

**Prospectus of two courses of lectures : one on anatomy and physiology; the other on pathology and the practice of medicine / Mr. Walker.**

**Contributors**

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183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
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# PROSPECTUS

OF

## TWO COURSES OF LECTURES:

ONE ON

### ANATOMY & PHYSIOLOGY;

THE OTHER ON

### Pathology and the Practice of Medicine.

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MR. WALKER

This season gives the double course of Lectures which he last Summer announced, and of which his preceding Courses, however flatteringly received, were the merest outline.

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THE LECTURES ON

### ANATOMY AND PHYSIOLOGY

Will commence on TUESDAY the 25th of OCTOBER, at N<sup>o</sup>. 63, SOUTH BRIDGE STREET, *opposite the College*, and will be continued daily, from ELEVEN till TWELVE o'clock forenoon, till the termination of the course, at the end of Three Months, in the beginning of February.

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THE GENERAL PLAN OF THESE LECTURES will be that they consist of three parts; *each department of Physiology being preceded by a view of all*

*the important corresponding facts of Anatomy, and succeeded by references to all their applications, and particularly to those which are Pathological; in such a manner as at once to render obvious to the student the facts of ANATOMY, to impress upon him the important reasonings of PHYSIOLOGY, and to exhibit to him a view of a new, simple and impressive natural system of PATHOLOGICAL SCIENCE in general.*

As, in consequence of this general plan, *Mr Walker will not introduce any Theory of Physiology until a clear and satisfactory view has been given of the Facts of Anatomy on which it may depend*, these lectures will be rendered easily comprehensible to the youngest student of General Science, as well as of Medicine.

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THE PARTICULAR ARRANGEMENT OF THIS COURSE will be precisely the same with that which Mr Walker has proposed for Anatomy and Physiology in general.

I. In that part of the Course which relates to the MECHANICAL ORGANS AND FUNCTIONS, will be explained the Structure and Uses, 1st, Of the *Bones* which support the rest of the animal machine; 2dly, Of the *Ligaments* which unite it; and, 3dly, Of the *Muscles* which move it.

II. In that part of the Course which relates to the VITAL ORGANS AND FUNCTIONS, will be explained the Structure and Uses, 1st, Of the *Organs of Mastication, Deglutition, and Digestion*, of the *Absorbent Surfaces*, and of the *Vessels* which absorb from these surfaces; 2dly, Of the *Heart, Lungs*, and *Blood Vessels*, which derive their contents (the blood) from the absorbed lymph; and, 3dly, Of the *Organs of Secretion*, which separate various matters from the blood. Throughout this division, in particular, the analogies from vegetables will be explained.

III. In that part of the Course which relates to the INTELLECTUAL ORGANS AND FUNCTIONS, will be explained the Structure and Uses, 1st, Of the *Organs of Sense*, which receive impressions from external objects; 2dly, Of the *Brain*, where these impressions excite ideas; and, 3dly, Of the *Spinal Marrow and Nerves*, where volition results from the last. In this division will be also explained, as founded upon original observations, certain criteria of the various degrees of the sensitive, perceptive and voluntary powers possessed by different animals, as well as the nature of sensation, perception and volition themselves.

Throughout all these departments, COMPARATIVE ANATOMY, as it alone can destroy Physiological Hypothesés, or transmute them into Theories, will be strictly attended to.

By adopting this arrangement, *Mr Walker will not merely be able to detail a greater number of facts in Anatomy, even during a Three Months Course, than can otherwise be done in one of six, but will also be able to deliver all the still more interesting Reasonings of Physiology*, which, though, in general, almost entirely neglected, and never systematized, are more important both to the Surgeon and the Physician. In truth, Anatomy is valuable chiefly as it constitutes the basis of Physiology.

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THE GENERAL MODE IN WHICH THESE LECTURES WILL BE DISTINGUISHED FROM ALL OTHERS, is, that *the student will not be troubled by doctrines and hypotheses which have no useful application, but which, on the contrary, serve merely to bewilder him, and to prolong the course of his studies: And further, that such arrangements will be adopted in them, as that, notwithstanding the shortness of the course, not one important fact of Anatomy, which can form a basis for Physiological reasoning, nor any fact of Physiology itself, will be omitted.*

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THE PARTICULAR MODE IN WHICH THESE LECTURES WILL BE DISTINGUISHED FROM ALL OTHERS is this, that *every im-*

*portant fact of Anatomy will be demonstrated upon* MOIST PREPARATIONS, *of the most valuable and perfect kind*, in which alone the relations of parts can be seen. And further, in order that this may be satisfactorily done, AN HOUR WILL BE EMPLOYED AFTER EVERY LECTURE INVOLVING MINUTE OR DIFFICULT FACTS, DURING WHICH EACH GENTLEMAN INDIVIDUALLY MAY HAVE ALL THE DIFFICULTIES EXPLAINED. *This will be from SEVEN till EIGHT o'clock every EVENING;* and will be considered as forming a part of the same course, requiring no additional fee.

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THE APPLICATIONS OF ANATOMY AND PHYSIOLOGY will form a prominent part of the course.

In considering the application, or rather the relation of Physiology to PHILOSOPHY IN GENERAL, the last mentioned points, with regard to the philosophy of mind, will be particularly dwelt upon.

In considering the application of Physiology to THE FINE ARTS, the errors in the construction of the antique statues, and of those of Michael Angelo, both with regard to the individual muscles supposed to be brought into action, and with regard to a hitherto unobserved principle of Attitude, will be carefully pointed out.

In considering the application of Physiology to THE MEDICAL AND SURGICAL ART, a view of a new, simple and impressive natural system of medical science in general, and of its first principles as an art, will be exhibited, and rules will also be given for performing surgical operations with the utmost precision and ease, upon the principle of an invariable relation between the arrangement of internal, and the situation of certain external parts, which consequently form accurate signs of their situation.

# THE LECTURES ON PATHOLOGY

AND THE

## PRACTICE OF MEDICINE

Will also commence on TUESDAY the 25th OCTOBER, at N°. 63, SOUTH BRIDGE STREET, *opposite the College*, and will be continued daily, from TWO till THREE o'clock afternoon, till the termination of the course, at the end of three Months, in the beginning of February.

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THE GENERAL PLAN OF THESE LECTURES will be that *they correspond to the arrangement of the Lectures on Anatomy and Physiology.*

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THE PARTICULAR ARRANGEMENT OF THIS COURSE will also correspond to that of the Anatomical and Physiological Course. The one will, in short, form the detailed and practical application of the other. *Thus while, in the Anatomical and Physiological Lectures, the Usual Structure and Healthy Functions of any part are explained; in the Pathological and Practical, the Morbid Actions and deranged structure of the same part will be exhibited.*

According to this Natural Arrangement, it will be found that all the parts of Medical Science cor-

rectly correspond, and beautifully flow from each other; while Anatomy is the basis of Physiology, Physiology is the basis of Medicine; the classification of one is applicable to the rest, and by means of it the study of the Science and the practice of the Art are thus at once simplified and rapidly accelerated.

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THE GENERAL MODE IN WHICH THESE LECTURES WILL BE DISTINGUISHED FROM ALL OTHERS will be that, in consequence of this dependance of the Pathological and Practical Course upon the Anatomical and Physiological, and by means of the simplicity of that arrangement which involves the details of both, *Mr Walker will be enabled to deliver every thing that can be of the slightest use in Medicine or Surgery during this course of three months, while, at the same time, he places every thing, by the same means, in what seems to him, an incomparably simpler and far more intelligible point of view.* It will indeed be the grand object of this as well as of the preceding course to teach both the science and the art of medicine at once more rapidly and more correctly than appears hitherto to have been attempted. Mr Walker does not hesitate to speak thus explicitly, because he will have the pleasure of *demonstrating* its correctness.

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THE PARTICULAR MODE IN WHICH THESE LECTURES WILL BE DISTINGUISHED FROM ALL OTHERS will be that MEDICINE AND SURGERY WILL BE INTIMATELY

COMBINED (for it is impossible to practice the one without a knowledge of the other), AND BOTH OF THEM WILL BE RENDERED COMPLETELY DEMONSTRATIVE.

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IN ORDER TO RENDER MEDICINE DEMONSTRATIVE, *Morbid Anatomy* will constitute its basis, and all the reasonings connected with the theory of, or the practice applicable to any disease will be most strictly founded upon those derangements of structure which actually take place, and which will be exhibited either in *Morbid Preparations*, or in *Drawings, Plates and Casts*.

THUS MEDICINE WILL, FOR THE FIRST TIME, BE TAUGHT BY ACTUAL DEMONSTRATION, INSTEAD OF VAGUE DESCRIPTION.

Indeed it is only in this way that *Lectures on the Practice of Medicine* can be of the slightest use. When not rendered thus demonstrative, books are evidently incomparably better, because they admit of repeated examination and can be recurred to when the hasty descriptions of a lecture cannot.

As usually delivered, then, books are much to be preferred to such *Lectures*, because while the one contains as much as the other, the former may be referred to when the other cannot possibly be. On the other hand, *Medicine* rendered demonstrative by *Morbid Preparations, Plates &c.* admits of no substitution.

In fine, it is because morbid anatomy &c. have not thus been combined with, and rendered the basis of Medicine, as now proposed, that the art is in its present backward state.

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*IN ORDER TO RENDER SURGERY DEMONSTRATIVE, each Gentleman will actually perform the operations which it involves.*

It cannot but excite astonishment that this, the only mode by which a facility in the performance of surgical operations can possibly be acquired, should never hitherto have been adopted in plans of public teaching.

Mr Walker feels no inconsiderable pleasure in reflecting, that he first had the pleasure of thus rendering Surgical Lectures completely demonstrative or experimental; and that, during the present course, he shall have the honour of first rendering Medical Lectures equally so.

No part of the Medical Art is at once so difficult and so important as this: nor has any part of it hitherto been so strangely neglected. The Lecturer on Anatomy thinks this not his duty, because it is of too practical a nature; and the Lecturer on Medicine thinks it not his, because actual demonstration is foreign to his business. Thus has a part, by far the most important of all Medical Science, been completely abandoned.

Every other department of Medical Science may also be infinitely more easily studied in private than this individual part of it possibly can, because every other department of it is incomparably more independent of actual demonstration. In short, the utter impossibility of any Gentleman, who has not practised in this way, ever performing Surgical Operations with *precision* and *ease*, is too obvious to be for a moment dwelt upon.

Mr WALKER thinks, that *an exposition of the common errors, a clear explanation of a few original and fundamental principles, AND ESPECIALLY OF THE GREAT PRINCIPLES OF OPERATION PROPOSED BY HIM, and the actual performance of operations upon these principles*, will decidedly effect these important purposes.

But to effect this, it is evident, that the performance of one or two operations cannot suffice. *Each Gentleman, therefore, attending this course, will have an opportunity of once performing one of the Great Operations, viz. Lithotomy, or Hernia (artificial Hernia, &c. being previously formed); of once performing Amputation; of twice Cutting down to and Tying Arteries, and of performing several of the smaller operations.*

The degree of experience which gentlemen will thus, from their own labours and the inspection of those of others, even during the First Course, acquire, cannot fail to be very complete.

Mr Walker is happy to state, that anxious to avoid the difficulties which he felt in obtaining subjects during the first part of last course, *he has already obtained subjects for a great part of the present one. The actual performance of operations will therefore commence without a moment's delay; and it is understood that gentlemen will perform these operations in the order in which their names are entered.*

As Mr Walker here makes no pretension which he cannot support, *he will, as a proof of the great correctness of the principle of operation which he has had the honour to propose, during one of the First Lectures, pass (as he did in his last course) the finest instrument from the surface of the body through any of the great vessels liable to be the subject of surgical operation, and before he bids farewell to the Gentlemen who do him the honour of attending him, he shall enable each of them to do the same, or to lay bare those arteries which can with most difficulty be reached, by a couple of incisions.* It is by public, ostensible, and **INCONTROVERTIBLE PROOFS** of this kind alone, that Mr Walker will defend the important principles which he proposes\*.

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\* Mr W. is not unaware that others will attempt to follow both this and the other plans of public teaching which, in this prospectus, he proposes: he is far from thinking that the persons who, because they found his lectures successful, could instantly attempt similar ones—could (unfortunately for themselves only) choose for these lectures the very hour which they vainly thought alone remained for him—and could then, (which gives a shade of meanness to the previous circumstances, otherwise almost praiseworthy) in order to influence the inexperienced, conde-

## THE PRELIMINARY LECTURES

Of both courses will, as stated above, commence on **TUESDAY** the 25th of **OCTOBER**, and be continued on **WEDNESDAY**, and the **PROPER BUSINESS** of both also will commence on **TUESDAY** the 1st of **NOVEMBER**, being the first day after the Holidays.

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scend to publish, a few days before the commencement of the courses, in the two first pages of a pamphlet, (by no means composed of extracts from authors, but indicating great originality of genius!!! and by the bye, upon an entirely different subject,) some remarks of the most unskillful kind, on the great principle of Surgical operation proposed by him—he is far from thinking that such persons will not similarly condescend to imitate the plans here detailed. This, however, though as weak as unskillful (for, in scientific investigations, it is the proposer, generally, who can best execute the proposition) is all that he desires. It is for the diffusion of knowledge alone that he labours, and those who cannot invent useful methods of their own are wellcome to the adoption of his. Where these persons act liberally, they shall have his applause; where they act meanly, he shall blame them; and where, even while they condescend to imitate him, they make puerile insinuations respecting principles of which they seem to have not the slightest comprehension, he, here publicly pledges himself that, he shall drag them into that derision and contempt which interested artifice so justly deserves. Mr W. is not of opinion, that, after conduct of this kind, the weakness of any man protects him from severity:—where such men do such things, they are generally the tools of others, and it is through them alone that their employers can be affected. Of interested parties, *however active and desperate their agents*, Mr W. has no fear—he would scorn himself if he could fear them—he is willing to meet them, in disputation, either singly or collectively, upon any subject in the whole range of human science;—he is willing, in particular, that the value of the principle of operation which he has proposed should be *publicly* and

No Perpetual Tickets can now be given for the Physiological Lectures, but ATTENDANCE DURING THE PRESENT COURSE WILL ENTITLE GENTLEMEN TO PERPETUAL TICKETS TO THE LECTURES ON PATHOLOGY AND THE PRACTICE OF MEDICINE.

*These Two Courses of Lectures, it is evident, involve by far the greatest and most important part of all Medical Science.*

These, however, do not yet complete the plan which Mr Walker has formed, and for that purpose, the following means will be adopted.

EXAMINATIONS of those Gentlemen *who choose to attend* on the subjects of the previous weeks Lectures, will be held at the Lecture-Room every SATURDAY MORNING, from NINE till TEN o'clock. As Mr W., however, is aware that many Gentlemen may not wish to attend these *Public* Examinations, he shall feel great pleasure in accommodating them as far as possible with *Private* hours.

*solemnly* decided by this, that if his youngest pupil do not, by means of it, cut closer upn any artery, at one incision, than any of these gentlemen can, without it, at two, the principle shall be deemed a bad one; in such a public and solemn trial, he should rejoice;—but he knows that the mean are the ignorant;—he knows that he can appeal to incontrovertible facts, and leave it to them, for temporary purposes, to deal in unsupported assertions; he knows that interested insinuation cannot refute those public demonstrations which he *has* made and *shall* make, with equal publicity, again, and again, and again; he knows that if he can render himself eminently useful to others, he shall be entitled to their good opinion, in spite of party intrigue; he desires to obtain that good opinion in no other way, and shall be contented to forfeit it if he cannot, in that way, obtain it.

CONVERSATIONS, among those Gentlemen also *who choose to attend*, in which each will have an opportunity of conversing with and examining another on the same subjects, will be held at the Lecture Room, every SATURDAY MORNING, from ELEVEN till TWELVE o'clock. Neither these Examinations nor Conversations will require any additional fee.

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*By these means ; by means of the Private Demonstrations after every difficult Lecture, (which will be given almost every evening, from Seven till Eight o'clock) and by means of the general plan of both Courses, so amply detailed, Mr Walker thinks it not derogatory to the character of Science to say, that he engages to render any gentleman, of reasonable application, perfectly versed in these Sciences during two seasons of attendance ; and if, in that time, that object be not effected, HE WILL BE HAPPY TO COMPLETE IT BY PRIVATE INSTRUCTION WITHOUT EXPENCE TO THE PUPIL.*

In order also to facilitate the mode of study, and accelerate the progress of the pupil, a SYLLABUS, exhibiting the heads of each Lecture will be published. By means of it, the pupil may prepare himself for every Lecture, or readily bring to recollection whatever he may have heard. As this Syllabus also contains hints of every fact in Anatomy and Physiology, it will form the text-book of the Examinations and Conversations.

A detailed CERTIFICATE correctly exhibiting the progress of each Gentleman, will be given to him, at the end of the period of his attendance.

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Mr Walker will receive into his house, at Adams' Square, a few HOUSE PUPILS, who, while they have the advantage of Lodging and Boarding, *will receive Private Instructions and have liberty of attending both Courses of Public Lectures*—Terms One Hundred Guineas per annum.

For further particulars, Gentlemen may apply to Mr Walker.

N. B.—*The first two volumes of Mr Walker's System of Anatomy and Physiology will be published early in the Course.*

ST. ANN'S PARK,  
15th October, 1808.

# PROSPECTUS

OF THE

## ARCHIVES

OF

# UNIVERSAL SCIENCE;

*To be Edited by*  
**ALEXANDER WALKER, Esq.**  
LECTURER ON PHYSIOLOGY, &c.

And PUBLISHED QUARTERLY, (the 1st No. appearing in JANUARY)  
by *Sir Richard Phillips*, No 6. Bridge Street, Blackfriars, London,  
and *Messrs. Thomas Bryce & Co.* Infirmary Street, Edinburgh,  
and sold also by all Booksellers.

THE utility of well conducted Periodical Publications is unquestionable. Those, however, which now exist, are, avowedly, confined to individual departments of Science, nor do they, either separately, or conjointly, extend to many of these. Chemistry and Natural Philosophy, Medicine and Surgery, are almost the only subjects of them. It is certainly, therefore, to be regretted, that Literature and the Fine Arts, Moral and Political Science, neither less generally interesting, nor less important in their nature, should remain unembraced by any or by all of them.

The original papers, however, which even these limited Journals contain, are not always of the greatest value, and the criticisms which some of them involve, being always anonymous, they certainly may, with the less difficulty, serve either the purposes of indiscriminating friendship, or of deliberate malice, and become rather remarkable for confusing the views and obstructing the advancement, than for illuminating the dark paths, and accelerating the progress of Science,

THE GRAND OBJECT OF THE WORK, NOW PROPOSED, WILL BE, BY GIVING IN DETAIL ALL THOSE SUBJECTS WHICH OTHER JOURNALS EMBRACE, AND BY INVOLVING ALSO ALL THOSE OTHER SUBJECTS OF SCIENCE WHICH THEY DO NOT EMBRACE, TO EXHIBIT, EITHER IN VALUABLE ORIGINAL COMMUNICATIONS, OR IN CRITICAL ANALYSES OF EVERY WORK CONTAINING NEW AND IMPORTANT OBSERVATIONS, THE PROGRESS WHICH ALL THE SCIENCES AND ARTS ARE EVERY DAY MAKING THROUGHOUT THE WORLD; AND FURTHER, ALSO, BY ASSIGNING, TO EACH DISCOVERY, ITS PLACE IN A NATURAL ARRANGEMENT, TO APPRECIATE ITS VALUE, AND POINT OUT ITS INFLUENCE UPON THE SCIENCES, AND ITS APPLICATION TO THE ARTS.

*The most striking also of the effects which this is intended to produce, is, as completely as possible to prevent the incalculable expence of obtaining, and the labour of perusing the immense number of periodical and other works, which every day issue from the press; while, at the same time, it places their contents in such a point of view as can only be exhibited by persons who are at once versed in all the Sciences.*

As certain general views, and especially such as refer to arrangement, must have the most extensive influence over the management of so vast an undertaking, the Editor will now, before the intended mode of publication is explained, rapidly sketch his views of these preliminary subjects.

Many of the most important facts of Science are certainly slighted; the processes of judgment are too often neglected; and rational theory is almost entirely forgotten: curious trifles, falsely denominated philosophic; flights of imagination, which please because they are peculiar; and brilliant, but delusive hypotheses occupy their place. No arrangement is adopted in Science; few of its inductions can be consistent; and from its facts no general theory can be established: all its data are dispersed; each must afford to individual caprice a new conclusion, and every one present a contradictory hypothesis. Even its language is not definite; arrangement is consequently, in some measure, rendered useless, and truth remains too often unestablished: almost every thing is rendered either arbitrary or vague; fruitless contests perpetually arise; error and confusion are propagated.

Thus, in my opinion, the facts, the arrangements, the theories and the language of Science are equally defective.

But let us, for a moment, consider its theories, because in them an attempt is made to combine its facts, its arrangements and its language.

Of all the great hypotheses which have held an empire over Science, each, perhaps, in its turn, has obtained the admiration of the Philosophers who lived during that epoch to which it owed its existence, and has also, in its turn, been thought to merit only the contempt or the invective of the following one.

This reflection forces me to condemn and to protest against that influence over the pursuits of Science, which the authority of great men has unwisely been permitted to assume—unwisely, I say, because, in every question, the circumstances of which admit of and afford time for experiment and induction, the slightest reverence for authority, proves a proportionate privation of intellect.

"As to the overmuch credit," says Lord Bacon, "that hath been given unto Authors in Sciences, in making them dictators, that their works should stand; and not consuls to give advice, the damage is infinite that Sciences have received thereby, as the principal cause that hath kept them low, at a stay, without growth or advancement.

It is under the impression left by such views as these, that I think we ought to investigate those hypotheses in Philosophy, which, though at variance with common opinion, appear admirably ingenious, have not yet been successfully answered, and are, on that account, embraced by the most profound Philosophers of the present day.

Every system then may be properly considered, with regard to its facts, its arrangement, its theory and its language.

As to the facts, those of two centuries are before us, and I am convinced that they only require arrangement in order to exhibit a connected and natural system of science.

Its arrangement then is the first, and, indeed, the chief portion of any system which requires previous consideration.

Such arrangement ought to exhibit the connection of the Sciences in general, and that of their individual portions with each other; and to shew, that instead of being disjoined, they, in reality, constitute, as it were, ONE SCIENCE.

This important truth I shall support by some very remarkable quotations from the works of Cicero, Lord Bacon and M. d'Alembert, though it will appear that the two latter, who attempted it, completely failed in constructing a system upon the principle.

"Etenim omnes artes," says Cicero \*, "quæ ad humanitatem pertinent, habent quoddam commune vinculum, et quasi cognatione quadam inter se continentur."

"And generally let this be a rule" says Lord Bacon †, "that all partitions of knowledge be accepted rather for lines and veins, than for sections and separations, and that the continuance and entireness of knowledge be preserved. For the contrary hereof hath made particular Sciences to become barren, shallow and erroneous, while they have not been nourished and maintained from the common fountain."

"L'Univers," says M. d'Alembert ‡, "pour qui sauroit l'embrasser d'un seul point de vue, ne seroit, s'il est permis de le dire, qu'un fait unique et une grande vérité."

To such as respect authorities, these are great and decided. But unfortunately these sentiments were not justly appreciated, clearly defined, accurately traced, or realised in application, even by the Philosophers who were impressed by them.

In order to evince the superiority of the natural system, upon which the proposed work will be conducted, and its independence of their plans, I shall here prefix some critical observations on the plans of Lord Bacon, Mr Locke, and M. d'Alembert.

On this great and important subject, the plan proposed by Lord Bacon, is, in my opinion, very erroneous in two primary and essential points; first, because in arranging Science according to the operations of the mind, it supposes these operations to precede natural facts, which is evidently absurd; and secondly, because by subjecting one Science to memory, another to imagination, and a third to reason, it contradicts this infallible principle, that there is no Science which is exclusively the object of any one of the human faculties, or from the study of which man can derive benefit, without employing all of them.

These observations will be justified by a view of his arrangement.

According to Lord Bacon, Science is divided into History, Poetry and Philosophy, corresponding to and dependent upon these three faculties of the mind, Memory, Imagination, Reason: History upon Memory, Poetry upon Imagination, and Philosophy upon Reason.

Now, I say, this arrangement of the Sciences, according to an imaginary dependence upon the operations of the mind, supposes these operations to precede natural facts, which evidently is absurd, and by subjecting one Science to Memory, another to Imagination, and a third to Reason, it contradicts this infallible principle, that there is no Science which is exclusively the object of any one of the human faculties, or from the study of which man can derive benefit without employing all of them. Thus it involves two fundamental errors....If, indeed, History be not rendered a source of induction, its grand, its only end, it may become the mere object of memory. But who then would wish to record human actions, or who would peruse a recital of them! It is only when History is treated as the source of induction, where Reason compares,

\* Pro Arch. Poet. Orat. † Of the advancement of Learning, Book II.

‡ Discours Preliminaire de L'Encyclopedie.

and where Imagination suggests these hypotheses, which Judgement afterwards transmutes into theories, that it forms a source of interest and of utility to man. As to Poetry, it is obvious that without Memory and Reason, as well as Imagination, it could not even exist; nor could Philosophy exist without Memory and Imagination, as well as Reason. Thus the arrangement of Lord Bacon is fundamentally erroneous, and consequently cannot form the basis of any natural or rational system.

Locke proposed a much less artificial arrangement, in dividing Science into Physica, Practica and Semiotica. His chief error lay in placing the Semiotica before the Practica, and in giving none of his divisions any degree of development.

The plan of M. d'Alembert, which formed the basis of the French Encyclopedie, was but a servile copy of the false arrangement of Bacon.

Previously to sketching the natural plan, I must remark (as no correct definition of them has been hitherto given) that, in my opinion, the precise difference between the Sciences and the Arts is, that the former are the amount of our knowledge of the facts and operations of nature, the latter, that of our knowledge of their applicability to the wants of man.

It is this precedence of the Sciences; it is because they afford the source of all improvement in the arts, that has ever entitled their cultivators to superior honours.

As errors have also been made respecting the mode of studying them, one contending that our views of them cannot be too limited, another that they cannot be too general, I may also observe, that it is merely the workman in the arts who excels in proportion as his practice is limited to a particular object, and great in that object; but that in Science, on the contrary, precisely the reverse is necessary, and the more general the views of the Philosopher, the more perfect his inductions.

In the natural plan, we should first consider those great objects, which seem independent of any other; namely, MATTER, its motions and qualities, generally considered; then its chief forms of existence, the Celestial Orbs, the EARTH considered as a Planet, and the Laws which regulate them; next the EARTH considered as such, the structure and history of those beings which occupy its surface, regarding MAN as the chief of these, and the laws which regulate their existence, including the IMPRESSIONS which MAN receives from the various Mineral, Vegetable and Animal Beings with which he is surrounded, and the Ideas, Emotions and Passions which they excite or generate in his mind; next the various SIGNS by which these IMPRESSIONS are communicated, and the mode of combining them; then the effects which the use of these SIGNS produces on the conduct of INDIVIDUALS, and the deductions which we form from the particular results of that conduct; and lastly, the effects which the use of these SIGNS produces on the conduct of NATIONS, and the deductions which we form from the general results of that conduct.

Now that portion of a natural plan which considers those great objects that seem independent of any other, namely Matter, its Motions and Qualities generally viewed, is, according to the common arrangements, termed *Metaphysics*; the description of the chief forms of the existence of Matter—the Celestial Orbs, the Earth considered as a Planet, and of the Laws which regulate them, is termed *General Physics*, and comprehends the branches named *Astronomy* and *Cosmography*; the history of the Earth, considered as such, of the structure and habits of these beings which occupy its surface, considering Man as the chief of these, and the Laws which regulate their existence, is termed *Particular Physics*, and comprehends *Geography* and *Natural History*, the *Anatomy of Minerals, Vegetables and Animals*, as well as the remaining branches of Natural Philosophy—*Chemistry*, and *Physiology*; the relation of the various Signs by which the impressions which Man receives from surrounding objects, are communicated, and the various modes of combining them comprehends *Literature* and the *Fine Arts*; the detail of the effects which the use of these signs produces on the conduct of individuals, and the deductions which we form from the particular results of that conduct, comprehends *Biography* and *Morals*; and lastly, the relation of the effects which the use of these signs produces on the conduct of Nations, and the deductions which we form from the particular results of that conduct, comprehend *History* and *Politics*.

By means of this plan, which involves what I denominate UNIVERSAL SCIENCE (all the parts of which have thus, in nature, an equal connexion with, and dependence upon each other) the union of its artificial portions, the relations of these portions to each other, and the proper mode of considering them, are apparent. By the common method, their union, their relations and the mode of considering them are lost.

Science may thus be divided into Physical and Moral. Physical Science may be subdivided into Metaphysical, General Physical and Particular Physical Science, embracing the three first portions of the above plan; and Moral Science may be subdivided into Literary, Moral (strictly so called) and Political Science, embracing its three last portions. The first series of Sciences, it is worth observing, are strictly dependent upon external objects, the second more immediately upon the operations of the mind. Their natural connection is indicated above, and the result of their combination is ONE UNIVERSAL SCIENCE.

To conclude this general subject, I need only repeat, that with regard to the Sciences, Philosophers ought to extend their views further than they generally do. For the Sciences which explain natural phenomena, require one mode of study, the arts which apply them to the wants of man, another; because, as I have said, in the arts, the workman requires the perpetual repetition of the same operation, to render him expert; in the Sciences, on the contrary, the more extensive the data, the more accurate the induction.

With regard to the Sciences in particular, I may conclude by A RECAPITULATION OF THE PLAN I HAVE SKETCHED.—*It is impossible to be a correct politician, without being acquainted with those moral principles of which politics is the mere application; it is impossible to be acquainted with morals, or to communicate a single principle to a single individual, without a correct knowledge of language to express it; it is impossible to be acquainted with language, without a knowledge of those ideas, emotions and passions of which it forms merely the signs; it is impossible to be acquainted with ideas or the operation of the intellectual organs, without knowing their structure, and that of the external objects which impress them: it is impossible to know these structures, without knowing those general physical principles on which their existence depends, and the bodies from which these principles emanate; and it is impossible to know these, without a knowledge of metaphysics, which explains the nature of matter and its properties in general, and upon which all the Sciences thus hang.—THESE ARE THE HITHERTO UNTRACED RELATIONS AMONG THE SCIENCES, AND THE PLAN OF THE NATURAL SYSTEM.*

It was because Lord Bacon adopted more nearly this plan than any other Philosopher, that he excelled all his predecessors, and is unrivalled by his successors in Philosophy—it was because he in some measure adopted this plan that Science is in its present state of advancement, and that we know what we do know; and it was also because he did not adopt it more completely, that he did not still more excell them and instruct us.

ALEXANDER WALKER.

ST ANN'S PARK, EDINBURGH.

It is therefore with the closest view to these general principles, and this natural arrangement that it is intended to conduct the Archives of Universal Science.

This Work will be Published Quarterly; its First Number appearing in January, Second in April, Third in July, Fourth in October, and so on.

Each Number will consist of Two Parts; one of which will be devoted to the Sciences, another to the Arts.

That which describes the progress of the Sciences, will consist of a Metaphysical, General Physical, Literary, Moral and Political Department, in strict conformity with the arrangement already indicated, and each department will critically show the progress of each of the subdivisions of Science which it involves. Under the head of METAPHYSICS, will, therefore, be arranged every thing relative to *Matter* and its *Properties* generally considered, and the Sciences connected with them. Under GENERAL PHYSICS whatever relates to *Astronomy* and *Cosmography*; under PARTICULAR PHYSICS, whatever relates to *Geography* and *Natural History*, *Mineralogy*, *Chemistry*, *Botany*, *Anatomy* and *Physiology*; under LITERATURE whatever relates to *Language* and the *Fine Arts*, under MORALS whatever relates to *Biography* and *Moral Science*; and under POLITICS whatever relates to *History* and *Political Science*.—Under the head of *History* and *Political Science*, will be detailed all the *Authentic History* of the respective period, accompanied by *Political Reflections*. That department of Politics which has unfortunately always been too little studied in this country—*Diplomacy*—will be particularly attended to. That part of the work also which describes the progress of the Arts will be conformably arranged.

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