

will consent to be kept quiet, and take low diet, she may live a considerable time—that is, considerable compared with the time she would live, if she were to walk about.

The other two patients admitted were men; one laboured under peritonitis, the other under acute rheumatism.

PRACTICAL OBSERVATIONS ON THE
PATHOLOGY AND TREATMENT
OF
DEAFNESS.

No. IV.

By JOHN FOSBROKE, M.D., *Cheltenham.*

IN cases of deafness, with obstruction of the Eustachian tube, the indistinctness of sounds and noises in the deaf ear are increased apparently by the impulse of the air on the membrane of the tympanum being rendered more forcible from without, than when that membrane is counterpoised by the free access of air from the mouth of the Eustachian tube to the cavity of the tympanum. But the continuance of this noise after the external auditory canal is plugged, shows that it is owing but partially to this cause.

Incapability of distending the membrane of the tympanum by closing the mouth and nostrils, and expiring forcibly, is no certain proof of permanent obstruction of the Eustachian tube, where that difficulty has occurred, and also where plugging of the meatus externus has rendered the patient completely deaf, I have passed properly-curved probes with the greatest facility from the nostrils into the cavity of the tympanum. When the Eustachian tube is clear, the deaf certainly hear best through the mouth, perhaps because the cavern of the mouth and the nasal cavities cause the sounds to come louder from that direction. But, also, inability to hear through the mouth is not always a proof of *permanent* obstruction of the Eustachian tube, for I passed the probes into the middle cavity of the ears of a gentleman, whose membrana tympani Sir A. Cooper had punctured, and who “could not always hear a watch when placed in his mouth.” A patient may be able to perflate the tympanum at one time, and not at another. Dry and fine weather is most favourable for it.

Apparent obstruction of the Eustachian tube occurs very frequently in those cases of deafness which are connected with that state of chronic disease which consists in continued and vitiated discharges of mucus from the mucous membrane of the bowels,

with irregular determinations of blood to different parts of the body, and disordered nervous action. In these cases it is probable that an over-secretion of mucus from reciprocal diseased action of the mucous membrane lining the tube of Eustachius may often preclude the approach of sounds to the internal ear by that avenue. I do not think that the deafness in these cases is always caused by local obstruction, for there is a sense of tumult in the head, a confused and muddled state of mind, and concomitant noise in the ears. I published the following remarks five years ago on this subject:—“But in different individuals the hearing in this disease (the morbus mucosus) is powerfully acute, whilst in the advanced stages some are almost deaf. The deafness is not always caused, as one would at first suppose, by obstruction in consequence of mucus being accumulated in the Eustachian tubes, or of occlusion of their pharyngeal apertures, for they have been pervious to inflation, when, in the more advanced stages of the disease, the acoustic sense was greatly impaired. According to observation, both sight and hearing shall be preternaturally acute, or preternaturally dull in this disease, at different periods of its advancement. When the eyes are morbidly susceptible, and noise and tumult in the head are complained of, the hearing at such times is more dull and confused. It must be remembered that in diseases which involve the whole constitution, as well as particular parts, of the human fabric, the ears, as possessing an eminent degree of organic sensibility, take a prominent place as to original susceptibility.”*

It is a curious circumstance, that in these mucous cases, those nerves are chiefly, indeed primarily, affected, which arise from and about the tuber annulare, viz., the fifth pair, which supplies the appendages of the eyes, nose, teeth, and parts about the face, and the eighth and ninth (portio mollis and dura), the nerves of the parts of hearing and expression.

In 1822, Mr. M., a general practitioner, came to Dr. Jenner on his own account, having the mucous disease with deafness. The deafness could not be traced to obstruction of the Eustachian tube, or of the meatus auditorius, by inference from symptoms or the usual tests. He had a painful and permanent headach, great dejection of mind, torpor of habit, and every symptom incident to those who pass vitiated mucus from the bowels. His mind had been under the influence of the depressing passions some years. I attribute his deafness to the diminution of energy which the sense of hearing, as well as the brain and nervous system, had

* Pathology of the Kidneys, p. 107. 1825.

undergone in consequence. *August, 1822*, I took these notes just as they stand, two years before I paid any particular attention to the subject of deafness. In June, 1825, Mr. M. called on me at Cheltenham; his hearing and constitution had improved, but the *susurrus aurium* continued.

There appears to be a morbid condition of the Eustachian tube of the same nature, which is purely local. In such cases I have found the Eustachian tube sometimes closed, sometimes open, sometimes extremely irritable when touched with a probe, at others possessing little sensibility. The more irritable the membrane may be, so much the greater is the sense of cold and torpor of hearing. In such cases the membrane is lax and thickened, and clammy with an albuminous mucus, as far as I can judge from the introduction of the probe, and from observing this condition of the soft palate at the same time. Dr. Parry describes a species of deafness which he thinks cannot be imputed to torpor of the nervous system, the hearing being at one time dull, at another too acute.* This species is connected with a morbid condition of the Eustachian tube. "There is a common species of deafness," says he, "of which Dr. James Sims has spoken, if not first, at least best, in an excellent memoir read before the Medical Society of Edinburgh. Like many other disorders of circulation, it is usually called nervous. It, however, seems evidently to arise from obstruction of the Eustachian tube. Accordingly, when it is simply of this kind, the patient can hear well, when the tube is distended by strong blowing, with the nose, mouth, and cheeks closely shut. He can usually also, at all times, hear acute sounds, but not the more grave ones. In this case, there is so far from being any real paralysis of the nerves that acute or very low sounds are even painful, and what demonstrates that this is a disease of increased vascular fulness, or impetus, † and not of nervous sensibility, is, that I have known it first removed on the occurrence, in the respective

* After hysteria, phrenitis, and some other diseases, the hearing is often too acute; the nerve is sometimes morbidly sensible after apoplectic affections, which appears to denote too great fulness of the vessels of the head. A case of morbid irritability of the auditory nerve following an apoplectic seizure, is related in the London Medical and Physical Journal, about 1822. The late Dr. Jenner was similarly affected after his first apoplectic seizure, and incapable of bearing any "clicking," or sharp sounds without flushing of face, determination to the head, and great pain, for he sometimes put both his hands up to his head and rushed out of the room. It ceased a few days before his death, which arose from a second apoplectic seizure; whilst sitting in his chair and shaving.

† Here, and in the remainder of the sentence, Dr. P. introduces his favourite doctrine, but I am not convinced that the facts cannot be as well explained in another way.

examples, of hepatitis and hemiplegia, and *return as those complaints were diminished;*" [These facts agree with a case of deafness disappearing on the occurrence of a thoracic affection, which I have already related, and are instances of John Hunter's doctrine, that "two actions," &c.—F.]—"secondly, entirely cease in two instances, forty-eight hours before death; and thirdly, completely cured for more than a year of the remainder of life by an accidental hæmorrhage from the humeral artery. This species of deafness is very commonly produced by colds in the head, in which it is evidently owing to a *communication of disorder from the mouth and nose* along the membrane, which is continued into the Eustachian tube. It is probable, however, that, on many occasions of deafness, *the malady is not confined to this part*; but it is worthy of inquiry, whether, in such cases, the effect does not originate in a similar excessive impulse of blood acting on some other essential part of the organ of hearing."

Diminution of nervous influence, and loss of animal heat, are observed, in cases of DEAFNESS WITHOUT DISCHARGE, in the tissues which line the Eustachian tubes, as well as in those of the external auditory passage. At the same time, the Eustachian tube may be excessively irritable to the touch, and more irritable on one side than the other. Obstruction of the Eustachian tube rarely occurs unconnected with other causes of deafness. M. Lallemand describes otorrhœa of the Eustachian tube as the most rare and insidious variety of inflammation of the ear with discharges. Dull pain in the aural region, fixed or shifting, constant or intermitting, *tinnitus aurium*, in a buzzing or cascade-like form; hardness of hearing, increased to complete deafness, succeeded by sudden recovery, the two last phenomena being ascribed to the accumulation and discharge of matter from the tympanum; a bitter taste, fœtid breath, nausea, vomiting, expectoration, or violent coughing up of fœtid matter; distaste of food, loss of appetite, emaciation and despondency, caries of the bones, cerebral affection, and death, mark the progress of the affection. The disease is generally ascribed to the stomach and lungs, and treated accordingly without effect.

The ceruminous glands in deafness are generally torpid, or cease entirely to secrete, and, sometimes, instead of healthy wax, produce a thin fluid. The suspension of their secretion is said to cause deafness. I have known audition become gradually impaired at the same time that the wax became very hard, nodulated, and small in quantity, whilst there was, at the same time, some chronic soreness of throat, and pain in the course of the Eustachian tube.

In many cases I have seen these glands much irritated by any mechanical stimulus; hence Professor Macartney conceives it best to let them alone when diseased. It is supposed that the secretion of these glands is intended to prevent the intrusion and poison of insects. I do not believe the assertion, for numbers of persons whom I have known having dry porches experienced no such accidents. It is more probable that the moisture has something to do with the conduct of sound; in function, as well in health as in disease, they appear to act in concert with the other parts of the organ.

Destruction of the membrane of the tympanum causes different degrees of deafness, which are incurable. Cold air and moisture obtaining, in consequence, ready admission into the delicate interior structure of the ear, render the individual more obnoxious to catarrhs. The preservation of the internal ear from the effects of cold is a most important use of this intercepting membrane. Deafness, when owing to this injury, may exist without noise in the head, except during the catarrh. Mr. Cruikshanks observes, that when the membrane is perforated the hearing is irrecoverably lost, for the air, getting through the breach, so affects the delicate periosteum and muscles of the bones and the pulpy sacs, that the parts are rendered unfit to perform their functions, though in the same page he admits that the membrane has been destroyed, and that the small bones have come away without destroying the sense. I have seen three cases in which it was destroyed by external violence or disease: all these parties were deaf. A girl of the name of Drum, æt. 24, became deaf at the age of four years, in consequence of violent cold and sore throat. The catarrh was attended with a discharge from one of the ears, which—she could not say. She had always noise in the ears when labouring under a cold. The membrane of the tympanum had an old ulcerated opening, through which, when affected with catarrh, she inspired, but not at other times. On the right side the Eustachian tube was permeable, and the m. t. uninjured. Both ears secreted healthy cerum. Cold injections caused violent heat and noise in the ears. Alteratives, counter-irritants, stimulants of ammonia and volatile oil, in short every means failed to benefit her hearing. A boy was brought to me from Presburgh, near Cheltenham, who had produced his deafness by partial destruction of the m. t. by introducing substances into the external porch, and exciting inflammation and ulceration.

Patients frequently observe that the external auditory tube becomes contracted in deafness. It seems certainly to undergo some change of form, to wind in a more

narrow and angular course towards the m. t. These changes may increase the reflection of sound from angle to angle, and concentrate the impressions into a narrower focus at the drum. Ambrose Parè has a poetical theory of the passage of sound as affected by collision. "Such a collision is spread over the air as the water, which, by the gliding touch of a stone, produces many circles and rings, one as it were rising from another. So as in rivulets running in a narrow channel, the water stricken, and, as it were, beaten back in its course against broken, craggy, and steep rocks, whirls about into many turnings, the collision of the beaten air flies back divers ways from acute and hollow roofed places."

NEW MINERAL RESIN.

THE last Number of *Brewster's Edinburgh Journal*, contains an interesting notice by Mr. J. F. W. Johnstone, of Portobello, of a substance which he describes as a new mineral resin, and which occurs amongst the refuse of an old lead mine in Northumberland. The author describes the mineral in the following terms:—

"*Colour*.—Externally, red of various shades, black, and sometimes pale yellow, approaching to the colour of amber. Internally, red, or brownish-red, except in the yellow varieties, and by transmitted light of a brilliant deep-red colour. It yields to the knife, but is hard, brittle, and has a bright glassy small conchoidal fracture. The fragments are transparent, and the fractured surfaces exhibit a pale greenish tinge (an opalescence), which becomes more decided after the lapse of a few weeks; the transparency at the same time diminishing in a slight degree. The specific gravity varies from 1.16 to 1.54 in the dark-red varieties. In the flame of a candle it burns with considerable smoke, and an aromatic, slightly empyreumatic, odour, leaving a small coaly residuum. On the sand bath, in a close tube, it gives off a small quantity of a transparent, colourless, and highly volatile naphtha, having a peculiar odour, resembling that of some kinds of strong cheese. Heated to 400°, it does not melt, but assumes a bright black colour, though, when broken into fragments, it still transmits a rich red light. Over a spirit-lamp it fuses, gives off a colourless naphtha, a red empyreumatic oil, and leaves much charcoal. It is insoluble in water, and is very slightly acted on by alcohol or ether. By hot concentrated nitric acid, it is slowly, but entirely dissolved. When rubbed, it exhibits strong negative electricity. Dr. Brewster informs me, that, like amber, it has no crystalline struc-

ture. This substance occurs along with brown spar (carbonate of iron), and carbonate of lime, either in the form of little drops on the surface of the brown spar, where cavities occur in the vein, or in the midst of the massive brown spar, as if it formed part of the solid stone. In one specimen it rests upon carbonate of lime, containing crystals of Galena, and is covered with a mass of brown spar."

On the probable origin of this substance, Mr. Johnston offers some plausible speculations favourable to the Huttonian or pyrogenic theory concerning the formation of primary strata. He then observes:

"The only mineral resin resembling the present, of which I have seen any description, is the mineral copal, or Highgate resin, found at Highgate in blue clay. The latter, however, melted by heat into a limpid fluid, a character which shows it to differ very much from that above-described.

"The vegetable origin of amber seems now established beyond dispute. The collection of embalmed insects belonging to the University of Upsala, or the equally splendid private collection exhibited by Dr. Berendt, of Dantzick, at the late meeting in Hamburg, appearing sufficient of themselves to convince the most sceptical. Yet it is not surprising that the occurrence of resinous substances like the foregoing, whose origin is incontrovertibly mineral, should be sufficient to lend plausibility to the opinion, that amber is of mineral origin also."

We believe the generic term of bitumen would be more appropriate to this substance than that of resin, inasmuch as one essential character of the latter class of compounds, viz. solubility in alcohol, is here absent.

DREADFUL RAVAGES OF THE CHOLERA MORBUS IN ASTRACHAN.

THOUGH the cholera had made its appearance at the mouth of the Volga about six weeks ago, it was not till Friday the 30th July, that its being actually in the city was ascertained. No sooner was this made known to the public authorities, than a council was summoned to make the necessary arrangements for giving all possible medical aid, and directions to such as might be seized with it. Papers were instantly printed and circulated, with a statement of the precautions to be taken for avoiding the distemper, and a sketch of the means of cure to be employed in the first instance, till medical assistance could be procured, with a list of the names and places of residence of all the physicians in town: and that no delay might be occasioned among the poor who had not servants at command, the sentinels, who are stationed night and day in all

parts of the city, were instructed instantly to report the name and residence of the individuals seized with it, to the police officers of the different quarters of the town, who, on their part, had orders to send the physician in waiting at the office, or if absent to find one. At first it was whispered that the doctors and the council were making a greater noise about the cholera than the case demanded; but a few days showed that it was not by any means a needless alarm that had been sounded. In two or three days accounts poured in upon us from all quarters, from which it appeared that the disease was of a much more malignant and alarming nature than *the cholera in 1823*. Some were cut off almost instantaneously; many in the course of two hours; and with the exception of such as had been instantly bled, it was said that most of those who had been seized with it expired. On Wednesday Aug. 4, being the sixth day of the cholera, it made its appearance in the Mission House, in the case of our friend Mr. Becker; on calling, I found him in great agony, often convulsed in a most extraordinary manner; he was seized about four o'clock, and in a few minutes past ten he expired. The next of our friends who fell a victim to the cholera, was Mrs. J.—. She was seized about nine o'clock on Saturday evening, and died in about twenty-four hours. Her husband, Mr. L.— (Serepta commissioner), died in the course of three or four days after, on his way to Serepta Colony, to which he was conducting his three motherless children; his death took place on the side of the public road, three stages from Astrachan. On Monday morning Mr. J. S., who is now recovered, was reported to us as having been seized. I instantly called down, and was happy to find that having been bled with success, and taken other precautions, his situation was not peculiarly alarming. About mid-day the governor's son was seized with it, and expired before the close of day. The death of the governor's son on Monday was followed by that of the governor himself of the same disease on Saturday.

Having thus given you a sketch of the progress of the cholera in the circle of our English and German friends, &c., in their individual or family capacities, permit me to bring the scene before you as a whole, which the progress of the cholera presented to our view. In general, business of every kind was at a stand; the bank suspended its operations; in the bazaar not a whisper was to be heard, and scarcely a face to be seen; even the cabacks (tipping houses) were abandoned, and a general gloom was spread over the countenances of the few solitary individuals that were to be seen walking through the streets. This gloom was heightened by their attitude—

moving pensively along with handkerchiefs at their noses, perfumed with or containing camphor, to counteract the infection with which, it was supposed by medical gentlemen, the air was in a manner saturated. According to the best accounts, when the disease was at its height, the number of funerals on one particular day was 500, and on another day 480. More than a thousand were buried about that time in a large sand-pit for want of graves, which could not be got dug so fast as required, nor at a rate that the poor could afford to pay for them, twenty-five rubles being demanded for each. Such a time we have never seen, nor do I suppose that such a time was ever before seen in Astrachan. On the roads leading to the burial-grounds which are out of the city scarcely anything was to be seen from morning to night but funeral processions. During its progress more than sixty officers, from the governor of the city, the commander of the fleet, &c. downwards, fell victims to it, and the number of the dead of all descriptions in the city alone (the resident population of which is not more than 40,000), is calculated at about 6000 individuals, besides 1000, or, according to some, nearly 2000 of those from the interior of Russia, that were passing the summer here, and fled to the towns and villages up the Volga, in the hopes of escaping it. Of these, above forty were found lying on the road side *unburied* on the first three stages, till notice was given of the circumstance to the commanding officer of the district. But the greater part of the fugitives who fell victims to it, met their fate on the Volga. Nearly 10,000, it is said, left the city in great confusion, and being ill-provided with food and other necessaries, were reduced to such indescribable hardships on their passage up the river, that Calmucks, on its banks, would have no intercourse with them. It is said that one or more of the crews of these boats perished entirely from the cholera, and having none left to man them, were at last carried down the stream with the residue of the dead on board, and that in other cases the ravages were dreadful. From the above statements it would seem that a sixth or seventh part of the population of Astrachan, chiefly adults, have been cut off by the cholera; and it is supposed that the one half of the adults have been more or less affected by it. Some children that were seized with it died; but the proportion of these in comparison of adults was small. Mr. J. S.—'s youngest child died of it, after having been abandoned by its nurse. The cholera is now as far up the Volga as Saratoff, and as far west as Kieb.—*Abridged from the Scot. Mis. and Phil. Register.*

ON THE ASSOCIATION OF MEDICAL PRACTITIONERS AT NEWCASTLE, AND THE ESTABLISHMENT OF SCALES OF MEDICAL FEES.

To the Editor of THE LANCET.

SIR,—When I invoked the assistance of your pen in support of the objects of the Association of General Practitioners established in this place, you will readily believe that I anticipated not your opposition instead of your support; that I little expected you to designate the principle of our proceedings unsound, and to impute to us the very essence of monopoly. I have to thank you, however, for the readiness with which you have given a place in your Journal to the communication I sent you; and though I hope, with some confidence, that on the profession generally it will make a very different impression from that expressed by yourself, yet knowing as I do the influence of your opinions on many of its members, I feel myself called upon to endeavour, either to alter your view of the subject by farther explanation, or to neutralise the effect it is calculated to produce in preventing the adoption of the course recommended by other practitioners throughout the kingdom. It does appear to me strange to accuse the Association of monopoly, when, by one of its fundamental laws, every legal practitioner is not only admissible, but is actually invited to become a member; and surely you would not recommend us to invite the St. John Longs of the neighbourhood to join our fraternity. Where then is the monopoly? It is as extended as the numbers of practitioners at least (and they are certainly not a few), and I am at a loss to know how its basis can be more extensive or more liberal; it is neither our wish to limit the existing number of practitioners nor to prevent their increase. On the score of monopoly then I am able to see no want of soundness in the principle. But you say, "It is further unsound, in its being an endeavour to estimate the value of mental acquirement and skill by the gross inefficient test of a metallic standard." Base, indeed, would be the attempt (materialist as I may be) to bring the intellectual exertions of a high and noble mind into comparison with the glittering dross which is too frequently the effective stimulus to human efforts, and which has unfortunately become the medium of compensation for all human services. It is indeed a subject of deep regret that it should be so; and of yet deeper regret that medical practitioners, however exalted may be their principles of action—however generous and philanthropic, and disinterested their desire to save life and to relieve suffering—that those humane and enlightened