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University of Glasgow.

Fundamental Conceptions as to the Characteristics and Embodiments of Life, With Special Reference to Pathology,

BEING THE INAUGURAL LECTURE AT THE FOUNDATION OF THE CHAIR OF PATHOLOGY,

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THE CHARACTERISTICS AND EMBODIMENTS OF LIFE.

I STAND here to give the Inaugural Lecture, as the First Professor of Pathology in this University. It is naturally and legitimately a source of personal satisfaction that I have, without solicitation, been called to occupy this position. In the case of the establishment of a new Chair, however, such personal matters sink into insignificance in view of the interests of the University.

The establishment of this Chair has filled up what has long been regarded as a gap in the University staff. Of the three Universities of Scotland with medical schools, Glasgow has been the last to acquire a Chair of Pathology. Edinburgh obtained its Chair so long ago as 1831, and Aberdeen, through the munificence of Sir Erasmus Wilson, had its Chair established in the year 1882. In regard to this matter there are two remarks which I shall make. The first is that, even without a Chair, the students were not left without instruction in Pathology; and we may even presume that this instruction was counted satisfactory by the University authorities, else the defect would have been sooner remedied. I may even be allowed to lay the flattering unction to my soul which this reflection suggests. Indeed the teaching will suffer no appreciable change by the institution of the Chair.

The other remark is that the delay has been by no means an unmixed evil. It has, to my mind, enabled the Chair to be placed on a more advantageous footing for the practical teaching of the subject than would have been possible at an earlier period. Let me explain this further. This is a great school for training men to practise the art of medicine, and, in the teaching, this object should never be lost sight of. In such a school, what, we may ask, is the function of the Professor of Pathology? It is on the one hand to give to the student some insight into the great principles which underlie our conceptions of diseased action, and on the other to bring him as close as possible to the concrete examples of disease, so that he may see and handle for himself the structures in which disease is manifest. In Pathology the student must always have his principal field of practical study in connection with the *post-mortem* room and museum of a large hospital; and the efficiency of a Professor of Pathology will be largely dependent on the closeness of his connection with such great repositories of material for teaching. The position which I have for some years occupied as, in the first place, Pathologist to the Western Infirmary, which is the great field of clinical and pathological observation for the students of this University, and in the second place as Lecturer to these students, placed me, I think, in a position of great advantage in this respect; and my long tenure of these offices has consolidated and united them in my person. And now the delay in founding the Chair has brought it about that these advantages of the position have been secured for all time coming to the University. The appointment to the Chair is made by a Joint Board representing the University and the Infirmary, and the Professor is, and will be, the Pathologist to the Infirmary. I believe that this arrangement is a better one than in any other

school in this country, and it has been rendered possible, at least in its fully effective form, by the delay in establishing the Chair.

I do not mean it to be inferred here that the field of work of the Professor of Pathology should be limited to the pathological department of the hospital. I know that there are departments of pathology of the greatest importance which require other modes of study. The Professor of Pathology should not therefore be limited to the field of hospital work, but should have at his command laboratories and material for these other departments. But I do make bold to say that, for the practical uses of a great school, and for the actual instruction of students who are going to be practitioners of medicine, the field of pathological observation afforded by a great hospital is the essential requisite. It is, therefore, of the first importance that the Professor of Pathology should have command of this great field, and that not as a casual or occasional tenant, but as the head of the department of Pathology, not only in the University but in the Infirmary.

Closely connected with this is the important desideratum that there should be united under one roof the laboratories and class-rooms required for the study and teaching of Pathology. It is, I take it, a great source of gratification that there is now being erected a building that will contain joint laboratories, in which both the University and the Infirmary shall have their parts, under one roof and under one head, to some extent with overlapping interests, but together forming one Institute for the study of Pathology.

I desire publicly to recognize the enlightened interest which the directors of the Western Infirmary have taken in this matter. They have recognized the practical importance of the subject; and when, before the institution of the Chair, I put before them proposals for the erec-

tion of a laboratory in which there would be accommodation both for the pathological work of the Infirmary, and also for pathological study and research, they readily met my views, taking precautions, however, that the educational part of the establishment should not be defrayed out of the funds committed to them for the care and treatment of the sick. The negotiations between myself and the directors were considerably advanced when the Universities Commission, more than a year ago, founded the Chair, and I had only to retire from the scene and allow the University and the Infirmary to complete the arrangements. There is now in course of erection a building which, I trust, will efficiently fulfil the requirements both of the Infirmary and of the University. If it does not, then I am the person to blame, as it has, in every detail, been under my personal supervision.

In planning this building I have borne in mind that in such a school as this we should aim, not merely at teaching the subject to students, but also at advancing the science by means of original research. Accommodation will be provided in the new pathological institute for competent persons, who have finished their curriculums and obtained their degrees, to devote themselves for a time to pathological investigation. No better foundation for practice can be laid than a few months or years devoted to some pathological subject. The great medical corporations in London and Edinburgh have recognized this by erecting and endowing laboratories which are chiefly devoted to pathological research, and much good work has been done in them, although they have only existed for a few years. A great University ought to be a centre for work of this kind; and I trust that the laboratories now being erected will serve their purpose in this respect.

It is obvious, however, that more is needed than laboratories in order that research may be prosecuted. We need

also men and money. I venture to think that in Glasgow we shall never fail in the supply of men, who, from natural endowment, are fitted for scientific work. But our students are rarely men of fortune, except in ability and energy. It is too much the case that, as soon as the solemn ceremonial of graduation has transformed the student into the practitioner, he has to go forth into the world and find the means of living. It would be an immense advantage to the University, to Medical Science, and no less to the Practice of Medicine, if many more of our young graduates were able to stay with us for a year or two and engage in the work of research; but for this we require endowments. The English Universities and the Medical Corporations in London and Edinburgh have given freely for this purpose. Our Universities have not kept in line, and are bound to suffer in consequence. The Scottish Universities Commission have seen the importance of this matter, and have handed over to the University Courts the duty of founding and endowing Research Fellowships. I am convinced that much of the future of our medical school will depend on the manner in which the Court carries out this trust which has been committed to it. But it must be remembered that the means at the disposal of the Court are limited, and that they may be precluded from doing all that they think desirable by want of money. Whilst believing that it would be a false economy to stint in regard to this essential matter, I would still say that there is here a great opportunity for the generous assistance of any who may have the interests of the University and of Medical Science at heart. By offering opportunities to young graduates to engage in such work, we are, I believe, doing service of the highest kind and of the widest influence.

Let me here add a few words in regard to a department of Pathology which has been much neglected in

this country as compared with France, Germany, and the United States. I refer to the study of the diseases of the lower animals, or Comparative Pathology. The substantial interests which are at stake in the live-stock of this country ought surely to be a sufficient incentive to the study of the diseases of the domestic animals. It would be a worthy action if one of the great Societies in which these interests are represented were to come forward for the endowment of a scholarship or lectureship on this subject. I think I could lay my hands on a man who would suit their purpose. In this city and neighbourhood there is an enormous field for study and research in this department, and it is one which well deserves recognition in a national University.

Gentlemen, it is little more than a year ago that the Royal Society asked the greatest of living pathologists, Professor Virchow of Berlin, to deliver the Croonian lecture. Virchow chose for his theme "The Position of Pathology amongst the Biological Studies." The very title of this lecture asserts for Pathology that it belongs to the group of scientific studies which deal with the problems of life. Pathology concerns itself not merely with the dead structures of disease, but with the vital processes as they go on in the living body. If the facts revealed by pathological anatomy be the principal material for our study of Pathology, it is never to be forgotten that these facts are useful chiefly as elucidating the vital processes in the actual living animal. The problems of life have an essential interest for the pathologist, and we shall find that the fundamental conceptions which lie at the basis of modern pathology are concerned with the questions of the nature of life and the forms in which it is embodied. In this respect Pathology and Physiology are kindred sciences, and in their fundamental conceptions go hand in hand.

We are all familiar with the modern view with which the name of Virchow is specially connected, that life, whether in the animal or vegetable, is embodied in the cell form. As there are animals and vegetables each individual of whom is composed of a single cell, so in animals and vegetables into whose composition many cells enter, each of these cells has a distinct and independent vitality. The human body is thus made up of an immense aggregate of independent units, each of which has in itself all the necessary qualities of life. We are also familiar with the idea that each of these cells has arisen by legitimate succession from a parent cell—that there is no such thing in the building up of the tissues of the body as equivocal generation. All the cells of the body are traceable by descent to the fertilized ovum, which is the ancestral cell of all the tissues. Pathology concerns itself with these independent units; and the morbid processes must all be ultimately traced to changes in the vital characteristics of these units. I propose, in what remains of this lecture, to trace briefly the origin of this conception, and to refer to some of its more modern expansions.

We shall find that, whilst the nature of life eternally eludes our search and is thus insusceptible of definition, there are certain characteristics of living structures which may be used as tests of the existence of life. Of these the quality commonly called Irritability is the most notable. This term, which, as we shall see further on, was first applied to muscle, is now used to designate the fact that each living structure is capable of being brought into some kind of action by the application of a stimulus from without. Just as muscle contracts on the application of a stimulus either directly or through the nerves, so all living structures are capable of some kind of action on the application of the proper stimulus.

The earliest use of the term Irritability is to be found, I believe, in the works of Francis Glisson, an Englishman, who was born in the year 1596 and died in 1677. This modest observer, whose name is enshrined in the so-called capsule of Glisson in the liver, seems first to have suggested the view that muscle contracts on the application of a stimulus by means of its own inherent powers, a characteristic of muscle which he designated Irritability.

This term, however, is much more commonly identified with the name of one who lived a hundred years later, the brilliant Swiss observer, Albert Haller, a man preeminent, not only in the severe walks of science, but also in the brighter paths of poetry. We cannot but admire the amazing industry and faculty of this man who, distinguished above all his contemporaries for the amount of actual scientific work which he did, attained to an almost equally high position in the literary circles of Europe. Haller's services to biology were doubtless very great. They are embodied in his great work on Physiology, written in Latin and published at Lausanne in the year 1757, in eight quarto volumes.

Haller very clearly expressed the conviction that muscles contract by virtue of a power inherent in themselves, and this inherent force he called *vis insita*. He recognized most distinctly that, although the contraction of a muscle follows the stimulation by a nerve, yet the power of the nerve is different and separable from that of the muscle. "The power," he says, "is adventitious to the muscle, whereas the latter is inherent in it."[1] He shows also that this *vis insita* of muscular fibre may be excited by other influences besides the nerves. Thus "it is excited both by the touch of a sharp instrument, and, in the hollow muscles, by inflated air, by

[1] Haller, *First Lines of Physiology*, translated from the third Latin edition, par. 404. Edinburgh, 1801.

water, and every kind of irritant, but more powerfully by electricity than by any other stimulus."[1]

But yet Haller did not carry his conception of irritability beyond muscles and other contractile structures. His notion also of the mode of formation of the animal tissues sounds to us strangely unfamiliar. He asserts that the elements of the solid parts of animals and vegetables, as seen by the most powerful microscopes, are either fibres or laminæ, or an unorganized concrete or glue. He believed the fibres to be formed from the unorganized glue or gluten. "The order of nature seems to be that filamentary fibres are all first formed of this gluten";[2] and again, "It seems, therefore, that an albuminous fluid, mixed with particles of earthy matter, subjected to some pressure whose causes we omit for the present, concretes into fibres."

The views of Haller were much discussed in his time, and much opposed. Amongst his most redoubtable opponents were Robert Whytt, who became Professor of the Theory of Medicine in Edinburgh in 1747, and William Cullen. Cullen was a contemporary of Haller. He was Professor in this University, first of Chemistry and then of Medicine, going afterwards to Edinburgh. He exercised great influence on medical science in this country. His conceptions of the animal body are a retrogression as compared with those of Haller. In his *Institutions of Medicine*, published in the year 1772, Cullen distinguishes two kinds of solid parts in the body, one whose properties are the same in the dead as in the living, and the same in the animate as in many inanimate bodies; the other, whose properties appear only in living bodies. The one he calls "simple solids," and the other "vital solids," and the latter he regards as the fundamental part of the nervous system. Cullen

[1] Haller, *First Lines*, par. 400.

[2] Haller, *First Lines*, par. 14.

was very familiar with Haller's views of muscle and the *vis insita*, and was opposed to them. He calls the muscles the "moving extremities of the nerves," and regards the nervous force and the muscular force as one and the same thing. His view seems to have been that the nervous power, taking its origin in the brain, flows into the muscles; a portion of this power is always in the muscles, and the excitement of the muscular fibre may be increased by an addition of more nervous power. He regarded, therefore, the muscular power as dependent on the nervous, and as not different from it. Indeed he seems to have regarded both of these powers as "having a constant dependence" on the brain, which he took to be the seat and source of the animal power.

From Cullen we pass at once to the name of one whom I regard as the greatest of British pathologists, and as standing in the first rank of biological science in Europe. I refer to John Hunter, whose views of life have not, I think, been sufficiently recognized as having an important bearing on our present position.

Let me here pause for a moment to notice how, in the middle of the last century, this city and neighbourhood were connected with a number of men of outstanding genius in various departments of mental activity. In this University there were, between the years 1755 and 1765, no less than four Professors whose names rank amongst the highest in their respective lines. We had Adam Smith, whose great work on *The Wealth of Nations* is distinguished, not only for its profundity and originality, but for its eminently clear and readable style. There was, first as Professor of Chemistry, and afterwards as Professor of Medicine, Joseph Black, whose theory of latent heat has made his name famous for all time coming. This theory is stated to have had a very important effect on the

researches of James Watt, who also, within the period with which I am dealing, namely, in the year 1764, became connected with this University in the position of Mechanician. The two other Professors to whom I have referred are Cullen, whose views I have already considered, and Thomas Reid, who succeeded Adam Smith in the Chair of Moral Philosophy in the year 1764. His name stands out prominently as the leader and chief representative of a great school of Philosophy.

To the same active period belong the two brothers William and John Hunter, whose biography has been recently placed on a worthy footing by my friend Dr. Mather. For our present purpose it is important to note the intimate connection which existed between Cullen and the Hunters. They were born in the same neighbourhood—Cullen at Hamilton, and the Hunters at Long Calderwood, near East Kilbride. Cullen, before he came into Glasgow, practised in Hamilton, and William Hunter, his junior by eight years, was associated with him in practice for three years. John Hunter was eighteen years younger than Cullen, and though he might from his age have been a student of Cullen's in this University, yet there is no evidence that he was ever within its gates, his only known connection with Glasgow being that he, when under twenty years of age, with generous affection assisted a brother-in-law who had got into difficulties in his business as a carpenter. John Hunter went to London in the year 1748, when twenty years of age, and his work is identified rather with English than Scottish science. The magnificent Hunterian Museum in Lincoln's Inn Fields, London, is a fit commemoration of his name. Our own Hunterian Museum is, in its foundation, the gift and monument of William Hunter, the elder, but the less gifted brother. In connection with the Hunters I ought not to omit to mention the name of Dr. Smellie, dis-

tinguished as an obstetrician, of whom his latest biographer has said, "Of all men, British and foreign, who have most largely contributed to the advance of sound obstetric knowledge, Smellie may justly stand in the foremost rank." Smellie's birthplace was also in our neighbourhood, namely, in or near Lanark.

It will be seen that the west of Scotland, at the period to which I have been referring, was the centre and source of an extraordinary amount of brilliancy in the world of science and philosophy. It is, perhaps, instructive to note that nearly all of these leading minds were drawn away from Glasgow, and that they seem to have regarded this community as an insufficient arena for their energies.

To return from this long digression, we find that John Hunter entered on his work doubtless with some knowledge of Haller's views on Irritability, but with a deeper impress of Cullen's theories, which made the nervous system almost the only vital structure in the body, and the only source of power or action. Hunter, who was no mere theorist and speculator, but one of the most industrious and painstaking observers and experimenters that ever lived, at once turned away from this view of the animal body, and greatly expanded also the limited view of Haller. Hunter had not the advantages of a University education, and, perhaps for this reason, his works are sometimes deficient in lucidity and clearness. There may be other reasons for this, however, as a man who is, with an original mind, probing the secrets of nature finds much that puzzles and daunts him, and that renders it difficult for him to put his views in a categorical form. Thus we find him in one of his lectures bursting out into the following characteristic expression, "Of all things on the face of the earth definitions are the most cursed; for if you make a definition you may bring together under it a thousand things that have not

the least connection with it." Yet, in his views of life, Hunter is sufficiently explicit. He says, for instance, in the Introduction to his great work on the Blood, Inflammation, and Gun-shot Wounds, "I shall carry my ideas of life further than has commonly been done. Life I believe to exist in every part of an animal body, and to render it susceptible of impressions which excite action: there is no part which has not more or less of this principle, and consequently no part which does not act according to the nature of the principle itself."[1] Again, in his Lectures on the Principles of Surgery, which were never published by himself, but were printed from notes made by his hearers, he compares his views with those prevalent before him, in terms which seem to bear a direct reference to Cullen and his views on the nervous system as the sole repository of the animal power. "The principle of life has been compared to the spring of a watch or the moving powers of other machinery; but its mode of existence is entirely different. In a machine the power is only the cause of the first action or movement, and thereby becomes the remote cause of the second, third, etc.; but this is not the case with an animal: animal matter has a principle of action in every part, independent of the others, and whenever the action of one part (which is always the effect of the living principle) becomes the cause of an action in another, it is by stimulating the living principle of that other part. . . . The living principle, then, is the immediate cause of action in every part. . . . Every individual particle of the animal matter, then, is possessed of life, and the least imaginable part which we can separate is as much alive as the whole." Do we not, in these words, seem to be on purely modern ground? and do we not in them see an anticipation of the main outlines of the modern views as to the inde-

[1] *Hunter*, Palmer's Edition, III., p. 2.

pendent vitality of the cellular elements of the body? It is consistent with these views of Hunter's that he attached great importance in pathological processes to sympathy. Regarding the individual parts of the body as possessed of a separate vitality, he looks upon them as affecting one another, and by sympathy taking part in the actions of one another.

It is true that Hunter, in the limitations imposed by the state of science in his day, did not attain to the position which we, more than a century later, have reached. He endeavoured to find out how life came to be embodied in the least part of animal matter, and he came to the conclusion that it was because a particular kind of matter, which was the vehicle of life, was diffused through the tissues, a view which is almost an anticipation of that which a few years ago attained to great prominence, that protoplasm is the great embodiment of life. Hunter thought that this kind of matter was specially present in the blood, and he identified it with the coagulable lymph, which is no other than what we now-a-days call fibrin. We now know that fibrin is in itself a dead substance, and that Hunter was in error in this part of his speculations; but this is to be ascribed rather to the circumstances of his time than to himself.

It is, I think, clear from what I have said, that Hunter not only understood what Haller had advanced, and had, under the terms Irritability and *vis insita*, predicated in regard to muscles, but extended the conception and made it cover the whole tissues of the animal body. It is curious that Hunter did not use the term Irritability in this sense, and even objected to its being so used, apparently because, in the English language at least, Irritability has come to mean an abnormal or pathological excitability in the temper or otherwise of the individual, and Hunter was averse to its employment for the most normal and healthy condition, that

of life itself. It is, perhaps, for this reason that Hunter's views of life in this regard have been so much overlooked in their bearing on the advance of science.

The discovery of the cell form, first in vegetable tissue by Schleiden in 1837, and then in animal tissue by Schwann in 1839, at once fixed and crystallized the views which we have seen to be those of John Hunter. The cells were almost at once regarded as having an independent vitality, and, as these were found to enter into the composition of the body in all its tissues, the conception of local life in the tissues became current.

It was another stage in advance to regard the cells as arising, not from a formative fluid or blastema, as Schwann supposed, but as having their origin in cells. The earliest record of this conception of which I can find evidence is in the works of the late Professor Goodsir of Edinburgh. In the first article in his *Anatomical and Pathological Observations*, published in the year 1845, entitled "Centres of Nutrition," we find an embodiment of the essentials of the existing view. In reading this article it is necessary to bear in mind that, in his own words, "A nutritive centre, anatomically considered, is merely a cell." The conception that all cells are derived from parent cells, is expressed in the following sentences with sufficient distinctness. "The centre of nutrition with which we are most familiar is that from which the whole organism derives its origin—the germinal spot of the ovum. From this all the other centres are derived, either mediately or immediately; and in directions, numbers, and arrangements, which induce the configuration and structure of the being."

It was, however, in the hands of Virchow, who is still the veteran head of Pathology in the world, that these views attained to their proper development and became

applicable to Pathology. His views are embodied in the fullest manner in the celebrated work, *Die Cellular-pathologie*, published in the year 1858. In developing his views, Virchow points out that, although vegetable tissue is to a large extent purely cellular, yet in animal tissues, whilst cells are always present, there is also in many cases an intercellular substance interposed between the cells. This substance arises either by a secretion from the cells or by a transformation of part of their substance, and it is dependent on the cells for its general well-being. Thus he recognizes not only cells but cell-territories, the latter subject to the former.

The vitality of the cells is manifested in their irritability, this term being used very much in the sense of Haller, but with an extended application. The cells present three kinds of activities—nutritive, formative, and functional, and they possess irritability in each of these directions. The first kind is concerned with self-preservation, the due nutrition of the cell and its territory. The second has to do with the production of new tissue, which arises by multiplication of cells. The third, or functional activity, is for each kind of cell, a special action which usually subserves a purpose in the organism as a whole. Muscular contraction and secretion are the most obvious examples of this form of activity. Irritability, or the capability of being brought into action in these three directions, is the test of vitality in the cells. In the domain of Pathology we have simply to do with variations in these different kinds of activity, and chiefly in the direction of excess and defect. The whole of Pathology may be included in defect or excess in nutrition, formation, and function in the active tissues and their cellular elements.

The cells, active and irritable in these three directions, do not arise, as Schwann conceived, by some kind of deposition or aggregation of particles in a fluid or

blastema. Each cell has its parent cell, and all are derived by a direct line of descent from the single parent cell of all, the fertilized ovum. Hence Virchow's great aphorism, *omnis cellula e cellula.*

In regard to the structure of the cell, there are apparently only two essential constituents—the nucleus and the cell-contents or protoplasm. Of these, the nucleus is the more important, as it subserves two activities, the nutritive and the formative, whilst the protoplasm is concerned with the special function of each cell.

Having thus, as briefly as I am able, brought the subject up to the time when Virchow published his great work, I desire now to refer to some of the more recent advances which have been made on the same lines.

I have already referred to the nucleus of the cell as the more important constituent. The position of the nucleus has been greatly elucidated by the researches of a number of observers, of whom the principal are W. Flemming of Kiel, and Strassburger. From these observations, it appears that in the new formation of tissue by division of cells, not only does the nucleus take the leading part, but that it goes through an interesting and striking series of changes. The resting nucleus, with its obscure fine fibrous network, transforms itself into an active body, in which the fibres, becoming thicker and more prominent, go through extraordinary movements and arrangements till they separate into two groups, each of which becomes the nucleus of a separate cell. This method of nuclear division, which has been called Karyomitosis, or indirect division, as contrasted with the direct division of Remak, has been now observed in so many growing tissues that it seems to be driving the direct method entirely from the field. Karyomitosis has been observed in pathological new formation no less than in normal growth, and the identity of the two has been

thus fully established. In all quickly-growing tumours, where, as in a growing normal tissue, the process of cell-multiplication is so active that there is a reasonable expectation of finding examples of the process in actual progress, we find ample evidences of this special form of nuclear activity.

I may here remind you that the nuclei of tissues are readily brought out and rendered prominent by certain methods of staining or dyeing. Carmine is the dye-stuff originally used for this purpose. But histological research has received extraordinary assistance from the use of the aniline or coal-tar dyes. The number of these is legion, and much industry has been expended in experimenting with them in various combinations and under various circumstances, with the result that our knowledge of the cells, and especially of the nuclear processes, has been greatly advanced. It is by means of these aniline dyes that Flemming and others have been enabled to demonstrate the processes of nuclear division.

The importance of the nucleus in relation to nutrition has been further shown in the interesting fact that where, in the living body, a piece of tissue dies, or, in pathological language, there is a necrosis of tissue, the nuclei disappear, or at least become inaccessible to those dyes of which I have been speaking. This is so much the case that the disappearance of the nucleus, although not occurring instantaneously on the death of tissue, may be taken as a test of the existence of a local necrosis as an actual circumstance during the life of the individual. The demonstration of this fact belongs to one of the most distinguished of living pathologists, Professor Weigert of Frankfort.

The importance of the living cell in pathological processes has received further exemplification from the admirable researches of Metchnikoff. I cannot indeed subscribe to all the doctrine of this indefatigable and

resourceful observer, and, more especially, I cannot agree with his endeavour to reform our use of the term inflammation, but I must admit the beauty and ingenuity of his observations and the soundness of many of his deductions. I cordially acknowledge also that his study of pathological processes in the lower and simpler forms of animal life has opened up a sphere of work of the utmost promise. Metchnikoff's observations have regard to the relation of the living cells of the body, to the intrusion into the body of deleterious and other extraneous matters, and more especially to the intrusion of those minute microscopic organisms which we call bacteria or microbes. It is well known now to everybody that a large number of diseases are produced by the invasion into the living body of hosts of these minute living cells, some of which have the faculty of evolving virulent poisons, and by means of these producing pathological changes in the tissues. We are not much more than at the threshold of this great subject of Bacteriology, whose creation as a science we owe to the great French chemist and biologist, M. Pasteur, but it has already borne much practical fruit, and daily promises more. In Metchnikoff's view the invasion of hostile microbes is, in many cases, met by a mustering of living cells with a view to the protection of the body. It is well known that living cells, and especially certain kinds of cells, are capable of taking into their substance solid particles of matter. Many unicellular animals live by englobing solid nutritious particles and digesting them in their protoplasm. In the higher animals the leucocytes of the blood and lymphatic fluid are the principal possessors of this power of taking up and dealing with solid particles, although it is not limited to them. It is asserted then, that when the body is invaded by microbes which are capable of producing disease, the cells, in most cases the leucocytes, meet them and endeavour,

by englobing them and digesting them, to dispose of them. There arises in this way a struggle for existence between two different kinds of cells, namely, the microbes and the leucocytes or other animal cells—a struggle which Virchow has somewhat humorously called a *Kampf der Zellen.* If the cells of the body are successful, then the disease is arrested, but if the microbes are able to survive in sufficient numbers, then the disease goes on. Now, I am not prepared to admit that Metchnikoff's doctrine of phagocytosis is to be regarded as a full and complete explanation of all the facts concerned. There is a great army of busy workers engaged in bacteriological investigation, and we are not yet able to assign their due position to phagocytes, antitoxins, etc. But there is no question that Metchnikoff has much advanced our knowledge by pointing out this important function which undoubtedly is possessed by many cells. It may here be added that this is an example of functional activity in the cells, and, like other functional actions, it resides in the protoplasm, whilst the actions of nutrition and formation have their seats in the nucleus.

I may now take a further step in regard to the activities and vital characteristics of the cells. I have hitherto spoken of cells in general, and, except in the case of leucocytes, have not specified any particular kinds of cells. But when we speak of function we come at once to deal with the differences amongst the cells. How comes it that, as the whole cells of the body are derived from a single parent cell, there is such an immense variety in the product? The nuclei of cells, concerned with nutrition and formation, show a remarkable similarity in all the different sorts, whereas the cell-substance or protoplasm, concerned with function, shows great variety in form and constitution. How comes it that from the one parent there spring cells which are so different as those of the liver and of bone,

of the brain and of muscle? We see in the growing embryo that the cells pass regularly into their places, and with steady industry proceed to build up the tissues in regular sequence with all their different characteristics, a process which seems altogether miraculous and mysterious.

In pathological processes the differences in functional activity of different kinds of cells, or, in other words, of different forms of tissues, are frequently exemplified. If we take it as an important function of cells to control the growth and multiplication of other cells, whether those of microbes or of growing tumours, then we shall find that in this respect the different tissues of the body show strange differences. I have elsewhere pointed out some of the facts bearing on this, and will here allude to one or two of them. A cancerous tumour consists essentially of multiplying epithelial cells, which in certain situations multiply by karyomitosis with great vigour. From the primary tumour there are frequently carried out grafts or sprouts which are planted at a distance from the primary growth. If these offsets, which no doubt consist of cells from the tumour, perhaps in association with other cells foreign to the body, get into the blood, they are planted up and down the body by the blood-vessels in the most varied organs and tissues. But there are most marked differences in the way they are received and treated by the organs. In the liver, for example, the cancerous structures will mostly grow till you may have much more cancerous tissue than liver tissue. On the other hand, in the lungs there is commonly very little growth. There are often in the lungs evidences of the implantation, but there are also evidences that the growth has been controlled. There are other similar contrasts, say between the bone-marrow and the kidneys, and so forth; but I need not seek for further illustration. It is curious that,

in regard to another disease, the liver and the lungs present a contrast, but precisely in an opposite sense. I refer to tuberculosis. This disease, as everyone knows, is due to one of the pathogenic microbes of which I have already spoken. If this microbe gets into the blood it is implanted, often in enormous numbers, throughout the body, but with the most various results. In the liver, for example, there is microscopic evidence not only that it has been implanted, but that it has been caught more abundantly than in any other tissue; but the evidences of this are microscopic, and the resulting lesions are so insignificant that even though these are present in vast numbers there is usually no alteration visible to the naked eye, and probably no considerable interference with the function of the organ. On the other hand, in the lungs there are evidences that the microbe has grown freely, and wherever planted has produced manifest results.

It will be seen that in relation to different causes of disease the various tissues of the body exercise the most markedly different influences, even though the cells constituting these various tissues have originally sprung from the same cell. This difference in regard to such an important function is not limited to the various tissues of the same species of animal; but we find, when we compare different species of animals, that even the same organ or form of tissue may present marked differences in relation to such causes of disease as those which I have referred to. For example, we have seen how in man the liver is an inhospitable host to the bacillus of tubercle. But it is not so with the liver of the ox or the guinea-pig. In them this bacillus flourishes and produces, in a marked manner, the characteristic lesions. Of similar import is the fact that if we take any one of the pathogenic microbes we shall find that different species of animals present very varying degrees of sus-

ceptibility. Even in the case of such a wide-spread and malignant agent as the bacillus of anthrax, there are all varieties amongst the various species, from immunity, as in the frog, up to extreme susceptibility, as in the mouse and guinea-pig. This variation in susceptibility applies not only to species, but to varieties and races of animals and men. It is well known that the white rat presents an almost complete immunity to anthrax, and that Algerian sheep are much less susceptible than the other breeds. A similar fact is that observed in man, in respect that negroes are, as compared with white men, singularly insusceptible to yellow fever.

If we regard all these variations in function of the various organs, and of the same organs in different animals, as dependent on variations of cellular action, then we have to inquire how such variations have arisen. Well, so far as I can see, it is a matter of hereditary transmission. The earliest animal to be formed presumably consisted of a single cell, and in its reproduction, by simply dividing into two, it would transmit its qualities to both of its descendants. As complexity of structure was evolved, and organs and tissues were differentiated, then the cells concerned in transmission had to bear in them implicitly the various kinds of tissue. Variations in the structure and functions of the individual tissues became, no less, the subject of transmission from parent to offspring. There is nothing more certain than that, taking alone the case of diseases due to the invasion of microscopic organisms, variations in susceptibility, whether they concern species, race, or even family, depend on transmission by inheritance more than on anything else. I have worked out this subject somewhat fully in an address which I delivered in the Glasgow Medico-Chirurgical Society, and published in the *Lancet* in January, 1888, and I will not attempt to illustrate it further here.

The principal key to the varying susceptibilities to disease of whatever kind presented by different animals and different individuals is to be found, then, in transmission by inheritance; but in this also lies the key to much else in the physical constitution of each individual. If we regard the constitution of a man as the sum total of the various particulars of his bodily frame, then we shall find that each item in the constitution is a matter of inheritance, and by necessity of cellular activity. Not only does inheritance determine the greater and more common features of an animal's constitution, but it condescends on the most minute particulars. It is by hereditary transmission that we belong to the great division of the animal kingdom—the vertebrata, and to the genus and species *homo*; but it is also by inheritance that we have the various racial, family, and individual characteristics by which we are distinguished one from another. If we examine these more individual characteristics we shall be struck with the extraordinary minuteness of detail to which this force extends. This is best seen, perhaps, in those slight deviations from the normal type which are most readily recognized and distinguished, such as variations in the fingers and toes. Nothing is more definitely hereditary than supernumerary digits and such things as webbing of the fingers or toes. We find also small variations in the coloration and distribution of the hair to be transmitted by inheritance. The individual man, in all the minute particulars of his frame, is compounded of items derived from parent or ancestor. When we consider the physical process of hereditary transmission, this fact fills us with wonder, and makes us almost shrink from any attempt at an explanation of it. It is proper, however, that we should here more definitely state the problem, and consider such explanations as have been offered.

The problem is one of cellular activity. When the

fertilized germ cell enters on its career of development, it has in it implicitly all the future bodily conformation of the individual. It has, as it were, an idea or image, or model, after which it aims, and which in its utmost detail is already preconceived in the single cell at the very outset of its course. I do not ask here how we are to explain this, because it is, I think, utterly beyond our powers of conception ; but I ask more humbly, how we are to find any means of embodying the problem. Is this idea or image a mere immaterial force, and has the ovum something equivalent to a mind or soul which can hold such an image and work it out? Or have we to go beyond the cell form, and to believe that there is an actual material record in the cell of these various particulars of which the future body is to be made up? To my mind, the latter suggestion is the only thinkable one. I cannot conceive of a cell containing in itself such an idea as I have endeavoured to indicate without this idea having a material embodiment. I cannot conceive, for instance, to take an actual example, that such a deformity as the union or adhesion of two toes on each foot should be transmitted from a man to his grandson, although suppressed in the intermediate generation, without this particular being registered in some material form, and so preserved and perpetuated.

The merit of first seeing clearly and stating the problem (because I do not think they ever supposed they were going beyond that), belongs to two distinguished Englishmen, Herbert Spencer and Charles Darwin. They saw that, for the transmission of such particulars as we have considered, the existence of material particles or units is necessary, and they tried to conceive how such particles might possibly exist and be arranged. Hence arose Spencer's idea of "physiological units," and Darwin's more celebrated doctrine of Pangenesis, which designated the particles as gemmules. A third Englishman, Francis

Galton, whose works generally show much insight into the problems of biology, saw still deeper into the problem we are now concerned with. He rejected the idea that the gemmules circulated in the blood, and asserted that they were to be looked for in the germ cell as primarily formed.

It is, however, by the distinguished German zoologist Weissmann, whose name at once suggests serious divergences of opinion, that the problem has been seriously and systematically attacked. It is not possible, at the close of this long discourse, to give anything approaching to an exposition of the elaborate and thorough attempt which this author has made to state and solve this great and difficult problem. Suffice it to say that, according to Weissmann, the nucleus of the cell is not such a simple body as has been usually supposed, but that in the case of the germ cell it contains particles or vital units which represent, and in a measure embody, the various particulars of the future individual. These particles are not in any sense the minute representations of the future structures, but they are living and vital units which have the power of determining the course of events in the process of development. The whole theory is worked out by Weissmann in the greatest detail in his various works, but most fully and systematically in his latest treatise, entitled *The Germ-Plasm.* Now, I am far from saying that this theory is to be accepted as an explanation satisfactory in every way of this difficult problem, but what I do say is that we have here a clear and direct statement of the problem and a deliberate and fair attempt to find a solution. I will reserve for the class-room any further exposition of the theory, but I will say here that the manner in which Weissmann has worked out the problem in detail in the various departments of biology is a wonderful exhibition of industry and insight, and that where he

touches on ground with which I am personally familiar, his treatment of the facts is to me in every way satisfactory, and affords at least a provisional explanation of what had long baffled me. For I may state here that, in several published addresses, I have dealt with this subject of heredity, pointing out how, in respect to both normal and pathological structures, inheritance condescends on the minute particulars of our bodily constitution, and that I did so with only a vague knowledge of Weissmann's views, and without any reference to them. It is only just to him to say that his theory offers to my mind a solution of the difficulties which my own reflections had raised up.

There is one point in regard to this matter which calls for a moment's further consideration. If the particulars of the future individual are represented by minute particles in the nucleus of the primary cell, is there actually room in this microscopic object for such a vast number of units? This is a question which would lead us too far even to enter on it in the most cursory fashion. We have in our midst one whose scientific imagination has enabled us to realize the extraordinary activity of the molecules of ordinary matter, and who has also endeavoured to calculate the probable size of these molecules. Lord Kelvin, by four different lines of reasoning, has estimated the diameter of a molecule of matter at from the millionth to the ten-millionth of a millimetre. If this be a true estimate, and even if we take the vital unit in the nucleus to be a complex particle containing a thousand molecules of matter, then there is still room in the nucleus, according to Weissmann's calculations, for a sufficient number of units to represent the particulars of the future body.

Gentlemen, it will be seen from this rapid survey that our conceptions of life have advanced some distance beyond the position of Virchow in his great work on

Cellular Pathology. We still regard the cells as the active units in the living body, concerned in the building up and maintenance of the tissues, and the seats of all the changes occurring in disease; but we look now more clearly into the varying endowments of these units and the sources of these endowments. Metchnikoff has done service in this line by tracing, in different grades of animal life, the powers of the living cells in their function of meeting and dealing with external agents, and Weissmann has indicated how these functions may possibly be transmitted from one generation to another. This has carried us beyond the cell form, and has led us to suppose in the nucleus of the germ cell, and in varying degrees in other cells, still more minute vital units, in which are embodied the forces of life. Each individual has, let us say, his own constitution, made up of a multitude of particulars, each of them represented in the single cell from which he was developed. These particulars of his constitution have their pathological manifestations in differences of susceptibility and tendency to particular forms of disease, and in differences in the powers of vital resistance to the agents which cause disease. These are all practical considerations; and thus it is that Pathology, in this as in other instances, having its foundations on the deepest problems of life, is also in touch with the everyday experiences of the medical practitioner.

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PROGRESSIVENESS OF THE SCIENCES.

A LECTURE

DELIVERED AT THE

OPENING OF THE WINTER SESSION OF THE UNIVERSITY OF GLASGOW,

NOVEMBER 2, 1875.

BY

JOHN CAIRD, D.D.,

PRINCIPAL OF THE UNIVERSITY.

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LECTURE.

GENTLEMEN,—As on former occasions, I think it best to leave over to the close of the session any reference to the incidents of our University life, and to devote the opening lecture to some subject of a more general character. Last session the topic on which I took leave to address you was "the Unity of the Sciences,"—the relation, that is, of the various departments of knowledge to each other as parts of one organic whole. It may be said to be the peculiar function of a University to teach *science*, or the universal element in human knowledge; and, again, University teaching has this as a further characteristic of it, that it visibly represents the systematic unity of the various departments of knowledge, not merely by the juxtaposition of their teachers in a common seat of learning, but by the subjection of the whole

work of education carried on within its walls to a common idea or system. In short, what according to this view lends distinctive significance to the name University is, that it is an institution which teaches, or professes to teach, what is universal in all departments of knowledge, and each separate department in its relation to universal knowledge.

It is to another characteristic of the sciences, which concerns us no less than their unity, that I purpose to-day, for a few minutes, to direct your attention — I mean, their *progressiveness*. The history of human knowledge is a history, on the whole, of a continuous and ever-accelerating progress. In some of its departments this characteristic may be more marked and capable of easier illustration than in others. External accidents, affecting the history of nations, may often have disturbed or arrested the onward movement, or, even for a time, seem to have altogether obliterated the accumulated results of the thought of the past. But on the whole the law is a constant one, which constitutes each succeeding age the inheritor of the intellectual wealth of all preceding ages, and makes it its high vocation to hand on the heritage it has received, enriched by its own contributions, to that which comes after. In almost every department of knowledge the modern student begins

where innumerable minds have been long at work, and with the results of the observation, the experience, the thought and speculation of the past to help him. If the field of knowledge were limited, this, indeed, would, in one point of view, be a discouraging thought; for we should in that case be only as gleaners coming in at the close of the day to gather up the few scanty ears that had been left, where other labourers had reaped the substantial fruits of the soil. But, so far from that, vast and varied as that body of knowledge which is the result of past research may seem to be, the human race may, without exaggeration, be said to have only entered on its labours, to have gathered in only the first fruits of a field which stretches away interminably before it.

Now it is this condition or characteristic of human knowledge, which constitutes the inspiration and the ever present stimulus of intellectual effort. Without its quickening influence, thought and research would lose half their charm. If we cannot assent to the paradoxical notion of some thinkers that the chief value of knowledge is not in the possession, but in the pursuit of it; if there are few who would endorse the well known saying of Malebranche, "If I held truth captive in my hand, I should open my hand and let it fly, in order that I might

pursue it again;" yet this much may be conceded, that the known, the mastered and established facts of knowledge, derive a great part of their value from their relation to the unknown and the undiscovered. As we review the history of science, we are impressed by the fact that the greatest discoveries, however important in themselves as a contribution to human knowledge, have been incalculably more important, as stepping-stones to subsequent and still greater advances. And we in turn, in our day, feel in our intellectual labours the power of the future pressing on us. It is the new hopes that are ever arising in us in the search after truth; it is the stir of unresting endeavour, the impossibility of stationariness or stagnation, the excitement of enquiry, the wonder and delight of new ideas, of the world of thought breaking upon us with the ever-unabated charm of novelty; it is the sense of ever-growing power, the ever-increasing amount of our intellectual possessions, and the prophetic glimpses of richer, yet still unappropriated, treasures that lie beyond us; it is, in short, this atmosphere of progressiveness which lends a peculiar interest and attractiveness to the vocation of the student and the searcher after truth. To few, indeed, is it given to be great discoverers or original thinkers, to know, by experience, the delight of the mind on which some great result of thought or investigation

—a new law of nature, or speculative principle, or conception of creative imagination in the realm of art—comes, now, perhaps, dimly foreshadowed, now shaping itself into dawning, deepening fulness and distinctness of outline, at length grasped with the firm sense of realised certainty of possession. But though this peculiar experience is that only of the few, we can all, at least at second hand, share in the stimulus which the thoughts and discoveries of the higher and more gifted minds afford; and the humblest labourer in the field of science may feel himself partaking in the common movement, and in the intellectual activity of his own mind responding to the unresting activity which pervades the world of thought.

The immediate duty, it is true, of the great majority of those whom I address is that, not of discoverers, but of learners. Whether in future years it shall be given to any of us to rise to the rank of original thinkers or investigators, or we must be content to belong, at best, to that of the receptive and transmitting order, to whom is allotted the humbler office of being the conductors or interpreters of thought to the common mind,—in the meantime, at least, our work is to gain, by the aid of skilful teachers, some acquaintance in various directions with the extant body of knowledge, with the

languages and literature of the past, with the facts and principles concerning the outward world of nature or the inner world of mind which have been found out and established. But even here, in this our proper vocation of students and learners, we may and do get the benefit indirectly of that spirit of progressiveness which is the life of science. If not immediately acting on your own minds, it acts on you through your teachers. Though not directly controlling your own aims and enquiries, it is reflected upon you in the intellectual atmosphere in which you daily breathe, in the living power and influence which ever penetrates the instructions of a teacher who is abreast with his science and seeking by his own investigations to contribute to its progress. Universities, especially universities constituted as our Scotch Universities are, are places where a body of men are, for the most part, withdrawn from all other work but that of study and thought, to whom knowledge is a profession, with ample leisure for prolonged enquiry, each in his special department, and a command of the best appliances for private research. Such places ought to be, and I am happy to think that our Universities have generally been, centres of intellectual activity. Seldom, if ever, have their professors been content to be mere routine teachers of stock ideas or transmitters of accepted traditions; but they have

added to, and greatly helped, the function of communicating, by the other and higher function of extending the bounds of knowledge. I need not recall the names of Scotch professors whose contributions to literature and science and philosophy have given an impulse to the thought of former times; and the ancient fame of this University amongst others is in our own day by no means likely to suffer for lack of productive activity on the part of its teachers. Now, what for my present purpose I wish to say with reference to this fact is, that though the function of the original thinker and investigator and that of the teacher are distinct, yet the latter ever derives from the former a great access of power—a power which, in the most elementary work of the class-room, will be sure to tell. It is not merely that the daily presence of a man eminent in the department he teaches has an insensible influence on the minds of the students which *he* can never exert who works merely from hand to mouth, knowing little more of his science than he daily doles out to his pupils; but it is that the man who speaks from a full mind, with a complete mastery of his subject and a genuine enthusiasm for its advancement, whose own powers are kept at their highest tension by original and exhaustive enquiry, will infuse into the ordinary routine of instruction a spirit and life, a freshness

and ardour, which a commonplace mind can never communicate. It is, in one word, that the teaching of such a mind will transmit to other minds that with which it is itself penetrated—the power of that progressive spirit which is the life of science.

But now, passing from these general considerations, is it in point of fact true, it may be asked, that progressiveness is the universal characteristic of human knowledge? Are there not departments of study in which the productions that approach nearest to perfection are to be found, not in the present, but in the past, so that what is left to succeeding ages is only the endeavour to imitate those exquisite works of the genius of antiquity which it can never hope to excel? Are there not again, it may be asked, some subjects with respect to which experience proves that the mind of man can make little or no advancement beyond the point reached at a very early period by one or two master minds of ancient times; and others in which the period of greatest illumination for the human mind was more than eighteen centuries ago, nay, in which the very organ of knowledge has for ages been an unused faculty, and wisdom at this entrance quite shut out? If we look only to the domain of the physical sciences, we see that here modern times are at an immense distance in advance of ancient; and there are obvious reasons on which

we may base the conviction that the progress of these sciences will be still greater and more rapid in the future. As the number of observers increase and, with that, the possibility of the subdivision, comparison, and correctness of observation; as methods of investigation improve, and the application of science to the mechanical arts leads to the construction of instruments more delicate and incalculably adding to the power of observation; and still more significantly, as province after province of science is reduced to a condition of generalisation, to which mathematical processes of reasoning can be applied; it is impossible that man's knowledge of the inexhaustible realm of nature should not go on in an ever increasing ratio.

But, whilst from these and other causes, in the domain of Physical Science, each successive generation is surely destined to advance by rapid strides on the attainments of its predecessors; there are other departments of mental activity, in which neither experience nor the reason of the thing, it may be said, leads us to look for the same progressiveness. Can we ascribe it to the same extent, or indeed at all, to Literature and Art, to Philosophy, to Theology? Is it to modern or ancient times that we look for the most perfect masterpieces of purely literary art? Has language ever afforded a medium of expression, at once so varied

and so accurate, so subtle and refined, lending itself with such infinite flexibility to the most delicate distinctions of thought, and to the endlessly diversified tones of feeling and fancy, clothing with aptest forms the severest dialectic of philosophy, and the most glowing and impassioned inspirations of epic or dramatic genius—has language ever afforded a more perfect instrument of thought than that which, though dead, yet speaks to us from the lips of the orators and poets, the historians and philosophers of ancient Greece? Not to speak of their historic value, or of the substantive excellence of their contents, when we wish to place before the student of our day models of finished and faultless excellence in form and expression, examples by which he can be trained in the principles that regulate the formation and structure of language, the precise and accurate use of words, the delicacies of style, the simplicity, the terse conciseness, the measured rhythmical sweetness, the elevated grandeur, the sustained force and vivacity of which human speech is capable,—is it not the fact that we pass by all the treasures of modern literature, to put into his hands, and bid him spend laborious days and nights in mastering and appreciating the works of the great writers of classical antiquity? And the same observation applies to some extent also to ancient art in general. Are not the remains of

Greek sculpture and architecture the envy and the despair of modern artists? Is not much, at least, of modern art only an endeavour to reproduce with laborious imitation the lines and forms of those works which were flung forth, with the spontaneous ease and exuberance of genius, from the creative spirit of Greek and Roman art?

If, again, we turn from Art to Philosophy, to some it would seem as if here too we have an exception to the alleged progressiveness of human knowledge. To outsiders at least, it will be said, it looks as if not much has ever come of metaphysical speculation. Is not the history of speculative thought, it may be asked, a record of endless motion without advancement? Each successive age do we not find the old divisions and controversies reproduced without apparently any nearer approach to definite results? Are not philosophers still disputing about the same questions on which Plato and Aristotle thought and reasoned? Idealism and empiricism, materialism and spiritualism, dogmatism and scepticism, utilitarianism and intuitionalism—do not these various schools of thought find their advocates in modern times, each as eager and earnest, as thoroughly convinced of the absolute and exclusive truth of his own standpoint, as the representatives of precisely the same schools in all past times? And if there be any one school that is, more than

another, the fashion of our day, that can claim a wider consensus of opinion than others, is there not a strange irony in the fact that that is a school which makes it the business of philosophy to prove that philosophy is an impossibility, that the necessary limits of human thought preclude all knowledge of the supersensible, and that the attempt to grasp absolute truth is a delirium or a dream?

Now, however plausible such representations may sound to the popular ear, I think it would not be difficult to show that they are fallacious and superficial. Neither Art nor Philosophy, nor, I will add, Theology, constitute any exception to that law of progress which conditions all human knowledge. That I may not trespass too far on your indulgence, I will leave over for the present what might be said on Art and on the still more delicate and perilous subject of Theology, and in the few minutes that remain to me, confining myself to only one of the above-named departments, I shall try very briefly to show that the much maligned science of Philosophy can justly claim to be a progressive science.

The doubt or denial of this claim, whether tacit or avowed, is grounded, as I have just said, on the never-ending succession of opinions and systems issuing in no definite and universally established results, which seems to characterise the history of metaphysical speculation. Each new system purports

to have reached the secret of the universe, and denounces all previous explanations as futile. Yet each in turn, after attracting more or less attention, meets the universal fate—succumbs to some newer, yet equally transient attempt to construct a perfect philosophy. Where then, in this restless flux of opinion, can we discern any sign of definite progress? Amidst the diversity and conflict of systems, how shall a plain and unsophisticated enquirer determine which is true, or whether the pretensions of the last and newest system are better grounded than any of those which it claims to supersede?

Now, in the first place, I think it necessary to remark, that a plain and unsophisticated observer is not, in this case, a competent judge. Whether Philosophy has progressed or not, whether beneath the appearance of incessant change there has been a silent and steady advance of thought, is a question which cannot be determined by outsiders. In no case, indeed, can science be adequately appreciated from without; but of all branches of science, Philosophy can least suffer its acquisitions to be tested by external criticism. In the case of the physical sciences or the mechanical arts, dealing as they do with sensible facts and phenomena, or appealing to material results bearing on the outward utilities and enjoyment of life, there is a possibility,

up to a certain point, and in a certain gross, rude way, of their progress being tested and recognised by the popular mind. But Philosophy has its peculiar domain in a region altogether remote from popular observation, in the region of thought, of ideas, of the ultimate and invisible principles of things. Its objects are not discerned by the senses, capable of being represented to the imagination, or realised by the natural shrewdness or ordinary good sense of the world. It demands for its prosecution a power of abstraction, of generalisation, of speculative insight, which is not given to all; and an intellectual self-restraint, and superiority to outward illusions, which few are capable of yielding to it. Strait is the gate and narrow is the way that leads to this kingdom, and few there be that find it. Yet, it would seem as if, even more than the other sciences, Philosophy is expected to make its results palpable to the ordinary and unscientific mind—to stand and be judged by that generalisation of common ignorance which we designate "common sense." Common sense is never allowed to sit in judgment on mathematical investigations, on a process involving delicate experimental analysis, on the correctness of a medical diagnosis, on a question of comparative philology or ethnology. In these cases uninstructed shrewdness is not offended to find that

the language of science is to it unintelligible, its methods and processes an utter blank. Yet ordinary intelligence is somehow supposed to be quite adequate to the work of estimating the methods and results of a science, the most recondite of all; takes upon it to flout at what it calls the jargon of metaphysics, and is credited with wisdom in treating the results of speculative research as mere moonshine. Also, it is to be remarked that, from the remoteness of philosophy from ordinary thought, arises another difficulty with which it has to contend and a further hindrance to the recognition of its substantial results. Here, more than elsewhere, science is subjected to the presence of impostors, whilst here it is less easy than elsewhere to detect and expose them. There are many who give themselves the air of metaphysicians and psychologists with whom philosophy has nothing to do, yet the discredit of whose crudenesses and absurdities, in the general judgment, philosophy is often made to bear. All sciences, indeed, are more or less exposed to the intrusion of pretenders and charlatans; and in science, no more than in any other sphere of human activity, is it possible to prevent, occasionally, an element of nonsense from creeping in. But this is an evil which, from the nature of the thing, is more common in philosophy than anywhere else.

For, though its province is in one sense remote, in another it is near and familiar. Though not many can grasp it, all, or almost all, can talk about and dabble in it. It deals with mind, with ideas, with the principles and processes of thought; and everybody has in his possession, at least implicitly, the subject matter with which it concerns itself: everybody has, or thinks he has, a mind and ideas. And so, mistaking the familiar for the intelligible, without science, culture, or discipline, multitudes who are shut out by conscious ignorance from other sciences, have thought themselves entitled to rush into this field. The literature of philosophy is thus exceptionally beset by extravagances and vagaries, by crude observations, ill-sifted notions, and baseless theories—in short, by the element of nonsense. From which it arises that people who have no liking for the subject, or who have caught up a prejudice against it, find ready to their hands a thousand illustrations of the uselessness and unprofitableness of metaphysics. But, surely, if we would estimate the true value and solid results of philosophy, we should begin by brushing off this foreign and parasitical element. If controversies about the squaring of the circle or the perpetual motion are not to be set down to the discredit of mathematical or mechanical science; if the pseudo-science of Astrology, or the dreams of

alchemists and Rosicrucians, are not suffered to abate our respect for the sober investigations of Astronomy or Chemistry, why should a like careful discrimination not be made when we come to consider what is or is not included in that body of truth for which philosophy is responsible? The history of philosophy is indeed rife with conflicts and controversies; but the senseless quarrels of camp followers and hangers-on have no bearing on the great controversies of nations, nor even on the issue of a single campaign.

But though it is impossible outside of Philosophy to demonstrate its reality and its progress—though, in other words, it is only a knowledge of philosophy that can qualify us for appreciating its progressive character; yet, waiving for the present other points, there is one general consideration with respect to the history of this science which, even without this deeper knowledge, may help us to see how there may be real progress here despite that appearance of fluctuation, that absence of settled results, to which I have referred. And that consideration is simply this, that the highest kind of progress is not progress by addition or accumulation, but progress by *development*, and development implies the perpetual transmutation of the past. There is one kind of progress which consists simply of addition of the same to the same, or of the external accumulation of

materials. But increase by addition, even though it be ordered or regulated addition, is not the highest kind of advancement. Pile heap on heap of inorganic matter, and you have a result in which nothing is changed; the lowest stratum of the pile remains to the last what it was at the first, you keep all you ever had in solid permanence. Add stone to stone or brick to brick, till the house you have built stands complete from foundation to copestone; and here, though in order and system there may be a shadow of something higher than mere quantity, there is still only addition without progress. You have here also what the superficial mind covets as the sign of value in its possessions—permanent results, solid and stable reality. Every stone you place there remains to the last cut, hewn, shaped, in all its hard external actuality, what it was at the first: and the whole edifice, in its definite outward completeness stands, it may be, for ages, a permanent possession of the world.

But when you turn from inorganic accumulation or addition of quantities to organic growth, the kind of progress you get is altogether different. Here you never for a single day or hour keep firm possession of what you once had. Here there is never-resting mutation. What you now have is no sooner reached than it begins to slip away from your grasp. One form of existence comes into being only to be

abolished and obliterated by that which succeeds it. Seed or germ, peeping bud, rising stem, leaf and blossom, flower and fruit, are things that do not continue side by side as part of a permanent store, but each owes its present existence to the annulling of that which was before. You cannot possess at one and the same time the tender grace of the vernal woods and the rich profusion of colour and blossom of the later growth of summer; and if you are ever to gather in the fruit, for that you must be content that the gay blossoms should shrivel up and drop away. Yet though, in organic development you cannot retain the past, it is not destroyed or annihilated. In a deeper way than by actual matter of fact presence and preservation, it continues. Each present phase of the living organism has in it the vital result of all that it has been. The past is gone, but the organism could not have become what it is without the past. Every bygone moment of its existence still lives in it, not indeed as it was, but absorbed, transformed, worked up into the essence of its new and higher being. And when the perfection of the organism is reached, the unity of the perfectly developed life is one which gathers up into itself, not by juxtaposition or summation, but in a far deeper way, the concentrated results of all its bygone history. And by how much life is

nobler than dead matter, by so much are the results and fruits of life the manifestation of a nobler kind of progress than that which is got by the accumulation of things which are at once permanent and lifeless, and permanent *because* they are lifeless.

Now, the claim of philosophy—a claim asserted by its greatest modern representatives—is that the history of speculative thought, like the whole history of man, of which it is the highest form and expression, is not a record of an accidental succession of opinions, but a development—the evolution through definite stages of an ever-growing organic life. Philosophy does not advance by mere empirical addition of fact to fact, and opinion to opinion; but its history is that of a process, a systematic development, each step of which, though true, is not the absolute truth, and therefore yields to and is taken up into another and higher in the dialectic movement of the thought of the world. And, as in the process of physical life, each successive phase and form, though it seems to be the subversion, is only the deeper realisation of that which preceded it. The first step, like the germ, contains ideally and implicitly the whole subsequent development; and the last, in the fulness and riches of its life, subsumes and explains, is in itself the truth and realisation of all that seems to have passed away.

The attempts, for instance, at the first awakening

of speculative thought in Greek philosophy, to explain the world by such notions as Being, Becoming, the One, the Many, &c., have long ceased apparently to have any other than a historic or antiquarian interest. But even the ripest and most advanced philosophy of modern times has not refuted or falsified these notions of its earliest infancy. For the categories which constituted to these early thinkers the ultimate principles of things do actually enter into the system of the world, and must enter into any rational explanation of it which our latest thought can give. They are the notions with which every philosophy must begin, and they are only false when we stop short at such abstractions, instead of regarding them as only the first faint notes of that rhythmical harmony of thought into which they have long been taken up. And even in these first beginnings of speculation we already see the process at work by which one philosophy, while seeming to be subverted, yet really passes into and yields up its life to another. "All is Being," is the formula which expresses one and perhaps the earliest, definite attempt to read the secret of the universe. "Change, division, multiplicity, are but surface appearance and illusion. There must be one permanent principle or ground of things, and all other experiences that seem to be, are but phantoms." "All is Becoming,"

was the seemingly contradictory explanation of another and later school. "Nothing in the universe continues for two successive moments, but restless movement, mutation, fleetingness, an eternal alternation of birth and decay, life and death, *that* alone is. The permanent is the illusory—what is, only seems to be; the real principle of things is to be found not in the idea of Being, but of Becoming." And both explanations were true; both principles needed to rise, and have their day, and play themselves out to the fullest, before thought, obeying its own inward impulse, rose to a higher principle which at once superseded and embraced them—a principle which includes both change and permanence, unity and difference; which sees not the one only, or the many only, not the particular, the manifold, apart from the universal, nor the universal apart from the particular, but a universal which is *in* the the particular, a world which is neither in abstraction, but both ever coincident, ever blended, ever reciprocally interpenetrated in the concrete unity of thought and life.

And so, in like manner, at another and far distant time, when a deeper problem arose for solution, the problem of matter and mind, of the world without, and its relation to the world within, it would be easy to show how, beginning with the hard opposition of the two, speculation first playing with

metaphorical solutions, such as that of a mental tablet on which impressions are inscribed from without, sought on the one hand the explanation of materialism; on the other, by necessary reaction, that of false or subjective idealism, till the truth in both was taken up, and the error eliminated in a deeper philosophy, which says, "Both are true, but neither in abstraction from the other. Neither materialism in itself, nor idealism in itself, neither bare objectivity, nor bare subjectivity; but the secret is to be found in that deeper concrete unity in which they are both lost and found again—the unity of self-conscious thought."

Thus, not to weary you with further illustration, what has been said may, at least in some faint measure, suggest to you a view which removes from the history of philosophy that aspect of chaos and perpetual contradiction issuing in no progressive knowledge which has been so often urged against it. There is much, as I have already said, in the history of speculative thought just as in the outward of life of man that belongs to the accidental and irrational—errors, vagaries, paradoxes, whimsicalities, assuming in all ages the name and the guise of philosophy. But just as the student of the constitutional history of England can trace, amidst all the complexity and contingency of outward and passing events, through successive times and

dynasties, underneath the waywardness of individual passion and the struggle for ascendancy of classes and orders,—the silent, steady development of that system of ordered freedom which we name the Constitution of England; so, in the light of the principle I have attempted to set forth, looking back on the course which human thought has travelled, I think we shall be at no loss to discern beneath the surface changes of opinions, unaffected by the abnormal displays of individual folly and unreason, the traces of a continuous, onward movement of mind. It is one thought, one mind, and spirit which has lived and thought through the ages. The intellectual life of the world is the intellectual life of the individual mind writ large. It is not dwarfed in perpetual childhood. It has grown from less to more; and the rich content of its present thought is no chance-medley of opinions, but the legitimate and logical outcome of all the thought of the past.

And now, Gentlemen, is there not, let me ask in conclusion, in the idea I have imperfectly presented to you, that which should have a stimulating and ennobling influence on us in our vocation of students? Should it not help to lift us above ourselves, our petty individual aims, our narrow and selfish desires to feel (as well we may, if there be

aught of truth in the thought we have been contemplating), that we are sharers in a life which is infinitely larger and greater than our own—the ever advancing intellectual life of man. The pursuit of knowledge is at once a humbling and ennobling work—humbling, because it is so little we individually can accomplish within the narrow limits of our brief and passing life; but ennobling, because no earnest seeker after truth, but, by the very nature and law of his vocation, enters into communion with the great intellectual fellowship of all time; and if he will but open his mind to the genius and spirit of his calling, may feel himself inspired with the purest and noblest aims that have ever animated the spirit of humanity. Little indeed is it that we, even the most richly dowered with the gifts of intellect, can do, to advance the cause of truth. Slender at the best is the contribution we can make to the intellectual wealth of the world. But, slight though it be, it is surely something to think that it is taken up into and becomes an integral part of a life which neither space nor time can measure. Far above the agitation and strife of man's petty passions, far above the individual cares and interests that seem for the moment so important, never hasting, never resting, onward through the ages, the life of thought and knowledge advances to its goal. What its course

has been in the past is only an augury of the yet more splendid future that awaits it. Science advancing to richer discoveries, and a more comprehensive grasp of the order and system of Nature; philosophy shedding new and fuller light on the deeper problems of thought; art enriching the world with new and fairer creations; and the many-sided intelligence of man, freed from the idols and prejudices that still encumber it, unfolding new capabilities of insight, and a new consciousness of power and freedom—if something like this is the intellectual destiny that lies before our race, is there not in the contemplation of it that which may inspire us with a high and ennobling sense of our work here, and of the ends to which such institutions as this are devoted? To work here in order to gain the knowledge that will qualify you to earn your bread is no dishonourable motive. To study for honours, to be inspired by the love of fame and reputation, if it be the reputation of acquirements that are in themselves good and noble, is no unworthy aim. But there is an intellectual virtue that is higher and purer far than these, without some touch of which you can be no true student. For, as the highest patriotism is that of the man who thinks not of honour or rewards, but so loves his country that he is content to be forgotten, to lose himself altogether in the larger, dearer life for which he lives; so he only

rises to the true nobility of the student's calling who catches some sympathetic spark of that pure intellectual love, that love of knowledge for its own sake, which lifts him out of self into fellowship with those in all the ages, whose life has been, and will be, the eternal life of thought.

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Dr. Story.

MEMORIAL

OF

Old College Church.

MEMORIAL

OF

Old College Church

(BLACKFRIARS')

GLASGOW.

GLASGOW: THOMAS MURRAY AND SON.
1876.

The Old College Church.

OLD BLACKFRIARS'.

THE history may be gathered from the records of the University, the records of the Town Council, and of the kirk-session. The friar preachers of Glasgow—often called the Black Friars, from the colour of their dress—were of the rule of St. Dominick, and their order was founded—like that of their rivals, the Franciscans—somewhere about the year 1205. Their organisation was formally approved of by the Pope in 1216, and they settled in Glasgow as early at least as A.D. 1246, as appeared from a bull of Pope Innocent IV. on the 10th July of that year, granting forty days' indulgence to all who should contribute to the completion of a church and other buildings which they had begun to erect. The original charter of the foundation has been lost, but it seems to have been extant in the University records of 1582, as these made mention of the "auld evidents of the Friars' manseyaird and kirkyeard," but no such documents are now in the possession of the College. It is supposed that the original founder was Bishop William of Bondington, in the reign of Alexander II. After the Reformation, Queen Mary, by a charter in 1566, made over to the Provost, Bailies, Council, and community of Glasgow for the support of their ministers and the erection and endowment of hospitals, the lands, houses, churches, rents, dues, and other property effeiring to all the churches in Glasgow, including specially the property of the Dominicans or preaching friars.

On 5th June, 1568, the donation was confirmed and extended by a deed of James VI., and on the 8th January, 1572, the rights so conferred on the town were transferred to the Council of the University for the maintenance of a Provost, who was also to be a professor of theology, of two regents and teachers of philosophy, and of twelve poor students. About 1630 it appeared that the church was getting into serious disrepair. On condition that the town would repair it, the church and part of the ground was disponed to the burgh of Glasgow. The Magistrates seem to have been slow in executing the desired repairs, and there is a record in the books of the kirk-session that the church and steeple were "so bruised by a thunderbolt the same became ruinous, and thereafter fell to rubbish." Towards the close of the century the Town Council resolved to build another church on the site of the old one, and on the 6th May, 1699, entered into a contract with the moderators of the University, by which the latter, in consideration of the rebuilding, confirmed the previous contract between the College and Council, and disponed to the burgh a further portion of the ground. According to this arrangement, the Church which still stands in High Street was built in the same year, at a cost of £1800.

"Previous to 1763 the Professors and Students attended Divine service here. At this time the number of students had so much increased, that it was thought proper to retire to the Common Hall, and to have worship conducted by a College Chaplain, where the students would be more under the immediate observation of the Professors. Accordingly, four young men distinguished for their talents were selected, who preached on Sundays by turns, for a number of years, from November till May, for which they received a moderate compensation, there being no endowment for a Chaplain in the College. Latterly,

the duty was performed by such of the Professors as were ordained. Among the first preachers in the College Chapel were Dr Meek, Cambuslang; Dr Muttrie, Kirkcudbright; Mr Wright; Professor Arthur; Mr Bell; Mr Taylor; Dr M'Turk; and Professor Milne."—*Cleland's Annals, I. 135.*

NEW BLACKFRIARS'.

Report of Proceedings at the Laying of the Foundation Stone on 12th February, 1876, from "Glasgow Herald" of February 14th.

The interesting ceremony of laying the foundation stone of the New Blackfriars' Church, which is to take the place of the old edifice, better known as the College Church, situated in High Street, was performed on Saturday afternoon by the Hon. the Lord Provost, in presence of a large and general company. The site of the present Blackfriars' Church was acquired some time ago by the directors of the Glasgow and South-Western Railway, with a view to the extension of their High Street Goods Station. The Directors became bound to provide a new place of worship, and as a consequence of the negotiations which resulted between them, the kirk-session, and the Corporation, a highly eligible site was secured on the western side of Westercraigs Street, near to its junction with Duke Street. Here operations have been proceeding for some time, and already considerable progress has been made with the new church. The building is nearly square inside, being about 70 feet long and 57 feet wide, in addition to the east end gallery over the entrance hall, and the organ recess at the west end. The ceiling will be panelled in wood, and be about 40 feet high. It is lighted by five large round-headed windows in each side, and three in the front gable, all placed about twenty feet above the floor level—so that, while there

will be abundance of light, it will be subdued in effect. The sum at the disposal of the architects (Messrs Campbell-Douglas & Sellars) is only about £7500 (the site having cost £2500) to cover all outlays. The style selected—the old Romanesque as it is found in Germany—although one which is almost new to this country, is one deserving of being better known from the effective massiveness of its simple architecture. Those who are acquainted with the numerous specimens of this style on the Continent will remember how their attention was arrested by the striking effect of the two west towers, with their picturesque short spires, which are almost invariably to be met with in such work. At present the contracts embrace the completion of only one of the two towers, but it is hoped that the few additional hundred pounds may be got which will be required to complete the second one, so that the design may be carried out in a way not altogether unworthy of one of the city churches. In the typical churches of this style the west gable is comparatively plain, and the main entrances are from side porches; in this case that was inadmissible—so that the great round-headed door, with its three recesses, has been placed in the centre of the front gable; but with this exception, the main characteristics of the style will be represented as well as the means at disposal would allow. The towers will be about 17 feet square, and fully 100 feet high. Vestry, ladies' room, as usual, and a hall are provided on the south side; and the church will be comfortably heated on the most approved fashion. Accommodation will be provided for over 900 persons. The congregation have secured the neighbouring site for a manse.

The LORD PROVOST, who wore his robes of office, and was accompanied by Bailies Burt, Ure, Lamberton, and Scott, several members of the Town Council, the Lord Dean of Guild, and Messrs Peter Clouston, and Andrew Galbraith (directors of the

G. & S. W. Railway), was received on his arrival at Westercraigs by the Rev. Mr Somerville (pastor of the church), the Rev. Mr Arthur, Springburn, the office-bearers of the congregation, and the members of Presbytery; and was conducted to that part of the building where the ceremony of the day was appointed to take place. The choir having sung the 67th Psalm, and the Rev. Mr Arthur having engaged in prayer,

The Rev. Mr SOMERVILLE explained the circumstances which had brought the company together, and then stated that the stone about to be laid was the third in connection with Blackfriars' Church. The first, he said, was laid in the thirteenth century by the fraternity of Black Friars, who had acquired a large revenue from lands in the city and in the district around. That edifice was described by Milne, architect to Charles I., as the most ancient and noble of Gothic work within the kingdom. At the Reformation, the church, with a portion of the revenue, was surrendered to the University. For fifty years after that there seemed to have been no stated pastor, and it was sometimes applied to ignoble uses—for in 1606 its steeple was set apart as the ward-house for the city, and in 1634 the ordinary prison for kirk delinquents was the back gallery of the church. In the following year it was acquired by the Corporation, thoroughly repaired, and a minister appointed. Then there came a time of bloodshed, famine, and pestilence, during which it again suffered. In 1650 the minister, Mr James Durham, absented himself from his charge to be private chaplain to the Royal family. In 1666, whilst a violent storm was raging over the city, a thunderbolt fell upon the church and destroyed it. During the troubled reigns of Charles II. and James, the Corporation had little encouragement to do anything for the church, and it lay in ruins. With the Revolution and the advent of William III. came happier times;

and in 1699 the foundation of the second Blackfriars' Church—the old church which still stands in High Street—was laid by Provost James Peddie—Mr Robert Craighead being minister. At that time there were only 12,000 of a population in the city, now there were above 500,000. Then there were besides Blackfriars' only three other churches—the Cathedral, with its different congregations, the Tron Church, and the Wynd Church, built only a few years before; now there are 300. Then there were only twelve streets; now there are above 1000. Then there were hayfields in Candleriggs, Bell Street, and King Street; the trees were growing in Jamaica Street, and the Bailies of the period went out to the country for a day's shooting around Renfield Street and Sauchiehall Street. Not long after, Blythswood Holm was sold to the Campbells at 1¼d a square yard, and now some of it is worth £50 a square yard. It was at this time that Provost Gibson, who has been called the father of Glasgow commerce, founded the Broomielaw. Surely, said Mr Somerville, as they contemplated the advances which had been made during the comparatively short period which had elapsed since the last occasion on which the foundation stone of Blackfriars' Church was laid, they might venture to hope that whilst this edifice stood there would be even greater peace and prosperity within our city and our country. He did not expect that the relation so long maintained between the Corporation and the city churches would in times to come be continued on the same basis. He thought that matters were ripe for a change, and from all he knew he was sure that if any reasonable proposal should hereafter be made by the Corporation it would be received in a friendly spirit by the Presbytery and others interested in the city churches. (Hear, hear.) Mr Somerville concluded by thanking his Lordship for his kindness in attending, and by presenting him

with a silver trowel with which to perform the duty he had undertaken.

The stone having been duly laid,

The LORD PROVOST said—I feel proud of the honour which has been conferred on me in being asked, as Lord Provost of the city, to lay the foundation stone of the New Blackfriars' Church, and so to raise in this district a temple for the worship of God, where the truths and consolations of the Christian religion may be statedly proclaimed, and by which, for long years to come, I doubt not, the moral and religious character of many of the community will be improved. The Town Council and the Presbytery agreed on this site as a suitable one, though out of the parish, on account of the rapidly-increasing population of this neighbourhood, and because the population of the College Parish will be greatly reduced. When the University was in the High Street the population of the parish was 11,700; at present there are about 3000, and when the railway operations are completed it will scarcely amount to 300. The foundation stone of the existing but now doomed church was laid, as you have heard, by my predecessor, Lord Provost Peddie, in 1699, and it cost £1800 sterling. But as early as the tenth century the monastery and church of the Blackfriars' existed on the spot. In 1244 the Pope granted an indulgence of forty days to all who should subscribe to the repairing of the Church. In 1301 Edward the First of England resided three days in the monastery with his retinue, and left six shillings with the friars as remuneration for their hospitality. (Laughter.) In 1454 the first Lord Provost of Glasgow, John Stewart, bequeathed a sum to the Blackfriars' Kirk that a mass might be said every Friday for the repose of his soul, and to encourage the friars to attend he provided that each one present should get sixpence and a gallon of good ale. In 1485 his daughter,

Janet Stewart, still further to encourage the attendance of the friars, ordained that each should receive a gallon of good ale and bread and cheese for their evening's repast. At the time of the Reformation the church was given to the College; and in 1636 the church and the patronage were handed to the Magistrates, who became bound to pay the minister. In 1702 the Corporation sold several of the pews to professors and Glasgow families, but about thirty years ago these pews were repurchased and the church reseated by the Corporation. Many of our old Glasgow families belonged to the College Church. The famous Captain Paton, celebrated in song, attended it not only on Sundays but also on Thursdays, when he regularly put a sixpence into the plate. As a member of the Church of Scotland, I rejoice in the erection of this edifice, but I rejoice still more as a member of the church of Christ in Scotland, and I am glad to see so many churches rising all around. This cheers myself and my colleagues engaged in the government of the city, and gives us cause to hope that Glasgow will still continue to flourish by the preaching of the Word. (Loud applause.)

Councillor ADAMS, convener of the Churches Committee, said it was a source of great satisfaction that the congregation had prospered so much under Mr Somerville's care, and that he and his colleagues would always be glad to do what they could for its interest and usefulness in the community.

Mr DOUGLAS, of Campbell-Douglas & Sellars, also addressed the audience.

The Rev. Dr M'TAGGART thanked the Lord Provost for his interest in the Church, and the kind manner in which he had performed his duty, and the proceedings were brought to a close.

Report of Proceedings at the Last Meeting of the Congregation within the Old College Church, on the evening of Tuesday, 10th October, 1876.

In the *Glasgow News* of Wednesday, October 11, it is noted, "The final meeting of the Congregation within this old Church, which is to be taken down in consequence of railway operations, took place last night. Notwithstanding the inclement weather, there was a large attendance. The Rev. Mr Somerville, minister of the Congregation, presided, and there were present, Rev. Mr Davidson, Dalmarnock Church; Rev. Mr Dods, Robertson Memorial Parish; Rev. Mr M'Pherson; Messrs Brand, Spence, and Stobo, Elders, and the Managers." The proceedings having been opened by singing the 122d Psalm, and prayer by the Rev. Mr Davidson,

Mr SOMERVILLE said—The excavations made around the Church having made the approaches disagreeable, it has been deemed advisable to leave it, and arrangements have been made for worshipping in St Thomas' Wesleyan Church, Gallowgate, till the new church is ready. We still thought we might have managed to continue here until the Communion, at the end of the month, but in view of what is to be done next week, it has been resolved unexpectedly to make the change at once, and hold this, our final meeting here, to-night. We cannot leave without shortly reviewing the past, and I will say a few words about the Parish, the Parishioners, the Churchyard, and the former Ministers.

THE PARISH.

As all parishes situated in the centre of a large city, it has experienced many and rapid changes. Its most prominent

feature was the old University, established in 1450. The first building was in the Rottenrow. Ten years after, James, Lord Hamilton, bequeathed to Duncan Bunch, Principal, a tenement in the High Street, with four acres of land adjoining. In the building situated on this ground, the classes of the University continued to meet for 410 years, until they removed to Gilmorehill in 1870. A portion of the old edifice is still left; but, alas, how changed! Where the students formerly matriculated, tickets are distributed to railway passengers; where the professor of divinity formerly sat at his studies, the clerks of the goods department now pore over their ledgers; the instruments for experimenting in natural philosophy have been turned out for bags of grain and boxes of calico; and the common hall is demolished, where the eager alumni listened to the eloquence of Edmund Burke, Francis Jeffrey, Henry Brougham, Thomas Campbell, Sir Robert Peel, Thomas Macaulay, Sir Edward Bulwer Lytton, Lord Palmerston, and other Lord Rectors. There is still, on the outside of the old building, the royal arms, given by Charles I. If not within the parish, there was at the corner of it, near the Cross, an institution of a different order, the old Justiciary Court and Tolbooth, in the former of which the prisoners were tried, and in the latter confined. There are some still living who have seen the old building, with its iron stanchions, broad stairs, and gloomy recesses. At the Cross was the gallows, on which prisoners were executed for more serious crimes. The stone may still be seen into which the gallows' pole was inserted from which they were suspended. The mode of execution in former days was barbarous. The prisoner ascended the ladder on one side, while the executioner ascended another beside him, and pushed him off to meet his fate. Sometimes a severe struggle took place between the executioner and the prisoner. After-

wards there was a small balcony erected for this purpose. It was called after one who was executed on it, "M'Kean's Pulpit;" and Mr Robert Lang, who is still a member of this Church, remembers seeing a man executed on it, for the murder of the Lanark carrier. Near to this, in Gallowgate, was the famous tavern called the Blackboy. On its sign were depicted two women trying to wash white a black boy placed between them; and on the boundary of the parish at this corner, the Molendinar was spanned by a bridge. Farther north, in what is now the continuation of Graeme Street, there stood the palatial mansion of Provost Aiton. Our friend Mr Lang remembers seeing the cherries and pears growing on the garden wall, the large elm tree that stood in front of it, and the fish-pond in the centre of the garden. Mr Lang was born in a part of the old building supposed to be the monastery of the Blackfriars, which stood on the south side of the entrance to Blackfriars' Street or Wynd. When a boy, he found in the vicinity, amid some excavations that were going on, the huge iron grate of the old friars, and the stone trough in which they kept their holy water. Between Blackfriars' Street or Wynd and this Church were the Physic Gardens, where botanical specimens were grown; the door at the side of the churchyard was one of the entrances. In the corner of the Physic Gardens, next the graveyard, was the chemistry hall, which seems formerly to have been the chapter-house of the first College Church. Here the famous Dr Cleghorn lectured. His grave you have often seen at the back of the Church. Opposite the College was the meal market, and opposite the Church the old grammar school. One of the rectors bought the piece of land in front of it, and erected Barr's Land. In a niche he placed a statue of Cicero, with the name on it. Immediately to the north of the Church we have Havannah Street. This was named by Gavin Williamson, a

clever citizen, who became a sailor. He was engaged in the capture of Havannah in 1762, for which £300,000 was divided as prize-money. A good share seems to have fallen to him, as he came home and built the house (215–217 High Street) which stands at the corner. Others followed his example, and a hundred years ago the Havannah was quite a fashionable part of the town.

PARISHIONERS.

It would be impossible to enumerate here even the names of all the parishioners who have exercised great influence in their day and generation. In connection with the University, there are among those who have been Principals such men as Andrew Melville, the leader of the second Reformation; Patrick Gillespie, Robert Baillie, Wm. Leechman, and Duncan Macfarlan. Among the Professors, Robert Simson (1711), Adam Smith (1751), the author of the "Wealth of Nations;" Thomas Reid (1764), the founder of our Scottish Philosophy; Sir D. K. Sandford (1821), Dr Thomson (1832), James Wodrow (1692), the historian of our Church; Dr M'Turk (1807), Dr James Seaton Reid (1841), Wm. Cullen (1751), Dr Hamilton (1757), Dr Cleghorn (1791), Dr Thomas Thomson, Sir Wm. J. Hooker (1821), and last, but not least, though now living, Principal Caird and Sir William Thomson. Among those who did not owe their connection to the University, there are specially distinguished Thomas Campbell, the poet, David Dale, the philanthropist, and John Gibson Lockhart, the son of a former minister of this Church.

Campbell was born in the house in High Street opposite the entrance to Havannah Street, in 1777. As his father had lost money in the American War, he entered the University a poor student, and added to his resources by selling copies of his

earliest efforts at 1d each. In 1824 he was elected Lord Rector of the University, and re-elected for the second and third time—an unusual honour.

David Dale was born in Stewarton, but came to Glasgow when he was 24 years of age, and commenced business in the High Street, five doors from the Cross, in a shop for which he paid £5 of rent. This seems to have been too much for him, as he re-let the half of it to a watchmaker for fifty shillings. In 1783, he became the agent of the Royal Bank, and then turned out the watchmaker to make room for the new business. He had began to deal in French yarns by this time, and was among the first to perceive and take advantage of Arkwright's invention, for he soon afterwards erected factories at Lanark, Catrine, and Spinningdale, in Sutherlandshire. He is remembered in Glasgow not more for his successful enterprises than for his peculiar philanthropy.

John Gibson Lockhart came to the parish with his father from Cambusnethan in 1796. He went to Oxford in 1809; became an advocate in 1816. In 1819 he wrote "Peter's Letters to his Kinsfolk." This was followed by other literary efforts. In 1820 he married the eldest daughter of Sir Walter Scott, and is best known by his account of his eminent father-in-law.

THE CHURCHYARD.

The most casual walk through the churchyard recalls the memory of many distinguished not only in our city, but in our country, whose ashes repose here. On the right hand as we enter is the grave of Robert Simson, the father of mathematical learning in our country. He was the eldest son of John Simpson of Kirkland, Ayrshire. In his twenty-second

year he was appointed Professor of Mathematics in 1711, and occupied the chair for half a century.

On the corner of the Church is a tablet which cannot be passed lightly, with the inscription—

Sacred to the Memory
of
JAMES HOUSTON MAXWELL,
Writer in Glasgow,
Who died at Buchlyvie Moor
in consequence of the accidental discharge
of his fowling piece.
Aged 36. 2nd Nov., 1838.
This Tablet is erected by a few of his sorrowing friends.
Renewed by his affectionate sisters.

At the back of the Church is the grave of Dr Cleghorn, who died 18th June, 1843. Beside Dr Cleghorn's grave is that of John Carmichael, with this verse—

"Prepared for Heaven,
He took the shortest road;
Leapt o'er old age,
And took his flight to God."

Here also is the grave of Balmano the druggist. He was originally a slater, but whilst engaged in repairing the Tron steeple, he fell, and was carried into the drug shop near, which belonged to the gentle dame whom he married after his recovery. Their son, Dr Balmano, had his physic garden in George Street. Balmano Street is named after him.

In the part allotted to the University, we find the grave of Thomas Reid, D.D. He was born in Aberdeen in 1710, and, after being professor in Marischal College there, came to Glasgow in 1796. He was the founder of what is called the Common Sense Philosophy. Here also are the graves of

Josias Walker, Professor of Humanity, from 1815–31.
Dr Wm. Meikleham, Professor of Nat. Philosophy, from 1803–46.

Dr Hugh M'Leod, Professor of Ec. History, from 1778–1807.
Dr James Baillie, Professor of Divinity, from 1775–78.
Dr Wight, Professor of Divinity, from 1778–83.
Dr Trail, Professor of Divinity, from 1761–75.
Dr M'Gill, Professor of Divinity, from 1814–39.
Professor John Young, Professor of Greek, from 1774–1821.

How many familiar Glasgow names meet us in scanning these tombstones. The Maxwells of Maxwellton, Robert M'Gavin, James Robb, Merchant, Henry Smith, Merchant, John Johnstone, Writer, Robert Yuille, Merchant, Thomas Hamilton, Maltman, James Sword, Merchant, John Wallace of Cessnock and Kelly, Hector M'Lean of Turbush, Provost Aird, Robert Buchanan, Robert D. Hamilton, Writer, James Duncan, Bookseller, Arch. Wallace, Merchant, Stewart Mitchell, Tobacconist, Thomas Clayton of Gallowhill, David Binnie, Merchant, John Prentice, Merchant, Wm. Blackburn, Merchant, James Paton, Writer, Robert Dreghorn, Wright, and others.

MINISTERS.

1. Robert Wilkie—1621: Died 20th Feb., 1640, æt. 62. Translated from Douglas.

2. James Elliot, D.D.—1633. Translated to Trinity College, Edinburgh, 1635.

3. John Bell—1636: Died 20th Feb., 1640, æt. 40. Translated from Eaglesham.

4. Robert Ramsay—1640. Translated to High Church, 1647.

5. James Durban—1647. Became Private Chaplain to the Royal Family, 1650.

6. Hew Blair—1649. The "Common Session," which at the time was paramount, directed "that Mr Hew Blair of the New Kirk [Tron] should take the burthen of the haill Sabbath in the Black Friars' Kirk."

7. ROBERT CRAIGHEAD—1698: Died at Derry, Sept., 1711. Wrote several Treatises.

8. DAVID BROWN—1701: Died 16th Feb., 1704, æt. 42. Translated from Neilston.

9. JOHN M'BRIDE—1705: Died 1718, æt. 65. Translated from Belfast.

10. JOHN HAMILTON—1713: Died April, 1741. Translated from Strathaven. His son, Dr John Hamilton, became Minister of the High Church.

11. JOHN GILLIES, D.D., admitted 1842. Dr Gillies was a man of great force of character, and had great influence. He exercised his ministry in this Church for more than half a century, and was the author of "Historical Collections: illustrating the success of the Gospel," "Milton's Paradise Lost, illustrated with Texts of Scripture;" and many other works. (There is a description of him in Strang's "Clubs of Glasgow," page 158.)

12. JOHN LOCKHART, D.D.: Born 1760. Translated from Cambusnethan in 1796. Died in 1842, at the advanced age of 82. He was highly respected in Glasgow, and there are still spared several members of the Church who lovingly remember him. He had three sons: John Gibson Lockhart, William Lockhart, M.P., of Milton-Lockhart, and Lawrence Lockhart, D.D., formerly minister of Inchinnan, who died a few months ago. During the later years of his ministry, he was assisted by Mr Gibson, afterwards Dr Gibson, a distinguished leader in the Free Church.

13. He was followed by Dr M'LETCHIE, who was born in Maybole in 1800. Before entering into his charge here, he had acted successively as assistant to Dr M'Leod, minister of Dundonald; as minister of Larkhall; minister of Gartsherrie; minister of the new church at Leith, built by Sir John Gladstone. In 1842 he became minister of the College Church. He attracted

many by the ornate beauty of his discourses. The attendance and membership greatly increased during his ministry here, which was only for a year and a half. In 1843 he was translated to the High Church, Edinburgh, where he laboured until his death in 1866. Dr Macrae of Hawick has published a volume of his sermons, prefaced with an interesting memoir.

14. PETER NAPIER, D.D., was born in Dumbarton; he was assistant first in Port-Glasgow, and then removed to St. George's-in-the-Fields, from which he was translated to the College Church in 1844. He was thus described in the "Scottish Pulpit":—"In private life he is diffident, and to strangers distant. His friendship, however, is ardent and faithful, and in public estimation few clergymen occupy a more enviable place. The leading features of his mind seem to be discrimination, order, comprehensiveness, and common sense; the characteristics of his style are perspicuity, brevity, and chasteness—the peculiarity of his theology, catholicity, scripturality, and practicableness. His manner, though destitute of the winning arts of the orator, is natural and dignified." Dr Napier will long be remembered for the warm interest he took in the students of theology, and the great kindness he exercised towards the young ministers of the church in Glasgow. It will be remembered by many that his distinguished cousin, Peter M'Kenzie, Editor of the *Reformer's Gazette,* was an active member of the church, and that his still more distinguished brother, the late Robert Napier of Shandon, had his first workshop in the district. Died in March, 1865.

15. The last clergyman whose field of labour was the College Parish, and whose early death put an end to his quiet and unostentatious labours amongst the flock he loved so well, was the Rev. JAMES MACKAY, M.A.

Born in the year 1828, in the city in which he died, it was rather a singular coincidence that he should be the successor in

the College Church of the clergyman by whom he was baptized. The early death of his mother caused him, while quite a child, to be placed under the care of an aunt, whose predilections, if not her principles, led her to sit under the ministry of Dr Eadie. To Cambridge Street Church, week after week, did she wend with her prematurely thoughtful little charge; and as he passed from boyhood into student life, which he did at the early age of thirteen, many were the kind, encouraging words which he received from the genial, large-hearted minister under whom he sat. Mr Mackay had barely attained his fifteenth year, when that striking event took place which thrilled the heart of all Scotland; in which 400 clergymen demitted their charges, and marched in a body from the Assembly in St Andrew's Church to the hall at Cannon-Mills. Often did he talk of that touching sight, which, on a nature so sensitive as his, womanly almost in its tenderness, left a never-to-be-effaced impression. This it was that led him to throw his soul into the vexed question of Church Establishment, and notwithstanding the leanings of early association to the Church in which he worshipped, and the noble self-sacrifice which gave such a heroic prestige to the Free Church, he felt constrained by a conscientious conviction of what he believed to be just and right in ecclesiastical polity, to join the Established Church.

While yet a student, and previous to receiving license, he was asked to preach at Ardentinny, and immediately after was gratified by the request to become minister in that lovely little spot. On the advice of his professor, Dr Hill, who knew that an assistantship was the best field in which a young minister could train for his duties, he declined the call to Ardentinny. Shortly after, an assistantship at Campsie was offered to him, and there, under the esteemed pastor, Dr Monro, he entered on that noblest of all works—preaching for

Christ! Almost simultaneously with the assistantship at Campsie came the call to Ardrossan, and after nine months experience of preaching, during which the people at Ardrossan waited patiently for the minister of their choice, he left the scene of his first labours, and entered on the important duties of a parish minister.

The memory of his stay at Ardrossan was a very pleasing one: the love of an endeared flock—the friendships which survived till death—above all, the feeling that the Lord had in some measure blessed his labours, were cheering subjects of retrospection.

Inverkeithing, on the banks of the Forth, another dearly-loved sea-girt parish, was his next incumbency. Here he laboured for more than ten years, leaving behind him a memory sweet with fragrance, and a name that is still a cherished household word.

From Inverkeithing he came to Glasgow in November, 1865. Full of vigour, energy, and hope, he entered on his work, longing to bring back his parishioners who had lapsed from Sabbath services to the Church of their fathers and the house of God. Single-handed as he stood, the effort was too great for one who, though powerful in intellect and winning in appeal, was yet fragile and delicate in frame. A serious affection of the chest forced him for one winter to seek a warmer climate. This temporary cessation from duty seemed to have the desired effect, and he returned to commence anew, with zeal and fresh hope, the labours of his parish.

A high sense of duty was one of his leading characteristics, and this was borne out even amid failing health to the end of his career. The last Sabbath of his life he set out for church, calm and hopeful in spirit, as was his wont, but almost prostrate with feebleness. When it was suggested that his strength was

insufficient for his duty, his reply was, "Only let me into my pulpit, and all my vigour will return." Constrained by the anxiety of those to whom he was so dear, he consented to ask the advice of his medical man, and to be guided by his opinion. The doctor saw too plainly that death would be the immediate result of the slightest exertion, and forbade his entertaining any idea of conducting the morning service; but it was only when learning at mid-day that a neighbouring clergyman had kindly offered to fill his pulpit in the afternoon, that he could be prevailed on to return home and take his needed rest.

Up till the middle of that week—the week in which he died, he cheered himself with the hope of being able for duty on the coming Sabbath. Finding from increasing feebleness that this hope was vain, he could not rest till arrangements were made for providing supply for the church. It was not till late on Friday evening that these were completed, and on learning that all was satisfactorily arranged, he said, gently, "O, I am so grateful that none of my Sabbath duties are to be neglected!" These were the last audible words that passed from his lips. The mental strain being removed, he composed himself to sleep—a sleep which it was fain hoped was that of returning strength, but the Lord judged otherwise, and it was that last calm sleep, whose blessed awakening is in eternity! Thus quietly passed away, on the 1st of February, 1873, this servant of Jesus, in the 44th year of his age, and in the 23d of his ministry.

16. Rev. THOMAS SOMERVILLE, M.A., licensed by the Presbytery of Dunoon in 1863, acted as assistant to Rev. Mr Slater in St George's-in-the-Fields, and afterwards as assistant to Rev. Dr M'Taggart, St James's. 1865, Minister of St Andrews, Victoria, B.C. 1871, Minister of St David's Parish, Kirkintilloch. 1873, Minister of Blackfriars'.

CLOSING REMARKS.

In concluding, Mr SOMERVILLE said—

Brethren, when we think of all these great and good men of the past whose names we have to-night affectionately recalled, of the faithful expositions of the truth given in this place—of the members who have sat from time to time in these pews—of the prayers offered and holy resolutions made within these walls, and remember that no more will worshipping assemblies meet within it, we cannot but be deeply and solemnly impressed. There are times in life when we should make a distinct pause, and yield ourselves to the pious reflection to which the circumstances solicit us. This surely is one of these times. We are impressively reminded of an eternal past behind us, and an eternal future before us. We seem to stand on the summit of one of the dividing ridges in the journey of life, and are invited to look back upon the way by which we have come and the future that opens out before us.

We look to the Past. Let us remember that God requireth the past. That past is still with us. The winds travel on their courses and seem to sweep past us, but they do a work which never perishes. The sun rises and shines and sinks away again, but he leaves behind an alms-offering to the charities of fruition and sustenance which never perishes. Men are born, and live and toil and die, and are by *men* forgotten, but their work never perishes. It is inwrought with the present. And so also of the individual. God requireth the past. It is still ours for repentance. Opportunity has been ours. Do we look back upon opportunity embraced or opportunity neglected? Do we sadly look back upon former days that now no more return; the early days when the Almighty was yet with us in our daily prayers and our Sabbath praises? Do we feel that we

have been wandering further away from God—that we are sadly soiled in the contact with the dust and heat and storms of life? As we think of what we might have been and what we might have done, let us renew our confessions. In this solemn hour we may say, "Thou writest bitter things against me, and causest me to renew the iniquities of my youth."

The past is still ours for improvement. From failures behind us let us gather wisdom for the future. God's loving kindness is still for us. Christ still calls us on. The Spirit still invites. Like Paul, when he landed on the shore of Italy, let us thank God and take courage.

The very change which we are making is a manifestation of God's favour. He is not removing the candlestick from the midst of us. He is only placing it where the light may be more widely distributed. Though this old Church is to come down, another has already risen in its place. When Israel of old came out from Egypt, and their way was shut in at the Red Sea, God said to Moses, "Speak unto the children of Israel, that they 'go forward.'" Let us go forward in the name of God on the path which He has prepared for us. Like the Hebrews, we are conducted by a heavenly hand. Like them we are surrounded by wonderful providences. Promises and warnings, mercies and judgments, some things to animate, and some to dishearten, come in their turn to us. Let us go forward, then, to all our joys and sorrows with brave and steadfast hearts—forward to all holy duty, to all earnest work.

In glancing at the future, let us bear in mind, that as with this Church, so to us the last night will come. As the parts of this edifice erected by the pious hands of our ancestors shall be separated and taken down, so too shall the earthly house of our tabernacle be dissolved. Many things press this consideration upon us. There are only two members of the Church who were

members in Dr Lockhart's time—Mr Wood, of East Park Church, whose parents were members of the Church during the ministry of Dr Gillies, and Mr Lang, whose ancestors were connected with it for a long period. Some of those who joined in Dr Napier's time are now as trembling leaves upon the tree of life, waiting for the fall.* Several admitted by Mr Mackay have entered in with him to the joy of their Lord. Even those of us who have but a recent connection with the Church miss familiar forms in these pews. We often long for

> "The touch of a vanished hand,
> And the sound of a voice that is still."

New faces, new footsteps, now surround us. Change and decay in all around we see. Can we calmly look beyond the earthly dissolution to the heavenly reparation? Are we using the world as those who are only tenants, and will require soon to leave? Are we setting our affections on those things which are above? Are we walking with Jesus, the author and finisher of our faith? Have we the assurance of our faith? Can we with Paul say, "For we know that if our earthly house of this tabernacle were dissolved, we have a building of God, an house not made with hands, eternal in the heavens"?

All sanctuaries and all ordinances are valuable only in so far as they bring us to God in Christ. If any this night are looking back upon an unprofitable, sinful past, I beseech them to remember the words, "If any man sin, we have an advocate with the Father, Jesus Christ the righteous." Once again the

* On the third morning after this meeting, the following appeared in the *Glasgow Herald*. Mr Skirving was an old and greatly-esteemed member of the Congregation. He had been present at the last Communion:—

"Died, at 5 Florence Place, Woodlands Road, on the 13th inst., aged 84 years, William Skirving, late cashier, Scottish Amicable Life Assurance office."

old voices, so often lifted up in this place, are renewed to us: "God so loved the world, that he gave his only begotten Son, that whosoever believeth on him should not perish, but have everlasting life." "And the Spirit and the bride say, Come. And let him that heareth say, Come. And let him that is athirst come. And whosoever will, let him take of the water of life freely."

After singing the hymn "Jerusalem on high," the Rev. Mr M'PHERSON added:—

This house is now very old, and yet it is not its age that is leading to its removal, but the spirit of the age.

The Church in this respect does not stand alone. One has already fallen on the north of it, and another has fallen, or is now falling, on the south of it; and now the days of this sanctuary are numbered. How many, I shall not say the individuals, but the generations that for many long years have held sweet fellowship here! But now from every stone in these walls the cry is, "Arise! let us go hence."

This house of prayer—interesting for its locality, venerable for its antiquity, and ever memorable for its hallowed associations—is soon to be levelled with the ground. In a few months, at most, not one stone of it shall be left upon another that shall not be taken down. But though this temple is to be taken down, there is a sense in which it is not to be destroyed. The candlestick is to be removed truly, as we have heard; but then it is not in anger, not in displeasure: and though it is to be removed, the light is not be extinguished. In a more eligible site, and in a more commanding position, is the fabric again to be raised; and even now is it rapidly rising in all its stately proportions.

And yet we cannot part with the old without a sigh. "If I forget thee, O Jerusalem!" Oh, no! My friends, forget not these—both the living and the dead—who from this place have spoken to you the good word of life; neither do you forget the good words they have severally spoken.

Could these stones cry out, to how many a faithful exposition of the word—to how many a virtuous counsel—to how many a solemn warning—to how many a stirring appeal could they bear witness! For here for many long years—long before even the most aged here was born—have sat the young and the old, the grave and the gay, the devout and the indifferent, the saint and the sinner, and they have passed away: and we who are here on this the last night of its solemn history are also passing away. It was well remarked by Mr Somerville that not more truly shall this material temple be taken down than shall those spiritual temples—these fleshly tabernacles—all be taken down one by one. And as the Church, they shall also appear again in other forms; they shall again be gloriously fashioned. If here, like this house, they be consecrated to God's service—if here they be sanctified by God's Spirit and illumined with the light of the knowledge of the glory of God as it shines in the face of Jesus Christ—then in a fairer land, and under brighter skies, shall they appear again in much more beauteous forms.

> "Those bodies that corrupted fell
> Shall incorrupted rise;
> And mortal forms shall spring to life
> Immortal in the skies."

And as the event itself is solemn, so is the occasion of our sitting here for the last time profoundly suggestive. *The last time!* This will be true one day of every thing we do from the most trivial to the most sublime. The last of every thing

here will come—the *last!* The last year, the last month, the last week, the last day, the last hour, the last moment, will come; and the last *word*, the last *look*, the last *sigh;* and when these have all come, death will come; and then will come infinity with its boundless expanse, and eternity with its endless realities.

"Who, then, is a faithful and wise servant, whom his lord hath made ruler over his household, to give them meat in due season? Blessed is that servant whom his lord, when he cometh, shall find so doing."

"Watch! 'tis your Lord's command;
And while we speak He's near;
Mark the first signal of His hand,
And ready all appear."

The hymn was here sung, and Mr BRAND, Elder, who read an historical document referring to the Church, said—

In leaving our old Church, we are doing so with the fairest prospect of success for the congregation. It has been admitted on all hands, that the new Church at Dennistoun will be an elegant, commodious, and comfortable place of worship; and likewise, that it is the most desirable situation that could be found for one of the city churches. Many of us will remember this old Church with much regard. Some will remember it as the place where they received their first religious impressions, "in life's morning march, when their bosoms were young:" others of us, who are more advanced in life, will remember it as the sanctuary in which we were built up in our most holy faith, by listening to the sublime doctrines, the lofty motives, and the glorious hopes of the gospel. All of us will remember the peaceful and solemn communion seasons we have enjoyed within its walls, as well as many of the psalms and hymns, and spiritual songs, in which we united with heart and voice. A few months,

it may be a few weeks, and this old grey church shall have been swept away. A few short years, and the place which now knows us shall know us no more for ever. All is change.

Who'll press for gold each crowded street,
  A hundred years to come?
Who'll tread yon church with willing feet,
  A hundred years to come?
Pale, trembling age, and fiery youth,
And childhood with his brow of truth,
The rich and poor, on land and sea,
Where will the mighty millions be,
  A hundred years to come?

We all within our graves shall sleep
  A hundred years to come:
No living soul for us will weep
  A hundred years to come;
But other men our land will till,
And others then our streets will fill,
And other's lips will sing as gay,
And bright the sunshine as to-day,
  A hundred years to come.

Knowing that we have no continuance in this life, may we act a wise and worthy part, that we may find peace to our souls at every time of review, and have good hope in the prospect of the world to come. I am sure it is the earnest desire of all present, that in the new church at Westercraigs, Mr Somerville will ere long be surrounded by a numerous and devoted people, ever ready to assist and encourage him in every good work.

After prayer by the Rev. Mr Dods, Mr Somerville closed with the benediction.

Last Sermon preached by Mr Somerville in the Old College Church. There was no expectation that the Church would be closed so soon when Mr Somerville preached. The Rev. Mr M'Pherson and the Rev. Mr Davidson occupied the pulpit on the last Sabbath the Congregation met in it.

PSALM cxix. 25.

"My soul cleaveth to the dust: but quicken thou me according to thy word."

AN old writer has well said, "The Book of the Psalmist is placed in the heart of the Bible, for he reveals the heart of all humanity." As some skilled musician with the strings of his harp, he touches the different chords of the heart, and evokes from each its separate utterance. Every feeling, whether of joy or sorrow, of fear or of hope, of penitence or of faith, is there expressed in its intensest form. Even by his backslidings David became better able to utter forth every form of spiritual experience.

This 119th Psalm is in praise of the law of God. He contemplates the glory of God as revealed in His holy and good law. He speaks of God's righteous judgments, of God's testimonies, of God's word. As the painter gazes upon some famous masterpiece in every light, and contemplates it from every point of view, so the shepherd king surveys the law of God in all its different aspects. And just as the man who stands before some clear and brilliant light discovers the dust upon his raiment, so gazing upon the clear law of God, his own departures from it stand out to view. In almost every verse the contrast is maintained between the purity of God's law and his own weakness. "Incline my heart unto thy testimonies, and not to covetousness. Thy word have I hid in mine heart, that I might not sin against thee. Blessed art thou, O Lord.

Teach me thy statutes." It appears as if at this point (verse 25), he had paused in meditation upon his past life, and reflecting how often the counsel had been despised, how often his vows had been broken, how often his soul had been steeped in sense and sin, resumed again his song in penitential strain—"My soul cleaveth to the dust: but quicken thou me according to thy word."

"My soul cleaveth to the dust." True, O David, king of Israel. The God's anointed though thou wert, yet sadly didst thou stain thy regal dignity. Dost thou remember that letter sent to Joab by the hand of Uriah; or that time when Nathan, the prophet of God, stood before thee; or that night when thou wert crying in the gate, whilst the sick child of thy transgression was dying within the palace walls? Oh! thine offence, how rank it rose to heaven. But, brethren, let us remember that if David was a man of strong passions, if he soiled his royal dignity, if he did what was mean and sensual and base, that there is a whole-heartedness about his confession of sin. If his guilt was black, his repentance was bitter. Of all who have sinned as David sinned, few have repented as David repented. We see him lying low in the dust, but we hear also his earnest cry ascending heavenward, "Have mercy upon me, O God, according to thy loving kindness." Mark the depth of this expression: "My soul cleaveth to the dust." Here are two things brought together which are utterly contrary in their nature—*soul* and *dust*. The soul, the breath of the Almighty—a ray from the Infinite himself, immortal in its destiny, noble in all the expansion of its powers, and heavenly in its aspirations—this is brought into contact with dust, that which is earthly, perishable, dead, unclean. And not the dust as we understand it, not the fresh soft soil, into which the seed is cast, and nourished until it sendeth forth the bud and the tender blade, but as the original signifies, the hard, dry, beaten pavement—that which is barren, unclean, and

trodden under foot of men. What a depth of degradation! the soul clinging to the dust! We have seen the delicate cirrus cloud born of the breeze in the serenest sky, rolling around the hard dry lava on the mountain summit; we have seen the beautiful sunlight resting on the foul and pestilential den; we have seen the flowers of beauty cast around the cold clay corpse; we have seen the chambers of a once famous temple filled with all loathsome things; but saddest of all pictures is that of the soul cleaving to the inharmonious dust; the spiritual subordinated to the material—the incorruptible merging itself with the corruptible.

Yet sad as the picture is, it is one which is often seen. The man in our Saviour's parable congratulated his soul by saying, "Soul, thou hast much goods laid up for many years." He, like many others, brought *goods* to the *soul*—the material to the spiritual. But the soul will not be at ease with these. With aspirations that reach the heavens it is restless when confined to anything lower. Created immortal, nothing that is merely material can ever satisfy it. Ah, my brethren, what a strange thing is this heart of man. In itself no larger than a bird of the air, and yet the whole world will not fill it. Restless, the cry will ever arise, "Give, give." Its capacity partakes of the infinitude of Him who made it, and it never rests until God himself enters and enthrones himself upon all its powers. Then there is light, conviction, and knowledge; then there is harmony, and fulness, and peace. The heart of man, like a wearied child, has repose alone on the bosom of the Father.

"My soul *cleaveth* to the dust." It is not mere accidental contact, occasional transgression, which the Psalmist mourns over, but a lingering degradation of nature in spite of effort and prayer. My soul *cleaveth* to the dust. In that one word we find the condensed history of a protracted warfare between the spiritual and the carnal. In reviewing his life, he upbraids the traitorous soul which had so often made alliance with the

enemy. At times she had mounted on the wings of fervent faith and burning desire, and carried him to the very gate of heaven in sweet communion, at other times drooped her ethereal pinions, and trailed her powers upon the ground. Often had she dwelt with fulness of joy in the presence of God, but alas, again and again, fallen back upon the earth and the dust.

As our eye rests upon this expression, there come up to memory the fervent aspirations of his youth nurtured on the plains of Bethlehem; his bold defiance of his country's enemy in the name of God; his magnanimity towards Saul when his life was in his hand; his generous friendship for Jonathan; his princely kindness to the helpless Mephi-bosheth; his eager desire that the ark of God should find a resting-place; those spiritual songs that show how he walked with God, and talked with God. But what are these that also present themselves? Rash outbursts of passion, acts of violence and of vileness, deeds of selfishness and sensuality, the soul fluttering and falling to the dust, *cleaving* to the dust; for the very sunset of his life is darkened. What a struggle of purity with passion—of light with darkness, his life reveals. How lamentable that he who said, "As the heart panteth after the waterbrooks, so panteth my soul after God," should so soon after be compelled to utter the melancholy wail, "Behold, I was shapen in iniquity, and in sin did my mother conceive me."

"My soul cleaveth to the dust." Do not these words come home to you this morning? Has not your life been a spiritual struggle?—confession of sin, and yet cleaving to sin. Good resolutions at the table of the Lord, and small performance in the paths of life. "The heart knoweth its own bitterness."

There are three lives which all of us lead: there is the life by which we are known to the world—our public character. There is the life by which we are known to our family circle—our domestic character. And there is that other life within the precincts of our own heart. We have these three lives, not

because we are intentionally hypocritical, but because the different conditions of each develop into different manifestations. Many will be inclined to say that the public character is the best, the domestic next best, and the secret life the worst. This is not my opinion. I believe that the secret life—that life of thought and aspiration within our soul, is the best. I am certain that could we penetrate through the drapery which hides each soul, we would find many a bright ideal fondly cherished, many longings after the things that are lovely and pure, and many vows and efforts of the soul to redeem her fading majesty. I believe that if all were known, many, very many, are better than the world takes them to be.

But just as our unknown aspirations are the highest, so also are our hidden sins the blackest. Each man knoweth his own sore and his own sickness. Each man beareth his own burden —a heavy burden that is to some of us. It may be that some one has a burden, the very name of which would cause him to start in alarm. There is that foul deed that lies as a load upon the heart, the memory of that one whose hopes were utterly blasted by our perversity; that act of meanness that makes us at times despise ourselves; that crime, it may be, which might have blasted our fair reputation. One may have some besetting sin that has caused him to fall again and again—a serpent which he has nursed in his bosom for years; some enemy that enters by the door of appetite, or of passion, or of temper, or of habit; some darling vice against which he has fought and struggled and prayed. My friend, is there ever a thought crosses your mind, which makes you instinctively cry to heaven for mercy? "Is it not yours to say with the Psalmist as these bitter memories come up, "My soul cleaveth to the dust"?

II. Mark not only the confession but the prayer, "Quicken thou me." The spiritual and the material are in every man. God created us in His own image; and just as we have seen the

artist developing, bringing out into view the picture which the sun's rays has depicted upon his plate, so may the image of God within man, which has been soiled and stained by sin, be again renewed and quickened by the Spirit of God. "We all, with open face, beholding as in a glass the glory of the Lord, are changed into the same image, from glory to glory, even as by the Spirit of the Lord." Conscience and reason are the spiritual parts of our nature, and we are restored to the image of God in so far as these bear supreme sway. The evil is, that the parts of our nature intended to be subordinate so often usurp the place of these; we too often act from impulse, or instinct, or appetite, or bad habit. As we have seen the rich soil of a neglected garden spend itself in luxuriant though noxious herbage, so too often the whole nature runs into selfishness and sensuality. The diviner parts are overlapped and hidden. Our Saviour, referring to this, said, "The kingdom of God is like unto a treasure buried in a field." The flowers bloom there, and the long grass waves there, and as men pass by they say it is beautiful, forgetful that this very beauty, this luxuriant growth, in reality conceals the treasure. Thus is it in our life. Worldly pursuits, sensuous charms, external possessions attract the eyes, and command the highest efforts, whilst that priceless treasure, the soul—is lost sight of. We all feel this. Well then may we cry, "Quicken thou me." There is in every man a germ of goodness which may be quickened by the Spirit of God into strong and hardy life. Who is here so poor in thought and affection as not to feel this? Who is so utterly degraded as not sometimes to have been touched by the beauty of holiness? Who is so thoroughly bad as not sometimes to respond through every chord of his being to the call of virtue, generosity, and honour? Who is there with soul so dead as not sometimes to be touched by the nobleness of affection and self-sacrifice? Who has not at times felt the love of Christ which passeth knowledge? Who has not at times experienced the

ecstacy of spiritual strength—a foretaste of the joy unspeakable, and full of glory? Such experiences tell us that we have not yet come up to our fullest capacity. Even amid the dust of the earth, we have had occasional glimpses of the realm of undiscovered moral beauty that lie within each one of us; realms which, like the cities buried of old, may yet be revealed in the clear light of heaven. And what should a man care for so much as this—the strengthening of the divine life within his soul! What office, what apparel, what worldly honour is there worthy of comparison with the soul which a man bears within him? What circumstances of outward grandeur can lend such dignity as the throne of inward light and being where the spirit lives for ever? What object can possibly be set before us so worthy of effort, and agony, and prayer, as the quickening of the soul to all that is pure, good, beautiful? It was for this that Jesus loved us and gave Himself for us. He saw us not only as we are, but as what through His Spirit we might be, no longer prone in the dust, no longer steeped in sense and sin, but standing erect and firm, our face toward heaven, and our soul radiant with holy beauty; and thus He spoke to us: "My brothers, children of a common Father, the power of endless being still is yours; the possibility of eternal progress still is yours; the Spirit of God still is yours. Rise—walk." In view of all that He has done, and of all that He will do, well may the prayer rise from each heart, "Quicken thou me."

III. "According to thy word." The Psalmist in his struggle for a diviner life falls back upon God's word. In the same psalm he says, "I hope in thy word," "I trust in thy word," "I will not forget thy word." Feeling his own helplessness, he falls back upon God's promised helpfulness. He speaks, from his personal experience—"Thy word hath quickened me." This is as true to us as to him. The word is the instrument of the Spirit. The Saviour himself defied the tempter with the word

of God. The apostle says that "the word of God is quick and powerful, and sharper than any two-edged sword, piercing even to the dividing asunder of soul and spirit, and joints and marrow, and is a discerner of the thoughts and intents of the heart." Let this word then be the weapon of our warfare. Use it freely, and the Spirit will quicken it for the good of our souls. It will warn us of many a danger. Its bright promises will win us to many an effort. Its holy precepts will guide us in many a difficult path. "Let the word of Christ dwell in you richly, in all wisdom." Like David, let us plead the word before the throne. And surely when we remember how often we have confessed our Lord with our lips, and yet denied Him by our lives; how often we have sat at His table, and yet served His enemies; how often we cried for mercy, and yet cleaved to the dust, this prayer of old will come home to our hearts to-day, "My soul cleaveth to the dust: but quicken thou me according to thy word."

"In the houre of my distresse,
When temptations me oppresse,
And when I my sins confesse,
Sweet Spirit, comfort me.

"When I lie within my bed,
Sick in heart and sore in head,
And with doubts disquieted,
Sweet Spirit, comfort me.

"When the passing bell doth tolle,
And the furies in a shoal
Come to fright my parting soul,
Sweet Spirit, comfort me."

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Dup.

THE

UNIVERSITY EXTENSION MOVEMENT.

BY

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WITH AN INTRODUCTION BY

PROFESSOR STUART, M.P.

LONDON:

BEMROSE & SONS, 23, OLD BAILEY;

AND DERBY.

INTRODUCTION.

I DESIRE to commend the following pamphlet to those who are interested in the higher education of the people at large. The pamphlet contains important facts and suggestions, the result of a large and varied experience on the part of its author; and, moreover, it embodies the experience of the Cambridge University Extension Movement, in connection with which six hundred courses of lectures and classes have been held during the last ten years, with a total of sixty thousand pupils of nearly all classes of society, and in most districts of England.

There can, I believe, be no reasonable doubt that the demand for some form of higher education, literary and scientific, applicable to the masses of the people, must continue to gather force, and that such demand must and will be supplied. Under these circumstances, any body of accumulated experience, such as that described in the following pamphlet, relating to an undertaking which has gradually grown, and which has been carefully worked out in detail, cannot fail to be of considerable value.

The present time is the more opportune for the appearance of such a pamphlet, inasmuch as the University of Cambridge has already shown its satisfaction with the results of the education referred to by taking the necessary steps for the adoption of a statute, whereby successful

attendance at a prescribed course of study pursued by students under the University Extension Scheme, shall entitle those students to obtain a degree with a year's remission of residence.* Such a statute will undoubtedly do much to consolidate and render permanent the movement so far as it has already gone.

The expenses in each locality have hitherto been entirely borne by that locality. This will no doubt continue to be the case; and the amount of the expenses and the various methods of meeting them are indicated in the following pamphlet. It is to be hoped that in many cases these funds will be supplied by permanent local endowment.

It is the opinion, however, of many of those best acquainted with the matter, that a further movement is necessary, and that the time has now come when a great development can be given to higher education throughout England among the masses of the people, either by the University Extension Scheme, or by some similar organisation. In order to effect this development, it will be necessary that the central body which undertakes it should have at its disposal some fund. The amount and application of that fund is indicated in the pregnant sentences at pages 21, 22, and 23 of the following pamphlet. The undertaking could be carried out most cheaply and best, I believe, by the University which has gained the experience and which has provided the staff; and I believe that the University could now develop a complete scheme throughout England if it were in possession of a sum of £2,500 a year applicable to that purpose.

However that may be, I cannot doubt that either the University or some other body will before long avail itself of the experience which has been collected by the University Extension Movement to establish throughout

* See below, page 13.

England a system of higher education reaching much more widely than that movement has yet reached; and, in the hopes that either the University or some other competent body may realise the vast influence and the noble position which will be gained by it if it steps forward at this juncture, I commend the following pages to the reader.

JAMES STUART.

Cambridge,
Dec. 19*th*, 1885.

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have business or domestic occupations taking up the greater part of their time. It occupies, in Higher Education, the position which is occupied by the Night School in Elementary Education.

2. In a University Education, the actual *teaching*—as well as any testing by examinations—must be directed by the University. It is the more necessary to insist upon this principle, because the public are familiar with one great University, the University of London, which dispenses with this particular function of Universities, and confines itself to testing the proficiency of students by examinations, leaving them to acquire their knowledge in any way they please. There is ample reason for the existence of one such institution in the country. But all our other Universities recognise as their chief responsibility the supply of teaching to their students. For it is a fundamental principle of Higher Education, that its value lies, not in the amount of knowledge that may be possessed at any moment, but in the mode in which the knowledge has been imparted, and the habits of mind formed under the process of instruction,—just as the value of coal will be measured by the light and heat given out in the process of combustion. In the University Extension Movement the University itself supplies and superintends the teaching, in whatever part of the country it may be given.

3. In the full conception of University Education an essential is *residence* in the University town, as affording the education of mutual intercourse by bringing together the largest variety of minds in an area small enough for contact with one another. This is the chief advantage which the Universities themselves have to offer: in the nature of things, however, it is one practicable for only a small fraction of the whole nation. Accordingly, University Extension is mainly occupied with carrying, by itinerant teachers, University teaching to the doors of the people who cannot come up to the Universities; at the same time it endeavours, by its institution of Affiliated Students, to encourage and facilitate Residence in the University as a crowning point in the educational system of which it is a part.

The University Extension Movement, then, aims at being an itinerant teaching organisation connecting the Universities with the nation at large. During more than ten years of tentative work it has been feeling its way to a knowledge of the educational needs of the people and the best methods of meeting them. "In the last ten years 600 courses of lectures have been delivered under the superintendence of the Syndicate, the total number of attendances at whole courses of lectures have amounted to 60,000, the number of those who have attended in addition the class for more detailed work which follows or precedes each lecture 37,000, the number of those who have done in addition paper

work at home between the lectures (in seven years) 8,800, and the number of persons who have offered themselves for examination by the examiners appointed by the Syndicate at the close of the several courses of lectures has been 9,000. The amount paid by the towns to the Syndicate, besides all the local expenses of rooms and management, has been between £25,000 and £30,000." In estimating the significance of these figures, it must be remembered that the work has been, during this period, carried on under difficulties: its students have often been the leavings of other educational systems, it has had no substantial rewards to offer, it has been unprovided with proper educational apparatus (such as libraries, laboratories, &c.), and has been wholly unassisted by endowments or other external pecuniary assistance. The Movement may thus be considered to have served a sufficient apprenticeship; and the time appears to have arrived for formulating its system and attempting work on a wider scale.

University Extension has throughout been a **Joint Movement of the Universities and Towns.** It was first started on the application of some Towns to the Universities; and in the subsequent steps of its development the influence of the Towns has been as important as that of the Universities. The University undertakes the Educational Organisation, the Town the Funds and Local Management: the whole constituting a network of Local Branches, working independently, in association with the Universities as a common centre. The present paper accordingly divides itself into two parts: the first considers the movement from the University point of view; the second will deal with the subject of Local Management.

The following pages must be understood as referring to the management of the scheme in connection with the **University of Cambridge,** and also the **University of Durham,*** which, for purposes of this movement, has agreed to joint action with Cambridge. For information as to similar work under the direction of the **University of Oxford,** application may be made to **M. E. Sadler, Trinity College.** The connection of the **University of London** with extension work, is shown on page 43.

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* The centres under the joint management of Cambridge and Durham Universities are:—Alnwick, Backworth, Barrington, Bedlington, Blythe, Broomhill, Burradon, Cramlington, Darlington, Dudley (Northumberland), Hartlepool, Hexham, Middlesbrough, Newburn, Newcastle-on-Tyne, North Shields, Seaton Burn, Seaton Delaval, Skelton, Skinningrove, Stanley, Stockton, Sunderland.

Part I.

UNIVERSITY EXTENSION

FROM THE UNIVERSITY POINT OF VIEW.

A difficulty with which the University Extension has had to contend has been a vague idea many people have had of it as an educational makeshift, something loose and popular, good enough where more recognised College systems were not to be had. But this is the opposite of the view the Universities have taken of their duties to the new classes which they have sought to bring within the influence of higher education. In the *amount* of instruction taken, if the expression may be allowed, that is, in the number of subjects studied, and the total of time spent, no law can be laid down except the capabilities of students. The Universities are perfectly willing to deal with localities which can only undertake a single subject at a time. But in regard to thoroughness of method they have considered that, as dealing with people who work for the most part under difficulties, they were bound to be more rigorous, and not less, than other agencies in the systems of study they bring to bear upon the education pursued under their superintendence. For ten years and more the movement has been pioneering in educational method; and what is about to be described as the University Extension Method of Teaching is put forward as an advance upon the systems usually pursued in Colleges, and one which may, with advantage, be applied in the Universities themselves and elsewhere. The results of teaching done under the Movement, as measured by examinations, have necessarily varied with the varieties of people examined; where comparison has been possible with work done in the Universities themselves, the general advantage of such comparison has been with the Extension Students. At the same time in this, as in all adult education, examination results are the least part of the total educational effect produced; in such matters as

strength and durability of interest aroused, and desire evoked in students to continue their studies for themselves, the advantages of the University Extension Method will be still more apparent.

The University Extension Method of Teaching.

The method pursued under the Movement is based upon the recognition in all that is done of two kinds of people to be dealt with: (1) Popular Lecture Audiences, and (2) in every Audience a nucleus of Students. It is desired that the "Audiences" should be as miscellaneous in their character as the congregation of a Church or Chapel. Those are regarded as "Students" who are willing to do some work at home, however little, between one lecture and another. The combination of these two kinds of people is found to be for the advantage of both: the presence of Students raises the educational character of the Lectures, and the association of Students with a popular Audience gives to the teaching an impressiveness that mere class-teaching could never attain.

For such Audiences and Students the Movement provides Courses of Lectures, accompanied with Classes, Weekly Exercises, and Examinations for Certificates.

1. The **Lectures** are given weekly, in connected courses of three months on a single subject. In no case are single lectures given, or series of lectures on disconnected subjects. It will be seen that thus the Movement does not come into competition with regular institutions for popular lecturing. Another point of distinction from these is that it is not the purpose of the Universities to send out men of great name and celebrity; its lecturers are, for the most part, younger men, who will be willing to devote themselves to the teaching as well as the lecturing, and who can bring the public into contact with the latest results of University work. The intention is that the lectures shall be as interesting as other popular lectures, with the difference that amongst different kinds of interest they chiefly aim at the interest of continuity; and a lecturer will have accomplished no mean educational task if he has succeeded in sustaining the interest of a popular audience in the same subject for three months together.

2. The substance of every Course of Lectures is laid down in a **Syllabus.** This is a printed pamphlet of from 20 to 50 pages, and is sold for a few pence at the commencement of the Course. It is intended as a condensed Text-Book to the Course; every care being taken in it to emphasize points of method and arrangement, while for facts and detailed information reference is made to other

books. For the general audience this Syllabus will be useful, as saving them from the distraction of note-taking while the lectures are being delivered. The Students will be assisted by it in the work they do at home between the lectures; it is further intended as a training for them in analysis and systematic study, which they will be able to apply for themselves to other subjects after the Course is concluded.

3. The Syllabus contains, amongst other things, **Weekly Exercises** in the subjects of the weekly lectures. These Exercises are adapted to Students of all sorts; and are intended to be done by them in writing at home, and at their leisure, every encouragement being given to the use of books and similar assistance, since the purpose of the questions set is not so much to test memory, as to train Students in working for themselves:—though training the memory must not be neglected. Such Exercises are of course purely voluntary; this is in accordance with the character of the whole Movement, which enforces no discipline, but seeks to place its teachers in the most favourable position for exercising influence, and for the rest trusts to the interest such teaching can arouse. The answers are sent to the Lecturer, who returns them with written corrections or other marginal comments before the following lecture. Students may, if they desire, send their Exercises in anonymously; in any case the utmost care is taken to treat such communications as strictly confidential, and no one need be deterred by the fear of having his shortcomings exposed to others.

4. A Lecture usually lasts for an hour; the hour preceding or following* it is taken up with what is known as the **Class.** In this the formal method of the lecture is abandoned, and the time is occupied in any way that seems desirable for elucidating and driving home the matter of the lectures. Discussion is invited of knotty points; questions are put to the lecturer by Students as to any points that seem difficult or obscure; or the lecturer gives additional details and illustrations, or brings forward particular points he has considered too difficult for a general audience. It is an obviously convenient arrangement that the Class on any night chiefly refers to the lecture, not of that night, but of the preceding week; this gives Students an opportunity of thinking over the lecture and attempting the exercises before they enter into the further explanations of the Class; and in practice the Class is mainly occupied with the discussion of points that have arisen in the exercises sent in to the lecturer. This "Class" is open to all who attend the lectures, though, as a

* Considerable difference of opinion prevails as to whether the Class should precede or follow the Lecture. Logically, no doubt the Class should precede, since it deals with the subject of the week before; practical convenience often points the other way. It is a matter that makes little difference to a lecturer, and may be safely decided by local considerations.

rule, only a portion of them avail themselves of it: amongst those who do so it is no uncommon experience to find the Class considered the most interesting part of the work.

5. At the close of each course of Lectures and Classes (twelve weeks) a **Final Examination** is held. This is a written examination, conducted, not by the lecturer, but by an independent examiner under direction of the University, upon the matter of the lectures as indicated in the Syllabus. It is, of course, voluntary, but is only open to those who have done the Weekly Exercises to the satisfaction of the lecturer.

6. In connection with each three months' Course, **Certificates** are granted by the University to Students satisfying a double test: (1) The Lecturer's report of the Weekly Exercises, and (2) The Special Examiner's report of the Final Examination. Great importance is attached to this double basis upon which the Certificates are awarded. (*a*) The Certificates have thus a unique value, as indicating, not only the passing of an examination, but also a regular course of study, followed out for a specified time, under the superintendence of the University. This consideration is especially commended to the attention of teachers and employers of teachers. (*b*) By this plan, scope is given to people of different types of mind: those who can do themselves justice in ordinary examinations, and others—often more mature thinkers—whose strength lies in thoughtful and original work done at leisure. (*c*) A great evil is avoided of other systems, which, by making everything depend upon a single examination, bring a great deal of pressure to bear upon students during the concluding portion of a period of teaching. In the University Extension system, what pressure there is is distributed *evenly* throughout the term; and a Student is just as much earning his Certificate in the Weekly Exercises he does at his own home, as when he is sitting for the Final Examination. (*d*) This requirement of a double test does not increase, but diminishes, the difficulty of obtaining Certificates: for it removes a leading cause of failure—the temptation to neglect work until a final examination draws near. In actual practice, only a small percentage of those who have continued the Weekly Exercises to the satisfaction of the lecturer fail to pass also the Final Examination.

The Certificates are of two kinds, **Pass** and **Distinction**: but order of merit, and competition generally, have no place in the work of the Movement.*

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* Where the Local Management desires to offer Prizes, the University Examiners are willing to assign them.

The system, so described, of Courses of Lectures and Classes, accompanied with Weekly Exercises and Final Examinations, constitutes one form of what may be called the "Teaching System," as distinguished from the more familiar "Examination System." The latter subordinates the teacher to the examinations for which he is required to prepare his pupils, while the method here described treats examinations only as means for assisting the effectiveness of the teaching. The advantage of the University Extension method will appear, whether it be considered from the point of view of the teacher, or the learner, or the University.

A teacher's ideal is that he should have freedom to regulate his teaching in whatever way may be suggested by his own studies and by the circumstances of his pupils: under such conditions his best work will be called forth, and he will be most likely to make himself felt in his classes. On the other hand, some responsibility must rest with the University, or other controlling body, for laying down the courses of instruction that experience has shown to be the best, and for checking the individuality of the teacher where this is found to be acting disadvantageously. The problem of education is to balance this freedom and this control; and in the system here detailed, the key to such a balance is found in the *Syllabus* described above. In a Syllabus, the treatment of a particular course of study is laid down in such detail that it can not only be used as an educational manual, but it can also be judged of by educational experts almost as well as if they heard the teaching given. The University, having laid down general lines of study, requires its lecturers to make use of such Syllabuses for the departments entrusted to each. The lecturers, in so doing, are practically following their own inclinations; yet the management can at any moment interpose where the Syllabus shows the lecturer to be taking an undesirable departure.

Again, the University, which is responsible for regulating the general course of studies, reaps an advantage from such a method as that of the Extension Movement: it can, without diminishing its control of the studies pursued, introduce elasticity into its system. At present a University controls teaching by laying down lines of study prescribed for particular examinations, which must be the same for all students who take them; if the University is to make any variation in the line of study pursued, it must make it for all alike. Yet there will often be changes which the University would not be prepared to enforce, but to which it would gladly assent when in the hands of competent teachers. The system of calling upon teachers to submit their plan of treatment in syllabuses, instead of ordering the same plan of treatment for all the teachers, gives the University an opportunity of *making changes tentatively*; in proportion as such changes

are justified by experience, the University can secure the wider adoption of them.

The advantages of the University Extension system to the learner have been sufficiently described above. It brings him into the closest possible connection with the teacher; it gives the freest scope in its exercises and examinations to different types of mind; it adds to other apparatus of teaching the influence of the public meeting; and it recognises in awarding its certificates every piece of work which the Student has done. It is, however, a voluntary system of education intended for adults: hence it discards discipline and the motive of competition; for the use made of it each Student is responsible only to himself.

The University Extension Course of Education.

What has been thus described may be called the **unit** of the University Extension Movement—a three months' Course of Lectures and Classes with Weekly Exercises and Certificates. By calling this the "unit," it is meant (1) that the Movement never gives less*; (2) that what more it gives consists of combinations of such courses.

A "University Course," in the ordinary sense, is a carefully arranged plan of study, extending over a series of years, embracing a variety of subjects selected so as to assist one another's effect, the study followed out, if possible, in an educational centre where the surroundings will be favourable for culture, and the whole receiving recognition in a University "degree." Such an ideal, however, clearly needs modifying in the case of University Extension if this is to reach the nation as a whole. A system that is intended for students exhibiting all possible varieties of leisure, taste, inclination and previous training, must necessarily be elastic, and capable of being taken up to very different extent by different classes of people. The experience of the movement has led its managers to keep in view two separate objects. (1) Their main care is devoted to the unit of their system, the single Courses, which are suitable for all: to maintaining these at the highest point of effectiveness, and arranging with localities—so far as circumstances permit—for whatever number, and whatever selection of such Courses may be desired. (2) At the same time they invite all who can to take a more extended course, made

* See, however, page 31.

by a carefully arranged combination of single Courses and bringing the Student into direct connection with the course pursued in the University itself.

Arrangements as to Single Courses.

The University Extension Session extends from the end of September to April. It contains two terms of three months each. [The lectures of a term usually occupy twelve weeks, and the thirteenth is wanted for the Final Examination.] These are known as the Michaelmas and the Lent term. In either (or both) of these terms the University enters into negotiations with localities for single courses. [See below, page 24.]

On the **subjects** of such courses the University places no limit. In practice they may be divided into three **groups.**

(1) LITERATURE AND HISTORY. (2) SCIENCE.—The general nature of the teaching in these two groups will best be illustrated by examples of subjects already given.*

(3) ART.—Here explanation is required. It is no part of the purpose of the Universities to give practical instruction in (*e.g.*) Drawing and Music, such as is given by the Schools of Art connected with South Kensington, and by similar institutions. There is, however, a department of Art-teaching that comes properly within the scope of University Education, and which has been greatly neglected. This is instruction in *Art-appreciation* as distinguished from Art-production: the making acquaintance with masterpieces of Painting or Music, Sculpture, Architecture, explanation of their leading points, information as to the history and development of the arts, and the principles of art criticism—

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* (1) LITERATURE AND HISTORY. Shakspere's Dramatic Art, Pedigree of the Shaksperean Drama, Milton's Poetic Art, Development of English Literature, Courses on individual Authors and Works, French Revolution, English History (various special periods), Political Economy, Logic, Greek History and Literature, Constitutional History, English history in Shakspere, Puritan Revolution, England during the Reformation, Parallels between Ancient and Modern History, Influence of the Renaissance on English Literature, Origin and Growth of Language, Landmarks of English History, Social History, The English Commonwealth, European History, Stuarts and Puritans, History of the Georges, The Mind and how we use it, The State (a Study in Political Economy).

(2) SCIENCE. Chemistry of Common Things, Modern Astronomical Discovery, Physical Geography, Geology, Conservation of Energy, Light, Biology, Mechanism of the Heavens, Sound, Pioneers of Science, Force and Motion, Origin of the Rocks and Scenery of the British Isles, Palæontology, Chemistry in relation to Health, Light and Spectrum Analysis, Sound and the Elements of Music, Heat, Electricity and Magnetism, Early Man in Western Europe, Science and History of Music, Botany, Physiology and the Laws of Health, Physiography, Europe in Prehistoric Times, The Physics of the Earth, The Great Oceans, Practical application of Electricity, Animal and Plant life, Prehistoric Archæology and Anthropology.

(3) ART. The Method of Art Study, English Architecture historically considered, The Historical Development of Glees and Part Songs, The Great Age of Italian Art (chiefly Painting).

whatever would serve to render a visit to a museum intelligent. This, if treated with due thoroughness and method, would seem to be as proper an element of liberal education as similar treatment applied to masterpieces of literature. That Art from the spectator's point of view would be a useful subject of study can hardly be doubted, since for every person who can be taught to perform tolerably there will be a hundred who can easily be trained to understand and enjoy. The University has been trying the experiment of such courses in Art, and so far the results have been encouraging.

Course for Students affiliated with the University.*

As stated above, the Syndicate has laid down an extended plan of study, in the form of a combination of single courses, for which special University privileges are offered. This extended course will occupy (as a rule) three years, and will be accepted by the University in place of the first year of the regular University course. Students who have followed this University extension course, and obtained certificates for the different parts of it, will (1) receive the title of "Students Affiliated to the University," and (2) have the right, at any subsequent time, to proceed to the University, and obtain its degrees with two years' residence in place of three. It is believed that more persons will be encouraged to take a course at the Universities if they can thus go through a considerable section of it before they leave their own homes; and that the privilege to complete the course at the University will be valued even by those whose circumstances do not allow them to avail themselves of it. But the purpose of this institution of Affiliated Students goes much further than this. (1) It is intended to encourage continuity of study, and to give that which students have a special right to look for from Universities—the arrangement of a properly organised plan of work. (2) In fulfilling their functions as National Institutions the Universities believe it is eminently desirable that, in addition to those who can become full members of them by residence, they should have large bodies of students all over the country attached to them as associates, with every encouragement given them to become full members.

The principle on which this Course for Affiliated Students is arranged is as follows.—(1) The greater part of it belongs to the special department of study to which the student's inclinations lead him. (2) As in the full University course, it is recognised

* It must be understood that all which is said in reference to the "Affiliation" of Students with the University is provisional; the scheme has been approved by the Senate, but has yet to obtain the assent of the Privy Council and of Parliament. It is not anticipated that any opposition will be offered.

that special studies require supplementing with a certain amount of introduction to more general studies. (3) This combination of special and general constitutes the scheme of study; but, before admitting to the position of an Affiliated Student, it is necessary for the University to take some guarantee that the Student has received that minimum of elementary education which all Universities agree in requiring before they admit persons into formal connection with them. Accordingly the Course for Affiliated Students falls into three parts.

1. *The Special Series of Courses.*—This consists of six Single Courses, which must be consecutive, thus extending over three years. The six must be in the same group, but not necessarily in the same subject of that group : each series will be arranged by the University beforehand, with a view (1) to the preferences of the locality, and (2) to securing such connectedness of matter as will be educationally the best. Specimens of such three years' series of courses are given in an Appendix.

2. *The General Series of Courses.*—For this purpose only two Single Courses will be required, in a group other than that in which the Student takes his Special Series. The two courses of the General Series need not be consecutive; they may be taken before, during, or after the three years of the Special Series.

3. *The Elementary Examination.*—At some period before being admitted to the privileges of Affiliation, the Student must have passed an Elementary Examination in (1) Latin, and one other foreign language, (2) Euclid (Books I—III.), and Algebra (to Quadratics). The University will arrange to examine in these subjects at such times as may be found convenient. Students will be excused from this Elementary Examination if they have, at any time, passed any of the University Local Examinations in these subjects; or if they can in any other way satisfy the University that they have received the elementary instruction required. Unless specially desired it is not proposed that teaching in preparation for this Examination should be given by the agency of the University Extension Movement.

It may be remarked that such an extended course implies an amount of study greater than would ordinarily go to a first year's course in the University itself. But (1) to remit more than one year's residence would be an injury, and not a benefit, to those who would avail themselves of it. (2) It is no part of the purpose of the University Extension Movement to make its studies easier than those of the Universities themselves; on the contrary, its supporters throughout the country have appeared anxious that a high standard should be maintained, if only the system of education could be arranged in a form compatible with the case of persons engaged in the occupations of practical life.

Classes of People Reached by the Movement.

It may be convenient here to introduce a subject important equally from the University and from the local point of view :— the question, what classes of people are reached by the work of the movement? The answer is, all classes alike. The purpose of securing audiences as miscellaneous as the congregation of a church or chapel is repeatedly attained. A local Secretary writes :—

> "I think we have solved the difficulty of bringing together a mixed audience, as we had on a perfect equality workmen earning about 18s. a week, and members of some of the first families in ——, as well as pupils from the schools."

An analysis of a casual examination-list gives the following result :—

> Out of 58 persons who presented themselves for Examination in Political Economy and Literature in ———— 31 were men, and 27 women; of the men, 4 were students, 5 artisans, 4 warehousemen, 9 clerks and shopkeepers, 6 large manufacturers, 1 schoolmaster, 2 unknown ; of the women, 7 were daughters of manufacturers, 2 of ministers, 12 of tradesmen, and 6 were of the milliner class.

Moreover, an important feature of University Extension is that it is entirely without religious or political bias, and a safe meeting-ground for all parties. It may, however, add definiteness to the present survey of the movement to particularise certain classes of people who both may be expected to, and as a fact do, connect themselves with University Extension work.

Schools.

The Movement has been devised for Adults; yet its lectures have in many places been largely attended by Schools, especially Girls' Schools. Satisfactory testimony is forthcoming from teachers that even younger pupils become strongly interested in the lectures and classes—though the paper-work is usually beyond them; but the older pupils of schools have often produced highly satisfactory results in the Weekly Exercises and Final Examinations. This has been especially the case where it has been found practicable to make the subject of the Course part of the regular school work, the teachers following up at home the teaching of the lecturer, and in some cases working side by side with their own pupils. A hindrance to this—especially in Boys' Schools—is the pressure put

upon the school work by the Local and similar Examinations. The difference between these and the system of the University Extension Movement is a difference in kind; the Certificates of Local Examinations guarantee satisfactory teaching in a variety of subjects; the Extension Certificates indicate that students have undergone training in working for themselves at the subjects of their choice. Masters and Mistresses must, of course, judge for individual pupils between the comparative value of the two systems; one consideration, however, may be pressed upon them. In the present condition of our juvenile education, the most serious drawback is the slight hold which is, as a rule, gained upon the *interest* of young people in their work; the almost universal experience is that all work is dropped when school is left, or the Examination passed. The system of the University Extension Movement makes it a primary object to rouse such interest in the subject studied as will bear fruit after the course of teaching is finished. In particular, if it be found practicable for a boy or girl to begin an Affiliated Course in the last year before leaving school, the chances are very considerable that they will desire to continue it after they have left. This has especial bearing upon Pupil Teachers.

Young People who have left School.

The period between leaving school and [say] marriage may be described as the golden age for education. An hour's work at this period is probably worth as much as two or three at any subsequent time for its effect on mental development, and a small effort under these favourable conditions may lay a foundation of interest in a study that will be never lost. This is the age at which people of the well-to-do class go up to College; the Extension Movement places similar advantages within the reach of those who remain at home. Young people are also found to render valuable service in the work of organisation. This is felt so strongly in some localities, that places on the Committee of Management are reserved for younger members. Again, the "Students' Associations" described in another section are largely supported by younger students. But apart from more formal share in the work of organisation, young people may render essential service in promoting the success of individual Courses. They may assist in making them known, and in selling tickets. What is more important still, they may set themselves to increase the number of those who do the Weekly Exercises. With many people a personal invitation to join in these makes all the difference, and "I will if you will" is a formula that has done good service in the past.

People in Business.

The fundamental idea of the Movement has throughout been education for the busy. Clerks and shop people engaged all day

are able to attend the lectures at night. The purely voluntary character of the work is in favour of such persons: they commit themselves to nothing by beginning. If money be the difficulty, it will be found that in most places there are reduced prices for those whose positions in life suggest that they cannot be fairly expected to pay higher prices. Persons of all ages take part in the work; in an educational system from which competition is entirely excluded it is as natural for parents and children to be following the same Course as it would be for them to be reading the same book.

Ladies.

University Extension has been especially patronised and assisted by Ladies of all ages—so much so as to lend some countenance to the assertion of a high authority, that the women of the present generation are more deeply interested in intellectual matters than the men. Domestic duties, however heavy, are of a nature that interfere less with study than the occupations of business life; and satisfactory paper work has often come from sources from which it would not have been expected. A mother of a large family—to take a typical instance—told a lecturer that "she had not read a sensible book since she left school," until she attended his lectures. She was, however, induced to try the Weekly Exercises, and within the first term rose to the Distinction standard. It must be added that important service has been rendered by ladies in local management, as officers or members of committees; in some places special ladies' committees have been formed to promote the success of the work. In some cases Courses have been given exclusively to Associations of Ladies.

Artisans.

In reviewing the different classes of people reached by University Extension, it is natural to give special prominence to the case of Artisans—not that the Movement is intended more for them than for others, but because it is the first instance in which a University system has distinctly set itself to meet the wants of the Working Classes. For these the distinctive features of the Movement have a special fitness. It is an education for adults, and busy adults: it does not put its students to school again, nor subject them to pedantic studies devised for people under totally different conditions. Yet it is no makeshift education, but one which rises by stages to the full studies of the Universities. Its method gives a prominent place to the public meeting or popular lecture, with which working men are already familiar. Nor are they asked to be students only: they are invited to take part in the management of the Movement, and so

increase its adaptability to their requirements. In some places local branches are composed entirely of Artisans, and, where this is not the case, it is a leading purpose in local organisation that the Working Classes should be able to take their full share in it.

Already the Movement has made no inconsiderable advance in this matter of reaching the Working Classes of the country. This is notably the case in the Mining Centres of Northumberland: and, to a less striking extent at present, in large manufacturing towns and railway centres, such as Derby. The Reports of the Organising Secretary, Mr. Roberts, and of lecturers who have conducted the work in such places, throw valuable light on the practical problems of Artisan Education. One thing has been demonstrated in these Reports beyond the possibility of doubt: that Higher Education is a cause which can rouse passionate effort amongst those who would seem to be placed in conditions the most unfavourable to it—who have to contend not only with lack of opportunity, but also with poverty and hardship. After a fortnight's work in Northumberland, Mr. Roberts writes:—

> I wish I could adequately describe the impression this fortnight's work made upon me. The sturdy intelligence of the pitmen, their determined earnestness, the appreciative and responsive way in which they listened, the downright straightforwardness of their speech—all this it is impossible fully to express. I am persuaded that in the Northumberland and Durham districts the pitmen are ripe for a scheme that will bring Higher Education and Culture within their reach.

In Scotland it has long been a common experience to find men working hard in the fields during the Summer in order to obtain funds with which to go to College in Winter. But in England no such Colleges have been available: yet in individual cases great results have been attained by self-training alone. To quote Mr. Roberts again:—

> The leaders of the Artisans in the North are men of great ability and earnestness, and well-read to an amazing degree. As we were being conducted to the Station by a working pitman after one of the meetings, some reference was made to Whewell's "History of the Inductive Sciences," when our guide broke in with, "Ah, that is a book I have long been wanting to see. Mill criticises some point in it, and as far as I can see Mill was wrong." Another working man told me that in nine out of ten of the scanty libraries of the more thoughtful working men some of Mill's books would be found.

And elsewhere he instances pitmen who have made valuable collections of geological specimens and of microscopic slides; and of one who had acquired "a masterly knowledge of some branches of English Literature . . . in face of the fact that he had no early education, and began to work underground when a mere child." The impression made by reading of such effort under such unfavourable conditions is intensified by the very mistakes committed. A working man observed to Mr. Roberts that "one of the hardest and most pathetic things in the lot of a young

working man endeavouring to educate himself was the waste of time and money which ignorance of the best books on any subject and lack of guidance frequently occasioned," and instanced the case of a Cleveland miner who wished to know something of Natural History, and, out of his modest earnings, had spent a couple of pounds in the purchase of Goldsmith's "Animated Nature!"

Amongst men of this stamp it is not surprising to find that the University Extension teaching was eagerly welcomed, and that the lecture-rooms were sometimes "crowded out." But the work was carried on under difficulties which the ordinary educated man has a difficulty in even conceiving. The Reports speak "of a population eager for knowledge, travelling long distances to seek it in all kinds of weather, over the roughest of roads." Allowance is asked to be made in examinations for men whose fingers get cramped after a short time of writing. A case occurs of a Class which could get no place to meet in except a billiard room while the table was under repair. When the billiard table came back they had to assemble at a news table, with people reading newspapers at the other side. And this was a Class on Mathematics! A letter in the *Newcastle Chronicle* says:—

> I know several persons go a distance of six miles in order to hear the lectures; nay, I know some who have travelled ten miles in order to hear some of the present course of lectures.

Mr. Roberts mentions a case:—

> Two pitmen, brothers, who lived at a village five miles from one of the lecture centres, attended the course. They were able to get in by train, but the return service was inconvenient, and they were compelled to walk home. They did this for three months on dark nights, over wretchedly bad roads, and in all kinds of weather. On one occasion they returned in a severe storm, when the roads were so flooded that they lost their way, and got up to their waists in water.

It is interesting to add that they distinguished themselves in examination, and later succeeded in making their own village a lecture centre. One more example must be added, as illustrating the true missionary spirit of the Movement.

> Two students, members of the Students' Association at Backworth, attended the course at Cramlington, a distance of between four and five miles, walking both ways after their day's work. Finding others in their village anxious to study Chemistry, but unable to attend the course at such a distance, they formed a class of seven at Backworth on the night following the Cramlington lecture, and with the help of the Syllabus and their own notes reproduced as much of the lecture as they could. They also purchased some simple chemical apparatus and reagents, and repeated the experiments made at the lecture. The lecturer attended one of their meetings at the end of the term, and at the request of the students examined them, and found that all had acquired a sound knowledge of the subject, and would have passed the regular University Examination had they been entitled to enter for it.

Not less impressive is the testimony borne by working men to the effect of their connection with the Movement. A joiner said at a public meeting in a Yorkshire town:—

It is six years since I first sat in this Hall at the first course of University Extension Lectures, and I have attended all the courses since, except one when I was ill. I cannot tell how much I owe to these lectures. They have worked a revolution in my life. I am able to take broader views of questions, and my interests are widened. My life is altogether brighter and happier.

Or, to quote from a miner's letters:—

I deeply deplore the last 34 years of my life—being buried in the mines since I was nine years of age, and taught to look jealously on Science as being antagonistic to Religion. I little thought what pleasures of thought and contemplation I lost. I have, however, broken loose from my fetters and am proceeding onward. There is a feeling of this kind springing up among many of our working men.

And, referring to a course on Geology:—

I have lived in Cleveland 18 years of my life, but find it true what Jukes says, that I am now in a strange country. I mean, however, to know it.

A Lancashire weaver says:—

Having spent seven years of my life between the looms in a cotton mill, and by application after working hours acquired a little Higher Education, I know something of the pleasure and power it would place in the hands of my fellow men; the grasp of things which are now entirely hidden from their eyes, the different colouring with which all their surroundings would be invested, and the impetus it would give to put increased energy into all their work.

The echo of such sounds comes to us from distant regions. Mr. Burt, M.P., describing his "Impression of America" in an English Newspaper, says:—

I met an intelligent young fellow in one of the wild and remote villages of Ohio, who had recently emigrated from Northumberland. While here he was a student in one of the Science and Art Classes; he attended the lectures in connection with the University Extension Scheme, and was a member of the Mechanics' Institute. He felt deeply the want of similar advantages where he was, and declared that while his position as a mere animal was much better than in Northumberland, the lack of educational facilities, and suitable companionship, made him doubt whether he could accept America as a home.

The one main difficulty in the way of the Movement that appears in every page of the Reports of Artisan Centres is the financial difficulty. As one of their best representatives put it—bread must precede education. Working men are seldom in a position to pay more for a Course ticket than 1/-, or 1/6; if the price could be 2/- it would take an Audience of 700 to make the lectures pay. How purely financial is the nature of the obstacles Working Men's Committees have to encounter may be judged from the following remark made by one well able to judge:—

If we could offer the lectures without demanding from Centres more than they receive in fees, any number of Centres could be started.

It must be understood, moreover, in what the financial difficulties consist.

To an Artisan the total cost of his attendance at the lectures is considerably more than the mere price of his ticket. There are text-books, postage of weekly papers to the lecturer, sometimes railway fare, and often loss of wages by sacrifice of time on the lecture night; all these items have to be considered. Last term, for instance, a young married pitman, who lives some distance from the Northumberland Centres, arranged to leave work early on the lecture night and lost, in consequence, £1 6s. in wages. He is also attending the Course this term and will lose about the same sum, so that although he only pays 1/- for his ticket,

the lectures will cost him, altogether, 25/- to 30/- a term. Another who goes from Seaton Delaval weekly to the Literature Course at Newcastle, finds that, owing to loss of work, train fares and fees, the cost to him will be about £3.

What answer can be made to the following appeal? —

How can you expect such as myself to keep a house over my head, support and keep things respectable, and be able to pay 6/- down on the nail for a Course of Lectures, out of little over a pound a week? Besides, others that I know wishful to be informed on Scientific subjects are burdened with large families. . . . I, and other working men, are only grasping for that which fell from the lips of the great poet, Goëthe, when passing out of existence, viz., "More light:" but when we have to purchase it so dearly I am afraid we shall have to remain in darkness.

This is not the place in which to detail the strenuous efforts by which alone the Mining Centres in Northumberland have been able to raise, amongst themselves, and by contributions from outside, funds for maintaining the Movement for several Sessions in a considerable number of villages. But, looking at the general question, it is not to be believed that difficulties so purely financial will be allowed to long stand in the way of extending to the Working Classes a University system of which they have shown themselves so anxious and so well able to avail themselves. To a certain extent assistance may be looked for from the large funds they themselves control in their Unions and Co-operative Associations; some of the latter already devote as much as £1,000 a year to purposes of education. And, to take a wider view, the needs and demands of the Working Classes in the matter of Higher Education constitute the main argument for the external pecuniary assistance which, it is contended below, is required for the success of the University Extension Movement. In a country like England the sure way for a cause to obtain financial support is to deserve it.

The Strength and Weakness of the Movement

From the University point of view.

No one can question that there is a widely diffused spirit of preparedness throughout the adult population of the country for educational advance. The idea of higher education for adults whenever put forward wins hearty adherence from all classes; the cultured are anxious for assistance in keeping up their studies, and the feeling is equally strong amongst artisans and persons whose early training has been neglected. To this awakening the Universities have by their extension movement largely contributed; moreover, it is here submitted, they have elaborated the method best adapted to the variety of classes which it is desired to reach, a method now brought to completeness in the affiliation scheme

which embraces the studies outside and within the University in a single graduated system. In all quarters there is a willingness to defer to the high prestige of Oxford and Cambridge, and to welcome heartily an organisation that enables teaching to flow direct from the Universities to the nation at large.

But the scheme for extending University teaching, as at present organised, has one signal weakness. There is no fear of difficulty in securing a supply of the right sort of men for lecturers. But in this, more than in most systems, experience counts for a great deal, and is absolutely essential for senior lecturers who must give assistance in organisation as well as teach. Now the movement at present fails to retain the services of its experienced teachers. The payment of the lecturer comes entirely out of the fees charged to the towns; these are as high as the towns can afford to pay, nor are they insufficient considered merely as remuneration for the work done. But to retain teachers in permanence something more is necessary; there must be some prospect of a rise in position, and higher posts for senior men. In the absence of any means of providing these the University Extension Movement cannot hold its own in the competition with permanent colleges, and the career which these are able to offer is continually drawing off its best teachers after two or three years of work. It is just at present that this matter becomes of vital importance. In the future, when adult education is accepted as a matter of course, the funds it requires will be readily forthcoming. But while University Extension is still in its missionary stage a *starting force* must be provided by the Universities; and it is the belief of those who have practical knowledge of the movement that if ten men of the right stamp could be induced to devote themselves to University Extension as a life work this would be force sufficient to reach the whole country within a generation. To secure men of the type required the Universities must be able to offer them the status of College lecturers and officials, or (say) of H.M. Inspectors of Schools. This is not the place to discuss the details by which this object should be attained: whether by particular Colleges assigning fellowships to a particular kind of teaching, as they at present do to particular studies, or by the University inviting contributions to an endowment fund for a term of years. What is insisted upon is that without some mode of securing a regular staff of lecturers University Extension cannot follow any steady plan in extending its organisation through the country.

It appears then to be a critical moment in the history of University education. From some quarter or other the masses will certainly obtain the adult education for which there is a growing demand; just now the Universities have an opportunity which may never recur for stepping forward to take their proper

share in moulding the liberal education of the nation. They can do this without usurping the province of other institutions. They can do it without at all departing from their present work: on the contrary, nothing could do more to assist the stability of our existing University systems than to link with the Universities Associations of Students in all parts of the country who have every facility given them to proceed from the position of associates to that of full members. The University has already done a great deal in elaborating, through its Syndicate, a practical system of extension: the only remaining step is to provide the small starting force for laying that scheme effectively before the country at large

Part II.

LOCAL MANAGEMENT.

For the supply of education such as has been described, the Universities have negotiated with localities of all kinds—with towns and villages, with such an Institution as the Crystal Palace, and with District or Educational Associations throughout the country. The University is always glad to furnish information and give advice on the subject of Local Management. Correspondence should be addressed to the Secretary of the Syndicate the Rev. G. F. Browne, St. Catherine's College, Cambridge. Negotiations for Courses of Lectures are conducted between the Secretary of the Syndicate and a local Committee, or other representative of the locality, that can be responsible for the necessary funds and local management. Arrangements for each Winter's Session are commenced about May. The Organising Secretary, Mr. R. D. Roberts, Clare College, Cambridge, is willing to visit localities, and assist in explaining the working of the Movement.

Cost of the Courses.

The cost of a Course of Lectures and Classes falls under three heads.

1. *The University Fee*, for each three months' Course of Lectures and Classes, £45 * The same Course can be repeated on the same or following day at an additional cost of one-half. Under exceptional circumstances the Syndicate reserves the right of raising this fee (*e.g.*, when the number of Weekly Papers is very large), and occasionally when a number of towns near together unite in a Course, the fee has been somewhat reduced to each.

2. *Small incidental expenses divided between all the towns* (*usually* 3 *or* 4) *taking the same Course.* These are: (*a*) The lecturer's Travelling expenses between the towns. (*b*) The cost of the Syllabus [but as this is almost always a pamphlet that can be sold

* In the London Branch, £30. See also page 43.

for 6d., this item is covered by the proceeds of the sale, and sometimes a profit made]. (*c*) Cost of Apparatus in Experimental Courses [this may be provided locally]. (*d*) An Examination Fee of £2. The share to each town of these Incidental Expenses will not in ordinary cases exceed £5.

(3.) *Local Expenses*: such as Hall, Lighting, &c., Advertising, and General Management. The following Table may be convenient :—

	University Fee.			Estimated other Expenses, &c.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
A Single Term's Course (3 months).....	45	0	0	20	0	0	65	0	0
The same repeated [so as to secure a Double Audience, *i.e.*, Day and Night]	67	10	0	25	0	0	92	10	0
A Course for the whole Session (6 months), or Two Single Terms' Courses in the same subject or two different subjects.	90	0	0	35	0	0	125	0	0
Ditto repeated	135	0	0	40	0	0	175	0	0
Courses in two subjects concurrently for the whole Session of Six Months	180	0	0	50	0	0	230	0	0
Etc. Etc.									

Relation of Local Branches to the University.

As stated above, the University recognises its province to be educational organisation : in Local Management the principle is that a locality should give its own colour to the Movement wherever it is adopted. In some places it has been taken up as an artisan scheme ; sometimes it has been associated with organisations for female education ; sometimes the lectures have been introduced into a town upon the initiative of private individuals ; elsewhere by committees representing all sections of a locality. Some of these plans may seem more desirable than others ; but this is not a question for the University, which, though always willing to advise, is yet prepared to connect itself with all plans alike. Thus, a local branch of the Movement may be :—

(1) A Committee temporarily formed in a locality for the purpose of trying the scheme.

(2) Or a regularly organised local "University Extension Society," carrying on the work from year to year.

(3) Or some particular Institution of the locality.

Relation of the Movement to other Institutions.

There are already existing throughout the country a large number of Voluntary Institutions for promoting Adult Education in their respective localities. They are such as the following :—

1. Local Colleges, formed on the model of the Colleges at the Universities, in our largest towns (*e.g.* Liverpool, Leeds, Birmingham, Bristol, Sheffield, Nottingham, Aberystwith, Cardiff, Bangor, &c.)

2. Local Institutes for supplying miscellaneous instruction to adults in subjects for which a demand may be found in the locality, such as the Midland Institute at Birmingham and the Harris Institute at Preston.
3. Most towns of any size have a "Literary and Philosophical Society," or something of the kind. These are mainly occupied with popular lectures, though in many cases original work is done in connection with them by a small circle of educated men.
4. Some of these Institutions have a more special designation: Church Institutes, or Ladies' Educational Associations, or Mechanics' Institutes [though these last have, as a rule, ceased to retain their special character].

To these may be addded:

5. Night Schools, the purpose of which is to supply wants in the Elementary Education necessary for taking advantage of the rest.

The question will suggest itself, What is to be the relation of the University Extension system to local Institutions such as these?

The principle of the Movement is: (1) that it interferes with nothing; (2) that it can combine with anything; and (3) that its own particular mission is to fill up educational gaps and connect with the Universities. Whatever instruction is given on the responsibility of the University itself must always be given in the method above described. With this reservation it is always ready to ally itself with other Institutions doing educational work, whether in actual connection with them, or uniting with them in separate efforts for promoting the educational advancement of a locality. Thus:—

1. It has happened several times that a "Local College" has been founded in a district in which the Movement was at work. Sometimes in such cases the Extension Organisation has supplied, for a time, branches of teaching which the Local College was not yet prepared to undertake [as at Leeds]. Sometimes the organisation has withdrawn and left the Local College to do its work [as in Liverpool, South Wales, &c.]. Or else [as in Nottingham] the Local College has affiliated itself with the Universities, thereby securing for its Students the right of obtaining a year's remission of residence on their proceeding to the Universities.

2. In the case of "Literary and Philosophical Societies," and the like, these have sometimes taken Courses of University Extension Lectures and Classes in place of their own lectures, foregoing the popular attraction of a miscellaneous programme for the sake of continuity and other educational advantages. More often they have combined the work of the Movement with their own; a common arrangement is for a local society to assign one-

half of a winter's session to a University Extension Course, and during the other half make their own arrangements. Institutions [like Harris Institute at Preston] giving a great variety of adult education have added Courses of University Extension teaching to their programme as a supplement to the rest. In these various ways a local institution may link itself with the Universities, opening up to all its students a portion of the University system, and enabling some of them to take the first year of their course for University degrees before leaving home.

3. Local Institutions may often do good service by affording the means of *trying* the University Lectures and Classes in a locality. After a Course or two have been given the Institution may consider whether to maintain its connection with the Movement, or leave it to be supported by a separate organisation.

Connection with the Science Department of South Kensington.

It may be convenient to point out here that University Extension Certificates in Science subjects are now recognised by the Science Department of South Kensington; so that Students obtaining them will qualify thereby to earn from the Department "payment on results" as Science Teachers.*

Management of Single Courses.

As already pointed out, the Movement can be initiated in a locality by a private individual, or a few persons, or a local Institution, that can undertake the responsibility of the funds and proper management. In most cases, however, it will be found desirable, with a view to the future, to interest as many people as possible in the undertaking from the commencement. For such a purpose a meeting may be summoned by circular addressed to all persons interested in education, to be presided over by the Mayor or other principal personage. The Syndicate can generally send a representative of the University to explain the scheme to such a Meeting. Sometimes such Meetings have been made large and popular in their character; the usual plan is to postpone popular

* Provision is made for this in § xxxiv. e. of the "Science Directory," Jan., 1885. The section contains the saving clause: "In special subjects, which will be considered on their merits." This is inserted in order that, when a Certificate-holder applies for the benefits of this clause, the Department may satisfy itself, by an inspection of the Lecturer's Syllabus, that the Course of Lectures on which the Certificate has been obtained, has covered substantially the same ground as that prescribed by the Department in the same subject.

gatherings until after a trial Course has been held. The Meeting, if it approves, can appoint a Committee, or resolve itself into a Committee, for arranging a Course. These Provisional Committees sometimes continue to manage the work during several Courses; or, after a time, a local society is formed for the purpose, as described below.

Formation of Committees.

It is very important that a Committee should be fairly representative of the locality it is to represent, and great care should be taken to avoid anything that might be misconstrued by outsiders as giving any particular political or religious bias to the management: one of the strong points of the movement is its freedom from political or sectarian colour. If, in order to secure representativeness, the Committee is made large, there should be a smaller Executive Committee. Four classes of people, amongst others, should, as a rule, be found on the Committee, or should be represented by Sub-Committees: (1) Ladies; (2) Young People, who can assist in circulating information and selling tickets; (3) Persons engaged in teaching; (4) Artisans.

Raising the Necessary Funds.

Before undertaking a Course the Committee must see its way to the necessary funds. (1) The plan of covering expenses by a guarantee, to be called up if required, is not found to work well. (2) Subscriptions for the purpose are much better. (3) For subscriptions may be substituted promises to take tickets: this is the most satisfactory plan, as it helps to secure an audience. Often employers of labour, and others, are willing to purchase a considerable number of tickets and distribute them. Of course, all these plans may be combined. A simple way is to supply the Committee and others with cards, in which one column is for promises of tickets, and the other for sums subscribed or guaranteed. If the members of an Executive Committee undertake each to raise, in this way, a certain proportion of the sum required, the amount can be covered with little strain on individuals. In some places the practice is to issue a circular, describing the Movement and the proposed course, with a slip attached, in which persons are invited to enter their names under one (or more) of four heads: (1) Subscribers of any amount they may like to name; (2) Honorary (transferable) Tickets of 21s. each; (3) Students' Tickets, at 10s. Afternoon, or 5s. Evening Course; (4) Artisans' and Shop Assistants' Tickets, at 2s. 6d.

Arrangements as to Tickets.

A most important point for the Local Committee to settle is the price of tickets. Prices have varied, in different localities, from a guinea to 7s. 6d. for Afternoon or Morning Courses, and from 10s. 6d. to 1s. for Evening Courses. Perhaps the most common afternoon price has been 10s. 6d., and the most common evening prices 5s. and 3s. 6d. The almost universal practice is to make the same ticket admit to both Lecture and Class; a few places charge a higher price for the Lecture and Class combined, and one or two take the opposite plan, and make *Students' Tickets* cheaper than others—such a ticket being understood to imply an intention to do weekly work.

Other noticeable points are: *Workmen's* or *Apprentices' Tickets* at very low prices. In some places reduction is made to persons engaged in tuition, or to students of the South Kensington Science and Art Classes, &c. *Party Tickets*: *e.g.*, a party of eight or more (say artisans) are admitted at half-price each. Where a course is repeated in both Afternoon and Evening, it is usual to have a higher price (say 10s. 6d.) admitting to both, and a lower price (say 3s. 6d.) admitting to the Evening Course only. In a few places there are front and second seats.

Most places allow admissions to single lectures at proportionate prices: a few places have refused them altogether, or fixed the prices high. In any case, regular attendants ought to be able to procure on easy terms *Visitors' Tickets* for persons they desire to introduce to occasional lectures. It is often found good policy to offer free admission to the first lecture of a course.

Negotiations with the Universities.

The Syndicate do their utmost to meet the views of Local Committees as to subjects and other arrangements. Difficulty naturally arises owing to the common preference for the Autumn term over the Spring term, and the competition between towns for particular courses. It must be distinctly understood that *the Movement can only be worked by the combination of several towns in taking the same course.* The University arranges such combinations, and endeavours, as far as possible, to form districts of four places resembling one another in character, and likely to need the same sort of subjects. Each town negotiates only with the University, and, where the arrangement is understood, there is almost always found a spirit of "give and take" in settling differences of choice. Such settlement becomes especially easy if towns which take courses annually agree to alternate in different sessions between the Autumn and Spring term, and between the Science and Literature groups of subjects.

Advertising the Courses.

Experience shows that a most difficult part of the work of management is to get the movement widely known to the people likely to attend the lectures. Such methods of advertising as posters, circulars, handbills in workshops, &c., will readily suggest themselves. In the most successful places it is found that a *large amount of personal canvassing has been done*; active members of Committee, and others, have taken handbills and tickets for some time before the commencement of the course, and used every opportunity of distributing them. When a person has got to realise that education is a cause worth working for, here is a simple method in which he can begin.

Securing a Start.

It is obvious that a very great deal may depend on the opening of a term's work. Sometimes public personages likely to draw large audiences are secured to preside at the first lecture—admission to which should be free—or to attend a Public Meeting held just before the course begins. This Public Meeting may often take with advantage the form of a *Conversazione*. Local Committees may be reminded that the date of commencement of the University Extension Session (the end of September) is not a favourable time for securing the help of public men, and that, therefore, negotiations for such a purpose cannot be commenced too soon.

Supply of Books.

The text-books advised by a lecturer are sometimes too expensive for all the students to buy, and it is very desirable to find means of overcoming this difficulty. (1) If Public Libraries are available, it is well to have a "University Extension Table," or even separate room, on which the books can be placed for reference. (2) In the absence of these, if the use of the room can be secured, the supply of books is not difficult. (3) Failing both these plans, it is well to make one of the Committee Librarian, and let him arrange a plan of circulation amongst students for the principal books.

Associations for Work.

The efficiency of a course will be greatly increased if Students can associate themselves together for mutual help, either during the Course, or after it is finished. In a Literature Course, for example, friends may meet and read together the works treated. In a Science Course, they may find opportunity of doing Laboratory work, or making Excursions together. The Lecturers are

always glad to render any assistance and encouragement. A most satisfactory feature of the work in many places is the formation of regular *Students' Associations*, described in Appendix II.

Half Courses for Starting.

The University recognises nothing under the three months' Course: it, however, authorises its Lecturers, for the purpose of introducing the Movement to a locality, or assisting its expansion, to give Half Courses (at half cost) on exactly the same plan as the Full Courses (except that there are no Final Examination and Certificates). Sometimes such a Half Course consists of Six Lectures, with the Weekly Exercises and Class. Another plan, which may be called the *Warrington plan*, has proved very successful; this is to substitute for one of the six lectures a Public Meeting, at which the Lecturer gives a full account of the Movement, and the question is considered of the formation of a Local Branch. A convenient arrangement is to place this Public Meeting in the last week but one: this allows time for raising a subscription list before the final lecture, and in almost all cases it has happened that thus, before the trial Half Course was concluded, an organisation for Full Courses to be given annually was established.

Organisation of regular Local Branches.

The maintenance of one or more Courses from year to year as a regular institution of the locality is the purpose which defines what is here called a "Local Branch." Such Courses have often been carried on with excellent management by the Committee formed when the lectures were first introduced into a town. If, however, from amongst those attending the lectures, and others, a sufficient number of persons can be induced to unite in forming a Society for carrying on the movement, one of its leading purposes will already have been attained, viz., to bring people to interest themselves in the cause of Adult Education as one of the recognised branches of public and philanthropic life. The object of the present section is to suggest some plans on which such Societies can be organised: it will be well, however, first to call attention to two fundamental principles of the movement.

The movement being one of Higher Education must not be expected to be self-supporting from the sale of tickets.

Individual Courses have sometimes brought large profits; others have involved considerable loss; the net results of Courses

extending over several years seem to show that it is not safe to look for much more than half the total cost from the sale of tickets. Such has been the practical experience : it is equally true, as a matter of theory, that University Extension ought not to be self-supporting if it is a movement of Higher Education. Higher Education has no market value. There is no doubt a certain minimum of education, differing in different stations of society, which, as part of the necessary social equipment of life, can be made to pay. But "Higher Education" may be defined as beginning where this leaves off; and Institutions of Higher Education, whether Universities or Public Schools, or Government Classes of Science and Art, and the like—all need the partial support of endowments or other external assistance. From the want of a clear understanding on this subject, disappointment has often arisen ; and some places, after trying two or three Courses, have abandoned the movement "because it did not pay." Confusion has no doubt arisen from comparison of University Extension Courses with other lectures ; and it has been forgotten that, in the University Extension system, a "Lecture" carries with it Class-teaching and superintendence of Students' weekly work demanding the whole time of professional teachers. Indeed, it may be said that the movement has found an obstacle in its own success ; it has succeeded to so large an extent in meeting its expenses by the tickets of those who attend its lectures that people have mentally classed it with organisations for public entertainment, instead of comparing it with other educational systems. The attempt to make the Courses self-supporting out of ticket-money alone will be an injury to the educational character of the movement, as necessitating fashionable rather than educational subjects ; to its popular character, as confining it to the well-to-do, who can pay large fees ; and to the continuity of the teaching from year to year. As with all other public causes—Religious, Political, Philanthropic—so in that of Adult Education the well-to-do and the friends of education must be willing to pay more than other people towards the success of that in which they are interested. And in giving a subscription beyond the amount of their Lecture-ticket they are doing service precisely the same in kind as that done by the endowments with which our Universities have been assisted by the munificence of past generations; they are, moreover, doing this service to their own generation and their native town.

University Extension is a Missionary Movement.

The purpose of the movement does not terminate with the supply of teaching to those who desire it ; it seeks also to stimulate the demand for education. In the case of mere popular

lectures when a man has paid for his ticket and applauded the lecturer, he has done all that can fairly be expected of him. But the spirit of the University Extension Movement is a missionary spirit: those who have found themselves benefited by its teaching should feel in that benefit an obligation to bring others within the sphere of its influence. This would be at once recognised in institutions of Religion or Public life; and Culture, like these, must not be permitted to be selfish. In place after place the Movement has to encounter what may be described as local despair; people admit the value of the system "for other places, but our people care for nothing that goes beyond entertainment." If the suggestion be true it constitutes, of course, the best reason for the organisation of an institution for combating such educational apathy. The University Extension courses are not put forward as a popular boon which has only to be announced in order to be eagerly welcomed. Education necessarily implies effort, and the only virtue claimed for the movement is that it constitutes a good centre, around which the educational effort of a locality can rally.

An Appendix contains a list of the Local Branches of the Movement, arranged according to the different plans on which they are organised: notes are added, so far as space permits, on special details in the management of each. Here it will be sufficient to describe briefly different plans of organisation. Many of the Local Branches issue a Constitution, a paper of about four pages, containing the rules, lists of officers and members, &c.; or these are added to an Annual Report.* From a comparison of several of these it appears that the favourite title is "The University Extension Society" [or "Association"]. The object of such Society is defined as the maintenance in permanency of one or more Courses of the Movement; in some cases [see Hull, Scarborough, &c.] a second purpose is added in the extension and organisation of Local Education. The management is usually in the hands of Officers and a Council [or Committee]. Of the Officers the President is the Mayor, or a public personage, or a leading Educationalist of the town; some places prefer to have a working President, and reserve the office of "Vice-President" for influential persons whose countenance they desire to obtain. A Treasurer and Secretary are obviously necessary; sometimes there is an additional Secretary to represent Ladies or Students, &c. In some Societies a Librarian is one of the Officers. The Council

* The Secretary of the Syndicate is always glad to receive copies of these Reports and similar local documents.

varies in number from ten to twenty; these are usually elected at an Annual Meeting, and often delegates are added representing, say, Trades Councils or particular Institutions. The usual time for the Annual Meeting is soon after the conclusion of the Winter Session; in some places provision is made for another Annual Meeting "of the nature of a *Conversazione*."

The most important clause, is of course, that defining membership of the Society: on this the nature of the organisation really depends.

Six plans of organisation may be distinguished.

1.—The Plan of **Fixed Subscriptions.**

A Society may be formed of Subscribers of some convenient amount—usually One Guinea. The Subscriber obtains a ticket of admission to the Courses given, in addition to the voting and other privileges of membership; and this ticket may or may not be transferable. [Appendix, page 44: a simple example is Derby; Hull is more elaborate]. This is the simplest of all plans, and is perfectly familiar in other institutions. The objections to it are two. (1) The amount of the subscription tends to confine it to the well-to-do classes. This is obviated in the Northampton scheme, by allowing a group of persons uniting in a single subscription to depute one of their number to act as a member of the Society. (2) Unless several Courses are being given at the same time, it will usually happen that Members of the Society are paying more for their lectures than outsiders. In reality, of course, this is no objection; the amount paid by the Subscriber over the price of lecture-tickets represents his contribution to the necessary endowment. An attempt is in some cases made to meet the difficulty by allowing Subscribers to receive the full value of their subscription in tickets. If this plan is followed, it may be well to grant such tickets only on application; it is found (*e.g.* in Derby) that about half the Subscribers use the tickets to which they are entitled.

2.—The Plan of **Unfixed Subscriptions.**

It is the direct purpose of this form of Constitution to include within the Society persons in all positions of life. Accordingly, the Society is composed of Annual Subscribers, but the amount of the subscription is left to the member himself to fix; and, as a fact, in York and Blackburn [Appendix, page 46] subscriptions vary from £5 to 6d. a year. In Blackburn, where the price of tickets is settled for each Course separately, the amount of his subscription is credited to the member in the purchase of tickets. In York, with a view of throwing the Lectures open to all classes, the Course ticket is kept at 1/-, and Subscribers of 10/- are entitled to two, and Subscribers of 5/- to one ticket; "in this way," to quote the

prospectus, "persons in a position to pay higher fees are able to share in the advantages offered by the lectures, and also give necessary assistance to the Society." The stability of this plan of organisation has not yet been tested by time; at present it seems to work well. No doubt some persons will be tempted to abuse such a system by obtaining the benefits of the Courses for less than they could afford to pay; but the plan has the advantage of directly recognising the principle that in a movement of this kind some persons must pay more than others.

3.—The Plan of **Subscription-Shares** or **Scarborough Plan.**

Of the plans described so far, the first fixed the subscription at a definite sum per annum, the second leaves it entirely to the Subscriber himself. A third, known as the Scarborough Plan, makes the subscription adjust itself each year to the requirements of the year, there being a maximum of liability beyond which it cannot rise. On this system an Association is formed of persons holding one or more "Subscription-Shares," which term is thus defined:—

(1) The total liability in no case exceeds £1 per annum per Share taken, and each Share admits one person to the Courses given.

(2) The total expenses of whatever Courses are undertaken must be *covered beforehand* by the number of Subscription-Shares taken. [The effect of this will be that all tickets sold to non-subscribers will be surplus profit.]

(3) The surplus of receipts over expenditure in each year goes to reduce the amount to be paid on each Subscription-Share for the following year.

To illustrate the working of this plan. Suppose the total expenses of a course (University and local) to be estimated at £65. Before a Society can be constituted on this system, 65 shares at £1 must be taken up, some Subscribers taking more than one share. Then, even if this number cannot be increased, the Society is in a position to undertake one Course per annum. (1) Suppose in any year the Course to be a complete failure—that not a single ticket be sold. In this case the Subscribers would have to pay the full £1 per share; but seeing that they (or their nominees) would have had some 12 lectures, with classes, weekly papers, and University Certificate, they could not consider themselves hardly dealt with. (2) Suppose the Course a moderate success; perhaps 50 persons [outside the Subscribers] taking tickets at [say] 10/-. This would give £25 to divide; and as a result Subscribers would for the following year get their tickets and other privileges for the reduced subscription of 12/8 instead of £1 per share. (3) If the Course were a decided success, the audience [including Subscribers] reaching the figure of 200, the Subscribers would, the following session,

obtain their lectures, &c., for nothing. In Scarborough, to take an actual case, Courses are kept up during both terms, involving a minimum of 130 Shares. It was found practicable in the second year to reduce the £1 Share to 16/- ; and in the fourth to 14/- ; besides using part of the funds for additional work.

If, however, the Society is in a healthy condition, the number of subscriptions would not be stationary, but would increase ; each additional subscription beyond the minimum required becomes surplus to divide. Thus, on this system, the more Subscribers there are, the less is the amount of subscription each has to pay ; and this has the effect of giving each member a direct pecuniary interest in increasing the numbers of the Society. The system has an advantage again in reference to the expansion of the work of the Society. Suppose it is desired to have two Courses instead of one, there is no need for experiment and risk ; effort must be concentrated on bringing the number of shares up to the minimum required for the increased number of Courses.

The Appendix [page 46] will give illustrations of Local Branches organised on this basis, which will be found specially suited to localities in which there is no great difference between the classes of people attending the lectures. There is, of course, no necessity that the maximum of liability should be fixed at £1 per annum per share ; in Barrow it is fixed at 10/-, and 135 shares were taken before starting.

4.—The Plan of **Endowment.**

The Conference of 1883 on the work of the Movement recommended, amongst other modes of making provision for the support of the lectures, "the collection, by a town's meeting or otherwise, of a capital sum of [say] £700 or £1,000 to provide for the permanent endowment of one Course per annum, or of such larger sum as may obtain two Courses [one in each term] each year." It was also suggested that local societies should put themselves in a position, if necessary, by incorporating themselves under the Companies' Act, to receive legacies and other gifts. It is often easier to raise a lump sum by a single great effort than to keep up an annual subscription list to a required amount ; and, as remarked elsewhere in this paper, this plan becomes of especial importance in connection with the scheme for Affiliated Students.

5.—The Plan of **District Associations.**

Another plan recommended by the Conference was the union of places in a District Association, wide enough to command influence and obtain subscriptions and endowments, which would

enable the Association to undertake part of the cost of the local Courses. This is the principle of the London Society for the Extension of University Teaching [Appendix page 43] which carries on work in connection with three Universities, over a District comprising (last year) some 23 centres, at an annual expenditure not far short of £2,000. Two other Districts have been recently formed: the North Midland Association, of which University College, Nottingham, is the nucleus, and an Association of the Northumberland Mining Centres. The former aims at raising an endowment of £600 per annum, with which it expects to be able to meet half the cost of Courses held within its area—the counties of Nottinghamshire, Lincolnshire, Derbyshire, and part of Staffordshire. The Northumberland Mining Centres have made a gallant struggle to obtain pecuniary assistance from individuals, London Companies, Associations of Employers, Workmen's Unions, and Co-operative Societies, and other sources.

The salient point in such a plan of organisation will be the relation between the Local and the District Management.

1. In the London Society each Local Committee is represented in its dealings with the Central Council by its Secretary, periodical conferences being held between the Council, the Local Secretaries, and the Lecturers, for discussion and deliberation. The Local Committee bears all local expenses: in regard to other expenditure, a surplus or a deficiency is divided in fixed proportions between the Local Committee and the Central Society [Appendix, page 43].

2. The North Midland Association consists of a Central Committee, on which Local Committees are represented proportionately to the nnmber of Courses they undertake. It offers Courses to towns at a fixed charge amounting to barely one-half of the regular cost, the Association paying the balance. [Page 47.]

3. In the Northumberland Mining Centres the General Committee for the District is formed by the *aggregation* of the Local Committees, the voting in the General Committee being by Committees and not by individuals. On page 48 will be found interesting information as to the working of this plan.

6.—The Plan of **Union with other Local Institutions.**

There remains the plan of organising a Local Branch wholly or partially in connection with some existing institution of the locality. This has been discussed in a previous section. The Appendix will show examples in which the full responsibility of the Movement, pecuniary and otherwise, is undertaken by the local institute: *e.g.*, the Harris Institute, Preston, the Newcastle Literary and Philosophical Society [page 49]. In some cases [*e.g.*, Southport (Town), page 49] a local Literary and Philosophical

Society undertakes the management of the Movement, with the assistance of special subscriptions. Elsewhere the courses are managed by independent Committees, but some local institutions grant the use of a hall, and in other ways give countenance to the work of the Movement.

Expansion of Local Branches.

A Local Branch which has once got to work with an annual Course or Courses, and has so brought home the idea of the movement to its locality, should then set itself to steadily expand its operations in proportion to the funds it can raise and the demand it can arouse. It has long been an ideal of educational reformers to see a ladder of education for the nation, of which the first round should be the primary school, and the final round the University. But hitherto the only scheme of advanced education open to the provinces has taken the form of the Local College, an institution needing for its starting a capital of some £20,000, an annual expenditure of some three or four thousand pounds. Such costly institutions are necessarily confined to a few places. But the effect of the University Extension system is that no town need wait till it can raise sums like these; if it can see its way to some £50 [or, with local expenses, £70] a-year, it can make a start with a single step in a University organisation, and it can go on adding Course to Course to whatever extent its means will allow. Local ambition in the matter of Adult Education has thus a path clearly opened to it; besides supplying more immediate wants, every town can, by the Affiliation Scheme, rise to become its own University, and this without raising any difficult questions as to the multiplication of degree-giving bodies.

Combination of Courses.

1. When a single Course annually has been made a success, a Local Branch should proceed to try a Course repeated [at the cost of an additional half-fee]: *i.e.*, an evening scheme should add afternoon lectures, or an afternoon scheme evening lectures. In several localities this has proved a financial gain, from the wider character of the audience thus secured; if not, this is a natural direction for missionary enterprise to take, and as such it can often obtain support by means of special subscriptions. 2. Or Courses can be tried in both terms, before and after Christmas, the work being thus continuous through the whole winter. 3. In any case, an effort should be made to secure, as soon as possible,

Courses in more than one of the groups of subjects, especially in Science, and either Literature or Art—in both concurrently, if possible. The supporters of the Movement are so clearly divided into favourers of Science, and favourers of Literature and Art, that the double plan will, in many respects, be easier to work than the plan of single subjects.

Special Courses.

As an appendage to the regular University Extension Courses a Local Branch may often find it convenient to arrange other lectures or classes for special purposes. For example, the York Society organised a series of popular Science Lectures in connection with the Gilchrist scheme: the general interest in Science so aroused could not do otherwise than make itself felt in the regular work of the Movement. Especially noticeable are the **Junior Classes** held at Sheffield and Hull. These were intended originally for Pupil Teachers in Primary Schools: it was hoped that with these hard-worked young people the interest attaching to lecture-teaching might prove a relief to the mechanical routine of their daily work. The scheme has proved a great success with those for whom it was originally intended;* in addition it has been eagerly welcomed by other young people, especially Ladies' Schools, and the classes have sometimes been as large as 300 in number. The favourite subjects are History and Geography. As managed in Hull no weekly exercises are set in these classes [the cost being thus greatly reduced], but local Certificates are granted in place of the regular Certificates of the University. The spirit of the Movement is carried out by making these Certificates depend, not only on an Examination at the end, but also upon the pupils' note-books, which are handed in for inspection at the end of a Course: and, throughout the Course, the teacher gives hints how to take notes—a point of no little importance in the case of young people. Great importance is attached by the Hull Society to this branch of their work, and an experience of eight years has enabled them to trace how such a Junior Class becomes a feeder of the Ordinary Courses for Adults.

Affiliation.

The main step, however, in the expansion of a Local Branch, will be to organise the Courses for Affiliated Students, described above. By securing these, a local agency will not only afford to a few, who could not be absent three years at a University, the

* The Hull School Board has given every assistance, and, under the New Code, pays the [small] fee charged for pupil teachers.

opportunity of taking the first part of their Course before leaving home, but they will further be opening to the whole town that which the Universities offer as the best scheme of continuous study they can devise, consistently with educational and practical considerations—a scheme which is, moreover, an integral part of the Course for University Degrees.

(1) Arrangements may be made for an *Affiliated Course in a Single Branch*, that is, in either Science or Literature, &c. For a town already taking Courses in both terms of the year, this plan involves no additional outlay; the only difference is that the three years' work must form a connected series of Courses, arranged by negotiation at the commencement. There will, very likely, be some sacrifice of popularity in the fact that all the Courses of this period must be taken from the same group of subjects; at the same time care will be taken that, as far as possible, each of the Six Courses shall have an independent interest of its own. It will be remembered that persons desiring to become Affiliated Students must, in addition to this, take two Courses of the "General Series" (*i. e.*, from the other group of subjects): these can form the work of a fourth year, or they can be arranged at any convenient periods of the three years; or, in the case of towns already connected with the Movement, any previous Courses will count for this purpose.

(2) But the work of a Local Branch will attain a high degree of completeness if arrangements can be made for *Affiliated Courses in Two Branches*, that is, in Science and Literature, &c., concurrently. In this case, Students can take the three years of "Special" work in whichever Department best suits them, and can, without waiting for a fourth year, secure the two Courses of the "General" Series—to say nothing of the variety of attraction such a system offers to the ordinary lecture audience of a town. This double Affiliation involves, in addition to incidental expenses, a University fee of £180 a year. But, though a paradox, it is true that it is sometimes easier to raise a large sum than a small one for public purposes. In addition to sale of tickets, subscriptions, and similar modes of meeting ordinary expenditure, it is, for the purpose under discussion, quite practicable to aim at endowment, and to look for large gifts from the wealthy and public-spirited of a locality. It is not, of course, meant that these results can be secured without a vigorous effort: the argument is merely that the scheme of Affiliation with the Universities is a tangible object for which to work in local educational advancement.

Co-operation with other Educational Agencies.

In most towns there will be, besides the University Extension Movement, other agencies at work for Higher Education, or for

purposes closely connected with it. Among others may be instanced Institutions for Technical Instruction, Art Galleries, Scientific Museums, Musical Associations, Parish or Congregational Mutual Improvement Societies, and the like. The cause of Higher Education needs the combination of effort upon the part of all its friends; and it is much to be desired that such agencies as have been named would consider the question of mutual co-operation. It is quite right to attach high value to independent effort; but, without in the least sacrificing this, combination between educational agencies may do much good. They have needs in common, such as libraries, halls, and other suitable premises. They are often wasting power by doing the same work over and over again. And they often have it in their power to directly help one another; thus, Exhibitions of Pictures or Scientific Objects would increase their usefulness tenfold by being connected with Lectures on Art and Science; or Musical Associations, aiming at anything beyond light music, would greatly increase the interest of their work if associated with agencies for systematic study of Music. Such co-operation between educational agencies might stop short at mutual understanding, or they might go on to combine their efforts in a common Institution.

Town Institutes.

A natural object of local ambition would seem to be a Town Institute, concentrating in itself a variety of agencies for education or self-improvement, and important enough to advertise itself, to be an object of local pride, and to attract gifts, legacies, and other endowments. It should be under the management of a thoroughly representative body, which would have as its object to *organise* the Higher Education of the locality—not interfering with existing agencies, but combining and supplementing their operations. It would endeavour to secure such objects as these:—

(1) Libraries, both for circulation and reference.

(2) Art Galleries, especially for works of local artists.

(3) Scientific Museums, especially for objects of local interest.

(4) Lecture Halls, Class Rooms, and other buildings necessary for educational purposes.

(5) Night Schools, and other means of supplementing elementary education.

(6) Science and Art Instruction in connection with South Kensington.

(7) Lectures in Art and Science, and Music, in special connection with its Museums, &c.; and the formation of Field Societies, or other local associations, for doing practical work in Science and Art.

(8) The University Extension Movement, with Courses for Affiliated Students, as a link between the Local Institute and the University.

Educational Councils.

In any case a good step is the formation of an Educational Council, representative of various agencies of an educational or quasi-educational character, in a locality: this has in the past produced good results. It is important in endeavouring to create such a Local Council to make it clear *that it is to be purely consultative:* the object being to bring various bodies into communication with one another, and not in any way to hamper the independent action of any one. Its meetings should be periodical, and should be of the nature of Conferences, at which such topics as these would be discussed: (1) how to prevent waste in educational effort, (2) the special wants of the locality, (3) further advances in local education. Such Councils might also do good service by efforts to spread information on matters of local education, *e.g.*, by addresses from distinguished educationalists, or by deputations sent to visit other localities.

APPENDIX I.

LOCAL BRANCHES.

LONDON.

THE LONDON SOCIETY FOR THE EXTENSION OF UNIVERSITY TEACHING.—*President:* The Right Hon. G. J. Goschen, M. A., D.C.L., M.P.—*Secretary:* R.D. Roberts, M.A., D. Sc. Office: 22, Albemarle Street, W.

The work of the movement in London is associated with the three UNIVERSITIES OF LONDON, OXFORD, AND CAMBRIDGE.—The Society is formed of Subscribers and Donors. Local Committees are related to the Central Society in the following way:—(1) For local expenses the Local Committee is entirely responsible. (2) For others: If the sum received from tickets in a local branch falls short of the sum payable to the Council of the Socity, this deficiency is paid in the proportion of one-third by the Locality and two-thirds by the Society; a surplus, on the other hand, is divided equally between the Local Committee, the Society, and the Lecturer.

The Report for 1884 thus exhibits the progress of the Society:—

	Number of Centres.	Number of Courses.	Number of Entries.	Average number at each Centre.	Average number at each Course.
First year.					
Oct.—Dec. 1876...	5	7	139	28	20
Second Year.					
First Term ....Jan.—Apr. 1877...	7	9	222	32	25
Second Term .....Oct.—Dec. 1877...	5	9	379—601	76	42
Third Year.					
First Term .....Jan.—Apr. 1878...	8	11	320	40	29
Second Term .....Oct.—Dec. 1878...	6	8	284—604	47	35
Fourth Year.					
First Term .....Jan.—Apr. 1879...	4	6	150	37	25
Second Term .....Oct.—Dec. 1879...	13	26	1224—1374	94	47
Fifth Year.					
First Term ....Jan.—Apr. 1880...	13	24	1095	84	46
Second Term .....Oct.—Dec. 1880...	12	20	1142—2237	88	57
Sixth Year.					
First Term .....Jan.—Apr. 1881...	13	17	870	67	51
Second Term .....Oct.—Dec. 1881...	16	26	1619—2489	101	62
Seventh Year.					
First Term .....Jan.—Apr. 1882 ..	17	25	1459	85	58
Second Term .....Oct.—Dec. 1882 ..	22	30	1755—3214	79	58
Eighth Year.					
First Term .....Jan.—Apr. 1883...	19	27	1632	86	60
Second Term .....Oct.—Dec. 1883...	20	23	1789—3421	89	77
Ninth Year.					
First Term . .....Jan.—Apr. 1884...	19	22	1691	89	77
Second Term .....Oct.—Dec. 1884 ..	23	31	1971—3662	86	63

The Accounts for the same year show an Expenditure of £1,865 17s. Towards this was derived from Local Committees the sum of £979 10s. 6d., and from subscriptions the sum of £991 1s.

The centres at present in connection with the London Society are as follows (with the name of Local Secretaries) :—

WHITECHAPEL. *Secretary :* Bolton King, B.A., Toynbee Hall, 28, Commercial Street, E.

POPLAR. *Secretary :* R. P. Scott, M.A., LL.M., the George Green Schools, East India Road.

LEYTONSTONE. *Secretary :* Rev. W. H. Richmond, Forest Lea, Holly Road, Leytonstone.

BANK OF ENGLAND. *Secretary :* Thos. Askwith, Bank of England, E.C.

CITY OF LONDON COLLEGE (White Street, Moorfields, E.C.)

GREENWICH. *Secretary :* James Gray, B.A., White Cottage, Vanburgh Fields Blackheath.

LEWISHAM. *Secretary :* E. C. Sinkler, 14, Belmont Hill, Lee, S.E.

NEW CROSS. *Secretary :* Henry Benwell, M.A., 33, Breakspears Road, St. John's, S.E.

DULWICH. *Secretary :* G. G. Skinner, 2, Sussex Villas, Thurlow Park Road, West Dulwich, S.E.

SOUTH LAMBETH, KENNINGTON, AND BRIXTON. *Secretary :* Rev. W.W. Edwards, M.A., St. Barnabas Vicarage, 31, Guildford Street, South Lambeth, S.W.

PUTNEY. *Secretary :* Miss Reeves, Tiervarna, St. John's Road East, Putney Hill, S.W.

WIMBLEDON. *Secretary :* Mrs. H. W. Lawrence, Alenho, Ridgeway, Wimbledon, S.W.

SURBITON. *Secretary :* Richard Sennett, R.N., Tolcarne, The Avenue, Surbiton Hill, S.W.

HAMMERSMITH AND WEST KENSINGTON. *Secretary :* Lewis Sergeant, B.A., 13, Girdlers Road, Brook Green, W.

CAMDEN ROAD. *Secretary :* J. A. Heaton, 24, Elsworthy Road, Primrose Hill, N.W.

HIGHBURY. *Secretary :* Rev. H. Gee, M.A., St. John's Hall, Highbury, N.

STOKE NEWINGTON. *Secretary :* W. Stanley Anderton, B.A., 57, Clapton Common, E.

HIGHGATE. *Secretary :* J. H. Lloyd, Hillside, Jackson's Lane, Highgate, N.

WOOD GREEN. *Secretary :* C. H. Conolly, 3, Church Hill Villas, Wood Green, N.

CROYDON. *Secretary :* H. Keatley Moore, B.A., B. Mus., Adelaide Lodge, Addiscombe.

SUTTON. *Secretary :* H. H. French, Florenceville, Grove Road, Sutton, Surrey.

NEW BARNET.

WATFORD. *Secretary :* Rev. Newton Price, B.A., Oxhey Vicarage, Watford.

HARROW. *Secretary :* Mrs. Glazebrook, West Hill, Harrow.

KEW and RICHMOND. *Secretary :* Miss Ida A. Sharpe, St. Bees, Kew Gardens.

SEVENOAKS. *Secretary :* D. M. Birkett, M.A., Schoolhouse, Sevenoaks.

CHISLEHURST. *Secretary :* Ernest S. Allen, Salcombe, Chislehurst.

KINGSTON-ON-THAMES. *Secretary :* Valentine Knapp, Clarence Road, Kingston.

[It is hoped to resume work shortly at BATTERSEA, HACKNEY, KILBURN and WESTMINSTER.]

Local Branches on Various Schemes of Management.

1.—On the Plan of Fixed Subscriptions.

HULL UNIVERSITY EXTENSION SOCIETY.—*President :* Dr. Kelburne King, F.R.C.S.—*Secretary :* E. J. Wilson, M.A., 6, Whitefriar Gate.

The Society is in connection with the HULL ROYAL INSTITUTION. This exists under Royal Charter, and conducts various educational work, besides giving Courses of Lectures—Scientific, Literary, and Popular. One feature of its work is the *Penny Lectures,* given every Saturday afternoon, by local lecturers. A movement, emanating from a town's meeting, has been set on foot for expanding the Royal Institution into a full *Local College.* The project remains in abeyance for the present. The University Extension Society uses the premises of the Institution, but its management is independent.

The Constitution of the Society defines its object as twofold: (1) To maintain in permanency Courses of the Movement. (2) To work towards a complete Collegiate System of Technical and General Education in various ways: *(a)* Special Classes for Pupil Teachers, &c.; *(b)* To spread information on the subject of local education; (*c*) To promote co-operation amongst local agencies for education; (*d*) To raise contributions to the "College Fund."

The Members of the Society are: (1) Subscribers to the original guarantee; (2) Donors of £5 or upwards to the "College Fund;" (3) Annual Subscribers of one guinea and upwards; (4) Holders of Vice-Chancellor's Certificates. The privileges of membership are: (*a*) A vote in business meetings; (*b*) The Annual Subscribers nominate one person [the subscriber himself or another person] for each subscription of one guinea to all the Lectures and Classes of the present arrangement [*i. e.*, usually Four Courses per annum, besides Junior Classes]. Of course the amount of work undertaken must depend largely upon the amount raised by Annual Subscriptions, which is found to vary greatly in different years.

Other noticeable points are: (1) The JUNIOR CLASSES described above (page 39); (2) The Society holds Two Annual Meetings, one of the nature of a *Conversazione*; (3) One of the officers is "Librarian," and has the charge of circulating books bearing on the lectures.

DERBY SOCIETY FOR THE EXTENSION OF UNIVERSITY TEACHING.—*President:* The Duke of Devonshire. *Secretary:* H. Arnold-Bemrose, M.A., Irongate.

Membership by Subscription of One Guinea, which entitles to two tickets for one Course, or one ticket for two Courses. Donors of £10 become Life Members. [It is found, in practice, that about half the subscriptions are represented in tickets. Subscriptions cover about one-third of the whole expenditure.] Other noticeable features are the representation on the Council of the *Students' Association* [two delegates], and the *Derby Artisans' Higher Education Society* [three delegates].

CHESTERFIELD UNIVERSITY EXTENSION ASSOCIATION.—*President:* The Duke of Devonshire. *Secretary:* Dr. Jeffreys, Eastwood House.

Membership by Annual Subscription of 10/-, *plus* the responsibility of selling one additional Course-Ticket [8/-] The subscription admits the member to the Course. Subscribers of three guineas annually become Vice-Presidents.

NORTHAMPTON UNIVERSITY EXTENSION SOCIETY.—*President:* *Secretary:* W. R. D. Adkins, B.A., Springfield.

Membership by Annual Subscription of One Guinea. Special features: (1) A group of persons uniting to subscribe a guinea may depute one of their number to act as member of the Society. (2) Members receive the full value of their subscription in tickets *on application*.

THE HARTLEPOOLS UNIVERSITY EXTENSION ASSOCIATION.—*President:* *Secretary:* C. Macfarlane, 6, South Scarboro' Street, West Hartlepool.

In the constitution of this Local Branch the place of Annual Subscribers is taken by Course-Ticket holders [front seats, 10/6; second seats, 3/6]. Each Ticket-holder becomes a member of the Association for the year. The management is in the hands of a Committee. The Association is not called together to elect this Committee, but a list of all Ticket-holders is [in Sept.] sent to each, and they are invited to send in their votes for Members of the Committee of Management. The Committee elect the Officers.—It is found that many are willing to assist by taking Tickets who are not able to attend the Lectures.

DORKING.—*Secretary:* Rev. H. R. Barker, Cotmandene.

Managed by a Committee. Its "Honorary Transferable Tickets" at One Guinea each have practically come to be Annual Subscriptions.

MAIDSTONE.—*Secretary:* Randal Mercer, Church Institute.

Managed by a Committee. Annual Subscriptions, One Guinea.

2.—On the Plan of Unfixed Subscriptions.

YORK UNIVERSITY EXTENSION SOCIETY.—*President:* Mr. Alderman J. S. Rowntree. *Secretary* (pro tem.): J. B. Skerry, 26, Charlton Street.

Membership by Annual Subscriptions; the Subscriptions varying from £5 to 6d. Subscriptions of 5/- entitle to one; of 10/- and upwards to two, tickets for the Lectures and Classes. All members have equal voting power.—The design of this constitution is thus described: "The chief aim of the scheme was to interest all classes of society in the work, and this was achieved by giving to Subscribers of 10/- and upwards two tickets for the Course of Lectures, and Subscribers of 5/- one ticket. In this way persons in a position to pay higher fees were able to share in the advantages offered by the Lectures, and also give necessary assistance to the Society. This also enabled the tickets for the whole Course of Lectures and Class to be issued at the small charge of 1/-, and thus put them within the reach of the Working Classes.—The local opinion is that this small subscription, though abused by some persons able to pay more, yet on the whole works well. Large numbers of artisans have joined the Society, which in fact represents all classes of society.—Importance is attached to the principle of having no reserved seats. —Another feature of this Society is that they have arranged for popular lectures other than those of the Movement, and have found them helpful: a Course under the Gilchrist Scheme, and one by Sir John Lubbock.

BLACKBURN UNIVERSITY EXTENSION SOCIETY.—*President:* Lieut.-General Feilden, C.M.G., M.P.—*Secretary:* W. H. Brewer, M.A., H.M. Inspector of Schools, Shear Bank Road.

Membership by Annual Subscription:—"No sum is fixed for the amount of the Annual Subscriptions," and in purchasing tickets members are credited with the amount of their Subscriptions. [As a fact the amounts vary from £5 to a shilling or two.]—A special feature is that *Collectors* of £1 and upwards per annum are entitled to a ticket for a single Term's Course.

NORWICH.—*Secretary:* Rev. J. Wilson, St. Stephen's Vicarage.

This local branch is managed by a Committee. The tickets are supplemented by Annual Subscriptions, varying in amount from £5 to 5/-, and carrying tickets to their several amounts.

3.—On the Plan of Subscription-Shares or "Scarborough Plan."

SCARBOROUGH UNIVERSITY EXTENSION SOCIETY.—*President:* Lord Derwent.—*Secretaries:* Miss A. Thompson, 1, Grosvenor Crescent. Miss J. Balgarnie, 9, Filey Road.

The constitution of this Society defines its object as two-fold. (1) To maintain the Courses of the Movement. (2) To promote Higher Education in general. [Various modes are specified—co-operation with other Educational efforts, formation of a library, &c.]

The Society consists of all persons holding Shares of a "Guarantee Subscription," which term is defined as follows:—(1) The liability for each Share in no case exceeds £1 per annum. (2) Each Share carries admission for one person to all the University Extension Lectures and Classes, and each holder of one or more Share has a vote in the business meetings of the Society. (3) The surplus in any year of receipts over expenditure in connection with the University Extension Lectures, shall be applied [after leaving a convenient balance for emergencies] to reducing the next year's Subscription. In practice the society has maintained the two Courses per annum, and has been able to reduce its Subscription in the second year to 16/-, in the third and fourth to 14/-.

Special Features: (1) The Lectures are largely attended by Schools; Mistresses of these are members of the Society, and some of them take five or six Shares each. (2) The Society is, in practice, an Afternoon-Society, but has inaugurated Evening Lectures at low fees with the aid of special subscriptions.

HALIFAX UNIVERSITY EXTENSION ASSOCIATION. *President:* Solomon C. Smith, M.D.—*Secretary:* H. Norman Mellor, 4, Savile Terrace.

The constitution of this Association does not differ from that of the Scarborough Society.

DONCASTER UNIVERSITY EXTENSION SOCIETY.—*President:* Rev. G. Smith, M.A., Head Master of the Grammar School.—*Secretary:* W. E. Atkinson, Regent Square.

On the Scarborough Model.—Special features: (1) The ticket for the Courses conferred by the £1 Share is transferable. (2) Among the Officers of the Society is a Ladies' Secretary.

LANCASTER UNIVERSITY EXTENSION SOCIETY.—*President:* The Mayor.—*Secretary:* H. L. Storey, Underfell.

On the Scarborough Model.—The £1 Share confers *two* free tickets for a Course of Lectures and Classes.

BARROW-IN-FURNESS UNIVERSITY EXTENSION SOCIETY.—*Secretary:* E. Irving, 80, Duke Street.

This Society is on the Scarborough Model, with Shares at 10/- limit [instead of £1]: 135 Shares were taken up before the single Course per annum was undertaken. In the second year it was found practicable to reduce the amount of subscription to 7/6 per Share.—Other special features are: the use of voting papers in electing the Directors. (2) The "Cambridge Hall" is granted free of cost by Sir J. Ramsden. [Provisions that Ticket-holders other than Share-holders shall be represented on the Committee, and that Subscribers leaving the Society shall be entitled to the balance of their Subscription for the year are found inconvenient in practice.]

BARNSLEY UNIVERSITY EXTENSION SOCIETY in connection with the BARNSLEY MECHANICS' INSTITUTE.—*President:* The Mayor.—*Secretary:* W. E Raley, Solicitor.

The constitution differs from that of Scarborough, in the arrangement that the £1 Shares are Shares of a "Guarantee Subscription;" and any deficit is made good by the Guarantors by an equal rate per £1 subscribed. The Society is in connection with the Mechanics' Institute. The latter provides Hall (with fire and light) and an Annual Subscription of £10, in return for which its members are admitted to the University Extension Course for 2/6 (or to single lectures at half-price).—The Council of 15 contains 5 members nominated by the Mechanics' Institute; the rest are elected by the Society, and one-half must be ladies.—Another feature is the admission to the Courses of Assistant and Pupil Teachers on the same terms as Members of the Mechanics' Institute.

4—On the Plan of Endowment.

No Local Branch is at present supported by Endowments. The Hull Society, described above, has a small Endowment (under £20), being the interest of a fund started in connection with a Town's Meeting as the nucleus of a fund for a Local College; the Movement for the latter being at present in abeyance.

5.—On the Plan of District Union.

THE NORTH MIDLAND ASSOCIATION for the EXTENSION OF UNIVERSITY TEACHING—comprising the Counties of NOTTINGHAMSHIRE, LINCOLNSHIRE, DERBYSHIRE, and part of STAFFORDSHIRE.—*President:* The Duke of Devonshire.—*General Secretary:* Rev. Professor Symes, University College, Nottingham.

The objects of the Association are defined as follows: (1) To promote the higher education of all classes of the people by the establishment of University Lectures and Classes in the towns and large villages in or near Nottinghamshire Derbyshire, Lincolnshire, and North Staffordshire. (2) To associate such towns and villages so that they may encourage and assist each other; and that arrangements for Courses of Lectures, &c., may be made more conveniently and efficiently. (3) To form a fund, made up of bequests, donations, subscriptions, &c., to subsidise such University teaching, especially in towns and villages where the working-classes can partake of it for a small fee. It is estimated that an annual income of £600 is required for the full working of the District scheme; the subscriptions at present amount to £250.

The expense of a complete Course (apart from hire of rooms and advertisements) is about £55. It has been determined henceforward to make a fixed charge of £27 to a town for a complete Course; but where four towns are provided for a Lecturer, the charge for each Course will be £25, the Association paying the balance. The fixed charge will include Lecturer, Classes, Syllabuses, Lecturer's Travelling Expenses, and Examinations, as well as the expense of experiments, if any. The fixed charge made to a town for a Half-Course (six Lectures and five Classes) will similarly be £14, the Association paying the balance.

DERBY and CHESTERFIELD are described above (page 45). Other Centres are

*LINCOLN.		
*MANSFIELD.	*Secretary:*	Rev. E. Johnson, The School House.
*NEWARK.	,,	E. H. Nicholson.
HUCKNALL TORKARD.	,,	E. J. Johnson, Spring Street School.
STAMFORD.	,,	Miss Whincup, St. Martin's.
ILKESTON.	,,	Rev. J. Fleming.
BELPER.	,,	F. S. Jackson.

THE NORTHUMBERLAND MINING DISTRICT.—*General Secretary:* S. Neil, Seaton Delaval, Northumberland.

The Local Branches in this District are composed almost exclusively of Artisans, the Centres being either mining villages, or small towns in the neighbourhood. Of the former Class are:—

BACKWORTH	*Secretary*—	Ellis Edwards, 18, New Backworth.
BARRINGTON	,,	Edward Carr.
BEDLINGTON	,,	J. Rogers, Doctor Terrace.
BLYTH	,,	W. Nicholson, Turner Street.
BROOMHILL	,,	W. Laidler.
BURRADON	,,	W. Mason.
CRAMLINGTON	,,	Martin Weatherburn, Shankhouse.
DUDLEY	,,	Edw. Simmons.
SEATON BURN	,,	Frank Barras.
SEATON DELAVAL	,,	George A. Grainger.

The management of the District is in the hands of a *General* and *Local* Committees. The latter are concerned with the strictly local arrangements, such as the sale of tickets, provision of a room, &c. The negotiations with the Universities, and the raising the funds necessary to supplement the tickets is the province of the General Committee. The *General Committee* consists of all the Local Committees put together, the voting being by Committee, and not by individuals. "If the whole of the members of a Local Committee do not care to attend a General Meeting, they can appoint as many or as few representatives as they like. When a vote is taken in the General Meeting, each Local Committee records its vote as a Committee; that is, no show of hands is taken, but each Committee has six votes, and if any Committee is represented by only one person, he records the six votes as he may think fit, or as he has been instructed. This system prevents the Committee which belongs to the District in which the General Meeting is held from exercising an undue power in the Meeting." This plan is reported to work well. The General Secretary writes:—"I believe this system of calling the Committees together is one of the real causes of the success of the Lectures among the miners. The fact that a group of ten centres can unitedly lay their difficulties before the public and appeal for assistance gives an interest to the appeal which could not be given to that of one or two struggling centres. And the meeting of so many men from widely-separated districts, all struggling under common difficulties, affords a fine outlet for the repressed feelings which those struggles engender—gloom gives place to cheerfulness and determination as each one tells his tale, and shows how he overcame his difficulties. More than one Committee would, I believe, have given up in despair but for these meetings."

The tickets for the Course have to be kept at 1/-; accordingly, the bulk of the funds has to be raised by other means—Subscriptions from individuals, or Co-operative Societies, or the Lodges of Miners' Unions, Coal Owners' Associations, the Gilchrist Trust, &c. Local Entertainments and similar efforts have assisted

* From Lincoln is reported an interesting development of the movement (not yet, however, fully matured): an attempt to connect the work with a School of Science, and also with Night Schools. In Mansfield and Newark the Lectures are associated with the Government Schools of Science and Art.

6.—Branches formed of Local Institutions.

THE CRYSTAL PALACE.—*Secretary :* F. K. J. Shenton, Literary Department.
Courses have been held in connection with the Educational Department of this Institution since 1879.

THE HARRIS INSTITUTE, PRESTON.—*President :*—William Ascroft, J.P.—*Secretary :* T. R. Jolly.
This is a largely endowed Educational Institute, providing, by its own teachers, Courses of Instruction in Science, Art, Technical, and Miscellaneous Subjects, at fees varying from 40/- to 3/6 for the Session. Over 1,200 Students were enrolled in the last Session. Courses under the University Extension Movement form part of its Programme for Students of the Institute and a general audience.

NEWCASTLE-UPON-TYNE LITERARY AND PHILOSOPHICAL SOCIETY.—*Secretary:* W. Lyall.
This Society undertakes the responsibility of two Courses annually, free to its members, tickets to others 3/- (including Syllabus). The management is in the hands of the Literary Committee of the Society, with a Delegation from the *Tyneside Students' Association* [see below, page 51].

NORTH SHIELDS FREE LIBRARY.—*Secretary :* W. Ryder, 8, Albion Street.
The management is in the hands of a sub-committee of the Library Committee. If expenses are not covered by the tickets, assistance is readily given when called for: such subscribers often buy a number of tickets and give them to the Committee to distribute at their discretion.

KENDAL LITERARY AND SCIENTIFIC INSTITUTION.—*Secretary :* J. Severs.
The Institute takes the entire management and responsibility of the University Extension Courses.

SOUTHPORT LITERARY AND PHILOSOPHICAL SOCIETY.—*Secretary :* J. Greenway, 33, London Street.
The Society undertakes the management of the Movement on the formation of a sufficiently large body of Annual Ticket Holders, at 7/6 per Course.

Branches Partly Connected with Local Institutions.

DARLINGTON.—*Secretary :* J. G. Blumer.
This Branch is under the management of a Local Committee, using the premises of the MECHANICS' INSTITUTE, at a low fee. The funds are partly provided by guarantee, in sums varying from £5 to 5/-: the guarantee is not annual [there have been four guarantees in five years], and care is taken not to appeal to the same persons each time. The subscriptions to this guarantee do not cover tickets.

MIDDLESBOROUGH.—*Secretary :* T. Hugh Bell.
This Branch has the free use of the premises of the LITERARY AND PHILOSOPHICAL SOCIETY, but is not otherwise affiliated to it. The tickets are supplemented by a guarantee; also, a certain number of tickets are sent to individuals, who pay for them, whether they use them or not.

SUNDERLAND.—*Secretary :* Herbert Corder, 1, Carlton Terrace.
This Branch is managed by a Committee chosen at a public meeting held after the conclusion of the Lent Course, to which also two delegates are appointed by a Co-operative Society, and two by the Trades' Council of the town. The Movement here was formerly in the hands of the SUBSCRIPTION LIBRARY, and still has the use of its hall free of cost. There are no annual subscriptions, but, at the commencement of the present management, a lump sum was collected, which is drawn upon annually to supplement the tickets.

WARRINGTON.—*Secretary :* J. A. Edlesten, Quernfield, Latchford.
This Branch is in formal connection with the WARRINGTON LITERARY AND PHILOSOPHICAL SOCIETY, the pecuniary liability being met by special subscriptions of various amounts. The Branch was formerly constituted on the Scarboro' model.

BARNSLEY.—See above, page 47.

Former Local Branches of the Movement now superseded by

Local Colleges.

UNIVERSITY COLLEGE, LIVERPOOL.

The work in Liverpool was formerly managed by a District Association organising Courses in connection with the Ladies' Educational Association, and the Brown Museum, Liverpool, and with ten or twelve other towns in the counties of Lancashire and Cheshire.

THE YORKSHIRE COLLEGE OF SCIENCE, LEEDS.

FIRTH COLLEGE, SHEFFIELD.

UNIVERSITY COLLEGE, NOTTINGHAM.

This College is regularly affiliated to the Universities of Oxford and Cambridge, and forms a centre to the work of the Movement in the North Midland District.

UNIVERSITY COLLEGE FOR SOUTH WALES AND MONMOUTHSHIRE.

The Charter of this College defines its work (in addition to teaching of the ordinary Collegiate kind) to be the provision of education, in the form of lectures with class teaching and examining, for non-matriculated Students. The District worked by the Movement previously to the establishment of this College included the towns of CARDIFF, NEWPORT, and SWANSEA, with occasional Courses at MERTHYR TYDVIL and LLANELLY.

Other Localities

Now or formerly taking University Extension Courses :—

ALNWICK, BEBBINGTON, BEDFORD, BEVERLEY, BIRKENHEAD, BISHOP'S STORTFORD, BOLTON, BOWDON, BRADFORD, BURSLEM, CARLISLE, CHESTER, CONSETT, COVENTRY, CREWE, DEVONPORT, EVERTON, EXETER, GUILDFORD, HANLEY, HARROGATE, HEXHAM, HINCKLEY, KEIGHLEY, KNUTSFORD, LEEK, *LEICESTER, LEIGH, MANCHESTER, NEWBURN, NEWCASTLE-UNDER-LYME, PLYMOUTH, RICHMOND [YORKSHIRE], ROTHERHAM, SAFFRON WALDEN, SHREWSBURY, SKELTON, SKINNINGROVE, SKIPTON, *SOUTHPORT [BIRKDALE], SOUTH SHIELDS, STANLEY, STOCKTON, STOKE-ON-TRENT, STROUD, SUDBURY [SUFFOLK], TAVISTOCK TIVERTON, WATERLOO, WHITEHAVEN, WIGAN, WORCESTER.

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* The work at LEICESTER and SOUTHPORT [BIRKDALE] has been carried on for a long term of years with excellent educational results, but the centres have not yet organised themselves as formal Local Branches. The Secretaries are, LEICESTER: T. C. Lee, Rutland Street, and SOUTHPORT, Miss Simon, Wintersdorf, Birkdale.

APPENDIX II.

STUDENTS' ASSOCIATIONS.

Several of the more successful Local Branches have formed separate Associations of Students for purposes of self-help. In some cases, as in Hull, the Students' Association has been absorbed into the General Society, which reserves some of its meetings for Students' purposes. There is a family likeness observable in the tickets of membership of such associations. These are usually handy little cards; the two outer pages of which are devoted to the list of Officers and the Rules, while the inner pages are taken up by a programme of papers to be read, and excursions to be made.

The objects laid down for such associations may be illustrated from the DARLINGTON ticket:—

> To encourage and maintain an interest in the Cambridge and Durham Universities' Extension Scheme by:—
>
> [*a*] Rendering all possible assistance to the Local Committee and the Lecturers.
>
> [*b*] Promoting study during the recess [especially of the subjects lectured upon] by united efforts, such as reading papers, arranging discussions, providing supplementary lectures, &c.
>
> [*c*] Organising occasional excursions during the summer months, in illustration of matters referred to in the Lectures.

To which TYNESIDE adds a fourth:—

> [*d*] Promoting the organisation of new Lecture Centres.

The NOTTINGHAM Association puts it somewhat differently.

> The main object of the Association is to draw together the whole body of Students, and thus establish a corporate feeling amongst them, and give them an opportunity of united action in the Extension of University Education in this town.

Members of such Associations are drawn mainly from those attending the Lectures and Classes. Some Associations admit others upon proposal by a member and ballot; others make a small charge for admission to particular meetings. The Annual Subscription appears to be usually 2/- or 2/6.

The meetings of such Associations seem to be of four kinds. 1. There is, of course, an Annual Meeting for business, and sometimes [*e.g.* in DERBY] public meetings of the nature of *Conversaziones*. Lectures by outsiders are sometimes arranged, which may or may not be intended to raise funds. 2. There is a very important class of meetings which makes very little show in an Annual Report; viz., those held during the University Session, and bearing on the subjects of the Lectures that are being given. The BACKWORTH Association makes it a leading purpose to "discuss the Lectures, and help one another to understand any difficult points." The DERBY ARTISANS put it more definitely:—"Members met weekly to discuss the previous Lecture, so as to be prepared for the next class." The NOTTINGHAM Association Report speaks of "Sectional Meetings" during term time—those attending the Science Courses meeting separately from those attending Lectures on Literature. In several places during Courses of Lectures on [*e.g.*] Shakspere, Students' Associations have arranged for Shakspere Readings amongst themselves, different Students having different *dramatis personæ* allotted to them. In Hull, during a Course on the Ancient Drama, an elaborate performance [in English] of *Antigone*, with Mendelssohn's setting of the choruses was arranged, which was not only successful in evoking interest in the subject, but brought a handsome profit to the funds of the Society. 3. Other meetings are for the reading and discussion of papers by members or others. Some Associations meet weekly through nearly the whole year; others monthly; others

take a recess from May to September. The programmes of papers are all interesting, and it seems invidious to make selection. Perhaps, however, the Derby Programme for the Session 1884-5 will give the best idea of them :—

1884.		
*May 22.	"Colour Blindness"	Dr. Greaves.
*June 19.	"Sun-Spots"	Mr. Arnold-Bemrose.
*July 3.	"The Geology of Cader Idris"...	Mr. Geo. Fletcher.
„ 17.	"Word Lore"	Mr. Walter J. Clemson.
„ 31.	"Robert Burns"	Mr. C. Weaver.
Aug. 21.	"Music, or Sound as applied to the Construction of the Scales"	Mr. W. Spencer.
Sept. 18.	"Competition and Morality" ...	Mr. H. Hutchinson.
*Oct. 31.	"Comets and Meteors" ...	Mr. Arnold-Bemrose.
Nov. 21.	"Homer"	Mr. A. J. Grant (University Extension Lecturer.)
Dec. 15.	"Customs of different Nations"	Miss E. C. Robinson.
1885.		
*Jan. 15.	"The Chemistry of Water" ...	Mr. J. Adey.
„ 30.	"Evolution as a Social, Political, and Moral Influence; a Darwinian Dream"	Mr. Thos. Hall.
*Feb. 10.	"A Geological Ramble up Cader Idris"	Mr. Arnold-Bemrose.
„ 24.	"Short Papers—Over Education or Pressure?"	Mr. Bulman.
	"Equivocal Words"	Mr. H. Hutchinson.
	"The English Language" ...	Mr. W. P. Goudie.
Mar. 10.	"Tennyson's Later Poems" ...	Mr. C. Weaver.
„ 24.	"Some Recent Advances in Electrical Science"	Mr. G. Fletcher.

In other programmes appear such interesting topics as these :—"How we see" [by Principal Garnett]; "Pain: What is it, and why do we suffer?" "Engravers of the 18th Century;" "The Ethics of Study;" "Photographic views of Local Architecture with Historical Description." Discussion :—"What Subjects should form the Course of Education of a School-girl?" "Italian Art and Literature;" "The Weather;" "A Half-hour with an Old Newspaper;" "Germs and their doings;" "Heredity;" "The English Lakes and their Associations." Readings and Musical Recitals are other modes of employing the time of a meeting.

4. The last and not least interesting class meetings are the Excursions arranged either in direct illustration of lectures, or for the more general interest of intelligent sight-seeing. Courses on Botany and Geology are regularly associated with expeditions to explore the neighbourhood, the Lecturer often acting as guide. So in a course on Art at Scarborough the Lecturer gave a demonstration in York Minster, and elsewhere. Demonstrations at Museums have the same purpose. The following list is from the DARLINGTON programme :—

1884.	PLACE.	CONDUCTOR.
May 24th.	Raby Castle and Grounds ...	Mr. Livesey.
June 14th.	St. Cuthbert's Church, Darlington (its History and Architecture)	Mr. T. P. Pritchett.
June 21st.	Rokeby and Ecclestone Abbey...	
July 19th.	Bishop Auckland Castle and Escomb Church	Rev. R. E. Hooppell, LL.D.
Aug. 23rd.	Deepdale and Lartington ...	
Sept. 26th.	Linthorpe	Mr. W. F. V. Stock.

It may be added that some Students' Associations meet for special purposes suggested by the tastes and requirements of their Members. In the DERBY Report appears a notice of a Mathematical Class engaged in studying Algebra. Other Societies dealing with districts where elementary education has been neglected have set up Arithmetic Classes.

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* Illustrated with lanterns, diagrams, or experiments.

Associations of Artisans.

In Derby there is a separate ARTISANS' HIGHER EDUCATION SOCIETY. In most of its features it does not differ from the Students' Associations already described. Its annual subscription for Members is 1s. Others are admitted as Honorary Members at an annual payment of 5s. Its Report for 1884-5 shows a total of 52 Members. Very successful work appears to be done by its Members in the regular Weekly Exercises.

The BACKWORTH STUDENTS' ASSOCIATION is especially noteworthy as an example of educational enterprise under difficulties. The district to which it belongs is inhabited exclusively by miners, and economy of expenditure has to be observed to the strictest degree. The subscription is one penny per week. Its objects have come to be much the same as those of other Associations, but it has had great obstacles to overcome in securing them. Its earlier history illustrates the spirit so often brought to light in the history of the University Extension Movement—the spirit of enterprise that is resolved to have Education of some kind, irregular if not regular. The Secretary writes:—

> "The first Summer after our Association was formed we met twice a week; one meeting was devoted to the reading of papers upon different subjects, or the reading of a Lecture from 'Cook's New Chemistry,' and the other meeting was devoted to the study of Land-Surveying. One of our members —a holder of a Certificate of Mine Management—was appointed leader of the Land Surveying Class, and Professor Stuart was asked to draw up a Syllabus for our guidance. Professor Stuart lent us a book in which he had marked certain parts for study. This was given to our leader, who met the other Students once a week, and explained the subject according to the book as well as he could. We also got the loan of a chain and staff, &c., and permission from our employers to survey their pasture fields. We did this all together on certain days, each Student making his own book, and after he went home mapping the field according to scale, and bringing his map to the next meeting to be inspected and criticised by the leader and the other Students. At the end of three or four months Professor Stuart sent a few questions for our examination."

Professor Stuart's Report of the Examination is "very satisfactory."—Next a difficulty arose in getting new members to join. "Most people when asked said our studies were too far advanced for them." To meet this one of the evenings in each week was devoted to Arithmetic; "this brought us several new members, and some of them are promising to be very good members."

Another interesting feature of the BACKWORTH Society has been their attempt to start a Library and Laboratory. Towards the former some 30 or 40 volumes have been presented by various persons. The Laboratory proves a great difficulty, and they are open to loans or gifts of scientific instruments of all kinds—much preferring the gift of old and even damaged instruments to the loan of what is more valuable. What with batteries extemporised out of common coke and pickle bottles, and the loan of a microscope, they have already got to work, and the Secretary's remarks on this part of their operations are of wide application:—

> "This experiment [a course of microscopic study in "Plant Life" during the summer months] has taught us a lesson. It is extremely difficult to persuade young men to confine themselves to the reading of books and the writing of papers in a systematic course of study of a new and hard subject during the summer months, even if it was desirable, for out-door recreation is much more congenial on fine evenings. . . . On the other hand, everybody is delighted with the microscopes, and we never tire of working on with them."

He advises that the summer's work should be applied rather to going over the work of the previous winter than to a new subject:—

> "By means of Associations, if provided with scientific instruments, &c., or even with a Magic Lantern and Slides, the Students could go through the same Syllabus again among themselves [and I believe they gladly would] during the Summer months. . . . I am really of opinion that a small Laboratory and an Association ought to exist at every Centre where Scientific Lectures are given."

The same Secretary thus describes his experience of the effect of forming such unions of Students for common work:—

"They keep a number of men together who are directly interested in Education generally, and in the Extension Lectures in particular. . . . Again, they are useful in helping weak members and new starters. I have known men pass an Examination who would never have attempted to follow up a Course of Lectures had it not been for the help they received from other members of the Association. . . . They are useful for old Students also. It is more pleasant to study a dry part of a subject, or to understand a difficult point, by discussing it with a friend, than by belabouring your brains in private. . . . The studying of a subject experimentally attracts our Students most."

This will be generally recognised as embodying the experience of all who have watched such Associations as have been described in this Appendix.

Toynbee Hall.

The latest advance in the matter of Students' Associations is in connection with the Whitechapel District, and has a local habitation in Toynbee Hall (28, Commercial Street, E.) In connection with this there is an active Students' Union, for promoting lectures of various kinds, and for general purposes of mutual help. The enterprise of these Students has given the movement a representative in Journalism: *The Toynbee Journal*, and *Students' Union Chronicle*, monthly 1d., 1s. 6d. per annum post free; Editor's address, Toynbee Hall. [I regret that an expected communication on this subject has failed to reach me before going to press.—R. G. M.]

APPENDIX III.

SPECIMENS

OF

THREE YEARS' PLANS OF STUDY.

For the "Special Series of Courses" required of Affiliated Students (See p. 14).

A. Literature.

The aim in constructing such a plan of study is (1) that each of the Six Courses should be independent, and have for a general audience an interest of its own; (2) that the plan as a whole should introduce to all the different sides of literary study: History of Literature, Literary Art and Criticism, Foreign or Ancient as well as modern English Literature, Prose as well as Poetry.

ONE YEAR.
- *Before Christmas.*—Survey of English Literary Development.
- *After Christmas.*—Literature of the Elizabethan Age.

The year would thus be devoted to literary history; the first term mapping out the whole field of our literature into its different sections, with evolution as the link of connection between them; the second term selecting some single one of these sections for enlarged treatment.

ONE YEAR.
- *Before Christmas.*—Shakspere and the Romantic Drama.
- *After Christmas.*—The Ancient Classical Drama.

The purpose of this year would be to awaken the critical faculty by the study, side by side, of two strongly contrasted schools.

ONE YEAR.
- *Before Christmas.*—Studies in Modern Great Masters: Goethe, Tennyson, Browning.
- *After Christmas.*—The Art of Prose Composition, with illustrations from Great Masters.

The first term would give a miscellaneous programme, an obvious element in a plan of literary study. The second term would introduce the subject of workmanship in literary art.

B. Modern History.*

The following courses are so arranged that, while the whole six form a valuable introduction to the scientific study of Modern History, each is complete in itself, and students who attend it alone will obtain a comprehensive view of an important period. Those who desire to study history seriously should in all cases begin with the first year's courses; but the work of the second and third years may be transposed, if convenient.

FIRST YEAR ...
- *Before Christmas.*—Outlines of English History up to 1485.
- *After Christmas.*—Outlines of English History from 1485 to 1832.

This year would thus be devoted to the history of our own country, which is not only the best for us to begin with, but also, from its intrinsic importance, a good introduction to the study of modern history.

SECOND YEAR.
- *Before Christmas.*—The Making of Modern England, *i.e.*, English History from the Revolution of 1688 to the Reform Act of 1832. Original authorities to be read:—Burke, *Speech on the Causes of the Present Discontents, Reflections on the Revolution in France.*
- *After Christmas.*—The French Revolution.

These Courses may be taken in the reverse order; but the two should always go together in the same year. They show vividly how English and European History act and react one upon the other.

THIRD YEAR...
- *Before Christmas.*—The Revival of Parliament, *i.e.*, The Constitutional History of England during the Stuart Period. Original Documents to be Studied:—*The Grand Remonstrance, The Bill of Rights.*
- *After Christmas.*—The Winning of India, *i.e.*, The Growth of our Indian Empire from Clive to Canning.

The two courses may be transposed, if desired. They are not so closely connected as were the courses of the second year; but each is necessary to introduce the student to an important branch of historical investigation.

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* Kindly suggested by Rev. T. J. Lawrence, M.A.

C. Political Economy.†

The aim of the proposed plan of study is that each of the six courses should be intelligible apart from the rest, though it would be much more profitable if taken in conjunction with the rest, as the student might thus have a complete survey of the Social History of his own country, the Theory of Political Economy, in itself and in application to familiar facts, the History of Political Economy and its dependence on the Theory of the State, all treated in connection with one another as parts of a whole.

ONE YEAR ...

Before Christmas.—English Economic History from the Domesday Survey to the disturbances consequent on the Suppression of the Monasteries.

After Christmas.—English Economic History from the accession of Elizabeth to the Repeal of the Corn Laws.

The purpose of these courses would be to show clearly how our existing industrial system came into being. The reign of Elizabeth is the most convenient point to take for the beginning of modern society, though there is no hard and fast line between mediæval and modern life.

ONE YEAR ...

Before Christmas.—The Modern Theory of Political Economy. Value, Money, Price, Credit, Rent, &c.

After Christmas.—The Theory of Political Economy applied. Rents, Profits, Wages, Taxation, &c.

The purpose of these courses would be to state the theories which explain the working of industrial conditions, the origin of which has been previously described: and to show how the theory may be applied to passing practical questions.

ONE YEAR ...

Before Christmas.—The History of the Doctrines of Political Economy. The Mercantile Theory. The Physiocrats, Adam Smith, Ricardo.

After Christmas.—The History of the Doctrines of Political Economy. Early French Socialists, Owen, Lassalle, Karl Marx.

The purpose of these courses would be to show the changes in the doctrines of Political Economy which have been brought about partly by changes in the conditions of industry or commerce, and partly by changed views of the nature and functions of the State.

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† Kindly suggested by Rev. W. Cunningham, B.D.

D. Natural Science.*

The aim is (1) That each of the six courses should be independent, and have for a general audience an interest of its own. (2) That the plan as a whole should introduce the different methods of scientific investigation pursued in the different sciences.

ONE YEAR ... { *Before Christmas.*—Force and Motion.
After Christmas.—Astronomy.

The first course would familiarise the student with fundamental dynamical conceptions, and in the second course these would be applied.

ONE YEAR ... { *Before Christmas.*—Principles of Chemistry.
After Christmas.—Light and Spectrum Analysis.

The methods of scientific investigation in chemistry and physics would be illustrated in these courses.

ONE YEAR ... { *Before Christmas.*—Physical Geography. / *After Christmas.*—Geology. } or, Animal Life / Plant Life.

In the third year a choice might be given of either Geological or Biological study.

* Kindly suggested by R. D. Roberts, Esq., M.A.

SOME WORKS BY

UNIVERSITY EXTENSION LECTURERS.

SCIENCE.

By Professor Stuart, M.P.

"A Chapter of Science, or, what is a Law of Nature?" Published for the S.P.C.K. Price, 1/-.

By Professor Garnett, M.A., D.C.L.

"A treatise on Elementary Dynamics." Geo. Bell and Sons, 6/-.

"An Elementary Treatise on Heat" [specially adapted to serve as an introduction to the study of the Steam Engine.] Geo. Bell and Sons, 3/6.

"Elementary Mechanics," [written in accordance with the requirements of the Education Code, for the use of Higher Grade Schools]. S.P.C.K., 4d.

"Heroes of Science—Philosophers," [containing memoirs of Robert Boyle, Henry Cavendish, Benjamin Franklin, Count Rumford, Thomas Young, Richard Faraday, James Clerk Maxwell]. S.P.C.K., 4s.

"Life of James Clerk Maxwell [by Professor Lewis Campbell, LL.D., and Professor Garnett"]. Macmillan, 7/6.

"Clerk Maxwell's Elementary Treatise on Electricity." [Edited by Professor Garnett.] Clarendon Press, 7/6.

By Alexander Hill, M.D.

"The Plan of the Central Nervous System." With 28 Illustrations. Deighton, Bell & Co., 3/6.

By J. E. Marr, M.A.

"The Classification of the Cambrian and Silurian Rocks." Deighton, Bell & Co., 6/-.

By J. J. Harris Teall, M.A.

"British Petrography." A description of the Ordinary Rocks of the British Isles, for the use of Professors and Lecturers in Geology and Petrography, College Students, Private Students, Amateurs, and others interested in the study of British Rocks. Illustrated

by 50 Chromo-lithographic Plates from original drawings of typical microscopic slides. Complete in 25 8vo. Imperial Monthly Parts, including a hundred figures and about 400 pages of text. Issued to Subscribers at 3/- per part, or 30/- per annum (including postage), or 50/- for the complete work. The first part to be published 1st February, 1886. Birmingham: Watson Bros. and Douglas, 92 and 93, Great Charles Street.

LITERATURE AND HISTORY.

By the Rev. W. Cunningham, B.D.

"Growth of English Industry and Commerce." Cambridge University Press, 12/6.

"Christian Opinion on Usury, with special reference to England." Macmillan, 2/6.

"Politics and Economics: an Essay on the nature of the principles of Political Economy, together with a study of Recent Legislation." Kegan Paul, Trench & Co., 5/-.

"Influence of Descartes on Metaphysical Speculation in England." Macmillan, 1876. (Out of print.)

"A Dissertation on the Epistle of St. Barnabas." Macmillan.

"The Churches of Asia: a Methodical Sketch of the Second Century." Macmillan, 6/-.

"Christian Civilisation, with special reference to India." Macmillan, 3/6.

"St. Austin and his place in the History of Christian Thought." Cambridge University Press. [In preparation.]

By J. Gow, Litt. D.

"A short History of Greek Mathematics." Pitt Press, 10/6.

By T. J. Lawrence, M.A., LL.M.

"Essays on some Disputed Questions in Modern International Law." [Second Edition, revised and enlarged.] Deighton, Bell & Co., 6/-.

"A Handbook of Public International Law." [Second Edition]. Deighton, Bell & Co., 3/-.

By H. E. Malden, M.A.

"Vienna, 1683. An Historical Essay." Kegan Paul, Trench & Co., 4/6.

By R. G. Moulton, M.A.

"Shakespeare as a Dramatic Artist." A Popular Introduction to the Principles of Scientific Criticism. Clarendon Press, 5/-.

By G. W. Prothero, M.A.

"Life and Times of Simon de Montfort, Earl of Leicester." London, 1877. Longman's.

"Universal History," by Leopold von Ranke. [Edited by G. W. Prothero.] Vol. 1. London, 1884. Kegan Paul, 14/-.

"Voltaire's Louis XIV.", 3 vols., Cambridge, 1879-1882. Edited with Historical and other Notes by G. Masson, and G. W. Prothero. Pitt Press Series, 2/6 per vol.

"Le Directoire," by Madame de Stael; by the same editors. Cambridge, 1881. Pitt Press Series, 2/-.

"Lettres sur l'Histoire de France," by Augustin Thierry: by the same editors. Cambridge, 1885. Pitt Press Series, 2/6.

By W. R. Sorley, M.A.

"On the Ethics of Naturalism." Being the Shaw Fellowship Lectures, 1884. Edinburgh and London. W. Blackwood & Sons, 1885, 6/-.

"Jewish Christians and Judaism," a Study in the History of the Second Century. Being the Hulsean Dissertation for 1880. Cambridge: Deighton, Bell & Co., 1881, 4/6.

BEMROSE AND SONS, PRINTERS, DERBY AND LONDON.

Sup.

RELIGION

AS AFFECTED BY

MODERN MATERIALISM:

AN ADDRESS

DELIVERED IN

MANCHESTER NEW COLLEGE, LONDON,

AT THE OPENING OF ITS 89TH SESSION,

ON TUESDAY, OCT. 6TH, 1874.

BY

JAMES MARTINEAU, LL.D.

PRINCIPAL.

SECOND EDITION.

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PREFACE.

THE following Address, published by desire of my College, was much curtailed in oral delivery. As somewhat more patience may be hoped for in a reader than in a hearer, it now appears in full. The position assumed in it, of resistance to some speculative tendencies of modern physical research, is far from congenial to me: for it seems to place me in the wrong camp. But the exclusive pretension, long set up by Theology, to dominate the whole field of knowledge, seems now to have simply passed over to the material Sciences;—with the effect of inverting, rather than removing, a mischievous intellectual confusion, and shifting the darkness from outward Nature to Morals and Religion. I cannot admit that these are conquered provinces: and to re-affirm their independence, and protest against their absorption in a universal material empire, appears to me a pressing need alike for true philosophy and for the future of human character and society.

LONDON, Oct. 12, 1874.

RELIGION AS AFFECTED BY MODERN MATERIALISM.

THE College which places me here to-day professes to select and qualify suitable men for the Nonconformist Ministry; that is, the headship of societies voluntarily formed for the promotion of the Christian life. In carrying out its work, two rules have been invariably observed: (1) the Special Studies which deal with our sources of religious faith—whether in the scrutiny of nature or in the interpretation of sacred books—have been left open to the play of all new lights of thought and knowledge, and have promptly reflected every well-grounded intellectual change; and (2) the General Studies which give the balanced aptitudes of a cultivated mind have been made as extensive and thorough as the years at disposal would allow. In both these rules there is apparent a genuine thirst for a right apprehension of things,—a contempt for the dangers of possible discovery, a persuasion that in the mind most large and luminous the springs of religion have the freshest and the fullest flow; together with the idea that the Preacher, instead of being the organ of a given theology, should himself, by the natural influence of mental superiority, pass to the front and take the lead in a regulated growth of opinion.

There have never been wanting prophets of ill who distrusted this method as rash. So much open air does not suit the closet divine; such liability to change disappoints the fixed idea of the partisan; and the "practical man" does not want his preacher's head made heavy with too much learning, or his faith attenuated in the vacuum of metaphysics. At the present moment these partial distrusts are superseded by a deeper and more comprehensive misgiving, affecting not the method simply, but the aim and function of our Institution. Side by side with the literary pursuits of the scholar, the study of external nature has always had a place of honour in our traditions and our estimates of a manly education; and there is scarcely a special science which has not some brilliant names that range not far from the lines of our history; and from the favourite shelf of all our libraries, the Principia of Newton, the Essays of Franklin, the Papers of Priestley and Dalton, the "Principles" of Lyell, the Biological Treatises of Southwood Smith and Carpenter, and the records of Botanical research by Sir James Smith and the Hookers, look down upon us with something of a personal interest. The successive enlargements given by these skilled interpreters to our earlier picture of the world,—the widening Space, the deepening vistas of Time, the new groups of chemical elements and the precision of their combinations, the detected marvels of physiological structure, and the rapid filling-in of missing links in the chain of organic life,—have been eagerly welcomed as adding a glory to the realities around, and, by the erection of fresh shrines and cloisters, turning the simple temple in which we once stood into a clustered magnificence. Thus it was, so long as discoveries came upon us one by one; nor did any Biblical chronology or Apocalypse interfere with their proper evidence for an hour.

But *now*—must we not confess it?—certain shadows of anxiety seem to steal forth and mingle with the advancing light of natural knowledge, and temper it to a less genial warmth. It comes on, no longer in the simple form of pulse after pulse of positive and limited discovery, but with the ambitious sweep of a universal theory, in which facts given by observation, laws gathered by induction, and conceptions furnished by the mind itself, are all wrought up together as if of homogeneous validity. A report is thus framed of the Genesis of things, made up indeed of many true chapters of science, but systematized by the terms and assumptions of a questionable, if not an untenable philosophy. To the inexpert reader this report seems to be all of one piece; and he is disturbed to find an account apparently complete of the "Whence and the Whither" of all things without recourse to aught that is Divine; to see the refinements of organism and exactitudes of adaptation disenchanted of their wonder; to watch the beauty of the flower fade into a necessity; to learn that Man was never *intended* for his place upon this scene, and has no commission to fulfil, but is simply flung hither by the competitive passions of the most gifted brutes; and to be assured that the élite beings that tenant the earth tread each upon an infinite series of failures, and survive as trophies of immeasurable misery and death. Thus an apprehension has become widely spread, that Natural History and Science are destined to give the *coup de grâce* to all theology, and discharge the religious phenomena from human life; that churches and their symbols must disappear like the witches' chamber and the astrologists' tower; and that, as everything above our nature is dark and void, those who affect to lift it lead it nowhither, and must take themselves away as "blind leaders of the blind." Whether this apprehension

is well founded or not is a very grave question for society in many relations; and is emphatically urgent for those who educate men as spiritual guides to others, and who can invest them with no directing power except the native force of a mind at one with the truth of things and a heart of quickened sympathies. Hitherto, they have been trained under the assumptions that the Universe which includes us and folds us round is the Life-dwelling of an Eternal Mind; that the World of our abode is the scene of a Moral Government incipient but not yet complete; and that the upper zones of Human Affection, above the clouds of self and passion, take us into the sphere of a Divine Communion. Into this over-arching scene it is that growing thought and enthusiasm have expanded to catch their light and fire. And if "the new faith" is to carry in it the contradictories of these positions,—if it leaves us to make what we can of a simply molecular universe, and a pessimist world, and an unappeasable battle of life,—it will require another sort of Apostolate, and would make such a difference in the studies which it is reasonable to pursue, that it might be wisest for us to disband, and let the new Future preach its own gospel, and devise, if it can, the means of making the tidings "*glad.*" Better at once to own our occupation gone than to linger on sentimental sufferance, and accept the indulgent assurance that, though there is no longer any *truth* in religion, there is some nice feeling in it; and that while, for all we have to teach, we might shut up to-morrow, we may harmlessly keep open still, as a nursery of "*Emotion.*"* I trust that, when "emotion" proves empty, we shall stamp it out, and get rid of it.

Though, however, no partnership between the physicist

* See Professor Tyndall's Address before the British Association; with Additions, p. 61.

and the theologian can be formed on these terms of assigning the intellect to the one and the feelings to the other, may it not be that, in the flurry of exultation and of panic, they misconstrue their real position? and that their relations, when calmly surveyed, may not be in such a state of tension as each is ready to believe? Looking on their respective contentions from the external position of logical observation, and without presuming to call in question the received inductions of the naturalist, I believe that both parties mistake the bearing of those inductions upon religion; and that, although this bearing is in some aspects serious, it is neither of the quality nor of the magnitude frequently ascribed to it. I venture to affirm that the essence of religion, summed up in the three assumptions already enumerated, is independent of any possible results of the natural sciences, and stands fast through the various readings of the genesis of things.

The unpractised mind of simple times goes out, it is true, upon everything *en masse*, and indeterminately feels and thinks about itself and the field of its existence, the inner and the outer, the transient and the permanent, the visible and the invisible: its knowledge and its worship, the pictures of its fancy and the intuitions of its faith, are as yet a single tissue, of which every broken thread rends and deforms the whole. Hence the oldest sacred traditions run into stories of world-building; and the earliest attempts at a systematic interpretation of nature, in which physical ideas were clothed in mythical garb, are regarded by Aristotle as "*theological*." It must be admitted that our own age has not yet emerged from this confusion. And in so far as Church belief is still committed to a given kosmogony and natural history of Man, it lies open to scientific refutation, and has already re-

ceived from it many a wound under which it visibly pines away. It is needless to say that the *new* "book of Genesis," which resorts to Lucretius for its "first beginnings," to protoplasm for its fifth day, to "natural selection" for its Adam and Eve, and to evolution for all the rest, contradicts the *old* book at every point; and inasmuch as it dissipates the dream of Paradise, and removes the tragedy of the Fall, cancels at once the need and the scheme of Redemption, and so leaves the historical churches of Europe crumbling away from their very foundations. If any one would know how utterly unproducible in modern daylight is the theology of the symbolical books, how absolutely alien from the real springs of our life, let him follow for a few hours the newest movement of ecclesiastical reform, and listen to the reported conferences at Bonn on the remedies for a divided Christendom. Scarcely could the personal re-appearance of Athanasius or Cyril on the floor of the council-hall be more startling, or the cries of anathema from the voices of the ancient dead have a more wondrous sound, than the reproduction as hopes of the future, by men of Munich, of Chester, of Pittsburg, and of the Eastern Church, of formulas without meaning for the present, the eager discussion of subtle varieties of falsehood, and the anxious masking of their differences by opaque phrases under which everybody manages to look. Such signs of strange intellectual anachronism excuse the aversion with which many a thoughtful man, with a heart still full of reverence, turns away from all religious association, and lives without a church. It has been the infatuation of ecclesiastics to miss the inner divine spirit that breathes through the sources of their faith, and to seize, as the materials of their system, the perishable conceptions and unverified predictions of more fervent but

darker times; so that, in the structure they have raised, all that is most questionable in the legacy of the past,—obsolete Physics, mythical History, Messianic Mythology, Apocalyptic prognostications,—have been built into the very walls, if not made the corner-stone, and now by their inevitable decay threaten the whole with ruin. Why indeed should I charge this infatuation on councils and divines alone? It is not professional but human; it is a delusion which affects us all. We are for ever shaping our representations of invisible things, in comparison with other men's notions, into forms of definite opinion, and throwing them to the front, as if they were the photographic equivalent of our real faith. Yet somehow the essence of our religion never finds its way into these frames of theory: as we put them together it slips away, and, if we turn to pursue it, still retreats behind; ever ready to work with the will, to unbind and sweeten the affections, and bathe the life with reverence; but refusing to be seen, or to pass from a divine hue of thinking into a human pattern of thought. The effects of this infatuation in the founders of our civilization are disastrous on both sides,—not only to the Churches whose system is undermined, but to the spirit of the Science which undermines it. It turns out that, with the sun and moon and stars, and in and on the earth both before and after the appearance of our race, quite other things have happened than those which the consecrated kosmogony recites: especially Man, instead of falling from a higher state, has risen from a lower, and inherits, instead of a uniform corruption, a law of perpetual improvement; so that the real process has the effect, not only of an enormous magnifier, but of an inverting mirror, on the theological picture. Yet, notwithstanding the deplorable appearance to which that picture

is thus reduced, it is exhibited afresh every week to millions still taught to regard it as Divine. This is the mischief on the Theologic side. On the other hand, Science, in executing this merited punishment, has borrowed from its opponents one of their worst errors, in identifying the anomalous or lawless with the divine, and assuming that whatever falls within the province of nature drops thereby out of relation to God. As the old story of Creation called in the Supreme Power only by way of supernatural paroxysm, to gain some fresh start beyond the resources of the natural order, so the new inquirers, on getting rid of these crises, fancy that the Agent who had been invoked for them is gone, and proclaim at once that Matter without Thought is competent to all. In thus confounding the idea of the Divine Mind with that of *miracle-worker*, they do but go over to the theological camp, and snatch thence its oldest and bluntest weapon, which in modern conflict can only burden the hand that wields it. How runs the history of their alleged negative discovery? The Naturalist was told in his youth that at certain intervals—at the joints, for instance, between successive species of organisms—acts of sudden creation summoned fresh groups of creatures out of nothing. These epochs he attacks with riper knowledge; he finds a series of intermediary forms, and fragmentary lines of suggestion for others; and when the affinities are fairly complete, and the chasm in the order of production is filled up, he turns upon us and says, 'See, there is no break in the chain of origination, however far back you trace it; we no more want a Divine Agent *there* and *then* than *here* and *now*.' Be it so; but it is precisely here and now that He is needed, to be the fountain of orderly power, and to render the tissue of Laws intelligible by his presence: his witness is found not

only in the gaps, but in the continuity of being,—not in the suspense, but in the everlasting flow of change; for, the universe as known, being throughout a system of *Thought-relations,* can subsist only in an eternal Mind that thinks it.

The whole history of the Genesis of things Religion must unconditionally surrender to the Sciences. Not indeed that it is without share in the great question of *Causality;* but its concern with it is totally different from theirs; for it asks only about the '*Whence*' of all phenomena, while they concentrate their scrutiny upon the '*How:*' by which I mean that their end is accomplished as soon as it has been found in what groups phenomena regularly cluster, and on what threads of succession they are strung, and into what classification their resemblances throw them. These are matters of fact, directly or circuitously ascertainable by perception, and remaining the same, *be their originating power what it may.* On *that* ulterior question the Sciences have nothing to say. And, on the other hand, when Religion here takes up her word and insists that the phenomena thus reduced to system are the product of *Mind,* she in no way prejudges the *modus operandi,* but is ready to accept whatever affinities of aspect, whatever adjustments of order, the skill of observers may reveal. On *these* investigations she has nothing to say. If indeed you could ever show that the method of the universe is one along which *no Mind could move*—that it is absolutely incoherent and unideal—you would destroy the possibility of Religion as a doctrine of Causality: only, however, by simultaneously discovering the impossibility of Science,—which wholly consists in organizing the phenomena of the world into an intellectual scheme reflecting the structure of its archetype. That those who labour to render

the universe *intelligible* should call in question its *relation to intelligence*, is one of those curious inconsistencies to which the ablest specialists are often the most liable when meditating in foreign fields. If it takes *mind* to construe the world, how can the negation of mind suffice to constitute it?

It is not in the history of Superstition alone that the human mind may be found struggling in the grasp of some mere Nightmare of its own creation: a philosophical hypothesis may sit upon the breast with a weight not less oppressive and not more real; till a friendly touch or a dawning light breaks the spell, and reveals the quiet morning and the bed of rest. Is there, for instance, no logical illusion in the Materialist doctrine which in our time is proclaimed with so much pomp and resisted with so much passion? 'Matter is all I want,' says the Physicist: 'give me its atoms alone, and I will explain the universe.' 'Good; take as many of them as you please: see, they have all that is requisite to Body, being homogeneous extended solids.' 'That is not enough,' he replies; 'it might do for Democritus and the mathematicians, but I must have somewhat more: the atoms must be not only in motion and of various shapes, but also of as many kinds as there may be chemical elements; for how could I ever get water, if I had only hydrogen molecules to work with?' 'So be it,' we shall say; 'only this is a considerable enlargement of your specified datum,—in fact, a conversion of it into several; yet, even at the cost of its monism, your scheme seems hardly to gain its end; for by what manipulation of your resources will you, for example, educe *consciousness?* No organism can ever show you more than matter moved; and, as Dubois-Reymond observes, there is an impassable chasm "between definite movements of

definite cerebral atoms and the primary facts which I can neither define nor deny,—*I feel pain or pleasure, I taste a sweetness, smell a rose-scent, hear an organ tone, see red,* together with the no less immediate assurance they give, *therefore I exist:*" "it remains," he adds, "entirely and for ever inconceivable that it should signify a jot to a number of carbon and hydrogen and nitrogen and oxygen and other atoms how they lie and move;" "in no way can one see how from their concurrence consciousness can arise."* What say you to this problem?' 'It does not daunt me at all,' he declares: 'of course you understand that my atoms have all along been affected by gravitation and polarity; and now I have only to insist, with Fechner,† on a difference among molecules; there are the *inorganic,* which can change only their *place,* like the particles in an undulation; and there are the *organic,* which can change their *order,* as in a globule that turns itself inside out. With an adequate number of these, our problem will be manageable.' 'Likely enough,' we may say, 'seeing how careful you are to provide for all emergencies; and if any hitch should occur at the next step, where you will have to pass from mere sentiency to Thought and Will, you can again look in upon your atoms, and fling among them a handful of Leibnitz's monads, to serve as souls in little, and be ready, in a latent form, with that *Vorstellungsfähigkeit* which our picturesque interpreters of nature so much prize.

* "Ueber die Grenzen des Naturerkennens," p. 29. Compare p. 20. "I will now prove, as I believe in a very cogent way, not only that, in the present state of our knowledge, Consciousness cannot be explained by its material conditions,—which perhaps every one allows,—but that from the very nature of things it never will admit of explanation by these conditions."

† Einige Ideen zur Schöpfungs-und Entwickelungsgeschichte der Organismen, §§ i. ii.

But surely you must observe how this "Matter" of yours alters its style with every change of service: starting as a beggar, with scarce a rag of "property" to cover its bones, it turns up as a Prince, when large undertakings are wanted, loaded with investments, and within an inch of a plenipotentiary. In short, you give it precisely what you require to take from it; and when your definition has made it "pregnant with all the future," there is no wonder if from it all the future might be born.'

"We must radically change our notions of Matter," says Professor Tyndall; and then, he ventures to believe, it will answer all demands, carrying "the promise and potency of all terrestrial life."* If the measure of the required "change in our notions" had been specified, the proposition would have had a real meaning, and been susceptible of a test. Without this precision, it only tells us, "Charge the word potentially with your quæsita, and I will promise to elicit them explicitly." It is easy travelling through the stages of such an hypothesis; you deposit at your bank a round sum ere you start; and drawing on it piecemeal at every pause, complete your grand tour without a debt. Words, however, ere they can hold such richness of prerogative, will be found to have emerged from their physical meaning, and to be truly θεοφόρα ὀνόματα,—terms that bear God in them, and thus dissolve the very theory which they represent. Such extremely clever Matter,—matter that is up to everything, even to writing Hamlet, and finding out its own evolution, and substituting a molecular plébiscite for a divine monarchy of the world, may fairly be regarded

* Address before the British Association; with Additions, pp. 54, 55. Compare the statement, by Dubois-Reymond, of the opposite opinion, quoted supra, p. 13, note.

as a little too modest in its disclaimer of the attributes of Mind.

Nor is the fallacy escaped by splitting our datum into two, and instead of crowding all requisites into Matter, leaving it on its old slender footing, and assuming along with it *Force* as a distinct entity. The two postulates will perform their promise, just like the one, on condition that you secrete within them in the germ all that you are to develop from them as their fruit; and in this case the word "*Force*" is the magical seed-vessel which is to surprise us with the affluence of its contents. The surprise is due to one or two nimble-witted substitutions, of which a conjuror might be proud, whereby unequals are shown to be equals, and out of an acorn you hatch a chicken. First, the noun *Force* is sent into the plural (which of course is only itself in another form), and so we get provided with several of them. Next, as there is now a class, the members must be distinguishable; and, as they are all of them activities, they will be known one from another by the sort of work they do: one will be a mechanician,—another a chemist,—a third will be a swift runner along the tracks of life,—a fourth will find out all the rest,—will do our reasoning about them, and get up all our examinations for us. The last of these, every one must own—at least every one who has graduated—is much more dignified than the others; and all through we rise, at every step, from ruder to more refined accomplishment. With things thus settled, we seem to have found Plato's ideal State, in which every order minds its own business, and no element presumes to cross the line and become something else. Not so, however; for, after thus differencing the forces and keeping them under separate covers, the next step is to unify them, and show them all as the homogeneous contents of a single

receptacle. The forces, we are assured, are interchangeable, and relieve each other; when one has carried its message, it hands the torch to another, and the light is never quenched or the race arrested, but runs an eternal round. But why then, you will say, divide them first, only to unite them afterwards? Follow our logical wonder-worker one move further, and you will see. He has now, we may say, his four vessels standing on the table; the contents of the whole are to be whisked into one; having them all, he has more ways than one of working out their equivalence; and it remains at his option, *which* he shall lift to let the mouse run out. For some reason, best known to himself, he never thinks of choosing the last; indeed it is pretty much to avoid this, and obtain other receptacles *empty of thought*, that he broke down the original unity. If he be a circumspect physiologist, he will probably prefer the third, and exhibit the universal principle as in some sense *living;* if he be a daring physicist, he will lay hold of the first, and pronounce *mechanical* dynamics good enough for the kosmos.

Am I asked to indicate the precise seat of fallacy in the hypothesis which I have ventured to criticise? The alleged division of forces, considered as something over and above the phenomena ascribed to them, is absolutely without ground; each of them, as apart from any other, has a purely ideal existence, without the slightest claim to objective reality. Science, dividing its labours, has to break down phenomena into sets according to their resemblances and the affinities of their conditions; it disposes them thus into natural provinces, the laws of which, when ascertained, give us the rules by which the phemomena assort themselves or successively arise,—but nothing more. But whatever field we survey, we carry into it the belief, inherent

in the constitution of the intellect itself, of a Causal Power as the source of every change: we believe it for each, we believe it for all: it repeats itself identically with every instance; and when a multitude of instances are tied up together in virtue of their similarity and made into a class, this constantly recurring reference, this identity of relation to a power behind, is marked by giving that power a singular name; as the phenomena of weight are labelled with the title *Gravitation*, expressing unity in their causal relation. Were we closeted with this group of facts alone, this unity would live in our minds without a rival, and we should have no numerical distinction in our account of force. But, meanwhile, other observers have been going through a like experience in some separate field; have gleaned and bound into a sheaf its scattered mass of homogeneous growths, and denoted them by another name—say, *Electricity*—carrying in it the same haunting reference to a source for them all. Now why is this a *new* name? Is it that we have found a new *power?* Have we carried our observation *behind the phenomena*, so as, in either instance, to find any power at all? Are the two cases differenced by anything else than the dissimilarity of their phenomena? Run over these distinctions, and, when you have exhausted them, is there anything left by which you can compare and set apart from each other the respective producing forces? All these questions must be answered in the negative; the differentiations lie only in the effects; the causal power is not *observed*, but *thought;* and that thought is the same, not only from instance to instance, but from field to field; and by this sameness it cancels plurality from Force, and reduces the story of their transmigration into a scientific mythology. The distinctive names therefore mark only differences in the *sets of phenomena;* they are simply in-

struments of classification for noticeable changes in nature, and carry no partitions into the mysterious depths behind the scenes. The dynamic catalogue being thus left empty and cut down to a single term, do we talk nonsense when we attach qualifying epithets to the word *Force*, and speak of '*electric force*,' of '*nerve force*,' of '*polar force*,' &c.? Not so; provided we mean by those phrases, simply, *Force, quantum sufficit*, now for *one set of phenomena, now for another*, without implication of other difference than that of the seat and conditions and aspect of the manifestations. But the moment we step across this restriction, we are in the land of myths.

Power then is one and undivided. As external causality, it is not an *object of knowledge* but an *element given in the relations of knowledge*, a *condition of our thinking of phenomena at all*. Were this all, our necessary belief in it would be unattended by any *representation* of it; it would remain an intellectual notion (Begriff), and we could no more bring it before the mind under any definite type than we can the meaning of such words as "substance" and " possibility." In one field, however, and no more, it falls into coincidence with our experience; for we ourselves put forth power in the exercise of Will and are personally conscious of Causality; and this sample of *immediate* knowledge because *self*-knowledge supplies us with the means of *representing* to ourselves what else we should have to *think* without a type. Here accordingly we reach, I venture to affirm, what we really mean, and what alone saves us from the mere empty form of meaning, whenever we assent to the axiom of causality. It is very true that the exercise of Will, having more or less of complication, itself admits of analysis; *intention* may play a larger or smaller part, may leave less or more

for the share of automatic or impulsive activity; and by letting the former withdraw into the background of our conception, we may come to think of *causation apart from purpose*,—which, I suppose, is the *idea of Force*. But this is a bare fiction of abstraction, shamming an integral reality;—an old soldier pensioned off from actual duty, but allowed to wear his uniform and look like what he was. Since we have to assume causality for all things, and the only causality we know is that of living mind, that type has no legitimate competitor. Even if it had, its sole adequacy would leave it in possession of the field. For among the products to be accounted for is the whole class and hierarchy of *minds;* and unless there is to be more in the effect than in the cause, nothing less than Mind is competent to realize a scheme of being whose ranks ascend so high. As for the plea,—which has unhappily passed into a commonplace,—that, even if it be so, that transcendent object is beyond all cognizance,—I will only say that this doctrine of Nescience stands in exactly the same relation to causal power, whether you construe it as Material Force or as Divine Agency. Neither can be *observed;* one or the other must be *assumed*. If you admit to the category of knowledge only what we learn by observation, particular or generalized, then is Force unknown; if you extend the word to what is imported by the intellect itself into our cognitive acts, to make them such, then is God known.

This comment on current hypotheses refers to them only so far as they overstep the limits of Science, and aspire to the seat of judgment on ulterior questions of Philosophy. So long as they simply descend upon this or that realm of nature, and try their strength there in simplifying its laws or rendering them deducible,—or, passing from province to province, labour to formulate equations available for several

or for all,—they must be respectfully left to pursue their work; and whenever their authors present their demonstrated "system of the world," all reasonable men will learn it from them, whatever it may be, as scholars from a master. In the investigation of the genetic order of things, Theology is an intruder, and must stand aside. Religion first reaches its true ground, when, leaving the problem of what *has happened*, it takes its stand on what *for ever is*.* I do not say that it is indifferent to us how antecedent ages have been filled, and have brought up the march with which we fall into step to-day; for we are beings of large perspective, concentrating in us many lines of distance and images that lie between the eye and the horizon; and what we see at hand borrows a portion of its aspect from relation

* This statement has been pronounced by a friendly critic (*Spectator*, Oct. 17, p. 1293) "not only questionable, but gravely misleading;" as implying "that if history and science showed us constant degradation instead of evolution of higher forms, and filled us with anticipations from which reasonable hope,—hope, that is, measured by experience,—was utterly excluded, the religion of the Soul would just as certainly assert the supremacy of righteousness and the love of God, as she does with the united voices of revelation and experience to help her out."

If I had said that Religion has *no interest* in the history of nature and the world, this criticism would have been just. But I cannot see how it applies to the positions which the text aims to make good: viz. that Religion has no *locus standi* in investigations about the order of phenomena in the past, but must make what it can of that order as determined by scientific evidence: and that Religion has a *locus standi*, where Science has not, in the quest and cognition of the Cause that is behind all phenomena. To reach that Cause, there is no need to go into the past, as though, being missed here, He could be found there. But when once He has been discerned through the proper organs of divine apprehension, the whole life of humanity is recognised as the scene of His agency, and the past, no less than the present, has to be embraced in the religious interpretation of the world, and becomes an object of sacred interest. Though Religion, in taking its stand on what for ever is, *first reaches* its true ground, it does not follow that it must always remain there.

to remoter zones behind. But, still if the light were all turned off from the Past, and on facing it we looked only into the Night, the reality for us is not *there*, but *here*, where it is Day. However the present may have come about, I find myself in it: in whatever way my faculties may have been determined, faculties they are, and they give me insight into my duty and outlook on my position: however the world, of Nature and of Society, may have grown to what it is, its scene contains me, its relations twine around me, its physiognomy appeals to me with a meaning from behind itself. If these data do not suffice to show me my kinship with what is above, below, around me, and find my moral and spiritual place, I shall not be greatly helped by discovering how many ages my constitution has been upon the stocks, and its antecedents been upon the way. The beings that touch me with their look and draw me out of myself, the duties that press upon my heart and hand, are on the spot, speaking to me while the clock ticks; and to love them aright, to serve them faithfully, and construct with them a true harmony of life, is the same task, whether I bear within me the inheritance of a million years, or, with all my surroundings, issued this morning from the dark.

Remaining then at home, and consulting the nature which we have and which we see, we find that, far from being self-inclosed, or related only to its visible dependences, it turns a face, on more than one side, right towards the Infinite, and, often to the disregard of nearer things, moves hither or thither as if shrinking from a shadow advancing thence, or drawn by a light that wins it forward. We are constantly,—even the most practical of us,—seeing what is invisible and hearing what is inaudible, and permitting them to send us on our way. Not left, like the

mere animal, to be the passive resultant of forces without and instincts within, but invested with an alternative power, we are conscious partners in the architecture of our own character, and know ourselves to be the bearers of a *trust;* and this fiduciary life takes us at once across the boundary which separates nature from what transcends it. Seducing appetites and turbulent passions and ignoble ease never gain our undivided ear; while we bend to them, there are pleading voices which distract us, and which, if they do not save us, follow us with an expostulating shame. Nor, if ever we wake up and kindle at the appeal of misery and the cry of wrong, or with the spontaneous fire of disinterested affection or devotion to the true and good, can we construe them into anything less than a Divine claim upon us: we know their right over us at a glance; we feel on us their look of Authority in reply; if, to our careless fancy, we were ever our own, we can be so no more. Once stirred by the higher springs of character, and possessed by the yearning for the perfect mind, we are aware that to live out of these is our supreme obligation, and that for us nothing short of this is holy. To have *seen* the vision of the best and possible and *not* to pursue it, is to mar the true idea of our nature, and to fall from its heaven as a rebel and an outcast. This inner life of Conscience and ideal aspiration supplies the elements and sphere of Religion; and the discovery of Duty is as distinctly relative to an Objective Righteousness as the perception of Form to an external Space: it is a bondage, with superficial reluctance but with deeper consent, to an invisible Highest; and both moral Fear and moral Love stand before the face of an Authority which is the eternal Reality of the holy, just, and true. On the first view, you might expect that the stronger the enthusiasm for goodness, and the surer the

recoil from ill, so much the fitter would the mind be to stand alone in its self-adequacy; yet it is precisely at such elevation that it most trusts in a Supreme Perfection to which it only faintly responds, and leans for support on that everlasting stay. The life of aspiration, attempting to nurse itself, soon pines and dies; it must breathe a diviner air and take its thirst to unwasting springs; and wherever it settles into a quiet tension of the will and an upturned look of the affections, it is sustained by habitual access to the Fountain of sanctity, and by the consciousness of an Infinite sympathy. Are not both the need and the existence of this objective sustaining power acknowledged by Mr. Matthew Arnold himself, when he insists on that strange entity, "That, not ourselves, *which makes for righteousness*"? By an abstraction, however, such a function cannot be discharged; nothing ever "makes for righteousness" but One who *is* righteous. To support and raise the less, there must be a greater; and that which does not think and will and love, whatever the drift of its blind power, may indeed be larger, but is not greater, than the sinning soul that longs for purity.

Now so long as the devotee of Goodness is possessed by a faith, not only in his own aspirations, but in an Infinite Mind which fosters and secures them as counterparts of the highest reality, it is of little moment ethically what theory he adopts of their mode of origin within him. Whether he takes them as intuitive data of his Understanding, or, with Hartley, as a transfiguration of sensible interests into a disinterested glory, or, with Darwin and Spencer, as the latest refinement of animal instinct and discipline after percolating through uncounted generations, —that which he has reached,—be it first or last,—is at all events *the truth of things*, the primordial and everlasting

certainty, in comparison with which all prior stages of training, if such there were, give but dim gropings and transient illusions. In Hartley himself, accordingly, a doctrine essentially materialistic and carrying in it the whole principle of Evolution, so far as it could be epitomized in the individual's life, easily blended with moral fervour and even a mystic piety; and, in Priestley, with a noble heroism of veracity and an unswerving confidence in the perfect government of the universe. But what if the process of atomic development be taken as the *Substitute for God*, not as His *method?* if you withdraw from the beginning all *Idea* of what is to come out at the end,—all Model or Archetype to control and direct the procedure, and restrain the *possible* from running off indefinitely into the false and wrong? Do you suppose that the ethical results can be still the same? The inevitable difference, I think, few considerate persons will deny; and without attempt to measure its amount, its chief feature may be readily defined.

It was often said by both James and John Stuart Mill, that you do not alter, much less destroy, a feeling or sentiment by giving its history: from whatever unexpected sources its constituents may be gathered, when once their confluence is complete the current they form runs on the same, whether you know them or not. How true this may be is exemplified by the younger Mill himself; who, while resolving the moral sentiments into simple pleasure and pain, and moral obligation into a balance of happiness, yet nobly protested that he would rather plunge into eternal anguish than falsely bend before an unrighteous power. If so it be, then one in whom benevolence, honour, purity, had reached their greatest refinement and most decisive clearness would suffer no change of moral consciousness, on becoming convinced that it is a "poetic thrill" of his

"ganglia"* induced by the long breaking-in through which his progenitors have passed, in conformity with the system of organic modification that has deprived him of his fur and his tail. In spite of the apparent incongruity, let us grant that his higher affections will speak to him exactly as before, and make their claims felt by the same tones of sacred authority, so that they continue to subdue him in reverence or lift him as with inspiration. The surrender to them of heart and will under these conditions, the vow to abide by them and live in them, may still deserve acknowledgment as *Religion;* but, inasmuch as they have shrunk into mere unaccredited subjective susceptibilities, they have lost all support from Omniscient approval, and all presumable accordance with the reality of things. For what *are* these moral intensities of his nature, seen under his new lights? Whence is their message? With what right do they deliver it to him in that imperative voice? and, if it be slighted, prostrate him with unspeakable compunction? Are they an influx of Righteousness and Love from the life of the universe? Do they report the insight of beings more august and pure? No; they are capitalized "experiences of utility" and social coercion, the record of ancestral fears and satisfactions stored in his brain, and re-appearing with divine pretensions, only because their animal origin is forgotten; or, under another aspect, they are the newest advantage won by gregarious creatures in "the struggle for existence." From such an origin it is impossible to extract credentials for any elevated claim: so that although low beginnings may lead, in the natural order, to what is better than themselves,—as a Julia may be the mother of an Agrippina,—yet in such case the superiority lies in new

* Professor Tyndall's Address, p. 49.

endowment, which is *not* contained in the inheritance. For such new endowment as we gain in the ascent from interest to conscience the theory of transmission cannot provide; if the coarse and turbid springs of barbarous life, filtered through innumerable organisms, flow limpid and sparkling at last, the element is still the same, though the sediment is left behind; and as it would need a diviner power to turn the water into wine, so Prudence run however fine, social Conformity however swift and spontaneous, can never convert themselves into Obligation. Hence arises, I think, an inevitable contradiction between the scientific hypothesis and the personal characteristics of a high-souled disciple of the modern negative doctrine. For his supreme affections no adequate Object and no corresponding Source is offered in the universe: if they look back for their cradle, they see through the forest the cabin of the savage or the lair of the brute; if they look forth for their justifying Reality and end, they fling vain arms aloft and embrace a vacancy. They cannot defend, yet cannot relinquish, their own enthusiasm: they bear him forward upon heroic lines that sweep wide of his own theory; and, transcending their own reputed origin and environment, they float upon vapours and are empty, self-poised by their own heat. One or two instances will illustrate the way in which what is best in our humanity is left, in the current doctrine, unsupported by the real constitution of the world.

Compassion—the instinctive response to the spectacle of misery—has a twofold expressiveness: it is in us a protesting vote against the sufferings we see; and a sign of faith that they are not ultimate but remediable. Its singularity is, to be not one of these alone, but both. Were it a simple repugnance, it would drive us from its object; but it is an *aversion which attracts:* it snatches us with a

bound to the very thing we hate, and not with hostile rush, but with softened tread and gentle words and uplifting hand. And what is the secret of this transfiguration of horror into love? It could never be but for the implicit assurance that for these wounds there is healing possible, if the nursing care does not delay. Should we not say then, if we trusted its own word about itself, that this principle, so deep and intense in our unfolded nature, is an evident provision for a world of *hopeful sorrow?* It is distinctly relative to pain, and would be out of place in a scene laid out for happiness alone; yet treats that pain as transient, and on passing into the cloud already sees the opening through. It enters the infirmary of human ills with the tender and cheerful trust of the young sister of mercy, who binds herself to the perpetual presence of human maladies, that she may be for ever giving them their discharge. Compassion institutes a strange order of servitude: it sets the strong to obey the weak, the man and woman to wait upon the child, and youth and beauty to kneel and bend before decrepitude and deformity. How then do the drift and faith of this instinct agree with the method of the outer world as now interpreted? Do they copy it exactly, and find encouragement from the great example? On the contrary, Nature, it is customary to say, is *pitiless*, and, while ever moving on, makes no step but by crushing a thousand-fold more sentient life than she ultimately sets up, and sets up none that does not devour what is already there. The battle of existence rages through all time and in every field; and its rule is to give no quarter,—to despatch the maimed, to overtake the halt, to trip up the blind, and drive the fugitive host over the precipice into the sea. Nature is fond of the mighty, and kicks the feeble; and, while for ever multiplying wretchedness, has

no patience with it when it looks up and moans. And so all-pervading is this rule, that evil, we are told, cannot really be put down, but only masked and diverted; if you suppress it here, it will break out there; the fire of anguish still rolls below and has alternate vents; when you stop up Ætna, it will blot out Sodom and Gomorrha, and bury the cities of the plain. Who can deny that such teachings as these set the outer universe and our inner nature at its best at hopeless variance with one another? Do they not depress the moral power to which we owe the most humanizing features of our civilization? We have not to go far for a practical answer. Within a few weeks the question has been raised whether the recent flow of commiseration towards the famine-stricken districts of India does not offend against the Law of Nature for reducing a superfluous population; and whether there were not advantages in the old method of taking no notice of these things, and letting Death pass freely over his threshing-floor and bury the human chaff quietly out of the way. Moral enthusiasm makes many a mischievous mistake in its haste and blindness, and greatly needs the guidance of wiser thought; but this tone of moral scepticism, which disparages the very springs of generous labour, and treats them as follies laughed at by the cynicism of Nature, is a thousand-fold more desolating. For it carries poison to the very roots of good. It is as the bursting out of salt-springs in the valley of fruits; it soaks through the prolific soil of all the virtues, and turns the promise of Eden into a Dead Sea shore.

Beyond the range of the merely compassionate impulse, *Self-forgetfulness* in love for others has a foremost place in our ideal of character, and our deep homage as representing the true end of our humanity. We exact it from ourselves, and the poor answer we make to the demand costs us

many a sigh; and till we can break the bonds that hold us to our own centre, and lose our self-care in constant sacrifice, a shadow of silent reproach lies upon our heart. Who is so faultless, or so obtuse, as to be ignorant what shame there is, not only in snatched advantages and ease retained to others' loss, but in ungentle words, in wronging judgment within our private thoughts alone; nay, in simple blindness to what is passing in another's mind? Who does not upbraid himself for his slowness in those sympathies which are as a multiplying mirror to the joys of life, reflecting them in endless play? And the grace so imperfect in ourselves wins our instant veneration when realized in others. The historical admirations of men are often, indeed, drawn to a very different type of character: for Genius and Will have their magnificence as well as Goodness its beauty: but before the eye of a purified reverence, neither the giants of force nor the recluses of saintly austerity stand on so high a pedestal as the devoted benefactors of mankind. The heroes of honour are great; but the heroes of service are greater; nor does any appeal speak more home to us than a true story of life risked, of ambitions dropped, of repose surrendered, of temper moulded, of all things serenely endured,—perhaps unnoticed and in exile,—at some call of sweet or high affection. Is then this religion of Self-sacrifice the counterpart of the behaviour of the objective world? Is the same principle to be found dominating on that great scale? Far from it. *There,* we are informed, the only rule is *self-assertion:* the all-determining Law is relentless competition for superior advantage; the condition of obeying which is, that you are to forego nothing, and never to miss an opportunity of pushing a rival over, and seizing the prey before he is on his feet again. We look without, and see the

irresistible fact of selfish scramble: we look within, and find the irresistible faith of unselfish abnegation. So here, again, Morals are unnatural, and Nature is unmoral; and if, beyond Nature, there is nothing supreme in both relations to determine the subordination and resolve the contradiction, he who would be loyal to the higher call must be so without ground of trust; if he will not betray his secret ideal, he must follow it unverified, as a mystic enchantment of his own mind.

Once more; the *Sense of Duty* enforces the suggestions of these and other affections by an authority which we recognise as at once within us and over us, and making them more than *impulses*, more than *ideals*, and establishing them in *binding* relations with our Will. The rudest self-knowledge must own that the consciousness of *Moral Obligation* is an experience *sui generis*, separated by deep distinctions from *outward necessity* on the one hand and *inward desire* upon the other; and the only psychology which can bridge over these distinctions is that which escapes with its analysis into prehistoric ages, and finds it easy to grow vision out of touch, and read back all differentiation into sameness. No one would carry off the problem into that darkness who could deal with it in the present daylight: so, we may take it as confessed, that *to us* the suasion of Right speaks with a voice which no charming of pleasure and no chorus of opinion can ever learn to mimic. To disregard *them* is a simple matter of courage; we defy them, and are free: but if from *it* we turn away, we hear pursuing feet behind: and should we stop our ears, we feel upon us the grasp of an awful hand. Moral good would, in our apprehension, cease to be what it is, were it constituted by any natural good, or related to it otherwise than as its superior. It is not a *personal* end—one among the many

satisfactions assigned to the separate activities of our constitution: else, it would be at our disposal, and we might forego it. Others are our partners in it: for it sets up *Rights* as counterparts to *Duties*, and widens by its reciprocity into a common element of Humanity. Is *that* then its native home? Have men created it, as an expression of their general wish,—a concentrated code of civic police? We cannot rest in this: for no aggregate of wills, no public meeting of mankind, though it got together all generations and all contemporary tribes, could by vote make perfidy a virtue and turn pity into a crime. Moral Right is thus no *local* essence; but by its centrifugal force, relatively to our abode, slips off the earth and assumes an absolute universality as the law of all free agency. That it should present itself to us in this transcendent aspect is intelligible enough, if it be identified with the Universal Mind, and thence imparted to dependent natures permitted to be like Him: for, in that case, the related feelings and convictions are *true;* in the order of reality, Righteousness *is* prior to the pains and pleasures of our particular faculties and the natural exigencies of our collective life; and our allegiance is due to an eternal Perfection which penetrates the moral structure of all worlds. How then does this intuitive faith of our responsible will, this worship of an eternally Holy, stand with the kosmical conceptions now tyrannizing over the imaginations of men? It encounters the shock of contemptuous contradiction. Ethically, we are assured, the known world culminates in us. Before us, there was nothing morally good: over us, there is nothing morally better: Man himself is here the supreme being in the universe. In the just, the beneficent, the true, there is no pre-existence: they are not the roots of reality, but the last blossoms of the human phenomena. And even there, the

fair show which gives them their repute of an ethereal beauty is but the play of an ideal light upon coarse materials;—rude pleasures and ruder constraints are all that remain when the increments of fancy have fallen away. The real world provides *interests* alone; which, when adequately masked, call themselves virtues and pass for something new: and, duped by this illusion, we dream of a realm of authoritative Duty, in which the earth is but a province of a supramundane moral empire. And so, we must conclude, the Conscience which lives on this sublime but empty vision has transcended the tuition of Nature, and, in growing wiser than its teacher, has lost its foothold on Reality, only to lean on a phantom of Divine support.

On the hypothesis of a Mindless universe, such is the fatal breach between the highest inward life of man and his picture of the outer world. All that is subjectively noblest turns out to be the objectively hollowest; and the ideal, whether in life and character, or in the beauty of the earth and heaven, which he had taken to be the secret meaning of the Real, is repudiated by it, and floats through space as a homeless outcast. Even in this its desolation a devoted disciple will say, 'I will follow thee whithersoever thou goest;' but how heavy the cross which he will have to bear! Religion, under such conditions, is a defiance of inexorable material laws in favour of a better which they have created but cannot sustain,—a reaction of man against Nature, which he has transcended,—a withdrawal of the Self which a resistless force pushes to the front,—a preservation of the weak whom Necessity crushes, a sympathy with sufferings which life relentlessly sets up,—a recognition of authoritative Duty which cannot be. Or will you perhaps insist that, in this contrariety between thought and fact, Religion must take the other side, discharge the θεῖα

ὀνείρατα as illusory, and in her homage hold fast to the solid world? This might perhaps in some sense be, if you only gave us a world which it was possible to respect. But, by a curious though intelligible affinity, the modern doctrine allies itself with an unflinching pessimism; it plays the cynic to the universe,—penetrates behind its grand and gracious airs, and detects its manifold blunders and impostures: what skill it has it cannot help; and the only faults and horrors that are *not* in it are those which are too bad to live. Human life, which is the summit that has been won, is pronounced but a poor affair at best; and the scene which spreads below and around is but as a battle-field at night-fall, with a few victors taking their faint shout away, and leaving the plain crowded with wounds and vocal with agony. Existence itself, insists Hartmann, is an evil, in proportion as its range is larger and you know it more, and that of cultivated men is worst of all;* and the constitution of the world (so stupidly does it work) would be an unpardonable crime, did it issue from a power that knew what it was about.† How can these malcontents find any *Religion* in obeying such a power? Can they approach it with contumely at one moment, and with devotion at the next? If they think so ill of Nature, there can be no *reverence* in their service of her laws: on the contrary, they abandon what they revere to bend before what they revile. To this humiliation the more magnanimous spirits will never stoop; they will find some excuse for still clinging to the ideal forms they cannot verify; will go apart with them with a high-toned love which stops short of faith but is full of faithfulness; will linger near the springs of poetry

* Philosophie des Unbewussten, c. xii. p. 598.

† Ap. Strauss: der alte und der neue Glaube, p. 223.

and art, and there forget awhile the disenchanted Actual; and will wonder perhaps whether this half-consecrated ground may not suffice, when the temples are gone, to give an asylum to the worshippers. Such loyalty of heart towards the harmonies that *ought* to prevail, with disaffection towards the discords that *do* prevail, may indeed lift the character of a man to an elevation half-divine; and in his presence, Nature, were she not blind, might start to see that she had produced a god. But, for all that, she is not going to succumb to him; she can call up her lower brood to suppress him, or monsters to chain him to her rock. He contends with the lower forces, believing them to be the stronger, and fights his losing battle against hordes of inferiors ever swarming to overwhelm what is too good for the world. Such religion as remains to him is a religion of despair,—a pathetic defiance of an eternal baser power. And if there be anything tragic in earth or heaven, it is the proud desolation of a mind which has to regard itself as Highest, to know itself the seat of some love and justice and devotion to the good, and to look upon the system of the Universe as cruel, ugly, stupid and mean. The most touching episodes of history are perhaps those which disclose the life of genius and virtue under some capricious and ignoble tyranny,—asserting itself in the ostracism of an Aristides, the hemlock-cup of Socrates, the blood-bath of Thrasea; and no other than this is the life of every man who, walking only by his purest inner lights, finds that they illumine no nature but his own, and are baffled and quenched by the outer darkness.

It cannot be denied that there does exist this contrariety between the modern materialistic philosophy and religious faith. It cannot be believed that this contrariety is chargeable on any mutual contradiction among the human facul-

ties themselves. Were we really placed between two informants that said '*Yes*' at the right ear and '*No*' at the left, we should simply be without cognitive endowment at all, and all the pulsations of thought would cancel each other and die. Can we end the strife by separating the provinces of the two opposites, and saying that the function of the one is *to know*, of the other *to create?** Certainly, "creative" power is something grand, and Theology should perhaps feel honoured to be invested with it. But, alas! a *known* materialism and a *created* God presents a combination which thought repudiates and reverence abhors; and the suggestion of which must be met with the counter affirmations, that the atomic hypothesis is a thing *not known but created*, while God is *not created but known*. The only possible basis for a treaty of alliance between the tendencies now in conflict is not in lodging the one in the Reason and the other in the Imagination, in order to keep them from quarrelling, but in recognizing a Duality in the functions of Reason itself, according as it deals with phenomena or their ground, with law or with causality, with material consecution or with moral alternatives, with the definite relations of space and time and motion, or with the indefinite intensities of beauty and values of affection which bear us to the infinitely Good. When once this adjustment of functions has been considerately made, the disturbed equilibrium of minds will be reinstated, the panic and the arrogance of our time will disappear, and the progress of the intellect will no longer shake the soul from her everlasting rest.

* Professor Tyndall's Address, p. 64.

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