SIR JOHN DONNELLY ON TECHNICAL EDUCATION.

AT the first ordinary meeting of the new session of the Society of Arts, Major-General Sir John Donnelly delivered an address in which he dealt with some points in the history of the Society, and especially with those connected with the promotion of education. The following is a condensed report of his remarks bearing upon the development of technical instruction:—

In 1868, a Conference on Technical Education was held by the Society of Arts, and shortly afterwards—on March 24, 1868—on the motion of Mr., now Sir B. Samuelson, Bart., the House of Commons granted a Select Committee, of which he was appointed chairman, "to inquire into the provisions for giving instruction in theoretical and applied science to the industrial classes." The first three of their conclusions were—(1) That, with the view to enable the working classes to benefit by scientific instruction, it is of the utmost importance that efficient elementary instruction should be within the reach of every child; (2) that unless regular attendance of the children for a sufficient period can be obtained, little can be done in the way of their scientific instruction; (3) that elementary instruction in drawing, in physical geography, and in the phenomena of nature should be given in elementary schools. Throughout these discussions the object-lesson afforded by the Paris Exhibition of 1867 was universally acknowledged to be the main feature of the movement.

Sir John Donnelly brought before the Society in 1872 a scheme for examinations in technology, which were to be supplementary to the examinations of the Science and Art Department. The scheme did not meet with much enthusiasm, and manufacturers set themselves against it on the grounds that trade secrets should not be the talk of the class-room. However, since then the examinations have been very largely developed by the City and Guilds of London Institute.

Owing to a set of circumstances, with which everyone is now thoroughly conversant, there was, shortly after the passing of the Technical Instruction Act, in 1889, a great windfall for technical instruction. Under the Customs and Excise Act of 1890, the residue, amounting to something over three-quarters of a million of money in England and Wales, became applicable to technical education. It has been so applied very largely. From a recent return it appears that, of the forty-nine County Councils, excluding Wales and Monmouth, forty-one are applying the whole, and eight a part of the residue to technical education. Of the sixty-one County Boroughs, fifty-three are applying the whole, and seven a part of the residue to technical education; while in one case only (the County Borough of Preston) the residue is being applied wholly to relief of rates. Further than this, ten County Boroughs are, in addition, levying a rate under the Technical Instruction Acts.

For the year 1893–94, the forty-nine County Councils have allocated about £465,000, and the County Boroughs about £161,000 from the Customs and Excise grant, besides raising over £12,700 by rates. This makes a total of almost exactly £626,000 provided in England alone for technical instruction for the year, independent of the grants from the Science and Art Department.

It is purely at the option of local authorities whether they apply the "beer" money to technical education, or whether they use it in relief of the rates. It is very gratifying to see the extent to which they have devoted it to the former object, and it shows that the operations of the Science and Art Department, the Society of Arts, the City and Guilds of London, and other bodies which had previously been engaged in the movement, have not been unfruitful. But unquestionably a great danger lurks around a sudden outburst of zeal of this kind. How far have the public generally been convinced of the efficacy of science and art and technical instruction, and the advantage of spending all the money on it, rather than in relief of rates? or how far have they been only momentarily carried away unwilling captives at the chariot-wheels of the enthusiasts? How soon will the pendulum of public opinion which has been so suddenly and so severely forced in one direction swing back again? Or—a still greater danger—how soon will the critic, the cynic, and the "practical" man commence their innings by asking to have the account balanced and the profit shown? There are already murmurings in the air: did not our forefathers get on very well without technical education? or how is it that we stand—or, at least, stood—at the head of manufacturing and commercial fame and engineering ability? At all events, if you cannot show any fruit let us have an inquiry; dig up the plant and have a look at its roots to see that we have planted the right sort.

Now what is this "technical instruction" with which the country is so much occupied at the present time? It is defined in the Act of 1889 as instruction in the principles of science and art applicable to industries, and in the application of special branches of science and art to specific industries or employments, as well as in modern languages and commercial and agricultural subjects, but not in teaching the practice of any trade, or industry, or employment.

The Act, in fact, provides for instruction in technology and not in technics. Besides, though the definition clause is careful to indicate that the principles of science and art are to be cultivated, the title of the Act appeals to the sympathy of the great mass who always clamour for a short cut—some way for arriving at the money-making application of science and of art without that preliminary study which is so laborious and apparently unremunerative.

After dwelling upon changes of style in artistic work and design, Sir John Donnelly went on to say that every now and then we hear a great outcry against South Kensington and its "system." And if South Kensington now, why not in a few years hence the technical schools and courses of instruction which are being set up with so much care and thought in all parts of the country? This danger is already felt by many who are interested in technical instruction. The Science and Art Department could always point to the fact that, if its science teaching was wrong, it erred in good company, for the syllabuses were prepared, and the examinations were conducted by some of the most eminent men of science of the day.

But to whom can the local authorities under the Technical Instruction Act appeal? It seemed to him that for their own satisfaction, and for the future stability of technical instruction, they will desire, instead of remaining, as it were, isolated and self-contained, to have an influential examining and inspecting board, to which they might refer, if they found it desirable, for assistance and advice. There are at present several bodies partially covering the ground—but only partially, and there is the great disadvantage of a want of unity. He threw out the suggestion that the Society of Arts, which is at present covering part of the field, should take the initiative in bringing all these bodies together, so that they may form some kind of joint board, or at least co-operate.

THE BATTLE OF THE FORESTS.[1]

I.

THE earth is a potential forest. Given time, freedom from geologic revolutions and from interference by man, the tree growth must finally dominate everywhere, with few excepted localities.

Its perennial nature and its elevation in height above all other forms of vegetation, together with its remarkable recuperative powers, assure to the arborescent flora this final victory over its competitors.

So impressed was Dr. Asa Gray with the persistence of individual tree life that he questioned whether a tree need ever die: "For the tree (unlike the animal) is gradually developed by the successive addition of new parts. It annually renews not only its buds and leaves, but its wood and its roots; everything, indeed, that is concerned in its life and growth. Thus, like the fabled Æson, being restored from the decrepitude of age to the bloom of early youth, the most recent branchlets being placed by means of the latest layer of wood in favourable communication with the newly-formed roots, and these extending at a corresponding rate into fresh soil, why has not the tree all the conditions of existence in the thousandth that is possessed of in the hundredth or the tenth year of its age?

"The old and central part of the trunk may, indeed, decay, but this is of little moment, so long as new layers are regularly formed at the circumference. The tree survives, and it is difficult to show that it is liable to death from old age in any proper sense of the term."

[1] A lecture delivered by Prof. B. E. Fernow, Chief of the Forestry Department of Agriculture, U.S.A., during the Brooklyn meeting of the American Association for the Advancement of Science.