A TALE OF THE "EARTH'S ESSENCES", AND NATURAL FRAGRANCES REVISITED

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Preamble

In the world of today we are dependent on a variety of technological innovations that augment our senses. In contrast, in the earliest age of hunting and gathering mankind depended very heavily on the sense of smell. So millions of years ago, the only fragrances that mankind knew were the fragrances that came from the earth itself. These were the "Earth's Essences," that is, the essences which came through the flora and the fauna that was evolving within the biosphere.

From then on during the millennia that followed, people gathered parts of plants and extracted their fragrances to bring delight and sensuality, feelings of wellbeing, and even sacred elements into their lives. Recently, archeologists have unearthed what is reckoned as one of the earliest perfumeries in the world; this was in the Mediterranean island of Cyprus. Similar sites have been excavated in other parts of the world, indicating that the perfumery technologies were practiced even during the Bronze Age.

A Bronze age perfumery factory

Ancient Greece, Egypt, China, and India, and the countries on the ancient trade routes, all had well developed perfumery industries. In ancient Egypt perfumes were made up of aromatic plant ingredients which provide a pleasing fragrance and healed a person of certain illnesses too. In India the Ayurvedic system of medicine recognized the value of psychotherapy for illnesses connected with the mind and the fragrant plant ingredients were used as one form of therapy. Health benefits were known along with personal and environmental benefits and these properties were extensively employed throughout the region. It was in the seventeenth century and after that chemistry entered the equation. Extensive scientific studies on organic natural products generated chemicals with distinctive aromatic characteristics that enabled the perfumer to extend the repertoire of constituents with which to compound individual perfumes; and this became a deluge when synthetic aroma chemicals came in to further widen the perfumer's palette. This phenomenon eventually developed into the vast modern perfumery and fragrance industry, amounting today to multiple billions of dollars. Perfume formulations tend to include natural derived substances, synthetic imitations, as well as purely synthetic aroma chemicals. Grasse, in France came to be regarded as the modern perfumery capital of the world.

Now another movement has emerged, which in consonance with the move towards naturals so evident in the revival of herbal medicine, strives to make perfumery to be totally natural as well. So the old art of perfumery comes a full cycle as the art of natural perfumery, comes to be revisited in a modern day image.

Ancient use of Natural Fragrances

Taputti Belatekelim, a woman perfumery chemist mentioned in a cuneiform tablet from the second millennium BC in Mesopotamia, is regarded as the first recorded exponent of the perfumery art.

She was reputed to have employed flowers, oil, and *calamus,* along with *cyperus,* myrrh and *balsam,* mixed with water, in her perfumery compositions, and even conducted purification and filtration methods to enable her to produce perfumes for the personnel of a palace for which she worked. Her utensils are one of the first recorded and she was believed to have worked with a researcher named *Ninu.*

The very first form of perfumery used by humans is believed to be the burning of aromatic exudates, barks and leaves. This led to the discovery of incense, which is a resin exudate; and it also was responsible for the origin of the nomenclature. Perfume is derived from the latin *per fumum* literally, "through smoke". Incense was in use from over 4000 years ago as the ancient cultures were known to burn many kinds of resins, fragrant woods at their ceremonies. The Egyptian tombs of over 3000 years ago bear the hieroglyphics that tell us of the part played by incense and perfumes in their lives. The trend was popularized by Queen Hatshepsut who was believed to have led expeditions in search of incense and other aromatic commodities. The temple created in her honour bears testimony to her interest and boasts a botanical garden with incense trees, resulting from the expeditions she sponsored. This predated the celebrated golden age of Arabian culture when perfumes were enclosed in the tombs of the ancient Pharaohs. For many centuries Egypt was the centre of perfumery and the strikingly beautiful containers which held their perfumes were made of expensively elaborate porcelain, glass, and even of gold. Perfumes were used in their embalming process, and urns containing the fragrant materials were enclosed with the dead.

Perfumes were part of Egyptian everyday rituals

The Egyptians were able to import flowers such as lilies and roses, and other fragrant materials such as anise and *orris* root from other parts of the world.

Ancient Egyptian perfumes made from flowers and other plant parts together with gums and resins and vegetable oils were called "unguents". Egyptian women often wore a cone made with fresh macerated roses on their heads. Body heat allowed the fatty oils bearing the scent of the preparation to melt and trickle down their faces and neck.

The famous Egyptian perfume **Kyphi** – meaning welcome to the Gods- was composed of sixteen materials of natural origin *viz:* frankincense, myrrh, cardamom, juniper mint, cypress, spikenard, and cinnamon, along with honey, wine and raisins. This was used for spiritual rituals, physical healing, and psychic awareness.

The methods of extraction and distillation and the ingestion into oils to form unguents were initially developed by the Egyptians. The Armenian scientist, Avicenna, is credited with the innovation of the technique of steam distillation. These early products from natural materials were extensively used as health care by both men and women at the time. The celebrated Queen of Egypt, Cleopatra, was lavish in her use of perfumes just as Nefertiti a beauty from an earlier Egyptian dynasty was reputed to have surrounded her with assortments of perfumes in vivid containers and handsomely ornamented jars of unguents.

Alexander the Great invaded Egypt in the third century BC and this brought the use of perfumes and incense to Greece. The consumption of perfumes was at a peak in the region at the time and the custom of daily bathing in the warm milieu involved the use of fragrant substances. The Greeks developed their own characteristic perfumery substances with fragrance carriers made from vegetable oils such as olive oil and flowers such as lilies and roses. Theophrastus of Athens, known also as the Father of Botany, in his thesis, *Concerning Fragrance,* discussed aspects of the technology of production of fragrances such as the suitable carriers of scents, the essentials oils and their extraction, and their effects on the moods and thinking processes of individuals. He also researched on how people perceived odour and taste.

Greek perfumes were different from what we know today. They were fragrant powders mixed with liquids which were stored in elongated bottles, made of alabaster and gold called *"alabastrums"*.

Ancient Greek Perfume containers

At around this time the Romans had begun their tryst with perfumery. They probably learnt it from the Egyptians, or the Greeks, or even from Turkey where fragrant flowers such as roses were available in plenty and used in various ways like *pot pourri*. The Roman public baths were a feature of the period the most famous being the baths of the Emperor Caracalla. A section of the bath, called the *"unctuarium"* featured shelves with pots of unguents, jars of fragrant oils, and essential oils in jars of various sizes. The Romans were reputed to apply perfume thrice daily, and even pets were perfumed. At their feasts birds with their wings perfumed, were released to disperse perfume from their wings. Draperies, candlesticks, tableware, and cushions, were all perfumed; and the servers wore preparations of musk, marjoram, spikenard, and similar aromatics.

The remains of the volcanic eruption of Vesuvius (79 AD) revealed the presence of equipment used in the making of perfumes of Pompeii, and traces of common plant material used at the time such as roses, jasmine, lily, marjoram, fennel, and laurel.

The Cedar of Lebanon was originally used as a perfume and as a moth and insect repellent. In the time of King Solomon valuable papyrus manuscripts were coated with cedar oil to protect them from insect attack. The Roman emperors also used cedar to protect their clothes in wardrobes so the insect repellent properties of cedar were well recognized even in ancient times.

Cedrus libani – the cedar of Lebanon, now an endangered species

Perfume Moved along the Ancient Trade Routes.

When the Ancient Trade Routes opened up to the outside world they caused the trade in fragrant materials to expand globally to specifically include the Indian sub-continent, the wider Arabian region, and China. All fragrant plant material, spices and essential oils were in high demand akin to gold and were the prelude to the subsequent conquests of this part of the world by the maritime powers.

The Syrian Phoenicians were some of the earliest to trade in the raw materials of perfumery. The Europeans with whom they traded were interested in the aromatic gums from which incense was made. There were a number of other aromatic substances such as myrrh and frankincense which were highly valued during Biblical times. Possession of large quantities of aromatic gums, sweet smelling herbs, unguents, was socially coveted as a symbol of wealth, in European society of the time.

In the Indian sub-continent there are traces of the old fragrance era and in the city of Kannauj there still exists the technology of a bygone age in the production of Attars, which surely is the characteristic perfume, of the Arabian region.

A perfumery in Kannauj showing the Deg-Bhapka technology

The spread of Islam accelerated the spread of perfumery too which was inextricably linked with religious ritual. Indeed there is even evidence to suspect that the method of extraction of essential oils by steam distillation was contemporaneously evolved during the *Mohendradaro* period in India too. The Indian Tantric ceremonies featured the bodily anointing of the participants, with fragrant oils; the men were anointed with sandalwood, and the women wore jasmine flowers in the arms, and were anointed with a variety of fragrant oils - patchouli on the neck and cheeks, amber on the breasts, spikenard in the hair, musk on the abdomen, sandalwood on the thighs, and saffron on the feet. In the spread of perfumery the celebrated "silk route" played its role.

In China, and the orient they used perfume widely, scenting their bodies and the things they used even to the extent of their stationery and clothing and linen.

As the perfumery arts and technologies were spreading far and wide the European regions of Italy and France were beginning to enjoy the fragrance influx which was helped along by the Crusades and the mobility of the era between the 11th to 16th centuries.

Italian archeologists have recently (AD 2003) unearthed what is believed to be the world's oldest known perfume factory. The discovery was made on the Mediterranean island of Cyprus, the reputed birthplace of Aphrodite, the Greek goddess of Love, Lust and Beauty. Dr. Maria Rosaria Belgiomo. of the National Research Council of Rome, the leader of the archeological excavation team believes that the excavated perfumes were beyond four thousand years old. The remnants of the perfumery were found within a three hundred square meter area which was probably a factory within a larger industrial complex, at Pygros, which had been destroyed by an earthquake in 1850 B.C. The remnants found included perfume bottles, mixing jugs, large oil storage jars, and distillation stills which had been preserved under the collapsed walls.

Dr. Belgiano and her team have analyzed the remnant material inside the mixing jugs and were able to identify fourteen fragrances native to the Mediterranean region, and known to be used in perfumery. Extracts of anise, pine, coriander, bergamot, almond and parsley were among the ingredients the ancient perfumers were known to have preferred. Belgiomo and her team also discovered several "recipes" of ancient fragrance formulations. An experimental archeology centre in Blera, Italy were able to recreate these compositions using techniques described by Pliny the Elder, the Roman author, who perished observing the eruption of Mt. Vesuvius in A.D. 79. Belgiomo explained how this was done. Plant parts and Herbs were ground and mixed with olive oil in clay jugs and then distilled in a clay apparatus. She noted that the smell of the perfumes was "a nice experience that recreates in our minds a sort of ancestral reminder".

Dr.Belgiomo reflected on the historical role of the island of Cyprus in regard to perfumes. Aphrodite was likely recognized as the goddess of Cyprus as the island was well renowned for its perfumes before the myth arose. The Cyprus perfumes originated before Aphrodite, and they remained afterwards linked to the island and its goddess. However Belgiamo had no clue as to why the island's people started making and wearing perfumes Pliny the Roman historian believed that Cyprus was the earliest source of some of the most popular perfumes of the ancient world.

Regardless of this she believes that the perfumes of today just did not compare with the fragrances of yore particularly the natural fragrances and scents of centuries ago. " We have lost the real world of natural fragrances" she observes.

European Developments

In the earliest Christian traditions we hear of frankincense being brought to the Christ child and Mary Magdalene anointing the feet of Christ with the oil of spikenard. In more recent times it is the French who transformed perfumery into a higher art form. The French city of Grasse located in the extreme South of the country slowly came to be regarded as the perfume capital of the world. In the modern context the South of France brings to mind the vast fields of lavender, and other strikingly fragrant flowers a feature that arose in a strange manner. Grasse had become a prosperous city as a result of a flourishing trade in animal hides and leather. It had developed a burgeoning industry in tanning. However the stench arising out of tanning operations gave the city a degree of unpopularity whereupon the innovative tanners began to impregnate their leathers with scented ointments. The scented leathers soon began to have a demand, and the scented glove trade catering to Parisian ladies of wealth prospered. A new profession emerged as a Perfume Glovers Guild and identified the City with it. Following the wake of the increase in demand for fragrance materials the city began to expend its growing of aromatic plants and even began to domesticate species from outside the country. They brought in species such as jasmine from India, roses from Bulgaria in addition to the lavender which they already possessed. The perfume producers of Grasse began to abandon the ancient methods of production and newer techniques such as *enfluerage* took their place. *Enfluerage* is the process of extracting the essential fragrance from the petals of flowers by laying them on fat-coated plates. When the fat is saturated with the essences, after several layers of petals are so treated, the fragrance is extracted from the fat with alcohol and after removal of the solvent an "absolute" is left. This process slowly gave way to the method of steam distillation by which much of the fragrant plants are now treated to extract their essential oils which latter are the eventual product that is used. By the 18th century Grasse and the surrounding region, the Provinciale, had put its emphasis on the cultivation of aromatic plants and the setting up of stations where the raw material after harvesting was subjected to steam distillation. This also gave rise to fabricators of distillation stills and the predecessors of world renowned firms such as Eisseric & Cie, and Tournaire Fres of today commenced activities.

Perfume production in Grasse using copper stills

Citrus oils were being cold pressed and distilled and these joined the repertoire of breathtaking natural raw materials that came to be available to the perfumer. An abundance of new natural raw materials came to be available to perfumers by the end of the 19th century as a result of improved methods of distillation and the application of this technique to a variety of new raw materials. Perfumers moved beyond making floral imitations and moved onto more creative perfumery. The emergence in the twentieth century and onwards of aromatic compounds synthesized by organic chemists escalated the creativity by offering a vastly enhanced number of aroma chemicals for the perfumer's palette. It was analogous to the entry of synthetic dyes to augment the comparatively modest array of natural ones that were available to painters and artists. This is what is now designated as: Mainstream Perfumery, where the burgeoning increase in the use of synthetic aroma chemicals due to either economic reasons or reasons of accessibility or even constancy of quality, or political reasons, is now the characteristic pattern, and results in the diminishing use of natural materials.

Back to the Earth's Essences

The new emerging trends in perfumery are now depicted as a harkening back to the deep past. There has been noticed a quest for intrinsic knowledge and the long lost wisdom from the dim distant past, which is believed to give new meaning to modern life. This quest represents a sort of revival, which stretches all the way back to the primitive rain forest, mountains and islands, is represented by a preference for natural foods, medicines, fragrances, and materials. It would appear that the more technologically advanced a culture is the more deeply does it search its past for, believably, a clue to the future. It is the new approach for healing, for foods, for weather control, and even for deep communication with plants, animals, the land itself. It seems to be based on a profound kinship to the Earth.

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Viruses in our Bodies.

During the past decade scientists have come to appreciate the vast bacterial world within the human body. They have learnt that they play a role in regulating the energy we take in from the foods we consume, and that they prime our immune systems and perform many other functions, that helps in the maintenance of health. In similar vein researchers are now beginning to appreciate the role of the viruses we carry around in our bodies. Curtiss Suttle, a virologist of the University of British Columbia, (UBC), in Vancouver, Canada, reveals that the variety and sheer numbers of viruses that inhabit us put our bacterial companions to shame. Ultimately these viruses are incredibly important in determining what's going on in the human microbiota. To understand bacteria associated with humans you have to look at the viruses as well. A comprehensive survey of the viruses in the body – the so-called virome– would be the beginning.

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