



## *The Gift of Green*

*R.D. Boyt  
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"The Gift of Green," is that wonderful substance we know as chlorophyll. It is found in nearly all plant life and even today continues to use energy from the sun to convert global warming carbon dioxide into the oxygen we breath and biomass we can use in many ways. It is a gift we must pass on to the future.

I must admit that there is nothing much we can do as individuals to solve the growing problem of global warming due to increasing concentrations of green house gasses in our atmosphere. It is as if we would try to bail out the oceans with a teaspoon. Yet, is it not better to light one small candle than to simply curse the darkness?

I bring with me 20 sacks of 50 nuts each from the finest two walnut trees I have so far found on the farm. The best tree is 25 inches dbh and rises nearly flawless for about 40 feet. Each sack should produce about 10 seedlings. If planted in good deep soil, and with luck, <sup>one</sup> might <sup>make</sup> a fine tree in a hundred years or so. Trees are our gift of green to future generations.



It is unfortunate that Libby, my wife of 58 years, is not able to be here to accept the honor of Tree Farmer of the Year. Libby turned 84 last Christmas. I have chosen to show you a drawing of her I made a few years ago. Perhaps it shows you a hint of her 1/8 Indian heritage. Perhaps that explains her intense love of dogs and horses and all creatures of nature. Interesting that the spring near the house was called Thomas Spring on old maps. And that her great grandmother's married name was Thomas. Might she have passed this way <sup>as a child</sup> on the march of the Trail-of-tears? Could that be why Libby felt she had been here before, when we first walked down the valley of Pottershop Hollow? Nah... nonsense! But then...

1 I confess that I am mystified why Libby and I  
2 were chosen to receive this award. There are so  
3 many of you who have achieved so much  
4 more than we have. I know only a few of  
5 you. There is Dennis Evans who has developed  
6 a unique method of reforesting land. Dennis  
7 is featured in an article in the <sup>most</sup> recent Sawmill  
8 and Woodlot magazine, a number of which  
9 I have brought to give you. And there are  
10 Dwight and Barbara Ittner who have developed  
11 remarkable skills in grafting improved  
12 cultivars of black walnut. These people have  
13 walked the walk while I only talk the talk.

14 I suspect that Libby and I were chosen  
15 because we are so old we would be leaving soon.  
16 Well, I have news for them. I have every intention  
17 to attend this conference in future years and to  
18 applaud you when you stand here where I now  
19 stand.

20 In the mean-time I intend to plant trees, as  
21 many as I have the time and the energy to plant.  
22 There is a saying, "young men plant turnips.  
23 Old men plant trees." Perhaps as we grow  
24 older we feel the need to leave something lasting  
25 behind that shows that we cared.

## **Sustainable Forestry**

Carefully managed forests can be sustainably grown and harvested and at the same time build and hold soil, purify air and water, provide recreation for people, habitat for wildlife, and even modify local climate by tempering extremes of temperature and moisture.

For the past 25 years we have been trying to discover ways to sustainably manage a 720 acre Missouri Ozark forest of uneven-aged mixed oak-hickory hardwoods. In past years forests in our area were repeatedly degraded by high-grading harvests, that is, cut the best and leave the rest. The rest were the culls that were too poor to have any value and so they were left to produce seed for the next generations of trees.

Because of this abusive and non-sustainable practice the quality of our forests have so declined that many have now been clearcut and planted in grass. It takes only a few dozer days to level forests that took generations to mature. Yet, harvesting our forests need not result in their decline. In fact, a carefully marked and executed selective harvest can actually improve a forest by reducing the proportion of culls, less desirable species, defective, and over-mature declining trees. This opens the sky to the finest and most vigorously promising remaining trees to grow and to continue to parent future generations.

In harvesting a tree for lumber only about half of the bulk is used. Unless the tops and limbs are cut for firewood they are usually left on the forest floor to decay and feed termites. In our area firewood doesn't pay labor for cutting. It brings only about \$35 cut, split, and delivered for a rick or face cord. Chipping brings even less, Perhaps as fossil fuels become more expensive in years to come, this now waste wood will be used to replace a portion of them, but until then, how many more acres of forest will disappear?

I suggest that today's forests and their many benefits may be greatly undervalued. The playing field is far from level. Educating the public of the future advantages of protecting and expanding forest land could be a beginning. The principle problem however is one of economics. Perhaps sustainably managed forests might justify certain tax advantages. Perhaps lumber and firewood cut from sustainably managed forests might bring premium prices. Perhaps very low forest-impact machines could be designed to efficiently harvest bulk waste wood to be burned in industrial furnaces.

Perhaps it is not yet too late to prepare for a future that threatens to be far less than just a mirror of the past.

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each of  
7 For the past dozen or so years we have put out  
8 1000 walnut seedlings purchased from the State  
9 nursery in Sicking Mo. One most ambitious  
10 year saw 4000 seedlings planted in a 5 acre  
11 field that had been dozed of its very poor stand  
12 of black-jack and post oaks. I drove the old Ford  
13 8N while fibly rode the seat of a primitive tree  
14 planting plow which bucked, shimmied, and  
15 shied as it fought to displace each rock, root,  
16 and buried limb it encountered. Her earlier  
17 experiences riding bucking horses proved useful  
18 as she did spend considerable time in the air.

19 The land was poor and the results were disappointing  
20 though several small areas did quite well. Choose  
21 carefully your planting sites to match the needs  
22 of the kind of tree you intend to plant.

23  
1 Three years ago last fall I began planting  
2 walnuts in a  $3\frac{1}{2} \times 33$  foot nursery. I crowded  
3 into it some 5000 <sup>un</sup>hulled walnuts and covered  
4 them with about an inch of top soil. The results  
5 were disappointing as only about 1000  
6 sprouted and their quality was poorer  
7 than that of the seedlings I purchased.  
8 Last year I doubled the size of the nursery  
9 and I plan to transplant only half of the  
10 crop this spring.

13 Last spring I fought squirrels who raided  
14 my walnut nursery by finding places to crawl  
15 under the protective chicken wire netting that  
16 covered the planting. I trapped a dozen and  
17 released them several miles away. Finally  
18 it dawned on me that I was fighting nature  
19 because while squirrels eat nuts, they also  
20 bury them in times of plenty, and then forget  
21 where they put them, <sup>and</sup> a new tree grows. A  
22 wonderful simbiotic relationship. This  
23 spring I have 10,000 nuts stored in barrels  
24 that I will scatter to feed more squirrels  
25 to raise more squirrels to plant more nuts.  
26 They work cheap, no minimum wage or  
27 withholding tax. So much better to  
28 cooperate rather than fight with nature.

11 The shock of moving a seedling from  
12 nursery to field <sup>often</sup> causes them to lose a year's  
13 growth, and many do not survive. So last  
14 fall I began planting nuts directly in an  
15 open field I wanted to reforest. Using the  
16 old tree planter plow I opened long troughs <sup>of sod</sup> into  
17 which I closely crowded the nuts, covering  
18 them with upside-down sod. Many hours of  
19 work on hands and knees putting in 18,000 nuts  
20 in a 1/3 of a mile of trough.

Tree Farmers all:

It is with great enthusiasm that I bring to the attention of this forum wonderful news of a technology that I believe may prove to be a primary contributor to the search for long term sustainable energies. As such, it should be of particular interest to stovers. While I cannot yet understand or describe this technology in precise detail, on the surface at least, it appears to promise to surpass even the potentials of high temperature depolymerization and cold fusion.

While some understanding and attempts to utilize this technology are relatively new, its basic principles are ancient. In essence, it relies upon a remarkably complex interconnection of physics, chemistry and geometry that uses the sun's energy to photoelectrochemically break apart molecules of water and carbon dioxide. It then combines the resulting hydrogen and carbon to produce a myriad of hydrocarbons. The technology combines some of these hydrocarbons to form solids of such great dimensions and strength that they may be used to build sizable architectural structures. Other uses for the hydrocarbons may be found in the manufacture of plastics, adhesives, foods, medicines, solid, liquid and gaseous fuels, and countless other products. Surprisingly, the technology derives its carbon dioxide directly from the air, then releases excess oxygen back into the air.

Certainly, the most remarkable feature of this technology is the advanced development of pre-programmed controls that permit it to build copies of itself, much like a CNC lathe which can be programmed to totally reproduce itself, complete with programming. The structure it builds automatically repairs itself if damaged and thus requires very little maintenance. This structure forms a rigid framework shaped to hold a multitude of solar cells in such a manor as to efficiently collect sunlight, search for the carbon dioxide. It also builds and, if necessary repairs, if necessary replaces its solar cells. These cells and, indeed, the entire structure are totally biodegradable.

Admittedly, the support structures are tall and do impose themselves upon the landscape, a bit like windmills. But this may at least be partially forgiven, for in fact, some people find them to be somewhat aesthetically pleasing. In large groupings, they do take up a lot of space, but it can be shown that these groupings can be arranged to actually modify local climates, reducing the extremes of wind, temperature, humidity, and even precipitation. Of particular interest to stovers should be the welcome news that these structures collect and store great quantities of chemical energy that can be released as heat and light when burned. One last, and perhaps most important observation is that this appears to be a technology that promises to be truly long-term sustainable.

Cryptically yours,  
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1 I want to take this opportunity to thank my teachers,  
2 my mentors, and those who have made it possible  
3 for me to speak to you. I must begin with  
4 Gary Smith of the Missouri Department of Conservation  
5 and Skip Mourgla of the U.S. Department of  
6 Agriculture. They both have been tireless over  
7 past years in helping me to understand and  
8 improve our forest. They have guided me in  
9 ways of receiving financial <sup>aid in</sup> carrying out  
10 tree-stand-improvement practices. I can only guess  
11 at the number of hours they have spent in our forest  
12 marking for thinning and harvest and teaching  
13 me the environmental importance of forests.

14 And I must tell you of a brilliant young woman  
15 forester Frances Main of the Missouri Department  
16 of Conservation. If you ever learn of a conference  
17 that she has a part in, go to it. It will be great.  
18 I also want to thank Blenda Fry and the Missouri  
19 Forest Product Association for this meeting and  
20 for scheduling felling and skidding classes  
21 at our farm.

22 I also must thank our three sons, Art, Dave,  
23 and Pete for their help on the farm and for  
24 getting me here. Lastly, I thank all of you for so  
25 patiently listening to my ramblings.  
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