which, when coming suddenly and unexpectedly, cause, not infrequently, paralysis of the auditory branch of the seventh pair of nerves, with total loss of hearing. When reposing in its ordinary state of tranquillity, affected only by the vibrations of sound such as take place in the ordinary course of familiar conversation, a certain proportion of atmospheric pressure becomes necessary to sustain its functions, in transmitting those softer and more pleasing modifications of sound to the brain; and it is either to the absence of this support from closure of the Eustachian tube, or to chronic thickening of the external layer of the tympanum, from inflammation and continued purulent discharge, that deafness is owing, in nine cases out of ten. This will often yield to the well-directed efforts of an intelligent physician.

It is from the combined influence of the tensor and stapedius muscles, with a due support from the admission of air into the cavity of the tympanum, that the sense of hearing is balanced to the nicest possible degree in animals endowed with it most acutely. The power of the tensor muscle, in such cases, is more than ordinarily under the control of the will, by which the adjustment of the membrane is rendered so perfect, as to convey the softest and gentlest vibrations to the centre of innervation, and give the necessary signal of alarm. So in man, the action of this condition of the tensor muscle becomes, by practice, much improved, depending, in fact, upon a compromise between the antagonistic functions of the tensor and stapedius muscles, and constituting what is called an educated ear, which musicians and vocalists of celebrity enjoy to an extraordinary degree of perfection.

In the louder degrees of sound, the tympanum, under the influence of the tensor and stapedius muscles, is rendered exceedingly tense, by which the functions of the auditory nerve are protected from lesions consequent upon concussions of sound. As the iris excludes, by its contractions, the ingress of a superabundance of luminous rays to the posterior chamber of the eye, which would inconveniently affect the functions of the retina, so does the tensor muscle of the ear, under loud concussions of sound, by its action on the tympanum, protect the auditory branch of the seventh pair of nerves from injury.

CASE OF EXOSTOSIS OF THE HUMERUS.

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CHARLES P., æt. 25, came under treatment December 3d, 1857. He is a small, spare-built man, of lymphatic temperament; has hereditary predisposition to consumption, several generations of his family having fallen victims to phthisis. About eight years ago, a small bony tumor appeared upon his right humerus, just above the

insertion of the great pectoral muscle. The tumor rapidly increased in size—caries supervened, and spicula of bone were extruded for several months. The wound, however, at length healed, the arm regained its original strength, and nothing but an extensive cicatrix remained to indicate the severity of the disease. But last August, after an interval of seven years of perfect health, he experienced severe paroxysms of pain in his right arm, so acute as to render him incapable of motion of any kind—and at the same time another bony mass appeared just below the insertion of the deltoid. An unfavorable prognosis of the case was given by his physician, and he was led to prepare for an extensive necrosis of the tumor. About the middle of November, he determined to consult a female spirit medium, who has effected several marvellous cures in this vicinity. This medial lady, influenced by the ghost of Dr. Nathan Smith—*venerabile nomen*—promised to dislodge the peccant tumor, and restore him to vigorous health in a fortnight. But in spite of her benevolent designs and poultices—her mesmeric passes and heavenly influences—the tumor obstinately refused to be conjured out of existence, and continued to augment in bulk.

About six weeks ago, becoming dissatisfied with the treatment he was being subjected to, he came under my care. At that time the exostosis measured four inches in length, with a broad, well-defined base, resembling in appearance the contracted bellies of the anterior humeral muscles. He suffered extremely from lancinating pains in the tumor—his arm had lost its strength, and felt, as he expressed it, as if it were dropping off. My impression was, that so large a cancellous tumor, under the peculiar circumstances of the case, would be destroyed by caries; and without much hope of promoting the absorption of so large a mass of bone, I advised cold douches, the frequent application of ung. iodini, with the internal use of iodide of potassium to the extent of a drachm and a half daily in syr. sarsaparillæ comp. Under this treatment, the tumor began to diminish in size, the acute pains he had suffered so long left him, and, after the lapse of six weeks, his arm had nearly regained its natural shape and strength, so that he told me he could “lift a stove or handle a hammer as well as he could six months ago.”

There seem to be two points of special interest in this case:—First, the rapid disappearance of so large an exostosis, when the peculiar history of the case seemed to warrant a less favorable prognosis; second, the large amount of iodine taken into the system (amounting to four ounces of the ointment and more than a pound of the iodide of potassium) not only with positive benefit, but without pytalism, soreness of the fauces, or any of the unpleasant effects which usually follow the exhibition of large doses of this medicine.

February, 1858.