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THE LAND QUESTION

AND

AGRICULTURAL REFORM.

Present Condition of Agriculture.

It is nearly impossible to exaggerate the gravity of the present position of agriculture in England, nor is this gravity peculiar to its political aspects only, but is more abundantly manifested in its social aspects. Legislation may indeed do something to satisfy political parties, and to appease the farmers who think they have a grievance external to themselves, but limited indeed is the power which legislation can exercise over the present system of agriculture, a system fraught with mischief so grave as to have assumed well nigh the proportions of a national calamity.

Legislative Interference.

At a time when clamour is loud and persistent for legislative interference, it is of paramount importance to direct public attention to the intrinsic evils of our agricultural system, since the outcry for extrinsic remedies is likely to leave these real evils where they now are untouched.

Our Agricultural Supremacy.

No Englishman but must view with an ever deepening sense of alarm the swift and certain annihilation of the agricultural supremacy of England, for this is certain if the present evils remain. Who can doubt that our supremacy is menaced when reminded that so large a proportion of the food consumed in the United Kingdom is grown in foreign countries. Lest it should be urged that England has reached the limits of her food-producing capacities, it may be safely averred that those capacities have only been partially tested, seeing that with her present cultivable area she could feed six times her present population.

The question naturally arises, why is it that England's food-producing powers are not more fully developed ? What follows may perhaps help to clear up this matter, we say—

1. That under the present system of unscientific farming, and the general brain indolence which characterises the ordinary British farmer, England's food-growing capacities can never be fully developed.

2. That not only is the development of lands of a high degree of fertility retarded by the present system of farming, but the cultivation of less fertile lands is either abandoned or ignored, first, because in the general want of knowledge of scientific farming it is supposed that lands of diminished fertility cannot be made to pay, and second, because even the scientific are deterred from venturing upon the cultivation of waste lands by the knowledge that in many districts difficulties of the cost of carriage will render all their efforts nugatory.

3. That the multiplicity of middle men, agents,

dealers, and others, enormously and unnecessarily increases the cost of farming operations, and acts as a deterrent to the capitalist adopting farming as a means of investment, and strips the landowner, the farmer and consumer of the full profits and benefits to which they are justly entitled.

4. That the stupendous item of the cost of foreign and manufactured manures enormously diminishes the profits of agriculture, without anything approaching to adequate return, all artificial manures being sold at prices which have hardly any relation to their real value (this being of the most limited character), while their use has led to the exclusion of natural indigenous manures, home refuse and sewage, which for manuring are of almost inestimable value.

The Limit of Legislative Remedies.

As we have said above, legislation can do something to appease political parties and the farmers, who think they have a grievance outside themselves, but we shall deny the utility of legislation beyond its power to insist upon the right of the people to demand of the occupiers of the land a system of cultivation nearer perfection and completeness than that which now obtains, for legislation cannot educate the farmer and get him to abandon his old mistaken ways. There are, however, some things it may do, namely, insist upon greater care in the production and preparation of food, demand full security for the landlord's rent and the tenant's interest, the abolition of one sided contracts, of farmer's leases and processes of ejectment, and the substitution thereafter of a system of commercial negociation for taking or surrendering possession of

farms, which should be as simple and as effective as any ordinary commercial transaction, always provided that the equal rights of landlord and tenant are honestly and fairly recognised and secured. And finally sanctioning improvements in the mode of carrying food, without putting patentees or companies to the enormously costly process of meeting only preliminary interested opposition.

Want of Scientific Knowledge by Farmers.

In our first proposition we averred that under the present system of unscientific farming, and the general brain indolence of farmers, England's food-producing powers are reduced to a minimum. We use the term brain indolence ; but it must be admitted by all who have had much experience of the British farmer, that as a rule brain paralysis would be the more appropriate expression for the dense stupidity with which farmers still cling to the old fashioned and unscientific modes of farming. Darwin defines a fool as a man who makes no experiments, and this definition is the more applicable to farmers, who ignore the use and value of all empiricism in their calling. All trade is but the outcome of experiment, while above and before all trades farming is *the* one, more capable of vast improvements, (with such momentous results), by careful experiment, than is perhaps any other.

It will be doubtless urged that experimental farming requires capital, and a special aptitude in men, but if farmers fail because they do not possess these special qualifications, or the enterprise necessary to develope to the fullest extent the resources of the land, they cannot complain that the causes of failure are with the seasons, or with the lack of legislation, or with the

landowners, and it may be added that the sooner the public recognize that the real cause of agricultural failure is neither with the seasons nor with the landowners, and only in a limited degree with the legislature, but with the shortcomings of the farmers themselves, the sooner will they insist that the present race of farmers be replaced by better men, who, under cultured scientific guidance, will be willing to receive and carry out such practical instructions so as to cultivate the land and draw therefrom the fullest yield of food and pay promptly a fair and a reasonable rent.

No country in the world can compare with England in the general fertility of her soil, and we aver without fear of contradiction that assuming the value of the aggregate produce of the land of the United Kingdom to be £250,000,000 per annum under the existing condition of things, that sum could be increased to upwards of £2,000,000,000 per annum under intelligent and methodical principles of farming. Farmers must, if they expect to win, get abreast of advancing science in agriculture, and yield obedience to its behests.

Within the mechanical limits of this paper it is not possible or even desirable to go into all the technical points of practical detail which some farmers have to learn, because every ignorant or dilatory farmer would be sure to aver that his particular farm was unfitted for any or all of the particular changes indicated, but if we call attention to a few broad general principles which those whom we address will easily grasp and understand, we are careless of the opinion of the farmer, since it is well known that he is at present much too bigoted or indifferent to learn anything in the interests of agriculture, though they be his own interests.

It may be said that farmers have had a very

important trust confided to their charge, and have utterly failed to render any adequate account of their stewardship, and we think, that at present, appeal to them is nearly useless, and that we may more safely appeal to the landowners, who should insist that their lands be occupied by responsible individuals or companies, and cultivated under the plans and directions of properly qualified engineers, and thus be likely to secure the complete development of the land and prompt payment of rents *quarterly*. Landlords must of course in return give security of tenure.

Identity of Interest.

Landlords getting the right class of occupiers should give them the fullest sympathy and consideration, for their interests and those of the occupiers are identical. Landowners should remember that they are subject to none of the cares and anxieties as to the crops and seasons, and the disposal of the products as are their tenants, and that if rent be secured and promptly paid it is their bounden duty to assist the cultivator, by every means within their power, to get the utmost yield out of the land, and return for his capital, skill, and labour.

Scientific Farming and Capitalists.

As to the second issue we have set out. It must be manifest that the want of a full knowledge of farming has a tendency to drive capital and enterprise from the soil, while complete commercial success is rendered hopeless by the absence of the means of cheap transport of agricultural produce, and the formidable power that is given to interested opposition.

If a system of farming be at once costly and clumsy, holding out the prospect of but a small return upon capital, capitalists are repelled where they should be attracted, for it is of the utmost moment that enterprise should be attracted to our food producing operations, since success in that means the fullest and cheapest food supply, and is of higher relative importance to the community than are the operations of any other trade, so that every obstacle should be removed to the attraction of capitalists. Agriculture, when properly conducted, is one of the safest and most profitable of all investments. The proper direction of agriculture must, it is manifest, be left in the hands of skilled agricultural engineers, who must be trained to the profession of agriculture, thus gaining that special and scientific knowledge which must be brought to bear upon any trade or profession of importance if it have to be worked upon sound principles. If the medical, the legal, and the military professions require special training under a logical system and scientific masters, and professors, what shall we say of agriculture, for neither of the professions named can compare with it in paramount national importance. Agriculture towers above all other professions and trades in its colossal proportions and importance, for whereas if any one or all of these were lost to mankind, he could yet live, but diminish or curtail his food supply, poison its sources, or render them so that they yield food of diminished nourishing and invigorating power, and you destroy at once half the value of life, and all the interest which men will take in any trade or calling. As well poison the air, and ask men if they would go on breathing it.

That agriculture should be carried on under the direction of men, scientists skilled and experienced in the highest degree, is beyond all question, for the perfection of agriculture consists in getting a full yield of the choicest quality of food at a minimum of cost. But to do this requires constant and keen watchfulness and vigilance for the changing conditions of soils, positions, and exceptional care in the production of seeds, but the men entrusted with the duty of growing our food are perhaps more careless, more indifferent, more averse to change and experiment (which is the life of agriculture) than is any other class.

That farmers should be replaced, or compelled to act under the skilled direction of trained agriculturists, is not only imperative, it is absolutely necessary, and what is more, there are signs that a feeling is growing rapidly that the present state of things, which leaves the practical production of our food supply in the hands of an indifferent and careless class, cannot be allowed to continue.

Carriage of Produce.

The importance of the questions of the transport of food cannot be overrated. Food is the source of all life and of all wealth, and next in importance to its production is its distribution among consumers who do not or cannot live in close proximity to the growing districts.

The question of the difficulty of transport applies equally to districts that are remote and near.

It is averred that the English are somewhat of a blundering people, and it would seem as if this charge were fully sustainable when we turn to the question of food carriage. The English admit of legislative control and regulation of the carriage of individuals by

a poor class of the community such as cabmen—but permit powerful Railway Companies to enjoy almost a complete monopoly of the food conveying trade, with a result which is costly and dangerous. Food becomes an expensive item, mainly through the cost of its transport, and Railway Companies are masters of the situation, and charge almost what they please, because the farmers are simply negligent in not availing themselves of the protection which the Legislature has afforded them in the matter of freightage; but there is still a more terrible danger than this enormous cost. It is of vital importance that the people should have all food fresh, but it is little of the food which is brought by railway, which can be said to be really fresh and undamaged, while much of it, such as meat and vegetables, is too frequently delivered to the consumer unfit to eat. Nor is this all; not only do the public have to pay for the cost of the carriage from one railway station to another but for the cartage to and from such railway stations, and these stations or sidings, be it remembered, are often at long distances from the *locale* of the consumers, and when this is found to be the case the food is actually carried to the London market only to be carted back again to the consumer. So costly is the carriage of food by Railway Companies deemed by many growers and farmers, that they still adhere to the old methods of conveyance by horse and wagon, and have to travel all night to get to market betimes in the morning.

Interested Opposition to Tramways.

It may be said that there is no real opposition to the carrying trade in food and passengers, but it is sufficient to point out that but for the preliminary costs our most

able tramway engineers have had to meet, the public would be carried on all lines now open at, perhaps, 50 per cent. less than the present charges. If Tramway Companies have to spend say £25,000 in preliminary expenses in meeting only interested opposition, that sum is simply spread out as a toll upon the public in the way of higher fares, for the Tramway Companies are practically free to charge what they like within their legislative limits.

Surely the granting of powers to patentees or companies can be regulated without putting them to the enormous preliminary cost which now rules. The cost of getting a private Act for an undertaking is *per se* a sufficient deterrent to all but the most sturdy and unflinching of enterprising capitalists.

But surely if the State have a legitimate function it is to so order the law that capitalists and enterprising men may be attracted to those objects which have for their scope and aim the ministering to the public health, comfort, or convenience.

The New Steam Tramways.

It is only quite recently that the scheme of steam tramways has been matured by the engineer of the Central Agricultural and Tramway Board of England in various parts of the country One of the objects of this paper is to call special attention to these steam tramways as an essential element in the future success of agriculture. The primary objects of these trams is of course to connect outlying districts with commercial centres, and so give an additional impetus to social intercourse, thus infusing fresh business, life, and vigour into districts and places heretofore commercially lethargic, indifferent, and socially isolated. No more important movement towards

the destruction of local prejudices and the pernicious influences resulting from the isolation from large civilizing centres, while increasing the means of social inter-communication, has ever been made, and a network of steam tramways over the country is likely to achieve rapidly such results as are being accomplished in a slow and tentative measure by our railways in the districts where their influence can be felt, but in the hundreds of districts and places where the railway influence cannot touch, the people are as far behind in commercial enterprise, public spirit, and intelligence as they were a hundred years back.

It is impossible to overrate the value of steam tramways as a means of social inter-communication, but add to this that they will enhance the value of land, improve the commercial status of the cultivator, cheapen the price of food, deliver it fresh and sweet, and pay a higher return upon outlay, and you give them a national value and importance which is exceeded by no other trading enterprise.

These tramways are worked by steam, they are picturesque, and are free from all noise and danger. They travel from 8 to 10 miles an hour, and are so arranged with an apparatus that loaded wagons and carts can be lifted at any point of the line from the road, carried any distance, and then replaced on the road again, thus obviating the undue strain upon horses, the danger and cost of unloading or transshipment, and will reduce, perhaps by 50 per cent., the present cost of the transport of goods and merchandise. These tramways have already received Legislative sanction.

Practical Hints.

We have heretofore spoken only of farming as it

is under existing circumstances, and have broadly indicated a few of the matters wherein lies the direction of the substantial and protective changes which we suggest. Now we propose to give a few practical hints which will show further the lines upon which we would work.

Injurious Use of Manures.

If a complete system of scientific farming prevailed, under duly qualified agricultural engineers, they would altogether dispense with the use of artificial manures and feeding stuffs, which are wholly unnecessary. It is utterly incomprehensible that farmers should pay for manures and feeding stuffs, which but too frequently are downright mischievous to their soils and cattle. The engineers would regulate the dressing of lands of limited fertility, upon scientific methods, in accordance with the respective character of the soils, and would in short bring to bear order, method and intelligence, upon the cultivation of land, the treament of which requires additional thought and skill, with the only natural outcome of an increased yield, and consequent higher return upon capital, and we repeat that no artificial manure or feeding stuffs of any kind should be bought or used upon the farms. Live stock of every paying kind should be kept up to the highest possible point of excellence, as far as the particular produce of the farm will admit.

Female Labour on Farms.

Another lamentable circumstance is the extent to which, of late years, female labour is being excluded from all the light and delicate kind of farm work, for

which they are specially adapted, and which they do so much better than men. The preparation of dairy produce, the tending of poultry, the thousand and one matters to which female skill, talent, and industry can be so usefully devoted on a farm, are so obvious as to need only the barest reference. Women are cleaner and better milkers than men, bestow greater care and attention upon the little ailments of cows, and will nurse young animals with greater skill and care. In short, it may be said that the supervision of a number of cultured and skilled lady directors on farms is absolutely necessary to farm with real success and to prepare food wholesomely.

Under trained females poultry, eggs, butter, and general dairy produce would be increased in quantity and improved in quality and sent out from the farm in an orderly and tasteful manner, with the added advantage of a neat and wholesome preparation for consumers. The surplus butter, milk, fat, and other proceeds from the dairy and slaughterhouse would be utilised in the making of milk cakes, rolls of pastry, &c., which, if neatly prepared for sale, would be likely to be highly appreciated. Beyond this, females should be trained in the beautiful and delicate art of cultivating flowers and fruits of the choicest as well as of the common kinds, vegetables, and making preserves. They should also cure bacon, manage bees, and prepare the honey for sale. None of these duties will inflict hard labour upon women ; on the contrary, they are light and agreeable duties, requiring delicacy and lightness of touch more suitable to women than men. The duties relating to cattle, implements, machines, seeds, manures, &c., will of course devolve on men.

The introduction of agricultural engineers to direct farming operations is, as we have already pointed out, of paramount importance. Their duties will consist in making surveys, and preparing plans and specifications of farms and buildings thereon, showing the nature of the soils, together with the cost of improvements, showing also the fields and parcels of land, the nature of the tillage for the coming year, and by a carefully prepared agenda setting out fully the duties to be performed each week during the year (copies of which should be supplied to the farm operatives, so that each may fully understand the year's work.) These plans and agenda papers, after use, will be collated for reference showing results.

Stock.

Then as to the rearing and feeding of cattle upon farms, much of the management of farmers is characterised by actual cruelty, to say nothing of its economic disadvantages. The most delicate of all animals the sheep and lamb are but too often exposed to the most inclement of seasons, left out in the wet and snow until they are seized with the worst forms of rot. That such delicate animals should be thus exposed shows not only a strange disregard to all animal suffering, but also a great neglect of economic considerations. Many of those who thus treat these delicate and highly profitable little sheep are doubtless christians, and are perhaps subscribers to the Society for the Prevention of Cruelty to Animals. As we have said above, they leave these poor creatures in the fields during the inclement winter seasons to walk or lie upon

the cold dank ground until the wool on their stomachs is loaded with hundreds of hard earth balls, and but too frequently they have to dig with their feet through frost and snow to get the rotten garbage to satisfy their hunger, until their stomachs as well as their feet become rotten. Mouth and foot diseases, sheep rot, pig fever, and the like, are with rare exceptions the result of the grossest inattention and neglect. Anything of the kind would never be found on well-conducted farms. Live stock of the best breeds, to be kept up to the highest possible point of excellence, should with few exceptions, be kept and fed in properly constructed and fitted sheds, and BEDDED ON DRY EARTH.

No animals, including poultry, should (except for breeding purposes) leave the farms alive. It is obvious that the slaughtering of all live-stock on the farms is one of the most important of the matters to be insisted upon,—first, because the price of slaughtering the stock, the cleansing and preparing of the offal, should be paid to the farm labourer and his family, the members of which should be trained for the purpose (for they will be likely to perform such work with care and cleanliness, while the men, being as it were in daily contact with the cattle, would be likely to perform the disagreeable duties of slaughter with less brutality and more consideration for animal suffering than the butcher)—secondly, because the blood, washings and rough offal make an invaluable manure, and belong to the farm, and thirdly, because the farm operatives and the residual peasantry should have the opportunity afforded them of purchasing at reasonable prices those parts of the slaughterhouse

offal, such as the head, liver, skirtings, trimmings, &c., which are a nutritious and a palatable food.

It would be a great gain to all concerned if the wives of farm operatives were carefully taught to deal with this food offal, such as the tripe, &c., and to prepare it for sale or consumption. As to the other offal, such as the blood, washings, &c., it should first be allowed to run into dry earth tanks, being removed from time to time and mixed with the manure taken from the cattle sheds; the fine being used in drills and the rough for top dressings.

By this economic treatment of the offal, and by a similar treatment of the skins, the disposal of the meat—beef, mutton, pork and bacon—slaughtered upon the farms, a profit of from £10 to £20 per head on cattle, from 10*s.* to 30*s.* per head on sheep, from 10*s.* to 60*s.* on pigs, and from 6*d.* to 2*s.* 6*d.* per head on poultry may be realised in *excess* of the prices now obtained by selling the stock alive at market or by auction. It is perhaps needless to add that all these advantages of feeding the work people wholesomely with the increased return, as above shown, are lost to the farmer under the present system of selling stock alive and slaughtering them off the farm.

Crops.

With regard to land, the whole should be kept arable *and* SEMI-ARABLE. Abundant crops of wheat and oats should be grown, WITH LARGE QUANTITIES OF GREEN STUFFS AT THEIR TAIL. *The cereals should be cut as soon as the grain is fully formed and whilst the sap is in the stalk, and saved similarly and about the same time as the hay.*

Hay.

Hay should not be grown in the careless manner to which we have been accustomed. Grass land in the autumn should be *grooved* with a circular saw machine or a mortice chisel pointed harrow, and a top dressing of *earth manure* put on, and then brush harrowed. In the early spring it should *again be grooved* the reverse way, and some *seed wheat, oats and quickly-growing clover thinly sown*—after which it should be brush harrowed and followed by a coating of *earth manure*. If the weather be favorable or unfavorable the crop will be an abundant one, and of wonderfully fattening quality.

The above-named cereal and hay crops, properly chaffed with the addition of beets, parsnips, mangolds or turnips, will feed cattle with marvellous success, and render the flesh of a choice and highly nutritious quality.

Middle Men.

It cannot be too often urged that all live stock, seeds, implements, machinery, &c., should be bought, as far as possible, from first hands, so as to save the costly interference of middle men. It is a matter of notoriety that farmers are usually careless and almost indifferent as to their character and suitability to their particular lands.

Street Farm Markets.

When the produce has been carefully prepared upon the farm, as herein set forth, it will be necessary to devise some simple plan, by means of which the producer and the consumer may be brought together

to do business, for such a meeting must be to their mutual advantage.

In the first place it will be necessary to secure small pieces of ground in thickly populated streets within, if possible, easy access to the farm by rail or tramway, or both. Upon these parcels of land should be erected a corrugated iron or a brick building, carefully fitted inside, and the whole limewhited for cleanliness.

To these stores all produce from the farm should be sent daily—beef, mutton, pork, bacon, poultry, eggs, milk, butter, cheese, cream, tripe, milk cakes, pastry, rolls, pies, fruit, flowers, preserves, honey, vegetables, &c., of the choicest as well as of the common kinds.

The lady directors would regulate prices and other business matters, and appoint female managers and the staff of saleswomen. These stores are, after all, but an improvement upon the old-fashioned system ; when at market the farmers, through their wives and daughters, dealt directly with the consumers. The markets of the past were for the producers and the consumers' use, but those of the present day are for purposes difficult to define. The regulations by the municipalities as to markets are but too often costly and vexatious, and it would seem that many of the local authorities are really bent on destroying their uses, otherwise it is impossible to explain the imposition of such exorbitant market rents, unless it be that these local magnates are anxious to ease their rates, and to drive the people to deal in their shops.

The plan of street markets would give the residents the advantage of buying their food sweet and fresh direct from the farm. Of course the daily sales would be for cash. Credit only being given to those

who should hold two or more shares in the farming company. This facility for the purchase of pure and cheap food would be enough at once to make these markets popular. Nor is that the only gain, for the smallness of the sum for which shares could be obtained, and the certain return thereupon would be another popularizing element.

Each of these things, surely, is enough to make these companies successful, but all combined, render failure impossible.

Farming Companies.

We shall now endeavour to show that by the formation of small joint stock companies under the direction of ladies and gentlemen, and especially of the former as directors and investors, not only would a large remunerative return be obtained but those highly important desiderata, a pleasant and an agreeable occupation for ladies, with the added satisfaction of the knowledge of doing a signal service to the community, and making the land yield a more abundant harvest of wholesome and cheaper food than it has heretofore yielded. For such must be among the results if the companies fulfil the scope and aim proposed for them.

The Advantage of Medium Sized Farms.

The exaggerated value attached to large farms is a mistake; moderately sized farms can be better understood by those interested, and farms of such proportions are easily supervised, while it is well known that small farming is better and safer than setting up with a

large concern the working of which the directors can know comparatively little. It is not possible for any one person or staff to economically and successfully manage farms of 600 to a 1,000 acres, with anything approaching to the success with which smaller farms of about 200 to 300 acres can be managed with a much more proportionately smaller staff.

In the working of companies here proposed we mean the directors to have a real and an immediate personal supervision. Twelve hundred acres, divided into farms of from 200 to 300 acres each, and £10,000 capital are quite enough for one company to manage, and the accounts of which may be easily and accurately audited and supervised by the directors, and the details of which would be so simple as to be easily understood by the least educated of the shareholders. Nor would it be advisable, even with success, to increase the amount of capital or quantity of land, for it is better to farm a small acreage with high farming and complete success than to run the risk of embarking upon large farming operations, which have in them always the certain factor of risk. In large farming operations the principals would be in the hands of a large number of irresponsible (because lacking interest) subordinates and employés necessary to its working, whose carelessness would lead to peculations, and would soon diminish the profits. Experience shows that the lack of interest of employés in large concerns leads to the perpetration of mischief, the hiding, and, therefore, to the prolongation of it. The object of dividing the land into small farms is to promote a healthy, vigorous, business-like life, within the circle

of each company, and the compact staff of one farm, should be encouraged to try and excel the successful achievements of the other.

Shares at the small sum of £1 each would enable the working people and others of the district to become proprietors in these farming companies, and would be likely to create among them a thirst for knowledge of, and an interest in, agricultural matters, which would be at once an individual and national gain, and would have a tendency to keep floating capital in the districts. It should be made a *sine quâ non* that all employés connected with the farms should be shareholders. This is but the essence of the co-operative principle, and thus deepening the interest of the employés in their labour, increasing their care, and thereby securing what is the grandest desideratum of all, both naturally and commercially, in any employment, viz., the harmony of interest and occupation.

On this part of the subject we may say that if the few practical hints we have given be carried out, farms moderately well situated, of say 200 to 300 acres each, would give a clear annual return of from £300 to £1,000 each.

Central Agricultural Board.

In order to train pupils for the profession of scientific and practical agriculture, it will be necessary to found an agricultural training institution, at which young gentlemen of ability should qualify. The nucleus of such an institution might be found in the bringing together of some 30 pupils of more than ordinary ability, who would pay a contribution of, say, £500 to £1,000 each to the above Board, the latter providing

a highly qualified staff of engineers to train them while carrying on the various farming operations of the companies.

Pupils will be instructed in the surveying and planning of farms and buildings, the mapping out of land for the various and special kinds of tillage, and the arranging and fitting of sheds for live stock.

They will have to study the nature and use of natural manures, the rearing and feeding of live stock, the slaughter and curing of animal and vegetable food, and the local circumstances of the situation and the chemical composition of the various soils.

They will be instructed in the manufacture and practical application of the various kinds of agricultural engines, machinery, and implements. Such knowledge must leave them competent to detect any flaws in the construction or defects in the working of such machinery in use upon the farms, and to direct the necessary alterations and repairs.

They will also be instructed in the construction of steam tramways, engines and carriages, also in the methods of carrying produce from the farms to the street markets.

When qualified as engineers they will be competent to act as arbitrators, and it would be advisable that all disputes pertaining to agriculture should be referred to such a competent body.

We may conclude this paper by saying that if these companies shall succeed in winning results of such wide public import, as unity of interest and occupation in the higher cultivation and development of the food producing resources of England, gaining these results upon a sound commercial basis, while affording

at once employment for thousands now suffering from enforced idleness, and a useful and an agreeable occupation for hundreds of cultured ladies and gentlemen pining for good work, they will have achieved something more than a mere trading success, and will at least deserve such support as should be accorded to all enterprise, which, while seeking to move on sound commercial lines, nevertheless seeks to achieve objects of permanent and national value.

Ladies and Gentlemen desirous of assisting in this national work of improving our husbandry, and increasing our indigenous food supply, are respectfully requested to forward their names and addresses—

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