tissues, nor of the external meatus, nor of the bones, nor of the facial canal (unless as a late feature of the case); neither had we such destruction of tissue as is associated with the carcinomatous growth. One symptom is, I think, common to and prominent in both carcinoma and sarcoma of the ear alike, namely, pain in the ear beginning at the early stage, intense in character, and continuous throughout. Such pain, occurring in an ear with the objective changes just mentioned, should, I think, suggest malignancy. There is no doubt however that carcinoma may also arise in the middle ear, especially in connection with previously existing purulent disease. Such important authorities as Schwartz, Lucae, and Kidd report cases of epithelioma originating thus in the middle ear.

It must be confessed that up to the opening of the cavities of the middle ear the growth was regarded by me as a simple inflammatory product. I was perhaps beguiled into this opinion by the fact that during my attendance upon this patient there happened to be another case under my care presenting a fibrous-looking growth, springing apparently from the osseous walls of the middle ear, and likewise singularly recurrent in tendency. In that case on several occasions, twice under an anæsthetic, I snared and curetted the growth, which was examined at the pathological department of the Western Infirmary, with the result that there was no reason to believe it other than a simple product of inflammation. The ultimate result showed the correctness of this, as eventually there was complete recovery. Such recurrent fibrous growths, which we occasionally meet with in the ear, may really be of the nature of a fibrous sarcomatous tumour, which is known to have a longer and milder course than the round-celled variety, the latter being more malignant, spreading rapidly, and invading the cavity of the cranium. May the case before us not have been in the early stage a simple inflammatory neoplasm, developing subsequently into a sarcoma?

It may be asked, May this growth not have originated primarily in the intracranial cavity, extending thence to the middle ear? That malignant disease of the ear may be the result of extension from neighbouring structures, such as the parotid gland or dura mater, is proved from recorded cases. For example, Pomeroy reports a case in which a myxo-sarcoma extended without doubt from the middle and posterior fossæ of the skull through the tympanic cavity into the external meatus. In such cases, however, the phenomena pointing to intracranial disease manifest themselves at an early stage, and the aural symptoms appear later on; the contrary held good in the case before us.

Records show that malignant disease of the ear is comparatively rare. Bürkner's statistics indicate that carcinoma of the ear occurs only in the proportion of 1 in 3,000 cases of ear disease; with regard to sarcoma of the ear the proportion is still less. It is worthy of note that in the recorded cases of the latter I have found that most of them presented, as in this one, a polypoid-looking growth in the external meatus when first brought under notice.

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THE COMPANY OF PLUMBERS.—At the quarterly meeting of the Court of the Worshipful Company of Plumbers, held at the Guildhall on September 29th, Alderman Richard Hind was sworn into the office of Master, Mr. Frederick Machin to that of Warden, and Mr. Charles Hudson to that of Renter Warden for the ensuing year.

CONTINENTAL AND BRITISH VISION TESTS FOR RAILWAY SERVANTS.

A COMPARISON.

By W. M. BEAUMONT, M.R.C.S., ETC.,
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THE necessity for examining the eyesight of railway servants, especially in the case of drivers, signalmen, and pointsmen, has been recognised by ophthalmic surgeons in all countries for many years. Its importance has been demonstrated again and again, and now it is enforced by State regulations or bye-laws in nearly every civilised nation. All over the Continent the standard of vision is fairly uniform, in most countries the rule being that one eye at least shall have normal acuity, whilst the other one shall have from one quarter to one half the normal. In this category are included Holland, Italy, Sweden, Austria, Switzerland, and I believe Belgium. In France two-thirds of the normal is required, in Germany at least one-half without glasses. If, however, we turn to Great Britain and Ireland we find a much lower standard of visual acuity. Instead of perfection in one eye, as is the usual rule on the Continent, the man who has one quarter of the normal in his better eye is considered to be visually fit to drive an engine, to signal a train, or to guard its passengers. Why is Great Britain satisfied with a quarter when almost all Europe exacts the whole? Has Europe set up an unnecessary high standard, or is Great Britain below the level of safety? I imagine, gentlemen, that you all will agree that we in Great Britain are wrong, and that no argument is necessary to demonstrate that the guard, the pointsman, or the driver who is three-quarters blind is not fit to fulfil his duties. Such, too, is the opinion of ophthalmic surgeons in England, and acting on that opinion they have on several occasions called the attention of the Government and of the railway companies to the inadequacy of the standard. Hitherto they have done so without avail, and it is with a view to consider the causes of the great difference in the English standard as compared with the Continental, that I have brought the subject before you to-day. In the first place the ownership of the railways is, I think, an important factor. In most countries we find that they are the property of the State. Such is the case in Holland, Italy, Sweden, and Norway; whilst in Germany, France, and Denmark they are nearly all State property. In Switzerland, on the other hand, with the exception of the Jura Simplon, they are all private. So, too, in the United Kingdom the railways are entirely in the hands of companies, and of these companies there are upwards of 200, many of them keenly competing with each other for the traffic. The Government of the country takes but little interest in the way in which the lines are managed and exercises but little supervision. As long as there is no gross neglect of duty they are not responsible for accidents, and they are left to frame laws and bye-laws for themselves. Should any question arise in the House of Commons there is a solid phalanx of eighty members who are railway directors always ready to protect what they conceive to be their interests. And so the companies can have any standard they choose, or if they choose, no standard at all. In reply to a deputation of ophthalmic surgeons that waited on the responsible department of the Government in February, 1895, to urge that some supervision should be exercised in this matter the President of the Board of Trade unsatisfactorily answered that they had "no power" and that "all the leading railway companies had shown a commendable desire to do what they could, and now required their surgeons to apply tests to the eyesight." This statement is quite inaccurate, as on the majority of, if not on all, the British railways the sight testing is done by lay officials, and as is to be expected they do it about as well as the mannikin at the back of the Hôtel de Ville would do it. The President of the Board of Trade went on to say that the companies "applied substantially the same tests as were applied on the State railways of the Continent, and therefore there was no reason to think that the work would be better done by the State." Had he known the facts he would not have replied thus. These, then, are the difficulties which we

* Read at the International Conference on Railway and Marine Hygiene, Brussels, September, 1897.

meet with in England in trying to press upon our Government the necessity for proper control of the vision of railway officials. They are difficulties which the nations of Europe have not to contend with; they are difficulties which will not be overcome until a terrible catastrophe points the moral.

In conclusion, I will just refer to what I believe to be the causes which prevent the adoption of more stringent regulations on the British railways. First, there is the money question. The chief duty of a railway which is the property of a private company is to return dividends, as large as possible, to its shareholders; a State railway, on the other hand, is never in straitened circumstances. It is cheaper to let a clerk "test" the eyesight and detect colour-blindness in the officials than to appoint a surgeon for that duty; and as the standard of visual acuity is so low a one, any man not more than three-quarter blind being eligible, practically almost every applicant is visually a fit and proper person to safe conduct a train.

In the second place, there is the opposition of the men themselves to be reckoned with. Trade unionism is strong in England, and changes cannot always be made without risk of upsetting the balance of power. This, together with the injustice to the servant involved in dismissing him, after many years' service, in consequence of failing sight, weigh more with the directors than the hypothetical danger to the public. Neither do they see the necessity for making a change as long as no serious accident has been publicly demonstrated to have resulted from the faulty vision of the officials. Although such accidents have occurred, public feeling is not yet sufficiently aroused; and until there is some rude awakening, it is improbable that the minimum acuity of vision which is considered safe by the ophthalmic surgeons of Europe will be recognised and adopted. Our contention in England is that Government should impose upon the railway companies a visual standard, in the case of drivers, signalmen, and pointsmen, of perfect sight in one eye and of not less than half the normal in the other, together with an absence of colour-blindness. For less important posts a lower range might be accepted. Surely, when we consider the serious consequences which may result from deficiency of eyesight, such a standard is not too high. And yet the struggle to secure proper supervision has been a long one in Great Britain and Ireland. In other countries there does not appear to have been so much difficulty. It was in 1877 that Professor Holmgren drew attention in Sweden to the dangers which may arise from colour-blindness, and in the same year regulations were authorised by the Government of that country. In the same year Donders reported on the eyesight of the employees on the Dutch State Railways; and now vision is tested in that country more thoroughly perhaps than it is anywhere else. Most of the European nations quickly followed with satisfactory laws—in some cases imposed by the railway companies themselves, and in others by the Government. In Great Britain, I have said, the struggle has been a long one. As far back as 1885 Dr. Wilson, of Edinburgh, wrote *On Railway and Ship Signals in Relation to Colour-Blindness*. In 1879 Dr. Wolfe read a paper *On Colour-Sight and Colour-Blindness in the Relation to Railway and Sea Signals*; and in 1880 the Council of the Ophthalmological Society of the United Kingdom appointed a committee to consider defects of sight in relation to public safety, with authority to communicate with the Government in the name of the society. The Secretary of the Board of Trade was interviewed, but no results followed. At the International Medical Congress in London in 1881 a committee was appointed which drew up a series of recommendations for the examination of the eyesight of mariners and railway servants; and in the same year Mr. Brudenell Carter's Lectures on Colour-Blindness were delivered which also called attention to the subject from the same point of view. Since then the struggle has never ceased, if it can be called a struggle, when one side does all the battering. Letters in the papers, lay as well as medical, committees of ophthalmic surgeons, lectures and papers by recognised authorities have followed one upon the other without avail. Still the most usual rule on British railways is that somewhere about a quarter or a third of the normal acuteness of vision is sufficient for engine-drivers, for signalmen, and for pointsmen; and it is still believed that clerks

and inspectors are sufficiently acquainted with the science of optics and the intricacies of colour-blindness to utilise the one in the detection of the other.

HEPATIC CIRRHOSIS OF CHILDHOOD: INTER-CURRENT TYPHOID FEVER: DEATH FROM ACUTE YELLOW ATROPHY.

By C. M. POWELL, M.A., M.R.C.S., L.R.C.P.,
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MALIGNANT jaundice remains so puzzling a disease that all fresh facts exhibiting its pathological affinities and modes of origin are worth recording. In the following case not only was the course of events most singular and instructive, but the opportunities for observation were unusually good, because the patient was in hospital for many weeks before the onset of the hepatic atrophy.

D. P., aged 6, was first seen at her home (a squalid one) on July 16th, 1896, on account of high fever, which had begun the previous day, and turned out to be typhoid; there was an epidemic in the district at the time.

On July 28th, owing to the severity of the attack, she was removed to the Maud Hospital. She improved, and on August 3rd her temperature fell rapidly to subnormal. From the first the abdomen was tumid; a note of July 17th recorded that "the liver was somewhat enlarged, the spleen much enlarged," that is, more than was accounted for by fever only two days advanced; and now, within a few days of the cessation of the continued fever the chart began to show oscillations between 97° (A.M.) and 100° (P.M.); and the enlargement of liver and spleen persisted or (as I believe) increased. There was evidently some underlying disease of these viscera of older date. There was no history of syphilis on the mother's part, and no sign of it in the elder sister aged 8. No malaria exists here. No special excess of leucocytes was found in an examination of the blood on July 30th. The child had, however, had measles severely at the age of 1, had been weakly ever since, had in the past year or two suffered from abdominal pains, chilliness and "colds," and during the last twelve months from increasing failure of nutrition and spirits. The conclusion arrived at thus, and afterwards confirmed by necropsy, was that the case was one of "infantile cirrhosis," and on August 25th exact measurements of liver and spleen were begun owing to their marked hypertrophy (see table).

From August 6th to August 22nd quinine was given and then, till September 5th, arsenic.

On September 5th jaundice, with pale stools, set in, preceded, for five or six days, by mild diarrhoea. For this reason the arsenic was stopped, but the diarrhoea and jaundice persisted through the remaining weeks of life. A strong cadaveric odour was present during her whole stay in hospital, corroborating Harley's remarks in *Diseases of the Liver* (p. 496). Appetite and tongue remained good, but strength began to flag, and she preferred bed to being up. The liver had begun to recede at least a week and a-half before the jaundice set in.

On September 26th delirium began, passing in a few hours into stupor. Pupils were unequally dilated, axes of eyeballs unsymmetrical, legs showing sensory and motor paresis, knee-jerks and abdominal reflex exalted; pulse 108, epistaxis, double incontinence.

September 27th. Feebler, stupor greater. Knee-jerks diminished.

September 28th. Urine 1016, acid, a little blood, urates, leucin, tyrosin; urea 7 grs. to the oz.; chlorides nearly absent.

September 29th. Weaker; coma: dysphagia. Tongue becoming brown; odour of breath like that of cut liver in *post-mortem* room.

September 30th. Vomited once. Respiration of Cheyne-Stokes type, pulse 120, temperature rising to 100°; urine as on 28th, but urea equal 5 grs.

October 1st. Deep coma with clonic spasms. Death at 4.20 P.M., with temperature risen to 101.4°.