... there is one plant whose beneficial influence on the manure is such that it would be next to impossible to find a substitute for it. We are often not very fond of this plant, at least not in the sense of wanting to fondle it, because the plant in question is stinging nettle.

—R. Steiner, *Spiritual Foundations for the Renewal of Agriculture,* lec. 5, p. 98

SO THAT THE EARTH MAY BE HEALED

The Josephine Porter Institute
for
Applied Bio-Dynamics, Inc.
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ADDRESS CORRECTION REQUESTED

Applied BIODYNAMICS©

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From Blossoms

From blossoms comes
this brown paper bag of peaches
we bought from the boy
at the bend in the road where we turned toward
signs painted Peaches.

From laden boughs, from hands,
from sweet fellowship in the bins,
comes nectar at the roadside, succulent
peaches we devour, dusty skin and all,
comes the familiar dust of summer, dust we eat.

O, to take what we love inside,
to carry within us an orchard, to eat
not only the skin, but the shade,
not only the sugar, but the days, to hold
the fruit in our hands, adore it, then bite into
the round jubilance of peach.

There are days we live
as if death were nowhere
in the background; from joy
to joy to joy, from wing to wing,
from blossom to blossom to
impossible blossom, to sweet impossible blossom.

—Li-Young Lee

From the Editor

Enclosed with this issue is a sheet for recording your experiences with "sequential spraying." Send us your report; we will be summarizing a number of people's reports in the next issue.

Malcolm Ian Gardner

Thank You Again!

Over the summer, the following saintly souls have gathered, dried, and sent us precious parcels of the hard-to-pick dandelion and chamomile blossoms, as well as ever-welcome contributions of yarrow blossoms and equisetum shoots:

Florence Bates, *Fairbanks, Alaska* (chamomile)
Christy Korrow , *Burkesville Kentucky* (dandelion)
Greg Martens and family, *Englewood, Colorado* (dandelion & chamomile)
Helen Oshima, *Las Vegas, New Mexico* (dandelion)
Lorinda Palin & Solly Walker, *Broadway, Virginia* (dandelion & equisetum)
Mary Lee Plumb-Mentjes & Conrad Mentjes, *Anchorage, Alaska* (yarrow)
Jed Restuccia, *Victor, Idaho* (dandelion)
Ruth Zinniker and friends, *Elkhorn, Wisconsin* (dandelion)

Florida Conference, Jan. 30-31, 1999

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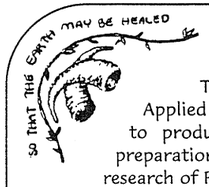


MISSION

The Josephine Porter Institute for Applied Bio-Dynamics Inc. (JPI), was founded to produce quality biodynamic agricultural preparations based on the spiritual-scientific research of Rudolf Steiner.

It serves as a living memorial to Josephine Porter, a pioneer for this work in America.

The mission of JPI also includes education and research in biodynamic agriculture.

JPI undertakes these tasks so that the Earth may be healed.

Time Marches On— Progress at JPI

"The mills of the Gods grind exceeding slow," and so too things move with excruciatingly slow speed when one is constructing a building. Nevertheless, I am pleased to report that the new JPI building does continue to make progress towards completion. Very recently, the last of the exterior doors was put on. The heating system is 75% installed, the outside deck is 80% completed, and we are busy with the finish of the interior: partition walls, drywall, electrical, telephone, and everything else necessary to complete the building. It has been a long haul, and there is still a ways to go; but as the saying goes, one can now see the light at the end of the tunnel. Sometime in early 1999, just in time for the millennium, we should be able to move out of the basement under my house and begin operations from new facilities. A great deal of thanks is due to a very long list of people who have made a contribution of time or money (sometimes both) to make all this possible. Although, at times, construction was slowed by lack of funds, everything in the building up to this point is paid for without benefit of mortgage or bank loan. There will still be the need for much additional work in terms of furnishings and equipment within the building, plus significant landscaping outside the building.

In the meantime, the regular activities here have continued, even while the increase of orders for the biodynamic preparations and the Pfeiffer products seems to be overwhelming at times for the staff. We were twice visited in 1998 by Dr. Maria Linder, of the Pfeiffer Foundation, who is helping us iron out problems with respect to materials and equipment. Her assistance will ensure that we will be ready to begin production of the Pfeiffer Biodynamic Compost Starter and BD Field Spray Concentrate in 1999, shortly after we occupy the new building. In August and part of September we were visited by Jennifer Reeve from Norwich, England, who has shown a great deal of interest in helping to produce the Pfeiffer products. Provided JPI can clear all the hurdles put up by the Immigration and Naturalization Service, we expect to have Jennifer join us at JPI at the beginning of 1999.

From late 1997 until March of 1998 we were fortunate to have the services of Woody Wodraska, a very competent gardener and fence builder, who helped us catch up on some of the many uncompleted or deferred tasks here at JPI. Woody returned for the 1998 growing season to Seeking Common Ground, the CSA he helped start in Honeoye Falls, New York. This Fall he returned to his beloved western mountain region, joining the good folks at Aurora Seeds in British Columbia. In May, we were joined periodically by Van McKay formerly of the Greensboro N.C. area, who will be taking up a more permanent role with JPI as of Fall 1998. We will have more detailed biographical information from Van in a future issue.

We are looking at the needs for the future as far as JPI's role in furthering biodynamics, and believe that we will need to reduce our participation in conferences in order to increase the educational activities here in Woolwine, where we have the facilities to give people a more thorough experience of preparation making.

Hugh J. Courtney

strength of the materialistic intellectualism that pervades humanity so thoroughly today. We do, however, have some help available both in inner human processes, as well as outwardly in nature. Steiner tells us:

> And when in high summer, from a particular constellation, meteorites fall in great showers of cosmic iron, then this cosmic iron, which carries an enormously powerful healing force, is the weapon which spiritual beings bring to bear against Ahriman, as he seeks Dragonlike to coil round the shining human forms. The force which falls on the earth in the meteoric iron is truly a cosmic force ... to gain a victory over the Ahrimanic powers, when autumn approaches. And this majestic display in cosmic space, when the August meteor showers stream down into the human being shining in the astral light, has its counterpart—so gentle and apparently so small—in a change that occurs in the human blood. This human blood ... is permeated throughout by impulses from soul and spirit, is rayed through by the force which is carried as iron into the blood and wages war there on anxiety, fear, and hate. The processes which are set going in every blood corpuscle when the force of iron shoots into it are the same on a minute human scale, as those which take place when meteors fall in a shining stream through the air. This permeation of human blood by the anxiety-dispelling force of iron is a meteoric activity. The effect of the raying in of the iron is to drive fear and anxiety out of the blood.[16]

So, we have a connection between an iron process within the human being—which counters an inner sulphur process—and, in the outer universe, with the August meteor showers known as the Perseids (originating from the constellation Taurus/Bull)—which counter the outer sulphur process in nature. Steiner calls upon us to

> make conscious use of the meteoric-force in our blood. We must learn to keep the Michael Festival by making it a festival for the conquest of anxiety and fear, a festival of inner strength and initiative—*a festival for the commemoration of selfless self-consciousness.*[17]

When one ponders the picture which Steiner gives us of this event in the heavens and its counterpart within the human being, along with the indications he gave for making the stinging nettle preparation and its relationship to iron, it makes a great deal of sense that the preparation remain buried through the summer months (after spending the winter in the earth). The summer burial allows it to absorb these meteoric iron forces showering the earth during this time of the year. It is important as well, perhaps, that one allow the living stinging nettle plant to gather these iron forces during the summer months. If one gathers nettle in the spring, makes the preparation and buries it, then digs it up the following June, one will end up with an immature preparation, even though it has spent a full year in the earth. The forces absorbed in the winter time, when the earth is most inwardly alive, must first be in place so that the preparation will be able to absorb within itself the meteoric iron forces available during the following summer. Otherwise it is akin to taking a young child to a sermon or a serious lecture and expecting the child to be able to fully understand and expound upon the subject matter. A certain maturity must be reached before comprehension is possible. In the same fashion, the stinging nettle must be exposed to the forces of winter in the earth, before it can fully comprehend the meteoric iron force coming to the earth during the summer months. If you prefer to make your stinging nettle preparation in June, please exercise the forbearance to wait until Michaelmas the following year to dig it up. In my opinion, however, a better course of action would be to use a June harvest of stinging nettle for making your fresh and fermented nettle teas for agricultural purposes, or for dried nettle for livestock or human consumption. Then, at Michaelmas, use the regrowth from a second harvest of your stinging nettle to make the stinging nettle preparation. This stinging nettle will have grown back from the earlier harvest and will have received the meteoric iron force to strengthen its inherent iron radiation of which Steiner speaks. Thus, this preparation is truly anchored at both ends of its production within the Michaelmas forces. There is probably much more to be said about the stinging nettle as the Michaelmas preparation, especially when we remember that Steiner identifies the Archangel Mich-a-el as the keeper of the Cosmic Intelligence,[18] and also describes the stinging nettle preparation as the preparation which brings "an infusion of intelligence" to the soil.[19] However, exactly what Steiner meant by relating the stinging nettle preparation to an infusion of intelligence for the soil remains to be elaborated upon at another time in the future.

Notes

1. Steiner, Rudolf. *Spiritual Foundations for the Renewal of Agriculture,* trans. by Creeger & Gardner (Kimberton, Penn.: Biodynamic Farming & Gardening Association, Inc. 1993), p. 98. Hereinafter referred to as *SFRA.*
2. *American Heritage Dictionary of the English Language,* third edition (Boston, New York: Houghton Mifflin Co. 1992).
3. *Common Weeds of the United States* (Dover: New York 1971).
4. *SFRA,* p. 98.
5. *SFRA,* p. 98.
6. Duke, James A. *CRC Handbook of Medicinal Herbs* (CRC Press: Boca Raton, Fla. 1985), p. 502.
7. *SFRA,* p. 99.
8. Steiner, R. *The Archangel Michael: His Mission and Ours,* (Anthroposophic Press: Hudson, N.Y. 1994), lecture of Oct. 5, 1923, p. 219.
9. *Ibid.*, pp. 219-220.
10. *Ibid.*, p. 220.
11. *Ibid.*, p. 220.
12. *Ibid.*, p. 220.
13. Rittelmeyer, Friedrich. *Rudolf Steiner Enters My Life* (Floris Books: Edinburgh, 1963), p. 124.
14. Steiner, R. *The Archangel Michael: His Mission and Ours,* (Anthroposophic Press: Hudson, N.Y. 1994), lecture of Nov. 21, 1919, p. 103.
15. *Ibid.*, lecture of Oct. 5, 1923, p. 220-221.
16. *Ibid.*, p. 221.
17. *Ibid.*, p. 222.
18. *Ibid.*, lecture of Aug. 21, 1924, p. 272.
19. Steiner. *SFRA,* p. 100.

Valerian and Frost Protection

We reported last summer (issue #20) on the experiments that Kachina Via undertook for her 11th grade science project at Elmira High School near Eugene, Oregon. During her 11th grade year she repeated and expanded her experiments, including this time not only the ability of several plant spays to provide frost protection, but also their effect on plant growth and nutrition. She compared the degree to which basil plants were protected from cold temperatures and frost by sprays of **fermented nettle tea, kelp tea,** and **fermented valerian extract (BD #507)**, as well as by plain water and with no spray at all. Due to the warm El Niño winter, she was unable to conduct any field experiments, so she instead used a greenhouse and relied on coolers and refrigerators to simulate a series of chilly nights (18 exposures over approximately a two month period). I will present here a somewhat simplified summary of her results.

One of the most significant things she found this time was that it made a considerable difference whether the plants were evaluated right after the cold treatments, or whether the evaluation was done a week later, when the growing tips of the plants had had a chance to put out new leaves. When the plants were evaluated right after the cold treatments, the best looking basil plants (as evaluated independently by two experienced farmers who did not know which plants had received which treatment) were the plants that had simply been sprayed with water (see Table 1). (Each treatment involved 16 plants that were sprayed 2 hours before first being exposed to cold and then again on four other occasions during the series of 18 exposures. The average damage per treatment was rated on a scale of 1-10, with 1 being best.) The plants that had been sprayed with valerian were rated to be almost as good as those sprayed with water, while those sprayed with nettle and kelp were much worse. After a week (without any further cold exposure), the nettle and kelp plants were still in bad shape, but the valerian plants showed hardly any damage at all, while the water-treated plants looked slightly worse. The plants that did not receive any spray at all were rated right after the last cold exposure as being the same as the water-treated plants, and after a week they were rated as being slightly less damaged than the water-treated plants but still not as undamaged as the valerian-treated plants.

Table 1: Damage Ratings
(1 = least; 10 = most)

Treatment	After the 18th cold exposure	1 week later
valerian	3.5	1.5
unsprayed	3.5	3.0
water	3.5	4.5
nettle	7.5	6.5
kelp	9.5	7.5

From this it may be concluded that spraying with water, and especially with nettle or kelp tea, does not in fact protect plants from cold temperatures as some growers believe. (However, biodynamically prepared stinging nettle, BD#504, may still offer some protection; see Hugh Courtney's remark on page 7.) On the basis of growth rate measurements and a comparative analysis of the nutrients in the sprays and in the basil plant leaves, Kachina tentatively concluded that the nettle and kelp sprays were acting to stimulate growth and thus actually decrease the plants' hardiness. The biodynamic valerian spray was the only treatment that actually increased the plants' long-term hardiness relative to the unsprayed controls.

Kachina does not plan to continue these experiments in her senior year of high school, but if she or anyone else ever does, one thing that would be very useful to measure is whether it is equally effective to spray valerian immediately *after* plants have been exposed to cold temperatures. In the meantime, however, it is a pleasure to report that Kachina's research efforts were recognized in the state-wide science fair with a first prize award in the Botany Division and with a large college scholarship.

The Michaelmas Preparation

(Continued from page 7)

summer human beings shine inwardly with the sulphur-process."[10] Besides the glow-worms or lightning bugs that shine out around St. John's Day in the physical realm, "the inner being of humans then begins to shine, becoming visible as a being of light to the etheric eyes of other planetary beings. That is the sulphurizing process. At the height of summer, human beings begin to shine out into cosmic space as brightly for other planetary beings as glow-worms shine with their own light in the meadows at St. John's Tide."[11] While this sulphurizing process within the human being is a positive, perhaps even nourishing process as far as these other spiritual and/or planetary beings are concerned, it does have a negative aspect or consequence for human beings. Steiner defines this negative consequence thusly: "... but at the same time it gives occasion for the Ahrimanic power to draw near to humanity. For this Ahrimanic power is closely related to the sulphurizing process in the human organism."[12] Here reference is made to the spiritual being Ahriman, who has been characterized by Friedrich Rittelmeyer* as the "Spirit of materialistic intellectualism."[13] Elsewhere, Steiner tells us to "think of everything that presses us down upon the earth, that makes us dull and philistine, leading us to develop materialistic attitudes, penetrating us with a dry intellect, and so on; there you have a picture of the Ahrimanic powers."[14] These Ahrimanic powers, by virtue of the sulphurizing process within human beings, attempts "to ensnare and embrace them, to draw them down into the realm of half-conscious sleep and dreams. There, caught in this web of illusion, human beings would become world-dreamers, and in this condition they would be a prey to the Ahrimanic powers. All this is significant for the cosmos also."[15] Since most human beings have not reached the necessary level of self-consciousness to enter into the deeper spiritual meaning within outer nature of the processes of dying and fading which are associated with the Michaelmas season, we have a clue as to the

*Friedrich Rittelmeyer was the first leader of the Christian Community, an international movement for religious renewal founded with the co-operation of Rudolf Steiner.

THE MICHAELMAS PREPARATION: BD#504—STINGING NETTLE

By Hugh J. Courtney

The claim in the title of this article will be addressed only after we have taken a good hard look at the indications Steiner gave for making the stinging nettle preparation. We will, to begin with, examine the most unique plant from which this preparation is derived.

Steiner confirms the uniqueness of stinging nettle by referring to the fact that while substitutes may be found for the other preparation plants, specifically yarrow and chamomile,

> there is one plant whose beneficial influence on the manure is such that it would be next to impossible to find a substitute for it. We are often not very fond of this plant, at least not in the sense of wanting to fondle it, because the plant in question is stinging nettle.[1]

When Steiner is subsequently questioned as to whether it is the annual or the perennial stinging nettle which is to be used, he responds simply with the technical name of the plant, *Urtica dioica*, that is, the perennial stinging nettle (see illustration, p. 4). *Urtica* is from the Latin *urere,* "to burn" which one presumes is in deference to the stinging hairs of the plant. *Dioica* is from the term *dioecious* (from the Latin for "two houses"), which is a botanical designation for plants "having the male and female reproductive organs borne on separate individuals of the same species."[2] Do not be surprised, however, if you sometimes observe a single plant that has both a distinct zone of male flowers as well as a distinct zone of female flowers, in other words, is *monoecious* (both sexes in "one house"). Jim Duke, a renowned ethnobotanist, pointed out in a private conversation, that sometimes "the plants don't bother to read the book, and do whatever is necessary to continue the species." The inflorescences are found in the axils of the upper leaves; the male inflorescences tend to project out sideways, the female are more pendulous. A U.S. Department of Agriculture publication[3] gives the following description of *Urtica dioica*:

> *Perennial* reproducing by seeds and creeping rootstocks; *Stems* erect, 1-2 m. tall, ridged, bristly-hairy with stinging bristles (0.75-2 mm. long); *Leaves* opposite, simple, egg-shaped to heart-shaped, coarsely serrate, hairy or glabrous, with or without stinging bristles, usually twice as wide as the length of the petiole, the stipules linear-lanceolate, 5-15 mm. long, green to pale-brown, minutely pubescent; *Inflorescence* branched, many-flowered, loose to dense, panicled spikes; *Flowers* mostly dioecious, small, greenish; *Staminate flowers* with 4 perianth segments and 4 stamens; *Pistillate flowers* with 4 perianth parts and a 1-celled ovary; *Fruit* (achene) 1-1.5 mm. long, flattened, egg-shaped, minutely glandular, yellow to grayish-tan, the calyx and remnant of the style often persistent. June-September.
>
> Waste places, roadsides, vacant lots, rich soil, and edge of damp woods. Naturalized from Eurasia. Throughout all the United States excepting southern Georgia, most of Florida, and that part of the United States from northwestern Washington through most of Texas.

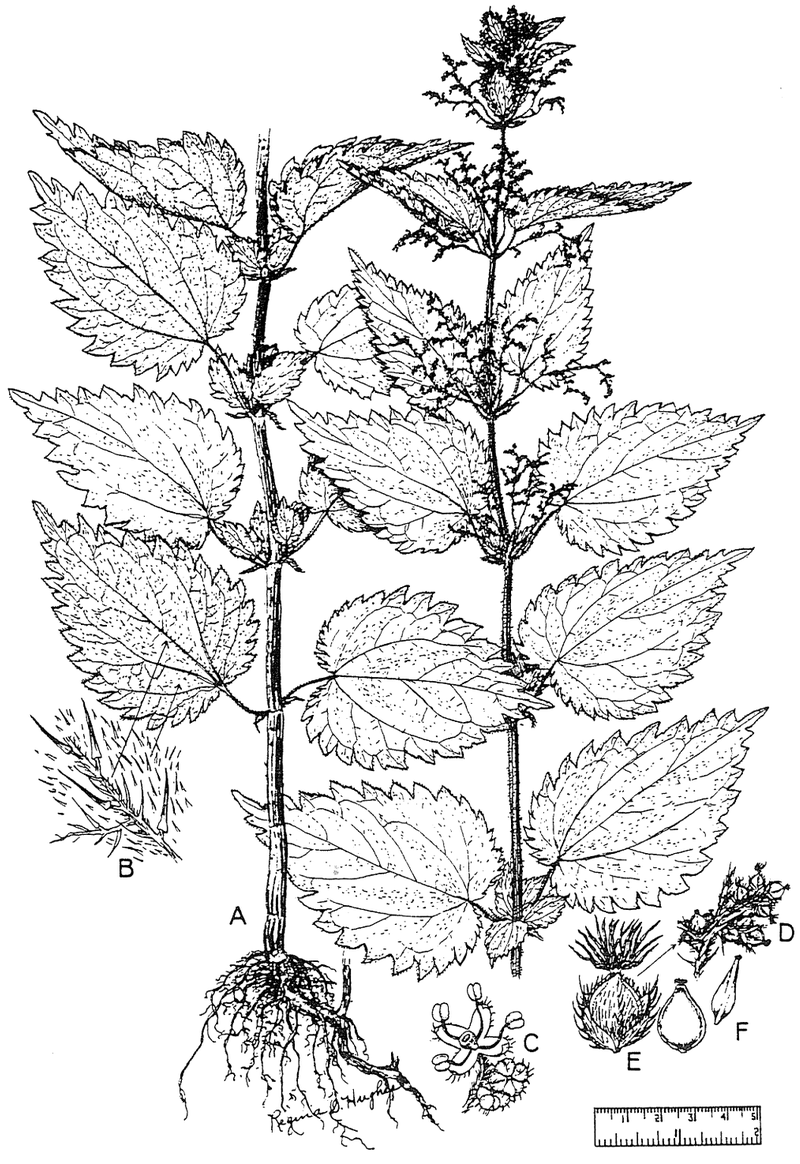
It is important to compare what Steiner says about the constituents of stinging nettle, to try to determine what qualities it possesses that make it so unique among plants. He goes so far as to define that uniqueness in the following statement: "But stinging nettle is in fact the greatest benefactor of plant growth, and it can hardly be replaced by any other plant. If it is not available locally, you really must get the dried herb from somewhere else."[4] It should be kept in mind, however, that when Steiner speaks of an element such as sulfur, or calcium, he is not so much referring to the gross element or chemical substance as he is to the process associated with that substance; or, even more exactly, the spiritual being behind that substance. Since most of us are not as gifted or adept as Steiner was, and cannot hold conversation with such beings, we must exercise our imaginations mightily in order to come to grips with what he is saying as he speaks of these qualities or constituents of stinging nettle. In Steiner's description, he says:

> Stinging nettle is a real jack-of-all-trades; it can do many different things. It too contains sulfur, which, as I have already explained, plays an important role in assimilating and incorporating the spiritual. Stinging nettle also carries the radiations and currents of potash and calcium, but in addition, it has a kind of iron radiation that is nearly as beneficial for the whole course of nature as the iron radiations in our blood are for us.[5]

When we resort to a modern scientific view of stinging nettle we are given a clinical description which reads as follows:

> Dried, young preflowering plants contain, per 100 g, 30.4 g crude protein, 3.4 g fat, 10.3 g cellulose, 39.6 g N-free extract, 16.3 g ash, 2970 mg Ca, 680 mg P, 32.2 mg Fe, 650 mg Mg, 3450 mg K, 140 mg Na, 4.3 mg Mn, 540 mg S, 680 mg Si, 270 mg Cl, and 20.2 mg beta-carotene. Oil from the seeds contained 11.5% oleic-, 73.7% linoleic-, 1.7% linolenic-acid, and *circa* 7.0% saturated acid (mainly palmitic), 4.5% glycerol, and 1.6% unsaponifiable material. Fresh plant material contained 80 μg vitamin B1 per 100 g and 15.7 mg chlorophyll. Betaine, choline, and lecithin occur in the leaves. Carbonic, formic, and silicic acids are also reported, with phytosterins and tannin.[6]

While the chemical analysis readily supports Steiner's characterization that the plant contains potash and calcium "radiations and currents," the limited amount of iron and its "sister" element manganese makes it difficult, from a substance point of view, to conclude the same degree of importance that Steiner gives to the iron radiation. It is also interesting to note that stinging nettle actually contains more of the other "light bearing" element, phosphorus, than it does of the sulfur which Steiner assigns such an important role in "assimilating and incorporating the spiritual." Obviously, the chemical analysis, although useful, fails to provide us the necessary insight to arrive at the same sort of understanding of this plant which Steiner possessed. If we observe the soil around the roots of the stinging nettle, even if it has been in place for only a short time,



Urtica dioica L. Stinging nettle. *A*, Habit—× 0.5; *B*, stinging hairs, enlarged; *C*, flower, closed and open—× 7.5; *D*, fruiting spike—× 1.5; *E*, fruit—× 6.5; *F*, achenes, face and edge views—× 7.5.

OBSERVATIONS AND EXPERIMENTS

Compiled by Malcolm Ian Gardner

Weed Pepper Success

After moving in 1993 onto an old farm in Alsea, Oregon, Tim Love became concerned about the amount of hawkweed (*Hieraceum sp.*) in his horse pastures and decided to see if the biodynamic technique of "ashing" or "peppering" could bring him some relief. So in 1994, after consulting with Hugh Courtney, Tim collected a full grocery bag of the fluffy seed heads a few days before the full moon on Aug. 21, and then proceeded to burn them on the afternoon of Aug. 21 (full moon had occurred in the very early morning). He got a hot grass and wood fire going in a 6-inch chimney pipe placed in a wok and then slowly added the seed heads. When the ashes had cooled he sifted out the non-granular material and then using a mortar and pestle stirred them for an hour (Maria Thun's "dynamizing" process). In order to increase the volume of material so that he could apply it easily to his whole 2-acre pasture, he then used the homeopathic technique of "potentization." He took 1 ounce of the dry ash that was now a very fine powder (the "pepper") and put this in a sterilized mason jar with 10 ounces of rainwater. (He may have in fact used the more usual ratio of 1:9, but his notes state that he used a 1:10 ratio.) After he had shaken or banged the closed jar against a book for 3 minutes (a process known in homeopathy as "succussion"), he had his first potency. By taking 1 ounce out of this jar, adding it to a second jar containing 10 ounces of rainwater, and again succussing the mixture, he arrived at the second potency. He repeated this six more times to arrive finally at an eighth potency.

The next evening he poured half a cup of the eighth potency into approximately 3 gallons of rainwater and stirred this in a clay vessel for an hour. Some people would consider that he now had a ninth potency. In any case, he put this liquid in a hand sprayer, held the nozzle just below the top of the grass (20% of the pasture had been mowed), and proceeded to apply a fine mist to as many of the areas of hawkweed as he could before he ran out of liquid. He repeated this procedure (starting from the 7th potency) for the next three evenings, which meant that some areas of the pasture were sprayed four times, while others received only three, two, or one spraying. Throughout the whole process, Tim stresses that he strove to maintain a calm and reverent frame of mind.

Knowing that the peppering method of weed control was supposed to take four years to become completely effective, Tim did not expect to notice much difference after the first year. To his surprise, however, he found that in the unmowed areas that been sprayed four times the previous year, the hawkweed population was already almost completely absent, while in the unmowed areas that had received fewer sprayings the population was reduced by 80 or 70 percent. On the other hand, in the mowed area, which had received four sprayings, the population was still about 50 percent as large as it had been before.

In the second year after the spraying, all the areas that had received four sprayings were completely free of hawkweed, and those that had received fewer sprayings had no more than 5% of their original population levels. Now in the fourth year, without having repeated the sprayings every year and without taking any other measures, Tim reports that the hawkweed is virtually gone from his whole 2-acre pasture. All around the neighborhood, however, the hawkweed flourishes as ever.

Chlorosis Cured with Horn Manure

Scott Crandall runs an organic truck farm on the fertile, mineral-rich soils of the delta region east of the San Francisco Bay, in Oakley, California. When he moved onto the farm in 1994, four old Japanese pear-apple trees were growing there that had not received any attention for twelve years. Scott undertook to revive them and began to irrigate and fertilize them. He was able to increase their production, but he found that one tree in particular began to exhibit extreme chlorosis, first on one branch and then on the others. Even the leaf stems were albino. He applied iron (in a soluble, chelated form) and seaweed and various rock powders and compost, but nothing helped. Each year it was the same story. He began to suspect that the high levels of boron (4 ppm) in his irrigation water might be causing the problem, so he stopped irrigating the trees. But in the Spring of 1998, 18 months after he had stopped irrigating them, and after a particularly wet winter, the one tree still exhibited chlorotic and under-sized foliage. By now, however, he had heard of biodynamics and so he decided to also try applying the **horn manure preparation (#500)** to his four pear-apple trees.

Instead of simply applying the horn manure in the traditional biodynamic fashion, however, Scott combined this with his own "heroic" techniques. Scott has a 1500 gallon PVC tank that he fills by means of several high-pressure hoses. These are arranged so that they will spin the liquid in the tank and thus hyperoxgenate it (after the tank is full, the water is recirculated). In this case he filled the tank—his "whirlatron"—and spun the liquid, as he usually does, for three days(!). Toward the evening of the third day (a "leaf" day) he hand-stirred a unit of horn manure in 3 gallons of water for an hour, and then added this to the large tank to circulate there for another 10 minutes. He then sprayed about 400 gallons on the 1000 square foot area around the four pear-apple trees, soaking the top 3 inches of the soil that had been dry, and also drenching the trunks. When he looked at the chlorotic tree the next morning, he found that the strongly albino leaves were already starting to turn yellow, and by that evening they had become lime green! By the next week, the leaves had achieved their full size, although not yet their full color. Scott therefore repeated the above procedure three more times (again on "leaf" days, but this time he also sprayed the crowns of the trees). After this further treatment, the leaves of the formerly chlorotic tree became a deep emerald green and were almost indistinguishable from the leaves on the other pear-apple trees. Scott is now undertaking more experiments with the biodynamic preparations and is very grateful to his neighbor in Brentwood, Rick Knoll of Knoll's Organic Farm, for introducing him to biodynamics.

JPI Summer Prep Seminar (June 26-28, 1998)

By Patrick Moser (Haiku, Hawaii)

The summer before last my spouse said, "next year we are going to take a vacation." From the way she looked and spoke there was no way out. We had never taken an extended trip before and it was taking on a do or die feel. I didn't get to hatch out the layers I wanted this summer but other wonderful things happened instead.

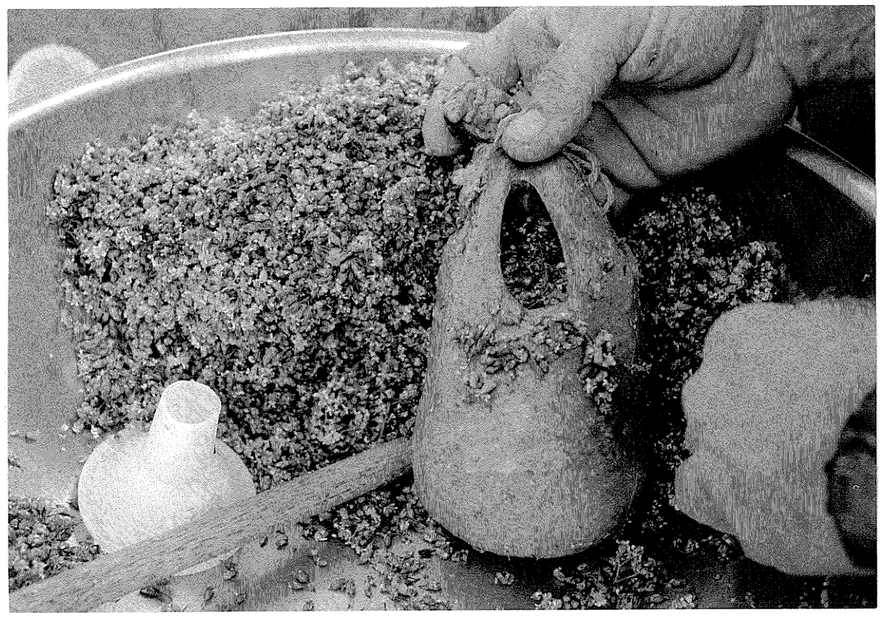
It was my first time in Virginia and I can't think of a better introduction than Woolwine, where Josephine Porter Institute is located. Nestled in the Blue Ridge Mountains our small group was ready to make "summertime" biodynamic preparations. Lee McWhorter and friend wasted no time and snatched me to go harvesting yarrow flower umbels along the Blue Ridge Parkway. Lee said we needed to be discreet because the rangers didn't like people picking roadside flowers. By late afternoon we had bundles of yarrow for one of the BD compost preparations (#502). The "real" work was still to come. Only the tiny flowers are used so we spent hours clipping off all the tiny but tough stems.

Another summer-made BD compost preparation is #504. Stinging nettles are cut at its fullest morphological expression—flowering time—chopped and, in Hugh Courtney's method, pressed tightly into hollow earthenware tiles. The tiles are sealed at both ends with peat moss and then clay. Fresh and dried nettle can be used in combination or alone. The filled tiles are then placed in a pit for burial. Hugh recommends a period of several years for a maximally enlivened preparation. Minimal time in the ground for #504 is 12 months [see Hugh Courtney's article on BD#504 in this issue]. Earthworm raiders can be a problem with the prolonged burial of #504. The tiles are perfect for conserving the decayed nettle.

We also had the opportunity to unearth and open some tiles with finished #504. The decayed nettle had a woodsy fragrance and crumbled easily. In a discussion session, Malcolm Gardner dropped a gem about how #504 works with BD preparations #503 and #502. He said the "iron radiation" of #504 acts to keep its own sulfurous protein forces in check, as well as the sulfurous forces collected by #503 and #502. According to Steiner (*Spiritual Science and Medicine*, lecs. 3 & 12), our blood (which consists of sulfurous protein) is inherently ill but is healed by the iron in it. The macrocosmic counterpart of this healing process occurs in autumn with the meteor showers (the archangel Michael's sword) that tame the sleepy sulfurous forces of summer (the dragon). I now see #504 as an indispensable part of the BD compost preparations. The nettles' iron process creates quality protein by organizing the chaotic forces of sulfur. (In lecture three of *Agriculture* Steiner says that sulfur is "the element in protein that plays the role of mediator between the physical in the world and the omnipresent spirit with its formative power.")

Making the yarrow preparation, #502, requires all those hard won clipped flowers and the stag bladders. Hugh gets his bladders from Kentucky; and judging from the size of the inflated bladders—we used small bicycle pumps—the bluegrass state has some big animals! Care has to be taken to inflate them without popping them. Once expanded to full size we filled them to capacity with the flowers. Hugh was the taskmaster at making sure they were fully filled (see photo). Just when I thought not another tablespoon more could be stuffed in—here comes Hugh! In the end, after a few days work, we had about 50 stuffed bladders ready to receive summer's aboveground influences and then be buried in autumn. As with #504, we also dug up some #502 from last year. The bladders were still wonderfully intact, black moist and humic. They were buried in a copper screen so they could be easily retrieved and possibly augment #502's Venus influence (Venus is intimately related to copper).

Finally, to make preparation #501, we filled many cow horns with a paste made from finely ground silica and water. Several different mesh sizes of silica powder were used to fill the horns and were marked with colored tape for later identification. Hugh believes that the silica is better endowed by several years of reburial instead of the usual one summer burial and autumn lifting.



we cannot help but marvel at how dark, even black, the soil is. Although I have never seen an analysis of the humic acid or humus content of such soils, it is easy to believe that they would be much higher than the soil under most other plants nearby in the same basic parent soil. While I hesitate to draw any particular conclusions in comparing Steiner's spiritual scientific analysis with a chemical substance analysis at this point in my efforts to understand it, I believe it is worthwhile to provide such a comparison so that others besides myself may reflect upon it as well.

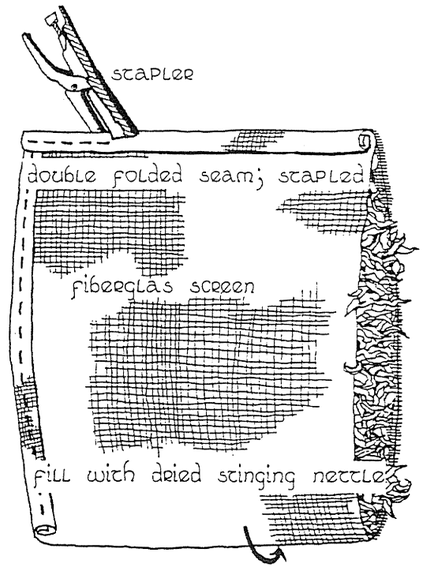
When using the plant itself in our gardening efforts, a freshly made tea, diluted one in ten, and sprayed on other plants can be effective in combating aphids. On the other hand, if we make a tea of stinging nettle and allow it to ferment for 48 hours or more, and use it as a spray on plants, again using a one in ten dilution, it serves as a strong, nitrogenous type of fertilizing agent. The sulphurous character of the odor that emanates from this fermented nettle tea brings us closer to a realization of the sulphur "process" that Steiner may have been referring to in the quote above. When using this nettle tea ferment, one actually has to be somewhat cautious, as overuse, say, more than twice in a growing season, can cause the plants sprayed with it to be more subject to fungus attacks, in the same way that happens when one uses too much raw, uncomposted manure on plants.

When we approach the making of the preparation itself, it has been my observation that there has been a certain carelessness which has crept into the business of making this particular preparation. To properly delineate that carelessness, let us return to the source and quote directly from Steiner's indications for making this preparation:

> Now, to improve your manure still more, take whatever stinging nettles you can gather and once again let them wilt slightly. Then compress them a bit and put them straight into the ground without any bladder or intestines, though you can use a thin layer of loose peat or something similar to separate them from the surrounding soil. Bury them right in the ground, but mark the place carefully so you do not just dig out plain soil when you come back for them. Let the nettles *spend the winter and also the following summer* in the ground; they need to be buried for a whole year. Then you will have a substantiality that is extremely effective.[7]

I have taken the liberty of italicizing the portion of Steiner's indications where I believe the carelessness referred to above has arisen. The general practice amongst a very great number of biodynamic preparation makers is to harvest the stinging nettle in June or July, bury it and then to dig it up a year later in the following June or July (in some cases, it is dug up even earlier in April or May). In other words, most preparation-makers are abiding by Steiner's indication that this preparation should be buried for a whole year, but have not paid sufficient attention to his statement that it is to "spend the winter *and the following summer* in the ground." I have long since come to the conclusion that Steiner chose his words very carefully in presenting to the world the wealth of spiritual scientific insights which he gave, and that if he meant this preparation to also spend the "following summer" in the ground it is for a most sound and important reason. I will reserve identification of that reason for a subsequent section of this article, after I have described some of the actual practices and techniques that have evolved over the years in my making of this particular preparation.

In practice, most people attempting to make this preparation, especially in soils that have been treated biodynamically for a while, and which therefore have a very high earthworm population, have long since learned that to surround the wilted nettle with "a thin layer of loose peat," is simply not sufficient to ensure that you will recover any of the finished preparation a year or longer after you first have buried it. In more northerly climates, such as in Canada, some have found it sufficient to bury the stinging nettle in a burlap bag surrounded by peat moss. In more active southern soils, the earthworm activity is so great that one would be very lucky to recover any evidence of the stinging nettle preparation, or even a scrap of nettle permeated burlap. The practitioner should understand that earthworms absolutely *love* to feast on this preparation. As a consequence of such experiences of not being able to recover any of this preparation, a number of techniques have evolved to assure that at least some of it can be recovered. The most commonly used technique is to make a "pillowcase" out of window screening into which one packs the harvested and wilted stinging nettle. The accompanying diagram illustrates this technique. What one needs for this procedure is window screening, either fiberglas or ferrous-based screening (never copper or aluminum), and a good heavy duty stapler to staple or stitch up the pillowcase. Three sides of the pillowcase are stapled together using a double fold and a generous amount of staples. The nettle is placed inside the pillowcase screening and the fourth side is stapled closed. In a pit 12-18 inches deep, the nettle pillow is then placed on a bed of milled peat moss at least three inches thick and the pillow is covered with another 3-inch thick layer of peat on top and around all the sides. The excavated soil is used to cover the contents of the pit so that at least twelve inches of soil is covering the preparation. When this technique is used one is likely to recover a fairly high percentage of good, finished BD#504, although even here, diligent plant roots can find their way through the screening and thus provide a pathway for the even more diligent earthworms. If one harvests and buries the stinging nettle in

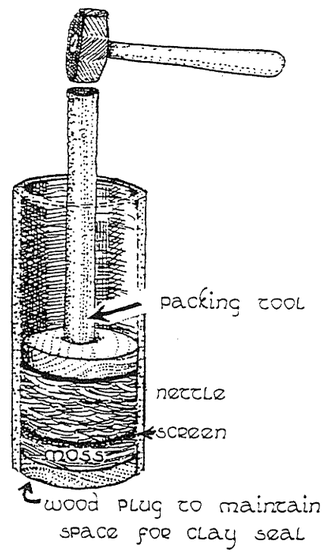


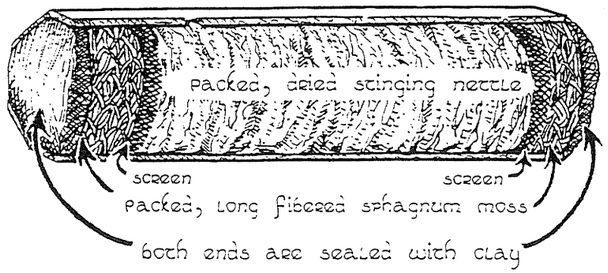
June or July, it should not be dug up until a year from the end of the coming month of September. If a second crop is harvested and buried in September, it would be dug up approximately a year later at the end of summer in the following year.

Another technique, which we have been employing to some extent in recent years, was prompted by conversation with Alex Podolinsky when he paid a visit to Kimberton, Pennsylvania over a period of several days in June of 1992. His technique for ensuring recovery of this preparation involves packing it into a length of clay pipe such as was formerly used in drain fields for septic systems and agricultural drainage. Once we located a few drain tiles, we began to employ this technique and thereby achieved quite a vibrant nettle preparation in the end (though I must confess to a certain skepticism when I first tried this method). The materials we use for making the nettle preparation according to this technique are as follows:

> one or more clay drain tiles, a piece of wood approximately ¾ inch in thickness cut to fit the inside diameter of the tile, window screening also cut into circles to fit inside the tile at the rate of two pieces per tile, a supply of long-fibered sphagnum peat moss,* a supply of moist clay to seal the ends of each tile, a wooden tamper, a 2-pound sledge hammer, and finally, of course, a supply of harvested stinging nettle, either fresh or dried.

One begins by placing the circular piece of wood at the bottom of the upright drain tile, followed by a good handful or two of the long-fibered sphagnum moss that has been moistened and wrung out. Using the wooden tamper and sledge hammer, tamp the peat moss firmly to form a one or two inch thick plug at the bottom of the tile and then place a circle of window screening on top of it. The next step is to take a handful of chopped stinging nettle, place it on top of the screening, and pound it

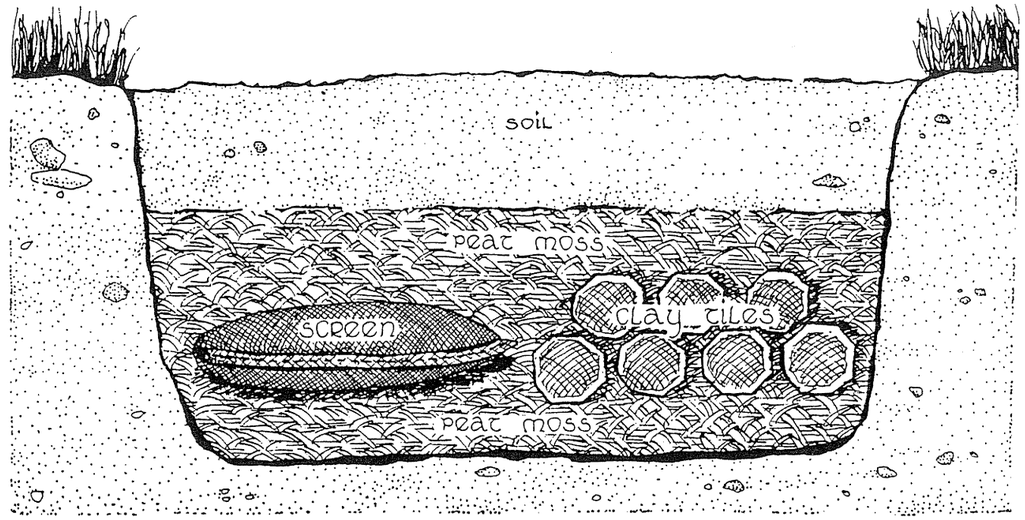




down tightly with the hammer and wooden tamper (see illustration below left). Continue this process until the upright drain tile is fully packed with stinging nettle to within 3 inches or so of the top. At this point, place the second circle of screening on top of the nettle, take another handful of long-fibered peat moss and proceed to make another one or two inch thick plug, leaving a space about ¾ of an inch from the top. Finally, remove the circular piece of wood from the bottom of the tile, and fill the ¾-inch cavity at both ends with moist clay to seal the tile. When placing the stinging nettle in the tile, one may choose to moisten it or not, but the end product seems to be somewhat better if it is not moistened (even if using the dried herb to make the preparation).

The statement ending the last paragraph may well bring up the question as to how one judges the quality of the finished preparation. While it is particularly difficult to quantify and measure the quality of any of the preparations in a totally objective way, there are certain signs that provide clues as to the quality of the BD #504 when one digs it up. Initially, however, when digging up the preparation and examining it, it is a good practice to suspend all judgment and simply observe the preparation very closely, essentially without allowing any thoughts of judgment to enter into the observation. My term for this technique I call "seeing into the preparation." After meditating/observing the preparation in this fashion, I will shortly have an awareness as to the quality of this particular preparation with respect to previous years' results. Over the years, however, I am always pleased to see an end product as black in color as can be, for my perception is that the blacker the end product is, the higher the quality it is likely to have. Any signs of life in the form of almost microscopic white bugs (which, to date, I have yet to identify), is also a signal to me of positive quality. Additionally, if one takes a small pinch of the finished preparation between one's thumb and finger and rubs vigorously, one will get a greater or lesser degree of smearing. The more the pinch of stinging nettle disappears or disintegrates into a stain or smear between thumb and finger, the higher the quality it has in all probability. Ultimately, of course, the answer as to quality of any given preparation can only be found by using it and seeing the results obtained. With respect to the stinging nettle preparation, one might consider using a bit of it as a seed bath for a dozen or so grains of barley (barley is the only seed for which BD#504 is suggested as a seed bath), using as a control another dozen grains in a seed bath of plain water and comparing the results to see if the preparation made a difference in germination time. Beyond this, one should simply make compost and see if the results are pleasing and if the plants grown with the compost are prospering.

*Long-fibered instead of milled peat moss is used since it will, when moist, adhere into a plug when tamped down.



The stinging nettle preparation can be viewed as having a hot, dry character. Culpepper and other noted herbalists assign these same characteristics to the plant itself because of its relationship to the planet Mars. BD#504, when applied separately as a spray or as a watering-in agent around plants, appears to have an ability to strongly stimulate leaf growth, as well as to be of some benefit in preventing frost damage. Much work lies ahead in the future to determine what effects using this preparation might have on plants in biodynamic culture when used by itself.

And now, as promised, I would like to return to my opening statement and tackle the most difficult aspect of this article by attempting to justify my claim that BD#504, the stinging nettle preparation, truly deserves to be known as the Michaelmas preparation. The starting point for this view arises from Steiner's indication itself, that this preparation should spend the winter in the earth and also remain there through the following summer. For none of the preparations, other than BD#501, horn silica, does Steiner give instructions that they are to be buried during any part of the summer. Having long since learned that Steiner did not indulge in careless word choices, I feel that in such cases as this he should be taken with total seriousness. In other words, if he said it should be buried through the following summer, he meant it. I have been unable to determine how the practice arose of digging up the stinging nettle preparation at the beginning of summer or even as early as April or May after its winter time burial. I can only conclude that this widespread practice has diminished the full effectiveness of this preparation, and is at least one of the factors involved in the relatively insignificant impact that biodynamic agriculture has had throughout most of the world. When one begins to look for the reasons behind this statement of Steiner's about the stinging nettle preparation, the lectures he gave on the Archangel Michael (pronounced "Mick-ah-el") provide us with the needed insight. Although my efforts to interpret these lectures as they might apply to the stinging nettle preparation may fall short of the mark, please bear with me, as it takes us rather deeply into the body of Steiner's esoteric work.

Steiner speaks of a certain inner process that takes place within the human being between St. John's Tide (June 26) and Michaelmas (September 29), which also has a parallel in events taking place in the outer physical world, and in spiritual dimensions as well. Within the human being, there takes place an

> inner process of combustion, but we must not picture this as being like external combustion. All the processes which take a definite form in the outer world also occur within the human organism, but in a different guise.[8]

He continues:

> The inner process which occurs during high summer is a permeation of the organism by what is represented crudely in the material world as *sulphur*. When we live with the summer sun and its effects, we experience a sulphurizing process in our physical-etheric being. The sulphur that we carry within us as a useful substance has a special importance for us in high summer, an importance quite different from its importance at other seasons. It becomes a kind of combustion process. It is natural for humans that the sulphur within us should thus rise at midsummer to a specially enhanced condition. Material substances in different beings have secrets not dreamt of by materialistic science.[9]

Although this is a process seen only with spiritual vision on the order of Rudolf Steiner's, it has at least two major spiritual consequences for both human beings and for events within the cosmos. Steiner tells us that this inner sulphur process "has a great importance to the evolution of the cosmos when in

Continued on page 10