

"forging our fetters," that we are proposing all those intricate problems which red republicanism so swiftly solves, and giving manifest destiny pertinent hints to shout new anthems of atheism over victorious rapine. The liberty which our fathers planted and for which they sturdily contended and under which they grandly conquered, is a rational and temperate but brave and unyielding freedom, the august mother of institutions, the hardy nurse of enterprise, the sworn ally of justice and order; a liberty that lifts her awful and rebuking face equally upon the cowards who would sell and the braggarts who would pervert her precious gifts of rights and obligations; and this liberty we are solemnly bound at all hazards to protect, at any sacrifice to preserve, and by all just means to extend, against the unbridled excesses of that ugly and brazen hag, originally scorned and detested by those who unwisely gave her infancy a home, but which now, in her enormous growth and favored deformity, reels with bloodshot eyes and dishevelled tresses and words of unshamed slavishness, into halls where liberty should sit throned!

LORD PLAYFAIR



LYON PLAYFAIR, first Lord Playfair, eminent English chemist and statesman, the son of an inspector-general of hospitals at Bengal, was born at Meerut, India, May 21, 1819, and died at London, May 29, 1898. He was educated at the universities of St. Andrews, Edinburgh, London, and Giessen, Germany. His interest was attracted from medicine to chemistry, and after he had worked at the laboratory of Baron Liebig, in 1858, he became professor of chemistry at the University of Edinburgh. Previously, he had been appointed, by Sir Robert Peel, member of the royal commission on public health, which did much for modern sanitation. In successive years he was a famine commissioner to Ireland and a member of many other committees of public utility. He helped to reorganize the civil service after a method which was called "the Playfair scheme." Besides serving as professor in the school of mines and inspector-general of the government schools of science, he was elected member of Parliament, and sat continuously until 1892, when he was raised to the peerage. Among other posts held by him were those of postmaster-general (1873-74), vice-president of the council (1886), lord-in-waiting to the late Queen Victoria, and was moreover member of the Legion of Honor and of many other British and foreign orders. He took a great interest in education and published several treatises, among them one on "Primary and Technical Education" (1870), another "On Teaching Universities, and Examining Boards" (1872), and still another on "Universities in their Relation to Professional Education" (1873).

THE EVOLUTION OF UNIVERSITY EXTENSION

DELIVERED IN 1894

RECENTLY the London University Commission, of which I was a member, has made its report, and during its sitting we received much evidence in favor of the University Extension scheme, as well as some evidence hostile to it. I think the opposition arose from a misunderstanding of its origin and purposes, and upon these I should like to address you. The extension of university knowledge and educational methods to the people who are unable to attend the university courses during the day, is one of the processes of evolution of popular education which has been trying to organize itself for about a century.

Universities in former times used to be more largely attended than now. Bologna University was said to be attended by 20,000 students, and Paris and Oxford by 30,000. These numbers are open to doubt, though, as there were few grammar schools, and as students entered at ten and eleven years of age, the universities were no doubt more frequented than they are now, and by a poorer class of students, who often begged their way to the university from monastery to monastery. Chaucer alludes to this when he says:

"Busily gan for the souls to pray
Of them that gave him wherewith to scolar."

Education in the sense we are now considering it, as attainable by the people at large in their hours of leisure after their day's work, is the product of the present century. Let us consider the conditions under which the demands for it arose.

Up to the last quarter of the eighteenth century the learned class and the working class were separated by a high impassable wall, because each spoke in a language that the other could not understand. For about two thousand years the learned class spoke, thought, and talked in Latin, and for about two centuries Greek had been raised as a second wall of separation between the learned and the people. No doubt the people were creating knowledge of another kind by enlarging their conception of things while the learned were dealing with literature and philosophy through words.

I do not allude to the early days when Rome and Greece spoke their own vernacular, and when their writers and philosophers largely recruited themselves from the people. The learned class were then the sons of citizens, and were in possession of the accumulated experiences of the people. I refer to a much later period after the dark ages when the

light gradually illuminating the darkness was the borrowed light of Rome and Greece. It was then that the learned linked themselves to the past and separated themselves from the present. Then it was that they adopted the ancient languages as the expression of their thoughts and teaching, while the people went on their way without caring for the pedants whose very language was incomprehensible to them.

Among the people the industries were growing by experience and modern science was being evolved as an outcome of their enlarged conceptions. Working men then made journeys to enlarge these experiences, and the memory of the old habit still survives in the industries under such familiar names as "journeyman carpenter," "journeyman blacksmith," and so on; for the tyro was a mere apprentice until he graduated to his full position as a working man by an education not got at school but obtained in journeys, which enlarged his experiences and knowledge. When I was a student in Germany in 1838, I recollect constantly meeting parties of these journeymen on the way from one town to another. An old German saying, freely translated, explains how technical education was attained in this way:

"Who shall pupil be? Every one.
Who shall craftsman be? Who good work has done.
Who shall master be? He whose thought has won."

By the end of the fifteenth century most of our present industries were fairly established in this way. During that century the printing press was introduced, and knowledge was ultimately widely spread as well as conserved. In the sixteenth century newspapers were published in the vernacular, and the people got a powerful means of recording their mental conceptions, which were chiefly those of a developing science. In England, however, newspapers did not

fully establish themselves till the period of the civil war, and then they were poor in quality. They scarcely came into the life of the nation till the reign of Queen Anne, during Marlborough's victories. The learned class still adhered to their Latin and Greek, and kept themselves outside of these great movements. Latin was, in fact, the universal language for learning, being a sort of glorified Volapük. Sometimes a treatise was written in the vernacular, as when Bacon wrote in English "The Advancement of Learning," though he asked his friend Dr. Playfair to translate it into Latin, because, he says, "The privateness of the language, wherein it is written, limits my readers," and its translation into Latin "would give a second verse of that work." So also when Bacon sends his "De Augmentis Scientiarum" to the Prince of Wales, he says, it is in Latin, "as a book which will live and be a citizen of the world, as English books are not." The vernacular was, however, being introduced into our schools, though it was not generally used until the close of the eighteenth century. Learned papers and discourses were now published in English, although they were at first duplicated into Latin. A general use of the vernacular made a common road on which both the learned classes and the working classes could again travel as they had done in the grand old days of Greece and Rome, when Plato and Aristotle and Cicero and Horace spoke, and wrote, and thought in the common languages of the people.

Now again the desire for popular education, of which university extension is one of the signs. Let us see how that form of popular education became involved in this movement, among the people, who were shut off from the possibility of attending colleges of learning. Workingmen know that one of their two hands must always be employed

in earning their daily bread, but they have another hand with which they could work for their own improvement and for that of the community if they only had the opportunity and knew how to employ it.

Before the age of printing books were necessarily costly, so the ancient method of obtaining knowledge was to attend public lectures or discourses, and they became the chief mode of higher education. It was so in the classical times when people flocked to the market-place in Athens to hear Socrates, and to the groves of Academus to hear Plato, or joined the Peripatetics in the walks of the Lyceum to listen to the scientific teaching of Aristotle. So it continued in every country where learning was cared for at all, and poor students went, begging on the way, to listen to lectures by Abélard in France, Chrysoloras in Italy, or Erasmus in Oxford and then at Cambridge. When printing presses multiplied books knowledge could be acquired by those who read, and was no longer confined to the few who could discourse. Public libraries for the people are, however, only inventions of our own day, and at the beginning of this century did not exist.

The people readily co-operated with Birkbeck and others in founding institutes of their own where they could read and hear lectures. One of the earliest of these exists in the city under the well-known name of the "Birkbeck Institute," which has now a new lease of active life as a systematic school of science and commerce. The people in the early part of the century were only groping in the dark for the kind of higher education which they desired. The mechanics' institutes supplemented small and defective libraries by single and unconnected lectures.

In fact, the associated members of these institutes scarcely knew what they wanted. Some joined the institutes for

amusement, some for instruction. Both were proper objects of desire, but were difficult to amalgamate, so a strange mixture was made, often not very wisely, by the inexperienced managers of the new mechanics' institutes. One of the most prosperous of them asked me to give a single lecture on chemistry, in the year 1846, and sent me its program for the preceding year. It was as follows: "Wit and Humor, with Comic Songs—Women Treated in Novel Manner—Legerdemain and Spirit-Rapping—The Devil (with illustrations)—The Heavenly Bodies and the Stellar System—Palestine and the Holy Land—Speeches by Eminent Friends of Education, interspersed with Music, to be followed by a Ball. Price to the whole 2s. 6d. Refreshments in an Anteroom."

Compare your program of sound work with this motley assemblage of professors, ventriloquists, conjurers, and musicians, and you will see how much the scheme of university extension has molded the demand for knowledge among the people and turned it into channels which will refresh and irrigate the various districts through which it passes. The mechanics' institutions where they still exist have altered themselves into systematic schools, either scientific, technical, or artistic, but they have still left outside the people who have not been trained to use schools.

The universities associated to supply this want. In the universities there are always a number of zealous graduates who desire to extend to others the knowledge possessed by themselves. They are animated by the spirit of the famous Loup de Ferrières, who, a thousand years ago, wrote to Charles the Bold: "I desire to teach what I have learned and am daily learning."

This spirit led to the scheme of university extension.

Gradually, not yet completely, but surely, the people who demand your courses of lectures appreciate and follow them because they are systematic and in proper sequence; and because the lecturer also becomes the tutor to each student who really desires to understand and profit by the subject taught. In ordinary popular lectures the lecturer treats his audience as a mass, throwing his information broadcast over it, ignorant as to where it may fall, and careless as to whether the seed falls on fertile soil or on stony places where it can take no root.

When the lecturer acts also as a tutor he looks upon his audience as individuals, he drills his seed into productive soil, taking care that the ground is prepared to receive it, and that each seed gets its proper proportion of food-giving manure. The minds of the teacher and the taught get into an intellectual grapple and as the former should be the stronger man, he is enabled to drag the mind of the student from the dark holes in which it may lurk into the broad light of day.

In a college or technical school a tutorial system ought always to be combined with the lectures. Under your system of peripatetic lectures it is more difficult of application, but you do much by the weekly exercises and final examination as well as by making the courses consequential in series. The examiners for the certificates, who are not the lecturers, testify by their university experience to the good results which are attained.

To understand the object of the promoters of university extension it is important neither to exaggerate these results nor to depreciate the value of the system. The main purpose is not to educate the masses, but to permeate them with the desire for intellectual improvement, and to show them