EAUTARCIE –
its Guiding Principle

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(adapted and translated by André Leguerrier)

Preamble

The EAUTARCIE System is distinctive in the way it recognizes the intimate interactions between fields as diverse as water supply & water quality, wastewater management, biomass management, energy & food production, soil formation, climate & soil, climate change & the state of the biosphere, for which is required a different perspective on hygiene and health. In this sense, the EAUTARCIE approach is highly multidisciplinary.

First consider current observations that the existing « all-to-the-sewer » system, better known as mains sewerage, follows the same logic as consumer society's « all-to-the-trash » logic, yet with graver consequences. A first conclusion immediately follows: we need to collect and selectively treat grey (soapy) water, separately from black (faecal) water. This is the starting point that lays the foundation for a new science, that of « **wastewater management** », to replace its outdated predecessor, known as sanitary engineering. [1]

Findings and Conclusions

Close examination of current problems in the fields of water, energy and climate change leads to a series of startling observations in various sectors:

Sanitation

- Household wastewater (and wastewater from the agro-food industry) is not « waste ». Rather, it is a precious resource that is essential to the proper functioning of the biosphere. Wastewater only becomes waste when its core components, greywater and black water, are mixed together. Thereafter, wastewater treatment/purification as done today transforms this mixture into hazardous waste (e.g. sewage sludge, toxic residues discharged with sewage into sensitive aquatic environments, etc.).
- From this observation follows another: the worst thing you can do with wastewater containing human and animal dejecta is any treatment run under pretence of purification. This even applies to phytoremediation as a purification technique. In sharp contrast to all existing treatment/purification techniques, the EAUTARCIE approach outlined here is much less expensive and certainly more efficient in how it improves, even regenerates the environment, instead of just « protecting » it. The greywater component also constitutes a resource for crop irrigation and groundwater recharge.
- So in the new system that we have called « SAINECO », for EAUTARCIE's version of ECOSAN [2], all urban wastewater is recycled. Water bodies such as rivers are no longer polluted by domestic wastewater.

[1] Sanitary engineering made sense at a time when it was necessary to « sanitize » unsanitary cities. This objective has been attained thanks to the implementation of city sewers. Now we must focus on managing the wastewater collected. The new objective should be to fully recycle wastewater towards regenerating the biosphere, not purify wastewater. See webpage http://www.eautarcie.org/en/02b.html.

[2] SAINECO is an acronym that comes from the French expression « asSAINissement ECOlogique », known in English as Ecological Sanitation or ECOSAN, a carryall term from which EAUTARCIE's version is distinctive.

Water supply

- Our water resources are as they are: polluted to varying degrees. Instead of tackling this problem head on and inventing complex and expensive systems to purify water, it is more reasonable – and especially more efficient – to take a sideway approach. When one applies the principle of « adapting water quality to its end-use [3]», one discovers that however polluted our water reserves may be, we have at our disposal effective and inexpensive decentralized techniques that can ensure we get high quality drinking water for the home, reserved only for the most noble uses (drinking and cooking). Next to this, mains water supply can provide lesser quality water (non-potable, yet safe) for less noble uses such as personal hygiene, laundry, dishes, etc. High quality drinking water would be produced from mains tap water within each household. The result is a more efficient means of protecting public health.
- One of the cornerstones of sustainable water supply is rainwater harvesting for whole-house reuse, as per the PLUVALOR System [4]. Here too, the starting point comes from observations. Throughout the water cycle, water that falls from the sky is by far the cleanest. Given the diffuse pollution of our water reserves, the only source of high quality freshwater that is currently accessible to all comes from precipitation. Besides, all freshwater available on the planet comes from this resource, not to worry.

« Green » energy production fueled by biomass

- Contrary to preconceived notions, current « green » energy sectors are also contributing to the destruction of the biosphere while also fueling the atmosphere with carbon dioxide. An alternative solution is a form of thermogenic composting that produces low temperature energy, useful for heating homes (based on the work of Jean Pain). It produces more energy per kg of biomass consumed [5] than other sectors: at the end of the process, the residual compost can be used to regenerate soils. This dual technique has the potential of becoming a powerful carbon sink. Combined with the abolition of conventional sanitation (i.e. the « all-to-the-sewer » system), this could become a key to curbing climate change [6].

Climate change

- A stunning observation: the atmosphere's increasing carbon content constitutes a resource, even an opportunity for humanity to expand the planet's areas of life at the expense of deserts and arid regions. Our underlying idea to curbing climate change is the result of another observation. The planet's atmosphere is the fruit of the biosphere. Thanks to photosynthesis, the living world regulates the atmosphere's carbon dioxide content. The atmosphere is the result of two processes that spontaneously come into balance: first the power of photosynthesis itself, and second the atmosphere's CO_2 content, which is regulated by atmospheric temperature. Any imbalance must be addressed through the biosphere itself. The biosphere is by far the most powerful carbon sink. To reduce the CO_2 content, you need to increase the quantity of active biomass within the biosphere. The process is autocatalytic: once triggered, it accelerates spontaneously as it advances. It is also self-regulating, because a reduction of the CO_2 content entails a reduction of the temperature, which in turn slows down photosynthesis; and vice versa.
- Two hundred million years ago, the carbon of today's fossil fuels was part of the biosphere's continents. Restoring this carbon to the biosphere (not the atmosphere!) by stimulating photosynthesis to increase the quantity of active biomass will in itself constitute a carbon sink.

[3] See relevant text on webpage http://www.eautarcie.org/en/02c.html#c.
[4] See relevant text on webpage http://www.eautarcie.org/en/03a.html#c.
[5] Download the pdf file http://www.eautarcie.org/doc/article-experience-hongroise-en.pdf.
[6] See webpage http://www.eautarcie.org/en/07b.html.

The link between wastewater management and climate change is to be found in soils and plant life – first the increased humus content of soils and second the expansion of plant life bourgeoning and thriving from the first – whereby the recycling of livestock manure and human dejecta can be used to store carbon in the form of humus and plant biomass. Indeed, by eliminating all-mains sewerage as well as conventional wastewater treatment, a new infrastructure [7] would arise, through which excess CO_2 would be stored by harnessing all plant and animal biomass available. Thus a new world-scale industry will be created for the production of humus.

Public Health

- As previously mentioned, sustainable water supply provides more efficient protection of public health. Pushing further, it has become necessary to reassess the relationship between water quality and health. The dominant hygienics ideology [8] has a reduced perspective on the correlation between these, a shortfall that is rooted in the fact that electrochemistry is a neglected area of medicine. To set the record straight, you need to recognize the works of William Mansfield Clark [9] and Louis-Claude Vincent [10]. The key concept underlying the works of these two pioneers is hydrogen activity, also called electron activity. It became necessary to examine their work and re-establish the validity of Clark's rH concept (rH_2 under Vincent) as well as the science of Bio-Electronic Vincent (BEV), the medical applications of which open up promising perspectives in the healing arts. The reinstatement of the rH_2 parameter (in many respects equivalent to the well-established pH) was only made possible through the establishment of the Unitary Theory of Redox and Acid-Base Reactions [11]. This work, published in 1991 [12], is now at the forefront since the discovery of apparatuses that produce water having high hydrogen activity [13]. We have shown that ignorance of the unitary theory leads to errors in assessment as to the oxidative or antioxidative character of therapeutic beverages.

Water management at an individual scale

- This constitutes the essential work of our small team of EAUTARCIE volunteers: responding to hundreds of messages received each year from the world over. The EAUTARCIE system also includes a technical side, namely the development of simple, inexpensive and effective water management solutions, even at the household level. (N.B. Some perceive the EAUTARCIE website as strictly limited to these technical solutions, which is a tremendous oversimplification). What is remarkable is precisely the way these solutions tend to evolve towards simplicity, reduced cost and increased environmental performance. In this respect, the main obstacle is current legislation that ignores or disregards and often penalizes such technical solutions.

Agriculture

- Despite progress made in alternative farming techniques (organic farming, permaculture, the Jean Pain method, etc.), the dominant view remains the N-P-K concept (nitrogen – phosphorus

[7] Download the pdf presentation at http://www.eautarcie.org/images/ecosan-en.pdf and the corresponding text at http://www.eautarcie.org/images/ecosan-text-en.pdf (or alternately, see the video on Youtube at https://www.youtube.com/watch?feature=player_embedded&v=u9er47QA_yM.)
[8] See relevant text on webpage http://www.eautarcie.org/en/05b.html#c.
[9] See webpage http://www.encyclopedia.com/doc/1G2-2830900912.html.
[10] See webpage https://fr.wikipedia.org/wiki/Louis-Claude_Vincent (in French only): for an overview in English of Louis-Claude Vincent's work, see webpage http://www.mybodyofknowledge.net/perfect-water.html
[11] See webpage http://www.eautarcie.org/en/03d3.html.
[12] Published in French only: http://www.eautarcie.org/doc/article-reactions-redox-acid-base-fr.pdf. The webpage cited at the preceding note provides a complete and updated overview of the Unitary theory.
[13] See webpage http://www.eautarcie.org/en/03d2.html.

– potassium) specific to intensive chemical-based agriculture. In the face of observed nuisances recurring with a fervour intensified after each lapsing year, both on health and the environment, the dominant view is increasingly challenged. Unfortunately, this challenge is in turn countered by a scientific stand that is inspired by an erroneous and incomplete picture of life of the soil. Thus, the dominant view is applied to all other techniques using those analytical methods developed for chemical agriculture, thereby restraining innovative techniques and poising the future of agriculture in a fatal gridlock.

- The key technique to curbing climate change is composting. Unfortunately, the N-P-K concept is still considered *de rigueur* for soil and compost analyses. The development of new analytical techniques is likely the next EAUTARCIE undertaking.

How EAUTARCIE is perceived

The topics covered by EAUTARCIE are highly controversial. The prospect of shifting out of the « all-to-the-sewer » system can be perceived by some [14] as a threat to an entire industry and its concomitant branch of science – sanitary engineering – when in fact the implementation of EAUTARCIE's version of ECOSAN would only shift activities towards other more environmentally-friendly techniques. For example, the concept of remediating environmental damage/pollution after the fact would be replaced by that of preventing it at source; the destructive techniques that culminate in wastewater treatment/purification would be replaced by the constructive synthesis of humus to regenerate soils.

On the other hand, the techniques recommended in the EAUTARCIE website are neither known, nor taken into account by both policy makers and regulating authorities. Significant changes in water legislation will become necessary in the near future. And this will require a definite support in overcoming staunch and ever-present resistance from sanitation and water management lobbies.

Prospective Criticism

The EAUTARCIE System is constantly evolving. Techniques pop up from day to day, so to speak, benefiting from field experiences from our correspondents. Demands that we put forth scientific papers to be published in major international journals to justify our theories become pointless when a monopoly of rigid, even biased scientific views systematically rules out ideas that go against established views. All the more so, considering that papers we did try to submit were too easily shrugged off because they went against the mainstream. Finally, consider that our experiments [15] were continuously hampered by the authorities rather than being sponsored, under pretence, for example, that « the proposed techniques are unknown to the administration or are prohibited by applicable laws ».

Consequently, the experiments we did manage to carry out, against all odds, were ultimately shelved, neither approved, nor challenged. The experiences/experiments of our correspondents are amongst the contributing factors that will lead to a validation or dismissal of any advice later provided on our site. Some indications are in fact « working hypotheses » that need to be verified experimentally. As for some conclusions drawn, their validity is justified by indirect observations [16] as well as by long proven chemical evidence – very much like how it is done in mathematics – working with, and building up from a few axioms.

[14] See relevant text on webpage http://www.eautarcie.org/en/02b.html#f.
[15] Refer to sixth paragraph of webpage http://www.eautarcie.org/en/01b.html.
[16] Download the pdf presentation at http://www.eautarcie.org/doc/article-residus-medicaments-TLB-en.pdf .

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