The Place of the Public Library in Relation to Elementary, Secondary, and Higher Education: being, mainly, an account of the work accomplished at the Wolverhampton Public Library Technical College.¹

TO those who attended the October meeting of this Association, the principal part of the title which I have chosen for the subject of this address, will be familiar. It is unnecessary to make any apology for again bringing up the subject of technical education and its relation to the work of a public library, for it is one of those subjects which should have a perennial interest for all who are interested in the development of education.

In the following paper I purpose explaining, first of all, what I believe is the relation of libraries and education, and secondly, recording a portion of the interesting history of an institution in which the operations of the library and technical classes are carried on side by side, with the most successful and praiseworthy results.

Carlyle, in one of his most charming addresses, has truly said, that "the true University of our days is a Collection of Books."

If he is right—and I do not think public librarians at any rate will disagree with him—it follows that a library, in which the noblest thoughts of all time are collected, and in which the latest and most valuable discoveries in science are brought together, is an institution of the highest educational importance to the community in which it is situated; and as such it appears to me that local authorities should, by some means or other, be induced to supply the best kind of instruction. What is the best kind of instruction we, as librarians—judging from the discussion which followed the reading of Mr. Axon's paper—are fairly well agreed.

¹ Read at a Monthly Meeting of the Library Association, December, 1893.

Carlyle has also remarked in an address which he delivered to the students of Edinburgh University—that it is a most useful and excellent plan to have a library of good books in connection with every university. If this is so, and here again I believe we shall agree, is it not equally important that there should be in connection with every large library, classes which may help diligent students to reach the university?

I feel convinced that if Carlyle were living to-day, and were asked to express an opinion with regard to the relationship of libraries and the teaching of secondary or technical education, he would unhesitatingly agree that a library connected with a technical school, or a "People's University," as Mr. Axon wisely calls the combined institution, is a most desirable and excellent consummation.

In his recent paper, Mr. Axon asks, "What is the place of a public library in a well-organised system of public instruction, stretching from the elementary school to the university?" The question has been brought forward at an opportune time, but I am inclined to think, with our esteemed secretary, that Mr. Axon's treatment of the subject is a little disappointing—I say this with the greatest respect—and scarcely deals with the points which we hoped he would have solved.

Towards the close of his interesting paper—a considerable portion of which refers to the "University of Harvard College"—Mr. Axon tells us that "the English town libraries touch education at every point, and have a relation, more or less close, to primary, secondary, and higher instruction." Here we find an indefinite acknowledgment that a relationship exists, but what the relation is we are not able to discover from the paper in question. However, we are all greatly indebted to Mr. Axon for suggesting a consideration of this most important subject; and if the present paper adds any interest to the points raised in his address, its author will be satisfied.

At the outset, then, let us repeat the question, "What is the place of the library in its relation to elementary and higher education?"

To my mind, and I speak from practical experience, a public library should be, and is in some cases, the bridge by means of which an intelligent youth may pass, if desirous, from the elementary school to the university; or, if intended for commercial pursuits, such an institution should "bridge over," to use the words of a recent report of the National Association, "the

unoccupied space which now exists between the end of the primary instruction and the commencement of industrial life."

In short, it is desirable that a public library should provide a course of instruction which will cover the period of life which lies between the elementary school and the university, or the commercial life. I do not intend these remarks to apply to London; there seem to me to be ample facilities afforded for study in this great metropolis without burdening public libraries with the necessarily extra expense and work which science and technical classes involve; but I think that in the suburbs some provision might be made for the combined working of the two branches of our educational system.

The idea of including technical schools as part of the work of a public library is by no means new; several libraries in the country have worked the two successfully for many years; and it is gratifying to observe the tendency to make the connection more general.

With your permission I desire to record a little of the interesting history of an institution which has successfully carried on the work of a library and the teaching of science for over twenty years; from this it will appear that the theorem proposed at the commencement of my paper is based on actual facts.

This institution, situated at Wolverhampton—the metropolis of the Black Country,—was established first as a public library in the year 1869; and for several years its work was limited to the issue of books, and the providing of periodical literature.

In the year 1873, Mr. Elliot—who has been chief librarian and secretary of the classes from the commencement, and with whom I was privileged to work for thirteen years—saw the necessity for providing instruction which would be of service: (1) to those whose elementary education terminated at an early age and whose subsequent career rendered it almost impossible for self-improvement; and (2) to those who were desirous of preparing for a more ambitious position in the educational or commercial world.

To the Committee's credit, Mr. Elliot's proposals were adopted; and in September, 1873, classes for instruction in twenty-one subjects were extensively advertised. These subjects included arithmetic, book-keeping, chemistry, languages, physiology, &c. During the first session 200 students, mainly consisting of persons engaged in the trades of the district, presented themselves for instruction. At first, three rooms, not used

for library purposes, were sufficient for the classes; but in the year 1880, the number of students had grown considerably, and it became necessary to build two extra rooms. In the session which followed, 572 persons came from all parts of the town and district for instruction; 267 of these entered for instruction in arithmetic, shorthand, languages, book-keeping, and other commercial subjects; and 305 were admitted as students in the classes connected with the Science and Art Department.

Three years later, ten years from the commencement of the classes, the number of students had increased to 671. This year extra subjects were taught, and the standard of success of the examinations was very high. In agriculture, magnetism and electricity, &c., for instance, the whole of the students were successful in satisfying the Government examiners.

In the year 1884, a remarkable increase was shown in the number of students requiring instruction; 945 persons were registered, an increase of 274 over the preceding year. Marked progress is also observed in the number and nature of subjects taught; thirty-one classes were formed, fourteen being regulated in accordance with the instructions of the Science and Art Department; fourteen were confined to the study of languages and commercial subjects; and others were formed for instruction in the subjects of iron and steel manufacture, mechanical engineering, and electric lighting, in accordance with the requirements of the City and Guilds of London Institute.

At this period in the history of the Wolverhampton People's College — for such it can truly be called — the teaching of chemistry and metallurgy had attained to so great a degree of perfection, and the interest of the students in these subjects became so intense, that it became absolutely necessary for additional accommodation to be found for instruction in practical chemistry and metallurgy. By the kindness of the Chairman of the Committee, a large piece of land was obtained adjoining the library, and on this laboratories have been erected, the cost of which has been defrayed mainly by local gentlemen. The chemical laboratory has been used for several years, and has proved of immense advantage to those students who had previously passed the examinations in theory.

"The teaching and practical work in the chemical laboratory," says the Librarian's report, "have succeeded beyond expectation; some of the students obtained the highest distinctions at the May examinations, held under the regulations of the Science and Art Department." (*Twenty-first Annual Report.*)

Last year thirty-five subjects were included in the programme of classes held at Wolverhampton; twenty-one of these were on technical and science subjects, and were carried out in accordance with the rules and regulations of the Science and Art Department, and the City and Guilds of London Institute; the remaining fourteen included many of the subjects necessary for a successful commercial life, and which are included in the syllabus of the Society of Arts. During the year 1,072 students joined the classes. The total number of students who have received instruction in science subjects only, amounts to 2,842 individuals.

This, then, is the history of Wolverhampton Public Library Technical College as briefly as I can give it. There still remains the question of cost of maintaining a school of this description; before concluding this paper I hope to say something on this point; but before entering upon its consideration, I desire to bring before your notice one or two examples of the students who have profited by attending these classes.

A large proportion of those attending the technical classes at Wolverhampton, belong to the industrial or working class population; and it is a remarkable, yet gratifying fact, to find that whenever any special distinction is obtained by a student, that student is generally an artisan.

I have in my mind at the present time three or four students who have distinguished themselves; the first is by trade a fitter, who entered the mechanical classes either immediately before or immediately after leaving school; he was a most diligent student, and much of his spare time—when unoccupied with his trade or classes—was spent in the reference department of the library, studying the most difficult problems of science. After several years in the library classes, this student was successful in securing a Whitworth Exhibition Scholarship—value £50, for one year. The name of Sir Joseph Whitworth should be honoured by all who care for the development of technical education: he set apart the sum of £100,000 for encouraging the study of mechanical and engineering subjects. The interest of this sum is devoted to the maintenance of scholarships, which are open to all the subjects of the Queen. The student I refer to was successful in obtaining one of these scholarships for passing the following subjects:—

Metallurgy, honours 1st class; machine construction and drawing, advanced 1st class; magnetism and electricity, ad-

vanced 1st class; inorganic chemistry, advanced 2nd class; sound, light, and heat, steam, practical plane and solid geometry, and theoretical mechanics, advanced 2nd class; mathematics, stage ii., 2nd class; practical metallurgy, elementary, 2nd class; and freehand drawing, 2nd class.

This was in the year 1891. In 1892 he entered again, and was successful in gaining from the Science and Art Department a Royal Exhibition scholarship, value £50 a year, for three years, with free tuition, travelling expenses, &c., at the Royal College of Science, Dublin. It may be interesting to you to know that this young man was successful in obtaining certificates for the following subjects:—

Practical inorganic chemistry, honours 1st class; practical metallurgy, honours 2nd class; in the subjects practical plane and solid geometry, theoretical mechanics (solids and fluids), light and heat, he obtained advanced 1st class; in mathematics, stages iii. and iv., 2nd class; in sound, physiography, and practical organic chemistry, advanced 2nd class, and elementary 2nd class in theoretical organic chemistry.

Another case with which I am well acquainted is that of the son of a shopkeeper, who entered the mathematics and mechanics classes before his elementary education was finished. He plodded along diligently and was successful in gaining bronze medals from the Science and Art Department for a 1st class honours pass in mathematics, stage iii.; for a 1st class honours pass in theoretical mechanics, and for a second class honours in mathematics, stages v. and vi. In addition he has obtained a scholarship, valued at £30 a year for three years, at St. John's College, Cambridge, and since entering upon a university career he has increased his sizarship from £30 to £40 a year, and has gained an exhibition scholarship of £20.

Is it not likely, gentlemen, that if no such classes had existed this promising youth would have remained in some inferior position? As it is, however, he is exciting some interest among those who have watched him so far, and it is their belief and hope that he is laying the foundation of a most useful and prosperous career.

Numerous examples of remarkable success at the Wolverhampton Library classes could be cited, but I may weary you if I do more than state that many students are now holding important positions which are clearly traceable to the training they

had received at these admirable classes. The present Borough Surveyor of Wolverhampton is a man who commenced life as a journeyman plumber; he entered these classes, and by sheer perseverance has risen to the important office he now occupies.

And now let us consider the all-important question of cost of maintaining a school of this description.

I am aware, of course, that in a large number of our libraries it is impossible, with the limited amount received from the rate, to make any attempt to provide classes and books for furthering the cause of secondary or intermediate education; but you will all, I think, be surprised to learn that for the first twelve years' work at Wolverhampton the average cost of efficiently maintaining the technical school did not exceed £23 per year.

The Library Committee superintended the whole of the arrangements, and the library staff performed the duties of registering, &c.

The rooms in which the classes were held were lent free of cost: the lighting, heating, cleaning; and all accessories such as desks, pens and ink, chalk, blackboards, &c., were provided by the Committee. In the science classes, numerous appliances were necessary, but these were partly supplied by grants from the Science and Art Department, up to December, 1891:

A nominal fee is paid by the student to the teacher for admission into the classes, ranging from 1s. to 5s. a quarter, excepting the higher stages in the laboratory; the teacher also until recently received the Government grant on results. Up to 1892 the amount of grant paid to the science teachers at Wolverhampton, made a total of £3,302 18s.

Since the passing of the Local Taxation (Customs and Excise) Act in 1890, considerable changes have taken place. With a liberality, which is worthy of note, the Wolverhampton Council has made a handsome grant of money for the support and efficient maintenance of the classes: the result is that some of the teachers are receiving salaries equivalent to the amount which they will lose by the withdrawal of Government grant for second-class elementary passes; and one teacher—the professor of chemistry and metallurgy—is devoting the whole of his time to teaching, and is paid a salary of £300 a year. The cost of maintenance in the future, therefore, will not be far short of £500 per annum.

It seems to me that, taking Wolverhampton as an example, where rooms are available, the question of expense should not

be a barrier ; and I trust that some pressure will be brought to bear on County Councils, so that institutions of a character such as that described, may be established in all parts of the country.

A leading member of this Association, in one of the excellent association handbooks recently published, has said : " The main object of public libraries is to promote education and literary and scientific inquiry, by placing within the reach of the community at large those books which, by reason of their scarcity or costliness, would not be otherwise available, and such other books as are useful for the purpose of general education and recreation."

With Mr. Cowell we must all agree, but at the same time we must not overlook the fact that it is not by books alone that scientific and technical education will be promoted ; there must be a union of classes and books if education is to attain to the most desirable ends. Students require not only advice in the choice of books on special subjects, but direct training, and I must confess that it is not always in the power of a librarian even to give advice on abstruse scientific subjects without the assistance of a specialist ; therefore it seems to me that where the two institutions are combined, there is every prospect of mutual help : the Librarian and Committee on the one hand receiving from the teachers great assistance in the selection of books on scientific and technical subjects ; and the teachers and students on the other hand having the privilege of using those books.

At Wolverhampton the students have exceptional opportunities for obtaining the more expensive books on scientific subjects ; for by the liberality of a few wealthy inhabitants, something like £50 a year is collected for the purpose of rewarding the most diligent students. The successful students are permitted to select their own prizes, and these for the most part consist of text-books, but they are not allowed to choose novels. The lists of books chosen by students give an excellent idea of the interest taken in their work ; and to those who possess the early reports of the Wolverhampton Public Library, a perusal of these lists should prove instructive.

I should weary you if I attempted to give an idea of the admirable collection of works provided by the committee for students ; but I may add that in each class-room, lists of books on the subjects taught are placed in a prominent position, and have proved of very great service.

In concluding, let me express the hope that this slight attempt to bring into notice the operations of a very successful public library and technical college may be received by you as a beginner's efforts should always be received, that is, with appreciation and encouragement; and also, that the consideration of so important a subject should receive the attention it undoubtedly deserves.

FRED TURNER.