REMARKS

ON THE

CONNECTION BETWEEN DISEASE OF THE
EAR AND GENERAL MEDICINE.*Being an Introduction to a Discussion in the Section of Otolgy at the
Annual Meeting of the British Medical Association in Worcester,
August 1882.*By GEORGE P. FIELD, M.R.C.S.,
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THE subject that I have the honour of bringing before you to-day, is the relation of diseases of the ear to the affections of the human frame in general. There was a time when Pandora's box sufficed to hold all the ills that could afflict mankind; but as the world has grown older those ills have not been backward in development; and the numerous varieties, subspecies, and species of disease that have arisen, could not now be contained in anything of small dimensions, still less within the compass of what I shall here have time to offer you.

So, at the outset, I have to confess that the title of my paper is inclusive of far more than I can pretend to accomplish; but I trust I shall be able to introduce to your notice, and to promote discussion upon, certain of the most important considerations in connection with our subject. Toynbee, my predecessor at St. Mary's, my late master Hinton, and a host of other workers at home and abroad, have striven and have done much to extend our knowledge of aural therapeutics; and still we see evidences of the necessity for further research. Otologists may, I think, lay claim to have done their part of late years in the relief of human suffering; for continued experience in the observation of the various phases of aural disease has afforded them the opportunity of gaining special aptitude in interpreting the same, and in comprehending their relation to other pathological conditions. I am convinced that a man may, with advantage, devote his life-time to the study and treatment of affections of the ear exclusively, if he fit himself for his undertaking by a thorough grounding in the science as well as in the art of his profession.

The truly practical otologist brings to bear upon his study, an acquaintance with the pathology of the body as a whole; and it is because he clearly perceives that there can be no special aural pathology, that often he is able to discern in some disorder of the ear, which to many might appear to be of little moment, a symptom of grave disease in other organs.

I cannot, therefore, but regard the subjects appointed for consideration, at this our jubilee meeting, as singularly well chosen. I purpose to begin my paper with an enumeration of those maladies, mostly of every day occurrence, which are directly to be attributed to aural disease. The time at my disposal will permit only a bare outline of most of the facts I would commend to your notice; but the important subject of the relation of ear-disease to certain lesions of the brain and lungs I hope to be able to illustrate, by the histories of a few cases that have recently been under my care.

In classifying the diseases of the ear in relation to general medicine, I shall begin with those affecting the external auditory meatus. A plug of cerumen may occasion, not only vomiting and coughing, from irritation of the auricular branch of the pneumogastric, but ulceration and perforation of the membrana tympani, and intense pain and other symptoms. I have known several cases of persistent cough, for the relief of which residence in a warm climate was recommended, which at once ceased on the removal of impacted wax from the ears. Dr. Fergus lately informed me that three cases of persistent and alarming cough, quite unaffected by ordinary remedies, which he was called upon to treat in the Marlborough School, were, he found, entirely due to this cause.

One of my patients, after the accumulation of wax in his ears for a certain time, suffers acute pain in the head, which is immediately relieved by the clearing of the meatus. A few years since, a severe attack of pain compelled him to seek the assistance of the doctor of the Italian town in which he was staying, who charged him a fee of twenty guineas for the successful removal from his ear, under chloroform, of what that gentleman was pleased to call "a black tumour."

Doubtless we have all had experience, not so much of the evils arising from the presence of foreign bodies in the auditory canal, as of those caused by the injudicious use of instruments for their removal. It would seem, and I think many of my hearers must be able to corroborate my statement, that some practitioners, without resorting to the use of the speculum to ascertain that there really is a foreign body in

the ear, will accept the testimony of a child's friends that something has been lodged therein, and will doggedly set to work for hours to discover and extract it, oftentimes causing considerable damage to the patient.

We see, then, that both troublesome cough and intense pain in the head, not to mention other troubles, may be entirely due to abnormal conditions of the meatus. But chronic inflammation and erysipelas may each occasion narrowing of the external meatus, the latter sometimes extending thence with great rapidity, and endangering life.

Dr. Cassells, in an admirable paper, has pointed out how atmospheric contamination by sewer-gas may produce ear-disease; and we all, I am sure, have met with many instances of aural furunculus, and acute inflammation of the middle ear, which, in accordance with the germ-theory of disease, are to be traced either to effluvia from defective drains, or to more direct contagion. It is an ascertained fact that working amongst decomposing organic substances, as in rag-factories, may give rise to aural furunculus, which, it has been shown (by Löwenberg), may occur in a mild epidemic form. I might relate details of several cases in point which have occurred in my own practice. Thus, two gentlemen, living a few doors from each other, in houses improperly drained, were almost simultaneously attacked with ear-disease; and, in two separate families which I attended for five cases of otorrhoea, the cause of the evil was simply sewer-gas.

Again, in my own house, this year, I discovered defective drainage to be the origin of ear-mischief in two children, and severe septic pneumonia in a third child. If, indeed, sewer-gas affects the laryngeal mucous membrane as it apparently affects the tonsil, the extension of septic disease along the Eustachian tube to the tympanic cavity is a matter readily comprehensible. Allow me further to illustrate the subject in hand, by the recount of a case which I saw in consultation with Mr. Cripps Lawrence.

Miss H. B., aged 30, on May 6th, 1882, was seized with earache, which, as it increased, became accompanied by tenderness on pressure in front of the tragus and over the right mastoid process. Three leeches were applied for a few minutes, and then removed at the wish of a relative. Fomentations relieved the pain, and a discharge took place from the external meatus. Still there was a good deal of pain; and the next day, when I first saw the patient, I advocated the use of small conical pledgets of absorbent cotton-wool, moistened with water and covered with finely powdered boracic acid. When the temperature had reached the normal, she left town for the Isle of Wight, and quickly regained her health. It proved, upon investigation (at my suggestion) that the sanitary arrangements of the house in which the patient had been living were eminently defective. In the same house, but a few days previously, there had been two deaths, the patient's sister having succumbed to septic pneumonia of only four days' duration, and a servant, almost simultaneously, to acute hepatitis, eventuating in peritonitis and congestion of patches of lung-tissue.

I think that I have now said sufficient respecting defective drainage to show that not only pneumonia and typhoid and other fevers, but also disease of the ear (productive of serious consequences), may be due to it.

Hæmorrhage from the ears is a symptom which may point to various diseases, as purpura, malignant small-pox, yellow fever, and suppression of menstruation.

Pus, pent up by osseous tumours, or by polypi in the meatus, is a common cause of severe headache, and may bring about very grave conditions. Of the truth of this fact, we have an example in the following case. A man, sent to me from among his out-patients by my late colleague Dr. Farquharson, was suffering from violent headache, which, before he came to the hospital, had been treated as neuralgia. The patient had spent all his savings in the purchase of vast quantities of quinine and other drugs, but without relief from his pain, which, however, speedily ceased when, by removing a large polypus, I had evacuated a considerable amount of pent up pus.

In ordinary cases of otorrhoea, where the pus is not confined by any external obstruction, headache may yet be a troublesome complication; and, in not a few instances, I believe it, in common with loss of appetite, foetor of breath, digestive disturbances, and general *malaise*, to be due to the fact that the pus, finding its way to the pharynx, is perpetually being swallowed.

Otitis interna, I am persuaded, is yearly the primary cause of many deaths, especially among children, which a *post mortem* examination reveals to have been too hastily certified as due simply to suppurative meningitis.

Acute inflammation of the drumhead and tympanum, together or separately, may produce serious complications; for instance, facial paralysis.

An illustrative case was one to which I was called some weeks since.

The patient, a young lady in the country, when at a cricket match, had caught cold in her left ear, which became very painful, and discharged pus for some days. One morning, when she seemed to be on the road to recovery, her medical attendant discovered that she had an outward squint of the left eye, with double vision and slight facial paralysis. I was then asked to see her. On examination, I found the membrana tympani very red and tumid; and, although there was now no complaint of pain, the patient's pulse was quick, and her temperature a little above the normal. An incision which I made in the membrane gave exit to a considerable quantity of blood. Further relief was afforded by leeching the following day, and the patient soon afterwards recovered. In this case, the functions of the facial nerve had no doubt been impaired, either by slight effusion of blood into its arachnoid sheath, or by extension of inflammation to the aqueduct of Fallopius.

Acute inflammation of the tympanum may lead to numerous complications, of which the most troublesome to the aurist is the chronic discharge which is likely to follow acute catarrh. Discharge from the ear is frequently neglected; and, as I have already pointed out, may lead to disturbance of the general health, owing to the swallowing of pus. I have seen many a miserable-looking, sickly, dyspeptic, and stunted child recover health and strength and spirits, on the employment of local, in addition to constitutional, treatment for its otorrhœa. It is true that some patients are cured solely by attention to cleanliness, and by resort to tonics and fresh air; but the majority require the adoption of some further means of combating their otorrhœa, which, unless arrested, may lead to serious consequences: for do we not see cases of polypus, caries of the temporal bone, meningitis, gangrene of the lung, and other ills—a direct result of such neglect?

It is impossible, in the time at my command, for me to deal at length with any one form of ear-disease; but I may briefly allude to the subject of mastoid abscess, in the treatment of which there is still much to be desired. The severe cases of abscess of the brain, of which one hears, would, I am quite sure, be far less numerous, were mastoid disease treated by early operative measures. In two cases out of fifty of perforation of the mastoid bone, lately put on record by Schwartz (*Boston Medical Journal*, June 8th, 1882), there was extensive necrosis, but no external manifestation of its existence; although, in one of the patients, the outer table of the skull had been eaten through. That nearly all these cases recovered, can only have been due to the promptness with which they were subjected to operative treatment. At the London Fever Hospital, my colleague (Mr. A. J. Pepper) has lately communicated to me the following very interesting case of mastoid abscess.

J. A., aged 22, was admitted at the London Fever Hospital, April 24th, 1882, for measles. On May 3rd, she had pain in the right ear, for which she was leeches three times (3rd, 4th, and 18th). On the 4th, there was a purulent discharge, and swelling and tenderness over the mastoid. On the 26th, the swelling had much increased; she had severe and constant headache, and a dazed expression, but no facial paralysis. Having trephined over the mastoid, and let out a few drops of pus, Mr. Pepper proceeded to carefully break open the cells with a director—thus setting free successive drops, as if from a honeycomb. Outside the mastoid, there was no pus. After the insertion of a drainage-tube, the wound was dressed with carbolic lint; subsequently, it was kept open by means of a little ball of wire, placed within the mastoid and secured in position by a loop over the ear. The immediate effect of the operation was to remove the earache; and, by July 27th, the discharge had ceased, the wound had healed, and the patient went out well, the hearing almost unimpaired.

The next case which I wish to read illustrates several important points.

J. L., domestic servant, was admitted to St. Mary's Hospital, June 22nd, 1882. From the age of eleven, she had suffered from discharge from the ears, latterly with febrile symptoms. There was œdema of the left neck, and the course of the left internal jugular vein was marked by hardness and tenderness. There was a small mucous polypus in the left meatus, and both membranes were perforated. The temperature varied from 100° to 103° Fahr., and the entry of air over the left back was deficient. On the 23rd, I removed the polypus, and applied leeches. The temperature varied; she became very weak, and died on the 29th. At the *post mortem* examination on July 1st, a decoloured adherent clot was found in the left lateral sinus, extending thence to the superior vena cava. There was dead bone over an area of one-sixth of an inch in diameter in the wall of the groove, and the tympanum contained caseous *débris* and a small sequestrum, composed chiefly of its roof. Necrosis had taken place around the left external semicircular canal and the cochlea, and the right tympanum yielded muco-pus. The right pleural cavity contained offensive pus, which had caused collapse of the lung; and there was commencing pleurisy at the base of the left lung, in the lower lobe of which were two or three gangrenous spots.

The probable sequence of events in this case was: (1) chronic disease of the left tympanum; (2) inflammation of the right ear (possibly sympathetic); (3) inflammation extending from the necrosed bone to the left lateral sinus, followed by thrombosis in it and the left internal jugular, with hectic fever from absorption of septic matter by the blood; (4) breaking down of the clot, causing pulmonary embolism, gangrene of the lung, and septic empyema. No symptoms of brain-disease were observed during life; and it is interesting that, as late as thirty-six hours before death, no sign of the empyema was detectable. It appears likely that, had the temporal sequestrum been detected and removed before the onset of phlebitis, death might have been averted.

Here we have a case of death from disease of the lung, ensuing on what, I dare say, at first appeared to be a harmless discharge from the ear. In the next two cases, we find the same result (death) from a like cause, but other organs being affected. The first is an instance of purulent cerebro-spinal meningitis after otorrhœa.

A. L., aged 19, was admitted on April 15th, 1881. He was a well nourished man of good family history, and had enjoyed excellent health till three years ago, when he suffered from otorrhœa for some months; it gave him no trouble till January 1881, when he suffered for five weeks from enteric fever. On his recovery, his hearing was much worse, and he had slight discharge also in the left ear. This ceased about three weeks prior to admission, when he began to have severe headache and photophobia. On admission, the pain was chiefly along the spine. His face was anxious; his tongue dry and brown; his abdomen tender. He lay with the head retracted, the legs semiflexed, and attempts to straighten them caused great pain in the back. The optic discs were swollen, deep pink in colour; the arteries were small; no exudation. Pulse 64. The urine was of specific gravity 1022. Morphine injections were required frequently for relief of the pain. On April 22nd, he had a rigor at 9 A.M., very severe, lasting about an hour, followed by repeated attacks of pain in the spine and legs. At 4.40 he was delirious, and crying out; pulse 96, temperature 104.2. On the 23rd, pulse 126. There was slight internal strabismus of the right eye. On the 24th, he was delirious, shivering occasionally, and twitching his hands very much; and there was ptosis on the right side, and the squint was more marked. There was no facial paralysis. Sordes appeared on the lips, and he died comatose on April 27th.

At the *post mortem* examination, the brain weighed fifty-one ounces. The base was covered with a thick layer of lymph, which extended along the Sylvian fissures, and surrounded the middle meningeal arteries. Here and there on the hemispheres were localised patches of suppuration, entirely meningeal. The vertebral column was healthy. The spinal cord was bathed in pus. The cervical enlargement and the lumbar were of normal consistence; but in the dorsal region it was appreciably softened and much congested, though no hæmorrhages were present. The left tympanum contained inspissated pus, and the membrane was perforated; but there was no necrosis of the bones, and no apparent track of extension of inflammation.

In this case, the ear-disease, which was originally of slight intensity, appears to have been lighted up by the attack of enteric fever. Meningitis is a very rare complication of enteric fever, and in this case there was a distinct interval of apparent good health between the illness and the onset of the cerebro-spinal symptoms. During this period, the discharge from the ear continued, and, when it ceased, the patient began to suffer from headache and pain in the back. Though no actual continuity of disease was made out at the necropsy, there can be little doubt that the otitis was the immediate cause of the meningitis.

The insidiousness with which cerebellar abscess may be produced by ear-disease is well shown in the case of S. T., a hospital outpatient, who came to me on March 23rd, 1882, complaining of the return of an otorrhœa, which had troubled him some years previously. After little more than a week's treatment, he suddenly died, having presented no symptoms besides the discharge, except slight pain behind the left ear. The *post mortem* examination manifested the presence of yellowish puro-lymph beneath the arachnoid, most abundant over the left temporo-sphenoidal lobe, and an abscess-cavity about the size of a walnut, filled with pus, between the left lateral lobe of the cerebellum and the dura mater of the temporal bone. The temporal bone was much necrosed; and a vein in its roof, filled with blackish soft clot, was observed to pass directly into the diseased cerebellum.

Just a few words on a totally different subject before I close my address. I wish to direct your attention to the ravages which acquired syphilis may commit upon the ear, as shown in a case which I have latterly had the opportunity of observing. I need not remind you that impairment or loss of hearing is much more commonly the result of the congenital than of the acquired disease. J. McC. was an out-patient under my care on June 2nd, but was admitted as an in-

patient on June 5th, 1882. He gave a history of syphilis six years previously, followed in two years by violent pain in the head during six months, and, about Christmas 1881, by temporary deafness in the left ear. Seven weeks before admission, he began to suffer from deafness, which, in a fortnight, became absolute, and was accompanied by fits described as being of an epileptiform character. There was right facial paralysis, with numbness in the right fourth and fifth fingers, to which pain extended from the right mastoid region; the grasp of the right hand was also impaired. The sense of smell was absent, though pungent odours were perceived, and excited sneezing. The patient complained of a sensation as if his legs were giving way under him. He was given iodide of potassium, gradually increased up to three grains four times a day. The facial paralysis subsided under this treatment, but the deafness still remains.

We have here a history and train of symptoms indicative of syphilitic disease (pachymeningitis) becoming apparently localised in the posterior fossa of the skull, and affecting the two auditory nerves. The paresis of the right hand points to damage in the cortical arm-centre; and, though extension of the disease has been checked by treatment, the results of injury to nerve-cells and fibres still persist.

A question on which I should like the opinion of the Section, is the degree of efficacy of large doses of iodide of potassium in syphilitic diseases of the internal ear. I cannot at present say much in their favour; but one case of some interest under my care, now taking a drachm thrice daily, was at one time absolutely deaf, and is at length beginning to hear slightly with one ear.

There are many other subjects which I might with propriety have introduced into this paper; for example, malignant disease, the relation of othæmatoma to insanity, deaf-mutism, deafness with chronic interstitial keratitis from syphilis, the various other affections of the ear connected with syphilis, gout, albuminuria, diabetes, cerebral tumours, and bilious attacks, and a host of nervous disorders, such as deafness from pregnancy, from concussion—as in artillerymen and boiler-makers—and from sudden nervous shocks, as on the reception of distressing news; also auditory vertigo and tinnitus aurium. But some of them, no doubt, will be discussed during the carrying out of the second half of our programme.*

THE CONNECTION BETWEEN DISEASES OF THE EAR AND GENERAL MEDICINE.

Read in the Section of Otology at the Annual Meeting of the British Medical Association in Worcester, August 1882.

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ALTHOUGH I was one of those who signed the memorial for a Section of Otology, I am not at all sure that we, as specialists, are acting for the best by separating ourselves from the general body of our professional brethren, and that each class may not lose by our isolation. However that may be, there can be no doubt that the authorities administering the affairs of this Section have done very wisely in suggesting as the first subject for consideration, after our formation, one which at once implies that the otologist of to-day desires to take by no means a narrow view of his subject, but recognises that it is but a branch of the one great tree of general medicine and surgery; and if our discussion should tend, as I think it will, to show that a large number of ear-diseases are, even if unconnected with constitutional diseases, less amenable to general than to local measures, we shall at any rate have demonstrated that we have carefully considered the question in its broadest as well as in its more special aspect. Moreover, such a manifestation is undoubtedly required; for not even in the classic works of Wilde or Toynbee, much less in modern textbooks, is the influence of the general health on ear-disease more than alluded to. Harvey alone, a practitioner of considerable repute with his patients, wrote and insisted on the importance of this matter both from a diagnostic and a therapeutic point of view.

In examining into the question now under discussion, it may be well to first draw attention to a few points which are always taken note of by the general observer. They are sex, age, occupation, temperament, and family predisposition.

As to sex, I have gone through the list of patients applying at the hospital with which I am connected, to the extent of some thousands, and also through my private note-books, containing particulars of some few hundreds; and I find that ear-disease of all kinds occurs in excess in the female sex over the male, in the proportion of almost exactly three to two. I am not aware that this has been stated before, and it

may be capable of correction, as are all statistics, and of many explanations; but I give the fact, *quantum valeat*, and it appears to be not without interest. As to age, I do not think much information can here be gained. A large proportion of cases of ear-disease are of a suppurative character, and they occur, for the most part, in childhood, in connection, first, with a strumous diathesis, and then as a sequel of various exanthemata—mumps, whooping-cough, or other diseases of childhood. A large number of cases of Eustachian obstruction, or I might rather say of rarification of the air in the tympanic cavity, occur in childhood; but puberty also brings to both sexes an access of many cases of ear-disease. Adolescence, with thoughtless exposure to injurious atmospheric conditions, and other hygienic faults, has also its influence, and in the case of women, amenorrhœa, dysmenorrhœa, menorrhagia, child-bearing, and overlactation, on the etiology of ear-disease; and so as life goes on, overwork or overplay causing anæmia; over-feeding and little exercise causing congestion; the change of life in women, and the decline of life in both, all act as factors in producing deafness and other symptoms of auditory derangement. Nor do I think we can say that occupation largely influences ear-disease. It occurs in those who stay at home, and in those who travel; to the student and to the athlete, to the careful as to the reckless, to the married and unmarried.

In temperament, without having taken notes on this point, I am inclined to the belief that ear-disease, especially in its most common form of progressive non-suppurative catarrh, is more common in those of fair complexion and lymphatic temperament, than in those known as of the bilio-sanguineous disposition; but I make this statement merely as suggestive, not as dogmatic. Family predisposition has been long recognised as an important factor in the production of ear-disease, but its knowledge has been, in my opinion, greatly misused; for instead of saying, as we commonly hear taught, "It is of no use trying to do anything in this case, for there is deafness in the family", we should, on the other hand, urge that it is just on this account that early treatment should be the more vigorously adopted, with a view of achieving what is but too often, alas! the limit of our skill—an arrest of onward progress of disease towards complete deafness, even where we cannot actually regain a measure of lost hearing power. All present will have had cases with very well defined evidence of family predisposition, but I would ask to be allowed to quote one from my own practice; first, because it is of some historic interest, as illustrating how infirmities are quite as often inherited as excellences; and, secondly, to show that not every case of deafness occurring in a deaf family is necessarily an incurable case, or necessarily, indeed, of that nature which has been generally associated with hereditary deafness.

I was consulted, early in 1880, by Mrs. S. S., aged 28, on account of deafness, which had supervened on an attack of measles and of scarlet fever, the first nine years, the second eight years, previously. The deafness was noticed only after the second illness. There had never been any discharge from the ears. She had been married three years and a half, and had two children, with a result of an increase of deafness after each confinement. The patient was of fair complexion, and pale, of feeble circulation, and subject to rheumatism, with constipation, heartburn, and flatulence. It would be out of place to describe all the local symptoms and appearances; but it may be stated that the tuning-fork was heard best on the vertex, that the vibrations could be perceived until cessation on the right side, and with only slightly diminished normal duration on the left, nor was there other evidence of nerve-impairment. The maternal grandfather and grandmother of this lady were first cousins, and respectively nephew and niece of the first President of the Royal Academy. They had four children: one son was deaf; and four daughters, three of whom, including the mother of my patient, were also deaf. I may here say that I saw and examined this lady—the mother—and that there was decided dullness of auditory nerve-sensibility, but no symptoms of what we now recognise as auditory nerve-deafness. My patient was one of ten, three of whom died in infancy. Two brothers and two sisters—that is, five in all of the surviving seven—were deaf; and in each the first appearance of deafness had occurred after scarlatina, which had attacked them at various ages, between those of ten and twenty years. In no case had there been suppuration, or, at least, perforation. This lady was improved somewhat by treatment of her general health, and by persevering inflation, but retrograded at her next confinement, and lapsed into apathy. One sister—of dark complexion, by-the-by—had evident nerve-impairment, and was extremely deaf. In another, fair, stout, and lymphatic, the deafness was due to thickening of membrane, made worse by frequent attacks of eczema auris. She improved greatly under treatment. Both brothers had ordinary chronic middle-ear deafness, and both improved, one very markedly, under treatment. In all, the moral effect of the family failing had a very depressing

* The discussion on this paper will be found on the next page.