

“Stages of Manuring”

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notes from the 1st of 4 lectures delivered by Manfred Klett
during a week at Steiner College, Sacramento USA
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all errors will be those of the transcribers :)
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Introduction

“manuring is such a great mystery*, only spiritual science can
solve this secret”
-Rudolf Steiner

*perhaps *secrecy* would be an alternative translation-choice to *mystery* - there
was discussion

-this statement refers to the *Being of Matter*

-it is a great question of recent centuries: What is the Being of matter?

manuring— as farmers we must fertilize-

produce removes matter

-also *forces* are removed

the fruit contains forces as well as well as matter

these *forces* must be replaced

[note: *substance/matter* is of earthly origin, while *forces* are from the cosmos]

-this is a most important aspect of manuring, to replace the [cosmic] forces

history of manuring:

in ancient history, manuring was not yet known - in pre-christian times: egypt, persia...

- these cultures developed in river valleys: Nile, Jordan, Indus, Tigris
- where nature fertilized herself thru annual flooding- clay and humus were deposited
- flood management* did develop- *water* was the medium of new fertility

MANURING began around the 9th c.C.E.or so - villages developed out of a *christian* impulse

- at the center, a church
- people lived with their animals under the same roof
- concentrically out from there were gardens, pasture etc.
- all surrounded by forest [permaculture-style]

the “organism of the farm” originated in this time - and continued to develop for 1000 years

- animal husbandry, and arable work, were now seen to be related
- before this the two were separated; around the 9th c they merged
- thence animal manure would be taken to fertilize the soil
- previously manure was burned for fuel [&/or used for other purposes?]

in the 19th c.village development came to an end

“Science”took on the development of agriculture - the theory/practice of CHEMICAL/MINERAL AGRICULTURE arose

- in which yield is limited by the substance in the minimum - the“minimum law”
- still the dominant model of agriculture

ammonia synthesis yielded abundance of N - [process developed 1909]

- outlandish yields resulted from manuring with large amounts of artificial N
- artificial N manuring led to the questions to Steiner, which resulted in biodynamics
- artificial fertilizing is and has been disastrous for the “3rd world” in particular

it is really MATERIALISM, which has led to the current artificial manuring system

- we must change our thinking, and develop our feeling

the 3 Stages of Manuring

are:

1. Materials from the Plant Kingdom
2. Materials from the Animal Kingdom
3. Materials from Man

plus 2 other stages [ie not to be called manuring proper]:

0. whatever comes from the mineral world
- 1. artificial fertilizing (especially N)

-1 Stage

artificial fertilizers

we must understand how artificial N is really an *evil*- and why we should get rid of it in *all* farming

ammonia synthesis gets N out of the air and into a salt - it is "almost criminally" effective in this form

imagine a meadow: 2 cuts hay per year

70 - 80 varieties of plants

dress it w/N - 100 kg - repeat next year

first herbs disappear, then clovers

-clover's (leguminous) nodes disappear when artificial N is added

- & obviously N fixation is then reduced

eventually perhaps 3 or 4 grasses will remain

- those 3 or 4 grasses might give a tremendous yield with further N "pushing"
but ...

consider a hypothetical individual root: - at the apex of the root,

living cells are secreted into the soil, *through which*[soup] the root grows [!]

these cells live for about 3 days, then decompose almost immediately

-this process also is prevented/disencouraged by N application

we could consider the root's apex its "life pole" and its origin/upper part to be a "death pole"

-interaction between these poles causes the root hairs, all along the root's length, to secrete into the soil various substances from its *whole metabolism*, including acids, protein, sugar

-a "complex chemistry" is maintained - in this way the plant *nourishes* the [various] microbes, including bacteria and fungi, in the soil [!]

-it thereby *builds up* symbioses all around the root hairs - not one but many
- 8, 10, 14...

it creates a *life zone*

via these processes the root merges completely with the minerals surrounding it minerals are thus dissolved and become part of the plant

-and nitrates etc also are taken in to the plant

humus formation requires carbon, hydrogen, sulfur, nitrogen, oxygen, potassium ...

the plant itself *monitors* this process [!!] through the mechanisms just referred-to

actually the plant feeds the soil, not the soil feeds the plant

[!] *manuring means, actually, to stimulate this process* [!] - yes, one replaces substances, and forces

- but it is the plant's *faculty*, to excrete and to take in, which *must be developed* [!]

the *plant must be educated* (<- seed-saving)

-to be able to *actively perceive* the salt - an *active* process

“-1”-type manuring causes these symbioses to be lost, “to come apart”

-leads to such phenomena as dying forests

with too much N from ammonia, a negative-reinforcing feedback develops

-applying more N to keep up yields ->

-the *plant's ability to organize itself* is lost ->

-then the soil totally loses its ability to dissolve - and you're effectively growing hydroponically

after dressing with compost, eventually the diversity would reappear to the meadow - which had been damaged by artificial N

manuring is not just to give something which is not there - but to *develop* something

0 Stage

sometimes minerals are deficient - like P or K

-sandy soils need K

-for acid soils, liming regulates decomposition

sometimes one must compensate for imbalanced conditions

perhaps rock dusts,

a small amount (relatively) of something to compensate for imbalanced conditions

1st Stage of Manuring

all plant material

everything not part of the produce falls back to the soil

organic residue decomposed by microbes, and mineralized (when the pile heats up)

life fertilizes life

composting is a real art - not just “piling up things”

it is of significance that one builds the pile above the earth

(interestingly, in africa one cannot compost above the earth - one must make a pit)

the pile is modified by forces of warmth, air, water, and earth

warmth -phase 1 - heating up of the pile - microbial decomposition
-more than 55 degrees C. bad

air - phase 2 - aeration - steam and CO2 produced by pile

water - phase 3 - moistening the pile
moisture suffuses ingredients -*cells release their contents*
-pile sinks down

earth - phase 4 of composting - process complete ->
HUMUS- a *new substance* in nature,*which Nature has produced*, herself
humus has same ingredients as protein -C, O, H, N, S
humus is the “memory” of the Earth
the achievement of 1 year: the humus “smidge” of that year
each year’s is somewhat different
it may be kept in a kind of “memory” -the yield of previous years
- maybe of hundreds or more years
“a soil with memories of years and years of the past”

how to cultivate, to create and retain the most humus, is very little understood

-tilling - overcropping

where is the finished compost most urgently needed?

compost- it is ideal for grasslands meadow, pasture
grazing requires continuous growth, without ripening
compost application stimulates return of grassland diversity [as referred to in discussion of “-1” stage above]

compost for garden areas -where the soil never/rarely gets to rest, ripening cycles are interrupted

compost is the *true* “artificial fertilizer”

there are 2 kinds of humus:

1. “feeding” humus - feeds the soil, microbes, worms
2. permanent humus - stable humus

usually we never get to see the second type, which in a sense is our real goal

compost for fruit trees - they need black, crumbly humus
humus has tremendous *organizing* forces - which is what fruit trees need
not stimulating / activating / grow-grow-grow forces - which would be a problem in an orchard

humus is the universal fertilizer - creating diversity
-organizing

2nd Stage of Manuring

animal manures and products

people think that NO are all the same
what comes from animals is very different than what comes from plants
animal products come from an *ensouled* being
it is [a] completely body-bound [experience], for animals
that is the animal’s tragedy- the soul is completely bound to the body
-they can’t develop themselves
-they have served the development of man, and *have been left behind*

to really understand an animal, we must really observe its behavior

manures correspond with various animals’ natures & actions - horse manure is lively, fiery . . .

what an animal does, it (its manure) fertilizes
it gives something to the world - a “surplus of their Being,” so to speak [:])
the way a bird’s song in the morning might infuse your work . . . this is also a real manuring of the farm
the farm needs fish, somewhere
earthworms - “a real miracle - the worm doesn’t want anything for itself - it serves soil structure”

the manure itself is actually ensouled also in some sense - the cow produces the most marvelous manure in nature
the “most harmonious” manure is human manure [more on this follows]

we must care for the wildlife on and around the farm as much as for our own animals - including earthworms!

on Manfred's farm scientists found 600 worms/m² - on a field 2 years out of clover

bd farms should have at least 200 worms /m²

and birds! -there were few birds on manfred's farm 30 years ago

now people come there to study birds (<-hedges, fruit trees)

all beings ought to have a chance to be present (on the farm) - whether they cause damage or not

don't speak about "pest insects"- all have their place

-it is just a question of balance

3rd Stage of Manuring

whatever comes from man's organism has no fertilizing effect

-human feces - in sweden it is used on fields

Manfred's research shows no benefit from application of human waste other than that which would come from applying artificial N

man's contribution must be otherwise - our work -*working spirit*

your vision | learning | efforts fertilize the farm

skill and *devotion* can make a ["conventional"] family farm superior to a bd farm

who feeds the cows? what is their *spirit* and *attitude*?

the cows will be more or less healthful as a result

"*the work, is the real secret*"

if we devote ourselves to the quality of our own work, it is possible for our work one day to carry an influence toward transcendence

in a peasant farming community, there one can see what human work can be

we fertilize with our spirit

this understanding must "sink down", and become a "heart-thinking"

and then, finally, a head-thinking

the [bd] preparations are not to be found in Nature - they are an invention, by a human /humans, out of spiritual research

there are other, new substances, - exactly the opposite of the preparations

they derive from the death-sphere

plutonium -"one spoonful could kill california"- all life in california

it carries such enormous forces - also an invention by humans

preparations also carry enormous forces in minute quantities -
these forces derive from the living sphere
-they include all kingdoms of nature
-arranged by the human spirit -“a composition of the human spirit”
one’s whole organism is engaged in working with the preparations
these forces, when released, do not

- explode
- in space

and

- destroy everything

-rather they

- evolve
- in time

and

- nourish all life

we fertilize time-processes [with manuring generally & specifically with the preps]

- thus, “something” can develop -
can evolve, with time

we have the means - through our work, we are “enhancing nature”

the preps are the kernel of bd farming - something truly new is introduced into nature

nature, as an integral wholeness, can develop *with us* - the earth cannot develop itself out of its own forces -*it is our task to serve*

beyond producing healthy food for people, biodynamics is to serve the earth and its future development, and to nurture the culture whereby that can happen
[end]