BEES.

Bee Keepers.

Practical Hints.

We find in the *Journal of Agriculture* some "practical hints" by J. P. N. Brown, a bee keeper of Augusta, Georgia, which we quote:

How to Protect Comb From the Moth Larvæ.

Bee keepers should never melt up good worker comb, but carefully save it for guides and for filling up frames, so as to give the bees a start in the spring. It can be very easily protected and saved from the ravages of the worms by fumigating it with sulphur. For this purpose procure a good sized dry goods box. Nail supports across near the top upon which to hang your frames of comb. If you have loose comb you can lay it across the top of your frames. Cut a hole six inches square at the bottom of one side of the box, through which to pass your fumigating materials. Fit a slide to this hole. Use several thicknesses of old blankets or carpets for a cover.

Prepare your brimstone matches by passing ribbons cut from a newspaper through melted sulphur. This should be melted in a shallow iron vessel, and great care taken not to get it too hot or it will ignite, and give off sulphurous acid and fumes, which are very injurious to the lungs. Break up these sulphur ribbons into pieces about three inches long. Lay about half a dozen pieces on a small plate, ignite and at once pass the plate through the hole in the box and close the slide. Every hatched worm in the comb will be killed, and it is quite probable that the sulphurous fumes will destroy the vitality of all moth eggs. Allow the box to remain closed at least twenty-four hours before removing the comb.

Look Out for Ants.

When the weather gets cold ants will sometimes collect over or near the ends of the frames under the honey quilt, where it is warm, and sponge on the bees. If not dislodged a large nest of these vermin will consume considerable honey.

Hives.

Now is the time to think of getting hives, honey boxes, etc., ready for spring operations.

If you make your own hives select well seasoned lumber, put them together accurately and substantially, and well paint them. Hives thus made cost a little more, but are the cheapest in the end. The reader must here bear especially in mind that the use of frames in hives is public property—that he can make and arrange them as he has a mind, without caring a "continental" for any patent. It is also well to recollect that large yields of honey are less dependent upon this or that sort of a hive than the man.

Bee Pasturage.

Those who intend sowing white Dutch clover for bee forage should lose no time in doing it. In our climate it must be sown early, so as to get rooted before the hot and dry weather comes on. If sown late it is very difficult to get a stand. It will grow in a sandy soil if sufficiently rich, but it thrives best where there is some clay. Save your poplar timber. Plant young trees of it in your low lands. If you want shade trees in yards select the varnish tree. It is a fine bee tree and very ornamental. It grows well in this latitude and further south. The linden is a good bee tree but it is of such slow growth that it takes many years before it produces a return.

THE DAIRY.

The Grasses.

The following note on the grasses mentioned was read by John Henderson before the New York Farmers' Club recently:

In the laying down of lands to grass, the plants must be suited to the quality of the soil, as some delight more in moisture than others; some succeed the best in clayey soils, others in those of a loamy kind, some in such as partake of the nature of peat, and a few in the calcareous sort. But from the vague manner in which soils are frequently described, and the various acceptations of the same terms in different parts of the country, it is difficult for a farmer who reads an account of the agriculture in any other section than that in which he resides to judge what relation such a soil may bear to that which he himself occupies. It is therefore evident that a certain amount of knowledge of the components of arable soils is necessary for a proper understanding of grass culture. As stated in the previous paper the grasses best suited to light loamy soils will receive our attention in this, and here it is proper to remark that by the term loam is meant that kind of soil which appears to be an intimate mixture of all the other earths reduced to a fine and equable state. It is of different colors. On elevated table lands it is mostly red, on gradual slopes it is yellow or hazel, and in the valleys it is almost black. The two first appear to be deposits from the general, the last from partial floods. It is found reposing on stone, on clay, or on gravel of various depths, sometimes in deep beds, but in general always deep enough for every purpose of the farmer. Its consistence is friable, readily admitting air and rain, and as readily discharging all excess of the latter, only retaining or imbibing from the air as much as is necessary to vegetation, and neither liable to be parched in summer nor drenched and chilled by surface water in winter. Such being the characteristic of loam or a loamy soil, it is in request by every cultivator, and every industrious one endeavors to bring his land of an opposite character as near to the standard and nature of loam as possible. It may readily be perceived, by the foregoing remarks, how the terms, clayey loams, gravelly loams, sandy loams, etc., are in such general use; and how necessary it is, in the absence of established and reliable rules, by which all soils should be known and classified, to specify distinctly the general character of a soil in order to arrive at a proper understanding of what grasses are suitable for it. For light clayey loams, orchard grass, whether sown alone or in a mixture, will prove a satisfactory one; it is a grass which accommodates itself to a variety of soils, and is one of the best pasture grasses we have; its rapidity of growth, the property it possesses of resisting a severe drouth better than any other grass, its arriving at maturity, the luxuriance of its aftermath, and its power of enduring the cropping of cattle, entitle it to an equality with any grass, either native or foreign, that is being cultivated in the county. Meadow foxtail is also an excellent grass for light clay loams. It vegetates with great luxuriance, and is, therefore, both as a first crop and as after-grass, justly considered as equal to the best grass, whether used as a green fodder or made in hay. It shoots very rapidly after mowing, producing a very plentiful aftermath. It has been found more hardy against frosts than any other grasses—a property which recommends it for cultivation in this country. It did well with us last season, and is now undergoing a winter test. Yellow oat grass (*Avena flavescens*) grows naturally in dry pastures on rather light and good soils, yields a considerable bulk of herbage, and deserves to form a position in all mixture on light, dry soils either for hay or pasture.

THE SWINE YARD.

Management of Brood Sows.

It is not a commendable practice to allow brood sows to run with other swine until the later part of the period of gestation, and then place each one in a pen by herself, for the reason that when thus confined alone, sows will manifest so much uneasiness as to superinduce premature farrowing. The usual time for gestation in sows embraces a period of about sixteen weeks. It is an unusual occurrence for a sow to exceed or to fall short of this period. Hence, her proprietor can calculate with almost unerring certainty as to the time when a sow will farrow. With proper management, a sow will seldom lose any of her pigs. On the contrary, if she is treated injudiciously, she will be liable to lose all her pigs and suffer injury herself. Four to six weeks prior to farrowing, every sow should be separated from the herd and provided with a comfortable pen and sleeping apartment. If she can have the advantage of a small yard, all the better. The quiet range of a field will be better still. When the pen is a large one and the weather cold, let one corner—say sixty feet square—be partitioned off, leaving only a narrow entrance. When the corner of a large pen is not thus boarded off, the cold wind and driving storm will sometimes whirl around in the apartment and render a corner more uncomfortable than some other point near the entrance.

In many instances, sows are allowed to accumulate bedding until a deep hollow about the size of the body is formed. Such a bed is exceedingly objectionable for a brood sow, for the reason that young pigs will be liable to get smothered beneath the dam when she lies down. Weeds and long straw should not be allowed in the bed of a brood sow. In some instances, a generous supply of long straw is placed in the sow's sleeping apartment, around which shelving six or eight inches high from the floor is attached to the sides of the pen, so that the little pigs may escape beneath the shelving when the dam is about to lie down on any of them. But a far better way than this is to clear away all the long straw and make the bedding of a few basketfuls of coarsely cut straw. Young pigs will never become entangled in such bedding. Brood sows should always be cared for by one person only, so far as it may be practicable. The danger is from over-feeding more than all things else. Whole grain for brood sows is one of the most objectionable sorts of feed that a sow can be supplied with, because such food will lie heavily in the stomach, producing fever, inflammation and a morbid desire for some change of diet which often induces a sow to devour her young pigs. For several weeks prior to farrowing, a sow should be fed on cooked meal and milk, which should be continued for some time after this period. If potatoes and roots are given, they should be cooked before they are fed. If a sow has not the advantage of a yard, make it convenient to turn her out an hour or two every day into grass. If a farmer always has a few lengths of portable fence about his premises he will find it handy on many occasions. He can fence in a few rods of grass for pigs, calves, or lambs as required. After ten or twelve days the pigs can be let out with the sow. Frequent feeding is better for the sow than one or two large feeds per day. If she is weakly or seems to have too many pigs for her milk, make a mash of whey and bran, or skimmed milk, meal and bran, and let the pigs learn to eat as soon as they will come to the trough. After the sow has become strong, and her udder exhibits no signs of fever, it will be safe to feed her three times a day, all she will eat of cooked meal, milk and slop. During cold weather, when sows cannot have access to the ground nor to grass, it is an excellent practice to pass some hay and cornstalks through a fodder cutter for them; such coarse and bulky feed will distend the stomach and bowels and keep the system in healthy condition.—*Practical Farmer*.

MISCELLANEOUS.

The Walking Cure.

He has passed Atlanta, Ga., and gone to Topeka, Kansas—De Mahler—a man who has traveled around the world and all over it on foot. He walks for pleasure. Sometimes a wagoner on the road accosts him with "Stranger, want a lift?" He always replies, "No; rather walk," and some miles on passes the home of the wagoner, who by this time has his wife and children out to look at the man who had rather walk than ride. De Mahler goes trudging on, like the wandering Jew. He has put 40,000 miles behind him since 1862, and has acquired such a momentum now that he can't stop. He must walk to be happy. Of course he stops sometimes for rest and refreshment and sleep, but 'tis only a halt. An Atlanta editor took De Mahler to his house and got some particulars of his walks in life out of him.

De Mahler is a Virginian. He has estates that yield him such an income as enables him to go where he pleases and enjoy himself in his own way. He was wounded in the beginning of our war, and when his wounds healed he was bent nearly double and was totally unable to walk. He was rolled up almost like that being which turns itself into a ball and wheels from place to place. He went to Paris to get straightened out. The surgeons operated upon him; but, after a fair trial, they couldn't make his head and feet stay at their respective ends of the man. At length they told him that nothing could effectually cure him but walking. He resolved to try it. He told his doctor that he was going to walk out of Paris and leave France on foot. His doctor told him he was crazy. He, however, commenced the journey, and made only 104 yards from his lodgings the first day, with the aid of a stick. The doctor tended him two weeks on his trip, that is, until he got out of Paris. He had then begun to improve, and was filled with a glorious hope. He put his whole soul into his walk. In a month he was on the sunny slopes of the Pyrenees and had begun to straighten up like a man. He walked on, and on, and on. At length he was entirely cured and strode with a firm tread. Thus he walked along the world and across it, and became intensely interested in his travels. He sailed across the seas, but walked the decks of vessels in order to keep his foot in. On land he seems to walk as naturally as the winds blow and the streams flow, and now he can't stop. He makes pencil sketches of the best scenes and remembers every place he has been in and the name of somebody he met and talked to. He is thoroughly cured of his war wounds, but many lazy people might think that the cure is worse than the original infliction.

THE Great World's Fair Exhibition lottery company, of New York, is in straitened circumstances, and its personal property has been seized by the sheriff.

IT is rumored that seven packages of gunpowder were discovered among the coal on a steamer about to sail from Antwerp last week.

Potatoes.

Following is a report of the prize contest in potatoes, arranged by B. K. Bliss & Sons, of New York:

The soils employed by the contestants were of peculiar richness, as the mention will show. Mr. Perkins, who raised 1,666¾ pounds of Eurekas from one pound of seed; found a spot like this: "A mixture of sand and clay, very rich in vegetable matter to the depth of eighteen feet, and underlying this is a gravelly subsoil. For three years the ground was used as a stock yard, the straw being left on the ground to rot and be burned." Another competitor describes his soil as "black loam, four feet deep, on the bank of a creek, and it has been used for a cattle yard for ten years." Another, "as vegetable mold and sandy loam, three feet deep, never cultivated before." Many describe their soil "as deep, very rich, the best potato soil in the State."

The fertilizers used comprise nearly every known manure, and the quantities applied are not less enormous than the crop raised with them. Most growers have made compounds of various materials, and some seem to have faith in complicated formulas, which they prepare with the accuracy of a physician's prescription. About the value of wood ashes, hen manure and plaster, however, there seems to be no doubt, and we find them used by a large majority. Sulphur has been used by many. This substance does not enter into the composition of the potato, and it would be interesting to know if its application actually increases the yield. Have experiments to this effect been made?

The fact that single eyes and eyelets will, with good care, produce large crops, has been sufficiently proved. All the large yields were grown from very small sets. In some cases single eyes were divided into ten pieces, and in one instance 240 sets were made from one pound, nearly all of which grew well. The sets, with few exceptions, were planted singly, yet we find a product of 970 pounds raised from 52 hills, two sets to each, nearly nineteen pounds per hill, and 677 bushels per acre. Whether this large yield is due only to the favorable soil they grew in—a rich black loam, formerly used as a hog yard—and the immense quantities of ashes applied in the hills and as top dressing—one peck to the hill—or to the two-set system, does not appear. It is to be regretted that a part of the plat was not planted with one set to the hill and the products weighed separately.

A comparison of the distances between the hills, with the average yield per acre, gives a most interesting and valuable table, as follows:

The sets planted at a distance of

2 x 3	feet gave a yield, per acre, of	378 bushels.
2 x 4	" " " " "	462 "
3 x 3	" " " " "	651 "
3 x 3½	" " " " "	441 "
3 x 4	" " " " "	372 "
3½ x 4	" " " " "	342 "
4 x 4	" " " " "	332 "
4 x 8	" " " " "	88 "

The large number of data of which the above figures form an average give these statistics a special value. It will be seen that although the greatest yields from one pound grew from hills four feet apart, the largest crops per acre were raised at distances of three feet each way, and that as the distances between the hills are increased or decreased the yield diminishes in regular proportion. In the first case there remains wasted ground which is not reached by the roots of the plants, and in the latter the roots are so crowded that they cannot obtain all the nourishment they are capable of consuming.

The mode of planting and cultivating with a large number of the best cultivators consists in crossing their fields with furrows six and more inches deep. The sets are dropped at the crossings and immediately covered with about two inches of soil or compost. The vines as they grow are hilled up gradually and frequently to a final hight of twelve to eighteen inches. Then large, broad hills are made, using all the soil between the rows.

The Mechanical Age.

The London *Times*, criticising Lord Derby's Manchester speech, says:

However quick other countries may have been to develop the great mechanical discoveries of the century, it is to England that those discoveries are mainly due; and our riches have been derived as much from the genius and patient intelligence of men like Stephenson and Faraday, as from our stores of coal and iron. But until recently manufactures and machinery were regarded very much as outlying provinces of human energy, which might be left to take care of themselves. They brought wealth to the country and fortunes to individuals, but they were regarded as no more a matter of general concern than any other trade. They are now recognized as a kind of public care; and even in his capacity of Foreign Secretary, Lord Derby was invited at Manchester to treat them as of primary importance.

Without going the length of Dr. Playfair the other day, and treating the natural sciences as almost a substitute for all human culture, it is evident that, as a matter of fact, all culture is being brought to bear upon them, and that they are absorbing energy and attracting thought in every sphere of life. In view of this remarkable revolution of thought one is a little provoked by the very matter-of-fact reasons which are usually alleged in explanation of it, and Lord Derby, in the greater part of his Manchester speech, was too true to his habitual caution in contenting himself with reiterating them. Labor, he says, is dear, and is becoming dearer; and it is consequently more and more necessary to invent labor-saving machinery. Similarly, at Leeds, the other day, even the apostles of science could find little more to tell us than that other nations are threatening to undersell us, and that we need all scientific appliances to hold our own.

All this is, no doubt, true, but the reality is too vast and broad to be adequately represented by such statements of the case. To say that we must invent better machinery because labor is dear, however accurate, is nevertheless something of a reversal of the order of facts. What has made labor dear in England? Above all, the invention of machinery. A machine is only matter animated by intelligence: and it is not merely because the wants of men have grown more numerous, but because their intellects have grown more active, that they have at length reached a stage of their development at which they are concentrating their energies on asserting the dominion of intelligence over Nature. It is this which is implied when we call the present a mechanical age.

EGYPT AND JAPAN.—It is a fact worthy of record that the very first to arrive on the ground of the foreign contributions to the Centennial was that of Egypt, the oldest of known nations making her friendly offering to the youngest. Speedily upon this came the practical demonstration of the friendly spirit of Japan—19 cars loaded with her exhibits having reached the Centennial grounds on the 17th of December. The *North American* thinks there is a better illustration of the importance of the exposition to be gleaned from these two items than from a volume of argument.

A Newly Discovered Force (?)

The scientific world, just at the present time, is considerably exercised about an alleged "new force," thought to have recently been discovered by Mr. T. A. Edison, a well known telegraph engineer and inventor, of Newark, N. J. One mode of producing a manifestation of this force is given by the *Scientific American*, as follows:

Upon an insulated table place an ordinary Morse key and an electro-magnet, the coils of which are so wound that no magnetism is produced in its cores by the passage of an electric current. Use for an armature a piece of the metal cadmium, to one end of which fasten a flat spring. The other end of the spring attach rigidly to a standard fixed on the table. Adjust the armature a short distance away from the core of the magnet. The standard is to be connected by wire to one end of a glass rod or tube, say two feet long. The other end of the tube connects by wire with a graphite point (a lead pencil will answer). Another graphite point is connected by wire to a gas pipe or other suitable mass of metal, not in contact with the apparatus; and the two points, in position similar to the arrangement for producing the electric light, may be placed in a box from which light is excluded, but with a hole in the top for observation. Place 10 or 15 Bunsen cells in circuit with the key and the coils in the usual manner. Now, if the key be closed, a spark of considerable brilliancy will be evolved from the graphite points, but possessing no continuity. If, however, (the battery circuit remaining closed), any part of the connection between the gas pipe and the cadmium is broken, and contacts be made either slowly or rapidly between the disconnected points, the spark reappears at each contact.

It is here that the phenomena are surprising, and apparently unexplainable. The graphite is not in the battery circuit, nor in any other. Moreover, it is separated from the rest of the apparatus by the glass tube. This alone would seem to prove that the force is not electrical, at least as the term is generally understood; and when supplemented by the fact that the most delicate galvanometer and the chemicals most sensitive to the electric current fail to note its presence, this conclusion must be accepted.

Many experiments have been made with a view of obtaining some definite knowledge, but nothing has been developed beyond the facts above stated, and in addition that, like electricity, the new force passes through or over some substances better than it does over others, and also that, as the resistance of one of its best known conductors is increased by length the spark decreases in brilliancy.

All the manifestations thus far obtained have been of the feeblest kind, so feeble indeed that the current cannot be made to make a record sufficient to allow of its use for telegraphic or any other yet known practical purpose.

It does not seem to be either magnetic or electric, although pertaining to the nature of both. Mr. Edison called it "etheric force;" but for what reason does not appear. At first, efforts were made to connect it with Reichenbach's "odic force." It was also referred to what were denominated "weak sparks" of electricity, discovered several years ago, by Prof. Reiss, of Germany.

But the phenomena connected with this new manifestation, when carefully studied, do not seem to admit of either reference, and scientists are inclined to acknowledge that Mr. Edison has really made a discovery which has heretofore escaped notice.

Dr. Beard, however, is inclined to think that the phenomena may be due to a peculiar form of electrical induction, and that it is, after all, only a new phase of electricity. Mr. Edison prefers to consider it rather a new form of heat or light, rather than of electricity.

The weight of evidence, according to George M. Beard, M. D., in the *Scientific American*, is in favor of a new "radiant force, somewhere between light and heat on the one hand and magnetism and electricity on the other, with some of the features of all these forces." He would place it nearer to magnetism and electricity than to light and heat.

One of its peculiarities is that while electricity prefers to pass by points, this new force appears to prefer to pass through or over large surfaces; thus a large surface of tin foil, several inches square, will conduct it from one mass of iron to another more readily than will two points projecting toward each other from the two masses of iron.

It does not respond to any of the physical tests of electricity, except the spark.

It produces no physiological effects upon muscular tissues, as does electricity.

Glass, rubber, paraffine, dry wood, etc., which are non-conductors to electricity, are very good conductors to this new force.

It passes quite readily over non-insulated conductors—as along a wire laid upon the ground.

For this latter reason it was assumed at first that it might possibly be used for sending messages by uninsulated wires buried in the earth or in the ocean. But no facts have been developed which warrant any such assumption. Indeed, as yet, no practical application can be seen for this new force—if such it is. Scientists will watch with much interest for further developments, and it cannot be doubted, whatever the final results may be, that the earnest investigations now in progress must result in an important extension of our knowledge of the phenomena under discussion.

TREATMENT OF SEED WHEAT.—A wheat grower writes to the *Practical Farmer* concerning the use of brine in washing seed wheat. He says: "I know, from long experience, that washing the seed in brine as strong as it can be made, will prevent smut. Strong brine will enable the farmer to skim out light wheat, chess, and almost anything else that may be in the seed, as the brine will bring all such light grain to the surface much better than mere water. While the wheat is in the brine, the whole should be stirred as long as any foul seed or light wheat will rise to the surface. One bushel, at once, in a barrel, is sufficient with plenty of brine; then dip brine and wheat into a basket. When drained a few minutes, empty the grain on a clean floor. Take the same brine for another batch, and so on until you have as much as you wish to sow on that day; then sift on slacked lime gradually, while another person follows around the heap and stirs it with a shovel; put on lime until the wheat will not stick together; then let it be sown and immediately covered. The lime will then continue to stick to the wheat and be a good manure.

JAPANESE AGRICULTURAL COLLEGE.—According to the Springfield *Republican*, our agricultural college experiment is to be repeated in Japan. The Japanese government have been for some time endeavoring to engage President W. S. Clarke to found for them an agricultural institution after the plan of the one at Amherst. The trustees have granted him a year's absence, and such arrangements will be made that it is believed his going will not prove injurious to the Massachusetts college. Ample capital will be furnished. Col. Clarke is authorized to engage his assistants, and in every way to conduct the undertaking after his own methods. A special minister has been in the country effecting the arrangement.

Sub-Soiling.

[From Pacific Rural Press.]

Where shall we seek the agency which will give us richer fields? This is an important question to those whose acres seem to tire of former crops and have reduced their yield by a third or a half, or two thirds, within a score of years. We do not intend to instance the need of restoring to the land fertilizers which represent the wealth which has been taken from it, nor to say that the fields have been cropped to death. We wish at this time to call attention to the subject of sub-soiling, in order that our farmers may think seriously of it, and arouse an interest which will test its value.

There is reason in the sub-soiling practice, where the soil is deep enough. It will not do in shallow soil where all the productive material can be buried under an unproductive subsoil. But where the rich alluvial deposit extends downward from five to fifty feet, it is evident that the farmer who has only been tickling the surface with his plowshare, has a mine of fertility below if he can bring it to the light. This he can do by letting his plow strike deep, bringing to the air a most productive sub-soil, which will restore to him the crops of old.

In England the farmers are now being won to steam cultivation because it enables them to strike deep into the wealth of the sub-soil. The London *Agricultural Gazette* notes this advance in practice. Even on light soils it is economical. The deeper that light soils are stirred, the more retentive they will be of moisture. Suppose this were done even a yard deep, so that the crust of ages was broken to that depth, certainly the moisture that is stored in greater depth would be less exhaustible in summer. Thus light soils are made, from being more retentive of moisture, more capable of producing both green food for stock and cereals. And the advantage of deep culture for light soils is only equaled by the same practice in heavy soils; a culture which will overcome their tenacity, admit the wholesome action of the air and doubling their productive power. This has been the result of experiments in deep culture in England. How like a perfect answer to a need it comes to those who are familiar with the requirements of California farmers to insure the success of their crops. What do our farmers think of the prescription?

We have been much interested in a letter from a farmer in the Germantown *Telegraph*, in which he claims that he has discovered a new farm under the old one. It is a happy way of expressing the same idea which we are describing. His narrative is very interesting: "Some four years ago the Boston and Maine railroad extension to Portland was built through, and followed the northeast boundary of my farm on its entrance to this city. For 60 rods a cut was excavated 20 feet deep, the earth of which was carted out on one side and covered four acres of mowing land from six to 10 feet deep. This dump was composed of loam, sand, gravel, clay and rocks, and it was declared by the committee that the field was ruined, and I obtained damages for the full value of the ground. Being driven with other work, I allowed this dump to remain unmolested for two years to warm and dry. Being an eyesore and scab on the farm, I determined to abate it as soon as possible. I first hauled off all the stones and put them into a good wall, making a piece some forty rods long; then plowed the ground and leveled it with the scraper for the mowing machine; plowed again and carted on a light dressing of manure, and all was leveled, harrowed thoroughly and sowed to grass seed in August, 1874. Last summer, to my own surprise and that of every one, I cut the heaviest crop of hay I ever saw grow. Now this goes to convince me that the earth is composed of vegetable substances all the way through, and is only waiting for the plow to bring it to the surface to warm and dry in order to produce beautiful crops. Any one having an old worn-out farm which he has become sick of, has only to procure one of our modern steel plows and gauge it to twice the depth he has been accustomed to plow; break up that hard pan underneath and bring it to the surface, and thus at once secure drainage, heat and moisture. By doubling the depth of your plowing you double the capacity of your soil to produce crops, and perchance turn up a new farm which may please you better than the old one."

We hardly think our discoverer of the new farm could prove the statement that the earth is "vegetable substance all the way through." He probably means that plant food exists deeper than we think. He has the idea, however, and although we do not believe that farmers are destined to become miners, still in most cases they will find that there is wealth lower than they work.

FROST IN FLORIDA.—Mr. Brogdon, late editor of the *Rural New Yorker*, writes that he has not so much confidence as he had in Florida thermometrical reports. He says he knows Jack Frost's work when he sees it. He says, also, that there has been a curling up of orange leaves in certain situations; the bananas have succumbed, and their broad, green, glossy, upright leaves are now drooping and withered. The castor bean plants have lost their semi-tropical beauty. The fact is worthy of note.

There is another point in the agricultural promise of Florida which is worth quoting, from Mr. Brogdon's writing. It is as follows: Two men from Michigan who have been through the State with a view to investing in homes, if they liked it, told me that they should start home to-day satisfied that no well-to-do Michigan farmer, unless his or his family's health required a milder climate, could improve his condition by coming hither and entering into any agricultural pursuit. An Indiana family went home a day or two since with the same conviction. They had been in the State some months. I am simply reporting isolated facts, let it be remembered. There are probably a great many of an entirely opposite character. Three men from bleak Nantucket have just gone back "sick at heart"—which means homesick, I reckon. They had traveled up the Indian river and thereabouts, and up the St. Johns, and did not conclude to stay the winter through, though they were prepared to do so if they thought best. A Minnesotan said he had spent a "heap" in travel in the State, and "couldn't see it." He has gone back.

THE USE OF BELTS.—A correspondent of the *Scientific American* says: "After many years' experience with belts of all kinds, I have learned that it will require the most power with the short, tight belt, especially if the pulley receiving the power to be much smaller than the one giving it. With the tightener there is a greater length of belt brought in contact with the pulley, consequently the belt can be much looser, and thereby lessen the friction upon the bearings. The tightener should be only heavy enough to take up the slack of the belt, which should be quite loose when relieved of the weight of the tightener, which should always be close to the pulley receiving the power. If the power is carried horizontally the long and loose belt will have a similar effect, as the slack of the belt will always be found on the side of the belt going from the giving to the receiving pulley, which will, if it be the top side, sag so as to bring a much greater length of belt in contact with the pulley than in the case of the short, tight belt."