Monday.—Continues convalescent, and feels little more than general feebleness, from which she soon recovered.

Case 2.—Mr. Harvey, clerk of St. Werburgh's Church, aged 54, states that on rising in the morning of Monday, the 29th of August, he was affected with diarrhoea, accompanied with general lassitude, slight pain of the bowels, and faintness; motions very frequent, liquid, and copious. Had taken on the preceding night eel pie for supper, of which he says he eat very sparingly. The whole of Monday diarrhoea continued, with little abatement, for which he repeatedly took brandy. Tuesday morning he had a rhubarb draught, and occasionally took brandy; felt better, and walked about the town transacting business; in the afternoon motions much more frequent, copious, and liquid, with increased faintness. He continued occasionally to take brandy. About 11 o'clock, P.M., on getting out of bed, was seized with cramps of the arms and legs, fell down, and was unable to rise; whilst on the floor had a copious and involuntary motion, passed with great force, and he became extremely faint. On being lifted into bed I was immediately sent for. I found him greatly exhausted, affected with cramps of the upper and lower extremities, extending to the fingers and toes, and across the chest, excited and aggravated by the slightest movement. He had just vomited nearly half-a-potful of dark-coloured watery fluid; pulse full and slow; skin moderately warm, but of a darker colour than usual; eyes surrounded with a dark-coloured areola, and sunk in their sockets.

His feet were directed to be immediately placed in hot water and mustard; the abdomen and extremities to be rubbed with turpentine liniment, and afterwards a flannel, wrung out with hot water, to be applied; he was then wrapped round, as if swaddled, in a warm dry blanket. To be repeated every two hours. Two of the following pills were immediately given him, and one directed to be repeated every hour till natural motions were produced.—R. Chlor. Hydrarg., gr. viij.; Extr. Colocynth Comp., gr. xij.; Camph., gr. viij.; Ol. Carui., gr. iij. M. Fiat Pil. viij.

I remained with him till about five o'clock, and left him in an improved state, although during my stay he had frequently vomited copiously thin, clear, and liquid matters, and passed one or two motions, also copious, resembling milk-and-water, or rather the characteristic rice-water evacuations. Thirst was incessant and unquenchable. Cramps continued, but not so violent. About an hour after having left him, I was sent for in great haste, as the cramps had returned so severely that he thought he could not live; I found him, however, much better, although the cramps had been very severe, in consequence of getting out of bed. He was in a profuse perspiration; the change in the motions was more marked, less liquid, and not quite so white, although still abundant; cramp less severe; vomiting still copious, but not so frequent. The pills to be continued without the camphor, after which the vomiting ceased. In the course of the day (Wednesday) the

motions became more feculent, and slightly mixed with bile, accompanied with corresponding amendment.

Thursday.—Had a good night; motions much more natural, and for the first time since Tuesday has passed urine. The pills were omitted, and the following mixture substituted.—R. Pulv. Chlor., scr. ij.; Mag. Carb., dr. ss.; Mucil. Gum. Acaciae, oz. ss.; Sp. Ammon. Arom., Tinct. Hyoscy. utr., dr. ij.; Aquæ Ment., oz. v. M. Cap. oz. j., bis terve die.

From this time convalescence became rapid, and on Saturday he left his room complaining of little more than weakness.

Total amount of calomel taken sixteen grains, and of compound extract of colocynth thirty-two grains.

October 9, 1852.

EXTRANEOUS SUBSTANCES IN THE EYE.

By AUGUSTIN PRICHARD, Esq., BRISTOL.

Read before the Bath and Bristol Branch of the Association, October 7, 1852.

THE detection and treatment of the symptoms produced by foreign bodies in the eye, are matters of considerable surgical interest, dependent upon the value of the organs implicated, the destructive results of inefficient surgical aid, and the thoroughly satisfactory cures obtained by the most simple measures. Besides this, the subject is a surgical curiosity. Having constantly under my care a number of these cases, I have for ten years past always examined with a microscope the minute bodies which I have removed from the surface of the eye, and as might perhaps be supposed, have met with a considerable variety.

It will perhaps make my paper more worthy of a scientific body like the present, if I first give some account of the numbers of accidents to the eyes, in proportion to the whole number admitted to an ophthalmic charity, of the per centage of accidents where a foreign substance still remains in the eye at the period of admission, of the numbers of the different kinds of substances found, and the occupation of the applicants. I will afterwards show to any who feel disposed to examine them, some of the objects I have prepared.

My observations are collected at the Bristol Dispensary for the cure of complaints in the eye, founded by Mr. Estlin in 1812; and they go back as far as the year 1834, from which time the various injuries have been more distinctly arranged under their separate heads than they were before. This comprises a period of eighteen years, during the first part of which I attended the Eye Dispensary as pupil, and for the last ten years as surgeon.

Thirty-seven thousand one hundred and ninety-nine patients have been admitted during this time, that is about 2100 in every year, upon an average. 2856 of these cases were injuries to the eye, being between seven and eight in every hundred.

From this number of accidents we must take those that bear upon the present subject, and they are the following :—

		Per cent.	Of whole No. admitted.
1.—Injuries from lime	175	= 0.497	
2.—Pieces of iron or steel on the cornea	650	= 1.74	
3.—Other foreign substances ...	524	= 1.40	

I need not particularly describe the symptoms of an extraneous substance in the eye, as all have experienced the sensation, and must know that it leaves little room for doubt as to diagnosis. It must be remembered that the lid is the most sensitive part, and feels in the act of winking the foreign body stuck upon the globe of the eye, and the patient himself always refers to the upper eyelid as the position of the offending substance. The treatment is of course to remove it as speedily as possible, and for this purpose we ordinarily use a silver instrument, shaped like a cataract needle, considerably curved.

There are one or two observations I wish to make respecting the mein of a patient with an extraneous body in the eye. Some of the diseases of the eye are always accompanied by peculiar mein or characteristic gestures on the part of the patient. A child, with strumous ophthalmia, is brought into the room backwards, shrinking from the light, with both eyes screwed up as tightly as possible, with a handkerchief pressed up against them. A man with amaurosis walks in with his eyes widely staring and his brows raised, so as to prevent the possibility of any rays being intercepted in their progress to his insensitive retina. A patient with cataracts has his eyes partially closed, his brows contracted, and his hand raised to shade the eyes, to allow the iris to dilate as much as possible, and in a patient with an extraneous substance in the eye, one is entirely closed, or if opened for a moment is immediately closed again; he shows great incapacity of keeping his eyes open, which gives rise to the peculiar appearance of *intolerance of light with one eye only*, the other being in a great majority of cases quite sound. I have constantly noticed that the mein or general appearance of such a patient, and of the eye, (in a casual examination,) exactly resembles that of a man with iritis, which disease most commonly attacks one eye; and if inflammation has been produced by the extraneous substance, the redness is more like that in sclerotic inflammations than the colour of the eye in affections of the conjunctiva. There is another point of resemblance, which is one of particular physiological interest. It is commonly taught and believed that the optic nerve is the only afferent nerve to the third or motor nerve of the iris, *i. e.*, that the pupil contracts only when the optic nerve feels the impression of the light, and takes it back to the brain, sending the message to contract along the third nerve through the ciliary ganglion to the iris. Persons with an extraneous substance adherent to the cornea of one eye, almost invariably have that pupil more contracted than the other, notwithstanding the fact that the eye is kept more closed. The explanation of this is, that the fifth nerve distributed on the lids, feels the irritation and acts as an

afferent nerve to the iris, which immediately contracts. I sometime ago brought forward a proof of this fact, or of one exactly similar in nature, from the Blind Asylum Report. Two other instances have come under my notice recently. A girl completely blind from amaurosis after fever, and unable to distinguish the least light, was exposed to the rays of the sun. I saw the pupils of her eyes instantly contract, as in a seeing eye, and she said that she knew she was in the light from the sensation. With another blind person, whose eyes were completely sunk, and where there was no perception of the light, I performed the same experiment. She had no iris to contract, but she began to wink her eyelids and the tears began to flow from the weakness produced by a bright light, exactly as would happen in a seeing person exposed to the same influence. These facts prove beyond question that the fifth nerve *feels* the light and acts as an afferent nerve to the iris and eyelids as well as to the optic nerve.

I leave out of our present consideration all cases of accident, except where there have been extraneous substances adherent to the surface of the eye, and this is a tolerably numerous class, 1174 having presented themselves, amounting to one out of every thirty-one. I need scarcely say, that very few of these were women.

The artisans of a large city who most commonly come for aid on this account, are the following :—

Smiths, with scales of hot iron, which have struck upon the surface of the eye in hammering red-hot metal.

Stone-cutters, with minute portions of their chisels, or more rarely, of stone.

Millers, who have to chip the millstones, and thus also get struck with pieces of metal, or stone.

Millerights, with pieces of steel on the cornea.

Boiler makers and engineers, as they call themselves, *i. e.*, engine makers, who are particularly liable to get pieces of iron in the eye, in chipping cast iron, or hammering the rust from old boilers, or in grinding.

Metal turners, as opticians' working men, &c., who are struck with minute points of brass or iron; these generally have thin pointed pieces, like the tip of a needle, driven into the eye, where they penetrate perpendicularly and adhere most firmly.

Carpenters, in hammering or grinding their tools.

Tilers and plasterers and masons, in building and breaking stones, and hammering the plaster from walls; or what is still more frequent, in driving the nails into the laths in their plastering business. The nails generally used are cast and cut by machine, and are extremely brittle.

We see from the country—

Colliers, from the numerous coal mines in the neighbourhood of Bristol, with pieces of coal in the eyes.

Farmers' labourers, who are injured in chopping trees, or hedging, or haymaking.

We must add to these, of course, all the little accidents that occur, as for instance in railway travelling or in a dusty road, which are entirely independent of the patient's employment, and may happen to any of us at any time.

I have encountered objects from the organic and inorganic world,—in fact, animal, vegetable, and mineral substances of various kinds, some one or two of each of which I should like to show you.

Of *vegetable tissues* there have been specimens of wood, in the form of chips, imbedded in the cornea, or under the lid; or minute pieces of bark, which have flown from the edge of the hatchet; portions of nut-shell, seeds, and grass. One specimen of hard woody structure shows the separate wood-cells very distinctly, but from what plant it comes I have not been able to determine.*

The *animal bodies* which I have had occasion to remove from the eye, have been minute flies, of various kinds, more or less entire, and the wing cases of insects,—that is, the hardened case or shell, in which are folded the inner or real wings of the coleopterous tribe of insects. They are concave on one side, and convex upon the other, and adhere very firmly to the cornea, in all probability with the action of the leather sucker by which boys raise stones,—i.e., by atmospheric pressure. An instance occurred in the year 1839, when the patient presented himself, after suffering pain and inflammation of the eye for ten months, and the removal of the wing-case relieved all the symptoms. There is sometimes a little difficulty in detaching them from the surface of the eye. Many of them are very pretty objects for microscopic examination, they are very minute, and I have removed several in an entire state.

Metallic substances.—Pieces of percussion caps,—of iron, brass, or copper, retain their metallic appearance, if they are *entirely* imbedded in the substance of the cornea, and are thus removed from the action of air and moisture, so that after removal they have the glistening appearance of a metallic surface; and in the case of iron, it is attracted by the magnet. Portions of percussion cap are generally more or less imbedded in the eyes, as the accident is always accompanied with considerable force. Pieces of lime and stone will adhere for some time to the cornea.

One of the most remarkable facts connected with these metallic bodies in the eye, is seen when a piece of iron is driven upon the surface of the cornea, and does not penetrate deeply, but is subjected at once to the double force of friction by the eyelid, and oxidation by exposure to the air and tears. If it remains a few days in the eye, an extraordinary change takes place in its form, for it assumes the shape of a minute iron ring, with a clear central hole. Of this curious fact I have numberless proofs in the shape of specimens, which I

have myself removed from the eye, and which I shall be happy to show you. Now, this ring is formed in two ways,—the small piece of iron adheres to the cornea, and the prominent part is gradually rubbed away by the lid until it becomes transparent in the centre, much as an optician grinds a concave lens; the other method is when the circumference of the minute piece of iron adheres as before, to the cornea, and the prominent centre is gradually loosened, and removed *en masse* by nature or art. Of the former of these methods—i.e., the gradual thinning of the minute point, I have proof in specimens showing all the stages until a clear ring is formed; and as to the latter, I have frequently removed with the silver curette, a central point, leaving a ring behind, which I have detached at once, or after a few days. These rings are frequently only oxide of iron, and not metallic iron, the occasional transparency showing that they are then no longer in the purely metallic state. I do not yet understand clearly why these pieces of iron are so generally circular as is the case; they either fly off from before the hammer hot and fused by the violence of the blow, or they are ground of a circular form between the lids and the globe of the eye.

IPECACUANHA AS A RESTORATIVE.

By JOHN HIGGINBOTTOM, F.R.S.

I AM induced to make some observations on the use of emetics, from what has been written on the case of the late lamented Duke of Wellington, in the last number of the *Provincial Medical and Surgical Journal*, page 516. It is there stated:—"Instead of a *depressing potion, such as an emetic*, to void a stomach which, at the utmost, could have little more than gas within it, stimulants, antacids, and sedatives, such as brandy, ammonia, castor, valerian, and opium, with mustard poultices and other rubefacients, or even vesicants externally, were indicated."

For many years I have been in the practice of prescribing an ipecacuanha emetic as a powerful restorative in some cases of exhaustion and sinking, and I read a paper on that subject, before the Nottingham Medical-Chirurgical Society, which was published in the *Lancet* for June 28, 1845.

I prescribe ipecacuanha in preference to any other emetic; for if given in a sufficient dose, as half a drachm of the powder, it produces full vomiting both safely and quickly; it has also the power of raising the system to its normal condition, without producing any unnatural excitement.

I have long discontinued in such cases the use of brandy, ammonia, and opium, considering them only as palliatives. I give the ipecacuanha if I know the stomach is empty, being convinced that the stimulus of vomiting rouses the sinking powers by producing a considerable effect upon the nervous system; that it equalizes the circulation of the blood, removes the

* One piece of vegetable cellular tissue went through a somewhat circuitous route, before it finally rested as one of my microscopic objects. A man presented himself with an acutely-inflamed eye, with puriform discharge, and on everting his upper lid, a foreign substance was seen, and removed, which turned out to be the cellular membrane of some vegetable. The history was this:—A few days before, he met and entered into conversation with a friend, (a butcher's boy,) carrying a *bullock's paunch* in his hand; from words they came to blows, and my patient was brought down by a heavy flap in the face from his adversary's disagreeable weapon. His eye was painful, and intolerant of light, from that time until the substance was removed, when it speedily recovered. The portion of vegetable matter, having escaped in the process of rumination and digestion, found its way thus abruptly into the man's eye, and thence into my possession.