THE POSSIBILITIES OF ELOPTIC ENERGY RESEARCH

IN THE FIELD OF PLANT GENETICS

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The last fifty years have seen a great change in the range of fruits, flowers, grains, beans, and grasses. The research and working in cross breeding of plants has become a science within the range of what we call Biology, or the study of the branch of Biology called Botany. This involves the consideration and research into the principles of wide application to the origin, development, structure, and functions, and evolutionary processes of the general phenomena of life, growth and reproduction of plants.

Plants are generally divided into the categories of beneficial plants, such as those used for food by man; herbs, and other plants containing substances, and/or chemicals useful for medicine, or seasoning, trees, (of various types and species,) grains, flowers, melons, etc, grasses, ferns, and many, many diverse species of all these. We are reminded that Europeans knew nothing of corn, prior to the arrival of colonists from Europe on the territory now the United States.

The Indians who introduced Maize to those colonists would not recognize the corn grown in this country today, since the maize has been hybridized, and re-hybridized and cross-bred over and over again.

The "Love-Apple" of the last century would show little resemblance to the many varieties of tomatoes we grow today in this country, and the lowly zinnia of Mexico would never be thought to be the common ancestor of the many sizes, shapes, and colors of the Zinnias we grow today.

Plant geneticists are constantly hybridizing, trying out, changing and improving plants, for many different uses. Still the surface has been barely explored. Those who observe the advent of new types of improved plants in the catalogues of Plant Nurseries and Seed companies year after year, and marvel at the changes, perhaps never realize the intricate processes and hard work of those who labor in the field of improving plants genetically.

Plants and their growth patterns have long been a source of interest to many scientists. Kolreuter's book "Vorldaufige Nachricht" appeared from 1761 to 1766. Linneaus' "Disquisitio de Sexu Plantarum" was first published in 1760. The "Plantae Hibridae" of Hartman, a student of Linnaeus, who reflects the views of the latter, was published in 1751. Since that time, many many authors and scientists have discussed the subject of improvement of plants and correct methods of hybridization, and natural hybridization, suring the last two centuries. Therefore the amount of material is voluminous, and somewhat difficult to become acquainted with, in the many considerations of the subject available in these writings. The archives of programmed information in the range of biology contains many descriptive reports and approaches to the Theory and Practice of hybridization in specific plant groups.

Plant biologists and horticulturists today are more interested in the evolutionary processes involved in hybridization in the general overall points of view and the conclusions which are supported by specific evidence and results.

Here let us pause to define the word "Hybrid". According to Webster's Dictionary a hybrid is a word expressing "the relating to or resulting from the union of gametes from parents of different genotypes". The word "hybridization" is defined as "to cause to produce hybrids; to cross, to interbreed, to cross-pollenate".

Observation of natural cross-breeding of plants, resulting from environmental proximity, common bloom periods, former inter-relatedness, etc. has given rise to many theories and questions. Among the questions raised are such as: Are natural hybrids phenomena or freaks? Does natural hybridization have any effect on the natural evolutionary processes of plant life? Does natural mutation involved in natural hybridization processes contribute new races of plants or new species arising from the natural hybrids?

Scientists who have investigated this type of inquiry into natural plant hybridization and have published their findings are Roberts, who, in his "Plant Hybridization before Mendel" has brought together many valuable quotations from the writings of early students from Lainnaeus and Kolreuter to Fock. Students will find this work to be a valuable reference book. Modern summaries of natural hybridization in plants, with many references, by Heiser, (1949) Anderson (1949,1953) and Stebbins (1953, Chap 7, 1959). One scientist in this country who has conducted very valuable Research work in plant and animal and avian hybridization is Dr. R. Martin, of Lake Crescent, Florida.

One of the problems of plant hybridization is that the formation and maintainance of a hybrid plant population for experimental purposes, in an isolated reproductive environment, from a common ancestry, is a time consuming, painstaking process. One of the facts of life in the processes of hybridiation is that the time may arrive in the carefully controlled and reproductively isolated plant colony, when the generations have arrived at a point of hybridization, when it is no longer possible to interbreed them. Since careful selection and cross-breeding processes have been practiced, the plant geneticist may have arrived at the point with his plant colony when he is faced with the process of evaluating his work, and starting over. This can be due to several factors.

Hybridization has involved many widely differing phenomena. The plant colony consists of plants which are the products of interbreeding or crossing between different genotypes belonging to the same colony, or what is called in-breeding. There may have been grafting between different scions and rootstock, as is involved in the nursery experiments with citrus trees, apple trees, peach and plum trees, pear trees, gardenias, azaleas, etc. The gradual divergence between different plant forms and genes and chromosomes, has brought the individuals of separate lines into complete cross-breeding incompatibility. There are ways out of complete cross-breeding differientation, but the question for the geneticist is whether it is worthwhile for the accomplishment of his purposes to pursue the attainment of re-establishing cross-breeding compatibility: and the cost of new environmental reproductive isolation locations, to replace overly intensified natural environmental barriers established by the plants themselves.

Here one is reminded of the TV ad of some time ago, which specifically stated, "It's not nice to fool Mother Nature". Plant specimens have a way of pursuing their own reproductive inclinations, no matter what the care, work, intent and purpose of the geneticist- research specialist. We could cite here the beautiful hybrid petunias, double, or triple petalled, beautiful rosy or deep purple or bright red or yellow colors, which almost invariably revert to the type of flower their ancestors displayed, before the long protracted work of the Plant geneticist took place. Zinnias and many other plants display to some perverseness, in reversion to type. So the beautiful hybrid flowers we buy in the spring so appealing after a long cold winter, for our gardens or hanging baskets, invariably reseed themselves and revert to type.

Here again, let us refer to Stebbins, who was a prominent researcher into the vagaries of Plant Hybridization in the years circa 1959. He wrote "Hybridization is the crossing between individuals belonging to separate populations which have different adaptive norms." In this statement there is implicit inference of a separate history of evolutionary divergence among specimen plants involved in the process of "hybridization". This represents without a doubt a reversal in the processes of evolutionary divergence.

Spatial isolation is common among many plant populations of the world. This is a natural barrier to natural hybridization among many plants of common genus, such as some plants of the same family type but different in some respects, which grow in one country such as China or Greece, and plants of the same general species growing in the United States or the island of the pacific. Any two alopatric plants growing further from each other than the natural dispersal of their seed, cannot naturally cross breed, or hybridize. For instance, Plantanus Occidentalis grows in the eastern United States, and Plantanus Orientalis grows in the eastern Mediterranean area, but as is the case of the East and West "Never the twain shall meet" without the help of some busy Plant Geneticist, or some plant lover who inadvertently brings on within the natural normal raius of dispersal of pollen or seeds.

So we may say that it is accepted that special isolation is a natural barrier to natural hybridization. Others recognized are difference in time of blooming, so that pollen is not available to fertilize the plants reproductive organs; lack of insects to assist in the pollenization process, physical differences between the multiple gene systems of plants resulting in such incompatibilities as differences in the corolla length of two plants of the same species but differing in physical form and equipment. For example, Nicotiana longiflora has a corolla tube nearly 10 cm. long. But there is also a short-tubed corolla form of Nicotiana. Genes control this type of thing, and this form of gene controlled form has a high percentage of inheritability. In an experiment conducted by a plant Geneticist (East, 1916) two inbred and true breeding forms from lines with both short and long corollas. The result was that the first Generation (F1) was intermediate to the parent plants in variability, and also intermediate to them in phenotype. Yet the F1 generation showed a wider range of continual variations in flower size, and a higher coefficient of variability. This phenomenon is consistent with the finding that the F1 generation is possessor of several independent genes, with different effects than possessed by the parent plants. In the experiment, advanced generations were grown as derived from selected plants of the F2 generation, with long and short corollas. It was found that as expected, there was being expressed a shift in the mode, or a tendency toward selection in the F3 plant families, along with a great decrease in variability from F3 to F5.

This experiment was along simple lines with a finding of multiple genes, with cumulative results on a quantitate character. However, all experiments in such crossbreeding and inbreeding of plants, even of such a responsive nature as Nicotiana, are not so simple and give much more complex gene interaction. Further documented experimentation has shown that the components of a multiple gene system may not only have additive effects on a quantitative character, but some such components have additive or negative effects on character or form development. "When two such internally balanced, oppositional gene systems are combined by interracial or inter specific hybridization the F2 generations and under some circumstances, also the F1 hybrids, show transgressive segration, exceeding the range of either parental type in the quantitive expression of the character" (Grant, "Plant Speciation")

Some results of such gene changes in the hybrid generations, may cause epistatic interactions between gene systems, which control the presence or absence of pigmentation. For example Viola Tricolor always has a dark spot in the flowers. The related species Viola arvensis does not have this spot. Experiments in 1926, and 1951 (Clausen) revealed that both related species carry the genes for the formation of such spots. But the offspring of hybrids of corsses between these two members of the Viola family of plants show complex gene segregations for this effect of character.

The theory of Multifactorial Linkage: "Chromosome numbers in diploid angiosperms range from n=2, to n=12,13, or 14. The modal haploid numbers are equals 7 to 9, in herbaceous Dicotyedons, and 11 to 14 in Monocotyledons." These two families of plants are examples of what is true in many such plant species. So, in such cases, is the multiple factors or genes governing the character differences in two such species of plants, are more or less distributed randomly among the chromosomes, then some of the genes should be borne on the same chromosome. Then the two physical forms of the plants, and the genetic characteristics displayed by such plants, should show partial or multifactorial linkage. So therefore even a third qualitative characteristic is probably linked to either or both of the preceeding characteristics shown by F2, F3 or future generations. Clausen and Jiesey in 1956 experimented with an interracial cross between two species of Potentilla glandulosa. In the F2 generation, they found 14 characters, of which 11 were known to be determined by two or more genes. Among the 91 pairs of characters obtained in this experiment, 67 showd weak but quite significant correlation. Characterizations such as petal length are most likely caused by pietrophy, but combinations of unrelated factors shon such as pubescence and seed weight, are plainly inherited characteristics, and this also points to linkage. Thus, as Clausen and Hiesey point out, multifactorial linkage is more than a theory, it definitely contributes to Genetic Coherence.

The study of hybrids of several plant genera shows evidence of a linkage between genes for natural vitality and inability, and the genes determining morphological characterizations. These provide some allelic variations in plants with known linked morphological genes and viability genes (the M_V Linkage.)

In Plant genetics, breaks in chromosomes initiate new segmental arrangements which may be completed by the reunion of the breaks in a new manner giving some different characterization to the appearance, or some part of the form of the plant, or seeding characteristics, or viability, etc. The number of breaks, distribution, and mode of reunion are the definitive factors in such rearrangement of chromosomes, and the results of the changes. Terminal deficiencies, interstitial delition, duplications, paracentric inversions, or pericentric inversions, transpositions are the results of the breaking and rejoining of various positions of the chromosome in varied locations. These changes of characteristics due to Chromosomal rearrangement appear to be endless in number. Interspecific differences in characteristics due to chromosomal segmentation arrangements, are found in many annual herbs, whose environmental hibitat is open places. Other plants commonly displaying this type of chromosomal resegmentation are (examples) Brassica, Clarkia, Crepis, Elymus, Galeopsis, Gossipium, Gilia, Layia, Adia, and Nicotiana.

Although many experimental attempts at understanding the causes of plant character differences showing in F2-F5 hybrid plants, and it has been possible to assay the genic contents of homologous chromosomes in interfertile species of plants, not very much has been learned about the genetic factors resulting from the broken and rearranged chromosomes. But in the past some experimenters were able to find some evidence of the arrangements governing various characteristics displayed by some plant hybrids among the Godetia species, (Clarkia, Onagraceae, Gossipium, (Malvacae) Triticum (Gramineae) Zea (Gramineae) and Gilia (Polmoniaeae) (Grant, 1966)

The species Godetia amoena and G. Whitneyi, (members of Clarkia species, both have the same chromosome number. (2n = 14) However, these differ by one or more translocations which give rise to a chromosome chain of varying length in the F1 - generation of the cross between these two parent plants. (Hiorth, 1940,42) and Hakansson, 1947, in extensive experimental work). The researcher in these related searches by Hiorth and Hakansson will find much of interest, as the research by these two scientists furnish some evidence of chromosomes in several plant groups. We have not been able to find any later research among more modern genetic researchers to implement these findings, that in some cases the morphological genes appear to be linked with viability genes. Chromosomally homogolous species and the structurally differiented species do not seem to have any basic difference in the Morphological - viability linkage system.

Problems of induced hybridization of plants include failure of pollen to germinate on a foreign stigma, or if the gross pollenization is successful, still the hybrid embryo may die because of the degeneration of the hybrid endosperm. This happens frequently in cases of crosses of Datura species or in Iris, Gossypium, etc., Various constitutional weaknesses known as hybrid inviability, may block gene exchange between species, especially in the first generation (F1) hybrids. Sometimes, because of chromosomal breaks and rearrangement, odd characteristics such as leaves of a different color, or dwarfism of plants, may occur in hybrids of the first generation.

Hybrid sterility is a common occurrence, in plant and animal crosses. Incompatibility is thus joined by inability of plants to form seed, or inviability. Controlling factors are diplontic and gametic sterility. These phenomena can be further classified as being caused by genic, chromosomal, and cytoplasmic sterility. Actual cases display various combination of these factors. Many times plant hybrids are sterily because of the lack of development of anthers or some other essential organs in the hybrid. Male sterility in hybrids is usually caused by disharmonious interactions of nuclear genes with a foreign cytoplasm. (Grun, Augertin, and Radlow, 1962) These unfavorable interactions of genes may express also in the stages of meiosis and gametogenesis. (Grant, 1956,a) M.S. Walters, 1957-1960).

Today, botanists can use hormones to speed or stimulate or slow root growth, or stem growth or hasten the blooming period or duration of the bloom with light or lack of light. Varied minerals and plant food are used. Spraying with gibberellins can increase cell division at plant tips. Gardeners can cause dwarfing of plants, or reverse the trends toward dwarfism, and increase the size of fruit such as figs and grapes, and induce flowering in plants such as cabbages and turnips, thus affecting genes and chromosome segmentation, etc., by chemical means or hormones. Cytokinins can be used to induce cell divisions, and also delay aging, and influence the character of the plant form. Phytochrome (a plant's light sensitive pigment), can be controlled and so control growth by varying period of light and darkness affecting the plant. The processes of hybridization have been assisted greatly by these aids furnished by modern technology, and the range of knowledge of stimulation of plant change processes has been greatly increased. Over the last twenty years, many new peach, plum, nectarine, and apple varieties have been developed.

Today a modern curriculum in graduate studies in Plant Genetics will include such subjects as molecular Genetics, Population Genetics, Molecular Biology, MioChemistry, Biochemical Genetics, Developmental Genetics, Cell Biology, Nuceic Acids Enzymology, Plasmids, Genetic Recombination, Genetic Regulation, Protein Synthesis, DNA Replication, and DNA Repair. The student will have already become acclimated to the facts of plant Biology, hybridization, various aspects of chemistry, and have a good background in the various facts of Botany, Horticulture, etc., as an undergraduate, and with some special training in agriculture or Botany, Horticulture, Chemistry, and Theory and Practice, leading to a Masters Degree.

We can look about us at the various problems encountered by farmers with much of the results of modern Plant genetics and wonder where we go from here. I refer to the tall hybrid corn, much of which reverts to expressions of new chromosomal arrangements, and segmentation, much evidence of M_V linkage, expressing in plant character such as few grains on ears, dwarf or oversize ears, lack of viability of seed, and lack of food value for man or beast. Some plants, bred for resistance to insect attacks, fail other respects, and most hybridization fails to produce plants which will hold true to species improvements past the F2 generations. Many complaints are registered as to failures of genetic engineering with plants to produce lasting results. Many large melons or vegetables which look so luscious fail to maintain taste and quality standards.

It has been said that a weed is only a plant for which no use has been found. If that is true, then the field of finding improving and researching the uses of plants is still wide open, and such knowledge as will be forthcoming is needed. Dr. Darryl Langham is a pioneer in plant hybridization through careful selection of the most hardy and prolific plants of the Sesame family of plants, which has a very definite food value. We consider Dr. Langham's work among the most valuable of the work of individual hybridizers who are today developing through plant genetics, valuable sources of food. Other scientists are searching for, finding and developing such plants which are natural sources of seeds such as the Amaranth Plants.

Our own small experiments in using our Eloptic Energy instruments to alter plant structure and impinge the energy of one plant on another, thus altering its genetic pattern, has been so far only in the nature of "lets see what will happen if" sort of fun experiment, but the little we have done has shown us the great possibilities of research in this area.

We have used our instruments to intensify the general vitality of seeds, thus giving the extra vim and vigor to burst out of the ground within twenty-four hours after we planted them. We have oriented plants to find out which direction their greatest general vitality was apparent, and planted them in that position and direction, so that they out grew others plants (control) not so oriented.

Our first experiment was begun purely out of curiosity. With no regard for the genes, chromosomes, DNA or whatever of two small onions, we planted one in a pot, and set it out in the yard. The other we planted in a pot, and set it beside the first one. The first Onion, designated to as 01, was used as a control The other was our experimental subject. We transferred some of it's energy into an ampule of sterile water, and begun a series of treatments of the onion with the ampule of sterile water as a specimen. The specimen we sued to treat it with was a 2 inch Gladiola bulb, yellow in color (yellow flowers). We boosted the energy of the gladiola bulb 10 times, before we began the series of treatments. The control onion came up and grew for two months before the gladiola treated onion even poked one leaf or stem above the ground. When the treated onion had grown for two weeks, the leaves and stems of the control 01 began to die as is the custom of onions which have grown for their length of time while the bulb is maturing. The Specimen Onion continued growing, and grew from the last of August until the last of January. By the end of December, the plant was three feet tall, and the leaves were spread in the configuration of gladiola plants, i.e. a fan-shape pattern. The Onion still had the characteristic odor of an onion, although in a fainter degree than the untreated onion had possessed.

The color of the leaves was a darker green than that of the untreated onion, more the shade of the typical gladiola leaf color.

The plant did not possess the stiffness of the leaves of the gladiola and after it was about two feet tall, we found it necessary to stake the plant. We did this in order to maintain it's upright position, so we could determine how tall it would grow. After the third week in January it began to die, though the bulb was larger than when planted, and it's vitality was only slightly diminished from the vitality reading it gave when first planted. Unfortunately, after it had gone into hibernation completely, in cleaning up the greenhouse, and storing some things and throwing out others, we were unable to find our Gladionion, so we lost any further opportunity to experiment with it.

Of course we do not claim to be the first to conduct such an experiment. The story goes that Mrs. Muriel Benjamin, during the 1950's in Pennsylvania, once put some specimens of her beautifully productive peach trees in the well of her instrument, along with some material unidentified in this account except as poison "crystals" and treated the peach trees with these "crystals". It is reported of the lady's experiment, that the peach trees were shocked and ungrateful for such unsolicited treatment, and many refused to bear fruit. Other bore small, hard bitter fruit, or outsize fruit with no taste. This was an expensive experiment in that it ruined good peach trees which were bearing, nice, flavorful, fruit in season. The only comment I can make as to this experiment is that if the rule advocated by Dr. T. Galen Hieronymus were obeyed, such wasteful failure could not happen.

Dr. Hieronymus, out of the experiences of many years, enforces this rule in all plant experiments: Never treat a vegetable plant, tree, or any plant with any substance or chemical that lowers it's vitality reading. In the case of our onion experiment, the Gladiola energy we treated it with, raised its vitality reading 200 points on the genuine Hieronymus instrument intensity dial.

One other long term Energy-treatment experiment we began for amusement, was the result of a conversation we had in the car, coming back from a trip to Gainesville, GA, some 50 miles from our home. We had bought some new crop pecans, which proved to be delicious, with well shaped shell, and crist and tasteful kernels. We were talking about the great amounts of acorns on the oak trees at our home, "The Oasis" and how many bushels remained on the ground that fall. It was remarked if the acorns tasted like the pecans we had just sampled, the squirrels and chipmunks would have carried them all away! A serious remark suggested that if acorns could be improved so that more people would use it, there would be a good source of food that would be plentiful and nutritious. When we returned home, a specimen of the cambium layer under bark of two fully grown oak trees in the yard was taken, and the energies transposed into two ampules of sterile water, one for each specimen. Then the energies of two different new-crop pecans was transposed into two ampules of sterile water, one for each nut, and the energies of them boosted or multiplied ten times. Then, [redacted], we began systematic treatment of the oak trees with the intensified energy of the pecans. This was done for a year. When the acorns began to fall [redacted], we went looking for the acorns from the trees to see if we had effected any change in the color of the acorn meat, the taste, and the size and shape of the acorns. We found that the squirrels and chipmunks had also found our acorns. Only by getting up early, could we obtain any of the acorns for testing. The ground under the other oak trees in the yard was littered with acorns. Some had been nibbled and tossed aside presumably by the chipmunks and squirrels.

We gathered some of these rejects and tested them. They were very bitter compared with our specimens from the oak trees we had been treating with the Pecan Energy all year, had a deeper color orange meat, and were a rounded shape. The acorns from the trees we treated were elongated in shape, with a shart tip on the end, reminiscent of the pecans shape. The meat was lighter in color, of a much less bitter taste, and more crist texture. The general vitality of these acorns which had been treated with the pecan energy, was about 50 points higher than the acorns from trees which had not been included in the experiment. On the 1st of January, 1983, we resumed treating the trees in our experiment, with the intensified pecan energy. We did not change the specimens, nor did we change in any way the pecan energy specimens we had been treating with, but continued to use them as they were, since upon analysis, they showed no dimunition of general vitality, when the new analysis was compared with the analysis of the energy when we first began the experiment, [redacted]. The treatment of these two Subject Oak trees with this intensified pecan energy has been going on now since January 1st, continuously. Then [redacted], if we are able to salvage any of these acorns from our yard, (and from the squirrels and chipmunks, since they seem to like the treated ones best of all) we plan to again gather them, evaluate them, analyze, and see what the results of our year's treatment of the oaks with intensified Pecan energy will show.

To the Plant geneticist, the question here is "Just what are we doing to the chromosomal and gene arrangements of these old, well established oak trees?" What did we do to the onion which we bombarded with intensified Gladiola energy? Did the eloptic Energy Treatment of these living organisms of oak trees and the onion, with totally foreign energies, not likely to hybridize naturally with the source of the energies with which they were treated, break chromosomes of the treated organisms, and substitute for normal genes carried by the chromosomes, genes of the invading energy? Did we break chromosomal arrangements and cause impingement of foreign gene energy upon the specimen plants genes, thus changing the chromosome arrangement pattern by causing joining of sections unaccustomed to being joined. If the chromosomal pattern of the onion were, for instance, perhaps N equals 5, did we cause a change in this pattern to maybe, N equals 9? By treating these specimens with totally foreign energies, did we cause changes in gene patterns, different patterns of gene clumping and expression, as well as breaking and rearranging chromosomal patterns? Have we induced, with our bombardment of our specimens with totally foreign energies, caused new and different or aberrant meiosis, and gametic behavior? According to what we find in these totally inconclusive experiments, there seems to be no disharmonious interactions of [redacted] genes with these foreign energies, which in regular hybridization processes, would result from the application of foreign cytoplasm to interact with the nuclear genes. We might theorize that we are arranging chromosomes by breaking them, by clumping genes or gametes to form new patterns along with the rejoining of the broken chromosomes in new patterns to form different characteristics of the specimens to manifest, thus affecting the evolutionary pattern of the specimen plants and trees. The next step is to plant some of the acorns gathered from the specimen trees, after measuring and recording their sex, vitality count, and general drive to reproduce. Then the F1 generation should give some further manifestation of gene and chromosomal abbernations if any are present. What about any genetic weakness or sterility which might manifest? Since oak trees are a long time project, perhaps years, we might use some quick growing plant, such as radishes, for quick evaluation of results. In that way, in a years time we would be able to have several generation populations, in which F1 through F10 generations could b observed and evaluated, especially for Multifactorial Linkage, and Morphological and Viability gene factors, or the M-V Linkage factors referred to earlier in this paper. The possibility that we might find evidence for allelic differences found in these energy impingement experiments with plants, such as manifest in regular hybridization experiments, in varying degrees, is very exciting to us. We wonder about the increase in the effects of viability genes as shown in our oak-acorn-pecan experiments. Does this seeming increase in viability of these acorns have any pleiotropic effects on the morphological characters, or vice versa? How much evidence can be found in such experiments for changing allelic differences between the specimen plants and the plant with whose intensified energy we are treating the specimen plant? What linked genes are we disrupting, or substituting for or changing? What multifactorial Linkage are we substituting for the native arrangements? What epistatic interaction would occur in plants with flowering habits, if one were treated extensively with a foreign plant, a related plant, (species) or with a totally unrelated one, as in the cases of our Onion and Gladiola Experiment, or our Oak-Acorn-Pecan experiment?

I submit that these question-raising experiments we have done with the Oak Trees and intensified Pecan Energy, and the Onion treated with the Gladiola Energy open up a new and exciting prospect of plant hybridization, which the proper laboratory attention to the chromosomal and gene and gamete and miosis patterns, and keeping of exact and properly appraised records, might just possibly show us a way to change plant patterns to more desirable patterns, and provide a tremendous amount of information about the forming of plant characteristics. It might even be possible to look hopefully to a future of plant engineering, in which great amounts of money might be saved in the creation of new plant species to suit the food and fiber needs of a growing world population. It might be possible to spare the horticulturist and botanist who specialize in Genetic Engineering of Plants, the many years of time and great costs in money, now needed to set up plant generation groups, and maintain reproductive isolation, so that the results can be properly arrived at and evaluated.

Needless to say, it would take innumerable experiments, with Eloptic Energy Plant Genetic Engineering, to even scratch the surface to all the possibilities which the interested enthusiastic Eloptic Energy Engineer or Technician can picture as the outcome of such intense research in Eloptic Energy Plant Genetics Engineering.

Who said all the Frontier and discoveries have already been reached? It seems that Science has gone the long route in Electronics, and is arriving at the end of the road in miniaturization. Maybe, (Just Maybe!), the next exciting world to be explored is the field of Eloptic Energy applications in Plant Genetics Engineering.

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