

ALEX PODOLINSKY

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FOREWORD

In this lecture Alex Podolinsky demystifies the activity of the Bio-Dynamic preparations, and shows how the effectiveness of such preparations in soil development and plant form is easily seen.

This lecture complements the "Bio-Dynamic Agriculture Introductory Lectures" series, wherein fundamentals of the Bio-Dynamic Agricultural Method are discussed in a down-to-earth and practical manner.

The lecture was translated from the German presentation to the DEMETER International Organisation, and has been lightly edited so that the quality of the spoken word has been retained.

Experience has shown that for an introduction to effective practice of the Bio-Dynamic method direct instruction and initial supervision is necessary.

In Australia a wide-ranging advisory service (The Bio-Dynamic Agricultural Association of Australia) has developed for this purpose.

Trevor Hatch
Bio-Dynamic Agricultural Association of Australia
Powelltown Vic. 3797

“..... Yes, I count myself very lucky to have been able to hear Alex Podolinsky lecture and then to see his teachings so effectively applied at Agrilatina. That soil transformation was a miracle! I have never seen anything like it!”

**Linda Bullard
President of IFOAM
(International Federation of
Organic Agriculture
Movements)**



(Above photographs taken during the Demeter International presentation lecture, held in Latina, Italy in June 1999.)

BIO-DYNAMICS AGRICULTURE OF THE FUTURE

DEMETER INTERNATIONAL LECTURE

Held at LATINA, Italy. JUNE 1999

Followed by a field visit to the Cooperative Agrilatina
(Translated from German)

The farmer who, today, desires to convert to Organics or Bio-Dynamics faces far greater difficulties than thirty or forty years ago. For one, soils are sicker. This here is a typical lump of “soil” from Agrilatina neighbours. (Alex “knocks” – audibly – against the brick – a hard ploughed lump akin to picture A below).



Picture A: Latina Soil

Even in the Ukraine, the United States, Egypt or Australia, and as shown here in Europe “soils” come up in such hard lumps.

Furthermore, there are climatic difficulties. In a recent lecture (1997), published in English, I give reasons for the increasingly venomous storms, the enormous floodings, the incredibly gigantic hail. All this makes farming difficult.

5000 pigeons were released in France. They were to home in England. None found home. In Australia a pigeon has landed on

Macquarie Island, thousands of kilometres (54.36° Latitude South) from the Australian mainland, where it arrived deadly exhausted. It could not find home because communications functioning via Satellites so disturb the atmosphere that the pigeons are misdirected. This is also a contributory reason for the many nervous children and affected adults. A new not recognised form of pollution, of which possible effects on Nature generally, have not been investigated.

Additionally, there is the commercial situation of farmers, often oppressed by Banks. The commercial influence of Multi-nationals and Governments, inclusive of bureaucracy. They actually would like to be rid of us, namely, of the Organic/Bio-Dynamic integrity and product purity. They want to replace us with what in Europe is called “Integrated Agriculture”, “Clean and Green” with us, and which permits inputs of “minimum” chemicals. Such production, easier and cheaper to achieve, is to be “certified” and “accredited” and will be available in Supermarkets at lower costs than our honest production, so that it is made difficult for us to compete. All such can be expected.

In the EU there is, furthermore, satellite monitoring of every square meter and the influence thereupon of Brussels – subsidy based – which robs farmers in making individual, sound farm decisions. For instance soils have to be ploughed under atrociously wet conditions or the farmer would loose the right to cultivate this acreage for all future; much too steep hills are cropped with sunflowers, because of the extra AU\$1500/Ha subsidy so gained, with horrendous erosion resulting.

It would take too long to discuss the weather situation referred to earlier. However, it can be clearly shown that Earth has asthma. An asthma sufferer can breath in, whereas there is difficulty with breathing out. Earth is exactly in this situation.¹

The overall process of degradation began when Justus von Liebig – who, interestingly, towards the end of his life was not in full agreement with what his work tended towards in the hands of others – discovered, that plants can take in minerals only when soluble. Therewith began the artificial fertiliser industry. And, in the first lecture of Volume 1 of my “Bio-Dynamic Agriculture Introductory Lectures” I demonstrate how plants should actually be nourished. I can not expect that many of this audience have read this, so I shall briefly repeat it, as it builds the foundation for following contents.

Steiner’s Agricultural lectures contain an innocent sentence, of which little notice has been taken. It reads: “That plants should take in elements via humus and not through the soil water”. If we take this line as the

¹ This is described in more detail in **BioDynamic Agriculture Introductory Lectures** Volume 3, Lecture 3.

surface (refer to figure 1) and we have a tree; and here we have humus pockets (+); also roots; and the tree has leaves.

As soon as a plant is in leaf it has to transpire water. To allow this to happen it must therefore take in water. This is akin to breathing with man.

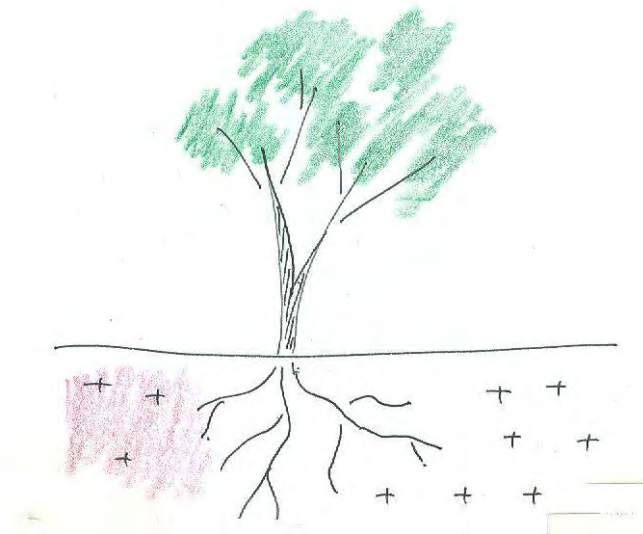


Figure 1.

We must breath in and out to remain alive. Thus the plant takes in water predominantly with the vertical darker roots. There are though also the smaller, more horizontal, white roots, which can be seen, for instance, late Winter to early Spring, when trees are taken from the nursery for planting. Then, even before buds swell, the white hair roots show up. These are the real feeder roots. The two root systems have generally not been distinguished.

When using artificial fertiliser, say, Nitrogen, powder is applied to the top of the soil. Rain dissolves the Nitrogen into the soil. Then all soil water, as far as the rain penetrated, is filled with Nitrogen. If we colour the Nitrogen with red dye it is easy to observe. When in this scenario, the plant takes in water for transpiration, it is forced to take in red water.

The plant is then nourished through the water and not through humus.

One may enquire how plants were fed before water-soluble fertilisers evolved. I have often been so questioned at the beginning of my work fifty years ago. The general acceptance, especially in phosphate starved Australia was, that plants would not grow without fertilisation.

Little is considered, that, prior to Justus von Liebig (artificial fertilising only commenced on a wider scale after the First and, in particular, the Second World War) - that prior to von Liebig plants **were** nourished....even grew and produced quite well.

Plants do require water-soluble elements. In Nature insoluble minerals occur in rock, and are freed into solubility via chemical-biological happenings. Worms and microbes function at the end of this chain of

events. Minerals passing through their bodies will be embedded in humus, in a water-soluble form.

At no University or Agricultural College have I ever seen humus like the 500 in my hand. But there are theories at such establishments as to how humus is to be taken up into the plant, and typically, how parts of humus, for instance, humic acid, are absorbed.

In a preserving jar, filled with humus and buried; open; a few inches under pasture in Spring; the dark content will vanish totally in a matter of weeks and will be densely replaced with the said white hair roots - like a piston in a liner. Therefore, the entire humus substance is taken into the plants.

At Universities there are also examinations of the metabolism of man, animals and plants. Once engaged in this process, examinations again tend into small and smaller particles. Thus an important and principal difference in the metabolism of plants, man and animals is readily overlooked. Man and animals maintain an individual metabolism, because each has an individual warmth organisation. Plants do not have an independent warmth organisation. A plant's metabolism is stimulated by Sun Warmth. The white hair roots are activated by Sun Warmth. The plant is absolutely dependant on Sun Warmth to take in humus.

Initially the most important criteria of humus is that it is a colloid. This ball of humus in my hand contains water-soluble elements (mineral salts). If I place this humus substance into a glass full of water, it will be, as it would be, had I placed Swiss Cheese into cold water. It would remain virtually unchanged for months and the water-soluble minerals in the humus or cheese would not mix with the water, because of the colloidity, which encases the ball skinlike.

Here (figure 1) we have the red soluble Nitrate water, and the plant, in taking up water, **must** take up red Nitrates. Here (+) humus is located dispersed throughout the soil and the white feeder roots enter the humus and take up water-soluble elements, but: in this case exactly as much as the Sun Warmth dictates or inspires.

In the red water scenario the plant **must** partake Nitrogen **without** Sun dictum – the plant must transpire when in leaf, whether it is cold or hot.

This is the cardinal and fundamental point which has to be understood.

Where the plant is forced to take in red water, it will take up much mineral salt. In each cell of our or a plant's body, an equilibrium of salt and water must exist. Where the cell's salt content is higher, sickness will occur.

Plants, influenced by excessive Nitrogen absorption, grow fast; are overgrown; blue green and hang water filled. Flying over Europe, much, even still green wheat, can be noticed lying flat. These are symptoms of over fertilisation.

In “organic” agriculture where animal manures are used - which have not been composted so that the entire heap is as colloidal as the 500 in my hand - the water-soluble salts remain “free” and would behave in soils so manured like the red water of artificial Nitrogen fertiliser.

On pastures around cow pads, grass and clover grows much larger. Animals are reluctant to graze this lush growth, because cow manure also contains water soluble NPK and the resultant, equally blue-green grass, likewise contains nitrates and is bitter.

This is a fundamental problem with Organic and often also of so called Bio-Dynamic agriculture. Namely, that water soluble salts enter the plants through organic fertilisers dissolved in soil water and not held in soil humus.

In the plant, salt and water must be in balance. If the plant is filled excessively with salts, because manured artificially, or, because manured “organically” without understanding, then the following happens:-

All combustible plant substance derives from CO² in the air which was assimilated in the leaf. Much less of a plant’s total substance is derived from Earth. The greatest component is water, the second comes with photosynthesis. Photosynthesis is a major reason for plant transpiration. It functions via light cells, located mainly on top of leaves, organised like a camera lens with a shutter, which are opened by transpiring water, so that sunlight can be absorbed. Chlorophyll and starch are made. The leaf is the main metabolic organ of the plant. Even roots grow from the leaf. Starch turns into finest aromatic sugar and food substances and, on the other hand, also into wood.

The plant transpires to gain finest substances.

But, when the plant is over filled with salts then the plant’s cells are likewise overfull with water to remain alive. This unnaturally large plant – we have examined carefully – transpires less water than the equally aged, smaller, natural plant nourished under the dictum of the Sun. With unnatural salt absorption each cell becomes an egoist and releases less water so as to not be affected by saltation, and water movement within the plant is reduced. For this reason less photosynthesis takes place in those blue-green giant plants and they taste bitter (nitrogen salts). They do not have the fine flavours and nourishment value of Sun influenced, natural plants.

Approximately forty-five years ago I obtained understanding on these plant nourishment factors. In my work, also with view to conventional agricultural experts, this was of fundamental importance. It provided a foundation of factual science which is in no way mystical, but when properly understood, actually expresses: “The plant should be fed through humus and not through the soil water”.

Before we view some pictures to the general situation of soils and to what can be seen at Agrilatina, a further fundamental reality has to be regarded.

In Australia we have very few real rivers. A real river such as the Po, the Rhine or the Danube show approximately 10% of the total water associated with the particular river visibly in the river. 90% is hidden in a vein system extending far into the plain, from where the river draws water or even holds water back. An interesting process.

In dry Australia few rivers exist, but there are many dry riverbeds. And when, after 18 months or two years, rain breaks in dry areas, it can be to one meter in twenty-four hours. Then dry riverbeds turn to flood channels and soon after again are dry. Flood channels are not connected to the surrounding Earth and have no vein system.

I have read reports on floods of, for instance, the Danube, where, for many centuries flood marks exist. In recent years flooding has been higher by meters than ever before. The reason for this is that soils have been turned into what I will now show.

We have just visited Sicily and the Marche. The erosion problem is enormous and it is astounding how virtually nothing is undertaken to make a halt to this, in a practical-technical way. I had contact in Sicily with an EU appointed agronomist who is to find a solution. He was helpful as interpreter of a lecture and interested in my suggestions.

The first pictures were taken in 1981/82 in a relatively good rainfall area of south Victoria – after a drought period of one and a half years and a gentle but persistent opening rain. Picture 1 shows a Bio-Dynamic farm.



Picture 1. Toni Fitzpatrick's Bio-Dynamic Farm: cultivated; darkness; shows humus even after long drought. Notice the glow in the soil.

Picture 2 a conventional neighbour.



Picture 2. Neighbour: ploughed; no humus; erosion; no colour.

Similar symptoms can be seen in the comparison of Agrilatina and a neighbour after heavy rain (Pictures 3 and 4), and the French professional Bio-Dynamic vineyard of Marc and Pirette Guilmot, and their neighbour (Pictures 5 and 6). Picture 7 shows the development of soil under Bio-Dynamic management from the original forest soil (Picture 8). In each comparative case the photographs were taken on the same day.

In a differing example, soil destruction can be demonstrated in the soil “cultivation” results in Pictures 9 and 10. The soil here is a very rich Latina soil, which has been ruined with modern farm techniques and become structureless, akin to a cement road, which can only be “cultivated” with giant tractors pulling murderous, heavily built ploughs.

The same can be seen on all continents, including the Ukraine and also on so called “organic” and “bio-dynamic” farms.

The enormous lumps are quickly broken down to sand-powder with appropriate weapons, so that seedbeds are achieved and irrigation can take place. Year by year the soil thus becomes more compacted.

To **open** soil by **cultivation** and to allow time for soil fermentation, has become forgotten.

Humusless cement soils require, of needs, more artificial fertiliser each year and more irrigation – because of lack of humus. (Humus can hold water to 70% of volume). And these unhealthy plantings, over-filled with salt and water, are attacked by innumerable “pests” (which, in natural

environments occur only in small numbers to deal with damaged or otherwise affected plant material) requiring increasing amounts of increasingly venomous chemicals.



Picture 3. Agrilatina: cultivated; humus soil colour glow; a professional Bio-Dynamic farm near Rome.



Picture 4. Agrilatina Neighbour: ploughed; no humus; erosion on flat Land; no colour.



Picture 5. A professional Bio-Dynamic example of a French Vineyard.



Picture 6. An adjoining French neighbour.



Picture 7. Cassegrain
Australian Bio-Dynamic
Vineyard, Ludwig Mueller.



Picture 8. The original “soil” of Picture 7, still in existence 10 meters
distant in natural bushland.



Picture 9. Rocks of soil; monster “plough” pulled by crawler.



Picture10. Same soil of Picture 9, after the lumps’ mechanical “breakdown” with “cruncher” (left side of picture).

Picture 11, taken after three months no rain, shows how a deep, black Bio-Dynamic soil has continuing pasture growth, whereas, 20 meters distant (Picture 12), conventional soil and plants are under moisture stress.



Picture 11. Trevor Cobbledick's Bio-Dynamic pasture, 3 months no rain.



Picture 12. Neighbour's conventionally grown pasture, 3 months no rain.

Please also pay attention to the colour variations between Bio-Dynamic and conventional soils; not just the “darkness” of the Bio-Dynamic soils, but how these **glow** and how the conventional soils show dull opaqueness. When an experienced physician sees such opaqueness in a stool he questions liver function.

One must objectively distinguish such colour variations in black or red volcanic and other soils. A comparison with the original colour of each soil should be sought.

Vincent van Gough painted soils as they should be – full of glow power.

Agrilatina bio-dynamically grown vegetables were examined with the Biophotone method in comparison to similar organic vegetables. One was astonished regarding the rich light result. (Refer to figure 2 A: Carrots, and figure 2B: Kohlrabi)

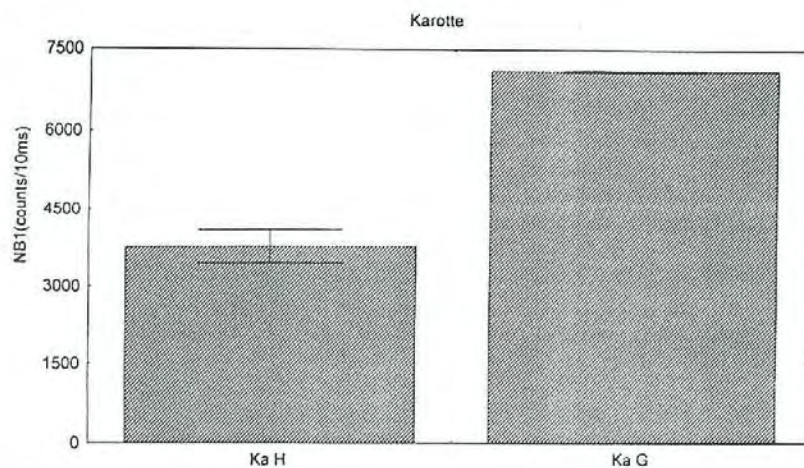


Figure 2A: Biophotone test comparing organic carrots (KaH) with bio-dynamically grown carrots (KaG).

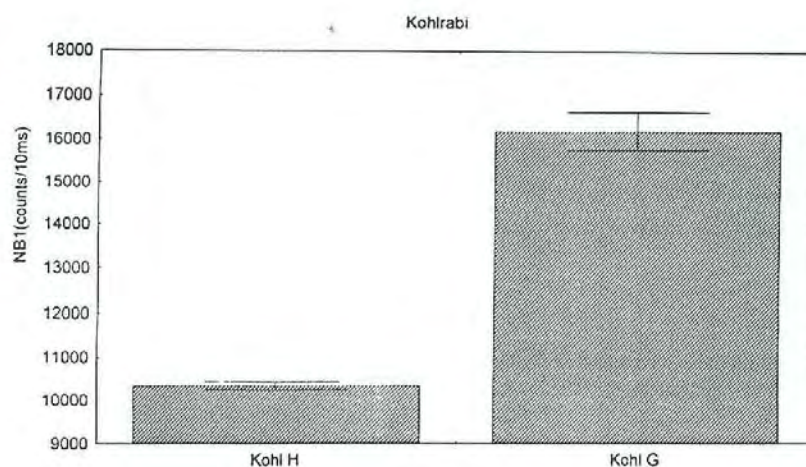


Figure 2B: Biophotone test comparing organic Kohlrabi (KohlH) with bio-dynamically grown Kohlrabi (KohlG).

On the Bio-Dynamic farm depicted in Picture 1, no artificial fertiliser has been applied for several decades, although the soil, originally, was poor sand. Three years ago agronomists from a fertiliser company collected clover leaves for leaf analyses purposes and discovered, to their astonishment, a full supply of all major and minor elements. The farm produces well - grains, cattle, sheep and pigs.

Everywhere where water runs off, causing erosion, or where soils are as compacted as depicted, the soil hardly takes in water and the vein system of a river can not function.

An example of another kind should also be raised. An Australian 1000 hectare farm, flat like a table top; with an approximately six meter deep gully-creek running along one boundary; flanked by the road and a neighbouring conventional farm on the hillside above the road with an owner in his mid-eighties. In the past Autumn, after the usual 6-8 months dry spell, this old farmer said to ours, "I don't know what you are doing down there John, but in 80 years this creek - over Summer and Autumn - is running for the first time". Our farm has developed sufficient humus and therewith stored water in the soil so that a vein system has commenced, which involves the entire district in a healing process.

After these introductory considerations I come to the actual theme. And I proceed, as always, with an **observation** which in turn must be brought to **conceptual recognition**. That is the Goetheanistic method of perceptual cognition ("Wahrnehmende Urteilskraft"). One can not discuss Agriculture without perceptions, which requires practical involvement.

We are visited from around the world, some are farmers, Chinese, Japanese, Europeans, Americans. And when I mention "lectures and advisory activity by agronomists" to this multitude of farmers, **all** faces show a similar smile. They know that, however knowledgeable these agronomists may be, they could not farm the land of the farmers; namely, that there is no real practical experience. Like art critics, who can not paint.

It is important to recognise this fundamentally. Because, sadly, particularly in Europe, where peasant holdings were small, and peasants worked hard, and therefore were reluctant to talk much, however much they observed - and the "studied" talk much - the peasant was seen as silly. This is how it came about that agronomists became recognised as the "professionals" of Agriculture and not the peasants. The real professional of Agriculture, however, is the one who produces food; akin to the artist painting pictures. Food that is nutritious and not poisoned. Unfortunately - due to the system of the agricultural educational establishments - the possibilities for practical experience for agricultural students is limited to short term visitor status on a farm where thirty are to perform the work of one person. Practical experience would have to

endure over several years, inclusive of independent farm management under common commercial pressures.

Medical doctors would never accept to be represented by bureaucrats of the Health Ministry who never touch a patient. They represent themselves, as do teachers.

In general science, especially so in conventional Agricultural Science, as also in Organics and Bio-Dynamics (although Steiner mentioned transmutation of elements, and Kervran and Hauschka offered evidence), it is accepted that elements, leaving the farm in products, have to be replaced. "Closed farm units" are mentioned in most Certification Standards as a pious wish. When, in early days, Government Agronomists mooted this theme, I raised the peasant production of centuries before Justus von Liebig. Peasants in my childhood used no artificial fertilisers and farm chemicals did not even exist. Artificial fertilisers were first used on large estates with sandy soils.

"Closed farm units" as argument is true at that historic date, not so today. Earth's population is four times that of 1900. Today, in the "developed nations", Italy, with 7% farm population rates highest. In the United States it is 3%, and in Australia 4%. Seventy years ago the great majority lived in the country, as workers or as small consumers, purchasing milk, butter, even bread from peasants. Very little produce left peasant holdings. The economy of recycling was enormous. Nothing was wasted. Healthy storage prevailed. Every waste went into the underground pit. Very rich areas, like the Ukraine, served as the bread-basket for poorer countries.

Today the opposite exists. We are forced into agricultural factory production. If, also as Bio-Dynamic farmers, we recognise our duty to deliver healthy food to city children, then we require production units such as Agrilatina (130 000 people fed by ninety to one hundred workers). But these factory farms must function at least as perfectly as a small house garden. We are capable of achieving this on huge properties. For instance in Australia, we spray 500 perfectly (not with planes) to 750 Hectares per afternoon and early night.

Today, a totally different situation faces us than seventy years ago.

This also belongs to the introduction. Many people, even some from country areas, are Supermarket orientated, and do not know any more how milk, a carrot or potatoes should taste. Between 1900 and 1920, however, after, especially on large estates, artificial fertiliser had been used, some noticed that potatoes and some other products no longer had taste. Such contacted Rudolf Steiner, who had already given new impulses in various areas. Steiner held back for years. Finally Count Keyserlingk asked a burly nephew not to leave Steiner's doorstep until a meeting date was given.

Steiner stood in the end phase of his work, and apart from the daily Agricultural lectures, travelled to Breslau to hold another course each

night. He was – as could be demonstrated – not certain in details of the Agricultural Course. However concise fundamental principles were expressed: “You must try it out”.

Steiner had prescribed a far flung university program for Ehrenfried Pfeiffer and offered living quarters in his own house. Eventually he entrusted Pfeiffer with the development of the preparations. The making, storage, application, stirring, spraying. We followed this and exchanged preparations with Pfeiffer in the early 1950's. He was surprised that, inter alia, especially our nettle preparation, which, after one year, is often difficult to discover, was better than his own. We had developed a special method in making this preparation.

Whereas, in Germany, to a degree, a different path was chosen and it was decided to dry the preparations and to thus store them.

Pfeiffer, a most creative scientist, was, however, not a farmer and not much developed, farm-wise, in the US. Bio-Dynamic development, as in many countries, was limited more to members of the Anthroposophic Society. Whereas it was the wish of Steiner that Bio-Dynamics as THE modern method of Agriculture would come to wide, general use.

So, Bio-Dynamics commenced in response to the new agricultural difficulties. So called Organic Agriculture started years later in England, guided by our friend Eve Balfour, Albert Howard, Albrecht and others in the United States. The direction there was “back to Nature”, akin to how all peasants in my childhood simply farmed naturally.

But this organic beginning was at hands of people who did not earn their bread with personal physical farm work. Lady Eve appeared as the most conversant with farm work.

However, never in life or in history can one **look backwards** and so hope to overcome new difficulties.

One has to strive forwards.

And I hope to now show how we move forwards.

Here, in my hand I hold effective 500. It comes about, by filling suitable cow manure into horns. Cow manure has a well known scent and this cow manure, buried over Winter, becomes a substance as is this 500.

I requested Joachim, who is from the country, Ilse and Matthis to sit in front.

How does 500 smell in comparison to the manure from which it stems?..... One, actually, has to push the nose right into the 500. Can one, with 500, recognise whence it originated?

Joachim says: “No”. That is correct.

What does this mean?

I am looking for a conceptual conclusion.

As stated, one can not recognise wherefrom 500 originated.

According to the Goetheanistic method, as organ of perception we are now not using eyes or ears, but the sense of smell.

What concise word expression is there? Here is the cow manure substance and here the 500 substance and one can not recognise from what the latter stems. One can certainly not recognise that three or four months ago it was cow manure. What does that mean – in one word? When one can not recognise the origin?

Joachim answers: A transformation has taken place.

Alex: But into what? Some say 500 smells neutral.

Joachim: Yes.

Alex: He agrees that it is neutral.

If 500 is neutral, how then does this cotton wool smell?.....Cotton wool has no scent at all. One could also use “neutral”, but more accurate would be “sterile”. That is very important.

So, this 500 is neutral. One also says, “transposed”.

Now, in this glass jar I have a bomb. In it is similar 500, but held air tight by this lid for some weeks.

Even those seated at the back will smell it.

(Alex opens the jar with gas audibly escaping).

Well, how does it smell?

Answer: Sharp.

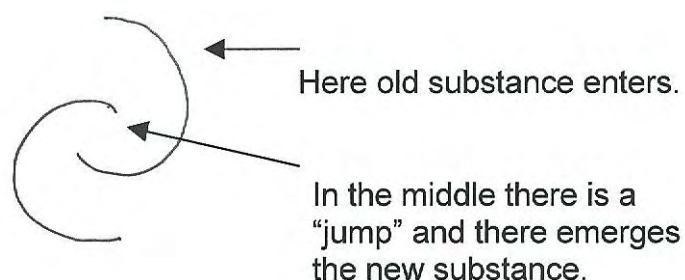
No, I require an exact description of the smell.

Answer: Putrid. Like rotten fish.

Well, this was perfect 500. Therefore: Because 500 is not “neutral/sterile”, but continues to exist as a living substance (although as a substance of indefinable origin), quite factually, a **transubstantiation** has taken place.

In our stomach region, particularly in the small intestines there is a white milky substance. Everything we consume should at some time be transformed into this substance. Otherwise, if I ate fish yesterday, I would have some fish here in my arm or here some salad. And I would slowly be poisoned. Pfeiffer, as a pioneer nutritionist, pointed this out.

Therefore: What I consume must also be “neutralised” into a transformed substance, before – out of this neutral substance – I can build up new body substance. We are dealing with something, which, drawn graphically, has to be like this,



It is the symbol of Chaos.

Rudolf Steiner also indicated, that Chaos exists not only in stirring, but likewise in the soil humus.

Humus – Humanus – Human.

Chaos is the activity toward new life. A “preparation” only then is such when it is “transformed”, in fact, when correctly understood, it is **trans-SUBSTAN-tiated**. It will become evident, that only when this has happened and, furthermore, when it is kept alive in the same moist original condition, that only then is 500 fully effective.

In the early years of Bio-Dynamic development the Agricultural Course was not generally available. A lady in England was denied access. She therefore inserted the compost preparation flowers into compost in dried herbal form. A slight effect resulted. It may be similar with dry or inferior preparations.

A confrontational discussion whether moist or dry preparations should be used, as “innocent” and democratic as this may appear, is improper and hypothetical. It denies, a priori, Transubstantiation and Chaos and the life-essential moistness.

The following picture (Picture 13) shows Australian transubstantiated preparations and some, obtained in Sicily, which came from central Europe.



Picture 13. Transubstantiated and non-transubstantiated Preparations.

None of the European preparations were transformed, never, transubstantiated. The origin of each, including 500, was perceived readily. The dandelion “preparation” consists of seed head puff (bottom left), which is not transformable. These flowers were picked at the wrong time. The dandelion and chamomile preparations in particular showed mouldiness. The “Horn Manure” was pressed and smeared on the outside into a ball, limiting air uptake and allowed to eventually dry out. On the outside mould was noticeable to eye and nose. Inside, this ball showed light green manure, by eye and scent, which stemmed either from not fully converted manure when horns were taken out or developed in the ball due to lack of air.

Unfortunately there are, today, many foods prepared akin to soluble manure ie. they are “readily” available, and avoid neutralisation. That is the preparatory reason towards sickness.

In the soil the humus substance is of similar purpose in purification as the milky substance in a healthy man’s digestion. Free nurturing.

The plant is to take in not too little or too much, but what is decreed by Sun Warmth direction. Then it has the right flavour. Furthermore, if it partakes via humus, then it is not poisoned through old substance (a new reason for eating Bio-Dynamic foods) and, that purity of food is an all encompassing necessity. That is the most important function of humus, followed by the colloidal, which holds water soluble elements.

Transubstantiated humus enables the plant to have individual existence.

Years earlier, I was informed of the Swiss comparative trials conducted by the FiBL Research Organisation: conventional; conventional with stable manure; organic; bio-dynamic; and, entirely natural without any manuring.

I heard that after fourteen years hardly a result for Bio-Dynamics was discernible and I intended to find out the reasons. Susanna Kueffer accompanied me to the Research farm and Institute and was present throughout. I report only on essentials for this lecture.

First we visited the trial plots and, at that time of year, I could discern no difference between the organic and the bio-dynamic plots. We then visited the responsible scientists. My name was known and maybe a somewhat vociferous representation for Bio-Dynamics was expected. After some time emerged that these scientists also could not see any special results in the Bio-Dynamic plot and that they were, consequently, rather inclined to the organic method. They seemed to doubt Australian pictures on one year Bio-Dynamic conversion results.

Regarding the slight bio-dynamic results – after fourteen years – claimed with the chromatography method, I felt somewhat ashamed, as this more anthroposophic method is not generally recognised and as no results were discernible in the soil of the field plots or in the plants.

I requested to see the preparations used. At the Institute only 500 was stored. Other “preparations” were supplied by peasants.

The 500 stored at the FiBL Institute was similar to the stinking bomb you smelt before. Stored in a tightly screwed down large jar, in a box with a few centimetres of peat moss, which barely came up the sides beyond the bottom. When I demonstrated the stink I was informed that the 500 came from the Goetheanum.

- “Equal Begets Equal”. -

I can not know the condition in which this 500 arrived from the Goetheanum – although, over the decades, we have, variably, witnessed too wet 500 there – but this example amplifies why the Australian DEMETER Standards have strict requirements on the storage of preparations - as is known to Michael Rietveld.

This is not a case of denial of “freedom”, but concerns professional ethics, as Herr Ellenberg of Weleda expressed in response to an earlier lecture of mine. It is expected, professionally, from a surgeon, that he operates with sterilised utensils and not with soiled scalpels.

The stinking 500 would not lift but lower the soil.

Each preparation is such only when it is transubstantiated typically for the particular preparation.

If 500 is stored as in this jar, what does it smell like?

Answer: Musty.

Yes it is mouldy, dried out (like the central European “500” ball).

When 500 is stored airtight, it stinks and is counter productive. Dried out, it is similarly ineffective – on the outside it is mouldy and, inside, it again reverts towards green manure.

500 and the preparations are effective when appropriately transubstantiated; and when applied at the correct Spring or Autumn time; and when correctly stored in peat moss and protected from outside influences such as electricity, petrol fumes, satellites etc.; AND held in the same state of moistness in which they arose from the soil – each with its special scent.

The principle and the purpose of the associated transubstantiation is a REALITY, open to the cognition power of any individual. It is not a matter of “opinion”. Therewith the preparations must be recognised and termed as sacraments. The only Sacraments available to objective Cognition-Reality.

The effectiveness of such preparations in soil development and plant form is easily seen.

The preparations are not “Medicines”. That would be a total misunderstanding. They are builders of a new Nature.

Bio-Dynamic practicers are Builders of Health not healers of sickness.

I feel for Medicos who have to be concerned with sickness (and often have a hankering for the land) and am grateful for our task. We are therewith artists in the reality of Nature, not musicians in a soul realm.

Joachim, you are a creative musician. I ask you to scent deeply into this 500. If you had to express yourself musically, how would that sound?

Pause.

I would like to make some introductory comments. If, from 8pm to 8am, under a clear sky and wind stillness, I stand outside in Nature: at what moment is it coldest? When is this?

Answer from another DEMETER International representative: shortly after 8am (!).

Exactly at sunrise. In that moment something happens, which Goethe made ring in the prologue to Faust. It sounds. Nothing is heard with the ear, but it sounds. And in that moment a shock-wave arises in the air, wind-chill arises and thus, momentarily, it is colder. Although, physically, neither sound nor air movement is discernible.

I ask for a tone of that kind. And, there, I have to raise also, that as a young child I was fortunate in having a God-Mother who was a musician and who convened the Heidelberg Chamber Orchestra. I was permitted to accompany the orchestra on performance trips and much to the amusement of the audience, onto the podium, and could listen to the Music amidst the orchestra - from "inside". This is quite different than to listen "from outside".

Now, Joachim, we want to hear quite objectively, how 500 sounds.

Answer: Like.....Moonshine Sonata....

That is much to elegiac. Firstly, is it one tone or many?

Answer: Many tones.

Yes, many tones and are they static or not?

Answer: I would require more time for such.

Good. There are here unendingly many tones (Joachim nods), more than the scale contains. And there is movement. And, physically, nothing is to be heard. After concentrated effort Tone Ether becomes audible.

Here, now, some further pictures. (Refer to Pictures 14 and 15 below.)

Soil Picture 14 shows a very compacted sandy-clay loam and in Picture 15, the same soil one year later. The soil in 14 is inaccessible to air. - One can ask regarding the most important soil ingredient for soil to be alive. Some answer water. In fact it is air. - If, in the soil of Picture 14, air is hindered, this soil can not function and 500 would not become effective. This soil therefore was ripped once, sprayed twice with 500 and some pasture seeds were roughly applied. The difference in colour, in power of glow and in structure is readily noticed.

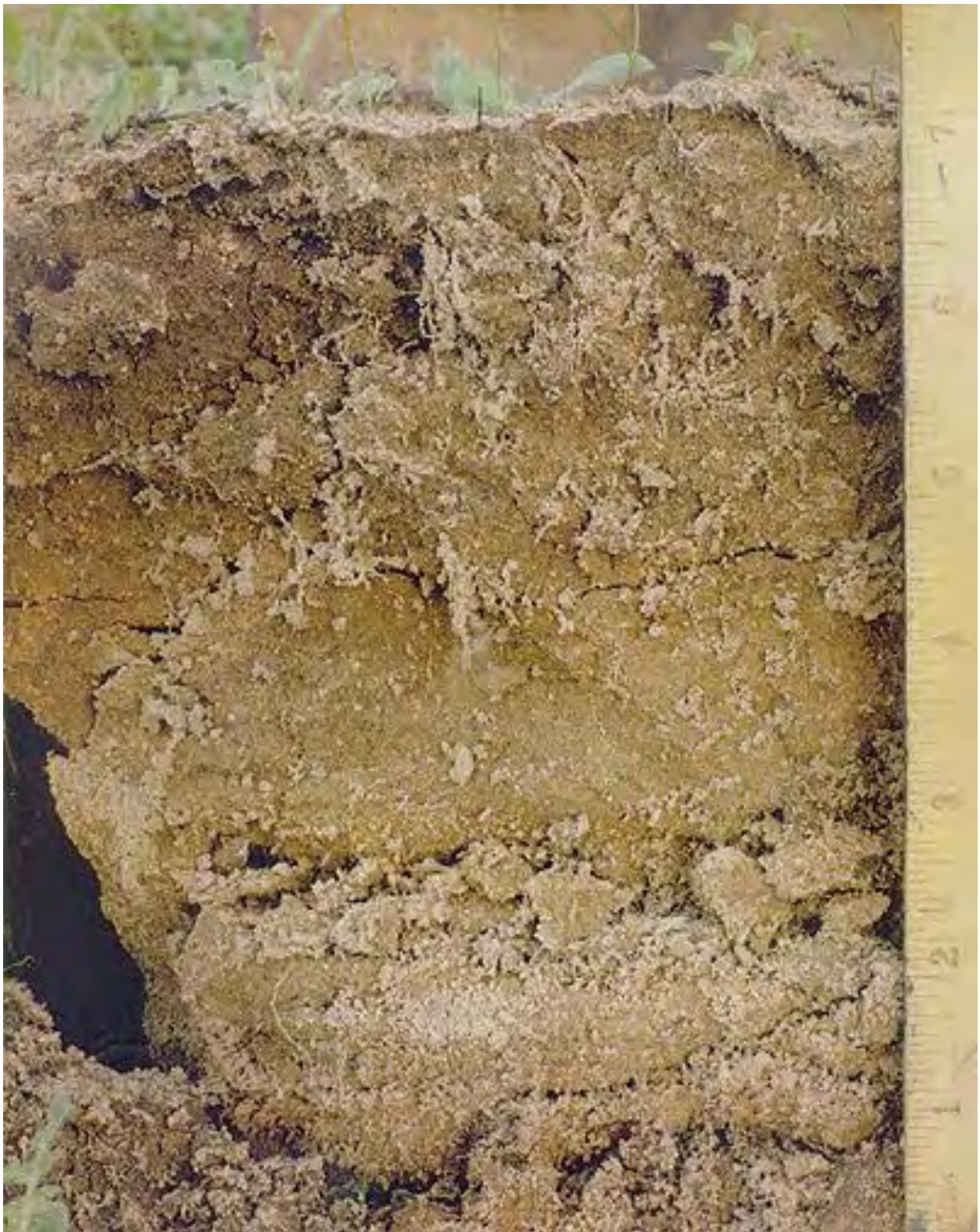
From what stems all the dark substance in the soil of Picture 15? What is it made of?

Pause.

The difference from Picture 14 to 15.

Well, please!

(After no answer Alex continues.)



Picture 14. Compacted Sandy-Clay Loam Soil



Picture 15. Same soil of Picture 14 after one year under Bio-Dynamic management.

The conventional answer is: converted organic substance of the original soil of Picture 14. But, look, where in this original soil is there any organic substance to be found? On top, sparse weeds, hardly a root and heavy compaction.

This transformation in one year! Here at Agrilatina there were similar results - even after eight months. (Achieved, initially with Australian preparations and appropriate cultivation).

Wherefrom does the dark substance derive?

Pfeiffer, unfortunately, did not complete the answer I will refer to. Namely, Pfeiffer, a very clever bacteriologist, as we heard, discovered bacteria in the preparations (one specialising in chewing up paper), which did not exist beforehand in Nature. In Lysenko's opinion not 50% of soil bacteria have been classified. I shall request FiBL to research into this. They have access to our type of preparations, now also made in Italy, Switzerland and France.

What is the new dark humus substance in the soil made of - after one year Bio-Dynamic transformation?

With application of prepared 500 bacteria enter the aired, moist soil – if all is undertaken correctly. These bacteria live only for moments, die and new ones emerge. Thus a new substance arises from the dead bodies of bacteria.

In arid Australia, where it generally is rather dry, especially in Western Australia, soil at first is just poor sand, which is water repellent (like with powder) and drips run off. Symptomatically this is an equivalent to the rock lumps ploughed up and shown in the picture of photograph A.

We have to wait for considerable rain (in main agricultural areas of Western Australia soil moisture exists for only three to four months) until 500 can be effectively sprayed.

Last May we again visited Western Australian farms after an Interval of some years (as I had to be in Europe so often). At Easter, relatively early, approximately 3cm of rain had fallen. Our visit commenced six weeks later. The sub-clover had germinated (over summer everything green dies, usually no rain for eight months and very hot). On the conventional neighbouring farms the sub-clover was dying, on our farms it continued to grow. John Cashmore and some other farmers sprayed 500 immediately. Others waited for more reliable rainfall, namely generally, for the amount of rain required when they first commenced 500 applications on their dead, water repellent soils. - A bureaucratic act.

We examined the soil profiles. The top two to three centimetres were dry, below was a darker layer of five to fifteen centimetres of visible moisture. The build-up of humus over the past years sucked in the rainwater, probably further down still, where it was not so obvious. In this moist region of warm soil 500 performed wonderfully and the clover grew well. We compared all Bio-Dynamic soils with those of conventional neighbours. The layer of moisture could be noted on all Bio-Dynamic

soils; also on those soils not yet sprayed with 500 this season, which now had to await later rains, when soil and climate would be colder and conditions less effective.

The neighbouring soils were equally dry in the top three centimetres. Roots, on top of the compacted lower zone, were bent horizontally. No moisture was to be seen and the sub-clover was dying.

The faces of our newer farmers showed delight at their soil development.

What developmental possibility arises therewith?

- a) The **new** humus layer “holds” water and enables prolonged soil biology and growth as the Pictures 11 and 12 show. Bio-Dynamic pasture grows actively whereas the conventional neighbour’s is drying up.
- b) Where the soil biology remains active longer and more NEW soil substance arises, experience shows that, in the situation of deficiencies (phosphate in Australia(!)), an application of 30 kilograms per hectare of rock phosphate is already too much, whereas 10 kilograms per hectare as “medicine” would be more suitable. Under conventional dead soil conditions such insignificant amount would show no result.

Because of the **new** humus quality and the continuation of soil moisture and enhanced soil biology, the 10 kilograms medicine (we seldom do have to apply), activating extra clover growth – enhancing the Bio-Dynamic soil biology and enzymes etc. activities – increases free nitrogen assimilation from the air (the fundamental substance for transmutation) into other elements. - In man’s digestion sugar can become fat and fat sugar. - Our experience of decades does not make for any other explanation ie. according to monthly soil tests the Phosphorus would go up and down without any Phosphorus being added.

I will now show some pictures from Egypt. Two years ago we visited Egypt. The famous Nile Delta is widely known. For thousands of years the Nile Delta soils have been farmed and enriched annually with run-off of organic substances from the Abyssinian Mountains. On account of the Aswan Dam the Nile Delta now misses out on this flooding and fertilisation is required. This soil picture (Picture 16) was taken on a so-called “Bio-Dynamic” Farm.



Picture 16. Egypt : Lumps; Irrigation; Cracks; Salt

Again the colour is milky opaque. No soil structure is discernible. Nowhere did we find soil structure.

After ploughing up the large lumps of “soil” none of the usual “crunchers” are required to break this soil down to dust - such as are required today even in the Ukraine - where the soils are so hardened, that, nowhere, one could plough with horse and single mouldboard plough as in my child hood. One could not get the plough into such hardness and if it were possible to do so, one could not “hold” the plough down and would be catapulted up and over. That is why today these huge tractors and murderous ploughs are used. Even, as shown on Picture 15, where, after one year, Bio-Dynamic development with a good structure has been achieved, a giant tractor would re-compact this fine structure immediately, rob air penetration and the new soil humus would begin to stink akin to the 500 in the airtight jar. We have developed totally new methods of soil cultivation, so that, even with a 400 Horse Power Tractor and special cultivation implements, soil can be worked as careingly as with a fork in a vegetable garden.

All such belongs to the Bio-Dynamic method, not just the preparations. - And if compost is applied and it is left to dry out, the same musty smell develops as with the dried out 500 in this jar. Then destruction sets in. All this (our) farmers learn.

But these Egyptian soils have run off the Abyssinian Mountains in such small particles and form alluvial soils. Fine silt organic particles, not humus, and therefore structurally like sand. This soil settles and compacts

without structure. And on initial ploughing similar large, hard lumps occur, but because of silt particalness these lumps melt (during the customary flood irrigation) like snow and murderous de-clumpers are not required. One can discern this on Picture 16. It also shows the absence of structure.

On the still moist other half of Picture 16, cracks are to be seen. I have never seen such on so still moist soil. And the white powder on top of the squares is a mixture of calcium and salt !

World-wide, especially in Australia, the salt problem is enormous. In Italy we have seen early symptoms. In Western Australia alone, per hour, four hectares are lost to saltation. That is like a soil cancer and nothing will grow any more.

To pacify the electorate politicians, before elections, make promises of a Billion Dollars to counter the salt problem. However, these do not even understand the cause of saltation, which has become more evident in the past thirty years.

In Bio-Dynamics we are the only ones who have overcome salt on a large scale. Australia was once submerged in the sea. Salt is therefore inherent. In undisturbed locations, even in so called deserts, the poorest plants created and maintained some soil structure. Structure, with pockets of air, passages etc. provided drainage and thus the salt remained, harmless, below the root zone. With increasingly destructive soil degradation by white man, with soil structure destroying quick ploughing, chemicals and heavy machinery, the natural structure was destroyed. Compaction resulted. Drainage was lost. Capillary action of the sun raised the salt. In Bio-Dynamics we re-create new soil structure, drainage re-commences, salt is again washed deep down and production returns.

In Holland DEMETER International members were shown a Bio-Dynamic Polder Farm. This equally rich alluvial soil (not to be mistaken for humus!) – similar in black silt particalness like in Egypt, derives from the Swiss mountains. There was also similar lack of structure. A field, planted to peas, showing earliest pod development, was already cracked wide enough for hand and wrist to submerge.

The following pictures (17 and 18) shows a black soil of what today is a Bio-Dynamic farm, which adjoins some black soil of Agrilatina.

According to conventional analysis this soil (in Picture 17) is fully supplied with every major and minor element so far known. But an experienced farmer can discern in the picture that this 50cm-1m profile soil is “sticky” and would cause drainage problems for some vegetables. Originally the soil was similar at the top. Worms are to be seen and stickiness. The colour also shows aspects of opaqueness. It should, like also the Egyptian soils, have a much darker **glow**.

Latina was a huge swamp, drained by Mussolini.

The next picture (18) shows the same soil.



Picture 17. Latina Black Soil



Picture 18.
Latina Black Soil,
after Bio-Dynamic
development.

The Archangeli family reputedly produces the best leeks in Europe. - For one, the soil (in Picture 18) glows in its totally transformed structured blackness. Such I had expected to see in Egypt and such could be achieved in Egypt, if non-transubstantiated, dried out preparations were not in use. (As it is also in many other countries.)

It is not a question of moistening preparations again after they were dry, but, whether they were transubstantiated and continuously held in the correct moist state.

I repeat: I hold here in my hand 500, which, scientifically has to be called transubstantiated. It achieves totally **new** darkening and structuring of soils without any organic substance being added. Transubstantiation is considered a sacramental happening. The **reality** of this is evident and it is open to the cognition of anyone. Belief is not required, but cognition with independent **objective consciousness** of a perceptible reality. This is the Goetheanistic method of cognition Steiner advocated - objective consciousness - a consciousness soul activity.

Whoever considers Bio-Dynamics can be practised with non-transubstantiated preparations, has not even begun. And someone who suggests, that preparations are no longer required – as long as one believes in Steiner's Anthroposophy – has never witnessed the effectiveness of preparations. This would amount to a negation of Steiner's impulse.

Further to Chaos. Have animals' individuality?

(Silence)

Please, have animals' individuality?

He says no.

Have animals' individuality?

Another says yes.

Generally Anthroposophists say "no", because Steiner indicated that animals have no Ego incarnated. However, the possibility of an incarnated Ego means no more than that those, where Ego is incarnated, have the potential for further development. And one has to seriously question how often this really happens, and as to how many animals have far more individuality than many humans. Realistically this question can only be put to people who work with animals. Whoever works with animals, like Ian, knows of the individual differences in animals. One milks one hundred cows. Four are quite different. Leaders. There are dogs – a child's mother has not yet noticed that the child has walked off, and, two kilometres distant, is near drowning – the dog runs to the child and saves it. Such has been documented. Animals have individuality.

Have plants' individuality?

(Silence)

Equally so. And such is demonstrated on an as yet unedited video – a pictorial representation just as the new structuring of Bio-Dynamic soil is

demonstrated, but of the upper plant Bio-Dynamic expression. Some of this can also be seen with Agrilatina plants.

Plants also have individuality.

Someone with 1000 cherry trees recognises exactly the four trees, of similar background, which from beginning offered a better form, just above average size and with balanced fruiting every year. If the others have suffered in whatever way, the four do not. They are exceptions and wood is taken from them for propagation. Considerable individuality exists.

How is it possible that a new being comes to existence from two parents, without being just a copy?

Steiner also spoke of Chaos in seed. Tests preformed by the Bio-Dynamic Research Institute demonstrate this further (refer to BioDynamic Agriculture Introductory Lectures Vol. 1, pages 119-122).

First an example where no individuality came to development. We trained a tea plantation manager from Sri Lanka. Highly cultured and educated also as Agronomist.

He showed photographs. A hill covered with tea bushes. It appeared as boring as plastic bubble wrapping. (In the Champagne exist similar examples of cloned vines.) I asked what had occurred. This does not look like plants, but like stereotype repetitions. He answered, the whole hill stems from one plant (tea belongs to the camellia family), from leaf cloning. For economic reasons tea is planted this way in modern times. Then tea bushes grow low and are easy to pick, whereas natural tea bushes were two to three meters tall and harvesting much more costly. Natural tea bushes (and historically also vines) grew in greater space, amongst complementary plants. Less monoculture. The soils are of rich volcanic origin, permitting deep tap roots, apart from shallow horizontals. The cloned small bushes have only the side roots and grow in tight rows without complementary plants. Therefore large amounts of fertiliser have to be applied. Whereas the natural plants did not require such.

These unnatural plantations, however "Bio-Dynamics" may be practised, would be unacceptable to us. We require that the plant is natural. On first visiting a newly converting farm, it has to be discovered what is physically wrong.

This is not quite as bad as "Dolly" the cloned sheep (which, incidentally, is aging over rapidly). The worst aspect of cloning or gene splicing is the avoidance of the Chaos principle in enabling new individuality. Seed propagation must not be avoided. - In this regard it must be added how astonishing and illogical Botany proceeds in declaring "female" and "male" parts within the flower. This distinction was taken over from the human and animal realm. Overlooked remains, that, after mating in the human/animal realm, the new being has inevitably started. Not so in the plant realm, where a seed can have lain 4000 years in the sarcophagus of a Pharaoh and, only after being put into warm, moist, dark mother Earth, will a new plant emerge. The seed is the male part, the

female part is the Earth. - One of the scientific hypotheses, but detrimental to plant propagation when, eventually, in the hands of over clever technical skills.

We in Bio-Dynamics pursue plant breeding from the female pole and not solely from the male side. Important is, that plants grow in the **new** soil developed by preparations; into humus rich darkness and to a state of new structure. That is, that plants are nourished via this new impulse. Thus seeds and plants become on-goingly healthier. Old quality varieties continue to be used, which, conventionally, have often had to be discarded. This also is Bio-Dynamic as distinct from organic.

Organics suffers an underground insecurity and lives off the past – Old Testament like – off run-off soils from mountains. Bio-Dynamics is New Testament like and impulses **new** soil. - Jealousy and ambition exists everywhere even in the Anthroposophic society. -

Agriculture and humanity can not for all future draw on resources stemming from erosion off mountains. This is not sustainable. Bio-Dynamics is sustainable, because new soil is created – with, sometimes, minimal usage of old substances. Furthermore old Earth is dying and so less and less old “humus” will eventually be available.

In my book Active Perception, I demonstrate in methodical pictorialness how the Bio-Dynamic preparations, in particular 500, bring individuality forces. Steiner spoke of the individuality force of 500.

In one of his last letters Hans Heintze (who was instrumental in re-starting Bio-Dynamics in Germany after the Second World War, as we did in Australia) wrote, “you in Australia are working Bio-Dynamically in the area of the Second Class”. That was surprising.

To say, (in wishing to merge Steiner's High School of Spiritual Science [First Class] with Bio-Dynamics), – “there, I use some Will and here, something else, in Stirring” – “experiencing” in the soul realm – sounds like mystical medieval introversion, if examined as to its methodicity with philosophic exactness.

Whereas I demonstrate objective perception and cognition in the area of Individuality power , in soil.



With regard to these two pictures (Pictures 14 and 15) I often question, not only as to where the dark substance originates, but also: Where does this astonishing new structure come from and so quickly?

I might then ask, “From what is the Cupola of Saint Peter in Rome made?”

Please what is this Cupola made of?

Pause.

Often answers are: from copper, stone and wood.

These are materialistic answers. These materials can be heaped up on the floor. How would the Cupola arise therefrom?

What, therein, is the role of Michelangelo?

(Pause)

At least 50%, probably much more of the total building stems from the spiritual vision of the one who incited the building.

- Steiner spoke of the Building Thought of the Goetheanum. -

Exactly so is this astonishing structure incarnated into soil. (Quite different to the ineffective standing by the window, praying down Spirit into Earth.) In fullest reality – an incarnating takes place.

– Spirit in Matter –

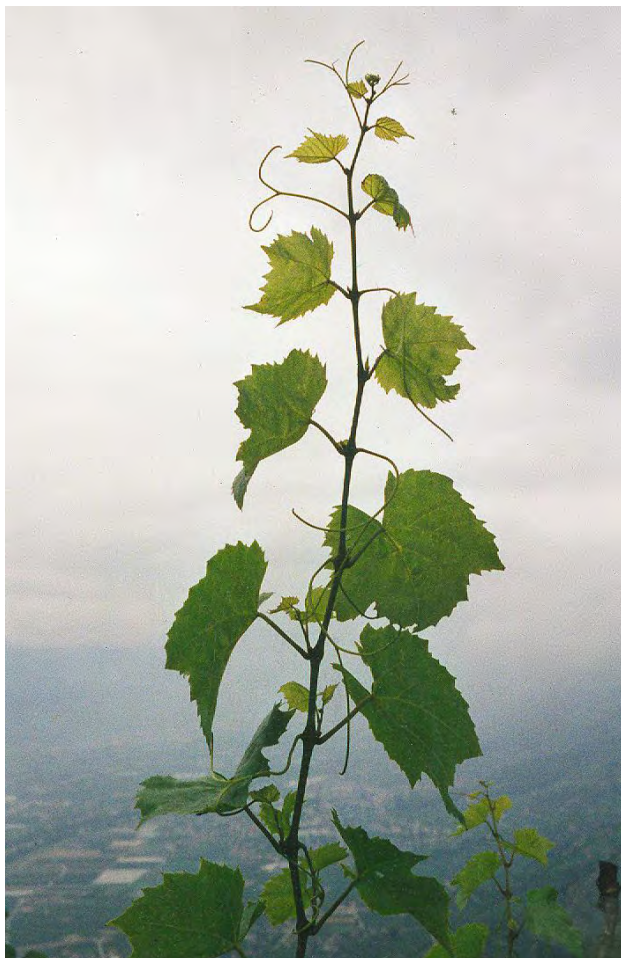
We are surrounded by this and nothing happens from nothing. Spirit gives structure. So also, when one studies plants, where variations in growth expression can be demonstrated. Vincent van Gough painted plants which “rise” actively. Rainer Sax (the first to work in Switzerland as Agrilatina does in Italy) at my last visit, showed with arms and hands how his strawberries reach up like dancers and took me to them. True Bio-dynamic plants show such uprightness. (See Pictures 19, 20 and 21)



Picture 19. Lettuce at Agrilatina, showing typical Bio-Dynamic upright plant expression.



Picture 20. Cassegrain Vineyard: Le Clos Francoise, showing typical Bio-Dynamic upright plant expression.



Picture 21. Vines of Jacque and Margot Granges-Faiss, Domain de Beudon near Geneva, Switzerland.

Fundamental to DEMETER registration in Australia is soil structure which typifies and accompanies **new** soil formation. The further requirement is the described Bio-Dynamic upper plant expression.

Van Gough so painted, and saw in each of his Suns the face of Christ. He gave up sharing in a painting school venture with Gauguin, because he painted in the realm of formative-forces whereas Gauguin was a sensual colour painter. Our farmers see this uprightness. They might drive thousands of kilometres from home past wheat and see that it is Bio-Dynamic. They know nobody there, drive up to the house and see a stirring machine. - Some of the new impulse of Bio-Dynamics.

A Chaos momentum takes place in the seed. Only thus a new plant arises. In man this occurs during embryonic development, when the embryo, for several times, takes on form and dissolves again. In plants, roses for instance, if "propagated" from cuttings, soon lose the rose scent and become roses without souls.

How does one conceive a transforming, developmental future for Earth? Is it to be by another big "bang".

We begin by creating totally new soil and new plants, which look as though they were making Eurhythmy.

For the whole of 1938 my twin sister and I were taken from the English boarding schools and stayed in a flat in Arlesheim and had private tuition from some leading former pupils of Dr. Steiner. Every morning we walked across the not yet built up meadows to the Goetheanum and often met Albert Steffen with his big rimmed black hat on his morning walk.

Most important to me was, that I had an absolutely free run of the Goetheanum. I could attend all performances and rehearsals. Most of the time I was up on the orchestra balcony (Hans Schmid [Capesius] was my music teacher) and watched how Frau Steiner taught Eurhythmy and Speech. The rehearsals were much more important to me than the performances. Such – etheric - Eurhythmy I have not seen again. Uprightness power, Forming, Moving-Form. Like our plants stand in formative-force. And the voice!

We create new soil – scientifically explained and objectively visible, and we aid the plants, maybe more than animals, to advance. - They have been left behind. - Plants are pure as children, or, as one says, children are pure as plants. Animals also have great purity. That is known to those who work with them. In all this one has to have observations. One has to have experience or talk is of little sense. - I regret that the Demeter International countries are not all represented by farmers, as is New Zealand by Ian, who knows – unsentimentally – what I am saying about plants and animals.

Plants have not passion. Through Bio-Dynamics they become new plants in uprightness. Such does not exist otherwise in Nature. It is New Testament like.

If the preparations are not of the appropriate quality, there may be 5% or 10% effectiveness. Our farmers would not wait for this. A healthy farmer wants to see results. Otherwise there would only be “belief”, which does not belong to the Consciousness Soul Age - the time of objective consciousness.

Farmers in Italy who attended my lectures for the first time in 1999 were reluctant to invite neighbours because they feared I would also give theoretical “Anthroposophic” lectures, as had happened by others in the past. This deterred people. Such lectures were based on fixed theories and lacked in power of perception and objective consciousness. Whereas, what stems from perception, widens and fills observations the practical farmer held beforehand. It explains as soon as “it falls into place”. The ill effect of such inappropriate dilettantish theorising to farmers and on the Bio-Dynamic movement is greatly paining.

I shall take this lecture off tape and will make it available. When first given at our AGM 1999 our Australian National Television filmed it. Tonight an Italian State Film on Agrilatina will be shown. But films etc. are never the same as having participated.

Question: Can one ask questions?

Answer: Yes, but they would have to come from farmers. Often it is better to let a lecture breathe out. If I were able to make three laws, they would be:

- a) that only those are to own land, who work it themselves;
- b) that everyone who is not a farmer, a mother with children, an independent tradesman and the likes, would have to work with one of these for one month per year - without weekends. Then feet would be grounded again and bureaucracy would reduce;
- c) that firms be limited to 150 employees.

Steiner indicated that Pfeiffer, after absolving that exhaustive University program, could work three years at the Institute and then should work three years on a farm, so that the feet remained on solid Earth. Pfeiffer, who did not come from the land, understood this thus, that, after Steiner's death he went to Loverendal farms as **manager**, who never really undertakes the hard yakka himself.

For a while Pfeiffer attempted to run a dairy farm in America. But had to give up on account of sickness.

I had hoped there would here be a vessel in which we could hand-stir, and, please, Steiner spoke of “stirring by hand”, not “with” the hands, using a witches broom. We, as with Pfeiffer, where smaller amounts are required, stir using our hands. There is a video on Stirring.

The first 500 was made on land of the Sonnenhof in Arlesheim. In 1938 that ground was still open, today it is built on. When the first horns were to be taken out – in the presence of Rudolf Steiner – they were difficult to find. Steiner became impatient and attempted to leave. The

horns were found and Steiner put his nose to one and expressed satisfaction! That says much.

In my books I describe why stirring with a broom is counter productive. Bio-Dynamic reality and results depend upon all being performed at best.

To obtain effective transubstantiated preparations it is necessary that these, as in Arlesheim, undergo the process during the coldness of Winter.

In tropical conditions cow manure is readily transformed into compost-like-humus, but it has not the power of 500!

We humans rise through a crisis situation, not, when it is made easy. And then theoretical Anthroposophists say nicely “cosmic forces” work in the 500 pit. - Steiner did say: “You can speak of the etheric body, if you can show why”.

All that is so claimed must be shown in practical-objective pictorialness.

Here on Earth we live on a Planet, which rotates and speeds through the Universe. Before the first astronaut took photographs, I predicted that only the Earth body would appear in colour. Only Earth has water, air, light and warmth-uptake. The glass in my hand can act as vessel for water. Were there no glass, the water would disperse. Our brain is not the producer of thoughts, but only the vessel in which thoughts appear. Artificially induced and measured electrical recordings in the brain are not identifiable with thought content. The Nobel Prize winning Brain Physiologist John Eccles stated, and he did not use the smallest particle approach, but the holistic method, by taking identical twins, identical cells and neurons, same upbringing and environment. One was highly developed, the other a dunce. Eccles took this to indicate that the brain acts only as vessel for that which he termed “mind”, which itself performs independently.

Water in the air acts like the glass. It accommodates light. When it is humid on a morning with a totally clear sky, the light is overbright, because of heightened air moisture. A thunderstorm can be expected. Dry light is quite different. - Flying at 12,000Km, looking upwards, the sky looks dark, downwards, it is lighter blue. Higher up there is less moisture.

The other planets do not have the extra three elements, only the solid.

How cow manure is transformed in so short a period is miraculous. Especially, as this takes place in a coldness, which denies bacterial activity. It is made “difficult”. What transubstantiates the manure? “Scientifically”, at that state of coldness, even frozenness to one meter, there is no explanation.

It is by the **cosmic** Winter forces of **Earth**.

The frozen Winter soil has a suction-power, as, a little and materialistic example, the “drag” on a large concrete floor surface.

When, in the still cold Spring, the horns, full of the transubstantiated 500, are taken up (500 is wrongly termed “horn-**manure**”. Perhaps,

because of lack of confidence such a “conventional” term is used), this 500 content is much colder to the hand than the horn or the surrounding soil. And if one lightly squeezes the horn shaped 500 content, a “crystalline breaking” crackling, can be noticed.

In a warm climate compost is obtained.

In the transformation in adversity the initial impulse of Ego power is awakened.

In the Course Steiner emphatically made two practical demands: That 500 is stirred “energetically” and that the crystal for 501 should be ground to finest flour-like powder. In a lecture I demonstrate how the crystal substance – as light intake substantiality - is of **old** kind, akin to cow manure, and why it must be destroyed to powder. To a non-existence as substance, which can then serve to **new** Light Intake Power. It therewith undergoes a transubstantiation equivalent to 500.

The second Ego-empowering comes with energetic stirring interspersed by powerful Chaos. This is discussed in more detail in my books and videos.

Further to the “obligatory” replacement theory of elements, leaving the farm with produce:-

Everywhere exists Grandma’s well known backyard plum tree with such especially tasty fruit; never cared for or manured; bearing fruit every year.

Why do these fruits taste so good? Exactly because nothing is done to the tree! In the FiBL comparative trial, I am informed, the not manured plot produces (surpassed only by the Bio-Dynamic) the best tasting products.

Wonderful that, for once, notice is taken of taste. The consumer is more influenced by taste than of writing on a package.

It is so, because with this plum tree **everything** of water soluble elements taken up by the tree arises from natural humus, as, in this case, this **natural** humus is the only supplier of water soluble elements. In no other fashion have elements been supplied.

In the Italian mountains exist many ages old, natural olive trees, never manured or chemically treated, never irrigated, and they supply the best oil. Finest quality, just as with the plum tree. Similar examples are provided by naturally functioning vineyards and herb gardens. The grapes taste like granny’s plum tree quality. Plants growing to century ages:- olives, grapes, figs - can produce, non-fertilised, for long durations.

There is also the example of huge natural archetypal forests from which here and there trees have been harvested and which continue on without any fertilisation – however, in greatest diversity of species, ie not monoculture.

But, as stated, today – with four times the population of 1900 – we are responsible to supply huge cities and have to revert to monoculture. In

consequence, Pasquale uses a variety of over ninety green manure plants. Each provides differinglly.

Only with the new Bio-Dynamic soil, nourished by the prior non-existent, New Testament like – humus, an even better taste than solely stemming from old humus, is achieved.

The large international firms Pasquale supplies, seek, with contracted preference, Agrilatina Bio-Dynamic quality.

The Agrilatina DEMETER publication, which is not propaganda, but truth - and works accordingly - reads, almost poetically:

“Plants, daughters of Sun and Earth.
(Experiences of the Co-operative Agrilatina)

A crisp and tasty carrot.....

A fresh inviting salad.....

A ripe and well flavoured melon.....

**Light, Taste, Aroma, Forms, Colours, Poetry, Love,
Vitality, Sun, Quality, Health, Joy of Life.....”**

The Australian market – even over distances of three to four thousand kilometres, asks: “when will certain peaches, avocados, cauliflowers, peas, apples, asparagus, bananas etc. etc. arrive at the market this year”. Consumers await these because the activity described by Pasquale is contained in these products.

Then the Agrilatina publication says, “the beginning enthusiasm, in spite of the considerable demands and sacrifices, has grown with gaining deeper insight into the mechanisms of **life** and with the professional application of the Bio-Dynamic Method”. Then reference is made to me and Bio-Dynamics in Australia, followed by practical-scientific explanations. Ninety to one hundred workers supplying healthy food for 130,000 consumers.

For years, weekly courses are held for the employees. All are informed and interested in the Bio-Dynamic work and results, and undertake their work excellently.

Now a scene from my Video No. 1, which, unfortunately can not be reproduced on slides. The first change from conventional to bio-dynamically enlivened soils is one of colour - of a purple tinge. Red basalt soils were originally not red but more purple-brown. This humus has generally long been eroded in old countries. In Australia also exist such volcanic soils, which in the relatively short period (200 years of white influence) have not been totally yellowed and where in road cuttings the original purple colouring is still obvious.

When we commence with a very dead, yellow clay soil, then - before structure or black humus is formed – it is as though a purple hue was brushed on to a yellow soil profile.

In desiring to show the glow-power of soils, where not only dark or blanched matters, a manifold palette would be required, including purple. Again Van Gough and Paula Modersohn-Becker were particularly sighted and able to represent this.

(The Video was shown.)

A further practical point to your visit to Agrilatina. When I was first taken to the then 26 hectare Agrilatina glasshouse it was by an Anthroposophic adviser. He asked, "Can we accept such a large, unnatural glass house?". My answer was, "If we can not face any agricultural situation and make a contribution, we do not represent an agricultural method".

The soil was, as can be seen with the neighbours, yellow sand. (See Picture 22). Pasquale will no doubt speak on this. Earlier on, when Agrilatina was functioning "organically", one annual green manuring with only one species, mustard, was used, followed by three or four crops. Mustard is stringy, lacking in real leaves and not a legume. I suggested the use of at least twenty varieties. Today it is two green manure crops with over ninety varieties.



Picture 22: Agrilatina original yellow sand (bottom) and under Bio-Dynamic management (top).

I further suggested, after cultivation, to sow down the green manure, to irrigate no deeper than ten centimetres and to walk out prepared 500. This brings the plants up and is followed by a second ten centimetre irrigation. The plants will come up to twenty centimetres high. This is

followed by one very deep watering, easy to achieve in a sandy soil, which in turn then dries off from the top downwards. The roots, stimulated by prepared 500, follow the water deeper and deeper and the 500 activity therewith acts and structures deep into the subsoil. After four weeks the soil can thus be penetrated to one meter.

It is easy to achieve soil transformation in the topsoil region, but we must strive for depth activity – also because of drainage – to accommodate the enormous amounts of rains mentioned earlier on. See also the Archangeli soil pictures (Pictures 17 and 18).

At the beginning of a lecture on Compost, I said, “the best is to not make any!”. Compost, even if of really developed colloidal, and, as usual, put into the topsoil, draws the roots to the enriching soil at the top.

The effectiveness of sheet composting and what we achieve, especially with our dynamic rotational grazing management, works deep into the soil.

Sheet composting also takes place, when part of the farm is stocked, preferably with cows, (sheep and others welcome) in rotation over the whole farm. Mixed pasture is offered at optimal growth – similar to the ideal time for harvesting lettuce, not too short and not too stagnated.

During the first farm visit we search for the most suitable general farm method for the particular farm to function as a Bio-Dynamic farm. And therewith – as a totality – for the applicable farm individuality, suitable: to the district; to achieveability; to the physical and financial ability of the farmer; available machinery; apart from general biological and ecological requirements etc.

Essential is, that animals, as much as possible, are outside. In Australia that is so to 100%. Even in snow. We have no stables. And that, for instance in case of a dairy farm, the milk shed has one large concrete yard for in and outgoing cows.

In many areas of Earth cows are mainly stabled. Grass is brought in today with huge compacting machines and is coughed out at the cows, who should be grazing and able to choose feed. In turn the manure is spread out with equally compacting machines. Should any humus be left in the soil so compacted it is robbed of air and stinks like the 500 bomb.

The typical European “hay” paddocks are of thin growth. The importance of the cow’s hoof pressure – as distinct from pugging – and the cow’s grazing and breath on pasture for good sward development (well recognised by the Swiss peasant Hans Werner), has to be understood and provided for.

With us cows graze outside. But total rotation throughout the year is necessary. A dairy farm requires at least twenty well fenced paddocks, which in size must match the herd number, so that in ten days, with electric fence partitioning, paddock 1 is grazed off – just as if cut for hay. The herd is put onto the next paddock of optimum growth. The manure of paddock 1 must then be harrowed immediately. Manure is thus offered

freshly to the biological activity of the soil and twice per year prepared 500 is applied. 501 is used as plants require (Refer to Bio-Dynamic Agriculture Introductory Lectures Volume 1).

As little as possible should manure be lost on the cow tracks from paddock to milking shed. Cows are locked into their paddocks and before cows are fetched for milking, they are got up calmly to drop manure in the paddock.

After milking they are held half to three-quarters of an hour on the concrete and the accumulated manure is bladed over the side of the yard with a four-wheeler motor bike with a squeegee blade and is covered with good quality hay for protection against sun and rain. Thus high quality material becomes available for compost making, made approximately fortnightly. Fresh, moist, protected. We use compost spreaders for making and spreading of compost, which becomes an economic and easy task. Agrilatina purchased an extra 100 cow dairy farm mainly for compost reasons. Whilst for the first vegetable crop the green manure suffices, later crops require additional compost of best colloidal quality.

Good Bio-Dynamic compost acts dynamically like 500, with many years effectiveness. But much more effective is sheet composting through dynamic rotational grazing and regrowth of pasture to optimal length, which makes for creation of deep root activity.

On dairy farms the accumulated manure has to be composted with compost being applied on back paddocks or, on very fertile farms, is sold to market gardens.

With rotational management the entire farm increases in fertility, and in rotation, pastures can be cultivated and cropped without any outside manuring. Grain production is then nourished from newly established soil humus only.

Grazing paddocks and hay paddocks are one and the same – in turn. So no overgrazing and resultant shortening of roots, or stagnation and thinning of pasture, occurs.