dairy industry cannot expect to compete successfully against these go-ahead Continental rivals unless they can emulate their zeal for improvement. And it is to the new Department of Agriculture that Ireland must look to be kept at least in touch with such developments of progressive agriculture. It must be the Intelligence Department of the Irish farmer. In regard to this important matter of tuberculosis I cannot but think that it will be its duty to forthwith take steps—(1.) To disseminate accurate information in a concise and readable form as to the methods of dealing with tuberculosis elsewhere, and their results. (2.) To establish some station where tuberculin of guaranteed and uniform quality can be obtained on reasonable terms by farmers who wish to test their herds; and (3.) to be prepared to furnish a list of veterinary surgeons who may satisfy the Department that they are competent to apply the tuberculin test with precision.

### *Other Duties of the Department.*

In conclusion, it was my intention in commencing this paper to deal with "Economic Development in Ireland" from an industrial as well as from an agricultural point of view. Especially I had thought of showing how far it might be possible for the Department to go, having regard to the terms of the Act of Parliament, in assisting industrial and commercial development other than by Technical Education;—as for example in exercising some mediatory influence between traders and the railway despotism that obtains so widely in Ireland. But the length to which this paper has run, and the very scrappy character of the treatment which I have been limited to, even at such length, in dealing with the economic development of agriculture alone, both have made it clear that the task, if to be completed, must be resumed on some subsequent occasion.

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## *The New Local Bodies and the New Department of Agriculture and Technical Education and the development of the resources of Ireland.*

By Charles Dawson.

[Read Tuesday, 24th April, 1900.]

Two classes of Bodies have been lately created by the present Government. One class by the Local Government Act of 1898; and the other by the Act which established the Department of Agriculture and Technical Instruction of 1899. By the first Act the government of the thirty-two counties of Ireland, and the various towns and villages they contain, has been handed

over to the care of the Irish Councils elected by popular franchise. They have fiscal powers, and can levy taxes for certain purposes. It appears to me that we have here at last the opportunity afforded of practically developing the vast natural and industrial resources of the country, which, up to this, have only been written of and spoken of, but the theories of which have never been realised. This realisation is the work of the New Bodies. They should, each in its own district, make themselves acquainted with the resources both natural and industrial. The Most Rev. Dr. O'Donnell, Bishop of Raphoe and member of the Congested Board, has, in a letter to the County Council of Donegal, called upon them to get the mineral resources of that county inquired into and reported upon, and calls upon the Council, when such report is before them, to take action thereon. This division of labour would prevent energies being lost in general speculation, and concentrate attention in each county and town on what can be practically done in that particular district. Now, it is well known that there is an immense field for such practical work. In his great work on the industrial resources of Ireland, and still later in his evidence before Sir Eardly Wilmot's Committee in the House of Commons, Sir Robert Kane deplored the fact that the resources of Ireland were left to him and others to write about, but that no national or local bodies seemed to be charged with taking action. "In other countries," he said, "such matters had been the anxious care of governments; it was their duty to ascertain the nature and amount of the means of promoting industries." Now, for practical purposes the new County and Borough Counties are the authorities which should discover the means of promoting Irish industries. There is much material at their hand throughout the country. It is to be found in the fertile womb of earth, in the shape of agricultural and mineral wealth. It is to be found in bog and mountain, in sea, and in lake, and river. It is to be found in that untapped source of industrial progress, electrical power. The resources of agriculture are well known, but there are others. Coal, if not abundant, exists for industrial purposes in many parts of Ireland. These districts comprise parts of the counties of Carlow, Queen's, Tipperary, Clare, Limerick, Cork, Kerry, and notably in the northern counties, as pointed out by Dr. O'Donnell. But coal is not the only source of heat and power. Long ago Sir Robert Kane pointed out this fact. He had visited the Bog of Allen, and thus expresses himself—"The picture of this district never left my mind—the melancholy solitude of my walk was only broken by the phenomenon of a strange presence—some wretched men asking me if I was about to do anything to give them employment. Alas, it was not in my power—and yet I knew there were there concealed all the materials for successful industry." In that district, indeed, there is lots of iron ore, and there is the fuel to work it. Peat, we know, is at this moment used

in many foreign countries for industrial purposes, and is used for puddling iron. Its heating power can be raised to a third of that of coal. In Holland it is used to make bricks, and that pottery with which we are so familiar under the name of Delph. In Bavaria it is used with great profit in the railways. In Ireland it has remained idle and unprofitable. Here is a source which the County Councils in many parts of Ireland could develop. Peat fuel, however, could not only supply heat for the manufacture of iron ore, but also for the movement of dynamos and diffusion of electric power. Of course, the water-power of Ireland is not to be compared with that of other countries of great rivers and mountains. But it was proved before the committee which sat prior to the introduction of Mr. Healy's bill for the acquisition for extended powers for its use, that it is considerable and could be made much of. I may say in passing that, Mr. Healy's bill, which passed safely through the House of Commons, was rejected in the Lords on the motion of Irish Peers. To show how electric power is being used abroad for manufacturing purposes, I may quote a few authorities. In one of its late reports, the French Custom House Department says—"The application of electric motion to ribbon machines is supplying a new power to the small shops and even to one loom bringing as a consequence a new force to French ribbon manufacture. Electric works have been erected near St. Etieune. The current is conveyed by cable to various districts. At the close of 1895 three hundred and fifty machines were worked at the houses of artizans, and now the electric force moves over five hundred." "We are in view," continues the report, "of a change, the consequence of which are and must be most important. They will indeed be important if they result in bringing back the diffusion to various parts of the country of the industries of the last century, which, since the introduction of steam, have been gathered into special centres. This invention of electric motor's," concludes the report, "has changed the situation, and it is not alone from an industrial but also from the social point of view, that it will be interesting to follow the revolution which machinery is about to accomplish in restoring that home work which its final effort was to destroy." Later still, Prince Kropotkin, the famous writer on economic and industrial questions, relates how "at Oyomax, on the Ain, over 1,200 persons work in their own homes making combs out of Irish horn. Wheelpower was formally used, but electricity generated by waterpower has lately been introduced, and distributed in the houses, bringing into motion small motors of from one quarter to twelve horsepower, and it is remarkable to notice that as soon as electricity gave this possiblity to return to domestic work, 300 workers left at once the workshop and took to work in their own houses. They have their own cottages and gardens. The Croix Rousse at Lyons," he says, "is the centre of the silk industry and the whole of

that hill, thickly covered with houses, resounded with the noise of looms which were busily going in every apartment of that big agglomeration." When I read those words my mind was carried back to the time when the hum of the loom cheered many a household in the ilberties of Dublin. And I believe a cheap supply of electric power might revive these industries in Dublin and the rest of Ireland. But it is not Ireland alone that is backward in this matter of electric power. The position of England was described the other day in the House of Commons. On the first of March last, when the Lancashire Electric Power Supply Bill was introduced, the mover said that "this country was behind Germany, France, and America in the utilization of this valuable force," and Mr. Ritchie, President of the Board of Trade, said—"No doubt this country was behind other nations in its utilization of electric force, and it could not be doubted there was great demand for something to be done." Well, if England is backward, Ireland is nowhere, at least, as far as manufacturing purposes. Now, the County Councils and Borough Councils should provide the development of electricity as a source of private enterprise. I am glad to see the efforts being made to utilize the power of the Shannon for the production of this great force in the popular districts along its banks. From careful investigation I understand this great work can be carried out without interfering with the fishing industry, or with private rights. The object of the undertaking is to supply electric energy for lighting and for the diffusion of motive power for public and private use within a radius of twenty miles of their power station. At Clonlara, where the station is to be, they will have a fall of forty feet, and command a minimum of 5,000 horsepower. From this centre industrial power can be diffused through parts of the counties of Limerick, Clare, Tipperary, Cork, and Galway. When the work is accomplished may we not hope to see these districts, not only well cultivated by the help of the Agricultural Department, but alive with manual industries, and as busy and populous as the districts along the Loire to which I have referred. According to evidence frequently given before Parliamentary and other committees, Ireland abounds in stones and marbles and clays. The County Councils of Down and Armagh have marbles to develop, then there is the red marble of Cork and the green of Galway and the black of Kilkenny. Why do we not find these stones more frequently in our churches and public buildings? Let me pay a tribute to two illustrious men who did their part in utilizing these Irish resources. Sir Thomas Dean introduced the Irish marbles and stones not only into the new buildings in Trinity College, and the new Museum and Library, but also into many works which he did in England. And next Professor Wm. K. Sullivan, who selected Irish stone for the Albert Memorial in London. One church in Dublin is unique in its beauty entirely derived from the marble and

stone used in its decoration. I refer to the Catholic University Church in Stephen's Green. The developing of resources of this kind should form a great part of the work of the new councils. Then there is a source of wealth and of industry capable of being developed in every county of Ireland—I meant the planting or reaforesting. This is a bountiful source of wealth, it is one of the most natural, but one of the most neglected. Dr. Sullivan, to whom I referred before, informed a Parliamentary committee how he had thirty years before the date of his evidence recommended the government of that day to drain the mountain and marshy land and plant it. It was not done. If it had been, Dr. Sullivan said, Ireland would have been thirty millions the richer. He was supplemented in that evidence by Mr. Howitz, the first conservator of Denmark, specially sent by the English government to inquire into the question in Ireland. He says in his report—"That formerly Ireland had been well planted—he found remains of forest trees almost everywhere. Nature has given us a hint that oak should be a prominent feature in the forests of Ireland." He instanced the effect of this culture in France. The planting of the Landes districts had added £50,000,000 to the wealth of France. Referring to this the French Forest Department says—"This is one of the most beautiful pages in the history of civilization and progress in a region which, thirty years ago, was one of the poorest and most miserable in France, but which must now be reckoned the most wealthy and prosperous." So struck was the Danish Conservator of the possibilities of this development that he concludes his report by saying—"I think the question of planting Ireland is one of vital importance to that country, and that instead of having five millions of people there might be twenty-five." Eighteen years have gone since Mr. Howitz gave his evidence, thirty years after Dr. Sullivan's suggestion, and nothing has been done by the Government of this country. In these years forty-eight millions of wealth have been left unrealized. Will our County Councils continue to do nothing? or will they not rather find out suitable places and commence at once this practical planting so possible and so profitable. In America where planting is necessary there is an "Arbor" day on which each citizen plants a tree.

Turning to another source of wealth not fully developed, as far as Ireland is concerned, may I not ask what county in Ireland is without coast, deepsea, or inland fishing? As regards the first so meagre are our effects in this matter that the Manxmen, and the Cornishmen, and the Frenchmen, well equipped by their ogvernments, come over to our shores and snatch the wealth from our very hands. Our inland fisheries are for the most part merely rather sources of sport than what they should be, well managed sources of national wealth. Such are some of the many resources now offering themselves

to the various County Councils in which they exist. But, before I come to Agriculture, I wish to refer to one other source of wealth in the hands of the County Councils, and capable of great development. I mean the Scenery of Ireland. Mr. Crossley, of the Irish Tourist Development, has brought this matter with his usual energy before the various councils in a circular-letter addressed to them. In this circular he recommends a committee to be formed to deal with such matters, as railway facilities, improvement of hotels, collection of information as to special features of attraction. But in the first place he puts the "proper up-keep of the posting roads." Now, this up-keep will be under the County of the County Councils, and it requires great reform. There should be, as in France, some intelligent national, provincial, and parochial management. In that country there are first the national highways which form the line of communication with the most important towns. These are kept up at the National Expense. Secondly, there are the Departmental or provincial roads from one town to another within the department, and thirdly, the neighbouring or village roads which go from village to village. All these are under the superintendence of the Perfect of the Departments. The syseem of up-keep is so admirable I am inclined to describe it. Each portion is under the care of cantonniéres who pass their whole time—their lives, so to speak—on the portions of the roads allotted to their care. Each one has a book in which is written his name and the length of the road in his charge, with the rules and instructions from his superintendent. The result of this system is that in France one never comes across lengths of roads covered with three-cornered stones—a state of things clearly invented by the evil one. Nor does one meet with roads full of holes. In France a road is never allowed to get into bad order; the moment the least inequality, not to say a hole is noticeable, the cantonnier goes to work. He scoopes out the gravel at the spot necessary to the depth of four to six inches, and the hollow he fills up to a level with the surface of the road. He then rains a flood of water over the stones, and covers them with a lair of soil from the roadside. Then with a heavy hammer he presses the stones into the ground made soft by the water. Save for a very slight elevation in the patch of new ground nothing betrays the operation which has taken place. "It may be an exaggeration," to say of these roads what, the writer says in a most interesting book from which I have taken the above extract.—(From the Pyrenees to the Channel in a Dog-cart.)—"that you could play billiards on them; but on a level part you could certainly play bowls without any fear of obstacles or unevenness." This is a very different state of things from the description given of our roads in the *Irish Cyclist* of the 27th of December last. The writer says—"Some caustic politician

once said that Ireland had received most of her injustices from the hands of Irishmen. Whilst not prepared to follow this argument to its full length we must admit that it allows of application to many affairs in the hands of the Irish people which are suffered to deteriorate till they cause injury to the country at large. The roads question is a fine example. Our highways are wretched, yet very little is done to improve them." The writer draws special attention to the roads of Kerry, "which of all counties can ill afford to have bad roads." Certainly there is much wealth to be found in Ireland's scenery. Dublin, Wicklow, Kerry, Galway, Clare, and Limerick in the South-East and West abound in lovely scenery, as do Antrim, Derry, and Donegal in the North. But the tourist must come to it by car, cycle, or rail. I have dealt with the ordinary road. What about the iron ones? The new Act establishing the Agricultural Department confers one general benefit on the industrial interests of Ireland. By the seventeenth section the Department can appear "as complainant on behalf of any persons aggrieved in reference to any matter which Railway and Canal Commissioners have jurisdiction to hear and determine." This power should be well used, and promptly used. Excessive fares, and inconvenient hours should be removed to facilitate tourist traffic. But still more important is it that the transit of goods and agricultural products should be facilitated. We know well that fish rots in tons in the summer for want of swift and cheap transit. In Kerry las year a painful example of this occurred. In America and other countries new districts and new industries are developed by the transit; they are not only facilitated but encouraged. A writer in the *North American Review*, last December, says—"No amount of natural riches in a country has ever availed to make its commerce great, or its industries widely profitable to its inhabitants, without the assistance of transportation generally available to its people." The writer, Mr. Lusk, instances the peoples' railroads in Australia as a proof of what aid agricultural and industrial development can get from a fostering transit system. This matter should arrest the immediate attention of the new bodies who should call on the Department to exercise the powers with which it is armed under the 17th section of the Act.

I shall now touch on what is, but what should not be, Ireland's only great industry—Agriculture. This is indeed the only industry which the new Act pretends to deal. Nine-tenths of it is concerned only with this industry. The Board is called the Agricultural Board. The member in charge is called and questioned in the House as the Member for Agriculture. It owes its origin and completion to the report of the Recess Committee. I have read this most interesting communication with care, and I found its whole inquiry, with rare exceptions, dealt

with agriculture only. Let me take the Appendices in their order—

C.—Agricultural organization in Denmark.
D.—Agricultural organization in France.
E.—Memorandum by Director of Agriculture in France.
F.—Agriculture in Holland.

In this last appendix there is reference to the Mechanical and Polytechnic Schools in Holland, which includes this significant paragraph:—"From the foregoing it appears that Holland spends £500,000 a year on Technical Education, including £400,000 from the Treasury. In Ireland the new Act purposes to spend £55,000 on a system the practical outcome of which will laregly depend on its practical administration. This, with their very limited powers, the County Councils shall have to see to. And so on appendices G, F, H, I, K, L, M, all deal with the state of agriculture in Belgium, Wurtemburg, Switzerland, Bavaria, and Austria. In a couple of instances attention is attracted as in the Tyrol to some industries incidental to rural districts, but scarce a word as to the great manufacturing industries of the towns which in these countries go hand in hand with and prosper as well as agriculture. Now, before I touch the question of town industries and technical education, let me point out to the persons appointed under sub-section *a* and *b* of section seven to form part of the Council and Board of Agriculture that they should use their influence with the Board to encourage tillage—an industry calculated to employ our people, and to retain our population. It appears to me that the promoters of the new measure rather favour the gospel once preached, "that Ireland's destiny was to be the fruitful mother of flocks and herds to feed the English people." Now, I claim that Ireland should have an abundant population of her own to feed, and is not destined to be turned into one huge grazing farm with a sparce population, where the "wealth" of individuals perhaps "accumulates," but where men certainly decay. However, apart altogether from sentiment and on pure grounds of finance and economic advantage, how does the question of tillage *versus* pasture stand. Anyone who has studied the Land Systems abroad in Belgium, France, and Germany knows how tillage accompanies stock rearing. But the most apposite illustration for Ireland is Flanders. Ireland is damper and less warm in summer, but, as a rule, less cold in winter. M. Emile de Lavellye says, in answer to the question, "where does the Flemings' money come from? From his flax, colza, hops and chicory; crops which he sells at the rate of from £24 to £60 per hectare. The Irishman, it may be answered, must grow food for himself. But so does the Fleming; for, in fact, apart from the special crops referred to, he grows enough to support a population relatively twice as large that

of Ireland. It has indeed been argued," he continues, "that the special crops for which Flanders is famous would be out of the question, save for access to markets, which are not within the reach of Irishmen." Here is the want of transit pointed out by a foreigner over twenty years ago, and I fear it is as obstructive still. M. de Lavellye further on says—"Were two or three intelligent farmers in each district in Ireland, having become land owners or hereditary tenants, to borrow from Flemish agriculture, such processes as are applicable to the soil and climate of Ireland a complete transformation of Irish farming might ensue. Could nothing be done to produce agricultural progress in Ireland? The fact that the Flemish husbandman derives so much produce from a soil naturally so poor is due to—

"1. The perfection of plough and spade work.
"2. Each field has the perfection of shape given to it to facilitate cultivation and drainage.
"3. The great variety of crops especially of *industrial* plants, *e.g.*, Colza flax, tobacco, hops, chicory, beetroot, etc., yiedling large returns, and admitting of of exportation to the most distant countries.
"House feeding of the cattle, by which the cows give both more and more milk and more manure."

In this last or dual system of agriculture, Belgium has gone by eaps and bounds to increased industry, increased wealth, and increased population. By the grazing system Ireland has sunk to idleness, poverty, and depopulation. Mark the culture of tobacco, a source of rural and urban employment denied to Ireland up to this. The absence of tillage in these countries may be looked on as a sentimental grievance, but one day it may become an acute and dangerous one. England, almost wholly, and Ireland, to a great extent, depends upon America and other countries for their bread stuffs. Some time ago, in answer to some inquiries on this point, I received from the Chief of the Bureau of Statistics at Washington several volumes with statistics and diagram up to date. From the diagram which I exhibit you will perceive that Great Britain is indebted to the United States for bread stuffs more than the rest of the world put together. It is quite clear that other European nations could exist without their aid in this matter. Writing on the dangerous aspect of this circumstance, Prince Kropotkin, referring to London and its immediate neighbourhood, says—"Taking Harrow as the centre of my excursion I could walk five miles towards London, and I could see nothing east or west but meadow lands on which they hardly cropped two tons of hay per acre. Man is conspicuous by his absence from these meadows, he rolls them in the Spring, he spreads manure every two or three years, then he does not appear until the time has come to make hay. And that within

ten miles of Charing Cross, close to a city of 5,000,000 inhabitants, supplied with Jersey and Flemish potatoes, French salads, and Canadian apples." In the hands of Paris gardeners each thousand situated within the same distance from the city would be cultivated by at least 2,000 human beings, who would raise crops to the value of from £50 to £300 per acre. But here the acres which only need human hands to become inexhaustible sources of golden crops lie idle, and," he continues, "that the most profitable soils are not in the prairies of America, nor in Russian Steppes, that they are in the peat-bogs of Ireland, on the sand down of the Northern coast of France, and the craggy mountains of the Rhine. In England," he concludes, "out of 33,000,000 acres of cultivateable land food is grown for one-third of the population, that for two-thirds is imported." What should happen were this importation cut off? Unfortunately, under the new Act the Department is all powerful, and the County Councils can only advise. But, if their advice is ignored, they, as representatives of the people, can take other measures. Now, some people say, at least as far as England is concerned, a county cannot hope to be productive in agriculture and in manufactures at the same time. This is an idea which facts are daily upsetting. We all know what "Made in Germany" means, as the fact is thrust under our notice every day. But more than this, German statistics show that her manufactures are invading many of the English markets. I have got from the Danish Export Association of Copenhagen a list of Danish exports besides butter and other foods. The list contains, amid a multitude of other items, those of the following character, viz.—cement, lime, fire bricks, china, marbles, porcelain, glass, agricultural machinery, engines, iron ware, stores, electric fittings, cycles, lamps, and every kind of metallic household goods. May I ask why have not we in Ireland an export association for the manufactures of towns, as well as an agricultural organization for some of the agricultural products? I fear it is because those interested in land in Ireland have pushed this matter to the front, and those interested in manufacture, if there be any, have remained inactive.

The only reference and very slight assistance to anything touching manufactures in the new Act is the very inadequate provision for technical education. But it behoves the Councils, especially the Urban Councils, to see that even this modest provision is used for practical purposes. The only intimation which I have seen up to this that education will be directed to its particular industry was in the Chief Secretary's speech at Belfast, upon the Act—there indeed the better preparation of flax, its scutching, etc., was most elaborately dwelt on. But have we no other industries that could be developed by a sound system of technical education? I could not possibly illustrate the want of this education, and the disasterous consequence of its absence than by quoting Professor Sullivan's

evidence before the Earldly Wilmot Committee in 1883. When asked why the manufacture of beet root sugar did not succeed in Ireland, he said, "The manufacture of beet root failed, but I can tell you the reason why. It was at Mountmellick. But machinery, when the sugar is separated, requires a very high speed, it requires a new building to put it into, an old mill was taken. The boiler used was one that had been used up in Belgium. It required 400 tons of coal when properly set, but it was so set that it burned 800. A proper factory would have required 200 feet of pipe which should be covered. There were in place of that 800 feet of uncovered pipe. The beet is at its best in the months from September to November. They did not begin manufacturing until February. The beet root should be kept from the rain; they put it in middle of a field which half the time was flooded. The Superintendent had never seen a ton of sugar boiled in his life, and the only thing he knew about it was that he had been one of Garribaldi's men in Rome. Now," said Dr. Sullivan, "if that could succeed, or if the failure of it is a proof that the industry is not suited to Ireland, I have nothing more to say." When questioned as to the non-development of the stone and marble resources of Ireland, Dr. Sullivan said—"What would be the use of digging the raw marble unless you have tradesmen who would be able to work it—there is no class possessing the requisite knowledge to do it."

Now the question for Ireland, especially for the artisan and town labourers, is—will the new Department ensure, and will the County Councils insist, that the small sum set aside for technical education should be expended to supply the practical education shown to be at present so defective? This practical appliance of science to manufacture has been often deplored not only by Dr. Sullivan, but even from such diverse sources as Dr. O'Dwyer, Bishop of Limerick, and Professor Fitzgerald, Fellow of Trinity College. In an able pamphlet lately published on university education, Dr. O'Dwyer says—"The most recent piece of legislation—the Agricultural and Industries Act—is avowedly framed on the possibility of such material development; yet, I think, it can be shown that neither this Act of Parliament, nor any machinery which it can devise, will ever be able to raise Ireland out of chronic poverty or any other conditions than those of education and science, which have been made the starting point of progress in every country that has gained prosperity for itself." Professor Fitzgerald said in a published lecture in 1896, lamenting the absence of this scientific training to which Dr. O'Dwyer refers—"Why are we so far behind in all this in Ireland. Is it the fault of the farmers—of the industrial classes? No. It is the fault of our educational system. The Intermediate Board won't allow boys in an agricultural country to learn botany. Trinity College won't allow students in their first years to learn experimental

science *for fear it might encourage schools to teach children scientific methods.* The National Board have not yet made drawing compulsory. It is all very well," he continues, "to complain that the industrial classes are not industrious—that they are not cleanly, that they are fond of loafing; but who is it sets them the example of being content with what their forefathers did? Who sets them the example of refusing to change with the times? It is those who should be their leaders. It is the authorities of the University of Dublin. It is the Board of Intermediate Education. It is the National Board of Education. It is those gentry who think more of sport than industry, who have left it to the Nuns to teach the people to clear away diet from their houses and the manure heap from their doors." Since Professor Fitzgerald made this criticism he, in conjunction with Archbishop Walsh and the late lamented and Most Rev. Archbishop Lord Plunkett, have made recommendations in their report on manual and practical instruction, which are likely to create a reform as far as primary education is concerned. Everyone wanting practical knowledge on this subject should study this report. In view of the inaction of Trinity College in this matter, I could refer to an interesting statement of the late Cardinal Newman, the first Rector of the Catholic University. He says—"Dr. Moriarty (Bishop of Kerry), to whom I owe so many good suggestions, had early directed my attention to the formation of an institution for 'practical science,' such as was to be formed in Paris."

How different would the position of practical science be today in Ireland if Dr. Moriarity's idea had been carried out fifty years ago? Industry and manufacture would have been much advanced. We have a College of Science, but for what practical advantage it has been to the Irish people it might as well not have been in existence. It is about to fall not into popular control directly, but into that of the new Department. The popularly elected elements under the Act should see that the education given there is of such a character as that thus advocated by Mr. Chamberlain in his late speech at Mason University College, Birmingham—"He hoped that before long they would do for every trade in the town what they were now doing for one or two. The had a school of brewing, they had a school of engineering; they ought to have a school of railway engineering, electric lighting, and every large trade in the town ought to be represented in the new university. Especially towards the termination of the university course, there should be such specialized instruction as would enable the students to leave the college fully equipped to take a proper part in the work for which they were intended." Will this be the spirit of the new College of Science? Shall it be manned with representatives of "every large trade in the country," or shall it be in the hands only of doctrinaries and theorists with no acquaintance with the real needs of the country, and little

faith in its possibilities? I was stunned not long ago to hear from a gentleman closely connected with the new Department that he considered the people in the black forest and other industrial parts of Europe were too industrious. Well, we surely in this country may go a long way in this direction before the danger signal need be hoisted. But what grieves me most in this concern is this want of hope in an Irish industrial revival. Now, the people of Ireland and their representatives in the Councils must see to this matter. The very last report of the Registrar-General shows another sharp increase in last year's emigration, amounting to above 9,000. Are our people thus to fade away and only leave a remnant of their race to be employed, and perhaps profitably employed, at a few creameries and grazing farms? Or are all the material resources of our country, and all the aids of science—including the new born force of electric power—to be employed to resuscitate our manufactures, and keep our people in their own land. If this is to be done there is but one course to follow, and that is to follow the example of the Recess Committee and the Agricultural Organization Society. An Industrial Organization should be established. It should agitate to have an Industrial Department established, consisting of experienced manufacturers from the North, South, West, and East of Ireland. It should have its minister in the House of Commons as the Member of Trade and Industries entirely independent of the Member of Agriculture. If this were so we might hope for some revival of the lapsed and languishing industries of Ireland.

It was with the object of making this suggestion and advocating the immediate establishment of an Industrial Organization, consisting of the manufacturers of Ireland and others interested in its progress, that I have ventured to trouble you with the foregoing remarks; and I trust they may gain the approval and support of the Statistical Society of Ireland.