

three weeks more, the neck-glands had coalesced into one mass, and the unclosed wound became a hideous rodent ulcer. The whole circumference of the neck became involved, upwards to the occiput, downwards to the seventh cervical vertebra; in front, as low as the clavicles and as high as the jaw, with indications of yet further encroachments. The great vessels at the root of the neck were pressed upon, and œdema of the face and arms strangely altered the expression of the patient and incommoded her movements. It was curious to remark how the fasciæ of the neck determined the limits and mould of the tumour. The middle line in front was not invaded, and hence dyspnœa and dysphagia were not distressing, though the outline of the trachea was obliterated by the tension of the integument.

For the last three weeks of her existence, the disease did not increase in superficial extent. She sank exhausted, rather more than two months after the operation. No autopsy was obtained.

It may be that the tumour was non-malignant. That the glands were truly cancerous when I first saw her cannot now, I think, be doubted. It is possible that some obscure internal malignant disease was present, the coexistence of which with the tumour of the neck was purely accidental; that the primary obscure disease led to the gland-disease, which again led the wound to assume an unhealthy and ultimately a malignant aspect. I cannot say that I have much faith in my own theory.

Perhaps, there is no one cause which has had such a blighting influence upon the progress of scientific truth, as the vicious nomenclature which everywhere obtains, much of which has been handed down from the earliest times. Anatomy, physiology, and pathology, are smothered in a mass of uncouth, irrelevant, and false names. We are used to them; and use them without remembering that we promulgate an untruth every time we utter them. We forget how, as tyros, we were confounded and worried; how we were made to believe in impossible triangles, rotund squares, and angular circles; to use terms half Latin half Greek; or of which the etymology appears hopelessly hidden, or only to help the memory on the *lucus a non lucendo* principle. It is true, that many names appearing at first to express a meaning, might well, in process of time and progress of knowledge, come to be unmeaning or untrue; but there is no necessity to attach to words meanings based upon fancy or theory. Of late years there has been an improvement in this respect, e.g., albuminuria or leucocythemia imply simply well-ascertained pathological facts, which no subsequent knowledge can controvert. On the other hand, gonorrhœa and cancer are both fantastic names, either having a false meaning or meaning nothing. Scirrhus is, I consider, an unexceptionable term; it indicates a leading feature, and is a "handy" word. The time is gone by for alteration; we might as well attempt to ostracise the English grammar as to forbid the word cancer—a fact that should be a warning to future nomenclators.

What constitutes malignancy? A scirrhus may assume the form of a hard, painless, indolent tumour; and, as such, it can hardly be considered malignant, although it may be said that every scirrhus contains the germ and essence of malignancy, and only waits an exciting cause; yet many a true benignant tumour does the same. An abstract definition of a benignant and a malignant mass is not difficult. While the former is composed of histological elements already taking a more or less important part of the animal economy, the elementary tissues of the latter are foreign to the body in a state of health; and, whereas the benignant tumour is at most a mass of normal, but misplaced or redundant tissue, the malignant tumour invades healthy structures, converts them into itself, and usurps their place; muscle, skin, and fat, remain so no longer, their distinctive characters disappear, changed by the active and deadly

power of the all-absorbing cancer. Yet it does not appear, practically, that any one characteristic is sufficient to determine the question; the means at our command before removal are, of course, the most important, and on the whole, perhaps, the most reliable; the previous history of the patient, the duration and rapidity of growth, the general appearance of the tumour and surrounding tissues, and the amount and character of pain—these are considerations with which every surgeon is familiar; yet one or more of these indications may be present and the tumour be benign, or absent and yet malignant. The growth of an adipose tumour is frequently most rapid; glands may enlarge from other causes than the absorption of carcinoma; pain is common to all diseases; and microscopic appearances may deceive the most practised eye.

It is not he who is most conversant with the literature of disease and modern theory who is best able to handle a tumour and decide its character, but he who is most familiar with the hospital ward, and possesses that which brains without practice cannot afford, the *tactus eruditus*.

Tunbridge Wells, May 1861.

## TEN YEARS OF OPERATIVE SURGERY IN THE PROVINCES.

By AUGUSTIN PRICHARD, Esq., Surgeon, Clifton, Bristol.

### V.—OPERATIONS ON THE EYE.

[Continued from page 412.]

*The Formation of Artificial Pupil.* CASE CCLXX. M. aged 68, came up to me many years ago with staphylocoma of the right eye, and the left pupil was almost closed and blocked up with lymph from rheumatic iritis. The case looked so unfavourable, that I sent him home to his country, although he lived fifty miles away. He would not live contentedly in blindness, and after a time was brought up again, being still able to distinguish light from darkness. I agreed to operate, and made a free lower corneal section with a view to remove a portion of iris. Upon withdrawing the knife, a little pressure being probably made inadvertently at the same time, the adhesions of the iris to the capsule suddenly gave way, and he recovered his sight instantaneously. The eye was strong and well in a week, and he went home with excellent sight, and worked as a labourer for many years afterwards.

This was one of my earliest cases of operation for artificial pupil, and one of the most successful; for his lens had remained perfectly clear; and this patient's unexpected restoration to sight encouraged me to try many others whose cases seemed equally hopeless, and did not turn out so well. There is a very peculiar and indescribable change which takes place in the expression of the face when a blind man is suddenly restored to sight, which I have seen several times, but never more markedly than in this instance.

CASE CCLXXI. M., aged 59, a Frenchman, who, by the advice of some relatives here, came over from Paris in search of a cure for his blindness. He had iritic adhesions, with central deposit, in each eye; and the pupil in the left was larger than in the right, but he had only the power of seeing light from darkness.

I operated on the right eye, and made a section in the outer and lower part of the cornea, passed in a hook as far as the margin of the pupil, drew the iris out at the wound, and cut it off. The anterior chamber filled with blood at once; but it was soon absorbed, and in less than a week his new pupil was quite clear, and he could see to tell the time by my watch.

Six months afterwards he came again, having a large clear pupil in the right eye, the central part of the capsule being still covered with lymph; but his sight was

very good, and he begged me to operate on his left eye. This I did in the same way as before, and with the like success; and he went back to France able to read easily.

CASE CCLXXII. M., aged 47, had lost the sight in the right eye since boyhood from an opaque cornea, to which the pupil had been adherent. The other eye having been recently damaged in the ironworks near Pontypool, by a spark of fire, he was disabled from work. I operated on the right, making a corneal section; and, as the iris prolapsed, I laid hold of it with a forceps, and removed it with the scissors. He saw well at once, and the eye recovered immediately.

CASE CCLXXIII. M., aged 60, had been blind in both eyes for four years before I saw him. He could see the light with both eyes; and in both the pupils were closed, the central part of the capsule being occupied with lymph. The left iris was bulging forwards and discoloured; the right looked more healthy. I operated on the right eye, making a section in the lower and outer part of the cornea. The iris prolapsed slightly, and I removed a triangular portion with a forceps and scissors. He recovered from the operation without any bad symptoms, and had very good sight.

CASE CCLXXIV. F., came under my care when a few weeks old. The right eye had sloughed from purulent ophthalmia; and the left cornea had given way below, the centre being opaque. From this most unfavourable condition the child so far recovered that it could see the light; but no pupil was visible, and the right eye was atrophied. When it was one year old, I operated on the left eye. The child was pinned up tolerably firmly in a towel, and the upper lid held with a speculum; and I made a section through the cornea, introduced a hook, and withdrew and cut off a piece of iris. The child showed no sign afterwards that anything had been done to it. The cornea was opaque for a time, but it cleared, and a pupil was visible; and she evidently could see objects, and recognise her mother's face.

This case is remarkable, because of the child's tender age for this operation.

CASE CCLXXV. M., aged 50, had his right pupil closed by iritic adhesions and opaque capsule; and the left eye had met with a blow, which produced, in all probability, rupture of the eye; and the pupil had been distorted and drawn up completely under the upper lid. I removed some of the outer part of the iris through a corneal section, and he recovered with good sight. After a time he returned, to request me to operate upon the right eye, which was useless to him. I made a corneal section, and slit up the iris with a fine pair of scissors; and he did well. With a four-inch lens he could see well. In the other eye, the lens remained clear.

CASE CCLXXVI. M., aged 15 months, with opacity of the right cornea, and adhesion between the left cornea and iris, involving the pupil—all following purulent ophthalmia.

I operated on the left eye, and made a section of the cornea, and applied pressure. The iris prolapsed, and I cut it off: a small quantity of vitreous humour escaped. He recovered at once, and had a fair sized pupil, reaching to the corneal section. The cornea was a little hazy, but was clearing when he was taken home. It was difficult to determine how much better the child could see, but everything was favourable for sight.

CASE CCLXXVII. M., aged 30, a discharged soldier, who had lost his sight in India, probably from purulent ophthalmia, had his left eye amaurotic, with prominent cornea and central opacity. In the right eye, the pupil was closed, and drawn up to a cicatrix in the upper part of the cornea. I made a corneal section, and removed a portion of iris. The cornea was a little dull for a time where the section was made, but it cleared subsequently, and he had good sight.

CASE CCLXXVIII. M., aged 29, with entire opacity of

the right cornea, and closed pupil in the left eye, following a mine-explosion. This was a very unpromising case. I operated on the left eye, and made a minute opening in the upper part of the iris, opposite the clearest part of the cornea. The eye filled with blood at once; but he said that during the operation he saw the bars of the window distinctly. The blood was gradually absorbed from the anterior chamber, and the left eye became much the best. I operated on the right eye (with prominent opaque cornea, a small portion below being alone clear), and made a small section, and drew out a portion of iris. He recovered well from this operation; and now, both eyes being equal, I made a further attempt on the right. I made a corneal section below with the left hand, drew out some iris, and cut it off. He went away in two weeks, with his sight much improved; but the cornea at the point of section was hazy. I saw him three months afterwards; and his cornea had partially cleared, and he could see to do labouring work.

CASE CCLXXIX. M., aged 30, had been blinded by gonorrhœal ophthalmia, which produced adhesion of the cornea and iris after sloughing of the cornea in each eye. He was unable to see to do anything. I operated on the left eye in which the sight was the least, and making a free section of the lower part of the cornea, drew out some of the iris with Tyrrell's hook. His anterior chamber filled with blood, and for a time he saw nothing. No bad symptoms followed. The cornea was partially opaque for a time, but it cleared, and he had a good pupil, nearly central, through which the sight was very good.

CASE CCLXXX. M., aged 23, lost his eye by accident, and the sight of the left was useless to him in consequence of the secondary inflammation. His pupil was blocked up with lymph and adherent to the capsule. I made a corneal section in the left eye and tried to draw out some of the iris, but it tore easily, and the only instrument which would hold it was the cannula forceps. I withdrew some, and the anterior chamber filled with blood at once. The sight was not much improved by this operation, and three months after I repeated it, and succeeded in making a large clear pupil above, by the removal of the iris. His sight was much improved and when I saw him a year afterwards, it was still further improved, and with a four-inch lens he could see well. There was no history in this case which would account for the loss of the lens, for the accident had happened to the other eye.

CASE CCLXXXI. M. aged 35. This case was like the last, viz., injury destroying the right eye and consecutive inflammation of the interior of the left eye, rendering it useless by closed pupil and deposit of lymph. I made a free lower corneal section, drew out some iris, and snipped it off as far as the pupil. Blood escaped at once, but after its absorption he saw well. He had no bad symptoms.

CASE CCLXXXII. M. aged 60. An old man, who has gone through many vicissitudes,\* came to me many years ago with incipient cataract in the left eye. I lost sight of him for some years, when he reappeared and I proposed to operate on his left eye in which the cataract was formed, while he had a moderate amount of sight in the right eye. He was persuaded to go to London and had the lens extracted at the Moorfields Hospital, and then he returned to me with opaque capsule blocking up a very small pupil. I made a lower corneal section, and not being able to dislodge the capsule I took

\* Should the surgeon who operated on this patient at Moorfields happen to read this account, he will possibly recognise his patient by the following history. At my second interview with him, on asking him for his dispensary-card, he told me his pocket was picked of it as he was crossing the Prairie to go to the Salt Lake; being converted from the errors of Mormonism, he escaped, and now makes a good living by selling an account of the sect and of his own escape. He also lectures on the subject. He left his wife behind him in Wales.

off a piece of iris and left a black clear pupil through which he had good sight.

CASE CCCLXXXIII. M., aged 19. His left eye was partly staphylomatous, the right cornea very opaque. With some difficulty I removed a portion of the iris of the right eye through a corneal section, and he had much intolerance of light for a day or two, but afterwards his sight was a good deal improved.

CASE CCCLXXXIV. M., aged 45, had only one eye, and in it the cornea was dull that he could not find his way about. Standing in front of him, with the left hand, I made a lower section of the cornea, and as the iris prolapsed I cut it off with a forceps and scissors. He went away in a few days with improved sight.

CASE CCCLXXXV. M., aged 36, injured his left eye when twenty years of age, and the result was a closed pupil. The other eye became very dull from iritis about four months before I saw him. Upon operating, and removing a portion of the iris through a corneal section, a large black pupil was formed, but a considerable quantity of fluid vitreous humour escaped. The next day his eye was strong, and he said that he could see fairly.

CASE CCCLXXXVI. F., aged 40, with the left eye staphylomatous, and a large corneal opacity and iritic adhesion in the right. The greater part of the cornea was opaque. I made an upper section, and removed a part of the iris by Tyrrell's hook. In two days the eye seemed to be recovered from the operation, and she went home with improved sight.

CASE CCCLXXXVII. M., aged 30, had a sightless left eye, and in the right he had suffered from a perforating ulcer of the cornea, and very little anterior chamber was left. I operated and withdrew, through a lower corneal section, a small portion of iris, and snipped it off. He went home with his sight much improved, but very weak.

CASE CCCLXXXVIII. M., aged 15, was able to find his way about with the right eye, on the cornea of which was a considerable opacity. In the other eye he must have had a perforating ulcer, for besides the opacity there was anterior adhesion of the iris. I operated on the left (his worst) eye, and by a corneal section, was enabled to draw out some iris and remove it. The next day the cornea was opaque opposite the new pupil, and he had but little sight. It began to clear in a few days and he went home.

CASE CCCLXXXIX. M., aged 40. The right eye had been lost by a puncture with a thorn, and the pupil was filled with lymph, the iris being in contact with the cornea. In the left eye inflammation had come on, and the centre of his cornea had become opaque. I made a small pupil in the left eye, without difficulty by a corneal section and the removal of the prolapsing iris. He had no bad symptoms following, and went away with improved, but still imperfect sight.

CASE CCCXC. F., aged 20, injured her right eye with a penknife when six years of age, and six months before I saw her internal inflammation and iritis had destroyed the sight of the other. The right pupil was closed, the cornea was opaque below, and she squinted with this eye. I removed a piece of iris by repeatedly laying hold of it by a fine forceps through an incision in the cornea. She was a little improved by this operation, and when I saw her after three months, I divided the internal rectus, and cured her squint, and her sight was still further improved. On a third occasion, I attempted to enlarge the pupil still further, but as the vitreous humour began to flow I desisted, and in this case the sight although improved was imperfect.

CASE CCCXCI. M., aged 18, lost his right eye some years before I saw him, from a blow which destroyed it, and the eye was sunken. In his left eye the pupil was blocked up by lymph, but he could see to do some kind of work and to get about. I removed a piece of iris and

his eye soon recovered itself, and although improved his sight was indistinct.

Of the remaining cases where the operation of artificial pupil was performed, the first few are incomplete, and in most of the others, although a pupil was made in a satisfactory manner the patient was unable to see in consequence of some other defect of the eye.

CASE CCCXCII. M., aged 62, with closed pupils after iritis. I operated on the right eye and removed some of the lower and outer part of the iris through a corneal section, and the anterior chamber filled with blood. No inflammatory symptoms followed, but he went away before the blood was all absorbed.

CASE CCCXCIII. M., aged 23. The right eye was sunk and the left had been ruptured, and was soft. It was a most unpromising case. I made a pupil in the left eye, but his sight was no better.

CASE CCCXCIV. M. The right pupil was closed by adhesion and opaque capsule, and he suffered from *nyctalopia* of the left. I made a pupil in the right eye, with some difficulty, owing to his unsteadiness. The anterior chamber filled with blood, and he saw no better.

CASE CCCXCV. M., aged 20, had been blind since he was nine months old from smallpox. The left eye was sunk; and in the right there was closed pupil with adhesion of the cornea to the iris. I made a pupil in the outer part of the right eye, opposite the point where the cornea was clearest. He recovered with a bright black pupil, but his sight was not restored in a corresponding degree.

CASE CCCXCVI. F., aged 70, with amaurosis of the right eye, and the left pupil closed and filled with whitish lymph. I made a pupil of fair size in the lower part of the iris, and she went home in four days with directions to come up and have the cataract extracted; for an opaque lens was seen through the new pupil. I never saw her again.

CASE CCCXCVII. F., aged 35, with the left eye sunk and the right pupil blocked up with lymph. I made a pupil in the right iris, and she went home seeing more light. Three months afterwards I operated again, and removed a little more iris, but with some difficulty, as it appeared that the whole posterior surface of the membrane was adherent to the capsule. An increased quantity of light was then admitted. A third operation and a fourth were performed, but with no ultimate success.

CASE CCCXCVIII. M., aged 50, with a pupil in his right eye blocked up by adherent, particoloured capsule. The other eye was lost ten years before, and he had already undergone several operations to try to regain his sight. The case was most unpromising. I removed a portion of iris with some difficulty, for fluid and pellucid vitreous humour streamed from his eye. He saw the light more strongly afterwards, but received no permanent benefit.

CASE CCCXCIX. M., aged 45, with tremulous iris and no sight in the right eye; in the left the pupil is drawn down to the lower part of the cornea where it is adherent and filled by some opaque matter. I made a corneal section, and with the point of the curette turned out a small oval hard cretaceous lens, leaving a clear pupil. He saw but little better at first; but six months afterwards he wrote to say that he was much better. I saw him about eighteen months after the operation, and then he could see but little better than before.\*

CASE CCCC. M., aged 50, lost his left eye some years before I saw him by an accident, and in the year 1840 (six months after the original injury) the sight in the right eye began to fail. He had been previously operated on by one of my colleagues, without success. The pupil was blocked up with lymph, the eye soft, and the iris green when I saw him. I made a corneal section, and some brown aqueous humour ran down his cheek, and his iris, which had been green, at once became yellow blue. I

\* This case should have been arranged in the list of operations for the removal of opaque capsule, but was accidentally omitted.

succeeded in making a pupil, but his sight was no better.

In most of these cases of discoloured iris in diseased eyes, I believe that the green hue depends upon this alteration in the humours, and not in the membrane itself; and this particular instance seems to illustrate some remarks I made upon discoloured iris in connection with Case No. 337.

CASE CCCC. F., aged 55, lost his sight by internal inflammation, and both pupils were obliterated, the left being staphylomatous. I operated on the right eye, and making a lower section removed a part of the iris, leaving a new pupil blocked up with an opaque lens. At a second operation I removed a portion of the lens, but with some difficulty, for she was struggling and screaming continually, and the nucleus remained behind. This came out after a time, but her sight was no better; and after I had made a new pupil without any advantage, the case was given up, and she is now hopelessly blind.

CASE CCCCII. M., aged 15, lost one eye by accident, and the other was useless from sympathetic inflammation, the pupil being closed. I performed two or three operations with a view to make a clear pupil in the left eye, but without any success; and his eyes atrophied.

CASE CCCCIII. F., aged 19, with staphyloma of the right eye; and closed pupil, adherent cornea, and iris in the left, from smallpox. I removed a portion of the iris from the left eye, and made a pupil opposite the clear part of the cornea. When the eye recovered and all the blood was absorbed, she could see objects better.

CASE CCCCIV. F. aged 16. The left eye was sunk; and the right had closed pupil and corneal opacities following the measles. I operated in the same way as in the last case, but only a little improvement followed.

CASE CCCCv. F., aged 21, with eyes exactly in the same state as those described in No. 403; viz., staphyloma of one, and closed pupil of the other with corneal opacity, following smallpox. I operated in the same way and made a pupil, but she saw no better.

These three last cases were inmates of the Bristol Blind Asylum, and being there under my care, I thought it right to let them have a chance of restoration of sight, although the hope was but slight.

CASE CCCCVI. M., aged 66, an old rheumatic subject with closed pupils, adherent irides, and lymph in the centre. I made a large pupil in the left eye, and for some days was in doubt whether he had cataract or not. Having at last decided that he had, I extracted it through the new pupil; but his retina was unsound, and he saw no better.

CASE CCCCvII. M., aged 25, a labouring man whose right eye had become entirely opaque, and the left pupil was closed with adherent iris and capsule and fibrinous deposit in the centre. I took out a piece of iris from the left eye, and it was discovered that he had an opaque lens behind. This I extracted at a subsequent operation, but with some difficulty; for the eye was very moveable, and the black pigment of the piece of iris, which had been removed on a previous occasion, still adhered to the capsule and complicated the operation. A hard opaque amber lens was ultimately removed. This patient went on well for a time, but ultimately inflammation came on and he went home. I have heard casually, lately, that he is getting better, but I can give no reliable account of him.

In addition to the above, I operated upon a man with conical cornea, as long ago as January 1852, and drew his pupil down to the outer and lower part of the cornea, so as to alter its form, and bring it opposite to a flatter part of the eye. He was well from the operation in a day or two, and the pupil was all that was desired, but his sight was not improved by it. I noted at the time that the eye appeared a little less conical after the operation.

[To be continued.]

## DR. BEALE'S LECTURES

ON THE

### STRUCTURE AND GROWTH OF THE TISSUES OF THE HUMAN BODY.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS, 1861.

In his fourth lecture, Dr. Beale commenced by recapitulating his previous observations on the characters of *germinal matter* and *formed material*, and on the means of distinguishing them from each other. The lecturer then considered briefly some very interesting changes, which may be shown to occur in elementary parts, when the conditions, under which growth takes place in a normal state, are modified.

Prep. No. 20 showed the elementary parts situated in the middle of the cuticle of the arm, about twelve hours after the application of a blister, at the time when the superficial layers were being separated from the deeper ones, and fluid was accumulating in the interval between them. Several elementary parts were seen invested with a moderately thick layer of formed material, but some had but a very thin layer indeed. Several spherical masses of germinal matter were observed in close contact with the inner surface of the softened external substance, and these were evidently in a state of active growth. They seemed to be growing through the formed material. They were multiplying in number. If set free, and nutrient material continued to be abundant, they would soon increase in size, and multiply very fast. The layer of formed material investing each would be exceedingly thin. The masses first resulting from the growth of the germinal matter set free from the epithelial particles would be invested with a layer of formed material, and would resemble a young cell of cuticle, but as they multiplied faster and faster, there would not be time for the formation of the layer of *formed material*, and at last corpuscles resembling pus would result.

This last stage was seen in No. 21, which was obtained from the same blister twenty-four hours after it had risen.

These specimens showed the manner in which the formed material was produced, and how, under certain altered conditions, the germinal matter might increase quickly, and a vast number of separate masses might be rapidly produced. The preparations also proved that the thickness of the layer of formed material (cell-wall) was determined by the rapidity of increase of the germinal matter, which, in great measure, depended upon the proportion of nutrient matter present.

If the germinal matter of a structure grows unusually quickly, particles resembling the pus-corpuscles, which contain very little formed material, are produced. Conditions favourable to the increase of germinal matter are adverse to the formation of formed material. The formation of pus from epithelial and other cells has been demonstrated by Virchow, who, however, attaches the greatest importance to the formation of pus in the areolar tissue corpuscles; and considers that from these bodies various morbid processes start.