

TRANSFERRING MOLECULAR AND FIELD INFORMATION

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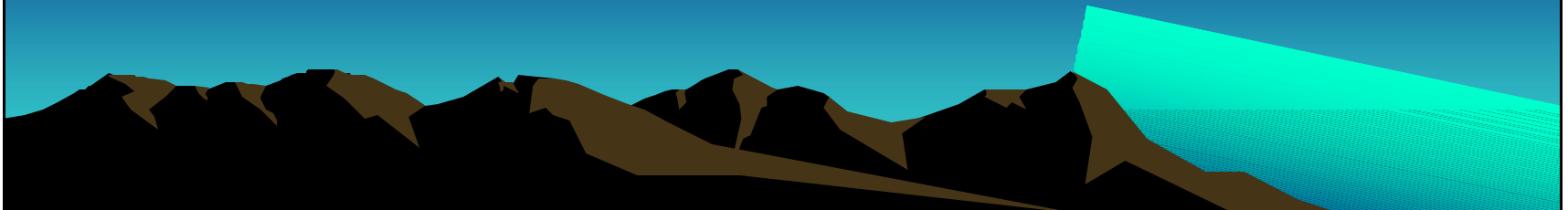
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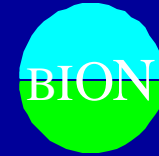
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Acknowledgment

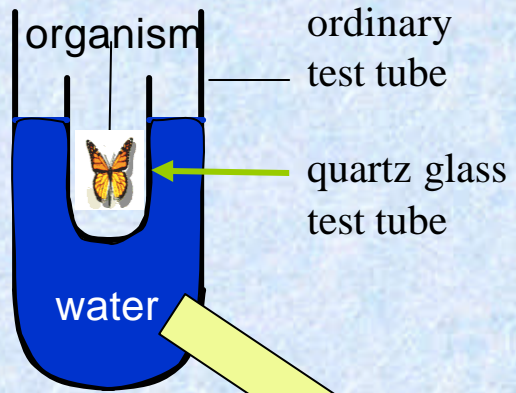
In the name of my co-researchers I would like to express our gratitude to Howie Firth for his kind invitation to the Orkney Science Festival, to Jessie Gray for all her help and kindness and to other organizers of the Festival, as well as to one of our sponsors, Adria Airways, who made it possible for me to come to Kirkwall and to have this presentation.



History



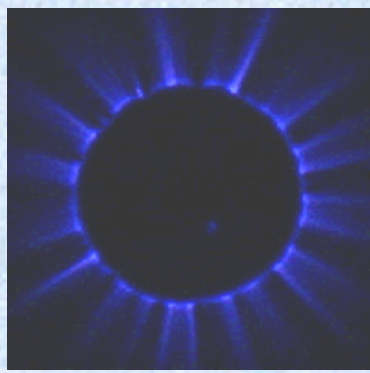
- our **Institute Bion** - Institute for bioelectromagnetics and new biology was founded as a Research organisation for the research in **bioelectromagnetics** – the research concerning interactions between organisms and EMFs around 13 years ago.
- after some successful research in EM stimulation of organisms (mostly plants) we began with the research concerning the supposed **coherent endogenous EM oscillations** within organisms.
- since there were no devices for direct measurements of these fields we tried to test the hypothesis of these fields through:
 - first, imprinting the organisms' (bio)fields into water and
 - second, examining the effects of this imprinted water biologically via **living beings** (as sensors) and instrumentally via **computerised electrophotography**.



tested



control

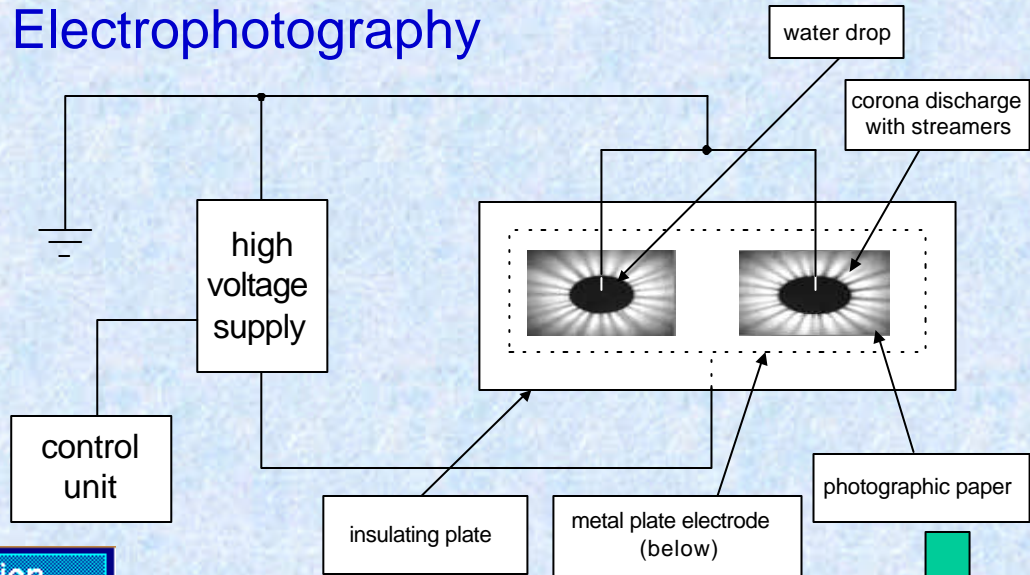


computerised electrophotography

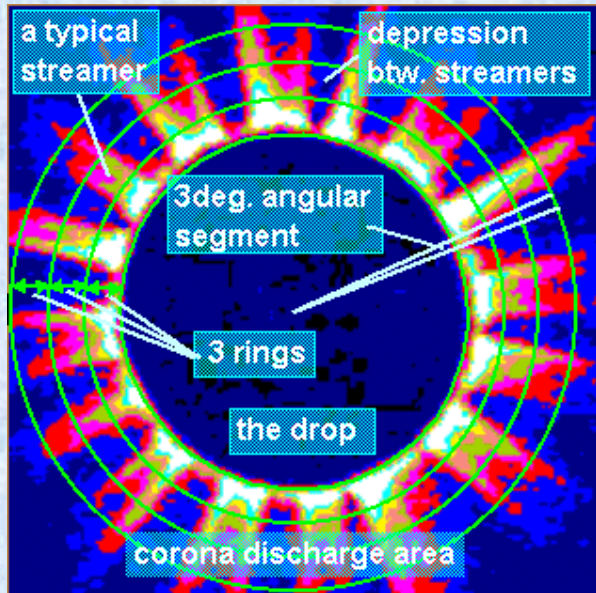
living beings (germinating plants)



Electrophotography

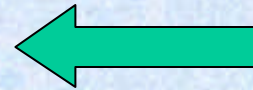


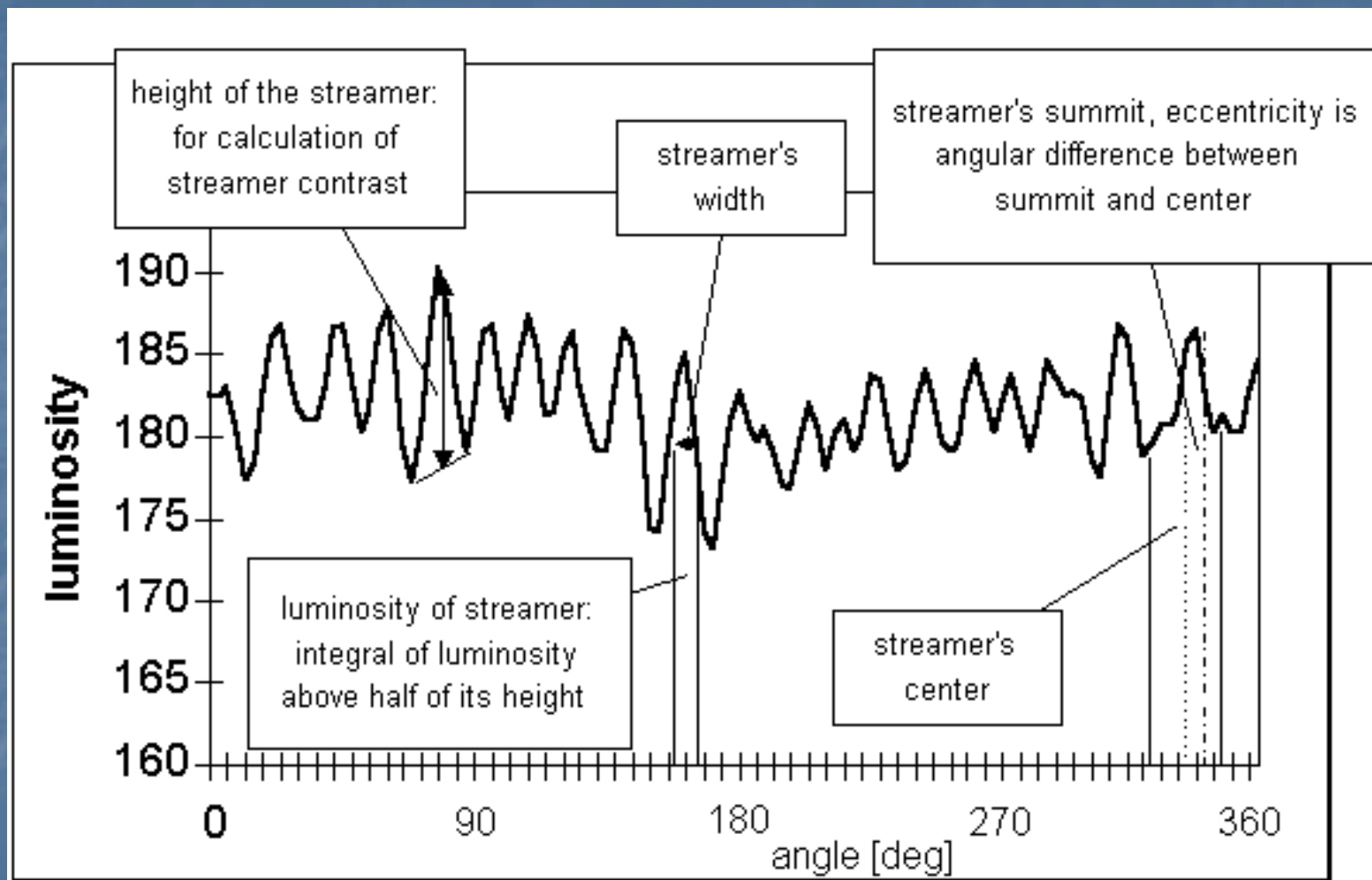
Example of corona discharge parameters (corona colour coded)



computer

Statistical analysis of corona parameters



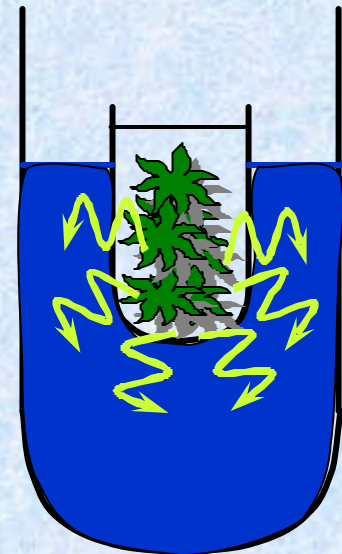


In general, the results of this preliminary research on humans, mealworm beetles and spruce seedlings confirmed that:

- our system for electrophotography can detect subtle changes of water non-chemically exposed to organisms and
- that organisms emit some form of a very weak radiation, which according to the present scientific knowledge is closest to the ultraweak electromagnetic radiation. After the imprinting into water it appears to modify the physical characteristics of the latter.

For instance, some experiments showed that normal spruce seeds watered by water imprinted with the radiation field of dying seedlings reacted with significant slowing germination and have a tendency to grow more slowly than controls (watered by sham exposed water).

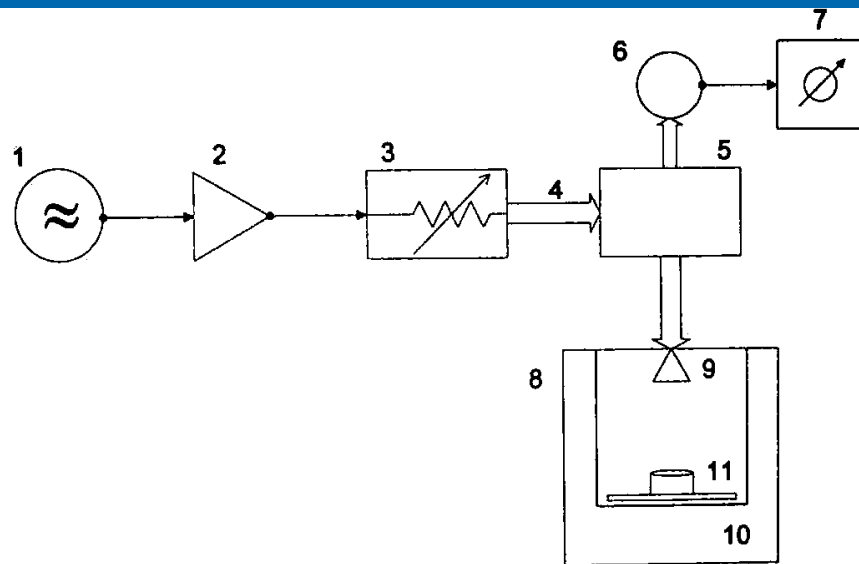
Jerman I., Berden M., Ružic R. (1996): Biological influence of ultraweak supposedly EM radiation from organisms mediated through water. Electro Magnetobiol 15 (3): 229-244.



IMPRINTING OF ELECTROMAGNETIC (MICROWAVE) SIGNAL INTO WATER

We proceeded with investigating the influence of microwave irradiation (frequency: 10 GHz) on water by means of corona discharge electrography. Water drops were taken from the previously irradiated and control (sham exposed) water. Several parameters related to the luminosity, shape, and streamers of the image were calculated and tested non-parametrically.

Block diagram of the experimental setup for microwave (MW) irradiation of water. 1-MW oscillator, 2-MW amplifier, 3-attenuator, 4-waveguide, 5-20dB directional coupler, 6-wavemeter, 7-power meter and thermistor sensor, 8-irradiation chamber, 9-horn antenna, 10-electromagnetic absorber, 11-styrofoam table and glass vessel with water



The results show distinct and non-linear behaviour of corona discharge patterns (both radially and angularly) as regards different power densities ($5 \times 10^{-1} - 5 \times 10^{-8} \text{ mWcm}^{-2}$) of microwaves.

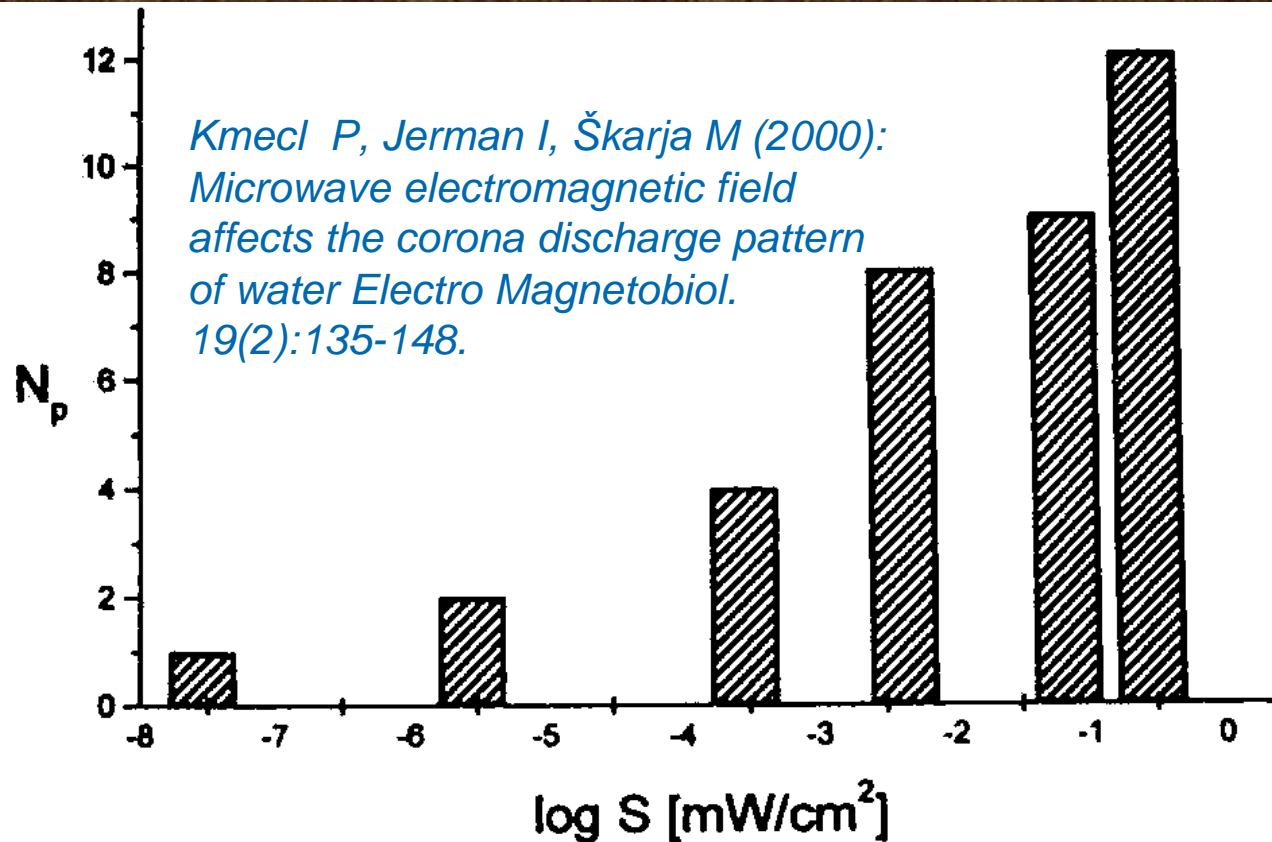
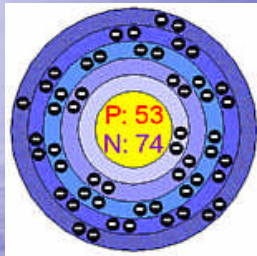


FIGURE 5. The dependence of the number of significant differences in parameters N_p ($p < 0.05$; χ^2) on the applied microwave power density (logarithmic scale). Twenty-five pairs of pictures were analyzed at each power density.

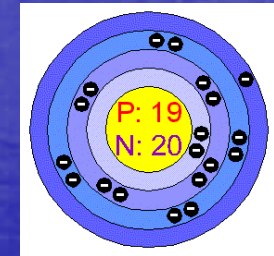
INSTRUMENTAL MEASURING OF DIFFERENT HOMEOPATHIC DILUTIONS OF POTASSIUM IODIDE IN WATER

The potassium iodide (KI) mother solution (0.1M) was diluted in the standard way (without potentisation) or with potentisation (succussions by striking the vial against a large book) to $10^{-3}M$, $10^{-6}M$, $10^{-10}M$, $10^{-16}M$, $10^{-17}M$ and $10^{-24}M$ KI solutions. In the electrography method a drop of KI solution was compared with a drop of control water. To get a dependable system of the



atom of iodine

results we compared homeopathic dilutions with ordinary distilled water, sham-potentised distilled water and non-potentised (standard) solutions of KI. The results were analyzed by the Chi-square Goodness-of-fit test and Sign



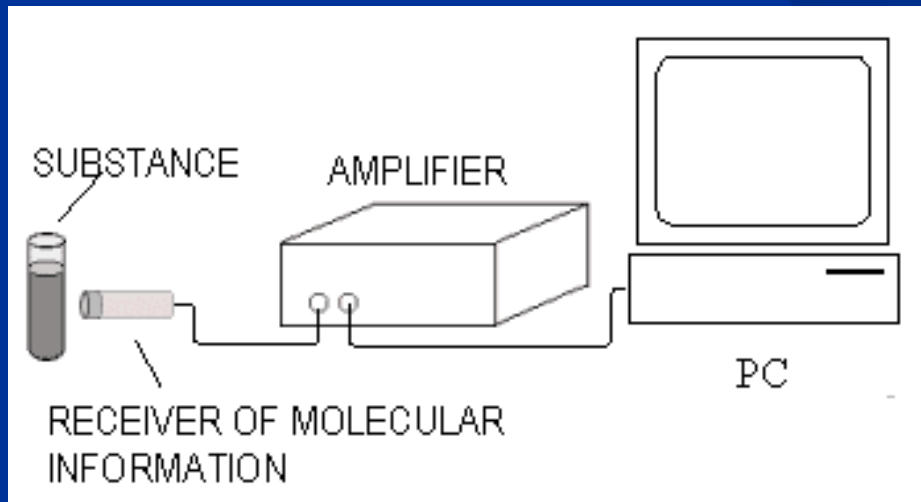
atom of potassium

test. They showed repeatable and statistically significant effects of concentration of KI dilutions as well as potentisation on the corona discharge process (from $0.001 < p < 0.05$). All this well indicated that there was some physical basis of molecular (ionic) information imprinted into water.

Jerman I, Berden M, Škarja M (1999): Instrumental measurements of different homeopathic dilutions of potassium iodide in water. Acupuncture & Electro-therapeutics Res., Int.J. 199:24(1): 29-44.

Recent research

- After studying the works of W. Reich, P.C. Endler, J. Benveniste and C.W.Smith we began to test the hypothesis that molecular or biofield's information can be captured, imprinted, transmitted and reproduced (expressed) through electronic means.
- In our first experiments we tried to capture molecular information (alkaloid amanitin and a herbicide glyphosphate) and to transmit them via water or via sound to our plant sensor system composed of cress germinating seeds.

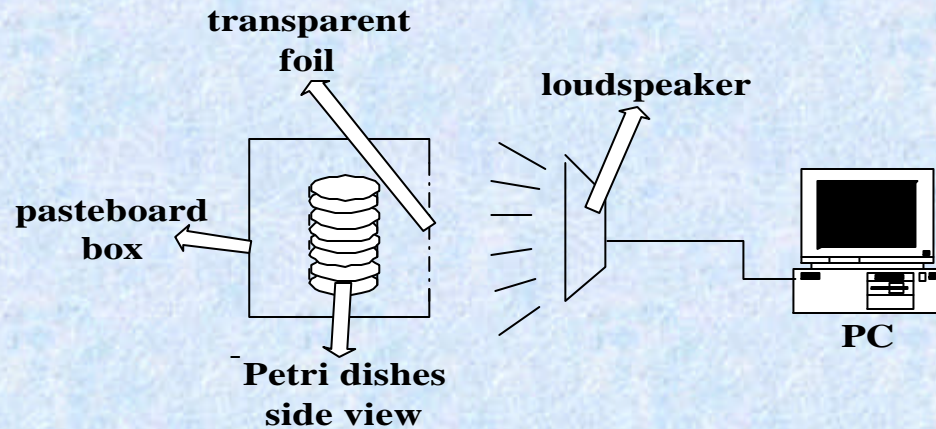


A scheme of our first system for digital recording of subtle molecular information

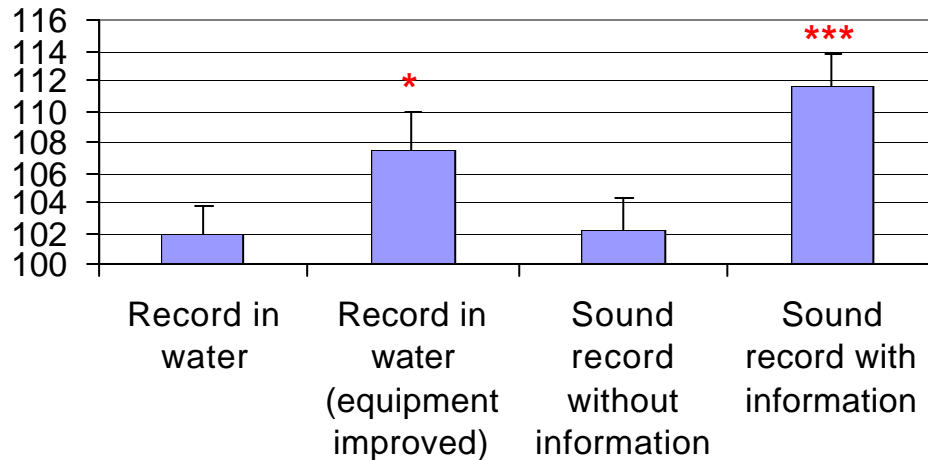


cress seedlings: they react to very subtle fields if subject to a controlled heat stress at 42° C.

A scheme of our system for sound broadcasting of molecular information



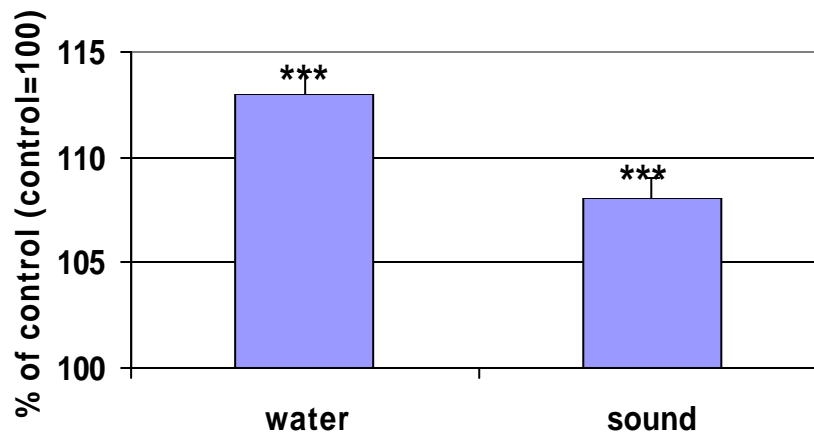
Influence of information of herbicide on growth (% of control)



different ways of expressing captured information:

- via water
- via sound broadcast

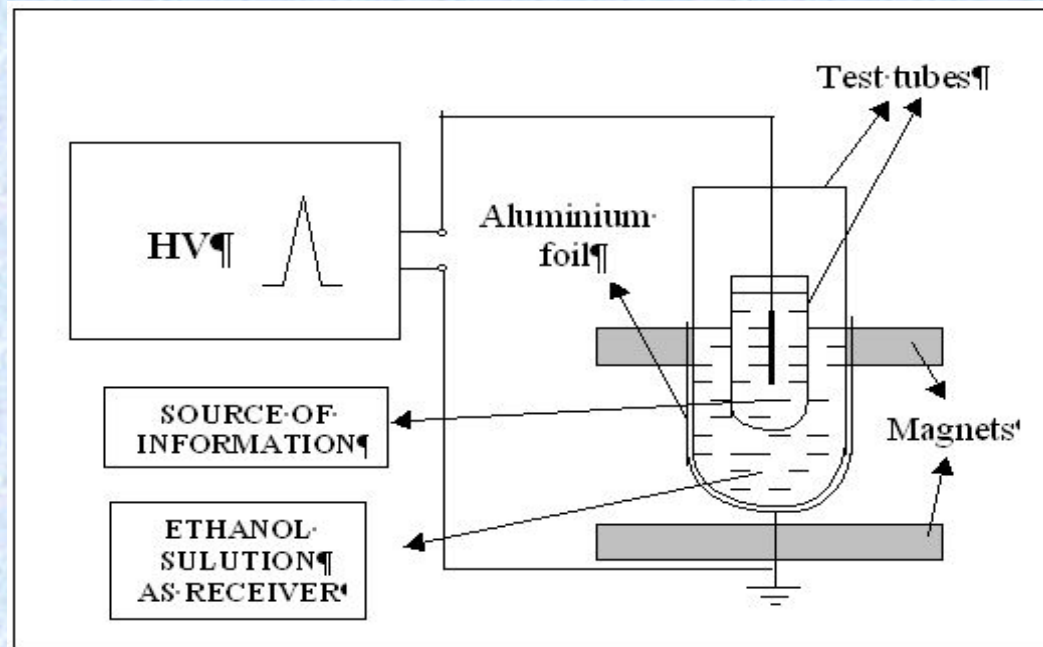
Influence of herbal information on our cress sensor system



The same herbal information captured electronically and stored in water was detected also electrographically.

Present research

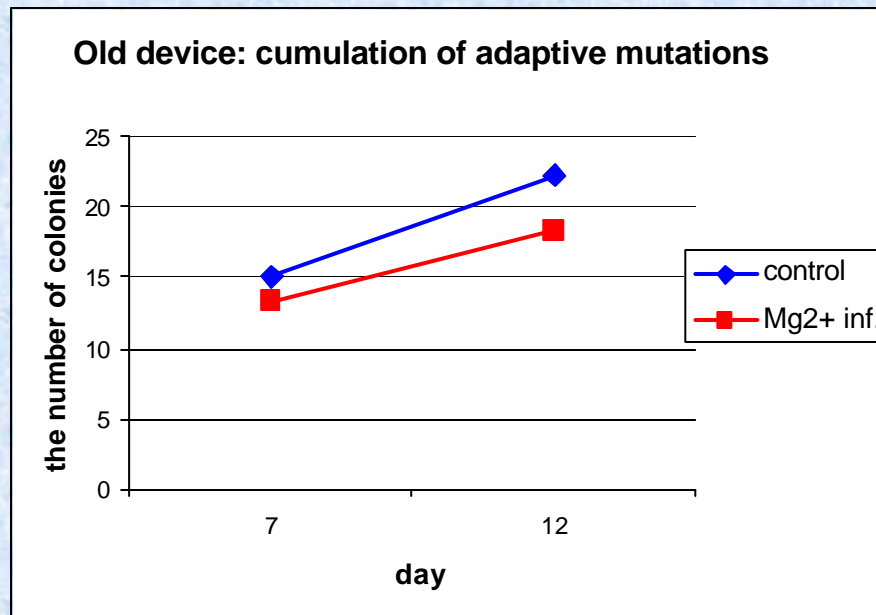
From our experiments as well as from studying the matter of endogenous biological coherent fields it became clear to us that molecular information is tightly connected to electric and magnetic fields. To test this hypothesis we constructed a new device for molecular information processing.



Experiments involving adaptive mutation on *Escherichia coli* K-12

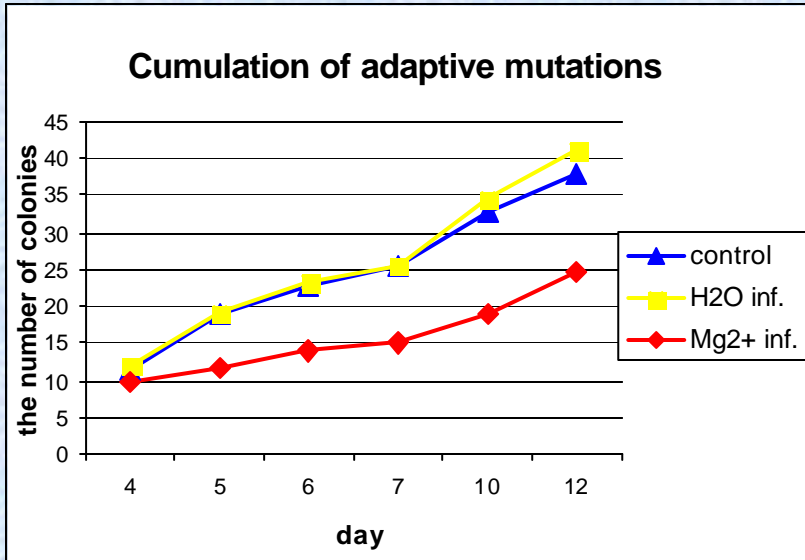
Adaptive mutation is a complex mutational process (discovered in 1988 by Cairns) that is induced by the need for survival (apparently Lamarckian way). For instance a mutational improvement of the gene for the use of lactose when the latter is the only source of energy for bacteria.

With the strain *E.coli* SJ134 it is known that Mg^{2+} ions inhibit its capability for adaptive mutation. We captured information from Mg^{2+} ($MgSO_4$) and expose it to bacteria. Below are some of the most typical results.

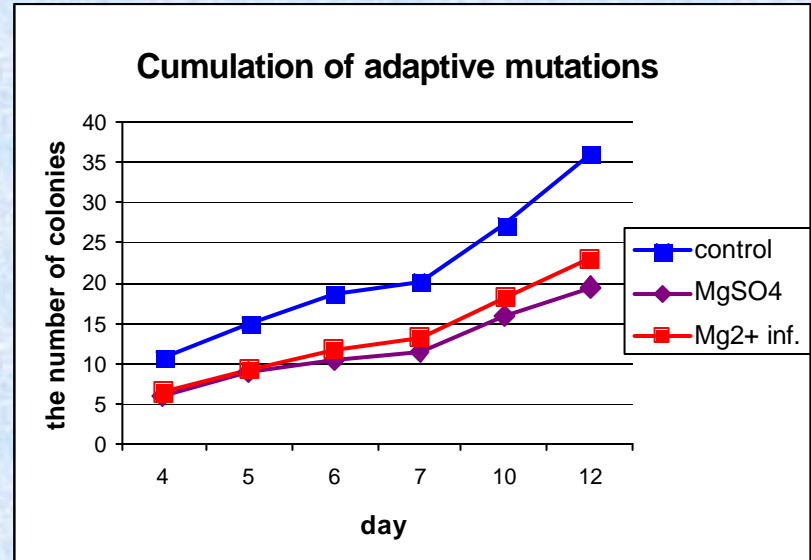


the 12th day:
 Mg^{2+} inf.: control: -18%
 $p < 0.17$

Same type of experiments involving the new device for capturing molecular information



the 12th day:
Mg²⁺ inf.: control: -35%
p<0.002



the 12th day:
Mg²⁺ inf.: control: -36%
p<0.058

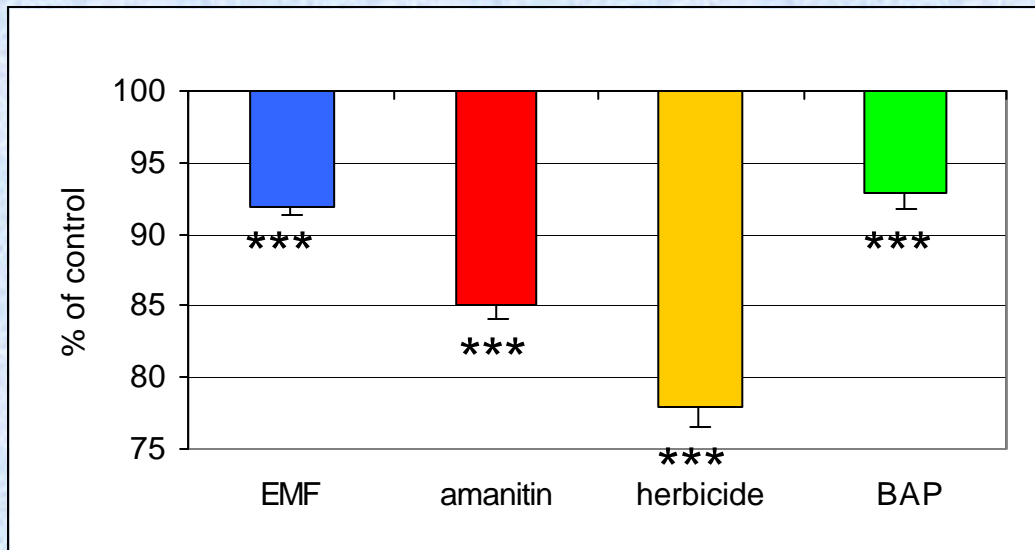
For the whole series of expts. (12th day) the effect of Mg²⁺ inf. vs. control was -32% and statistical significance p< 2x10⁻⁴

Experiments involving our plant sensor system composed of cress seeds (*Lepidium sativum*) subject to the heat stress and information of various substances



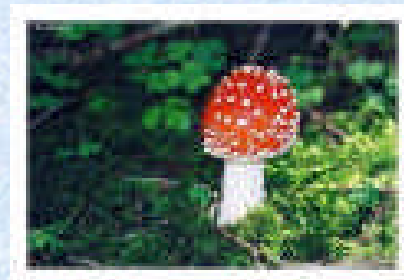
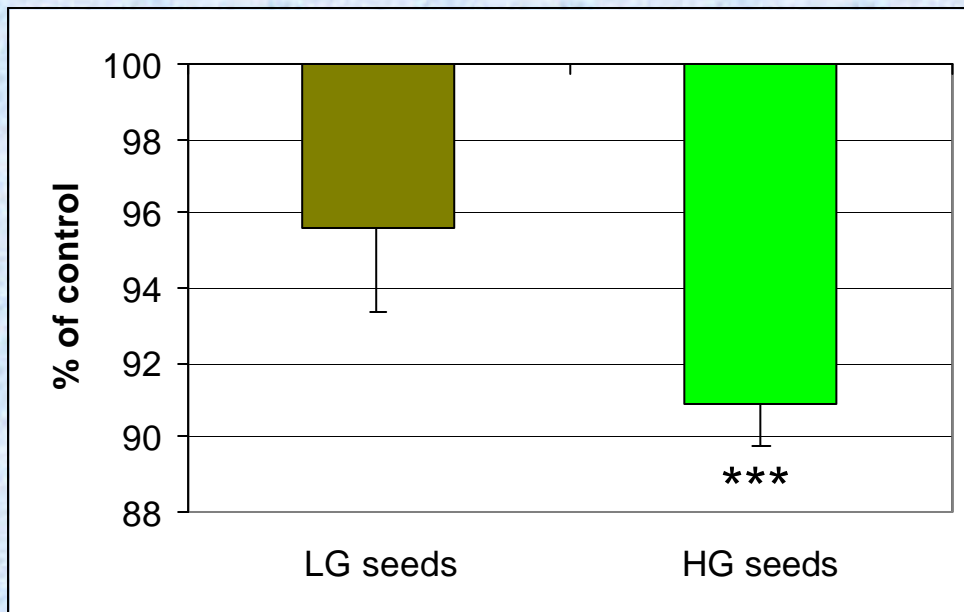
Amanita muscaria - toadstool

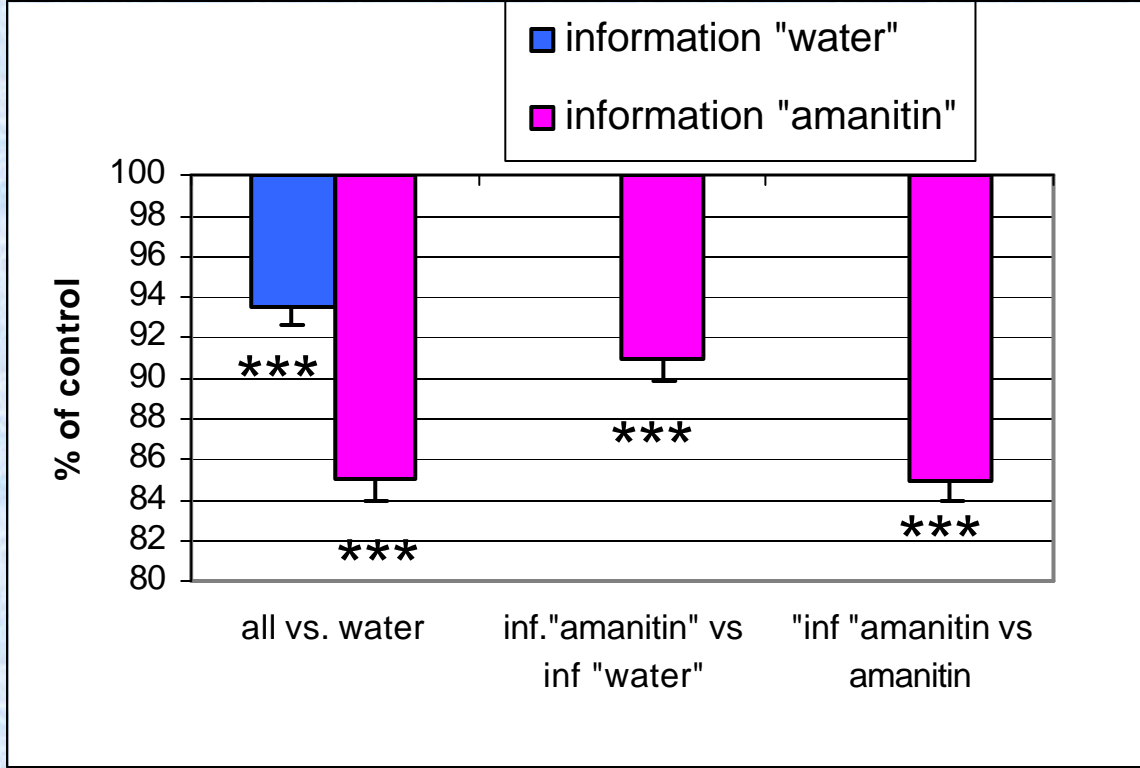
Results through many experiments



EMF: electric field and bidistilled water
herbicide: glyphosphate
amanitin: an alkaloid from toadstool
BAP: plant hormone (cytokine) benzylaminopurine

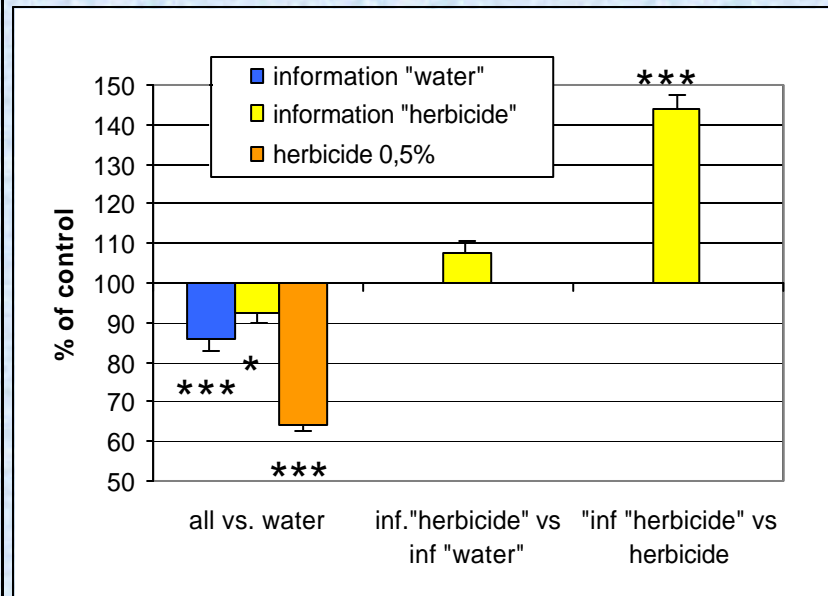
Further experiments performed in moderate room temperatures showed the inhibitory effect of information "amanitin" in comparison to information "water". The inhibitory effect of information "amanitin" was revealed in high (HG) as well as in low germinability (LG) seeds. The results were highly statistically significant in high germinability seeds but not in the low ones.



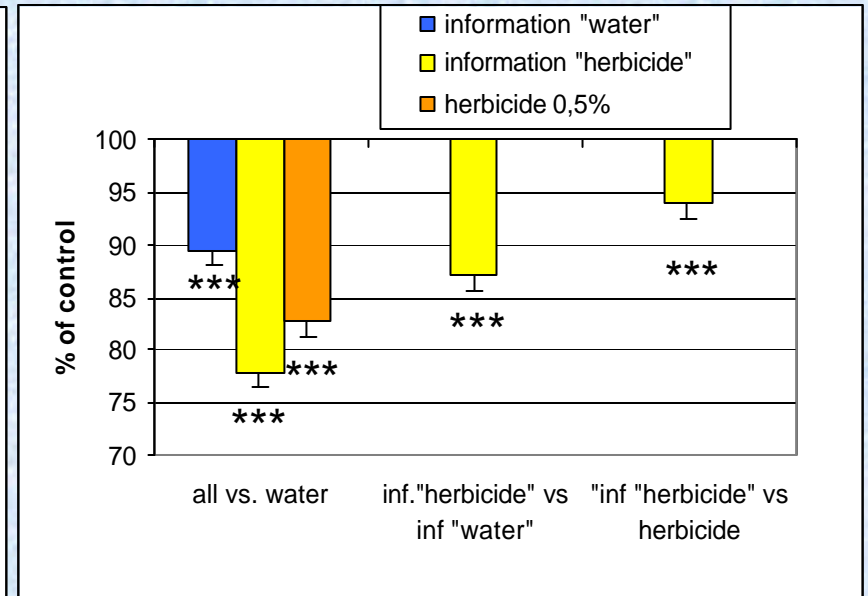


The herbicide solution normally inhibits the growth of plants. However the result with herbicide information depends on the quality of the seeds and consequently their physiological state.

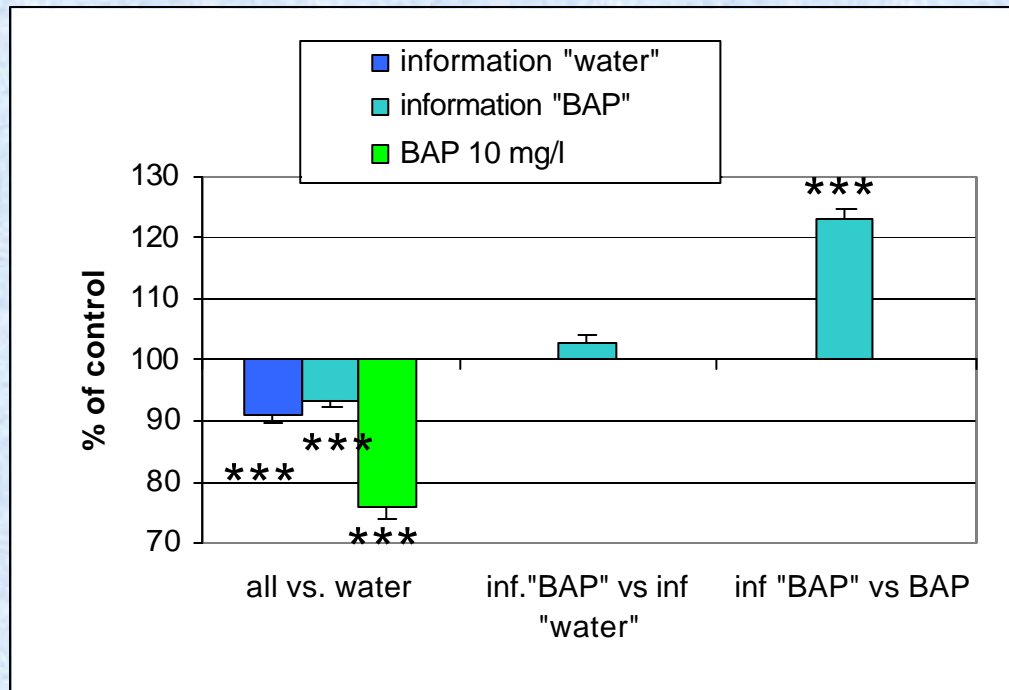
low germinability seeds



high germinability seeds



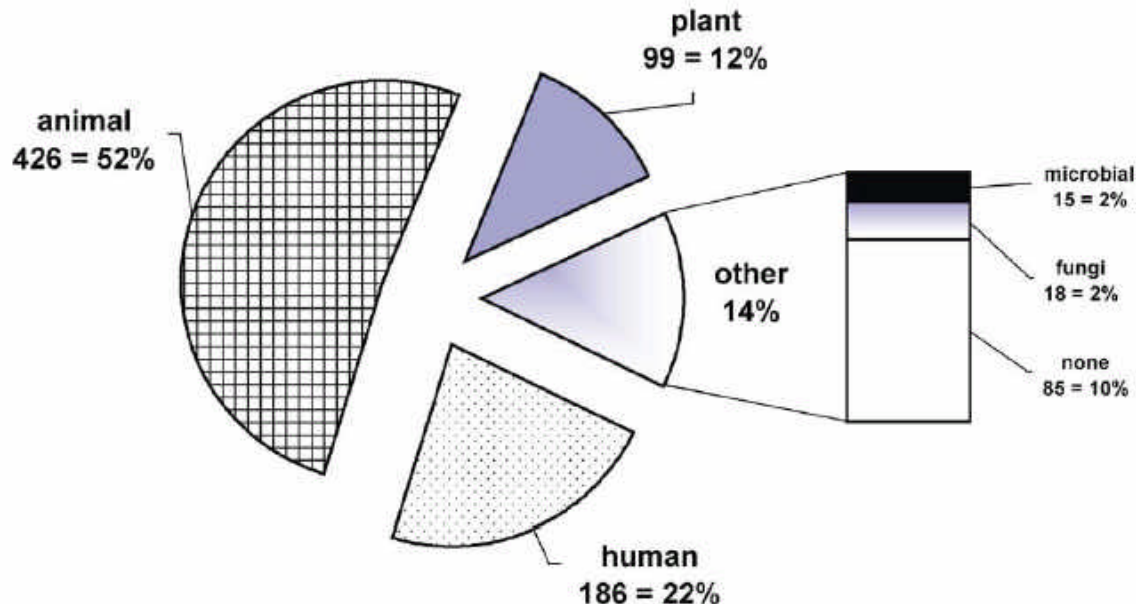
The experiments with the plant hormone cytokine were performed only with high germinability seeds. The chosen solution normally inhibits the growth of plants for about 25%. The information "cytokine" was less effective and not distinctive from the effects of information "water". However, the effects of both differ from ordinary distilled water.



Groping behind the phenomena – towards a new science

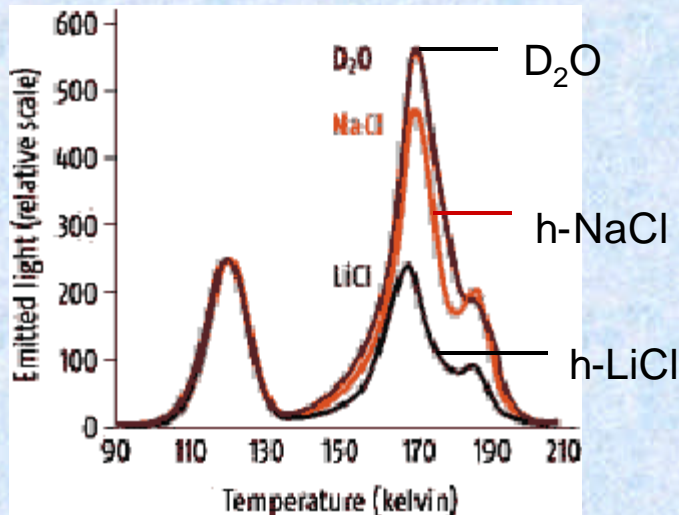
Increasingly the serious and competent scientific research in homeopathy and the memory of water demonstrate that these unorthodox phenomena are real.

There is even a considerably large database on basic research in homeopathy built by researchers from Germany and the Netherlands. It covers more than 1200 experiments that are roughly categorised below and should be attainable on www.idealibrary.com



A paper soon to be published in the journal Physica A shows that even when diluted to homeopathic levels, **salt solutions change the structure of hydrogen bonds in water**. Swiss chemist Louis Rey made the discovery while using a technique called **thermoluminescence** to study molecular structure.

The technique involves bathing a chilled sample with radiation. Warming up again causes the stored energy to be released as light in a pattern that reflects the atomic structure of the sample. Rey used the system to study the pattern of hydrogen bonds within ice. He used heavy water (D_2O), because it has stronger hydrogen bonds than hydrogen. After examining pure water samples, Rey looked at solutions of LiCl and NaCl. They revealed specific patterns; they were discernible also after the dilution well beyond the point when any ions of the original substances could remain.



Heavy water (D_2O) and highly dilute solutions of sodium chloride and lithium chloride behaved differently in thermoluminescence tests.

Not long ago scientists found that a wide range of substances such as salts and polymers can form clusters in solution. But a surprising finding made by the South Korean researchers is that **cluster size increases steadily with increasing dilution in water**. Therefore even if no molecule is expected there can be at least one large cluster exhibiting characteristics of involved molecules.

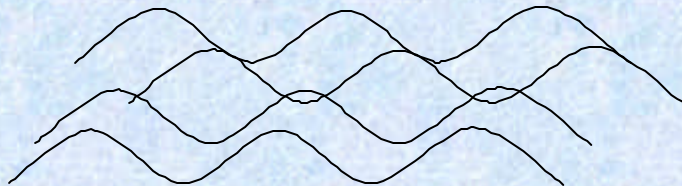
An extensive thermodynamic study has been carried out on aqueous solutions obtained through successive dilutions and succussions of 1% in weight of some solutes up to extremely diluted solutions, (less than 1×10^{-5} mol kg⁻¹) obtained via several 1/100 successive dilution processes. The interaction of acids or bases with the extremely diluted solutions has been studied calorimetrically at 25°C. **Despite the extreme dilution of the solutions, an exothermic heat of mixing in excess has been found, in about the 92% of the cases, with respect to the corresponding heat of mixing with the untreated solvent.** The researchers conducted over 500 experiments, approximately half of which were made with double-distilled water that was mixed with a specific acid and base substance and half were in the control group of only double-distilled water.

There is no generally accepted theory that would cover the phenomenon

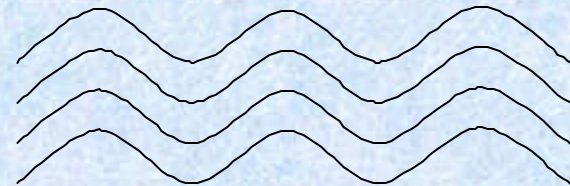
By many researchers it was found that information from various molecules can be transferred by a process of stepwise aqueous dilution and agitation or by means of an electronic circuitry (Benveniste, Schulte, Smith, Bion group), it can be stored on a compact disk and it can even exert its effect through the wall of a sealed glass vial (Schulte et al. expts. with thyroxin on frog tadpoles). It seems that the nature of this information capture, transmission and expression is tightly connected to the **electromagnetic field**.

The quantum field theory research has revealed that water dipoles may develop **phase coherent oscillations** through radiation coupling model predicts that the ground state of condensed mater is determined not only by short-range forces between the molecules and atoms, but also by long range interactions mediated via the endogenous electromagnetic field. This theory suggests that the phase coherent oscillations of the medium may represent molecular information.

incoherent oscillations



coherent oscillations



Conclusions

The memory of water is a real phenomenon that deserves full scientific attention. The dogmatism of scientific establishment is untenable and deeply unscientific.

There is not only the memory of water; in the broader sense we should speak about the memory of matter and fields.

From our own experiments as well as from many others we learn that the imprinting process is not limited only to molecules (homeopathy), but also to electromagnetic fields and even physiological states of organisms.

It seems to be a good working hypothesis that a special coherent state of matter and energy or perhaps coherent energy-matter is behind these phenomena.

The phenomena of molecular and even physiological information imprinting into water and other media are probably but the tip of the iceberg of the unknown laws and characteristics of matter and energy that may revolutionise not only medicine and biology, but also chemistry, physics among the basic natural sciences and the related applicative sciences as well.

Therefore we need a **new science** whose research field would cover the before mentioned phenomena and would be an enlargement of the present scientific fields of homeopathy and digital biology.

digital biology

homeopathy as a science

a new science of information
processing in matter and fields