A Lecture

ON

WOUNDS AND INJURIES OF THE EYEBALL, EYELIDS, AND ORBIT.*

INTRODUCTORY TO A COURSE OF POST GRADUATE LECTURES
AT THE ROYAL EYE HOSPITAL, SOUTHWARK.

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THE subject I have chosen for my lecture is an important one. Every practitioner is liable to be called, in the first instance, to a case in which an eye has been injured, and a knowledge as to how such a case should be treated is of the utmost consequence to him. Besides this the Workmen's Compensation Act, especially the one that has come into operation during the present year, has raised in importance all injuries connected with the eye, not only as to their immediate effects but as to their more remote influence on the capacity of the injured man to return to his old employment. To his accustomed observations and treatment of such injuries it has become incumbent on the practitioner to note the account given of any alleged accident and how far the condition of the eye is in accord therewith.

The subject I have set before me is a large one, and in the short time allotted to one lecture it will be possible for me to rapidly pass in review some only of the injuries to which the eye, eyelids, and orbit are liable.

Wounds of the eyelids heal rapidly, but for this very reason, if the proper treatment is delayed, are apt to cause considerable deformity. Those wounds involving the edges of the lids demand special attention, for if deformity is to be prevented, the earliest opportunity must be taken to secure such exact apposition of the severed edges that the lid-line is properly restored. This, a simple process immediately after the injury, becomes later a matter of much more difficulty. Should this treatment have been delayed and a faulty position of the eyelids have consequently resulted, the adhesions, when possible, should be broken down and the separated portions restored to their proper position, and secured by sutures so as to reform correctly the lid margin. These are simple matters, but their non-observance leads later to deformity which is much more difficult to deal with.

Injury may be caused to the eyelids, especially the upper lid, by a hook or other object catching underneath it, as I saw in one case in which the upper eyelid was torn away, leaving only a slender attachment. The case, too, which I illustrate on the screen is that of a butcher in whom a meat-hook caught under his upper eyelid, injuring the levator palpebrae muscle, with resulting ptosis (Fig. 1).

WOUNDS OF THE OPTIC NERVE.

I may refer also to penetrating wounds of the orbit inflicting immediate and permanent effects on the optic nerve. I have in my mind now a case of a man who, whilst working, had the left eye blinded by the pick point of a fellow-workman. It penetrated the outer side of the orbit, wounding the optic nerve, with consequent optic atrophy, and at the same time it injured the sixth nerve, causing palsy of the external rectus. In another case—that of a boy aged 12—the prong of a hay-fork had pierced the lower eyelid of the right eye. The boy withdrew the fork himself. In this instance the optic nerve was injured, and blindness, with optic atrophy, resulted. I also saw, many years ago, a case in which a piece of wood penetrated a boy's upper lid—how deeply was not known, for another boy immediately withdrew it; but the damage done was most serious, for not only was the optic nerve injured and sight permanently lost, with atrophy of the optic disc, but, curiously enough, the whole third nerve was at the time paralysed, whilst the fourth and sixth were unaffected. The third nerve palsy, however, passed away.

* This lecture was illustrated with numerous lantern slides, a few of which are reproduced here.

BLOWS.

Blows on the eye can also occasion immediate and complete blindness, the injury probably being that fracture has occurred in the vicinity of the optic foramen. It is further well known that blows on the globe, such as that inflicted by a tennis ball, cork from aerated water bottle, etc., whilst leaving it outwardly intact, are liable to cause rupture of the choroid. It is, perhaps, less well known that injuries through the lower eyelid, such as a blow from a stone, may occasion a rupture or injury of the optic nerve, with haemorrhages at or near the papilla, which, when they have cleared away, reveal small multiple ruptures of the choroid, and possibly of the retina. Such a case has come to me as I write. The appearances of the fundus are similar to that just mentioned. The injury happened some years ago. The sight has been destroyed, and on the lower eyelid is a depressed scar at the place of impact of the stone.

Injuries over the eyebrow or blows on the eyeball may also occasion proptosis by haemorrhage into the orbital cavity. I remember a boy some years ago who was struck by a heavy piece of wood over the right eyebrow; haemorrhage ensued from the nose and mouth, and the eye became considerably proptosed from haemorrhage in the orbit. This gradually became absorbed, but atrophy of the optic papilla resulted.

Blows on the eye and orbit may, on the other hand, produce the very opposite condition to that to which I have alluded—namely, a depressing or pushing back of the eyeball, called "enophthalmos." I have met with at least 3 cases, and, as they are comparatively rare, I propose to give some particulars of them.

The first, a young man aged 18, was sent to me in December, 1895, by his medical attendant. A month previously a wooden cylinder, which had been revolving in a machine as rapidly as 2,000 revolutions in a minute, had broken, and one of the pieces, 7 in. square, had hit the right eye and felled him. It had cut his forehead just above the eyebrow and his face below the eye, and had also broken two teeth. He was rendered unconscious and remained so for two hours. He bled also from the nose and mouth. At his visit to me his appearance was striking, for the right eye was pushed back and was on a level posterior to the left. It suggested very much the appearance of one wearing an artificial eye (Fig. 2). There was some opacity of the lens capsule, sufficient to reduce V. with + 2 D., to $\frac{1}{2}$, and to prevent a good view of the fundus. It was ascertained, however, that the optic disc was normal. The right eye was 4 mm. behind the other, and a little lower, too.

The second was a collier, aged 24. Two years previously he had been struck over the right eye by a piece of coal. The upper eyelid had been wounded, and illustrates the point I have, earlier in this lecture, urged as to the immediate treatment of wounds of the eyelid, for there was ectropion, which necessitated a plastic operation. There was, however, distinct enophthalmos (Fig. 3). There was no irregularity of the orbital margin and no evidence of any fracture, although the surface of the orbit seemed to be more posterior than the left.

The third was that of a woman, aged 53, who consulted me in 1900. Six months before, when riding a bicycle, she had been run into and knocked down and rendered insensible. The right side of the face was struck; it was black and swollen, and there was ecchymosis of the eyelid as well as of the eye. The appearance mentioned in the first case was noticeable also in this—namely, the resemblance to one wearing an artificial eye, for the enophthalmos was well marked, and the right eye after careful measurement seemed to be about a quarter of an inch posterior to the left. The driving in of the malar bone and the flattening of the maxilla gave a very different appearance to the two different sides of the face, but the edge of the orbit was not irregular. There was loss of sensation from the orbit to the lip, but this appeared to be partially returning.

INJURIES OF THE CORNEA.

Passing now to the consideration of wounds and injuries of the eye, the cornea comes first. Among certain trades, and especially in the Sheffield grinders, the workmen are liable to get minute foreign bodies embedded in the cornea. To some this happens several times even in a day. At most of the large works certain of the workmen have become noted for their skill in removing these "motes," as they are called. Not infrequently in the streets one sees a man resting against a wall whilst a fellow-workman extracts one of these "motes" (Fig. 6). The instruments used are of various kinds—for instance, lancets, pins, needles, pocket-knife blades, and so on. Some years ago I collected several of these implements, and had them submitted to a bacteriological examination, which, however, was negative. This was somewhat surprising,

as the same instruments may be used for various purposes, not always the most cleanly. The knife would very possibly be the same used at the man's lunch, and the pin, not infrequently, is put into the mouth to wet it before being used, and is very likely kept stuck in the man's waistcoat, where it comes in contact with the dirt collected in the clothing. These small foreign bodies of steel or stone are almost insignificant, and the men remove them skilfully in the vast majority of instances, and only an increasing number of corneal specks is the consequence. If one examines carefully the cornea in a grinder it will be found to be often studded with minute opacities. Not infrequently, however, the trivial injury becomes septic, and a sloughing ulcer with hypopyon results.

Another class of corneal injuries are abrasions, healing quickly and well under ordinary circumstances, but under others, especially in colliers, they are very prone to pass into septic ulcers with hypopyon. Each year a very large number of these cases come under observation. The treatment is cauterizing the ulcer with the actual cautery, and the platinum cautery I have employed for many years is very useful for this purpose. It may be heated readily in a spirit flame. Rest in bed, perchloride of mercury lotion in some, argyrol, or iodoform in fine powder, in others, together with atropine or eserine and quinine, is the line of treatment usually successful. As far as the exigencies of accommodation permits, such cases are admitted as in-patients as early as possible. They are serious cases, and a patient is fortunate if he escapes with a leucoma, giving a good opportunity of recovering fair vision, after an iridectomy.

The injuries of the cornea I have mentioned form a goodly proportion of those seeking compensation under the recent Acts. A cloudiness of the cornea may occasion as much blindness and consequent inability to follow one's employment or to earn the same rate of wages as what, in other respects, a much more serious injury might do. If a nebula, however small, be so placed that it covers more or less the pupil, and interferes with direct vision, the diminution of sight may be very considerable. Whereas a larger and denser opacity, situated more peripherally and away from the pupil may cause little or no interference at all to direct vision. It is important in all these cases to bear in mind the situation of these nebulæ.

So much destruction of the corneal tissue may frequently be caused by these sloughing ulcers that staphyloma may result, and enucleation be rendered necessary. A recent case has reminded me, too, that the possibility of sympathetic ophthalmia must not be lost sight of. A man with sloughing ulceration of cornea, with hypopyon, in which extensive destruction of cornea with perforation had resulted, returned not long after leaving the infirmary with sympathetic irido-cyclitis in the fellow eye. I have used antidiphtheritic serum, which had been advocated by Darier, in a few cases, but not with encouraging results.

Clean-cut wounds of the cornea heal well, just as operation wounds do. No ill results should follow, nor should there be much interference with vision unless they encroach on the centre and over the pupil.

Quite different, however, are perforating wounds, between the lips of which the iris has become prolapsed. In these it is necessary, if the case is recent, to endeavour to coax back the iris with a spatula, or, this failing, to excise the projecting piece of iris, and to free the wound of all portions as much as possible so as to promote close apposition of the edges of the wound. Even if the injury is not recent this can usually be done, though it may be less perfectly, by cutting across the prolapsed part and withdrawing any entangled portion of iris, and cutting it off with scissors.

In most of these cases cocaine as an anaesthetic suffices. As in all operations on the eye, careful aseptic or anti-septic precautions should be taken. The outer surface of the eyelids and the vicinity should be cleansed carefully with sublimate solution, and the same solution should be allowed to run freely over the surface of the eyeball. The simplest and best irrigator for this purpose is a pledget of absorbent cotton-wool saturated with the lotion, and by pressure of the hand a steady stream of lotion will freely bathe all parts of the outer surface.

Whatever has occasioned the corneal wound may have penetrated deeper, and by opening the lens capsule have caused a traumatic cataract. This may have formed quickly or slowly, accordingly as the wound in the capsule

has been large or small. In some instances the opening in the capsule seems to close at once, and the area of opacity of the lens remains limited and stationary. Notably was this the case in a man I had under observation for a long period some time ago, in whose lens for something like twenty-five years a foreign body, a minute piece of steel, had been embedded without causing irritation or more inconvenience than reduction of vision to $\frac{1}{8}$ or $\frac{1}{16}$. In this instance a linear scar was noticed in the anterior capsule, and the opacity of lens was limited to the situation of the foreign body, which was well away from the direct line of sight. In all cases where the lens has been injured the indication is to keep the pupil widely dilated with atropine, but the time when operative interference is called for must depend on the conditions present in each individual case. A rapidly-swelling lens, producing increased tension of the eye, will demand the speedy removal of the cataractous lens. On the other hand, it is as a rule wise to wait for the subsidence of inflammatory indications before resorting to operative interference. Some surgeons, I believe, are willing to wait for absorption of the cataract to take place, and regard such a case as one in which the needling operation has been performed and which has subsequently been left for absorption to be effected. Progress is, however, too often tedious, and a cure can be advantageously hastened by letting out the broken-up lens through a corneal section. The prognosis may well, in many cases, be a guarded one, for the damage wrought may have been deeper and more serious than at first is apparent.

WOUNDS OF THE SCLEROTIC.

Wounds of the sclerotic, if clean cut, will heal quickly and well, a process which may be materially assisted by drawing the edges into apposition by a suture. I do not mean suturing of the edges of the wound direct, for I have long since discarded such a procedure, but by a suture passed under the conjunctiva on either side, which will, when tied, bring the cut edges of the sclera into apposition, as well as if they had been made direct, and without the disturbance to the sclerotic, choroid, and retina, which the use of a suture so placed would necessarily involve. Many cases, even when the wounds are large, do well. Just now I am seeing frequently an old patient as he is attending the infirmary for another purpose. Twenty years ago, when a youth, he came to the infirmary with a large wound in the sclerotic at the upper and inner part. It measured, if my memory serves me correctly, $\frac{1}{2}$ in. in length; fortunately it did not reach to the ciliary region. I happened to be at the infirmary, and saw him at once, and immediately united the edges by conjunctival sutures. For all these years he has possessed $V. = \frac{1}{8}$ with this eye. Such good results are, however, not always obtainable, and it is wise to give a guarded prognosis, for wounds of the sclerotic are very prone to lead to softening and shrinking of the eyeball. It must be remembered that a perforating wound of the sclerotic means also injury to the underlying choroid and retina, and Parsons has taught us that in the healing of such wounds the injurious effects are observed in the underlying tissues for some distance around.

Rupture of the globe, usually the result of direct violence, such as a blow from the fist, is always a serious matter. Its situation is generally typical, for it follows the line of least resistance and is to be found placed in the sclerotic at the upper part at a little distance from the cornea. Usually the interior of the eye has been disorganized, and blood will be found in the anterior chamber or in the vitreous. The lens may be shot, too, through the wound, and be observed under the conjunctiva causing a subconjunctival dislocation. Shrinking usually follows a rupture, at a variable time, and as an eye damaged in this way is a menace to its fellow, its early removal is frequently called for.

FOREIGN BODIES.

I pass now to say a few words as to foreign bodies in the eye. It is not uncommon to find foreign bodies, under the conjunctiva and more or less embedded in the sclerotic, which have been present for many years without causing inconvenience. This is especially the case with colliers, in whom one meets with pieces of coal lying under the conjunctiva which may have been there for many years. Interference in such cases is rarely called

for, as such foreign bodies are innocuous. Should removal be attempted they will be found more firmly fixed than was perhaps thought, and the fragment of coal will more readily break up, under the efforts for its removal, than be extracted entire. Foreign bodies are met with embedded deeply in the cornea, nearer the posterior than the anterior surface, and for which the usual methods for removal with spud or needle are ineffective. The anterior chamber may be opened before the foreign body is extracted, or the efforts for removal may succeed in pushing it into the anterior chamber. Such cases, however, can be treated successfully by passing a keratome through the cornea behind the foreign body, and using it as a background on which to work with a needle or spatula for its exposure and removal. The first instance I treated in this way occurred many years ago. A piece of broken filter had penetrated deeply into the cornea, and efforts for its removal only succeeded in opening the anterior chamber. Later, when the chamber was reformed, it was successfully treated in the way I have mentioned by placing a keratome behind it. Since then I have treated several others in a similar manner.

It may be asserted that when a foreign body has penetrated the tunics and entered the interior of the eye its extraction is called for. If the foreign body be a splinter of steel or iron, its removal from the anterior chamber may be effected by the electro-magnet through a corneal incision, frequently without interfering with the iris; but in others, in which it has become entangled in the iris, excision of a portion of the pupil may be required. The electro-magnet affords a ready means of diagnosing in doubtful cases the nature of a foreign body in the anterior chamber; for, if it be steel or iron, on the approach of the electro-magnet it will show movements, or, if lying free, will spring forward to the back of the cornea, and on withdrawing the magnet it may be deposited at any convenient situation for its subsequent extraction.

The question of foreign bodies in the posterior part of the eye opens up a large field, and I am obliged to content myself here with a few general observations.

The successful treatment of such cases depends very largely on the accident being a recent one and on the

accurate location of the foreign body. If a splinter has entered through the sclerotic its exact position in the background can very often be accurately made out by means of the ophthalmoscope. If, on the other hand, it has entered through the cornea and passed through the lens, breaking it up and rendering a view of the interior of the eye impossible, it is then difficult or

impossible to discover its exact location. It is in these cases that the *x* rays are frequently able to render signal service (Fig. 4). Failure, however, to detect a foreign body by this means should not, I think, in all cases preclude the possibility of one being present. The patient's own account of the accident is usually not only unhelpful, but it may be most misleading. A case in point has been under my care at the infirmary at the time I write. The patient was so insistent that he saw the fragment of metal drop from his eye that the house-surgeon considered it unnecessary to have a radiograph taken. The eye became septic and on enucleating it a large piece of steel was discovered situated in the vitreous chamber.

For my part, I am still satisfied with the services of the hand electro-magnet which I long ago devised. I have extracted 400 or more than that number of splinters from all parts of the eyeball. Some of the cases have been particularly brilliant. In one instance a fragment was situated close to the optic disc. It was clearly seen by the ophthalmoscope and its exact location made out. The patient was a student at the

Technical Department of the University. An incision in the sclerotic was made and the electro-magnet advanced to the point indicated, and the foreign body was extracted. This happened between eight and nine years ago, and up to the present the patient possesses perfect sight ($V.=\frac{5}{6}$), one eye being as good as the other, the ophthalmoscope alone showing a

Fig. 1.—Traumatic ptosis (stereoscopic).

Fig. 2.—Enophthalmos.

Fig. 3.—Enophthalmos (stereoscopic).

pigmented area in the retina indicating the situation where the foreign body had formerly been. Among my cases there have been several other instances of removal

of foreign bodies from the retina, which need not, however, now be considered.

For many years I, in common with others, was inclined to regard the attempted extraction of foreign bodies from the background of the eye with good vision as more open to question than since the occurrence of the excellent results I have mentioned. I have had, from time to time, a large number of instances of foreign bodies in the retina with preservation of good vision. My general experience in observing these cases over a series of years has been that the later results have not been satisfactory. In some a gradual reduction of vision has occurred, with changes in the fundus (in one case, optic atrophy) caused by inflammatory processes set up by the oxidation of the metallic fragment, whilst in others the splinter has become detached, and removal has had to be effected under less favourable conditions. Whilst, therefore, considering the conditions of each particular case, my opinion has inclined towards an early attempt to effect the extraction of the foreign body by the electro-magnet.

It is fortunate that the majority of the fragments penetrating the eye are aseptic, and thus the damage wrought

detached, for it is clear that if the fragment is not magnetic the electro-magnet is of no avail. Unfortunately, this information will not always be forthcoming. The magnet will very probably be used, but failure to remove a splinter must not be ascribed to the magnet until the fragment itself has been tested and proved to be magnetic.

Before passing altogether from this subject I should like to say a few words as to gunshot injuries. It not infrequently happens that the injury wrought is of such a nature that the propriety of immediate enucleation admits of no question. On the other hand, there are instances in which the known presence of a shot in the interior of the globe would decide the treatment in an otherwise doubtful case. A few months since such a case occurred in my practice. A small shot had penetrated the eye through the sclerotic on the inner side of the globe. An x-ray photograph* disclosed a shot in the interior of the eye. The globe was enucleated and the shot was discovered in the vitreous chamber (Fig. 5). An interesting case came under my care some years ago, before the x rays were introduced. The patient was a youth, aged 16, and briefly the particulars were as follows: A

Fig. 4.—X-ray photograph. Piece of steel in vitreous.

by the foreign body is due to the delicate tissues implicated and the extent to which they are involved. One recognizes, however, that a certain number are septic, and an additional danger to the eye is thereby incurred.

The foregoing remarks are made on the assumption that the metallic fragment is magnetic, but I was able to show, in a recent paper before the Ophthalmological Society, that all steels now on the market are not magnetic. Various alloys, especially manganese steel, are finding increased employment, and the qualities of hardness and toughness possessed by them are likely to lead to their extended use. These steels, however, are not magnetic. Chromium steel, though magnetic, is less so than ordinary steel. Another alloy is that of nickel with iron. In some proportions it is distinctly magnetic, but the addition of a small quantity of manganese will make it non-magnetic. There are many points of interest as to these steel alloys which I cannot enter upon to-night. Fortunately, it is still true that the vast bulk of steel splinters penetrating the eyeball spring from steel that is magnetic, and that therefore the use of the electro-magnet is not affected, but it is necessary, especially in a large industrial city, to make inquiry in cases of accident as to the particular kind of steel it was from which the fragment injuring the eye had become

Fig. 5.—X-ray photograph. Shot in eye.

pellet from an air-gun had penetrated the sclerotic on the inner side, and the vitreous chamber was filled with blood. Immediate enucleation was decided against. As the vitreous became clear enough to make an ophthalmoscopic examination a haemorrhage was observed in the situation of the optic papilla. Later it was evident that no foreign body was in the eye, and that the shot, entering through the sclerotic, had passed out on the inner side of the optic disc. Vision improved, and ultimately V.= $\frac{5}{6}$ and he read J.1.

SYMPATHETIC OPHTHALMITIS.

In conclusion, let me say a few words on sympathetic ophthalmitis. An eye which has sustained a penetrating wound must always be regarded as a menace to its fellow. This is particularly true of wounds complicated with foreign bodies, jagged and irregularly healing wounds, and especially of such injuries in the neighbourhood of and involving the ciliary region. My impression is that the immediate treatment of wounds such as has been set forth in this lecture, together with the more general use of

* I am indebted to Dr. Rupert Hallam, Medical Officer in charge of the Electrical Department of the Sheffield Royal Infirmary, for taking the skiagrams for me.

antiseptics, has lessened the number of instances of sympathetic ophthalmitis. By clearing a corneal wound even when encroaching on the ciliary region, of all entanglements of iris, an effort can be made to save, without undue risk, an eye which formerly would have been condemned and excised. I know many instances in which this conservative treatment has been carried out successfully. At the same time an eye which has been irretrievably lost had better be enucleated with as little delay as possible. There are cases on record, fortunately rare, in which, in spite of enucleation, sympathetic ophthalmitis has appeared in the other eye. I have met with at least 4 such cases in my practice, 2 were in children, one boy and one girl, and 2 were in men, each aged 26. In 3 the eyes were enucleated 16, 23, and 32 days after the accident, whilst the ophthalmitis showed itself 32, 40, and 106 days after the injury. Unfortunately only one of my cases was of the mild character described as usually present under these circumstances, for one progressed to absolute blindness, another almost so, and the third to very greatly impaired vision. The other

Fig. 6.—Workman (timekeeper) removing "mote" from fellow-workman's eye.

fortunately made a complete recovery and has been able to pursue his, or any, employment uninterruptedly for many years. In these cases it would seem as if the enucleation was too late, and with regard to some, at all events, that the disease, if latent, was present prior to the enucleation.

The freeing of a wound from iritic adhesions should be employed, even when a considerable time has elapsed since the accident. An interesting case illustrates this: Many years ago a man was under my care for a punctured wound of the right eye beyond the upper corneal edge, with prolapsed iris, caused by a packing needle. He did not come under my care for some time after the accident, and shortly after sympathetic ophthalmitis showed itself in the other eye. Fortunately it was mild in character. An operation was performed for the prolapse in the right eye, and the old wound was reopened and cleared as far as possible of all iris entanglements. Subsidence of the ophthalmitis in the sympathizing eye quickly took place. Enucleation in this case was out of the question, as vision in the injured eye was not far from normal. The result was recovery of normal vision in each eye.

It should be borne in mind, when considering the question of enucleation, that the injured eye may ultimately be the better one, and also that, when the sympathetic disease

has obtained a hold, the enucleation of the offending eye may not stay or alter the progress of the disease in the fellow organ.

Recently, for the purpose of another article, I worked out carefully my records of the children who had been inmates since its foundation of the Sheffield School for the Blind.* The number was 335, and of these no fewer than 22, or nearly 7 per cent., owed their blindness to sympathetic ophthalmitis. It was interesting, but sad, to note how many of the original injuries were really of a preventable kind. The use of a fork to undo a bootlace is a common practice among children and a frequent cause of eye accidents. Three of my cases were injured in this manner.

An Address

ON

THE SCIENTIFIC USE OF EVIDENCE IN SURGICAL PRACTICE.

DELIVERED BEFORE THE READING PATHOLOGICAL SOCIETY.

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GENTLEMEN,—I am informed that it has been your custom for the last ten years to have an annual oration, but that your Committee impose no conditions, and thus it is that he whom you honour with the position I now occupy is left to his own devices. In these circumstances and after careful consideration I have selected a subject which has often forced itself on my attention. I allude to what I may term the scientific use of evidence in the practice of medicine. But, in order to lay this question before you in any adequate manner I must submit some introductory remarks.

The present is a time in which science has broken through its accustomed boundaries and is spreading like a flood over the whole field of human activity. And this, not because the phenomena which surround us have suddenly become scientific, but because having witnessed many marvellous discoveries and seeing that in every direction there is more beyond, that "in everything there is inexhaustible meaning," men are diligently working to find things out and see what they really are, and how they can be made to serve our own needs and aspirations.

It is strange to see how the term "science" had until quite recently lost its true meaning, and come to be limited to such subjects as astronomy, geology, and chemistry, and to have no application to brewing or the dyeing of fabrics, or to the multitudinous affairs of everyday life. Is it not often cast in our teeth that medicine itself is not a science, but merely an art? But what a chaos of thought is here disclosed! The term "science" is the English form of the Latin *scientia*, and "knowledge" is its Anglo-Saxon equivalent, and the adjective *scient* means knowing, perceiving, discerning. Thus, whenever we use the term "scientific knowledge" we lapse into tautology, as if we should talk of speedy rapidity or of ascending upwards. A moment's thought will show that "science" applies not to any object, but to the method of investigation. The pursuit of science means the effort to obtain knowledge, the search after the facts which appertain to whatever subject is under examination. There is thus nothing—from the planet Mars or the sun itself to a wart on a ploughboy's knuckle or dust on the window-sill—which is outside the field of science. Even a laugh so foolish or a remark so inane (in contempt of science) that it provoked physiological investigation, might conduce to a more scientific classification of the feeble-minded. Those who tell us either that medicine is or that it is not a science are, I take leave to say, talking mere nonsense. Was medicine not a science when it was studied by Harvey and Hunter,

* Vide BRITISH MEDICAL JOURNAL, November 2nd, 1907, p. 1215.