give assistance to the general practitioners not to enter into competition with them in any shape or form. The qualifications of the specialist should include: (1) A knowledge of the more important modern languages. (2) A post-graduate position as hospital intern. (3) A year or more in general practice. (4) An internship (of at least eighteen months) if the choice be oto-laryngology. (5) A year of post-graduate instruction upon (*a*) clinical diagnosis and treatment; (*b*) functional tests; (*c*) bedside work on surgical cases; (*d*) surgical practice on the cadaver; (*e*) minor operations in the out-patients' ward; (*f*) demonstrations and lectures on normal and pathological anatomy, histology, and physiology; (*g*) diagnosis and pathology of labyrinth diseases. Finally, the specialist must become attached to a hospital. Wishart says that few universities are yet equipped to give adequate preparation for specialising. In the future specialisation will not be allowed without such university post-graduate training. We have too many so-called "specialists"—the damaged fruit of commercial post-graduate colleges, which are managed by a board of stockholders for the sake of the "almighty dollar." A man after getting his degree, and with his sheepskin still damp from the signatures of the faculty members, at once goes abroad for special studies, to Paris, London, Vienna, where he takes a few special courses by privat docents, given in a poorly understood foreign language. Six or twelve months later he arrives home - his friends having already been informed by numerous letters of his wonderful attainments abroad—armed with instruments of the latest pattern, declaiming about the most recent methods of treatment of which he is now the only possessor.—J. S. FRASER.

NOISE AND SHELL-SHOCK.

"It is often the case that sudden and unexpected or loud noises aggravate those suffering from shell-shock, and it is interesting in this connection that Homer associated fear with sounds, for he stated, 'terror and consternation at that sound, the mind of Priam felt; erect his hair, bristled his limbs, and with amaze he stood motionless.' The reason for this association is probably connected with the fact that the sense of hearing is the most highly evolutionised, and therefore the least stable of the senses and is thus the most easily disturbed. Also, it may be due in part to the fact that the auditory nerve is closely related to the vestibular nerve, which is again connected with the static sense and with the control of movement. The vestibular nerves, though giving rise to no sensations, are nevertheless closely connected at their roots with the roots of the motor-oculi nerves as well as with other motor centres in the medulla and cerebellum. The auditory nerves are thus correlated and continuously associated with movements, yet there is no knowledge in consciousness that there is a connection between the eyes, the bodily movements, and hearing" (Sir R. ARMSTRONG-JONES, *St. Bartholomew's Hospital Journal*, July, 1917, p. 97).

It is interesting to remember in connection with these remarks that the auditory (acoustic) and vestibular nerves are associated in their end-organs, and not in their central nervous connections. The presumption, therefore, would be that sound of certain kinds may directly stimulate the vestibular end-organs in the semi-circular canals, and in favour of this supposition is the fact that in certain hyperæsthetic states loud sounds may induce vertigo in the patient.

It is possible, in other words, that the *alarm* (using that phrase in its widest psychological meaning) induced by a loud sound may be partly due to impressions conveyed not only through the cochlea, but also through the semi-circular canals,

It is difficult, indeed, in view of the close union of the vestibular and hearing end-organs, to escape from the idea that inasmuch as they lie in close proximity to each other, and indeed in contact with the same body of fluid, so their functions must be similarly united at times.—DAN MCKENZIE.

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