AGRI-CULTURE

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Largely due to awakening consumer awareness: Agriculture is faced with change. Bio-Dynamic and organic farming organizations, old and new, have contributed. But for decades they were not considered by Government authorities, were even hindered – and still are in some regards – by unnecessary regulations.

Consumers demand nutritious[1] and unpoisoned food. Votes are at stake. Political parties in power take notice. Ministers press the scientific establishment of their Department.

There has, however, been no new recognition pertaining to a change of scientific agricultural method within the agricultural establishment. Government Departments have no expertise in advising conventional broad-acre farmers on land dependent on fertilizer and chemical inputs on how to farm naturally and without undesirable chemicals. The appointment of a staff member to act as "organic adviser" may be politically opportune, but does not mean that this person has the experience to so act. Long term new Research Schemes, comparing organic with conventional methods, await results. However, similar trials were undertaken earlier this century by people conversant with organic methods.

The Victorian Agriculture Department may be one step ahead by enlisting some co-operation with natural farming organizations. This also awaits proof by results.

What is Agri-Culture actually about?

Is it to produce wholesome food or is it to establish scientific theories and to prove these by costly and time consuming statistical evidence?

A history of this evidence would disclose how little notice has often been taken of results, whereas other "proven" results and consequent farm advice has then been contradicted in later years. Furthermore, can this current science method approach be so entirely trusted? It did, amongst many others, pronounce DDT and Thalidomide as safe. Of course, such system exerts a powerful hold and has to continue increasing – to justify itself.

Who is the Expert of Agri-Culture?

Is it the Farmer, able to produce healthy food, or the agricultural scientist and his system?

In Art, who is of prime importance, Rembrandt or the art critic?

In earlier times, according to culture and bio-geography, many old countries had a highly developed agriculture, producing nutritious and unpoisoned food. There was no manure or anything else introduced onto the farms. The farms produced to the optimum of the particular conditions. The production level was quite high. Production depended on the skill, knowhow and work input of each peasant. There was considerable variation of performance even between peasant neighbors.

[1] See A. Podolinsky 'Organic-biodynamic Outlook', reasons for Demeter registration; Vol Ib.d. lntroductory lectures, lecture 3.

Ancient peasant skills and wisdom, often reflected in bygone peasant magazines or calendars, were passed through the generations, from grandfather to grandson. This enabled our ancestors to retain the health of soils and produce. Green manuring was not specifically, in use. It would have been considered an irreverent waste of God given plants. Peasants undersowed crops with legumes and fed this off. Stable manure and urine was expertly used. Most of these skills and this wisdom have vanished, even in the old countries, whereas in so new a country as Australia, such never really developed.

Peasants worked physically even harder than the well equipped farmer of today. Consequently their bodies moved slowly and they had no spare breath to talk cleverly. Their skill and wisdom was valued by poets and artists, while others deemed them "stupid". In class conscious England they were also known as "villains".

Last century modern science began to develop, and a special science of agriculture started. The activators were mainly specialist chemists. Highly interesting factors became known, like Justus von Liebig's discovery that plants can utilize minerals only in water soluble form. (Much evolved in Russia and has never been fully assimilated in the West.) The resulting, chemically induced, water soluble fertilizers were first used on large estates and produced bigger crops. Eventually peasants also had to use the modern fertilizers to compete. Older peasants, even then, lamented the change in food quality and the increase of disease in plant and animal, brought on by the use of fertilizers.

Plants were now no longer dependant on the soil biology to free insoluble elements in a gradual, natural process. In time, no-one remembered the food quality of naturally grown produce, as virtually only fertilizer forced produce was available. And, of course, money came into it. Bigger crops paid better, at least initially.

The artificially[2] fed plants were prone to pests and an ever increasing range of pesticides appeared on the market to combat the equally increasing pests, fungi and weed problems affecting these unnatural plants.

Simultaneously soils deteriorated, lost structure, compacted – became "sand" or "a bog" – and because of resultant lack of biological activity, were utterly dependant on further fertilizer input for the next crop. A continuing downhill spiral.

Thus the change to modern farming escalated, right to the point where, today, farmers are advised to be "with it" – more land, bigger, heavier (ground compacting) machinery. Loans from banks for "progress". Possible bankruptcy.

Conventional agricultural educational institutions in the West discontinued meaningful teaching on soil and soil biology. "Plant health" became associated with chemicals. Soil analyses determined as to fertilizer input according to the hypothetical ideal of supposed plant requirements etc. Huge amounts of irreplaceable phosphate, alone, have been wasted. Future generations may well question.

Today we are beset by the chemical residue situation. Traditionally farmed soils, storages, road and rail trucks, are polluted with chemical residues. It is a worldwide problem.

[2] See A. Podolinsky. BD introductory lectures Vol I – lectures 1 & 2 and "Organic-Bio-Dynamic outlook"

Australia, dependant on agricultural export, is particularly affected. There is an increasing worldwide demand for pure food, even if some poorer importing nations may not yet be financially able to press this point. Neither the overseas buyer nor the general public trust national or World Health organization's "safety levels" of pollutants. They have had to be lowered all too often. Furthermore, the existing safety levels are geared to adult bodies. Children have not the adult bodies resistance level and are therefore more vulnerable to the effects of residues. There should be a review of safety levels for this reason alone.

Agricultural science has of course contributed considerably to modern knowledge in many areas. But a major problem with all sciences is the inevitable and ever increasing specialization. Gradually a "system" evolves.

Since the advent of computers, "systems" can increase at a horrific rate. A bureaucracy of knowledge data is created, which via the use of statistics, can become a "creative" machine running amok. Very few individuals are able to overview their particular science. Most are sucked into this rich and powerful system, they become bureaucrats of their science.

Today little distinction is made between science and modern technological achievement. The essential base of epistemology has become forgotten in modern science cognition.

In some sciences this may matter less. In Agriculture it matters a lot. Agricultural practice requires a total approach, a total base in Nature.

Valuable contributions come from entomologists and other specialists, but none of these can totally advise a farmer. And a "passing on" of valuable specialist research via a farm advisor, who has no hands-on experience of the research, and has never farmed a property, is often all too theoretical.

In medicine, the Health Department doctor, who has not seen a patient in 30 years is not trusted as a medical expert. The practitioner with hands-on experience is sought. In Agriculture this situation is reversed. The man with a degree is regarded as the expert, although he may never have farmed.

Australian farmers listen to lectures of experts, but are generally aware that the lecturer could not run their farm. Contrary to the subdued peasant of old countries, the Australian farmer is historically a new appearance. He farms large tracts of land and copes with climatic hardship. He is rugged and independent. He may have become affected by modern chemical farming trends, but to date he has competed on the world market against EEC and US farmers, subsidized to 65% of their annual gross product value. On top of this he has been slogged by paying the Australian Government a tariff for imported replacement parts. No other Australian market is thus imposed on.

However disagreeable it may be, the recognition must be faced. Chemical farming is a sunset operation.

The question arises: <u>how to farm economically, and on a large scale, without fertilizers or chemicals?</u> This, certainly, is totally beyond the established agricultural system. Also, the harsh Australian climate makes biological farming more difficult. In favor is that Australia has used less agricultural chemicals than other countries, where heavy soil and environmental pollution diminishes attempts at realistic natural farming.

Per acre production in Australia, cost wise, cannot afford the chemical acre input New Zealand, for instance, can afford, whilst European conditions require still higher applications.
Old country peasant farmers performed on biologically active, beautifully structured soils. Because of the crumbly structure there was no problem with drainage, neither with soil blowing away or bogging down,. Those soils were much less "fragile" than today's. They were ploughed, slowly, by horse or cow drawn single furrow mould board ploughs in the hands of a skilled peasant. Although "cut", the soil laid over and broke gently into a crumbly structure. There were no cut lumps, eventually drying to hard rocks, on top of ploughed ground, neither the "dust" a modern disc (or rotary hoe) chucks up.

The peasant had but to maintain this soil. If we had such soils today, any heavy tractor, harvester etc. wheel would immediately compact it and reduce it greatly in biological capacity.

To just copy what our ancestors did, to just follow some amateurs' idealistic advice on "green manuring" etc. is not the answer in the prevailing Australian conditions in major farming areas, especially areas of low rain fall.

The problem is no longer soil maintenance, but soil redemption.

There may still be farmers who do not know how compacted and biologically dead their soils are[3]. Understandably – because there has been very little official reference to the subject and, generally, no material on the subject is available to farmers. Farmers have followed the advice of the Agriculture Departments and the current soil and pollution situation results – worldwide.

The agricultural establishment should accept this situation. It has currently not the expertise to advise on how to redeem dead soils. This cannot be remedied by quick "courses" for the conventionally trained staff, or by drawing from experienced natural farming organizations in order to issue information leaflets or booklets.

They should also attempt to view well developed, and practically proven, natural farming methods and results.

Agriculture deals with Life, Nature, Cosmic influences, the Elements. It goes beyond the conventional reliance on soluble elements, chemicals and the supposed necessity of replacing minerals. Natural farming results cannot be adequately judged from such a limited basis.

The need for a new direction in the purpose of Agriculture has to be accepted. Namely, the production of nutritious and unpoisoned food and the maintenance of soils for future generations. Man's existence on Earth depends thereon.

Only 11% of Earth's surface is suited to sustained agricultural production. In the last hundred years this very area has been the target of the worst ill treatment of any and this has been the major contributing factor to the current pollution situation of Earth. The redemption and consequent biological maintenance of this area is far more important than any other "preservation" issue.

The increasing salinity problem of Earth's agricultural area is but a side issue to the ill treatment of this area. The planting of trees will not solve this salinity problem, unless the entire productive area be

[3] See A. de Podolinsky Introductory BD Lectures – Vol I photos pg 81 & 82 and "Organic – Bio-dynamic Outlook".

planted – with loss to practical agriculture. Increased salinity is caused by compacted soils of shallow root system.

It is conventionally accepted that it takes thousands of years to make one centimeter of topsoil. Fortunately this has been disproven by bio-dynamic experience in Australia[4]. We have, likewise, proven how saltation ceases as soon as a deep root system is established. Productive mixed pasture is the most suited to this purpose.

Once, the agriculturally productive area of Earth was high in organic matter. Today the organic matter levels are very low. The resulting increase of CO_2 in the air, as a major contributory factor to the current (greenhouse) CO_2 problem is, as yet, unrecognized.

On Australian bio-dynamic soils increases in organic matter from 0.9% to 11.4% have been registered in a few years in the top 4 inches and totally new organic matter levels were measured to a depth of 40 inches. The overall co_2 ratio in the soils increased from 10 to 586 tonnes per acre.

Even Australia has virtually run out of suitable farming areas which could be opened up and would be clean of pollutants. There may be some outback land which could produce one or two, new and clean, crops. This would certainly not be "organic" produce, although free of fertilizers and chemicals. It would be "mined out" produce and of short term agricultural sustainability. There are but few traditional, well established farming areas, where soils are so rich that some farms were never chemically treated. Few of these farms have received the care old time peasants gave their soils – a certain amount of "mining" has also occurred on them. But farmers who did not fall for chemicals on soil or stock are in a fortunate position.

The recent Dieldrin episode was a shock. The Dieldrin problem, as others of a kind, was long known. Suddenly it became financially significant. Farmers could half shut their eyes and decide to "reduce chemical sprays" etc. There are chemicals in use now which are potentially much more dangerous than DDT. As yet there are no practicably effective detection methods for these, but eventual detection must be expected.

The vast problem of how to redeem dead soils, especially in the harsh Australian climate, arises. There should be potential help for any farm of essential productive capacity.

The best method of agriculture is meaningless unless it is appropriately presented to farmers, and appropriately accepted, and consequently practiced by framers.

Experience indicates that a total re-education in Farming is necessary.

It is difficult to redeem a broad-acre farm, especially in the unreliable Australian climate – biological farming requires water – the inexperienced new man has to obtain a result from a dead soil. He cannot go broke. An experienced bio-dynamic farmer would achieve more soil and plant development in one year than many a new man in three. But, a beginning there has to be.

Totally new skills and understanding of soil cultivation have to be brought to consciousness. Likewise, every aspect of erstwhile farming and grazing practices has to be reconsidered. New husbandry,

[4] Vol I – Soil photos pg 81 & 82

conducive to the modern labour acreage situation, has to be understood so that dead soil can be redeemed without financial net loss to the farmer. New equipment has to be developed to suit special conditions.

Artificial fertilizers have brainwashed to "big is desirable", "the more feed the more nutrition". Orchardists and market gardeners (less so the modern consumer) look for "big" trees and cabbages. Plants are blown-up bags of salt and water[5] and quite unhealthy. Until they return to their natural shape they continue to be sick and require chemicals.

New seed varieties have been bred to produce exactly such unnatural plant giants, requiring heavy fertilization and chemical inputs to grow. And the recent attempts at genetic breeding as the savior of the prevailing problems will only further compound the issue, even if a temporary recession of an isolated problem is achieved.

The redemption of a farm is a gradual process coupled with the conscious development of the farmer himself. There is no "foolproof" changeover method to natural farming per se. Farmers have, alike, been brainwashed to "easy counters" – a chemical spray to rid plants of a pest, or to get rid of weeds in a crop. Weeds become a major problem on soils of low biology.[6]

There are no such easy and quick methods in natural farming. The farmer must find courage to newly perceive. As soil and plant health gradually rise, pests do less damage, sheep cope with worms etc. He must find courage to reduce the use of chemicals, which negatively affect the new soil life he is trying to develop.

A great responsibility lies with those who have experience in advising. There is no "standard" method to exactly suit every farm. Every farmer and farm is different. Insight, based on experience, is required to advise safely and usefully. Take the conventional farmer who has hung his fortune on the advice offered over decades by his Agriculture department. A man under bank pressure perhaps. Considerable courage is required to step out of this system into the apparent uncertainty of natural farming. Yet, success depends on courage. We have at times rebuffed a BD applicant and do not "advocate" BD. We give each farmer the opportunity to thoroughly make up his own mind. Then there is a chance for the success we have registered. This farmer can then meet the very considerable demand made on the converting farmer: a new and higher professional standard.

In Bio-Dynamics in Australia we have the largest naturally farmed area in any country. We have developed the newly required skills to commercially produce virtually all types of produce – even cane sugar – without fertilizers and chemicals, and it could be stated that, in general, the net income of our farmers is at least as good, mostly better, than that of conventional neighbours . They are happier farmers – they are not using poisons – they have a healthy soil based future on the farm for their children.

In Denmark, and now also West Germany, the Government subsidizes farmers to convert to Bio-Dynamic or biological farming. It is expected that the EEC food mountain will thus reduce because of lower gross production, also the food will contain less or no chemicals. In the Australian situation, the

[5] Lectures I & II Vol I – "Organic-biodynamic outlook"
[6] Vol I – Introductory BD Lectures, last lecture

Australian Government cannot be expected to fund such, but it would certainly be preferable to any further bounty on super phosphate.

Current Problems Relevant to Wider Development of Natural Farming.

Government appointed marketing boards hold monopolies. Earlier on we had to battle with them to be permitted to market and export bio-dynamic products. Now they are entering the export markets we established at the very considerable financial advantage of up to $70 or $80 per ton which the Board retains from our payment. The grain to be exported by them reportedly comes from relatively newly opened inland country… the US.., our other major competitor, has no similar Board, they are also ahead on us financially with lower transport costs and less wharf problems.

Some of the alternative agricultural organizations trying to establish their authority "officially" are led by people "qualified" in the conventional establishments. Sometimes they too lack hands-on farming experience. The danger of a new bureaucracy looms. For instance, overkill in the establishment of "standards".

Not one alternative organization, including IFOAM, has, to date, in their standards the requirement <u>that the plant be fed naturally</u> via the soil structure-root-humus organization[7] . Plants can be fed excessively even in an organic system. Raw organic manure, even green manure, can become available to plants, as soluble NPK, directly through the water of the soil – without first being built into humus colloids. Only an examination of the root-soil-humus structure organizations can ascertain whether the plant was fed naturally. The sun should decree how much the white feeder roots absorb[8].

It would be good if experienced natural farmers took a major share in guiding natural farming organizations, and that committed, practical wholesalers and executives of reputable consumer organizations, assisted in the supervision of marketing.

To be hoped for: Re-direction of agricultural education.

Basic education in agricultural science should be less institutional and more farm based and take place under full commercial pressure, with continuous work experience of students on farms for at least one year. Students to have choice of conventional or naturally farmed properties.

Co-operation between natural farming organizations and Government establishments.

1. Co-operation is a necessity and a responsibility. It would require openness and respect of achievement.

[7] See A. de Podolinsky – Vol I – 1 & 2 – "Organic-Biodynamic Outlook"
[8] See A. de Podolinsky – Vol I – 1 & 2 – "Organic-Biodynamic Outlook"

2. There are areas of research totally out of observation of systems trained western scientists. Natural farming organizations should have an input into research direction.

3. Co-operation in Education. Currently, students at Australian Agricultural Colleges enquiring after alternative methods are told that commercial broad acre farming is not possible without use of fertilizers and chemicals.