minute cysts on the surface. The cortices were slightly atrophied, and the convexities of both kidneys were coarsely granular. The right one had some irregular fibrous thickening of the capsule; the capsules separated in fragments, but were only a little adherent. There was no lardaceous change. The spleen was small and firm; it weighed 4 ounces. The liver weighed $5\frac{3}{4}$ ounces; it was slightly hobnailed on the upper surface, and very slightly cirrhotic on the lower surface. The prevailing hue of the sections was yellow. The liver was not lardaceous; and although, under the microscope, some of its cells were rather too fatty, there was no well-marked fatty disease of it.

It may be added that, under microscopical examination, both the cells and the minute vessels of several of the cerebral convolutions exhibited morbid changes. Of the minute vessels, some showed hyperplasia of the nuclei of their walls, others had irregular molecular deposits here and there in their walls, and others had a hyaline appearance. In the medulla oblongata, beneath the floor of the fourth ventricle, the walls of the minute vessels were irregularly thickened at points by finely molecular deposits in or upon them. The nerve-cells also had undergone some granular degeneration.

CASE II. Chronic Insanity: Phthisis Pulmonalis with Bronchitis: Cardiac Change: Cheyne-Stokes Respiration.—T. D., of the 8th Regiment, died in September 1876, at the age of 44. He was an old inmate, the subject of chronic mania with periods of mental depression, but latterly without active mental symptoms. At the age of 43, he became affected with latent pulmonary phthisis, and died about a year afterwards. During the last few months of life, he had a soft and rapid pulse, usually a little above 100 in the minute, with dyspnoea, and a bluish colour and coldness of the face and hands. It was only when bronchitis supervened that any cough or expectoration was noticeable. The heart-sounds were comparatively feeble, the impulse was only felt distinctly at the epigastrium, and the first sound was heard more clearly there than elsewhere. The patient rested on the right side. Generalised bronchitis came on four weeks before death. Towards the close of life, slight pneumonia and pleurisy attacked the base of the right lung; tuberculosis spread in other parts; emaciation progressed; the dyspnoea was considerable; the purplish lividity and chilliness of the face and hands increased; perspiration was free; the pulse continued slightly above 100; and the respiration varied from 32 to 37 per minute. Nine days before death, and thenceforward until that took place, the Cheyne-Stokes respiration was noticed. Respiration was laboured, mainly thoracic, rather loud, increasing in depth, loudness, and frequency in a crescendo movement; then gradually diminishing in these respects, until it ceased altogether for a period, after which the cycle was renewed. The only coincident abnormality made note of in the characters of the heart-sounds was their weakness.

Abstract of Necropsy.—The consistence of the brain was slightly diminished; the fornix was soft; the membranes were slightly oedematous. There was full vascularity of the brain-substance. The cerebrum weighed $42\frac{1}{4}$ ounces; the cerebellum, $5\frac{1}{4}$; the pons Varolii and medulla oblongata, 1 ounce. The *Heart* weighed $12\frac{3}{4}$ ounces; it was flabby, dilated; its apex was situated somewhat below and to the right of the usual site. The muscular substance of the heart, examined with the microscope, showed some granulo-fatty degeneration, and the transverse striæ had not their normal distinctness. All the cavities contained black clot, and by it the right cavities of the heart and the large veins emptying themselves into both auricles were gorged. The external fat covering the right side of the heart was only in moderate amount. The pulmonary semilunar valves were thickened and unduly opaque, and the corpus Arantii of one was greatly hypertrophied. The aortic semilunar valves were thickened and unduly opaque; the mitral valves were large and atheromatous; there was incipient atheroma in the arch of the aorta. *Lungs.* The right weighed $45\frac{1}{2}$ ounces; the left 33 ounces. On both lungs were old close pleuritic adhesions and some leathery bands. The caseous changes were widely spread in the left lung, and at points had led to small excavations; while there was some cirrhosis in the upper part. In the right lung were scattered tubercles, some of which were in process of softening; and at the base were recent red hepatisation and some flakes of recently effused lymph on the pleura. In the central part of this lung, a pink and white soft material with fibrous stroma showed the characters of ordinary tubercle under the microscope. In both lungs, the bronchi were markedly hyperæmic, were slightly dilated, and contained secretion. Of the kidneys, each weighed six ounces and was slightly granular at one extremity, the capsule being also slightly adherent. The spleen was small, firm; and the liver nutmeggy. There were seven gall-stones in the gall-bladder.

CASE III.—General Paralysis of the Insane: Successive Attacks of Left Hemiplegia: Apoplectic and Epileptiform Seizures, followed by temporary Right Hemiplegia and by Cheyne-Stokes's Respiration:

Hypostatic Pneumonia.—H. B., of the 4th Battalion, Rifle Brigade, died at the (stated) age of twenty-eight. This case of general paresis was of four years' total duration, and the physical signs were well marked. At first, the patient was elated and optimistic; later on, he was morose, querulous, foul-mouthed, and at times confused, void of expression, and stupid. Without entering into details, it may be said that, fourteen months before death, he had an attack of acute herpes zoster over the front of the left thigh, groin, and upper gluteal region; and that he had temporary attacks of left hemiplegia, without convulsions, on several occasions—eleven, eight, six, and four months before death. Ten weeks before death, he was flushed, feverish, and there was slight pneumonic mischief. Several days afterwards, an apoplectic seizure occurred, and in a few hours was followed by three severe epileptiform convulsions, beginning in the right upper extremity. Right hemiplegia succeeded these fits, which were treated by enemata of chloral-hydrate. On the next day, the right hemiplegia was much less; the face and ears were flushed; the right conjunctiva almost insensitive. There were also muco-purulent expectoration, scattered pneumonic consolidation, and numerous *râles*, especially over the right lung. Temperature 101.2 deg.; pulse 114 , full, soft; respiration 25 per minute, possessing the Cheyne-Stokes characters, though not quite in a perfect typical form. The period of apnoea occupied one-third of the cycle; then two-thirds of it were occupied by respirations which increased in depth, loudness, and frequency, and then diminished; but each period of respiration included, on the average, six respirations only. After a severe paroxysm of coughing, the rhythm was temporarily modified, and there was for the time a regular ascending and descending rhythm of greater and less frequency, depth, fulness, and loudness of respiration, without a period of true apnoea. He was now, and for five days in all, supported entirely by nutritive enemata, epileptiform seizures recurring on several occasions. The right hemiplegia cleared up; but the left hemiplegia returned, and was persistent and increasing from this time until death; while the left limbs became extended and rigid, and the right limbs had sudden and irregular increments of their weakness. Biebs also appeared on the right hand, and slight sores from pressure on the right foot.

After death, were found adhesions and other changes in the membranes and substance of the brain, common in general paralysis, but which, in this case, affected the right much more than the left hemisphere, and were differently distributed on the two sides. The brain and meninges were pale. Some induration of the white matter, and much slighter induration of grey matter, existed, neither at all universal, and both most marked in the right frontal lobe. The basal ganglia were much alike on the two sides, but were not plump. The right hemisphere weighed $23\frac{3}{4}$ ounces less than the left; the right weighed $15\frac{1}{2}$ ounces; the left, $17\frac{3}{4}$; the cerebellum, $5\frac{3}{4}$; the pons Varolii and medulla oblongata, $1\frac{1}{2}$ ounces. The spinal cord was rather soft and pale; its membranes were thickened, and beneath them were hæmorrhagic masses. Scattered hypostatic pneumonia was found in both lungs, the pulmonary tissue being also broken down here and there, especially at the right apex, which was excavated, but there was no tubercle. The heart weighed $9\frac{1}{4}$ ounces; it was healthy, save that its muscular tissue was rather dull in hue and slightly friable, and that there were a few small points of atheroma in the left coronary artery. The aorta seemed to be perfectly healthy, there being in it only a few small spots of atheroma just above the sinuses of Valsalva.

ON A CASE OF TYMPANIC ABSCESS HAVING AN UNUSUAL TERMINATION.

By J. MOORHEAD, M.A., M.D.,
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THE case of tympanic abscess which I propose to narrate will, I trust, be deemed worthy of notice by the members of the Association, especially those in general practice, who, being familiar with the usual mode of termination of such cases—namely, perforation of the membrana tympani and otorrhœa—are likely to overlook such a rare contingency as presented itself in this instance.

On April 24th, 1878, a young gentleman aged 15 came under my care suffering from acute pain in the left ear. There was considerable constitutional disturbance, the temperature being 102 deg. and the pulse 120 . The pain, which extended over the temple and left side of the head, was greatly aggravated during the night, and was attended

* This modification of the respiratory rhythm was also seen in another general paralytic under my care two days before death. He was then partially comatose, and had dextral hemiplegia, following right unilateral convulsions. Besides this, modified Cheyne-Stokes' respiration was seen in the fifth case, also a general paralytic.

with restlessness and want of sleep. Hearing in that ear was impaired, the watch being heard at only four or six inches distance. There was no swelling or redness of the meatus; but the membrana tympani was opaque.

The following remedies were prescribed: leeches to be applied around the ear; liquid extract of belladonna to be introduced into the meatus; a saline mixture containing iodide and bromide of potassium; a sedative almost nightly; and a scidlitz draught every alternate morning.

Under this treatment, the symptoms gradually abated until May 1st, when the pulse, which the previous day had been 92, fell to 76, and the temperature became normal; hearing, however, being *totally lost*, as the watch was not heard even in contact with the ear. This sudden change was attributed to suppuration having occurred in the tympanum. On May 2nd, the breath became offensive, and continued so for many days; the fetor being supposed to be due to disordered digestion, as the tongue was deeply furred. Soon afterwards, the meatus became red and tumid, while the membrana tympani presented a sodden reddish appearance. There was no otorrhoea. On the cessation of the fetor, the Eustachian tube was found to be occluded.

On May 20th, as no improvement had occurred in the hearing, and no discharge of any kind had taken place through the meatus, my patient proceeded to the metropolis to procure the advice of a specialist. While there, he was several times examined by Mr. Field, Aural Surgeon to St. Mary's Hospital, who, after careful investigation, arrived at the opinion that the discharge from the tympanic cavity had on May 2nd burst through the Eustachian tube into the throat, thus causing the foetid breath which at that date became so striking a feature of the case. Although the tube was at first found occluded, an entrance into the tympanum was subsequently effected by means of the catheter, and the cavity was washed out with a solution of iodide of potassium (ten grains to one ounce). Mr. Field ordered a few more leeches in front of the tragus, and linimentum iodi to be freely applied over the mastoid; while he prescribed a mixture containing quinine, opium, and nuxvomica.

On my patient's return from town on May 28th, though the fetor of the breath was absent and the Eustachian tube pervious, there was no appreciable amendment of hearing, and the membrana tympani was still opaque. The treatment recommended was, however, advised to be continued a few weeks longer.

On June 19th, a crisis supervened; the patient, who during the few days previous had been dull and confused in his manner, having suddenly heard a loud noise like an explosion in the affected ear, and having immediately afterwards found his hearing restored. The breath again became fetid for a short time, indicating the exit of pus from the tympanic cavity through the Eustachian tube. When seen the following day, the patient could hear the watch distinctly thirteen inches from the left ear. The membrana tympani, which had previously been opaque, had become translucent, and revealed the handle of the malleus; it had, indeed, almost regained its normal structure. This fact, it is believed, affords the key to the explanation of the phenomenon, as the tympanic membranes, having their natural tenuity restored, were now capable, on the removal of the pent-up fluid, of freely vibrating in unison with the sonorous modulations of air.

REMARKS.—The foregoing case presents a few points of special interest and importance. In the first place, it affords irrefragable proof that pus formed in the tympanum in rare instances spontaneously discharges itself into the throat through the Eustachian tube. Secondly, it shows that, in cases of acute otitis, suppuration may be accurately diagnosed, as indicated by the sudden fall of the pulse and temperature to the normal standard, coupled with total abolition of hearing. Thirdly, it suggests that the occurrence of fetor in the breath shortly after the phenomena just referred to have presented themselves may be regarded as suspicious, if not pathognomonic, of discharge of pus through the Eustachian tube into the pharynx.

Although the tube in the case under consideration at first clearly gave exit to the discharge, it afterwards became obstructed, as revealed on examination; and hence the difficulty of correctly interpreting the phenomena.

As there was originally some doubt felt as to Mr. Field's diagnosis, the termination of the case, I need hardly say, completely dissipated it, forming, as it did, a most striking *experimentum crucis*.

The danger to life which occasionally arises from abscess of the middle ear by extension to the brain, though not dwelt upon in this brief paper—being beyond its scope—was, however, not overlooked in the treatment of the case. Such a grave complication was, I believe, averted mainly through the persistent use of iodide of potassium, combined with frequent and active purgation.

In conclusion, it may be thrown out as a suggestion for considera-

tion, whether it might not be desirable, in all cases of otitis, after pus has undoubtedly formed in the tympanic cavity, to endeavour by catheterism to promote its discharge through that which is obviously its natural channel—the Eustachian tube.

THERAPEUTIC MEMORANDA.

SODA TREATMENT OF BURNS AND SCALDS.

In the following three cases, I had the opportunity of comparing the results obtained under this treatment with those of Carron-oil.

CASE I.—On March 7th, I was called to a little boy, aged eighteen months, who had upset a large quantity of very hot tea over himself, inflicting a severe scald upon the front of his neck, chest, and abdomen, as far as the umbilicus. I found the child screaming in agony, and swathed in rags soaked in a sticky slimy compound of treacle, flour, etc. As soon as the little patient was thoroughly cleansed from this mess, a lotion, composed of a saturated solution of carbonate of soda in camphorated water, was applied on a piece of lint large enough to cover the entire scalded surface. The first effect of this application was, that the child, who had been screaming ever since the accident happened, in a short time fell asleep, and slept for an hour or two. The relief from pain was most marked, and such as I had never seen under the Carron-oil treatment. During the following six weeks, the only application was this lotion, the lint never being allowed to become dry, and being changed when the discharge (which was very slight for so large a wound) showed itself through it. At the end of that time, this extensive surface had healed, though there was considerable sloughing of the skin. It was noticed that there was very little tendency to the formation of "proud flesh", the granulations seeming to have been kept down by some slight caustic action of the soda.

CASE II.—A boy aged 5 scalded his hand and arm nearly up to the elbow with the water from a kettle. His jacket protected his arm to some extent, though several blisters had formed on it and on the back of the hand. The soda lotion was applied as in the last case, and the layer of lint next the skin was left undisturbed for a week. The relief from pain was speedy and permanent, and, when the lint was removed, it was found that the greater portion of the skin was almost of a natural colour. A few patches of skin on the back of the hand sloughed, but the wound healed kindly without the use of very painful astringents, leaving very little scar and almost no contraction.

CASE III.—In marked contrast to these two cases was that of a boy aged 8, who, in December 1877, fell with one leg into a boiler, inflicting a severe scald of the foot and leg, nearly up to the knee. In this case, the Carron-oil treatment was adopted, followed by zinc ointment and astringent lotions. The pain throughout was intense; large portions of the skin sloughed, the granulations grew rapidly, requiring the frequent application of caustics or strong astringent lotions; the discharge was profuse, and the wound healed very slowly, leaving a hard contracted scar.

REMARKS.—The advantages which the soda treatment possesses over the Carron-oil are these.

1. In its cleanliness, there is no comparison between the two; for, while the oil is all that is disagreeable and spoils everything it touches, to say nothing of its smell and general unpleasantness, on the other hand, the lotion is clean and pleasant to work with, and much more agreeable in every way both for patient and attendants.
2. It is also less troublesome, as it requires to be changed less frequently.
3. It seems to prevent the too rapid growth of the granulations.
4. It is, I think, cheaper.
5. But its greatest advantage is the relief of the acute pain caused by a recent scald.

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ACTION OF HYOSCYAMINE.

VERY recently, I had occasion to give hyoscyamine, in the hope of inducing sleep, in a case in which there had been great sleeplessness for two or three weeks; and as the effects of the drug were, in my opinion, somewhat remarkable, I think a record of them may be of interest to the profession. The dose given was one-sixth of a grain; and, as the patient was my own wife, I had an opportunity of observing the effects from beginning to end. After the medicine had been taken about an hour, a sensation of swimming in the head was complained of, and very soon afterwards there was an excited and rapid action of the heart, quickly followed by excessive restlessness and constant tossing about in bed; and then, when she tried to get out of bed, she could not stand. When the medicine had been taken for about two hours, she became