

The following interesting account of the life work of Edgar J. Hollister is sketched by Mrs. Grannis, who has had the opportunity of personally observing some of the results of his wonderful activity. Except for Dean Hollister's retiring modesty regarding his own performances, Mrs. Grannis says that it would be possible to present many more stimulating incidents of difficulties overcome. All in all, his life work is doing much not only for American agriculture, per se; but for the advancement of the idea that brainwork-farming pays, and that there is as promising a field in this line of endeavor as in any of the mercantile or industrial occupations.

Through Toil to Traimph.

By Anna C. Grannis. It is a far cry from a Canadian farmer boy in the sixties to the Dean of Agriculture to-day in a rising institution in the West, yet, by the applica-tion of science to practical farming such a change has been wrought by Edgar J, Hollister, a soil expert of wide reputation.

No agricultural college opened its friendly doors to this young pioneer, nor was the Canadian government so deeply interested at that time as now, in its farming population. Books on the subject were few and fell woefully short of the mark, yet he knew neither discouragement nor dismay.

A call from western Ontario, his birth place, came in 1873 and in response, some time was spent in setting out peach orchards, the work losing its irksomeness because of the study which accompanied it. Moreover, at this point a company was engaged in reclaiming some twenty-five thousand acres of land by the drainage of an inland lake. The young man assisted in some of the surveys and was in touch with the chief engineer of the work. His enthusiasm was aroused by the anticipation of the results which would come from the addition of such a large acreage, which hitherto worthless, was now, by reducing it to cultivation, to be made productive.

After some further years of study and preparation Mr. Hollister became interested in the organization of a company for the development of large tract of swamp. The land was cultivation, buildings erected, machinery installed and a system of had a man in the field, who had refarming, very nearly perfect, was established. Fields of six acres were made to produce an income of \$3.-009.00 each, while others of four acres produced \$1,800.00. Of the latter \$1,-200.00 was net; while thirty-five acres was made to yield \$14,000.00 gross at an expense of \$8,000.00. Of course, these were special crops such as celonions and other vegetables

SLOW PROCESS OF NATURE. In some instances five years is the eriod allowed for the reclamation of and by the slow process of nature Even then these lands may fail to produce paying crops, because of their as lime, potash, phosphoric acid and These are some of the magnesia. forces which go to make stability in plants. It is true that such lands contain a large percentage of nitrogen, accumulated from the decomposition of vegetable matter annually produced in low places. However, this nitrogen, which would produce growth were it available, is in an unknown quantity and available only when sufficien; moisture is present, yet does not produce the same results upon crops as nitrogen derived from other sources, such as bone, dried blood or barn-

yard manure To make these lands productive immediately after drainage, it is necessary to correct their acid condition by of the soil particles, thereby increas-

Hollister proceeded upon the theory that, climatic conditions being equal, certain crops are adapted to certain soils, and that planting those which will bring the greatest revenue will enhance the value of the land, inspire the people with enthusiasm and encourage development in all lines of trade. For example, Kalamazoo, Michigan, was once surrounded by bogs and flats worth scarcely \$10.00 an acre. After the incoming of the Hollanders, who began raising celery on these supposedly worthless la-\$600,000.00 was brought annually to the town by the sale of this vegetable. In ten years' time the land increased

in value to \$900.00 an acre. In 1899, a trip was made to Colorado where the people were farming under irrigation, and here the growers



DEAN E. J. HOLLISTER.

were taught the economical use of water and the method of creating a favorable environment for plants. visit was made to Maryland, where experiments with soil and plant life added still further to the experimenter's fund of knowledge, but in 1901, the most difficult and seemingly impossible work was to come, i.e., the reclaiming of tidal lands on the north cleared of brush and reclaimed to shore of Long Island Sound. The Department of Agriculture already had ported the feasibility of reclamation but by slow processes, and that investigation revealed too many failures.

In spite of this, Mr. Hollister had sufficient knowledge, gained experi-mentally, to suggest success, added to which was the further information gained during a four years' residence in Washington, D. C., for the express purpose of consultation and co-operation with the experts of the Department of Agriculture. An experiment was first made on a small tract on the south side of Long Island, where the after the drainage has been obtained. sait bog had simply been taken up and thrown inside of a dike, constructed of lumber sufficiently strong deficiency in essential elements such to withstand the tide. This bog was made smooth and even, and chemically treated in the month of August. By the 't of October the surface was covered with a beautiful growth of tame grass six inches high. This might certainly be termed, "A Quick Process Route." Work on a sixtyacre tract on the north side was begun in June and completed in December of the same year. On this land, covered the previous autumn with salt water, nine hundred bushels of turnips were produced on two acres during the first season. Rye, oats, celery and vegetables throve on the same tract. The following year twenty acres were seeded to meadow land in April. By August it was covered by a beautiful terf, strong enough to hold up the use of lime and by disintegration cattle pastured thereon. The remain ing portion of the sixty acres proing their powers to retain water and duced luxuriant crops of vegetables absorb oxygen. These forces together, and corn. A year later the meadow will act on potash and the three absorptions of hay to the acre yielded four tons of hay to the acre lute essentials to plant growth are ni- and was considered a great demon-



phosphoric acid and make them lands under applied science available as plant food.

Mr. Hollister visited Florida and se-

trogen, phosphoric acid, potash, and stration of the productiveness of the

MAKING SEA LAND PRODUCE. Abother equally successful expericured a tract of land which for five ment was conducted by this "Wizard years was used experimentally. All of the Soil" on this same tract, viz., though he was in one case much handle the transforming of a five-acre tract capped by inadequate drainage, which of sea sand to a loamy condition. The is about one-tenth in bloom-is better Asia. it was not found practical to improve, soil was first treated with chemical for the colts. In any event, horses that the results were, however, very satis- fertilizers and in the fall rye was are fed alfalfa hay must be given sown, which covered the ground in abundant exercise.

the soll.

The work of this interesting man attracted the attention of many people pursuing scientific agriculture, among whom was H. J. Heinz, the pickle manufacturer-57 kinds-who is interested not only in the culture of the vegetable kingdom but in the 'tel' otual growth of boys, and through his activity Mr. Hollister was elected Dean of Agriculture at the Agricultural Institute of Winona Lake, Indiana. Here he was seen last summer, handling his crops of embryo farmers who seemed imbued with his enthusiasm and whose first harvest received encomiums from five thousand visiting farmers, who unanimously adopted resolutions endorsing the work.

EDUCATING FOR SMALL ARMS. A plan is now taking tangible form, which will lead to the establishment of small farms comprising five to twenty acres each. On these farms young men will be taught combined scientific and practical agriculture. They will also demonstrate the possibility of getting an income and genuine happiness from their investments which may well be envied by the the garden. The preparation of the salaried man or the man of moderate capital in the city. It is believed too, garden crops. that this work will have a wholesome are its farming population.

wealth and happiness to the people.

is being shown a golden highway to ficiently warm. an ever increasing success.

in the region mentioned, may well be the plants to hold them erect and pro-

a crop of corn sown broadcast. The hay for pigs, it is considered better to corn was plowed down in the fall and cut it early, so that a larger proportion the sand lot planted in rye. It will be quently a larger proportion of protein seen that in this process nature was conserved. While late cutting, after being assisted by moisture and sun- the leaves have fallen somewhat and light to change sand into rye and corn the stem hardened, is better for stalks. Then the sand, by the natural pigs, the crop should be so harvested horses; for pigs, especially growing process of decomposition of these as to save the largest number of grains, brought about a complete leaves. Experience teaches also that change in the physical condition of the third or fourth crop is better for pigs because it is softer and more palatable. It is always wise to provide some sort of a trough or rack with a

floor in it for feeding alfalfa to hogs. Alfalfa in its green state, or when used as hay or ensilage, is a first-class poultry food. Poultry will pasture on it during the summer and thrive. It is best for poultry to use the last cutting of alfalfa, as it is softer in texture, has a larger proportion of leaves, less woody matter, and is more succulent than any other cutting. While poultry of all classes will eat alfalfa hay, or at least the leaves from it, and thrive, it is undoubtedly a better practice to chop or grind it and mix it with a grain ration. A good practice is to steep the alfalfa hay in hot water and let it stand for several hours before feeding.

The Irish Potato.

A rich, sandy loam is best suited to the production of Irish potatoes, and the fertilizers employed should contain high percentage of potash. The main crop of Irish potatoes for family use should be grown elsewhere, but a small area of early ones properly belongs in soil should be the same as for general

In a recent bulletin on farm vegeeffect upon the farmers throughout tables, the department of Agriculture the country. An increase of even recommends that for late potatoes, the \$100.00 in the revenue of each farmer rows should be 21/2 to 3 feet apart, when multiplied by five million, would and the hills 14 to 18 inches apart in establish the prosperity of the Ameri- the rows. Lay off the rows with a can Nation, the bulwarks of which one-horse plow or lister, and drop the seed, one or two pieces in a place, in Mr. Hollister is also directing a the bottom of the furrow. Cover the work of reclamation of a large tract seed to a depth of about 4 inches, using of salt meadow on the Connecticut a hoe or a one-horse plow for the purcoast which, when reclaimed, will be pose. One to three weeks will be sed for the purpose of intensive required for the potatoes to come up, farming, thereby firmly establishing depending entirely upon the temperathe fact that these lands may be used ture of the soil. The ground may even to furnish employment and bring freeze slightly after the planting has realth and happiness to the people.

Thus each day reveals some new does not reach the seed potatoes no progress, and farming, that once harm will result, and growth will be seemed a hopeless, hapless drudgery, gin as soon as the soil becomes suf-

As soon as the plants appear above the ground and the rows can be fol-Value of Alfalfa to Farm Animals. lowed, the surface soil should be well The Bureau of Animal Industry of stirred by means of one of the harrowthe Department of Agriculture has re- toothed cultivators. Good cultivation cently published a study by I. D. should be maintained throughout the Graham of the use of alfalfa for the growing season, with occasional hand rowing and fattening of animals in hoeing, if necessary, to keep the the Great Plains region. The results ground free from weeds. Much deattained by experiments, while of in-estimable value to live stock growers last the soil may be worked up around



STUDENTS CLEANING OUT A DRAIN AT WINONA

the experiments were the composition dead, but digging should not be deand digestibility of alfalfa, the calcu- layed too long, as the potatoes will lated cost of nutrients supplied by al- make a second growth in case well falfa and other feeding stuffs, the weather should set in, and weeds will value of alfalfa hay cut at different start seriously interfering with har periods of growth, alfalfa as a pastur- vesting the crop. On a small scale age, soiling, and hay crop, alfalfa meal, dig with a spading fork, and on a and the value of alfalfa, fresh and large scale, use either one of the spe cured, for different kinds of farm ani- cial digging machines or a turning mals and for poultry. The importance plow, which latter will cover up a of this crop as a honey-producing good many potatoes. A late crop may plant was also considered.

isfactory results as feeding stuff. The the vines. commercial article is made from seected alfalfa and mixed with sugar- should never be allowed to lie exposed beet molasses in the proportion of 75 to the sun, or to any light while in

Horses and mules, it is stated, thrive toes especially should not be stored in on alfalfa pasture, and while alfalfa is a damp-place during the heated part too rich a food for mature horses unless used in combination with some other roughness, it is an excellent feed the nutuum weather sets in, after for roung ones, as it seems to contain for young ones, as it seems to contain which they can be placed in a dry just the elements necessary to develop cellar or buried in the open ground. bone, muscle, and consequent size. The ideal temperature for keeping Caution should be used, however, in Irish potatoes would be between 36 feeding alfalfa to horses, particularly and 40° F., but they w.l not with if they have not been accustomed to stand any freezing. it. Like other concentrated feeds, it seems to stimulate all the physical have been raised on one acre. How processes to such an extent that various disorders of the digestive system this, have raised 200 bushels on appropriate the control of the digestive system. may appear. This is particularly no-

tory glands. When alfalfa is fed to horses in considerable quantity the grain ration must be proportionately reduced and an abundance of other roughness furnished. When horses have attained a mature age and it is desirable to change from other hay to alfalfa, this change must be very gradual, and the alfalfa selected for this purpose should be more advanced in growth at the in India from plague last year. time of cutting than that which is to be fed to cattle or sheep. As a general statement, very ripe alfalfa hay is the best to use for working and driving horses, while that prepared in the usual way—that is, cut when the field

In 1895, in Canada, the next field of operation, a phenominal success resulted in eighteen months. Here Mr. plowed under in June and followed by sults. As regards the use of alfalfa a head.

considered by stockmen in other sec- | tect the tubers from the sun after the vines begin to die. When the tubers Some of the questions considered in are fully ripe the vines will be quite be planted during May or early in Finely ground, kiln-dried alfalfa June in the North, and harvested late hay, called alfalfa meal, has given sat- in autumn, when the frost has killed

After digging the potatoes, they per cent. alfalfa and 25 per cent. mo- storage, as they soon become green and unfit for table use.

A thousand bushels of potatoes many farmers, who chance to read may appear. This is particularly no-ticeable in the urinary and perspira-tory glands who can not grow 100 bushels on their

> Mary was Diseased. Mary had a swarm of bees And they, to save their lives, Must go wherever Mary went 'Cause Mary had the "hives."

There were about one million deaths

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