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ALEX PODOLINSKY

2011 LECTURE

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*Final extended report based on lecture given at the Vonthien Farm
near Young NSW on 28/10/11.*

This meeting is addressed to farmers who can judge a performing farm – aware of time of year, recent climatic conditions i.e. held not at an “ideal” time of year for cropping, although good crops are still to be seen.

Timewise I could not have come earlier because of other lecture commitments in Europe and Australia. My task is to introduce to you another method of farming which has not been properly presented in this area before.

Two experienced, retired Bio-Dynamic farmers had also pointed the finger at me before I left for a 4 month lecturing tour in Europe, demanding more lectures here in Australia (Don Rathbone and Trevor Cobblestick).

There is some unease regarding the chemical sprays used in modern agriculture, and the eventual effect on man and Nature – without much change resulting. But there is a **further serious challenge** of a more physical kind as yet **not widely recognized**. I started many university lectures in Italy (see internet under “Alex Podolinsky”) explaining this new problem, which received widest acceptance and support from university and government agronomists. But whether these actually have the power, finances and skills to cause reform, will have to be seen.

The problem concerns water. I first drew attention to it in the lecture “Living Agriculture” 2000 (reprinted 2002, 2005, 2009). Familiarity with the rivers Rhine and Danube, with Danube flood marks and sequential dates over many centuries, exist historically – I was surprised at reports of higher and more frequent flooding than ever before.

In my assessment, in a healthy, natural river system like the Danube, flowing at great length through rich fertile flats, ranging often hundreds of kilometres to both sides of the river, only about 10 to 20% of the total water of that river system is visible as flowing river water. The larger portion flows in a vast underground vein system, which requires constant new input through rainfall, and which therewith acts like a bank account in holding the water level in the river, even in minor dry spells.

The so called “flood channels” of Australian inland “rivers” have no such vein system but run in flood after tropical type heavy rainfall of short spells up river.

Recently Dr John Russell, Latrobe University Bendigo published three dissertations comparing the water intake capacity on three large Bio-Dynamic grain and sheep farms north of Stawell, Victoria, and compared each to a similar conventionally farmed neighbouring farm.

The Bio-Dynamic farms (B.D. Farms) took in water freely, whereas the heavily compacted conventional soils only gradually took in water whilst most ran off. For decades the Bio-Dynamic organization was aware of B.D. farms not being water logged compared to conventional neighbour’s, but also, that the B.D. stock water dams filled only slowly and in some cases extra provisions were required. I requested Dr Russell to supply a realistic, wide ranging assessment of the difference between the water intake of conventional soils and B.D. soils.

On a 160,000 square kilometre contributory river system into the Murray river, a one week rainfall of 100mm – with all soils **being Bio-Dynamic**, compared to the same being conventional, indicated a **saving of water** into the soil to maintain a more even river flow of 1/3 the holding capacity of the Eildon Weir irrigation dam (the flood irrigation Victorian requirement

of one year). Whereas with conventional compacted soil conditions this water would **cause prolonged local flooding (world wide) and unnecessarily raise the ocean levels**, causing so much concern.

When my lectures commenced in mid May 2011 in north Italy, the Po river, the major water source for the important Po river irrigation system was empty (there had been no rainfall for one month), and so was it generally right down to Calabria, where a government agronomist supported my lecture, stating that the rivers in that region were suffering similarly. The Latina region, which receives large annual water in flow from the Apennine Mountains (maybe the “safest” irrigation area of Europe) was an exception.

In my **observation virtually all major flatland food production areas of Earth (USA, Europe, Australia, Ukraine) are similarly affected by heavily compacted soils**. This is an unrecognised enormous problem worldwide.

The reason for this major problem will be demonstrated in the following:

Picture 1 shows such heavily compacted soil, ripped up with a bulldozer equipped with road rippers – as can be seen widely in current Agricultural practices. Picture 2 shows how the big rocks are “broken” down with heavy equipment (picture 3) and 200 hp heavy tractors. Mechanically breaking down soil to “**dust**” (to again be sown down thereafter) is the worst mechanical treatment a soil can receive. After rainfall or irrigation such soil will set down more **concrete** like each time requiring worse mechanical treatment.



Picture 1



Picture 2



Picture 3

A Dutch Rhine river barge Captain attending a lecture in Sweden stated, “now I understand why in recent years the water levels of the Rhine fluctuate so much that we can’t load any more to 3 metres, but only to 2 metres, considerably affecting our economy”.

A further problem, even after Bio-Dynamic restructuring of soil providing renewed water intake, is: the movement of soil water in the vein system. Due to soil compaction and only little rain water intake into the vein system – which is also a living entity and not just a system of drainage pipes – little is known about the vein system flow and its effect on soil fertility.

We have one example from a B.D. farm at Gerogery (north of Albury). John Wilson had the usual results of Bio-Dynamic soil structure development, plant and animal health after 2 to 3 years on his very flat land. Along the west side between farm and road a creek runs water in Winter. The land further to the west rises. After some eight years of B.D. results and at the beginning of a long drought, the opposite hill farmer, a man in his eighties, visited John and said “John, I don’t know what you are doing here, but this creek has not had water flowing in Summer for eighty years”. John and I had observed this slow development. It took about 8 years after B.D. soil structure was established for the vein system to open up noticeably again.

Because of deep freezing winter soils in Europe, roads require deeper excavation and rocking than in Australia or the bitumen would break into rubble. By this, as by deep cellaring of houses and by deep channelling of water for drainage purposes, vein system disturbances are caused.

Unfortunately, because of age John Wilson has retired to a smaller original family property in Victoria and the Gerogery farm has been lost to further B.D. observation.

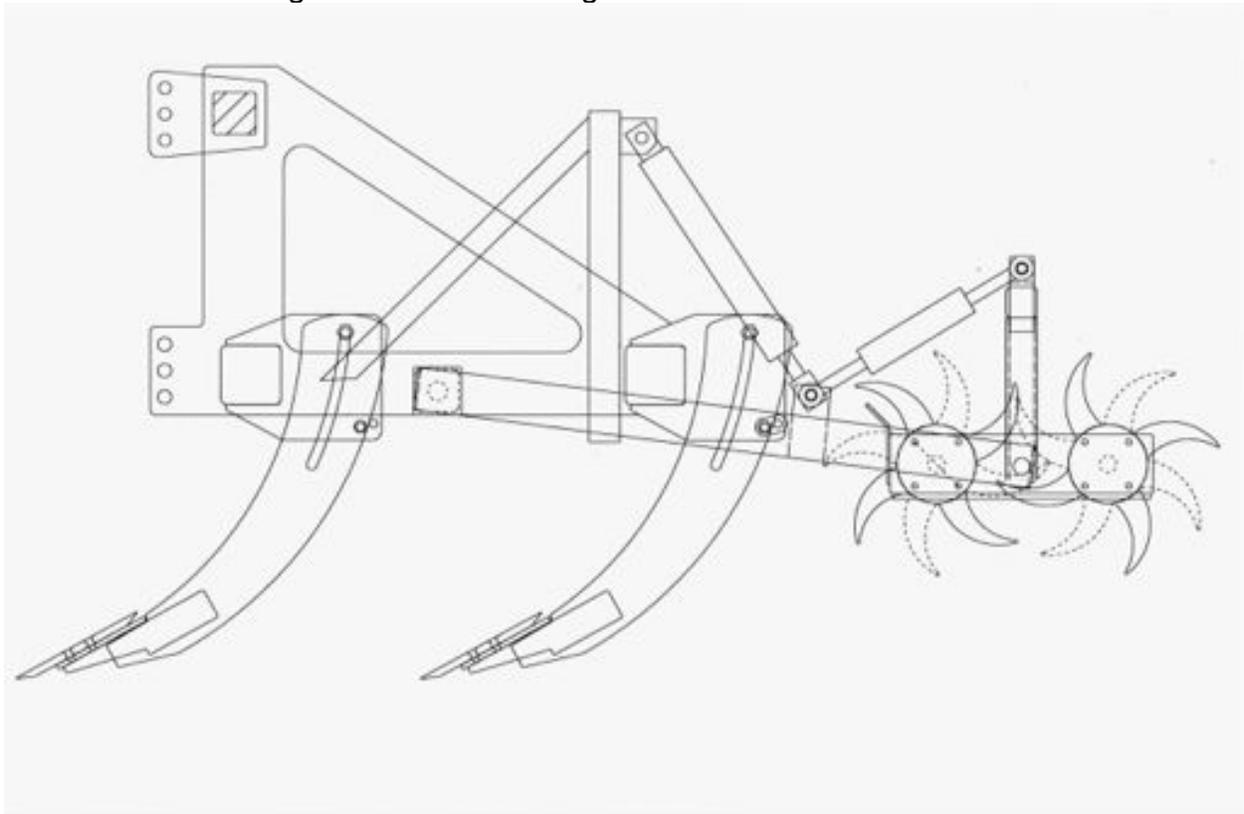
I have probed deeply to where the best soils are to be found and what kept them going. In Australia some would hold that the red or black basalt soils of rich recent mineral deposits would rank highly. Biologically such soils are not old and basalt’s elemental richness can run out with continued cropping. The richest soils I know are in the Ukraine. To varying depth the Ukraine was a swamp. The soil is so unique and the early attitude of land owners so “natural” (Tolstoy) and so little “regimental” drainage was applied, that at the time of Chernobyl, when I could first observe soil conditions, great soil fertility remained, lowered only in some colchoso establishments. In the last 20 years, applying more intensive, modern “western” methods, soil fertility has reduced. However intensive drainage like in the Latina flats or the Kooweerup swamp in Victoria had not happened.

A natural vein system has a critical effect on soil fertility – noticeable in the natural level of the water table: water movement preventing anaerobic swamp conditions contra to lowering of the water table by deep, straight drainage channels. Goethe’s unique, very realistic artistic sensing, depicted in Faust II showing the Latina drainage effect on Nature via the original old inhabitants – Philemon and Baucis so suffering, emphasising the negative effects on Nature, soil, plants and humanness. But, of course deep drainage enables heavy farm equipment on wide acreages to be used even in Winter, i.e. by “not getting bogged”, but totally lacking in understanding of soil life and ill effects.

The Ukraine soils, at variance even there, offer soil fertility, water movement etc in exceptionally Natural ways.

After WWII France realigned the Rhine water into a channel running in the Elsass, which lowered the water table in the original Rhine bed flowing on the German side by about 1 metre, thus visibly lowering soil fertility.

On the Vonthien farm here, cautious examinations were undertaken regarding soil structure. The basic Bio-Dynamic soil activating spray 500 was used on it's own with considerable soil structuring in the first and continuing years. The same spray was applied together with our "Soil Rehabilitator" plough shown in Picture 4.¹ This gave the best result. On one paddock, only this plough was used, without 500. Surprisingly the latter compacted again after one year. Spraying of the entire property resulted. The earlier results referred to can't be seen anymore but are well remembered. I am grateful to the thoroughness of the Vonthiens.



Picture 4

I emphasise again the **huge amounts of water** which should be held in **vast soil areas of river vein systems now running into the oceans due to soil compaction and not any Government or University showing awareness of this problem, because too little is known realistically about soil compaction and the result thereof.**

At Italian universities this information was received and there appears more freedom to accept truth than in Australia where Government obviously supports USA policy, (see GM and Monsanto) with, generally, a system of "funding" (ditto some large corporations) which influences research where Universities were once free to use money for research determined by

¹ The full effectiveness of this machine is shown and described in the DVD Cosmo "Earthly Ecology and Green Manuring" and in the DVD Conversion by Darren Aitken

scientists or truth. The most indicative research results (1990-94) world wide, comparing 10 Bio-Dynamic irrigated dairy farms in Victoria (16 years **no prior** application of fertilizers or chemicals, **no** NPK run off, less water required for irrigation etc etc) with each, a conventional neighbouring irrigated farm by the Victorian Agriculture Department's senior soil researcher and the local Government veterinary officer, resulted so clearly in favour of the Bio-Dynamic farms – I don't accept "comparative trials" on small "research plots", undertaken by "Scientists" lacking Bio-Dynamic experience – but allow commercially performing farms to be compared that even after fogging up results by the Government department Bio-statistician (only 10 examples!) of the work by Department officers was forbidden to be published. Ditto a lecture in 2010 in Victoria at which about 200 conventional grain and sheep farmers attended and the senior ABC rural representative expressed great interest, was eventually not reported on, neither further such lectures in NSW and Victoria, irrespective of prior warning of ABC representatives.

The 2010 ABC rural representative came to me after the lecture and questioned enthusiastically, "where did you obtain such knowledge of Nature – in the Ukraine"? I replied, this knowledge was developed here and many of our B.D. farmers aided in the process, designing and making equipment for wide acreage application and demonstration of results:

The scientific methodicity developed in interaction of my representation of European insight capacity and Australian practical objective consciousness as described in some of my literature (*"Active Perception"*). Under influence of Rudolf Steiner the general Anthroposophic outlook was one of "East-West" (Pazival and his black half brother). The importance of North – South of Earth has to be raised, of most important individuals of our time such as the South African Steve Biko and the creative objective consciousness of both white and Aboriginal Australian Individuals.

At the 2005 IFOAM tri-annual conference I challenged the eventual availability of Phosphate (so essential in the usage of conventional farming in phosphate starved Australia) with Earth's total resources vanishing, putting to question future conventional farming in Australia. I also pointed to the lack of a soil "bank" to "hold" water soluble elements in the conventional "model" of agricultural science and later received a "reply" in a little agriculture department magazine stating that, with Nano technology agricultural science will, in the future, be able to hold and release elements in soil akin to Nature's humus colloids!

I accept classical science results based on **observations of reality**, not hypo theoretical science, based on "working hypothesis." Thalidomide, DDT etc, "medications" and Agricultural chemicals originally "approved" by Governments, then discarded with the population acting as Guinea Pigs – is not "science". Not only manufacturers, but more so Governments who "approve" such – often on the backing of a "Government Chief Scientist" – should be challenged: Approval systems, as once given for DDT, again **used**, in "approving" genetic modification or Nano technology, awaiting eventual results, with population acting as Guinea Pigs.

I am a trained Philosopher. It is a philosophers task to examine how knowledge is formed in his time. I have investigated the possibility of suing a Government for negligence to the population. It appears technically impossible other than, perhaps, for a billionaire.

I recommend listeners to two BBC programs: the "Six Billion Dollar experiment", directed by James Van der Pool, and "Most of our Universe is Missing" produced and directed by Peter Lonard. Observe the maturity of the "scientists" and the hypotheticals the contents are based on. – That the immense intelligence in the design of Nature should be based on a Big Bang (explosion?) is unbelievable, and it must be questioned whether the originators have ever

experienced the explosive powers of a grenade? The “Six Billion Dollar experiment” is based on the hypothesis of the original Big Bang. It is “directed” to day one of this event! The experiment has so far failed.

What can be done to rectify the enormous soil compaction problem?

I start many basic introductory lectures with the question: “What is the most important ingredient in soil which is to be biologically active”. The answers invariably are “Worms, microbes, organic matter, humus”. In fact it is **Air** and secondly **Water**. We can live without food for weeks, without water for days, but without air only a few seconds. It is the same for the subsoil creatures. Conventional science sources have proposed that it takes 100 years for Nature to make one centimetre of soil; with a soil structure to take in water as shown on the Bio-Dynamic farms in the Bendigo University comparative trials.

Soil picture 5 showing a B.D. vineyard in Burgundy shows by colour and soil crumbliness, and structure, ability to absorb water. Compared to picture 6 the conventional farmed, compacted soil from the next door vineyard – further influenced by the greatest regular application of Monsanto Round Up as has occurred for decades, which, additionally, having sealed the top of soil like glue.

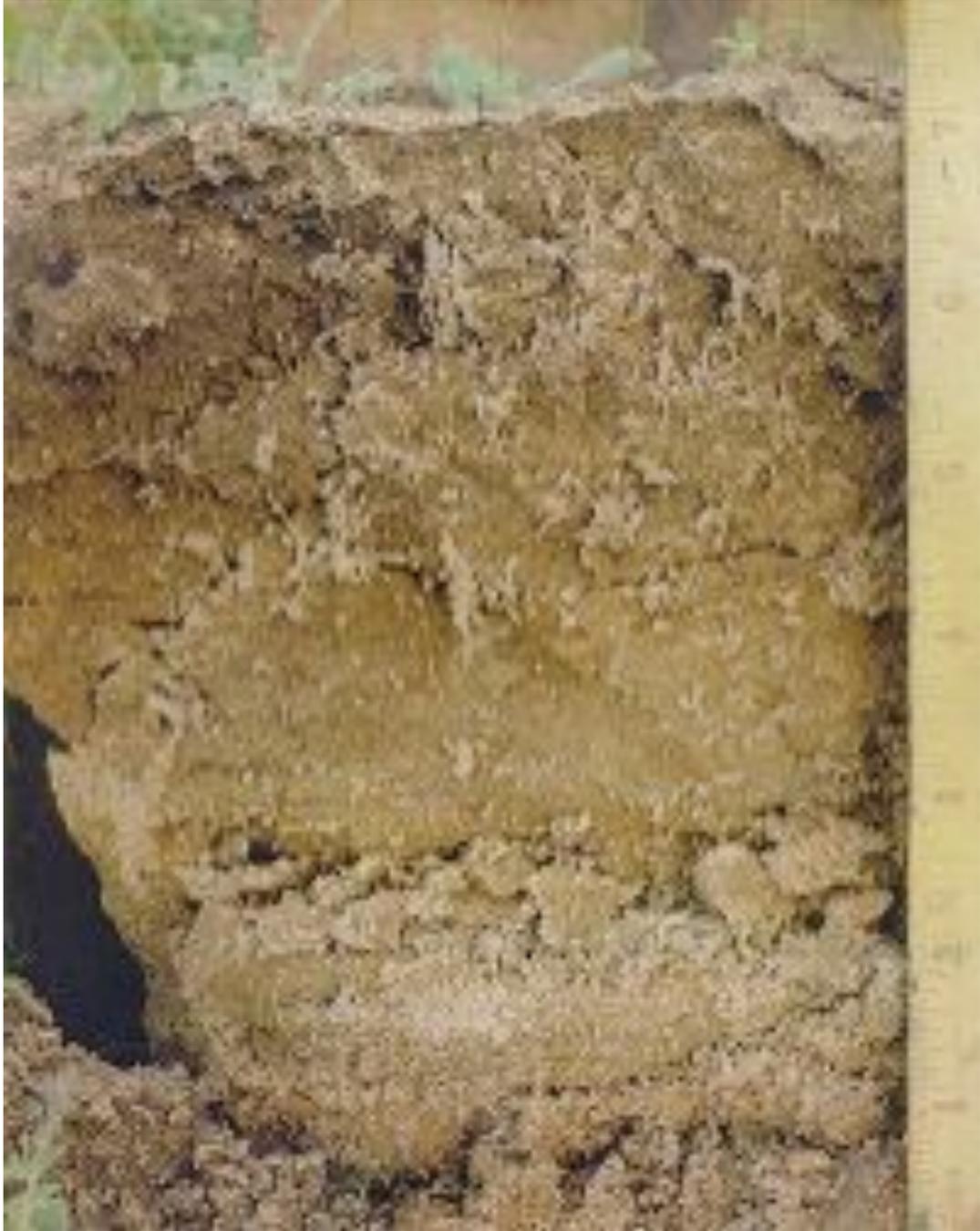


Picture 5



Picture 6

Picture 7 shows a typical poor Australian clay loam, grazed for many decades by sheep, less cultivated for cropping. This soil shows poor, weedy growth on top, compaction, no roots or structure. To get essential air into this compaction it was ripped deeply 2 to 3 metres apart, not ploughed on top but some English pasture seed broadcast and sprayed Spring and Autumn with the fundamental cow manure based Bio-Dynamic soil activator "500". Picture 8 shows soil 7 one year later. 25 centimetres of structured darker soil, full of white feeder roots and below the white root tips, due to root exudation, new darker soil emanating.



Picture 7



Picture 8

25 centimetres of new soil created in one year after application of initial biodynamic practice – if properly made and applied as Steiner and Ehrenfried Pfeiffer had worked out.

Ehrenfried Pfeiffer first appeared in Steiner's centre in Dornach, Switzerland as a poor 19 year old German student in 1919 to study in Basel. Dr Steiner saw in him the person who could perfect the Bio-Dynamic method, suggested study subjects and took him into his house like a son for the remaining seven years of his life. Eventually Pfeiffer became a leading bacteriologist, demonstrated that the cow manure inserted into cow horns and buried in suitable soil over Winter contained only faecal bacteria, whereas when taken out – as pure brown humus in Spring – contained no faecal bacteria. The dark brown, colloidy humus with per gram, 500 million aerobic bacteria, (some either not previously recognised or totally new) he named "500" as a result of this finding. After Steiner's death and before Pfeiffer had completed the tasks Steiner gave him, (Pfeiffer's main work devoted to the development of the Goetheanum stage lighting) inclusive of perfecting the compost preparations, and determining the exact amounts of 500 and preparations to apply; storage and application methods to maintain the colloidy nature appropriate to each preparation; application techniques etc – after Steiner's death there was some jealousy towards Pfeiffer and he left Dornach and worked in Holland, England and eventually settled in the USA, continuing his experimental B.D. work. Pfeiffer suffered lung problems sometimes requiring hospitalisation, where he reorganized hospital laboratories and was given an honorary medical doctorate. He was not a farmer but a very creative scientist. Eventually he became a Professor of the emerging science of Nutrition.

After Pfeiffer left Dornach especially Bartsch, Stegemann and Voegele, each started making "Bio-Dynamic" preparations without access to the special work of Pfeiffer and Steiner. Their "preparations" have not brought results as shown in the pictures used here. By contrast we worked with Pfeiffer type preparations in Australia, exchanged preparations with Pfeiffer in the 1950's, who was amazed to find some of ours more effective than his own and we described some of our improvements. Important also was that our cow manure came from fully Bio-Dynamic farms, ditto soil used to insert ingredients and preparations into, and Bio-Dynamic preparation herbs.

As *Equisetum* is a prohibited plant in Australia we experimented – laboratory and field – with a cousin of *Equisetum*, a native of Australia, the *Casuarina* bush. We found a *Casuarina* male variety to give best results. But amazingly, extracted as a tea and NOT stirred, only approximately by 20% as effective as *Equisetum*, but after 20 minutes of effective, energetic stirring, with a bubbling chaos, about 80% as effective as imported *equisetum* powder. Steiner required **energetic** stirring and a **bubbling** chaos in his Agricultural Course, which is technically unobtainable with the large stirring barrels used in Europe. (refer to "Living Knowledge")

Technical developments, like effective stirring machines (Kevin Twigg), without which the typical large Australian one owner/operator farm could not practice the Bio-Dynamic method, or horn fillers (Ginger & Trevor Hatch) to cope with the volume of horns required to supply essentials "for wide ranging bio-dynamic development" as Steiner envisaged, became possible in Australia because of the practical skills of the Australian farmer, and especially of their indomitable attitude to not being beaten and likewise of not looking backwards to past times or "written notes" but, naturally being unnerved in advancing courageously and being creative, not just with equipment, but the B. D. method per se. (Barry Edwards)

I have here a sample of 500. It is of dark humus colloidal nature and can hold 70% of its volume in water. The skin is not like plastic, but of a membrane nature that enables liquid to enter and be held in, so as a substance it would take many weeks to dry out. But at the same time this membranousness will release liquid when required by Nature's design. i.e. by the white feeder hair roots.

We make many tons of this substance called 500 in various, essentially cool, districts of Australia. A sandy soil like vast areas of the Victorian, South and West Australian "Malley" country, producing prime hard, world class wheat and fine merino wool with an initial soil organic matter level of 0.3%, and after 2 years of effective application of 500 developing a **humus** level of 2.5% ("measured" as "Organic" Matter level, as there is no conventional test for humus, but in B.D. science chromatography or crystallisation tests provide a humus test methodicity)

In practical agriculture this enables a collection and holding of a rainfall volume of as little as 4mm – which, conventionally in April, at a day temperature of 30° and almost constant wind, would disappear in a short time – this moisture sucked in like into blotting paper, but due to the humus colloidal nature, is "held" and sucked down into the soil to an observable 15cm, offering a chance for early sowing – say in April and long before Autumn rain fall is expected and required under conventional conditions.

Due to high variation between day (30°) and night temperatures (2°) in these regions: "dew irrigation" is enhanced, i.e. dew running down even on young plants and then being "held" by soil humus. Early seeding in these low, unreliable rainfall areas, allowing every later drop of rain as help, especially when, all too late, Autumn/Winter rain comes only in July, still leading to a good crop, whereas such late rain, conventionally, would come too late for a good crop.

Pictures 9 & 10 show the difference of humus levels, Bio-Dynamic and conventional 20 metres apart, late in Spring. The B.D. soil and plants "hanging on" even still growing further.



Picture 9



Picture 10

These examples demonstrate the totally **New Impulse of Bio-Dynamics** when practiced appropriately. The Agricultural lectures of Steiner bring this **Impulse**, backed by insights of cosmic chemistry. Apart from the **practical** emphasis on “energetic stirring and bubbling chaos” in between stirring directions, there are little other **agricultural methodicity** requirements, demanded of farmers in these lectures.

Steiner’s **Agricultural Course initiates a new impulse, it is less an actual method of Agriculture to be practised by farmers.** Representatives of the European style have not expressed awareness of the extreme water problem raised at the beginning of this lecture.

Historically and uniquely the peasants and aristocratic serfs of Europe – without written knowledge, but with instinctive observations and maybe old inspirations (Goddess Demeter) kept the soils of Europe alive, whilst mankind in general existed more by nomadic wandering, eating an area out and moving to another. The instinctive European peasant skills gradually died out after Justus Von Liebig’s discovery that plants can take in elements only in water soluble form, which became fundamental to modern agricultural science. The knowledge of water solubility provided a base for a “science” to replace Nature, i.e. a “particle” approach to water soluble requirements of plants, of never ending “deficiencies”, trace elements, eventually leading to a loss of basic understanding of balance as Nature provides. And this science approach **also** does not **really** provide a complete and **practical method of agriculture** and has, like European Bio-Dynamics, not observed the cardinal water problems and has **absolutely no method to counter the soil compaction problems**, where **mechanical** methods fail.

To reactivate soils: understanding “Organic” not just as applying solely animal manures, is necessary, but farming **within the organization of Nature**: with 500 colloidal ability developing low organic matter wide acreages by the sole owner operator – organic matter inputs on large acreages being impractical, but possible with the Bio-Dynamic 500 spray and organic Nature insights, **thus closed farm units become possible!** Which is only a pious wish in world wide organic farming standards. Whereas remaining old peasant skills, in my childhood, produced well from closed farm units, no “fertilizer” or chemicals yet available. (Monastery records of production are comparable to modern production levels).

Modern “Agricultural University and Government driven science” is: hydroponics and chemicals. Humus is not represented. Neither are appropriate basic agricultural skills or the ability to heal compacted soils with a substance like 500 and required soil cultivation.

How did Soil Degrade to Compaction?

Driving from Coonabarabran towards Gunnedah there are several, hundreds of metres high, relatively recent, steep hills of black basalt shaped like this  . At the top bare basalt rocks rich in insoluble elements are exposed to heat and frost causing flecking and cracks. The earliest plant life, lichens, appear like paint on the rock. These establish minute roots into the cracks and the earliest biological activity commences, freeing insoluble elements to solubility and therewith availability to plants. The lichens prepare for the slightly higher demand of mosses growing through the lichen base, higher, more demanding and deeper into the cracks, making them larger and freeing elements into original soil. So it continues down the sides of the mountain and halfway down quite large shrubs establish, rising from the rock side, whilst –

equally – making a deeper and wider soil base, until down onto wonderful black flats, rich in elemental supply, and already biologically established, large trees develop.

Extremely important to realise in this one time and place observation of original soil development, **all final** soil development derives from the activity of such as worms (castings are colloids) and microbes, **and that therewith all water soluble elements created in this original natural process – coming from worms and microbes – is contained in humus colloidalilty. This is the process of Nature which we recognise and follow in Bio-Dynamics.**

Since Justus Von Liebig's discovery of plants able to take in only water soluble elements and therewith the possibility arising to influence plant production beyond Nature's process of growth i.e. with extra availability of water soluble elements via artificially supplied NPK, plant production can readily be increased. Modern agricultural science and therewith a large scale practical influence on plant production, arose. "Big is Good".

However: the initial negative result of such fertilization **outside** of Nature's design is that the work of worms and microbes becomes affected. After early application of water soluble fertilizers worms and microbes attempt to incorporate the suddenly available, excessive Nitrogen or Phosphate into colloids. This can be shown in compost heaps where clusters of soluble phosphate show up red with worms, or, in the 10 dairy farm comparison test, more worms can be counted on the conventional farm's fence line between B.D. and conventional farms because typical 500 worms (i.e. the active small red ones) are attracted to work on humus incorporation of the high amount of fertilizer applied conventionally. Subsequent applications of soluble fertilizers – gradually – are less and less incorporated by worms and microbes, who – in Nature's design – make insoluble rock elements or such from old plant substances, roots, leaves, stems, water soluble for renewed growth. Worms and microbes lose their purpose of existence with ready made applications of water soluble elements.

Worms and microbes, actively working, keep soil aerated and structured. As this effect wanes, soil compaction gradually establishes: – Nature is enormously tolerant, even of foolish human disturbances. – As the soil compacts and as farmers loose old instinctive skills, as materialism increases, "quicker" ploughing is promoted by Agri businesses and Government "Agriculture" Departments (appearing "modern"): tractors, ploughs, pick up trailers, harvesters become "quicker" i.e. larger and heavier and increase compaction .



On the hill example, "weeds" and shrubs established halfway down. But on the originally – naturally – wonderful deep "self mulching" rich flats, magnificent crops grew, but, when challenged beyond the natural ability to produce, stimulated with artificial water soluble fertilizers: eventually the problem of weeds arose and therewith the need for chemicals, which have an increased ill effect on worms, microbial activity and soil structure. See the Round Up example shown in picture 6.

On richest flats so affected, English type pastures of perennial species, may be planted. And wherever under such conditions, these desired "perennials" disappear in some 2 years, the paddock reverts to native grasses or undesirable weeds. It is a fallacy to expect quality perennial pastures to depend on seeds sown. Mother Earth has a major say. The soil has gradually been degraded and in the hill example, has biologically gone half way back up the hill, where – naturally – weeds and low demand shrubs grow.

A member of the Morris, Rutherglen, wine pioneers has obtained an acreage of original, still natural "Riverina Soil". A stunning experience to see soil of so extremely natural structure and richness. When white man took on such or somewhat less, fertile soils, there was according soil structure, drainage and an underground vein system. An initial negative influence was caused by the grazing arrangement made for the generally first agricultural pursuit, of sheep and wool. Even in the fifties when the first large sheep properties came to Bio-Dynamics, habitually all sheep were set stocked, i.e. on one large paddock for life. Graziers were frightened to move sheep as metabolic affects were prophesised (broken wool etc). Thus pastures were grazed continuously, nibbled again and again, knocking the plants on the head and each time affecting the roots in their regrowth and growth down deeper and deeper. This in turn caused soil structure problems and, deeper down, the negative vein system drainage effects – gradually.

Eventually clover leaves becoming minute in size before pasture reverting back to weeds or low performance plant varieties.

The Australian Bio-Dynamic rotational grazing system effect on soil structure and vein flow was recognised from observing and consciously recognizing these defects. A very basic and important recognition, which in intensive dairy farming has developed to paddock sizes in consideration to herd numbers, so that each paddock is grazed off, with the moving of an electric fence, within one week and then immediately all manure heaps are harrowed and spread. "Pock Marks" appear on pasture where the soluble NPK from cow manure concentrates and the over fertilized grass, being bitter (excessive nitrate or nitrite levels) is initially not consumed although it "looks" lush (cows instincts know better) and, if forced into cows, causes similar symptoms to urea poisoning, methaemaglobanemia sterility, acetoneamia etc. Immediate harrowing of manure within a week is required.

When this was introduced at my first US visit it eventually became "block grazing" and the likes and was rotated per calendar instead of determined by the pasture plants and land re-grazed only when at an optimum leaf stage – like radishes or lettuce at the "preferred" stage – 2 days earlier still tasteless, 2 days too late "hardening". The consumer knows instinctively, so do cows.

Where cow manure heaps have not been spread by immediate harrowing, pasture is not grazed, plants stagnate to old growth, roots do not regrow, 500 cannot be effectively applied because of plant height. A pasture looks like being prolific, but stagnates: nature puts weeds like docks and thistles there, to get rid of excess "fertility", the "growth" at bottom can become mouldy and harbour stinking disease. The sun can't get to the soil.

Such grazing is one essential and basic example of an objective conscious, practical agriculture method of keeping soil structure, elemental supply and drainage in natural order. There are many, many other examples. Bio-Dynamic farmers are basically trained to consciously observe, often newly create, for every type of farm production. They are trained to individually observe and take action and become independent of advisors.

Essential is to conduct farm management to continuously pursue a dynamic activity.

On redeeming dead, compacted soils, by ripping it with the B.D. designed "rehabilitator", sowing seed and spraying 500 – very small amounts of NPK, preferably of a so called "organic" nature, blood and bone, rock phosphate, chicken pellets, "organic" cow manure ex feed lots with

evidence of no chemicals applied – may initially aid the process of redemption, as on old European farms produced within the farm system i.e. jauche (stable urine) or manure heaps, with amounts which the biology of the particular soil can accommodate digestively, i.e. an amount that does not – again – “push” the soil to “produce” by using the NPK introduced to directly drive plants without having been incorporated several times in the humus colloids created by 500. Green manure crops aid in this process of accommodation in the soil, i.e. the newly stimulated humus process.

Since early childhood, my development process was a very lonely affair. My twin sister, later a leading anthropologist in Canada, was a brilliant scholar, whereas I shunned conventional schooling, made music, lived in Nature, **observing, listening**, sailing, riding, skiing, skating, mountaineering and chose **instinctively what I wanted to know**. And, overlooking a long life process, must recognize, unquestionably, that there was a noticeable guidance! When 16, before being forced into the German army as a non German caught up in Germany at beginning of World War II, I had written a book, which later was burnt: I had been deeply permeated by J.S. Bach’s music, playing it for hours per day for many years, for the active balance of his counter point and rising – never a repetition – which Goethe described in his way as “Steigerung”: I described this experience as **creative joy** and in it’s creativeness and honesty of objective reproduction, as truth. The second main point recognised in the book was more poetic, however equally true, namely that we are kind of, in our potential, akin to many coloured balls with one being larger and oval. And that we should not pursue this special giftedness but the most opposite much smaller ball.

When, at 14, briefly in hospital from my last school, Salem, near the Bodensee (lake Constance), playing my flute, doctors came admiringly “you are made for life with that tone and ability”, whilst I looked askance knowing that what I could do so young could never be for life.

At 20/24 after the War, I “studied” philosophy and psychology. Freiburg (formally Husserl and Heidegger) was then the leading university in Philosophy. Ontology was a major theme: everything “is” therefore there is a general “Beingness” akin also to Jung’s general subconsciousness. Secondly, there were, in the Catholic environment of Freiburg, “concordat” catholic professors attempting to philosophically prove the unendingness of God. To me all this was hypotheses being more or less well put philosophical wordiness, , whilst the **word “IS”** or “BEING”, applied as basis, was an empty husk equally to be “filled” by hypothesis. I said to my professors, “if I look around, every item, the smallest blade of grass or the planet, comes and goes, there is Life – “Movement”.

And, looking at the **reality** of these, I would **ask** them what **Life/Movement itself** indicates as to its future – as distinct from a hypothesis “**thought out**” by man. What does the essence Life-Movement indicate, as essence Life, about its future? The essence Movement says “I am unending”. Ditto in reverse, as to its origin.

The professors were exhilarated whilst I was in the room, but then could not keep that spirit alive.

At the time Heidegger, visited and revered by many French (as father of Sartre) in the “French Zone” of occupied Germany, was not permitted to teach at the University because he had spoken at a Hitler rally (forced to, as we understood). I was sent to Heidegger, who had been briefed regarding my approach. Since childhood I had found understanding by individually contacted (!) important individuals, but was equally a challenge to various Intellectuals. So was it with Heidegger, who appeared somewhat self opinionated and sat side on, on a heightened

platform, never looked at me, but directed me to speak and answered, “that Schelling had already said the same about unendingness” (which I knew as a Schelling admirer) using “Will”.

My answer was, “there is no Willing without a Being that Wills, whereas Life is an “IT” and therefore independent and objective. The **essential** difference in the **substance Will** and the **substance Life** had to be objectively **seen**.

Somewhat later we were saved by the French secret police, the Sureté, from being snatched up by the Russian “repatriation commission”. I chose to go to the land of the sun (predestined since an experience that awoke me to permanent memory of life’s happenings, when I was 3 years old; my twin sister chose Canada). In three days we were in the safety of a camp and soon in the countries of our choice.

Later I recognised that the experience and the unendingness of the Essence of Life opened the mind of a cultured European from living in words and concepts to entering Creation’s realities. I had had some contact with leading Bio-Dynamic people – Lily Kolisko and Pfeiffer – and I ‘knew’ a bit about Bio-Dynamics as existant in Europe, but that experience of life reality became the basis for Bio-Dynamic practice with Australian farmers, born into the age of simple and obvious objective consciousness: actually born Goetheanists of creative observation and recognition.

After Stalin and Hitler, we arrived in Australia with no funds, I was the last male of my family, even a sister ended in Auschwitz (we are a historic family, with such as Kutusov and the Stolypin reforms in immediate background).

Working off my immigration debt to the Australian Government for 2 years, I built a house to lockup stage on week ends, which after selling gave us £800 (then the price of a new Holden car, when a Jaguar was £3000), as a deposit for a farm, an eroded grubbed former hill orchard cum wilderness with no access to water.

In 2 years, with original deep ripping and building irrigation dams as described in “Bio-Dynamic Introductory Lectures” and original use of the Graham Home US plough (later copied by Yeomans in Australia), and B.D. preparations, and a very lucky purchase of some selected Jersey’s I had very good pastures in 2 years, (In 1956 Lady Eve Balfour visited and wrote in her magazine, Podolinsky’s pastures are better than on our Kent farm). Thus 2 leading older Agronomists (Arthur Hewitt) from the Victorian Agricultural department visited, questioning my high milk production, resulting without concentrates just off grass and hay. They found it hard to believe I had used no fertilizers. I showed them 500 and pointed to the purpose in Nature of Colloids, holding elements. They had never considered humus or even consciously seen any. They questioned what of humus could be taken up by plants and hypothesised, being already somewhat of the modern kiln of one eyed “water solubility” akin to Justus von Liebig: that plants could take up only the liquid humic acid.

In consequence I took a cylinder-like large bottling jar, filled it with 500 humus and buried it in Spring 8 centimetres below a growing pasture sod. In six weeks the jar was totally empty of the humus substance and totally filled with only whitest hair roots, so tightly packed that there was a pop when pulling them out, like a piston out of a liner.

By observation, not “scientific” hypothesis, thus became recognised that there are two root systems; the white new, young feeder roots and the dark, longer water uptake roots designed for water transpiration needed for photosynthesis.

The next **reality** raised to consciousness from that starting point, was that whilst humans and most animals have an inborn warmth organization, which eventually makes us “hungry”

after physical or mental exertion, plants have no such inborn counterpart, but depend on Sun Warmth. The **warmth** of Sun is not considered in general agricultural science – as **the reality** it is, **IN** plants more important than an “element”.

In the design of Nature, according to which, of course, all water soluble elements are incorporated in humus colloids, as discussed above, the Sun Warmth decides how much the white hair roots should take up in elements from the humus. This very natural and essential process however is superseded when water soluble elements via artificial fertilizers are lodged in the soil water and result in artificial plants, with blue green super-sized leaves and watery stems, wheat falling over and requiring hormone treatment, fruit and vegetables subject to fungal problems or pests, requiring, of necessity, ever increasing chemicals etc or animals being sick and humans of course, equally affected and weakened in resistance. Pests and diseases are put by nature to get rid of unhealthy, unnatural growth (blue green N leaves).

Sun Warmth is not just something “outside” that can make domestic hot water. Sun warmth is for plants an important inner activity in their metabolism.

The next step is to understand the interrelationship of photosynthesis. Plants taking in forced amounts of NPK **salts** due to water soluble over fertilization and the raising of the salt levels in the soil water (not occurring in natural conditions, where the Sun determines how much NPK a plant should take in) have to accommodate unregulated amounts of NPK salts. Plant cells overfilled with salt, have to compensate to take in and hold extra water or die through poisoning. Such plants show blue- green blown up leaves with ribbing in lettuce, or Brassica oversized and hard and lacking taste, cut open tomatoes with large white ribs and small pools of red water, bitter in taste, ditto citrus etc. All of these inferior compared to crisp lettuce leaves, or Brassica, with small softer stems and red sweet soft interior and flavour of tomatoes, and fruit produced within the organized system of Nature or Bio-Dynamically. (See DVD “Cosmo Earthly Ecology and Green Manure”)

“Modern” agricultural science – overall – exposed in its effect on soil as outlined; or on products as described, commenced after Justus Von Liebig’s discovery (Justus Von Liebig towards end of his life in his 23rd Chemical Letter showed some painful doubts) which could not be stopped as “agricultural commerce’ took hold of it and money became powerful – as is the actual “Science” behind it, an artificial creation **outside** of Nature of mainly a chemical approach akin to the “creations” of Homunculus activity in Goethe’s Faust II. It will eventually collapse after having caused much evil, just as the glass tube artificial man: Homunculus did..... The emperors new clothes?

Plants full of excess salt, having to hold excess water in each cell – although larger than natural counterparts, because of holding excess water – transpire less water than the smaller natural plant and photosynthesis is reduced. Less than 3% of a plant derives from soil. Much more, including rich flavours and food value come from photosynthesis. All high value food derives from photosynthesis. The plant’s leaf, the organ of photosynthesis is the stomach of a plant, where the **cosmic forces**, Sun Energy and carbon etc, create new substance NOT obtained from earthly sources.

The “theory” of “agricultural science” that every bit of NPK leaving the farm as product has to be “replaced”, meaning imported as fertilizer, is also incorrect, because of the cosmic nature of photosynthesis. When plants are natural and can take in photosynthesis provided elements

as designed by Nature ,no such “inputs” of a physical earthly type are required. (See “Cosmo – Earthly Ecology and Green Manure” DVD)

At my third original lecture to 12 farmers, whilst conceptionally but livingly discussing how plants are more children of the Sun than of Earth, arose between the audience and myself a see through picture of the plant in motion in-between Cosmos and Earth, with all exchanges of liquids , light warmth.

I was stunned for a moment but had to continue the lecture. Goethe’s archetypal plant was static: this was all in motion; I never spoke of this happening to anyone, until step by step it became objectively presentable. It acted in the background , guiding my work; I was unintentionally influenced by this vision.

To a philosopher’s question into methodicity of chemistry: is the phosphate or nitrogen provided by 50 plants identical or does it vary in quality, purpose etc etc. the methodicity chemistry is overstressed and I lie to myself expecting an objective answer. Chemistry methodicity is an analytic inbuilt reaction test: i.e. all Phosphate or Nitrate is judged as “the same” because it is built into the test methodicity and only quantities of Nitrates or Phosphate are measured.

Old farmers knew instinctively “that every plant gives something else” if used in a green manure. This was “unscientific”, but it is like having a 50 instrument symphony orchestra, each playing the same C sharp – which can be measured in physics by wave count akin to chemistry procedure with NPK – but the sounds of C sharp by a trumpet, violin, cello, flute, etc vastly differ Humonculus We must not forget that: 60 to 70 years ago leading physists were not “cock sure” – being aware of an obvious “**something**” to be of a “particle” or a “wave” kind, it eventually became fixed as the “atom” though never actually seen. The same applies to the “molecule”. Both acting as the foundation of hypothetical science. Contra to atoms, “cells” are real, but we are waiting an awfully long time to see a paraplegic walk. Will this manipulation work? Having “closed” farm units is the pious wish of all Organic Standards but is hardly ever encountered. In proper Bio-Dynamics we have many farms thus functioning in various countries.

Some land today is so denatured that it will take great skill to advise meaningfully. A slow transition has to take place beyond the essential initial result of restructuring the soil – as to my experience can only be achieved with the Bio-Dynamic method. Attempts have been made to create “other “ biological starters etc (to make money) even calling it 5000. All unsuccessful.

Remember the only example we have to date of a redeveloped flat soil, inclusive of redeeming the river vein system, took eight years.

Lynton Greenwood – today in his 60’s – was not 18 when his father (second generation organic) turned to Bio-Dynamics. A very large and productive orchard. The father continued to spray a minimum of chemicals (the district said to “appease the neighbours”). When Lynton took over he immediately ceased with chemicals. The 2010 crop was his largest ever, and it was cleaner than what his father ever experienced! It took some decades and big generous Lynton, exceptionally positive and encouraging, deeply representing that pests also have a right to live, and who is not even out to have an entirely clean crop. They have bought the last remaining neighbouring orchard additionally, so the local town citizens are no longer exposed to chemicals.

In the hypothetical **often also mechanical** construction of agricultural science – replacing Nature’s design concerning plant breeding, male and female parts are “explained” as existing in the flower of a plant. And newly bred plants often revert back to original status, become deraligned.

One could equally propose that part of the reproductive male system to be “male” and part “female”. In **Nature’s reality** the female part is **Mother Earth**. The Earth so functioning that the Sun Warmth decides on the intake quantity of the elements by plants. Plants functioning within Nature’s design, not “running out” and wheat plants “weakening”, not needing mechanical redemption by introducing robust old wheat varieties, but: where functioning Mother Earth’s influence so influences a new potato variety (which under artificial conditions requires an annual replacement by another “new” variety) when produced by bio-dynamic method becoming healthier and better tasting by Mother Earth’s influence, as we can show, and so to continue, so far, for 30 years. The “variety” slowly changes as per Goethe’s metamorphosis!

The pre Justus Von Liebig old European peasant practical skills and methods, which agricultural science or European Bio-Dynamics has not considered sufficiently – has been **newly** replaced by the farming skills of Australian farmers – inclusive of the much higher 80% hand workers in 1800, compared to the recent times 4%: namely to be as **caring** with soil and appreciative of Nature as old peasantry was; creating machines by the farmers who use the machines and not by “business” engineers. The farmer is in charge not the machine!

With humus colloidal active in soil (like a bank) holding elements, plants require much less in elements than under an artificial fertilizer regime. All tests regarding supply of elements would have to be reassessed.

A very important development of practical new farming methodicity is **sheet composting**. A compost heap as commonly advocated, in the end result, would have to be as colloidal as 500, or the concentration of organic matter, inclusive of elementally rich NPK, being water soluble, would put out concentrated NPK like any water soluble NPK application. This can be seen where non colloidal compost has been put out on rows of vines. Areas, within the row, show over sized growth with blue green leaves overfilled with water, destroying the leaf formation.

Sheet composting with plant material grown on the spot – as in “topped” pasture, i.e. with pasture when there are plants as in spring only lightly grazed, harrowed and then residue slashed or mown to supply elements in the following season, or when plant growth in orchards or vineyards is slashed to equally supply plant food later on under direction of 500. Slashing as Green manure is more effective than compost application as compost can’t be worked deeply into the soil, whereas, with green manure, the NPK material is deeply incorporated by the plant root system. Furthermore this process is much less labour intensive and a one man owner/operator can service much larger acreages more effectively.

Old time peasants did not make “compost”. They – of needs – took stable manure out and spread this by fork at appropriate times. “Compost” started in England under the influence of idealist “organic” gardeners in the nineteen twenties. It and stone ground flour, became the main symbol of “organic” farmers. (*Refer to DVD – Cosmo Earthly Ecology green manure*).

Stone mills in Australia (Gavin Dunn) were designed with the bottom stone grinding. After milling – the bottom stone able to be lowered so that the mill could be cleaned easily after each

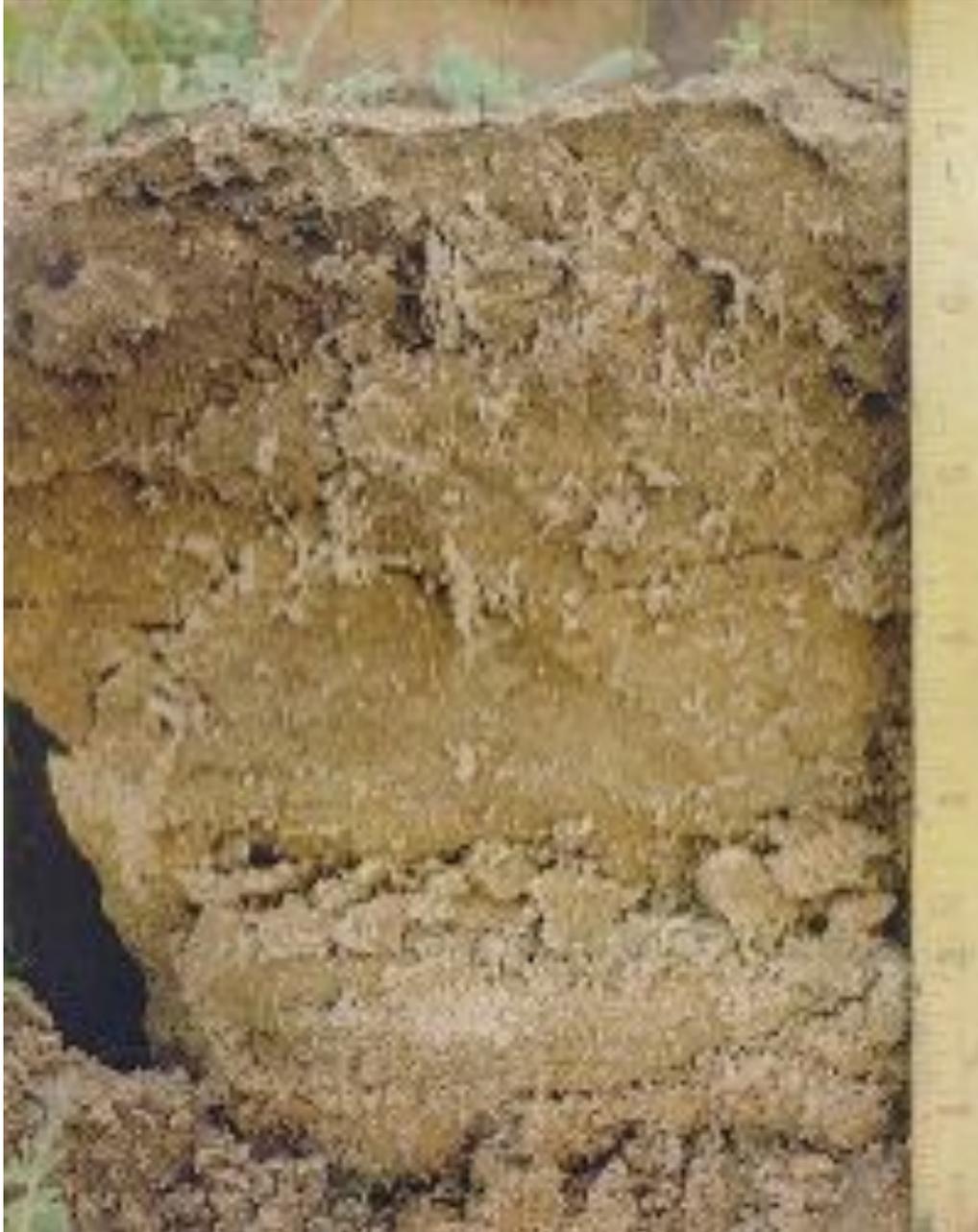
milling, throwing residue out or being open to air blasting. (No difficulty as with removing wooden covering by using a silk cloth over grinding gear).

Where does the dark substance (and structure) in picture A come from, deriving in **one** year from picture B? The usual answers are (from hypothetical memory!) “from organic matter, worms, microbes or humus”. **Look** at picture B, **where** is there any plant root or organic matter to be seen?

The so surprising darkness in soil picture A comes from the new 500 microbes. These microbes live for a fraction of a second only and give their bodies into humus whilst continuously new myriads of microbes regenerate. The common answers typify the materialistic attitude of “all comes from existing **old** sources”. The new impulse – like spiritual **lightening**, is not recognised.



Picture A



Picture B

Bio-Dynamic farmers live and work in closest contact with Nature. Climatic conditions vary continuously and weather causes problems. Farmers are challenged by what to do next. Their minds are occupied throughout with realities. But modern man has also the capacity to think individually. The mind is less occupied by religious demands, or old time handcraft work and going to sleep tired and fulfilled. The modern “free mind” gives rise to fantasies of worry regarding “what may happen”, supportive of Insurance Companies – hypothesis of all kinds: fears, of employment, effect of empty bureaucracies etc etc eventually growing to the new disease of **depression**. This is also the base of any capacity to “think” hypothetically,

hypothetical science including medicine: contrast a **healing** influence development? With a huge increase in **mechanical** skills! Similarly with “World Economy” i.e. all on borrowed capital, a development evaluated by higher production regardless of consumers real requirements, but with pervasiveness of expensive promotion. Healthy Humanness demands realistic individual creativity of existence.

Recently an Australian farmer friend drove through Melbourne’s new high rise office blocks with a neighbouring farmer and son. Looking to the skyscrapers the neighbour said to his son “many people work here, but they produce nothing”. A farmer’s statement. Bureaucracy is the cancer of civilization.

Education should aim to make life interesting and useful for everyone.