b Dropsy of the Vitreous humour. Short sight, and deep blue colour of the sclerotic, &c.

c Dropsy between the sclerotic and choroid, (sub-sclerotic.) *Diagn.* difficult.

10.—Cataract, (*κατα*, thoroughly; *απασσω*, to confound.) Opacity of the crystalline lens.

a True cataract, is seated in the lens, its capsule, or the fluid of Morgagni.

b False cataract, consists of an opaque deposit in front of the lens.

Objects appear in a *mist*, the opacity most frequently first appears in the *centre* of the pupil; hence objects are more readily seen on one side than in front of the eye, and in the shade than in a strong light. The action of the iris is not affected. The opacity is generally greyish, white, or amber coloured.

Catoptrical exploration of the lens. If, when the pupil is dilated with belladonna, a lighted candle is held before the eye, three reflected images of it are seen one behind the other; the anterior and posterior are erect, and the middle one is inverted. If the candle be moved, the two erect images follow it, but the inverted one moves in the opposite direction. The anterior erect image is produced by the cornea, the posterior by the anterior surface of the lens, and the middle or inverted image by the posterior surfaces of the lens.—*Cyclopædia of Practical Surgery.*

11.—Glaucoma* (*γλαυκος*, a sea-green colour.)

Pupil greenish and dilated, iris sluggish and of a dull leaden or dirty green colour. Eye painful, its vessels distended and vision generally destroyed. The greenish appearance is *deep-seated*, and the catoptrical exploration of the lens shows it to be clear. *Path.* Inflammation and thickening of the retina? (Scarpa,) of the vitreous humor? (Beer.)

12.—Amaurosis (*αμαυρος*, obscure.)

Loss of sight from affection of the retina, optic nerve, or brain. There is a staring *vacant* expression from want of proper control over the affected eye; the iris is sluggish, and dilated or contracted; in some cases it continues to act, though the patient is totally blind.

a Complete Amaurosis—total blindness.

b Incomplete Amaurosis—partial blindness.

CLASS III.

Malignant Diseases of the Eye.

1.—Scirrhus, (*σκιρρος*, a fragment of marble,)—or chronic cancer, (*καρκινος*, a crab.)

It usually begins in the conjunctiva.

2.—Encephaloma, (*εγκεφαλον*, the brain,)—or acute cancer.

It first attacks the optic nerve and retina; and occurs chiefly in children.

3.—Melanoma (*μελας*, black,)—or black cancer.

Black matter, liquid or compact, contained in a loose areolar tissue.

* This term is preferable to "glaucoma," because the final *oma* implies external protuberance, as in staphyloma; sarcoma, &c.

ANALYTICAL TABLE.

Effects of Inflammation.

External—

Cornea opaque . . .	1. Opacities and Specks on the Cornea.
Slightly . . .	<i>a</i> Nebula.
More completely . . .	
From inflammation . . .	<i>b</i> Albugo.
From a wound . . .	<i>c</i> Leucoma.
Projection on the front of the eye . . .	2. Staphyloma.
Cornea ulcerated . . .	3. Ulcer of the Cornea.
Abscess of the cornea semi-lunar and fixed . . .	4. Onyx.

Internal—

Pas in chamber of aqueous humour, position shifting . . .	5. Hypopyon.
Iris adherent . . .	6. Synechia.
Iris protruded . . .	7. Prolapsus of the Iris.
Pupil closed . . .	8. Closure of the Pupil.
Dropsy of the eye . . .	9. Hydrophthalmia.
	<i>a</i> Of the Chamber.
	<i>b</i> Of the Vitreous humour.
	<i>c</i> Subsclerotic.
Lens opaque . . .	10. Cataract.
	<i>a</i> True.
	<i>b</i> False.

<i>A</i> deep-seated greenish appearance . . .	11. Glaucoma.
<i>A</i> vacant stare . . .	12. Amaurosis.

Malignant Diseases.

Chronic cancer . . .	1. Scirrhus.
Acute . . .	2. Encephaloma.
Black . . .	3. Melanoma.

(To be continued.)

CUMBERLAND INFIRMARY, CARLISLE.

MALIGNANT DISEASE OF THE EYE: EXTIRPATION.

(Communicated by Wm. B. PAGE, Esq., Surgeon to the Infirmary.)

Catherine P., aged 76, married, and during the greater part of her life occupied as a cook, was admitted into the Cumberland Infirmary, April 23rd, on account of a tumour in the globe of the eye. Her history is as follows:—For a length of time she had been subject to occasional attacks of inflammation of the right eye, attended with much suffering, and about a year since, after one of these attacks, more than usually protracted and severe, she found that her vision in that eye was considerably impaired. About the same period she suffered much from an enlargement which she then, for the first time, discovered on the surface of the globe, and which has gradually, though slowly, increased in size up to the present time. Her power of vision became rapidly less, so that at the end of about the second month she was totally blind in that eye, and she then found that an alteration had taken place in the appearance of the interior of the eye, which increased until it presented the aspect it at present bears. Her life throughout the whole of the foregoing period has been one of almost uninterrupted suffering.

The severe lancinating pain to which she has been subject in the eye, together with the pain in the brow and orbit, the loss of rest consequent on the nocturnal exacerbations, and the general functional derangement resulting from these combined causes, have reduced her from a state of health and activity, to one of disease and incapacity for exertion. She has for a considerable period been under medical treatment, and was about three months since an in-patient of this hospital for two or three weeks, when she obtained so much relief from the administration of opiates, that she was unwilling to be subjected to any operative interference. The disease at that time, though not so far advanced, was but little less unequivocal in its character than at present. She is now considerably emaciated, and presents the aspect peculiar to those affected with malignant disease, attended with long-continued suffering.

The eye is somewhat increased in size, and the lower lid rendered prominent by a tumour which protrudes between the lids, and prevents their closure. This tumour is firm and lobulated, about the size of three small peas, closely adherent to the sclerotic coat on the inner and lower part of the surface of the globe, and slightly overlapping the cornea; it is firm and unyielding in structure, painful on pressure, and apparently of a pale yellow colour upon its surface, which can, however, with difficulty be seen, owing to the numerous small red vessels with which it is covered. The natural whiteness of the sclerotic is lost, and has become changed into a pale dusky leaden hue, with numerous large varicose vessels ramifying on its surface. On examination of the interior of the globe through the cornea, a minute portion of a discoloured greenish iris is visible on the upper and outer part, protruded forwards against the cornea, the remaining portion of the anterior chamber being occupied by a tumour, which appears to have proceeded from the posterior part of the eye; this tumour, at its upper part, is of a dirty red colour, while the lower part, which covers nearly half the internal surface of the cornea, presents a black melanotic appearance. The globe is exquisitely sensitive; there is constant profuse lachrymation, and she says she is never free from a severe burning sensation.

The history of the case, together with the symptoms, and appearance of the globe, led to the tolerably certain conclusion that the disease was of a malignant nature, amenable to but one mode of treatment, and that dangerous and uncertain—the extirpation of the globe. On the one hand, we had her age, which rendered any operation hazardous, the possibility that some other part was similarly affected, and the probability, almost amounting to a certainty, that a like disease would sooner or later manifest itself either in the neighbouring structures or elsewhere. On the other hand, we had the constant suffering which she endured, the apparent limitation of the disease to the eye itself, and the probability that if the operation were successful she would enjoy an interval of ease, even should the disease again appear, which it might fairly be hoped would not be the case, as at her advanced age it could not be expected that her life would be prolonged for any very lengthened period. Taking all these circumstances into account, it was resolved to propose to her the removal of the affected

organ, she being at the same time fully apprized both of the immediate danger incurred, and the uncertainty of its being attended with a beneficial result. She at once unhesitatingly resolved to submit to the operation proposed, and with anxiety and impatience looked forward to the period of its accomplishment.

April 28th. The patient being placed on a couch, the head supported and held firmly by an assistant, an incision, about half an inch in length, was made from the outer canthus, in order to render more easy the exposure of the globe; the lids were now separated, and a sharp-pointed bistoury was passed deeply into the orbit, and carried completely round; the globe was next drawn gently forwards with a vulsellum, and the optic nerve and other structures which remained, divided by a pair of curved scissors, and the eye removed. Having waited for some little time, until the hæmorrhage had ceased, the wound of the outer canthus was brought together by a suture, and the lids were carefully closed, a piece of lint being placed upon them, and retained in its position by a bandage. Neither by word nor gesture did she give any evidence of pain during the operation.

A draught of port wine and opium was administered, and she was placed in bed. In the evening she expressed herself as being quite comfortable, and, with the exception of some soreness, free from pain, or as she expressively described it, "quite in heaven."

29th. Is quite overflowing with gratitude and thankfulness for the relief afforded by the operation, and for the comfortable night she had passed—the first she had had for more than a year. The bandage is saturated with blood, but her state is altogether satisfactory.

May 1st. Healthy suppuration is established in the orbit, and she is going on favourably in every respect.

11th. Has continued to improve, and the discharge from the orbit has now quite ceased.

14th. Discharged in greatly improved health and spirits.

A few weeks after she was seen washing the steps of a house in which she was engaged as charwoman, when she stated she was quite well, free from all pain, and very thankful she had got rid of the offending member.

From this time I heard nothing of her until after her death, which occurred on the 31st of December. Mr. Armstrong, of the Carlisle Dispensary, who attended her, informs me that she first consulted him about the end of October, in consequence of some dyspeptic symptoms, arising from derangement of the functions of the liver; that the organ gradually increased in size, attended with much suffering until the time of her death, but as no *post-mortem* examination was made, the precise nature of the disease was not discovered.

An incision having been made into the tumour on the *external surface* of the eye, it was found to be of a hard cartilaginous structure, of a palish yellow colour, intersected with numerous dense white bands characteristic of scirrhous, its base was firmly adherent to, and intimately connected with, the sclerotic coat, which was here somewhat thickened. On a section of the eyeball being made, another tumour was found arising from the *internal surface* of the sclerotic at its posterior and inner portion, occupying the greater part of the posterior chamber; it had *nearly destroyed* all trace of the vitreous humour and lens, and in its

progress forwards, all the other internal structures of the eye. The surface of this *internal tumour* presented shades of colour, varying from a dusky red to black; in its interior the same colours were perceived, but instead of the black portions being blended with and lost in the surrounding redness, as on its surface, they were separated from it by well defined margins. It was composed in part of a reddish grey structure of a brain-like consistence, and in part of a pulaceous matter of a much less firm character, of a dark brown colour, almost approaching to black, with which the fingers became stained during the examination.

PROVINCIAL

Medical & Surgical Journal.

WEDNESDAY, MAY 6, 1846.

It is known that a large amount of the population of Liverpool inhabit confined streets, courts, and cellars, and the investigations of Dr. Duncan have shewn the crowded state and wretched condition of many of these localities. From the "Liverpool Health of Town's Advocate" it appears that if the whole area of *London, built and unbuilt*, be compared with the same area of Liverpool, the population is nearly four times as dense in Liverpool as it is in London. In the houses alone, area for area, Liverpool is above two-and-a-half times more densely populated. Dr. Duncan mentions a district containing about 12,000 inhabitants on a surface of 105,000 square yards, which is in the ratio of 460,000 to the square mile. Part of this district contained in 1841, 811 houses and 7,938 inhabitants, on an area of about 49,000 square yards, which gives a density of 657,963 to the geographical square mile! In the same year London contained 1,900,000 inhabitants, and every square mile of building accommodated about 50,000 people. Now, by the last census, Great Britain and Ireland contained 26½ millions; and if we could suppose 25 millions of these crowded into the present houses of London, we should have some conception of the condition of the people in that district of Liverpool. One instance is given by Dr. Duncan, out of a number of others, of a court in Crosbie Street, containing 118 inhabitants, on an area of 150 square yards. The usual average is nearly seven inmates to each house, while in this court it is fifteen to each; and there are entire streets where the average is nearly as high.

Many of the cellars, from defect of drainage, are partially flooded with refuse water of the most offensive description, the water being lodged either in pools on the floor or in wells sunk for the purpose. The water from several of these cellars has been examined by Dr. Brett, and also by Dr. Watson, from whose statements this account is taken.

A specimen of the water taken from one cellar was turbid from organic matter, mainly in suspension, slightly alkaline from the presence of ammonia; it was found also to contain small quantities of sulphuretted hydrogen, in combination with ammonia. A specimen of the water obtained from another cellar, vacant about twelve months, did not give any evidence of the presence of sulphuretted hydrogen or ammonia, probably owing to the fact of its being copiously diluted with escape water; it was rather slightly acid than alkaline, in which respect it differed from other water taken from cellars which have been examined, where an alkaline tendency was noted, owing to the presence of ammonia, the product, no doubt, of the decomposition of *animal matter*, frequently deposited in no inconsiderable quantities in these now uninhabited and uninhabitable depôts for filth.

In another dwelling the cellar was in a flooded state, and yielded a disgusting, sour, nauseous odour. The tenants above had been only two months there, and say they found it in the present state. A specimen of the water did not exhibit any acidity, but was turbid from dark-coloured matter held in suspension. When the water was evaporated a nauseating vapour arose: it was found to yield 28 grains of solid matter to the imperial pint, or 224 grains to the gallon. *About one-half of this solid residue consisted of azotised organic matter, most probably of an animal origin.* The presence of so much organic matter would doubtless, as Dr. Watson remarks, under the high temperature which prevails in the summer season, give rise to the production of effluvia highly injurious to health. In a back cellar in a court in this locality, a well existed in the centre of the floor, which was full of the most horribly foetid water; into which all sorts of animal matter was thrown, consisting of dead cats and dogs, and various excrementitious matters. The water from this sink of abomination was of a very dark colour, and had a highly offensive odour. When heated, a most nauseating vapour arose. The water was found to be distinctly alkaline, so as to redden turmeric paper; when mixed with lime, ammonia was set free; sulphuretted hydrogen was found to be present, being readily disengaged by the addition of an acid to the water, and its presence was further distinctly indicated by blackening salts of lead and silver. This water yielded, by evaporation, solid matter in the proportion of 100 grains to the imperial pint, or 800 grains to the gallon, and of this matter, one-third was azotised organic matter. Independently, therefore, of the injurious effects which would be produced from the disengagement of sulphuretted hydrogen (a most poisonous gas) there can be little doubt but that during the heats of summer rapid decomposition of