THE BRADSHAW LECTURE ON MUSEUMS IN THEIR RELATION TO MEDICAL EDUCATION AND THE PROGRESS OF KNOWLEDGE.

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MR. PRESIDENT AND GENTLEMEN,—A library and a museum are twin institutions, having for their common aim the advance of knowledge. Nor is it well to draw the distinction between them too definitely, for a library should always partake of the attributes of a museum, and most certainly a museum should always be in some sort a library. The latter may be defined to be a collection of knowledge-documents in a literary form, for the most part printed; the former, a collection in concrete form of the materials out of which knowledge is built up, and by which it is illustrated. Just, however, as a book gains greatly by the introduction of plans, portraits, maps, and other illustrations which are not letterpress, so a museum which does not avail itself freely of the aid of printed descriptions, labels, and catalogues, fails to develop a large half of its uses. A museum should indeed, it may be added, be a sort of book in itself, of large type, and easy to be read.

It would be ungracious to attempt any comparison as to usefulness of museums and libraries, for, as has been said, they are sisters. "Who loves a garden loves a greenhouse too," and we may remember that the founder of the Alexandrian Library was also a collector of museum specimens on a most magnificent scale. From the time of Alexander the Great and Aristotle downwards the collectors of museums have almost always been also the prolific writers of books. Aldrovandus and Hunter are good examples in proof of this.

Although it is far from my design to make comparisons, yet I find myself unable to leave the subject without just asking you to note some of the features in which museums have a great advantage over libraries. A library always contains much less than it assumes to, a museum usually much more. Books contain the statements of opinion often mistaken, and narrations of supposed facts which it may be equally impossible to believe or to refute. The specimens in a museum speak for themselves only, and stand open to the freest re-examination. They may possibly teach but little, but they do not lead us astray. To our librarians we allow no discriminative power; they must keep everything that is once acquired, and a large half of what stands on their shelves is simply worthless. Our museum conservators, on the contrary, we invite to weed out all that is superseded, and their collections contain nothing but what is good. Above all, the superiority of a museum is illustrated in the ease and rapidity with which its contents may be inspected, and the depth of impression which they make upon the memory. When we visit a foreign town we go to the museums, whilst we well know that it would be hopeless to attempt to consult a library. There is a pleasure in objective instruction, a sense of security and reality in it which greatly helps both the perceptive faculties and the memory. He who uttered the complaint that much study is a weariness to the flesh had doubtless known but little of the delights of a museum, and was thinking rather of the fatigues and disappointment of books.

I am tempted here to make a digression, with the object of saying that it is possible that before long our medical libraries may be made more valuable and the office of librarian acquire a new dignity. Books and pamphlets are now exceedingly cheap, and duplicate copies are easily obtained. I would suggest that our librarians should become bookmakers as well as custodians of literature. I do not mean that they should become authors, but that they should undertake the rearrangement and classification of the more valuable portions of their charge. Thus, all the monographs, chapters, and reviews on any given subject in various

languages should be collected together and be bound in a special volume. Such volumes of selections would immensely save the time of the reader and encourage research. Thus, all that has been written on Raynaud's disease, for instance, at home and abroad, would be found collected in one volume. A diligent librarian would, after a time, have a volume of monographs on every rare malady that can be mentioned, and his shelves would possess a value far greater than that of any mere collection of ordinary books.

It is scarcely necessary to remark upon what is known to all, that the museums of our forefathers were very heterogeneous, and that they often catered as much for the love of what is curious as for the love of knowledge. Something of this still survives in our present institutions, especially those of old standing. Gradually, however, in this as in other matters, as knowledge widens, we observe a tendency to restrict and to specialise. The authorities of the British Museum very properly long ago sent to us all their original specimens which bore upon pathology, and they have more recently effected with great advantage the transfer of their natural history department to the splendid edifice over which Professor Flower now so ably presides at South Kensington. The museum collected by William Hunter, and which he bequeathed to the Glasgow University, is an extremely miscellaneous one, and is even more rich in coins, curiosities, and works of art than it is in pathology and anatomy, although its wealth in the latter is very great. John Hunter had, to some extent, the same universal tastes as his brother, but he kept far more closely to natural history and surgery, and did not mix up his collections so much. That in the future the development of special museums, and of special departments in general museums, will receive greater attention there can be little doubt. We shall classify more, and with great advantage to all we shall learn to put aside all objects which are calculated to divert attention from those specially under consideration. We shall exclude from scientific museums all objects designed only to attract the sightseer and curiosity seeker. In Hunter's time the whole subject of comparative anatomy might almost be said to be in the keeping of the surgical profession, and the same statement was almost true of the scientific culture of natural history in general. But that stage has, we are thankful to say, long passed, and anthropology, comparative anatomy, palæontology, botany, etc., have now their special societies and their special museums. We have long since excluded from our museum the skins of animals and of birds, but we retain their bones and viscera, the reason being, I suppose, that the latter are less likely to find adequate illustration elsewhere. We have no longer a *hortus siccus*, and it may be in the future we shall see that the illustrations of palæontology and various other departments of natural history may be safely left to other institutions, whilst we devote our space to our more peculiar vocation, and to objects which would not be appropriate elsewhere. There is no fear that the zeal in general subjects of those who have received a medical training would be diminished by such a course. It is not that we have receded, but that others have advanced, and that the workers, who were formerly counted by tens, are now numbered by hundreds, and are taken from all professions. As such subdivisions are accomplished, surgeons are still found foremost in every special branch. In proof of this, I need only remind you that a surgeon is at present at the head of the British Museum natural history department, that he was preceded by a surgeon, and that very recently the President of the Pathological and of the Geological Societies was one and the same man. I need only mention the names of Owen, Huxley, Parker, Flower, and Hulse.

Leaving the subject of special museums, I have to say something of a division which has as yet received far too little attention. I allude to the importance of modifying the scope and arrangement of our various museums with regard to the class of students for whom they are intended. A museum of reference, one designed to aid the research of the well instructed who are working for the advance of knowledge, ought surely to take very different lines from one which is intended for the education of beginners. Almost all our English museums are as yet museums of reference, more or less complete; we have none which can claim to be designedly educational. I must note this as a great want, not only in professional museums, but in those designed for the general public. Neither as regards general science nor medical pursuits have we any collections of illustrative objects but such as are so heterogeneous and multifarious as to be very confusing to younger students. Educational museums seem to me, I will confess, to be the great

want of the age. By their aid, and by it alone, can we hope to get rid of the evils of cramming—of the lamentable loss to the formation of character which comes from the habitual and almost exclusive substitution of words for things. What we want is objective teaching; and this, I think, is beginning to be perceived on all hands. To that end nothing seems to be more important than the formation of good educational museums. Such collections should contain no mere curiosities and but very few rarities, but should be supplied with good illustrative specimens of common things, not too numerous and so liberally provided with printed description as to fully explain themselves. An ordinary museum, crowded as it almost invariably is, and replete as it ought to be with all that is rare and exceptional, overwhelms and confuses a beginner. Nine-tenths of what is there is of no use to him, and he cannot distinguish what is valuable from what is not. Few specimens, and those good and typical, plenty of explanatory diagrams and illustrations, abundant labels, and, above all, plenty of space, such are the requisites of an educational museum, and such a museum ought to be in the possession of every country town, and of every college and large school. These remarks are applicable, without much modification, to the museums which ought to be provided in connection with our medical schools.

The museum for reference has a very different scope, and should aim at a very different standard. Designed for the use of those already well advanced, it should seek after detailed completeness in every department; nothing should be too rare or too recondite to be suitable for it. Between such a museum and one for educational purposes there is all the difference that would be found between a school library and the public reference library of a large city. I will not attempt to conceal my opinion that it would be for the advantage of medical science if our London hospitals were to aim at higher perfection of their museums for educational purposes, and were more zealous to regard the Hunterian collection as the great reference museum for London, or, may I say, for England. It is not for the best that investigators should be driven to search through many collections for specimens which might very easily be accumulated in one. I know that I am on delicate ground, and will not say more than that I hope that this College will at any rate endeavour to collect copies or models of rare specimens which may be in the possession of other institutions, and that all facilities will be afforded it should such be its wish. We have lived past the old narrow temper of the collector, which rejoiced in the accumulation of unique objects, and carefully guarded them from reproduction. I trust also that we have lived past that yet narrower and more hurtful form of the museum-maker's pride which refuses to possess anything but what is original. Completeness of illustration should be our aim, not merely the possession of that which is unique or rare. Exclusiveness and fastidiousness, reprehensible and injurious everywhere, would be more especially out of place in an institution which exists not for the purposes of scientific dilettantism, but in order to subserve the great aim of the good of humanity through the promotion of medical knowledge.

Here, Mr. President, permit me to mention, and with feelings of reverential respect, the name of a pioneer in natural history, and especially in museum-making, Ulysses Aldrovandus. Born at Bologna in 1527, he died at the age of 78, after a life devoted to the pursuit of knowledge, and to the collection in permanent form of the materials for its illustration. He wrote many books and he made a large museum. I mention him chiefly, however, because he set an example to us all of liberality and enlightenment. His mind was not one of those which cherished a foolish pride in the possession of unique specimens, and in collecting nothing but the best. He aimed at completeness of illustration, he travelled widely, and of specimens of which he could not procure the originals he made sketches. At his own cost he employed one painter for thirty years, in addition to securing the help of several of the best engravers of his day. Like our own Hunter, who was just two centuries his junior, he devoted his whole fortune to his work and died in poverty which was an honour to him.

If we try to catch zeal from the example of Aldrovandus, it should, I think, incite us to endeavour to complete the splendid collection which we have in charge by obtaining (by the aid of the camera we can do it far more easily than he could) copies of rare specimens in other museums. Let me illustrate my meaning by directing your attention to a skeleton which hangs before you. It is one borrowed for the occasion from the Norwich Museum through the kindness of Mr. Cadge and Mr. Cross, the

latter of whom is the custodian of that collection. It is that of a dwarf whose limbs are very short, and show remarkably thick, coarsely-formed bones (fig. 1). His humerus and femur are more like those of a bear than of a man. The sternal articulation of his clavicle is most peculiar, for its under-surface presents an inclined plane, as if intended to slide backwards and forwards on the sternum. We have nothing in the least like it in our collection, and we cannot of course hope to beg the original. We shall preserve, however, photographs which so well represent its peculiarities that they are almost as valuable as the skeleton. Let

me express a hope that we shall also make these photographs easily obtainable by other museums. This skeleton is no mere curiosity, but is full of interest and value to the student of man. The possessor of these animal-like limbs was, there is reason to believe, of a brute-like nature. He was executed for the attempted murder by poison of his wife and child, and it is recorded that he evinced a remarkable degree of callousness and entire absence of remorse. Yet, be it observed, this brutality is expressed rather in his limbs than in his head, for the latter, although narrow and ill-formed, is not remarkably small.

I will adduce yet another instance of the desirability of collecting drawings when we cannot get the originals, although it may not improbably be an example of an inability only temporary. Mr. Frederick Horniman, an indefatigable collector, and the possessor of a private museum of great beauty and completeness, has lent me for exhibition to-day the butterflies which are before you. They claim our attention not for their beauty, nor yet as specimens required to complete a collection of lepidoptera, but as illustrations of biological law. This butterfly occurs both in Africa and Madagascar. The male in both countries is exactly the same, but the female, subject in Africa to considerable variations in colouring, assumes in Madagascar a fixed type, which is widely different from any of those shown on the opposite continent. There is probably no other instance so definite in the animal kingdom of the hereditary transmission of the tendency to vary, with finally a fixed difference, being wholly confined to the individuals of one sex. I need not say that, before these specimens are returned to Mr. Horniman, our museum will be the possessor of good coloured representations of these instructive facts.

Fig. 1.—Skeleton of dwarf with brute-like limbs.

The value of photographic evidence received a remarkable illustration in a case which a few years ago was brought before the

Pathological Society¹ by Mr. Henry Morris. A woman had died with large pulsating tumours in connection with bones, one of the largest affecting her skull. The histology of these growths puzzled all who examined them, but more than one noticed their similarity to the structure of the thyroid gland. A photograph of the patient, which had fortunately been taken to show the tumour, was now sought for, and when produced, it was discovered that it showed also a bronchocele.

It will be seen that we have here the suggestion of an important pathological doctrine, one which should supply another to the many items of evidence which connect non-malignant growths, inflammatory productions, or even simple hypertrophies with malignant neoplasms. It would appear that the bronchocele, in itself showing no signs of malignancy, was competent, if not to originate, at least to stamp with peculiarity of structure, a secondary growth which proved itself malignant in a high degree. Nor does Mr. Morris's case stand alone, for a year later Mr. Warrington Howard published a similar one, in which a woman, who had long been the subject of bronchocele, died with multiple tumours in bones and viscera. The bronchocele, which had much increased of late, showed chiefly hyperplasia of the normal elements of the gland, and the secondary growths consisted of a tissue exactly like that of the thyroid. A third example of the same thing is recorded in Langenbeck's *Archives*.²

Such being the facts already within my knowledge, you will judge of the interest with which, in turning over the pages of Bruns's *Atlas* the other day, my eye was drawn to the portrait which I have copied for your inspection. You will see that it represents a man with a large tumour growing from his skull, and that it proves, also, that he was the possessor of a bronchocele. Nothing that occurs in the case-narrative suggests that the reporter supposed that there was any connection between the two; and we are indebted to the artist who took the portrait for the unconscious record of the fact.

There is, of course, nothing whatever new in the proposal to collect pictorial illustrations of natural history and pathological objects. Every observer almost has done it more or less, and the only feeble claim to novelty of recommendation which I can advance is that I urge that it should now be attempted on a liberal scale, with an aim at completeness, and that we should avail ourselves to the full of the quite modern arts of the modeller and photographer. As I have said, Aldrovandus made drawings systematically; so did John Hunter. Hunter's drawings concerned almost exclusively comparative anatomy, and there are but very few which illustrate disease in the living patient. Our museum contains a large series of drawings collected by Dr. Farre, one illustrating vaccination and vaccine eruptions by Mr. Ceely; and quite recently we have had a very valuable gift from Dr. Matthews Duncan. To the value of such illustrations, Cheselden bears testimony as follows. Introductory to his work on *Osteology*, he writes:

"This work was executed in a camera obscura contrived on purpose by the author, which renders it more exact and complete

than any thing of the kind whatever; one view of such prints showing more than the fullest and best description can do."

My chief desire in these remarks is to emphasise Cheselden's assertion. To it may be added that "such prints" are often almost of equal value with the specimens, and, what is still more to the point, that in a host of instances they can be had when the latter cannot possibly be obtained.

Most affections of the skeleton as a whole, as well as those of single bones, lend themselves easily to the photographic lens. I shall refer directly to osteitis deformans, and may add symmetrical exostoses, all forms of rickets, osteo-malacia, and that rare and interesting condition known as myositis ossificans. This latter malady presents problems similar in their character to those which are offered by such others as ichthyosis, leucoderma, and the like. It can only be studied profitably when a number of examples are collected together. It is so rare, however, that no single museum can hope to possess more than one skeleton. Our own has but one, and that is Hunterian. During the century which has passed since Hunter was collecting, no one has offered us another example of it. We have, however, got two photographs, and it is impossible not to note with the utmost interest how closely these two resemble the original one. To Mr. Sympson, of

Lincoln, we are indebted for one, taken from the living patient, and the other, from a skeleton in the museum of the College of Surgeons in Dublin, was given to me by Dr. H. G. Johnstone, formerly a teacher of anatomy there. Tedious, indeed, would be the verbal description which would enable its reader to realise one-half of the peculiar features which he may recognise at a glance in this photograph.

Rare cases gain immensely in value when they can be, so to speak, paired. The placing of two or more examples of a precisely parallel but very exceptional condition in juxtaposition, and thus making them throw light upon each other, is accomplished more easily in museums than in printed books. In a museum a new illustration can immediately on publication be added to those of the same class already collected. Two very remarkable examples of arterial obstruction (published, one by yourself, Mr. President, and one by Sir William Gull, and both now upwards of thirty years old, serve me as good illustrations of what I wish to enforce. In Sir William Gull's case a woman, aged 47, died

two years after an illness which had resulted in blocking of her innominate and left carotid arteries. The state of things is shown in a good lithograph which I have had copied for your inspection. You will see that the arteries named are occluded at their origins, as if they had been corked (Fig. 3). The patient, who died finally with cerebral softening, had, it would be seen, survived for two years with no other direct blood-supply to her brain than that afforded by her left vertebral. Such a state of things might well have been deemed impossible. Nor does the interest of the case end with the problem as to how the brain was fed, for we have in it also a question of much difficulty and importance, as to the nature of the arteritis which led to the obliteration.

With this case let me pair your own. In it also the patient was a woman, but twenty years younger than the other. No definite history of the illness attending the occlusion was obtained, but it was known to have existed several years. Both main arteries on the left side were permanently blocked through a

Fig. 2.—Duhring's Neoplasm. (See Page 1265.)

¹ *Pathological Society's Transactions*, vol. xxxi, p. 259. Mr. Morris informs me that the bronchocele had not been overlooked.

² There is a fourth case, but with some differences, in Virchow's *Archives*, 1876, by Cohnheim. Bd. 68, S 547.

long tract, and so also was the right subclavian: thus the left carotid was the only vessel affording blood to the brain. You rightly aver of the case that "it is one of the most remarkable on record, and in some respects unique," but it will be seen that it is now capped by the preceding one. So far as I know, this may be the first occasion on which they have been mentioned together. I am sure it will be admitted that they illustrate each other, and as both were published with good drawings, they might easily be placed in juxtaposition in a museum collection.

Fig. 3.—Occlusion of Innominate and Left Carotid.

Of Sir William Gull's case I have scarcely found any mention in medical literature, and he does not refer to yours. Your case has not been wholly neglected by systematic writers, but almost the only reference to it which I have found contains in the course of four lines two important errors. Whereas you distinctly state that the occlusion was due to arteritis, and record that, in consequence of deficient blood-supply, the patient had ulcerative destruction of the scalp and skull, the writer to whom I refer as quoting you says that the condition was probably congenital, and that no gangrene occurred. Those who follow will probably quote from him and not go to the original, and thus the errors will be perpetuated, and I shall have an excellent illustration of what I stated in the beginning of my lecture as to the relative trustworthiness of books and museums. It is needless to point out that it is extremely improbable that any museum should ever be fortunate enough to possess the original specimens of two such exceedingly rare cases as those just cited. If they are ever to be paired it must be by pictorial representation of one or both; and I may, perhaps, be permitted to add that, for most purposes, these representations are almost as instructive as the specimens themselves.

To those who have devoted attention to dermatology, it will be quite needless that I should remark that the collection of models and drawings is of primary importance to the advancement and elucidation of this department of surgical knowledge. How tedious are detailed descriptions of the conditions displayed by a skin eruption! how clear and easy of comprehension do they become the moment a good drawing is produced! "Show me your drawing, and I shall know what you mean by your words," is the suggestion constantly on the lips of the puzzled listener or reader in this department. Witness the noble testimony to the importance of this mode of illustration which our Paris confrères have given in their magnificent collection at the Hôpital St. Louis. To those, however, who have not devoted any special attention to dermatology, it is, perhaps, necessary to say a few words in justification of the importance of its minute and detailed study.

The need for such justification is, I trust, diminishing very rapidly, but it is possibly not yet wholly past. The prejudices of an older day still cling about this department of observation, to its great injury, and prevent dermatology from occupying, as it ought to do, the very foremost place in medical study. Surely it cannot need much thought to perceive that the skin, inasmuch as it is exposed to view, affords the best opportunities for the inspection of pathological processes. The kinds of morbid action which it displays are almost infinitely varied, and they occur with a richness of combination which has no parallel in any other organ.

In support of the assertion that, quite apart from their substantive importance as objects of treatment, and therefore needing to be understood by the practitioner, diseases of the skin are invaluable as helping us to the comprehension of pathological laws, such facts as the following may, amongst many others, be advanced.

They, better than any others, illustrate the influence of drugs upon the economy, and the marvellous manner in which idiosyncrasy controls such influence. We note with wonderment how, in the case of the iodides and bromides, dose has little or no influence on the results; how very small doses will cure, and very large ones will not poison; and how in the production of eruptions on the skin all seems to depend upon peculiarity in the recipient, and nothing upon the quantity swallowed. Thus it has happened that the same patient has on three or four different occasions been poisoned, brought absolutely to death's door, by a dose of the iodide of potassium which most persons would have taken without knowing it. We note, also, how very diverse may be the type of the eruption assumed in different persons, a pustular acne, an erythema, a malignant purpura, a kind of pemphigus, or, finally, a freely growing multiple neoplasm, which may cause death. All these various results from small doses of the iodide of potassium are well illustrated in portraits which now hang before us, and they might be brought in an impressive manner within the experience of all by the arrangements of a clinical museum.

There is, as I have said often before, no single fact in the range of therapeutics better calculated to rehabilitate our faith in drugs than to observe the manner in which a few drops of a tasteless solution of arsenic can dismiss an eruption of pemphigus and rapidly restore the patient to health. Three lines of record of result at the foot of a portrait might bring this important fact home to the mind of the sceptic in the most conclusive manner. The possibility of causing, by the use of arsenic, that peculiar form of local neuritis which results in an eruption of shingles, might also be well illustrated, although, perhaps, it could not be said to be proved by a series of photographs. Another not unimportant pathological fact in reference to arsenic which should be demonstrated in our museums is the production of discolorations and chronic inflammations of the skin, ending in the formation of corns, which have a tendency to pass into epithelial cancer. Of these occurrences, some illustrative drawings are now before you.

Having mentioned cancer, I am reminded to ask attention to the manner in which various laws as to the modifications of malignant action receive their best illustrations when observed on the cutaneous surface. What may be called topographical modifications may be mentioned first. We observe how on the proboscis a papillary, gland-infecting type is the constant form, how on other parts of the face the cancer is not usually papillary and never gland-infecting. Now this latter (the so-called rodent or Jacob's ulcer) is almost peculiar to the face, or, if seen on other parts, receives at once most important modifications. We may observe also with interest how very similar in appearance and in course are the forms of melanotic sarcoma which develop in the sole of the foot, and of spindle-celled sarcoma of skin when it occurs on the lower extremities or abdomen. It has never happened to me to see any form of disease resembling that shown in the drawings which I exhibit on the upper extremities, on the neck or head, nor even, I think, on the upper part of the trunk. Yet on the thighs and legs, and lower part of the abdomen, it is a well characterised form of malignant disease. Further experience may prove that this impression is an erroneous one, but whether it confutes or confirms it, the possession of good drawings, in order to show the peculiarities of the conditions described, is equally important. Nor shall we find anywhere else such good illustrations of the mode in which cancer develops in connection with local irritation, as are supplied to us by the skin. The pipe cancer of the lower lip, preceded by papillary growth and hardening, the soot cancer of the scrotum, supervening on the soot wart, are

matters of transition which the artist can easily display. So also the immense multiplication of secondary growths, as we occasionally witness it in melanosis, is, for the student, a most instructive lesson in pathological possibilities, and one which he will be singularly fortunate if he ever witnesses in the hospital ward.

In connection with this topic permit me to exhibit a drawing which possibly transcends the experience of even the most experienced of those present, and which, but for the drawing, might have been held, in mere verbal description, to be an exaggeration.

Fig. 4.—Eruption of sarcomatous nodules.

The poor fellow who sat for this portrait, himself a member of our profession, died within two months of his first symptoms covered with an eruption of sarcomatous nodules, so copious as, in many parts, to have become confluent (Fig. 4). In the early stages his eruption had been named a purpura, then lichen planus, and, finally, with great confidence, a syphilide; but in the end there could be no doubt that it was malignant. The progress of the disease, the mode of death, and the microscope, placed this beyond dispute. It was probable that he had before his death a growth in connection with the lumbar vertebrae, but whether this was the primary one could not be proved. His mother had died of cancer.

I feel sure that all will admit that a portrait which brings such a case within the range of the personal experience of all who see

it possesses great clinical value. I owed to my friend, Mr. Morrant Baker, the opportunity of seeing the patient, and the permission to mention the case on this occasion. Mr. Baker has discovered that somewhat similar cases have been published by that most excellent observer, the late Dr. Hilton Fagge, but not having been illustrated by drawings, they did not secure for the malady the wide professional recognition which this case will, I hope, obtain.

I turn now from malignant disease to the consideration of illustrations of pathological laws afforded by the study of ordinary skin diseases. For dermatology in general I put in the claim that it is fast escaping from the trammels of nosology, and adopting with much success methods of patient search for causes and study of mode of evolution. Excepting for purposes of conventional convenience, we are careless as to names, and recognise that they often serve only to disguise and perpetuate our ignorance. The labours of those who have preceded us in the department of descriptive nosology enable us, now that the foundations are well laid, to disregard names far more than they could afford to do, and devote ourselves to the attempt to realise the nature of the process designated. We desire not to stop with the question, Is this psoriasis, is this lupus, is this morphœa? but to ask in each instance, What is psoriasis, what are the essential features of the diseases known as lupus, what are the pathological processes which result in the extraordinary conditions—by no means, be it remarked, confined to the skin—which we know as morphœa? From the investigation of skin diseases in this manner, permit me to repeat, we may expect very valuable discoveries as to the general doctrines of pathology. It is needful, however, that we should collect our facts with great care and patience, and illustrate them as far as possible by permanent representations of the conditions described.

A theory, for the present a mere working hypothesis, which has of late years claimed much of my attention, would assert that almost all inflammatory skin diseases are infectious to the organism in which they originate. The chief, indeed almost the only, real exceptions to this law would appear to be the neurotic and neuro-vascular affections—herpes and morphœa, and a few others. These are neither serpiginous nor capable of becoming generalised, and thus they are in no sense infective. But of the other forms, all of which do tend to become generalised, and which begin usually by local and small developments, it may be the fact that the first patches are the parents of the others. The degree of the infectiousness may vary much in different cases in connection with differences of idiosyncrasy, of health, and of age; but, under these limitations, the explanation may be nearly the same for acne, boils, psoriasis, eczema, and a host of allied maladies. It may be that we ought not to consider the patient on whose knee or elbow the first scaly patch has appeared as necessarily destined to evolve a complete generalised psoriasis, any more than one on whose lip is an epithelial cancer is destined to die of gland disease. The prompt excision of the primary cancer may entirely avert such a hypothetical destiny; and so also it is possible that the cure of the first patch of eczema or psoriasis, or of the first pustule of acne, may avert a general eruption. We have just seen how a malignant growth, shedding its infectious germs into the blood, may produce a general eruption, comparable in extent, in symmetry, and rapidity of evolution, to any inflammatory skin disease. Let us look backwards, and ask whether it be not possible that these skin eruptions become generalised in exactly the same way as sarcoma does, by the blood-diffusion of germs? Many facts support such an interpretation of what we see. In almost all cases there is an initial period, during which the eruption is local. Generalised eczema, for instance, is almost invariably preceded by an old-standing patch of eczema rubrum on the leg or some other part of the body. Acne never becomes copious all at once, and its worst cases are to be cured by careful attention to the destruction by local measures of its pustules as they appear. If one is permitted to develop, others will infallibly follow: the more pustules are permitted to exist the more will come. It is notoriously the same with boils, and, in a general way, I think it may be asserted of all the eruptions which I have named, that they are self-aggravating, and that the worse they are the worse they will become. Especially is this the case in eczema.

Looked at from this point of view, the main difference between a disseminated malignant disease and one the result of non-malignant inflammatory processes would be that in the one the cell-growths have entirely escaped the control of the organism and the influence of drugs and changes in bodily condition.

whilst in the other they have not. Even this distinction may be one of degree rather than absolutely of kind. You can cure psoriasis by the use of arsenic, whilst you cannot cure cancer: but many facts favour the belief that, although not efficient to cure, arsenic does very powerfully influence malignant cell-growths in the same direction, though not to the same extent that it controls those of psoriasis. I must not, however, trouble you further with the development of what I fear you will regard as, at the best, only a crude theory. Before, however, quite leaving the topic of general pathology as illustrated by skin disease, I must ask attention to one which stands as a sort of connecting link between malignancy and inflammation.

I refer to lupus. Surely there is no disease which presents so many points of interest for the pathologist, and at the same time offers such tempting facilities for their investigation. Various diseases of the lupus family are some of them so different the one from the other that good authorities have held that they ought not to be placed together. But, on the other hand, the connecting links are capable of easy and definite demonstration. In no disease, perhaps, can we find the laws of what may be termed pathogenetic partnership more interestingly illustrated. Some forms of lupus are little removed from chilblains; others are close to epithelial cancer, and readily slide into it; others are tubercular, and display the characteristic bacillus; whilst yet others, in their mode of evolution and the features of a disseminate eruption which they assume, come very close to common psoriasis. With all these differences, I yet make bold to assert that whoever investigates the lupus family in detail will convince himself that there are close bonds and relationships between its members. It is in the examination of different kinds of lupus that we may hope to throw light upon the relationship between common inflammations and those of highly specialised types; again, between the latter and malignant processes; and, lastly, to decide the all-important question as to the relationship between micro-parasites and the peculiar forms of disease which they attend.

Amongst the propositions in general pathology which may be instructively demonstrated by pictorial aid is the assertion that the specific poison of syphilis may, under favouring circumstances, become a cause, not of congestion merely, nor of inflammatory effusion, nor of ulceration, but of hypertrophic growth. The proof referred to is given in the case of the papillæ in the mid-region of the dorsum of the tongue. We have for long been familiar with "syphilitic warts" as reputed to occur on the genitals in both sexes; but in these regions there is always the fallacy that papillary growths may be the result, not of the syphilitic poison, but of the local influence of irritating discharges. On the surface of the tongue no such source of possible error exists, and I beg to put in evidence a little collection of five drawings, all of which show exactly the same thing—a group of overgrown papillæ, without any other evidence of inflammation in the region named.

It is needless to remark that this possibility, once conclusively demonstrated, becomes of somewhat wide importance. If syphilis can cause hypertrophy in one structure, it probably does so in others, and we begin to see in the processes of inflammatory action which so commonly attend all syphilitic disturbances of nutrition a usual but not absolutely essential concomitant. Let us reflect upon what takes place in the coats of arteries and in bones.

In what I have hitherto said I have been insisting on the value of pictorial illustrations for general purposes, but I must now pass to a special branch of the subject, for I wish to advocate the formation of

CLINICAL MUSEUMS.

By the name clinical we may designate that department of a museum which is devoted to the illustration of disease as seen in the living subject. As our ordinary pathological collections exhibit in permanent preservation the treasures of the *post-mortem* room, so would this display for us those of the hospital ward. It would accomplish this by casts, models, portraits, and photographs. Whilst almost all our museums possess a few illustrations of the kind referred to, in none, so far as I am aware, has anything like completeness been attempted. The collection at the Hôpital St. Louis in Paris is by far the best, but it is almost restricted to syphilis and diseases of the skin. Guy's Hospital has a number of wax models which are most excellent in execution and invaluable in character, but they make no approach to completeness. Most of our hospitals have, more or less consider-

able stores of valuable drawings, but they are usually stowed away in portfolios, and hardly available excepting to the hospital staff. What I mean by a clinical museum, and what is I trust contemplated by a resolution which was adopted by the Council of this College some years ago, is a department in which every effort shall be made to display in the best possible manner all that can be usefully portrayed by the artist or modeller in illustration of disease during the life of the patient. Its contents should not be hidden away, but exhibited in well arranged order for the ready inspection of all visitors. Such a collection would be far from restricting itself to disorders of the skin. It would comprise all varieties of deformity, whether congenital or acquired, all diseases of the eye, whether external or seen by the aid of the ophthalmoscope, and all that occurs to the tongue or in the mouth, including the revelations of the laryngoscope. In addition to these, it would also take in illustrations of all forms of external cancer and new growths, and the alterations of contour which are peculiar to the different varieties of fracture and dislocation. What is called the physiognomy of disease and the peculiarities of the general form of the body which characterise such diseases as myxœdema, rickets, osteo-malacia, spondylitis and osteitis deformans, and the like, would also fall within its scope.

Living as we do in a city which counts four millions of inhabitants, and is the easily-accessible metropolis of a country having a population of twenty-eight millions, it has often struck me as a defect that we have no institution into which the living examples of exceptional forms of chronic disease might be received and permanently maintained, for purposes not solely of treatment and of personal comfort, but as the means of advancing clinical knowledge. London could easily supply half a dozen examples of leprosy, morphea, lupus erythematosus, or Raynaud's disease, which, placed together, would afford material for observation of a kind not now accessible to the medical student. Nor is it alone or chiefly for the student that such a kind of permanent repertory of all that is at once chronic and rare would be of the utmost use. We are every year advancing in our recognition of the obvious fact that a surgeon's education is not complete when he takes his diploma, and it is not too much to hope that very speedily a large post-graduate school will flourish where, above all places in the world, it ought to flourish—in this great metropolis. When such is established, the want of such a hospital as I have indicated will be felt, and not impossibly an effort will be made to supply it. In the meantime, a clinical museum may be made, at much smaller cost, to supply a tolerably substitute.

The value of a collection of such objects can surely need no attempt at proof from me. It would be useful alike to the student, to the practitioner, and to the investigator. The distinction which has been drawn between an Educational and a Reference Museum would here scarcely apply, for a clinical department must almost of necessity be both. Its objects would one and all be useful to the student, however multiplied, but they would be so expensive to procure and keep up, and occupy so much space as to be beyond attainment, excepting in a modified form, by most of our medical schools. In a peculiar and special manner, therefore, the formation of a complete clinical collection devolves upon a central and wealthy institution such as this College. Let me add that, although costly in the first instance, as just observed, yet when once formed, it would in many of its sections, I allude especially to photography and portraits, be easily and cheaply copied. Thus the museums of our medical schools, whether metropolitan, provincial, or colonial, might be supplied with duplicates of great educational value. I shall venture presently to bring forward a few illustrations of what I have just asserted, but before doing so, allow me to say, in a general way, that a clinical museum would teach, so far as the eye is concerned, the great art of diagnosis. It is true that we cannot educate the finger in a museum, and that the detection of abscess, the manipulation of tumours, and the tactile examination of fractures and dislocations, must still be left to be learnt in the ward or the receiving room. But all that the eye can do, and it comprises by far the largest half of surgical diagnosis, can be learned easily and well from models, photographs, and drawings. The trained eye can detect hardness in a chancre without touching it, and many other conditions usually supposed to need the finger, may yet, if the eye be duly educated, be diagnosed at a glance without it. How useful the contour of the parts is in the diagnosis of dislocation, I venture to illustrate, although of course well known, by a number of stereoscopic photographs which are placed before you.

It may be said that diagnosis should be learnt in the hospital as anatomy is learnt in the dissecting-room. Neither in one nor the other instance, let me reply, is such limitation as to place and mode of study a judicious one. To learn anatomy only by dissections would be to incur an enormous waste of precious time, and if training in clinical diagnosis is to be restricted to the hospital ward, the student's attainments in it will be grievously inadequate. Let us reflect for a moment how seldom some of the more rare diseases make their appearance in our wards, and how transitory are the most important stages in many others. How many of our students pass through their curriculum, even at our largest hospitals, without having seen an example of malignant pustule, of Dupuytren's contraction of fascia, of an encephalocoele, or it may even be of the chalkstones of gout. Excepting by the house-surgeon and his dressers, fractures and dislocations are seldom seen until, by reduction, all their diagnostic features have been removed. How very short is the period during which each student enjoys the privileges of a dresser. No one who knows the real facts as to ordinary hospital opportunities (for even in the hospital itself, be it remembered, it is not one in twenty who is allowed the opportunity of gaining experience otherwise than by the eye) can hesitate for a moment to admit that it is most important to supplement them in all ways that are open to us. To a clinical museum the student can come again and again—the patient will not have gone out—and can refresh his memory and impress it anew with a visual picture, which if it does not equal life, yet very far excels for diagnostic purposes anything which he can get from books.

Although I have often before mentioned an incident which occurred to myself in illustration of my present argument, yet I shall beg your permission to again refer to it on account of its peculiar instructiveness. Five and thirty years ago, at the time when I was the hospital reporter to a journal of which Sir Spencer Wells was then the distinguished editor, I once entered an operating room where a surgeon was standing with his instruments in his hand. In another minute a large armed needle would have been thrust into a florid nasal encephalocoele, with the intention of ligaturing its base. The diagnosis, as I was informed, was naevus. I knew better, and at the risk of a charge of ill-manners I forced my way through the crowd of students, and mentioned to the surgeon my opinion as to the real nature of the malady. He desisted at once, and the child's life was saved. Now at this time I had never myself seen an encephalocoele; I knew the disease only from a photograph.

If I may venture to illustrate in detail the uses to which a clinical museum may be put, I will take first the recognition of cancer. The early diagnosis of external cancer will perhaps be admitted to be one of the most important objects of surgical attainment. Our students seldom or never see such cancers in early stages, and opportunities for obtaining an extensive familiarity with them fall to the lot of but very few of us. Now I unhesitatingly assert that it would be easily possible in a good series of wax models to construct imitations of the early appearances of rodent ulcer, cancer of the lip, tongue, genitals, etc., which would be as nearly as possible equal to seeing them in the living patient. The saving of human life and of human suffering which would result from such collection would be beyond our calculation.

The vocation of a clinical museum, as affording opportunities for the study of Rare Diseases, cannot be overrated. No other form of publication can afford advantages to be compared with what it would offer. Nor can anyone doubt that the complete study of rare diseases and the rapid diffusion amongst the profession of accurate knowledge respecting them is of the utmost importance. Not only is it to be alleged that the sufferers from rare disease have equal claims with others upon the resources of science, whilst unless special effort is made, they are in danger of encountering professional ignorance, but a yet more cogent reason is to be assigned in the fact that rare diseases are often type-forms, and afford us a clue by which to solve clinical problems of wide extent. I will adduce as an instance of this a new disease which has had the good fortune to be observed by one to whom clinical surgery was already under untold obligations, and to be described by him in two essays which are models for us all, not only in the art of seeing and describing what has been seen, but of zealous effort in bringing to a focus all the light that can be got from the researches of others. I allude, of course, to Osteitis Deformans, a malady which, were it not that the brow of its discoverer wears already so many laurels, we might be tempted to propose should be known as Paget's disease.

The first public mention of this singular and most interesting malady was made before the Royal Medical and Chirurgical Society in November, 1876, and our knowledge respecting it already comprises the narratives of some twenty cases recorded with great care by different observers. Those who, in addition to Sir James Paget, deserve especial mention, are Professor Czerny, of Heidelberg; Mr. Lunn, of the Marylebone Hospital; Mr. Bryant and Dr. Stephen Mackenzie. Three-fourths of the cases as yet extant are, however, from the pen of its discoverer, and I shall derogate in nowise from the merits of later observers if I venture to say that they have added nothing of importance to his statements. Now osteitis deformans and museums come into relation at two points. In the first place the photo-

graph of the living patient is easy of recognition, and might enable anyone who had never seen the latter to make a diagnosis at once; and, in the next, the single bones, still better the entire skeleton, afford objects of great interest for the pathologist. Already two complete skeletons have been obtained; one is in the museum of St. Thomas's and one is in our own. The difficulties which have been overcome in order to secure them will be appreciated by all who ever engaged in such pursuits. I ask you to remember them not alone that we may feel grateful to those who encountered them, but that I may enforce the lesson of the desirability of supplying to other less fortunate museums photographic copies of these skeletons together with those taken during life.

The main facts as regards osteitis deformans are these. It is a disease of the osseous system which occurs in middle life or senile periods, which is attended simultaneously by overgrowth and by weakened structure (Fig. 5). The bones increase in size, and at the same time they may bend and shorten. Although often almost painless, no one who looks carefully at the bones affected, and who notes how the disease may pick out one and avoid another, can doubt that the changes are due to some low form of inflammatory action. The problem which it presents to the pathologist may be thus stated: How account for a very chronic osteitis which becomes multiple, but not with exact sym-

Fig. 5.—Osteitis Deformans.

metry, which occurs to those who seem perfectly healthy, and has no connection with either syphilis or gout? Although occurring to the aged it is certainly not a senile degeneration, or it would be general and symmetrical.

Clearly, to solve this problem, we need an abundant collection of facts. Now to get these quickly and to put them into an available form we must illustrate our cases by photographs. Those who have patients should get the portraits taken, and supply them, with full particulars, to our museums. Above all, wherever a skeleton exists, it should be photographed and copies made accessible to

all. When we find out what osteitis deformans really means, we shall probably at the same time get light as to certain other maladies occurring under similar conditions, whose origin is for the present shrouded in mystery. Clearly it belongs to the group of structural affections tending to multiplicity but not to symmetry, and restricted to one kind of tissue. Let us ask if other tissues besides bone afford us examples of parallel occurrences.

We might, if we liked, call it "disseminated osteitis" or "disseminated osteoporosis," and if we did so the word would probably remind us that neurologists have a disseminated sclerosis which disorganises certain scattered areas in the brain and spinal cord. A little further thought would remind us that some forms of tumours, both innocent and malignant, become disseminated in a similar manner, and that lupus and several other affections of the skin do the same. This would lead to the hypothesis that osteitis deformans may be, like these, an infective malady in which one bone originates the elements which set the process going in the others—infect them, in fact. We know well what happens in Simon's "necrosial fever." It may be that we ought to give a literal application to the term "disseminate"—it may be that really the process is one of seed-sowing.

Now, if we assign any generalised malady to the group of self-infective ones, we have, if not discovered its cause, at any rate made an important step in that direction. All that is left to be done is to find out what caused the parent lesion. The answer to this will, in nine cases out of ten, be the same: the cause of the primary infecting area of inflammation or new growth was an injury occurring to a person of special type of organisation. Given the peculiar state of health or of age with the local damage to structure followed by a peculiar type of inflammatory action, and all the rest is explained.

I cannot leave this topic without just briefly referring to an exceedingly rare form of skin disease, of which a portrait is before you. In 1869 I had the man under care, whose hand is the subject of the portrait. He had large livid patches of thickened skin on his hands. He lived seven years after the portrait was taken, and became covered with blue patches of thickened skin. His health did not fail on account of the skin disease, and his death, which occurred in King's College Hospital, was from dropsy. In Christiania, some years later, Professor Boeck showed me the portrait of a man's hands exactly like those before you, but I was unable to get any particulars of the case. During the present year another example of the malady has come under my notice, and these three cases make up all the data that I have. This third case is a most extraordinary one, for the patient, an elderly and healthy farmer, is covered with blue livid patches, which present a condition of solid oedema, almost as hard as keloid. As in osteitis deformans, the subjects of this disease have been senile men, and the malady has multiplied slowly through many years without derangement of general health. As in osteitis deformans, it has not attained to exact symmetry. If we substitute skin for bone, the facts as to the two maladies are much alike. I have to add, respecting the blue-skin cases, that there was good reason to believe in at least one, that the disease began in a local injury.

A rich store of material exists ready to hand for clinical museums in the pictorial illustrations of disease which have been already published. It may be said, perhaps, and it is partly true, that these are already accessible in our libraries. They are accessible there, however, only in a certain sense, for in most instances they exist only for those who know where to find them. They are scattered here and there, unarranged and unclassified, and too often, so far as the general student is concerned, they are accessible only in the sense in which fossils in the rocks may be said to be accessible to the geologist. If carefully hunted out, disintombed, and placed in a museum, in which they should be well classified and indexed, their value would be increased tenfold. Few, indeed, of us have any conception of the wealth of clinical material of this kind which is buried in the atlases, journals, transactions of societies, and monographs of the past century. Most certainly as a preliminary to the collection of new delineations of disease, an attempt should be made to bring together, in orderly arrangement, the wealth which we already possess by inheritance. In skin diseases, for instance, there are at least a dozen atlases, and, of these, those of Bateman, Alibert, Cazenave, Sir Erasmus Wilson, and Hebra, are of exceptional merit, whilst almost all contain much that is valuable. Let anyone picture to himself the labour of hunting through all these works for illustrations of any given disease, and the probability that the seeker would after all miss much of

what he was looking for. How different would it be if these were all collected, taken to pieces, and their contents reclassified, according to subject. Such would be the beginning of a clinical museum, a well arranged collection of all that our predecessors have deemed worthy of delineation. In many cases, published portraits are accompanied by good case-narratives, and in such, not infrequently, the realisation of the facts may be almost as perfect as if we had ourselves seen the patient. It would be absurd for me to attempt to produce to you anything like detailed proof or exemplification of what I have said, and yet I may, perhaps, be permitted to glance very briefly at a few instances.

In the year 1849, our veteran colleague, Mr. Cock, published in the *Guy's Hospital Reports* some very important commentaries on the peculiar changes which may occur in sebaceous cysts, and which may simulate malignant disease. Mr. Cock's portraits should form the nucleus of a series of illustrations, showing all that has been observed subsequently on this subject.

A most extraordinary disease of the fingers and ears, which occurred in several children of the same family, was the subject of a very full narrative by my late friend, Dr. John Murray, who published with it the portrait which I have copied. So far as I know, nothing of the same kind has ever been observed, either before or since. Knowing, however, what we do as to the laws of production of rare maladies, and how it is certainly the fact that nothing

Fig. 6.—Protrusion of Hydrocephalic Brain.

can be so peculiar and strange in its features, but that we may expect in due time to find its precise counterpart, there can be little doubt but that we shall some day see the exact parallel of Dr. Murray's patients. In the meantime it is, I cannot but think, of great importance that his published portrait should be placed in a museum conspicuously under the eyes of the profession. It is as valuable for the physician as a new fossil bird for the paleontologist.

Professor Hebra published in his *Atlas*, amongst many other rarities of great value, a portrait which it will serve my present purpose to mention. It is that of a disease which he called *sarcoma melanodes*. It shows large diffused patches of black new growth, almost covering the fingers. It is most rare for anything of the nature of melanosis to be developed symmetrically, and I doubt much whether the experience of Mr. Pemberton or any other English observer can produce a parallel. I feel almost sure

that none such has been published. It is most important that the Vienna portrait should be kept in memory, and its features made familiar, in order that careful search should be made for others. No doubt, they illustrate new laws in reference to the disease in question, so also of rhinoscleroma.

In a portfolio which is on the table I have collected from various sources published portraits of diseases which, so far as my knowledge extends, are almost unique. We have amongst them an enormous erectile hypertrophy of the female breast (Mr. Image). Portraits of granuloma fungoides (Dr. Pringle). A most unusual case of urticaria tuberosum, by Mr. Morrant Baker. A case of dermatolysis, in which the man's ear and eyelids travelled half-way down his neck. The condition shown in this latter portrait is so extraordinary, so inconceivable without the sketch—and, I may add, so almost incredible with it—that we can but wish it had occurred within the possibilities of photography.

Here is a case of tinea, possibly favus, in which extensive disease of the skull bones was induced. A portrait by Dr. Anthony Todd Thompson, of a rapidly serpiginous form of nevus. In this other portrait we have a representation—rough, I may confess, as a work of art, but very good for the demonstration of what it is designed to show—in which, after premature ossification of the skull bones, the hydrocephalic brain grew through a hole caused by absorption of the calvaria, and hung over the temples (Fig. 6). I must not trouble you with more, my object simply being to enforce the point that of all extreme rarities portraits should be taken and conspicuously exhibited, in the hope of obtaining parallel observations.

We have in Dr. Duhring's Neoplasm a sort of type case of a new group (Fig. 2). If it be not now unique, it probably was so at the time of publication. The growths in the end killed the patient, and caused gland disease; they were therefore malignant, but they were not to be distinguished from inflammatory hypertrophies, and many underwent complete removal whilst the others were growing. The cases constitute most important links between inflammation and cancer.

It would be great omission if, in connection with the present-day development of such a museum as ours, I should say nothing as to the collection of illustrations of surgical instruments and appliances. The time at my disposal is, however, very short. I must content myself with affirming that such a collection ought certainly not to confine itself to objects of historical interest, but should aim at displaying every novelty of the day. It is only by such public display that the merits of what is good can be easily appreciated and made widely known, whilst that which is not good may be permitted to pass quietly away. At present the surgeon wishing to make himself acquainted with new instruments, etc., must visit an instrument maker's shop, or must content himself with what is shown at the annual museum of the British Medical Association. Neither of these can be considered as fully satisfying, and I cannot admit that the institution in which we are now assembled will have done all that it can for the perfecting of the art of surgery until it has within its walls a collection, easily arranged for inspection and comparison, well labelled, described, and catalogued, of all instruments and appliances, concerning the merits of which the practitioner may desire information.

It remains only, Mr. President and gentlemen, that I should now say a few words by way of summary and conclusion. The design of the Bradshaw Lecture is, I believe, to keep in memory the name of a surgeon who was proud of his profession and had faith in its aims. When you, Sir, did me the honour to convey to me your wish that I should deliver it on the present occasion, I had no difficulty in selecting a subject, than which I believe there is none other of equal importance at present. I can only hope that you have not thought it inappropriate. Apart, however, from the general interest which attaches to the development of modern museums, there were other and more temporary reasons which impelled me to take up their advocacy. It is well known that our Council contemplates large additions to our museum accommodation. The additions to our library are already complete, and have, I cannot but believe, given great and general satisfaction. When, however, it got abroad that one or more new wings were to be added to the museum, the announcement was not received by our critics with unmixed approval. It has been said that we have abundance of bottles and bones already; I have even heard it hinted that the age of museums is passed. Now, Sir, the Council of this College has, as you well know, in nowise commissioned me to defend its acts, nor do those acts

stand in the slightest need of apology from anyone. It occurred to me that I might, however, usefully employ the present occasion in the endeavour to enlist the sympathy and co-operation of the whole profession in the plans referred to. With this design I have tried to show that our museum, rich as it is, magnificent as in many departments are the accumulations which it already possesses, still stands in need of further developments. These developments are necessary in all directions, but, as being of paramount importance, and as having been comparatively neglected, I have urged the formation of clinical departments, which should be designed to assist in the diagnostic discrimination of disease.

I have in the advocacy of this object produced, I fear with some diffuseness, evidence that such a museum would be of the utmost advantage both for the education of students and the advancement of knowledge. I am sanguine that some of the facts adduced must have carried conviction to all doubters, should such be present, that it is most desirable that we should as speedily as possible form a collection as complete as possible of all that the modeller, the artist, and the photographer can do in the representation of disease as seen in the living subject. I am almost ashamed to attempt to meet the only objection which I can conceive to remain in the minds of any, that, namely, on the score of expense. If, however, this must be met, let it be urged that in the lowest and most mercantile calculations, such expenditure would pay. The victims of cancer, for instance, and of such diseases as malignant pustule, are often men in the prime of life, the fathers of families; and their death prematurely, quite apart from motives of humanity, may be easily shown to be a heavy pecuniary loss to the community. These diseases are curable only by early operation, and early operation is possible only as the outcome of early and confident diagnosis. I assert that a few good models would make such power of diagnosis a common possession of the whole profession to an extent very far greater than is at present the case. I name these two diseases as examples, but there are hundreds of others. Let us throw aside lukewarmness, and join heartily in the work. Let us stint no requisite outlay. I cannot believe that our critics wish that we should hoard our wealth; there could be no surer step downwards as regards both the repute and the usefulness of this noble College. Others there are, I doubt not, ready to emulate the liberality of Sir Erasmus Wilson if they see that the College knows how to make wealth useful, and has the moral courage to employ it. Surely it was to the high honour both of Aldrovandus and of John Hunter that they died poor. Although both enjoyed large incomes, yet both saw so clearly how money might be made to subserve science and both had such faith in science, that they spent in its service all they had. If I were asked to denote by any one fact the difference in the intensity of character of the brothers Hunter, who in most respects were much alike, I would say that William died wealthy and John almost a bankrupt. It cannot be wished that an institution like ours should show less of public spirit than has been displayed by individuals who were surrounded by family claims. If such cowardice should ever come over us, as I am convinced it never will, we shall indeed have lost sight of the example of the man whose name our museum bears, and shall have failed grievously in the duties of our trust.

THE MORTON LECTURE ON CANCER AND CANCEROUS DISEASES.

*Delivered at the Royal College of Surgeons of England on
Thursday, November 29th, 1888.*

BY SIR SPENCER WELLS, BART., F.R.C.S.,
Surgeon to the Queen's Household.

[Concluded from page 1265.]

LET me mention another matter for your consideration. We may be consulted in cases where the period for early and hopeful operation has passed by, or where, months or years after operation, recurrence has taken place—it may be that recurring growths have also been removed, once or several times—and then comes a time when a patient, exhausted by loss of blood or by profuse offensive discharge approaches the end, and further operative treatment is abandoned. Are we to be content with relieving pain, prolonging sleep, and the use of deodorising or