all and everything wearing out very nicely.

Fuel and Propellants

The government encouraged you to remove chlorofluoro hydrocarbons from your aerosols, but you did little or nothing to remove them from refrigerators, and air conditioning units. The joke was made even funnier by putting in butane as a replacement propellant. We swapped the hole in the ozone layer for global warming and the hotter the planet became, the more air conditioning we put in and the more the ozone layer was depleted over the years. No consideration was given to the cattle production of methane, which made aerosol tonnages of VOCs look insignificant.

If we need to spray a product in our time, then we use pump sprays. We managed to perfect the use of compressed air or nitrogen using differential pressure valves, which compensated for the pressure loss as the propellant was used up. Mechanical dispersion was never going to be as good as the true aerosol, but like everything else, we had to get used to them.

Today we are using hydrogen and ethanol as our main source of chemical power. We use water as a source of energy wherever we can, and we now grow sugar beet and sugar cane in vast profusion in order to produce the alcohol we need. The use of windmills has also grown to harness the energy of nature, but solar cells have remained an expensive option apart from use in low power equipment such as computers.

In parts of the world, where large tidal differences are found (such as Jersey, which has a fall as high as 40 feet) we do harness this energy quite efficiently.

The Japanese in the closing stages of World War 2 extracted an aviation fuel from pine oil, we re-evaluated this process and greatly improved it to provide an acceptable fuel for commercial flights today, using managed pine forests.

We also admired your capability in some parts of the world to exploit raw materials to their fullest potential, for example the rebuilding of old army lorries' chassies to provide buses after the second world war gave another 50 years of continued use. The use of horse drawn carriages to provide taxi services.

We look back at your history with both distress and contempt, how could you design things with built in obsolescence such as freezers, cars and electrical goods or produce items that could only be used only once, such as the throw away camera, the pump dispenser with no refill pack, disposable nappies and even something as mundane as a shopping bag.

Plastics and Packaging

Plastics are in very short supply, and we have had to work hard to find natural alternatives. It turned out that the answer was lying on our beaches, since seaweed was found to be a source of polymer that could be modified to provide a plastic substitute. It is not very durable, but then we do not want it to last for more than a few years, after which time it breaks down into useful compost anyway. We find it unbelievable that you could burn plastics simply to get rid of them, yet at the same time produce more to replace what you have carefully collected, transported and destroyed!

Glass is vigorously recycled, it is a legal offence not to recycle, besides your neighbours would never speak to you if you did not. Basically, glass comes in two colours, the low quality sludge green and the tinted clear that we use for windows. Optical quality glass is very expensive. Most of our foam baths are sold in the sludge green bottles, but the use of refill packs is considerably cheaper. These packs are made from recycled paper, lacquered with a shellac polymer or nitrocellulose resin that was developed towards the end of your millennium.

Paper

It has taken us the last two hundred years to replant and replace the trees that were stripped for fuel, building, boat making and paper production. It has been a long and bitter battle with the then developing countries to replant the trees and forests torn out and burnt to provide grazing land.

All trees are now protected, and any tree that is lost in paper production has already been grown and replaced in a managed estate for the purpose. This has had enormous benefit to the atmosphere, since trees, as you well know, take in carbon dioxide and breath out oxygen, which has done wonders to reduce the greenhouse effect and global warming. In your time, you would have added Kaolin to the pulp to make the finest photographic reproduction printing paper, we now incorporate large quantities of *Equisetum arvense* or Horsetail to provide organic silica.

Papyrus (*Cyperus papyrus*) has also been cultivated in huge quantities, this has two benefits, it removes impurities from the water, as do most reeds or species of *Phragmites*, and also provides a good quality and very durable paper, not dissimilar in quality to the artists' rag paper. It is also faster growing than conventional wood sources. The further cleansing of water courses has been improved by the introduction of selectively bred water snails

We have also started to harvest cotton (*Gossypium herbaceum*) and kapok (*Chorisia speciosa*) as a source of fibre that can be used for packing and protecting our goods in transit, as well as providing a source of insulating fibre.

Closures

We have gone back to using corks in glass bottles for our liquid preparations, since we can easily replace this resource, and we now sustain vast plantations of cork trees. We even looked at reintroducing the old lemonade bottles with the glass ball stoppers, but decided that the old quart flagons with the rubber stoppers were more practical. We have money back on the return of all our bottles again, as we do for all aluminium cans for both of which a surcharge is levied at the time of purchase.

Raw Materials

And what of the raw materials used in those products. Well as would be expected from the disappearance of our fossil fuels, we have had to rely heavily on plant based sources of raw materials. I have already talked about the production of alcohol, now I will discuss the production of other materials such as oils, waxes, emulsifiers, preservatives and other essential ingredients.

Fortunately, we discovered a number of very valuable plants in some remote areas of the world, particularly in the South American rainforests and in the tropical regions of Vietnam and Malaysia. Needless to say, those early discoveries were drug plants, but it made the local governments realise that the resource that they were tearing down and burning was exceedingly more valuable than the arable

land they were uncovering (which lasted only a few years anyway, before it was eroded and washed away by the torrential rains).

Moisturisers

You may be surprised to know that we now separate our effluent, solid matter is processed to form methane, which powers the reclamation plant and provides fertiliser (since we do not eat meat, we no longer concentrate the toxins and heavy metals) and the liquid part goes to the evaporators, which reclaim potable water and leave behind urea salts, which can be used both as fertiliser and as a moisturiser for our creams.

Storm water and domestic foul water is pumped to settlement tanks, which we use for watering our plants and washing our Sinclair C5s. All our detergents are a rich source of organic nutrient, and we find that they wet the soil and so make watering more efficient.

We still use glycerine from vegetable sources, but sorbitol is more commonly used. Genetically engineered plants have produced high yields of specific chemicals that were formerly synthesised from petroleum products. The use of honey as a moisturiser is more popular than ever.

High yield sources of Vitamin E and Vitamin C have been obtained from wheat (*Triticum aestivum*) and Kiwi fruit (*Actinidia chinensis*), which we use not only as dietary supplements, but also as antioxidants. We also found ways to improve the yield of provitamin A from carrots (*Daucus carota*).

Fats, butters, waxes and oils

Waxes are obtained from numerous sources, we still rely heavily on beeswax, but have increasingly found ways to use candellila and carnauba. New waxes have been exploited and extensively used, namely the waxes formerly used in ethnobotany for making candles, such as the Wax Gourd, *Benincasa cerifera*; Candle Myrtle, *Myrica cerifera*; or Brazilian Wax Palm, *Copernica cerifera* - to name but a few. We have also been able to exploit the small traces of wax found in sugar crops, since we produce such vast tonnages of these crops, the wax residues are not insignificant.

Butters and fats have become regular ingredients in our products, such as Shea butter (*Butyrospermum parkii*), Cocoa butter (*Theobroma cacao*), and Illippe butter (*Storea stenoptera*). We also have developed and refined butters from

Avocado (*Persea americana*), Mango (*Mangifera indica*), Coconut and Date palms.

You were always well supplied with natural oils, and to a large extent we still use most of these, oils such as coconut (*Cocos nucifera*), date palm (*Phoenix reclinata*), Moroccan olive (*Argania syderoxylon*), borage oil (*Borago officinalis*) and Macadamia nut oil (*Macadamia ternifolia*) to name but a few of the more exotic, which in your day could be purchased from Connock the almost pretty one. You also knew of Jojoba oil (*Zizyphus jujube*), which could be purchased from Maxine Canham the very pretty one.

We have exploited a number of insects, and now breed a number of species of moth for their oil content, this oil is exceptionally waterproof (as you drivers will well know from trying to clean the debris of a fresh splattered bug from your windscreens).

Colours

Colours continue to be a problem, we never really managed to get over the loss of the dyes based on aromatic ring structures. However, we have genetically engineered some plants to produce higher concentrations of colour material, and by selective breeding have managed to improve the light stability. It was all rather academic, since we only have the sludge green coloured glass bottles as readily available packaging, which help to protect the product from the sun anyway.

We can obtain a very nice blue from Chamomile (*Matricaria recutita*) or Woad (*Isatis tinctoria*), we have reds from the cochineal beetle which gives us give us carmine, and the Lipstick tree (*Bixa orellana*) gives us the orange-red annatto, greens come from Chlorophyll, yellow from Marigold (*Calendula officinalis*) and so on. We use almost three hundred natural dye sources today, most of which bind very efficiently to natural fibres such as wool, silk, cotton and paper.

Preservatives

We have exploited the plants for their preservative properties. We now use polyacetylinic compounds obtained from Passion flowers (*Passiflora incanarta*), benzyl alcohol, benzoic acid (from various gums and resins) and numerous other chemicals that in your time were only intimated in the literature. We have also learnt to formulate using a hurdle approach to our product preservation, each hurdle is insufficient on its own to offer microbiological preservation, but in tandem defeat even the most active of spoilage organisms. Thus the use of salt,

glycols, pH, preservatives, chelating agents and the protective effects offered by careful choice of an emulsion's external phase we have perfected this technology.

Alpha hydroxy acids

From our exploitation of fruit crops we have managed to obtain citric acid in reasonable quantities, malic and tartaric acids are readily obtainable from the fermentation industry and tartaric acid is seasonally available from the outer seed case of many oil bearing crops such as the baobab or *Adansonia digitata*.

Chelating agents

Chelating agents are available from nature as well, such as phytic acid from rice bran.

Environmentally friendly products

The initial question was whether your products were environmentally friendly, they were not. Today, every factory has its own water and waste pretreatment facility. All paper and cardboard is collected, some goes back into cartons and low quality paper, the rest is either composted, or bound with natural resins and turned into wall boards, wood substitutes and building materials. Some fibres lend themselves to bacterial fermentation, which can develop extremely high temperatures and so can be used to drive steam turbines.

Cold processing is preferred, but where power is used, it is from electricity produced from fermenting effluent waste, off-shore wind generation or water driven sources.

Management, in the most part, works from home, using computers, fax machines, telephones and conferencing facilities available through various electronic networks. Most managers only travel into work twice a week, so using previous travelling time as working time. Efficiencies are improved as a result of the more relaxed home environment and superior technological advances. You seem to have grasped all of the ecologically damaging advantages of your new technology, but totally failed to harness many of the benefits. There is no reason why most of you should go to work every single day.

Conclusions

In conclusion, Nature now provides for all our needs, in your time it also provided for your needs, but you only took the parts that you wanted and threw the rest

away. Everything is examined for its content, and only when we have sucked every last ounce of goodness out of it do we recycle the residue. You used to harvest peat, we make our own organic residues in vast quantities, we collect all the fibrous matter from drug extraction, food processing, fuel production and turn it into compost. In the earlier part of your century, you had rag and bone men who collected rags for paper and bone for porcelain production, what a shame that you did not keep that spirit alive and up to date.

Our world would seem boring by your standards, it is a much smaller place, people at the turn of your century would be more at home here than you. They knew how to manage their environment and make use of the materials around them. You will shortly hear from one of the large retailers, but they no longer exist in our time as you would know them today. Fancy travelling ten miles to collect your shopping, when you could shop from home on the Internet or even telephone your order through. The delivery van comes round three times a week and delivers all our needs, he is a sort of high tech milkman. Each week a vehicle collects plastics, another paper, another aluminium cans, while another one collects glass. Each month we can put out cloth, electronic goods and metallic items for collection. All compostable waste in rural areas goes into the garden, in the cities it is collected.

All of **our** products are environmentally friendly, most of the ingredients came **from** the earth, the packaging is returned safely **to** the earth when it is finished or is recycled into something else. The energy to make those products was also provided **by** the earth, but not by destroying it.

I have not forgotten the promise of that curse made earlier in my talk. This is from Zebedia the Miserable One: “May those who profit from pollution and waste, suffocate in its stink for eternity”.