pilula hydrargyri, with *hyoscyamus* and extract of *colocynth*, are of great service, especially where there are chemosis of the conjunctiva, and tendency to opacity or sloughing of the cornea. In such cases, bleeding, whether local or general, violent purging, and local applications of a stimulating and astringent character, do considerable mischief; whilst, on the other hand, I have commonly seen the happiest results from mild alterative aperients—bark and ammonia or quinine, with or without opium, according to the amount of pain; with warm and soothing local applications.

That the disease, even in its most severe form, will yield, and yield rapidly, to constitutional remedies alone, is amply proved by the cases here subjoined.

CASE I. J. E. F., aged 8 months, was brought on October 10th, 1864, to the Royal Westminster Ophthalmic Hospital, suffering from catarrhal ophthalmia of both eyes, of one week's duration. The conjunctivæ were chemosed, and discharged profusely; and the eyelids were so much swollen that the child could not open his eyes.

R. *Ammonie sesquicarb. gr. v; tincturæ cinchonæ ʒi; decocti ejusdem ad ʒij. M. Sumat ʒij ter quotidie.*

The eyes and forehead over the frontal sinus were ordered to be frequently fomented with warm water.

Oct. 12th. He was very much improved. There was less discharge; and the swelling of the lids was so much reduced that he could now partially open his eyes.

R. *Hydrargyri cum cretâ gr. iij; pulveris rhei gr. v. M. Fiat pulvis horâ somni sumendus.*

The mixture was repeated, and the warm water continued.

Oct. 14th. The patient was going on well. The medicine was repeated.

Oct. 21st. He was now cured.

CASE II. J. M., aged 3, was brought in October 10th, 1864, with catarrhal ophthalmia of both eyes, of one week's duration. The symptoms were similar to those of the last case. Three drachms of the mixture of ammonia and cinchona (as in Case I) were given three times a day, and an alterative powder at bedtime; and warm water was applied as in the former case.

Oct. 12th. The child was much better. The mixture and warm water were continued.

Oct. 17th. All pain and discharge were gone. The chemosis of the conjunctiva and swelling of the eyelids had entirely disappeared. The patient was ordered to continue the treatment for two or three days longer. The child was finally dismissed cured.

CASE III. B. H., aged 16, applied October 12th, 1864, with catarrhal ophthalmia of both eyes, of four days' duration. She said she caught the complaint from a little brother. There was considerable congestion of the conjunctiva of both eyes, with the characteristic patches of extravasated blood. The discharge was but scanty. She stated that the attack came on suddenly; that she became worse towards night; and she complained of pain and weight in her head and forehead, especially over the frontal sinus, accompanied with some intolerance of light. The tongue was foul.

R. *Pilulæ hydrargyri, extracti hyoscyami, extracti coloc. comp., sing. gr. iij. M. Fiat pilula horâ somni sumenda.*

She was ordered to take an ounce of the ammonia and cinchona mixture three times a day, and to apply warm water frequently to the eyes and forehead.

Oct. 14th. She was better. There was less congestion, little or no discharge, and less pain and intolerance of light. The mixture was repeated.

This patient did not apply again.

CASE IV. H. B., aged 38, applied to Mr. Hancock October 17th, 1864, with catarrhal inflammation of both eyes, of five days' duration. The patient complained of great pain at night, and said that the attack came on suddenly. There was slight chemosis; profuse discharge; and the eyelids were much swollen. The ammonia and cinchona mixture was ordered to be taken in ounce doses three times a day.

Oct. 19th. There was no improvement. The mixture was repeated.

Oct. 21st. The patient was better. The eyes were less swollen; the pain and discharge much less. The mixture was repeated.

The patient continued to improve, and on the 28th was dismissed cured.

CASE V. J. C., aged 43, applied to Mr. Hancock October 21th, 1864, with a very severe attack of catarrhal inflammation of both eyes, of a week's duration, which he attributed to exposure to cold. He stated that the attack came on suddenly, with a feeling as of grit in the eyes. There was now profuse discharge, with severe pain at times. The conjunctiva was of a deep red colour; and the chemosis was so great that the cornea appeared sunken and overlapped at its circumference by the irregular surrounding swelling. The lids were also so much swollen that he could not open his eyes. He was ordered to take an ounce of the cinchona and ammonia mixture, also five grains of compound ipecacuanha powder, three times a day.

Oct. 26th. He was much better in every respect. The bowels were confined. He was ordered to take two cathartic pills at bedtime; and to repeat the mixture and omit the powder.

Oct. 28th. He was still improving. The treatment was continued.

Nov. 7th. He had gone on well to this day, and was now dismissed cured.

ON CERTAIN FUNCTIONAL DISEASES OF THE RETINA.*

By J. Z. LAURENCE, F.R.C.S., M.B. Univ. Lond., Surgeon to the Ophthalmic Hospital, Southwark.

BEFORE commencing the immediate subject of this communication, it will be well to define, as clearly as we can, what we are to understand by the term "functional disease."

All disease is, in a certain point of view, functional in its manifestation. For, where no disturbance of function exists, either to the patient's or to the physician's senses, disease can hardly be said to exist, if we except what is understood by the term "latent disease"—disease so subtle in its character, so impervious to either the patient's or the physician's observation, as to elude all outward detection. But the term "functional disease" has, by a kind of common assent for a considerable period, been construed in a limited sense to mean a perversion of vital action, manifesting itself in subjective or objective symptoms, inconsistent with health, but unaccompanied by any change of structure in the constituents of the body—so that, when this is subjected to the analysis of our senses, we are unable to detect in it any departure from those conditions which we are accustomed to meet with in the normal organism. This—so to say—vital etiology of disease played, in days gone by, an important part in the doctrines of the age; so much so, as to have even originated a distinct school of medicine—Van Helmont's school of Vitalism—a principle supposed to preside over

* Strictly, for the word "retina," I should have substituted all the nervous structures concerned in vision.

the body, and directly opposed to the influence of mechanical and chemical agents. But as our means of physically investigating disease have become multiplied and perfected, so has the number of the so-called diseases of function progressively decreased. Morbid changes, inappreciable to our unaided senses, have disclosed themselves to the analysis of instrumental appliances. The stethoscope, the ophthalmoscope, the laryngoscope, the microscope, and chemistry, have each taken an important share in detecting material changes in the organism in diseases, which had previously, from the want of such artificial assistance to our senses, been ranked amongst those of a functional nature.

There are, however, certain morbid states which we can hardly suppose to have any other than a purely functional origin. I may, for example, instance that of syncope. It would be an improbable ultra-speculation to suppose that the nervous centres undergo any material change of structure during a short faint, to as readily again acquire their original normal condition on recovery; although, even here, it is true, we are met by our certain knowledge of the extreme rapidity with which physiological processes of an undoubtedly material character—such as the oxygenation of the blood—take place under our very eyes; and, if a physiological process, why not a pathological? If we, then, take a broad view of the entire subject, we are irresistibly impelled to the conclusion that, sooner or later, when our present methods of research have arrived at greater perfection, or have become supplemented by others of increased refinement, the term “functional disease” will altogether vanish from the realms of medical science. However, it is in the nature of things that such a state of science is, at any rate as regards our generation, but an Utopian aspiration.

At present, then, we must remain satisfied by understanding, under the term “functional disease”, a disease which we, in our existing state of knowledge, have no means of connecting with any observed material change in the organism obvious to our unaided or aided senses; and it is in this limited signification that I employ the term functional, as applied to those conditions of the eye of which I am about to speak. Before, however, proceeding to the immediate subject of our investigation, let me draw attention to another important preliminary reflection.

In studying pathology, we must, I think, clearly separate two factors; viz., what we observe during life and what after death, using the word death in its limited sense to mean the extinction of life, whether it affect the whole or part of the body.

To illustrate what I mean, I may take a disease of the chest. During life we perceive a peculiar sound distinguished as fine crepitation, accompanied by dulness of percussion, and all the other concomitant physical and rational symptoms of pneumonia. I say “pneumonia”, because we have gained the right to this designation, not from the symptoms observed during life, but from inspection of the lungs after death. A certain set of symptoms has been observed in thousands of cases to accompany certain morbid changes in the lung-substance. We have, therefore, a perfect right to call that disease in which we observe this set of symptoms “pneumonia”, although we may never have had an opportunity, by the patient's death, of actually verifying our diagnosis by submitting the affected lungs to physical inspection. In the pathology of the eye, however, it will, as far as we can at present see, be ages before we can ever arrive at such a positive diagnosis; and the reason is obvious. It is because, out of the hundreds of eyes we examine with the ophthalmoscope,

we very rarely indeed ever have an opportunity of examining the organic changes that accompany the ophthalmoscopic appearances. It is all very well for authors to assign certain material morbid conditions to certain aspects of the fundus oculi; to say, *e.g.*, that whenever the optic nerve presents a dead-white, tendinous appearance, that then there exists atrophy of that nerve. I regard such names as names only—till ophthalmoscopic appearances have, by numerous dissections, been absolutely proved in an overwhelming number of cases to be connected with certain respective, material, anatomical changes. We may, however, with perfect justice, connect symptoms with ophthalmoscopic appearances. We may even go further, and very reasonably conceive the two to depend on certain morbid conditions; but we have no right to authoritatively and dogmatically lay down any inseparable connection between the two.

To recapitulate: in the following observations I shall designate by the term functional disease, a perversion of normal action, partially or wholly directly inexplicable by any organic changes in the eye, in our present state of knowledge, appreciable to our senses.

One of the most remarkable functional diseases of the retina is its paralysis. I have observed this taking place suddenly after a blow on or near the eye; the patient there and then, as far as I could ascertain, becoming partially or wholly blind, and, what is more, never recovering any further vision. These cases are so interesting, that I may be permitted to give the details of some that I have observed.

CASE I. A man was struck on the eye by a rocket-ball in 1854. Violent inflammation ensued at the time. I saw him about nine years after the accident. I then found he had simple perception of light. After a careful comparative ophthalmoscopic examination of both eyes, I could find nothing but a small black pigmentary deposit in the macula lutea of the blind eye.

CASE II. A young woman was struck by the cork of a ginger-beer bottle on the left eye. This set up inflammation in the eye, which lasted for about a week. I saw her about two months after the accident. She had never been able to distinguish even light from darkness since the accident. The pupil was somewhat dilated, but contracted slightly to light. A comparative ophthalmoscopic examination showed that, to all outward appearances, the fundi of both eyes were precisely similar and normal.

In the following case we have an instance of acute paralysis of the retina occurring idiopathically.

CASE III. Robert K., aged 32, an engineer, whilst in South America three years ago, had a paralytic stroke, from which he lost the use of the left side of his body, whilst the left side of his jaw “was locked”, and the tongue deviated to the left side. The right eye became totally blind and turned completely in; the left eye was not at all affected. He used galvanism; and, applying it for six months to the right temple, recovered the movements of the right eye. He is gradually recovering the use of his left side. Now the right globe is slightly divergent for distance; its movements perfect excepting inwards, he not being able to invert the corneal margin nearer than to about a line from the ear-rod. He is stone-blind of this eye. Both optic entrances, vessels, etc., were perfectly alike in the two eyes, and apparently perfectly normal.

This case, however, is not one quite at point; for there was probably some deep central cause for the blindness.

In the above cases, then, we have sudden and complete abolition of useful sight, unaccompanied by any

appreciable organic changes in the retina or optic nerve entrance sufficient to account for the blindness.

A very remarkable series of cases are those in which a blow on a position corresponding to one of the branches of the fifth nerve has been followed by amaurosis.

Mackenzie, in his *Practical Treatise* (pp. 115-118), alludes to several such cases. "Petit submitted to the French Academy of Surgery the case of an officer who became completely amaurotic in consequence of a sword-wound in the eyebrow." Vieq d'Azyr had recourse to experiment. He laid bare, in a variety of animals, the frontal and superciliary branches of the fifth pair; he bruised and tore the exposed nerves; and convinced himself that this was speedily followed by blindness."

The following very striking instance occurred in my own practice.

CASE IV. A man, 38 years of age, was, eight days before I saw him, thrown forcibly against a broad piece of iron projecting from a mantel-shelf. He went at once to St. Bartholomew's Hospital. Much bleeding ensued; and for six days the lids were so swollen, as to prevent him from opening them. When he could do so, he found that he was quite blind of the eye. On examination, I observed half an inch below the left lower eyelid, and parallel with it a wound of the skin measuring three-quarters of an inch across. He said that it was here that the piece of iron struck him. The parts around the wound were red and thickened. The eye on the injured side stood about a line higher than the left eye, and was also slightly divergent. He had no perception of light with the eye. A comparative ophthalmoscopic examination of each eye disclosed not the slightest difference in either eye. In both the fundus was somewhat pale. A second such examination, twenty days afterwards, yielded the same results. On a third examination, a week later, I found signs of commencing atrophy of the optic nerve; it was paler in colour, and its contour more abrupt than that of the right eye. He had not recovered the slightest perception of light.

A case somewhat of the same kind came under my notice in the autumn of 1863. But, in this case, the eye of the opposite side to the injury of the face became amaurotic; in addition, changes of nutrition also set up in the eye.

CASE V. Ann B., aged 43, was, whilst walking along, struck by a brick falling from some buildings on the right side of her face. When I saw her a fortnight after this accident, there was a linear scar running pretty nearly in a line with the outer border of the right nasal bone. There was also a short scar down the dorsum of the nose below the bridge. She was stunned for an hour or so; and her nostrils, she said, bled. Two days after the accident, she noticed she could no longer read with the left eye, and subsequently the sight became much worse as if "a skin were before the eye." On examination, I found both eyeballs very prominent; the left eyeball as soft as a bag of water, the right one softish only; the left iris green and tremulous, the right one blue and not tremulous; both pupils acted well and independently to light; the corneae were both equally sensitive; the optic entrance in the right eye appeared from some irregular refraction, distorted, and "floated" with each movement of the eye; the fundus oculi of the left eye was normal. She complained of a sensation of cold in the left eye. With the left eye she could not read c c (Snellen) at twenty feet; with an 11-inch concave lens, she read it at twenty-six inches. Her acuity of vision (S) with this eye was thus 1-100th; with the right eye, she read No. 23 (Jäger) at twenty feet with a 6-inch concave lens; and s therefore equalled 1-10th. I saw this patient

again on Jan. 31st, 1865. She had now lost all perception of light with the left eye; the lens had become opaque; the iris was bulged forwards; the pupil undilatable, even to atropine, its edge irregular. The eyeball was very tender, and "felt always cold" to her; the cornea was markedly less sensitive than in the other eye. She told me she had had a black eye from the injury.

There is one weak point in both the above cases that we have no right to disregard. In both, the patients had swelling and ecchymosis of the lids after the accident. I regard this, however, as not the direct result of the injury; but of the same nature as that which so frequently occurs at a distance from fractures of bones, or after the application of leeches in the proximity of loose integument. Under any circumstances, the absence of ophthalmoscopic signs in the blind eyes is a circumstance of great interest.

It is a remarkable fact that, in paralysis of the motor nerves of the extrinsic muscles of the eye, vision is rarely much, if at all, impaired. The very fact of the constant occurrence of double vision in these cases is sufficient to prove the general truth of this assertion. But minutely exact observations on this interesting subject, especially with reference to the state of the pupil and of vision, remain to be made.

How are we to interpret such cases as the above? For want of a better explanation, I at present call the blindness a reflex phenomenon. I conceive the blow on the branches of the fifth nerve to be conducted by them to the cerebrum, and hence reflected in a centrifugal direction by the optic nerve to the retina. In our present state of knowledge, I think we are justified in thus explaining such cases. In the action of the pupil to light, we have a physiological phenomenon of a similar nature, only that the conducting and reflecting nerves act here in a reversed order. The light stimulates the retina; this stimulus is transmitted to the sensorium by the optic nerve, and is hence reflected to the nerves of the iris.*

Such cases as those I have been recording are instances of what might be termed acute paralysis of the retina. They are not very common, but still occur every now and then. The following very interesting case may perhaps be considered an instance of a subacute form of paralysis of the retina; whether from pressure on the retina itself, or on its conductor to the sensorium, the optic nerve, I am not in a position to say.

CASE VI. Elizabeth P., aged 11, a very intelligent girl, stated that a fortnight before I saw her, she felt what she described as a "pinching" pain in the right eye and the right side of the forehead, and, on closing the left eye, she discovered that the sight of the right was dim. The pain had continued ever since; and the sight became progressively less and less, till she could barely distinguish light from darkness with the affected eye. To still further fix this point, I, by the prism test, convinced myself of the absence of all simulation of blindness. On her regarding a distant object, I observed the right eye was drawn somewhat outwards and upwards, and its power of inversion diminished; facts pointing to partial paralysis of the internal and inferior recti muscles. The right eye was also more prominent than the left one. On examining the two eyes ophthalmoscopically, I found them normal, and absolutely identical. She had suffered from periodic attacks of violent headache for three years, the last one being two months ago. The headaches would

* Fontana and De Ruiter have shown that the pupil does not contract, when a jet of light is thrown in the iris alone, without its entering the pupil.

last about four hours at a time, and were so violent as to make her cry. She had never had any fits. She subsequently had an attack of what her general medical attendant, Dr. Jeffree of Kennington, considered meningitis; and after this she completely recovered the vision of the affected eye. I, at the onset, diagnosed the amaurosis as depending on some effusion within the orbit pressing on the optic nerve or retina; and I consider the ultimate progress of the case justifies me in adhering to this diagnosis.

[To be continued.]

CARCINOMA OF THE STOMACH.

By JOHN RICHARD WARDELL, M.D., M.R.C.P., Physician to the Tunbridge Wells Infirmary.

THE following cases are not given as presenting any very peculiar characteristics of the above named disease; but rather as a fair illustration of its examples which are ordinarily met with in practice.

CASE I. I was requested, by Dr. Johnson of this place, to see with him, January 28th, 1863, Mr. S., who had for some weeks previously been under his care. The patient was head gardener to a gentleman residing in the neighbourhood; and he had regularly pursued his occupation up to the time of the more urgent symptoms of his illness. He was now, and had been for some days, confined to his bed. He was 51 years of age, and had always been a healthy man until about two years prior to the above date, when he first began to experience what he conceived to be merely impaired digestion, for which the ordinary remedies had been employed. During the summer of 1862, he had been slightly jaundiced. Subsequent to that affection, he had abscess of the liver, which opened externally; and for some months a sinus remained, from which a small quantity of purulent matter continued to escape.

At my first visit, he had a cachectic look, was much emaciated, and then laboured under persistent sickness and vomiting; the ejections being sour, and a biliary mucous fluid. The respirations were not accelerated; percussion over the thorax generally elicited the clear pulmonic notes; and auscultation proclaimed no abnormal sounds. The pulse was 92, small, compressible, and regular; the cardiac impulse weak, not diffused; there was no valvular disease. On carefully percussing the hepatic region, dulness manifestly extended over a less space than natural; the abdomen was so distended with flatus that now palpation could detect no abnormalities of the viscera. Pressure at the epigastrium gave acute pain; and he described this pain as "sharp and shooting". The bowels were regular; and, when they were moved, only small amounts of fecal matter were voided. The urine was of specific gravity 1020; no morbid products were detected on the application of ordinary tests. He had had a variety of tonic and stomachic medicines without any material benefit. He had taken the bitter infusions, mineral acids, bisulph, quinine, oxide of silver, prussic acid, aloes, and belladonna, and other remedies of a similar kind. On a general review of the case, and when the tympany existed, the diagnosis could be but a doubtful one. The solution of morphia, with hydrocyanic acid, were agreed upon, to be taken at short intervals; and concentrated beef-tea, with port wine, every two hours. Under this treatment, the sickness was for a time relieved.

I saw him with Dr. Johnson again in the course of another week. The tympanitis had now subsided; and, on again examining the abdomen, we could feel an irregular hard lump, of about the size of a small

orange, at the right epigastric region, corresponding with the situation of the pyloric orifice. It was now abundantly clear, from this fact, the history, and the whole of the accompanying symptoms, that this was a case of carcinoma. He continued to waste and decline in strength; the sickness, vomiting, and epigastric pain, being to the last persistent and predominant symptoms.

He died February 14th, 1864. No inspection was made.

CASE II. The next example of this disease was in the person of Mrs. D. who, Oct. 16, 1863, came from a distance to consult me. Her case was reported as being one of stricture of the oesophagus. She was 49 years of age, married; her countenance was dusky, yellowish, anemic-looking; the volume of flesh was considerably reduced. About two years before, she had first begun to experience pain at the epigastrium immediately after taking food. Her affection had been regarded by an hospital physician as dyspepsia, and by a general practitioner as mere indigestion; for which a great variety of remedies had been tried, yet with little real benefit. The loss of flesh and strength, anorexia, with occasional vomiting, becoming more and more pronounced, and the opinion having been given that the disease was stricture of the oesophagus, herself and friends became alarmed, and my advice was requested. Three months prior to my seeing her, she had had, from time to time, attacks of vomiting almost immediately after a meal, and the ejected matters were invariably sour.

When I saw her, she said the swallowed morsel always produced pain, and it "felt as if it stuck very low down", on which account she had been compelled to live on fluid or on semi-fluid diet. The tongue was clean, smooth, and red; and the papillae, even at the V-shaped circumvallate lines, were almost indistinct. Her bowels were regular; pulse small and weak, 92. Percussion and auscultation gave no indication of thoracic disease. The abdomen, on palpation, gave no evidence of lesion, except at a circumscribed place at the epigastric region between the mesian line and the anterior border of the left false ribs. Over this space even moderate pressure gave great increase of pain. Pressure could be borne at the right side of the epigastrium. She said the pain was always in one place; that she could cover it with the palm of the hand; that it was a "sharp, pricking, wringing, sometimes a burning, pain." Her husband and daughter, who drove over with her, were much concerned at her inability to swallow solids, and were afraid of death by starvation. I softened an oesophagus bougie in hot water, oiled it well, and very cautiously introduced it. Not the slightest resistance was felt until its end reached the cardiac orifice, where there was slight obstruction; but excessive pain was produced, which was felt through into her back. The instrument was at once withdrawn, the object not being dilatation, but a mere help to diagnosis. From the history, symptoms, and all the circumstances, I did not hesitate to pronounce the case as being a fatal one. On careful manipulation, some thickening of the cardiac end of the stomach could be felt through the attenuated parietes. It was a plain case of carcinoma. I ordered pills, with extract of belladonna, aqueous extract of aloes, and quina; and a belladonna and opium plaster to the epigastrium. I also directed her to have new milk, thickened with some farinaceous article of diet; concentrated beef-tea, with isinglass, tapioca, and port wine. The pain increased in intensity; her flesh and strength decreased; sour vomiting became more frequent; and the desire for food less and less; the difficulty of taking it greater;