peutics. They at least show more clearly the reasons for the treatment that is customary. We have seen that the process of aural vertigo is a treble one, and that there are variations in the relative degree of its elements. One is the labyrinthine derangement, the second is the disturbance of the equilibrial centre, and the third is the process in the cerebral cortex thereby induced.

For the changes in the internal ear, as you are aware, little can be done by direct treatment. The labyrinth is beyond the range of aural surgery. When its affection is secondary to middle-ear disease, the treatment of this is obviously the first consideration, but for the internal ear little can be done locally beyond the customary, and by no means useless, counter-irritation. It is always important to discern whether any diathetic state underlies the labyrinthine changes, and to treat it, in the hope of at least staying their further increase. A gouty condition, especially that which is inherited, is often to be traced. We know how frequently this induces changes in the fibrous tissues to which the membranous labyrinth belongs. Structural changes that have taken place we cannot hope to remove, and the tinnitus thus produced, although often lessened by treatment, seldom ceases, except in the rare cases in which the disease is so progressive as to abolish all aural function.

The study of the symptoms has brought prominently before us the part taken by the central structures in determining the occurrence and character of the attacks of vertigo, and it is on these that most influence can be exerted. We have seen that the suddenness of onset must be referred to the disturbance of the stability of the equilibrial centre, and bromides certainly enable us to lessen the readiness with which it is deranged, to reduce the frequency of the attacks, and also their severity. Several of the cases I have mentioned afford evidence of this effect, and in some, arrest continued as long as treatment was maintained. We may, at least provisionally, conceive the process as an upward "discharge," acting on the cerebral cortex, inducing in it motor and sensory activity, by which consciousness of the features of the attack arises. Although the assumed upward discharge of the equilibrial centre may differ in character from the sudden "discharge" of epilepsy, we can understand that it may be amenable to the same influence. The effect of bromide seems sometimes to be increased by sedative agents, such as gelsemium and hyoscyne.

In general, this treatment is effective in proportion to the degree in which the symptoms seem determined by the central instability, as indicated by the uniformity of the features of the attacks. It is least in the cases in which the aural symptoms present evidence of steady increase, and the attacks are variable in character.

My chief object has been to impress on you the features presented by these borderline cases of vertigo which resemble epilepsy, and to enable you, by the examples put before you, to discern the differences, and also the probable relation, between the symptoms of the two diseases. Yet a careful consideration of them, briefly as the cases are described, may subserve another object. Giddiness is a common symptom, usually passed as such without endeavour to learn its features or discover its cause. It would have been easy thus to dismiss the symptom in most of the cases I have described. They only yielded their instructive detail to careful investigation, and they should teach us to "call nothing common," since within that which seems to be so may lie much that is unfamiliar, much that will well reward our careful study.

REFERENCES.

¹ *Epilepsy*, second edition, p. 234. ² *Ibid.*, p. 73.

A NOTE ON THE EFFECT OF BODILY EXERTION ON THE OPSONIC INDEX OF HEALTHY PERSONS.

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IN the BRITISH MEDICAL JOURNAL for November 25th, 1905, p. 1396, Drs. Meakin and Wheeler published a paper on a series of observations on the variation of the opsonic index after exercise of patients suffering from pulmonary tuberculosis. All, with one exception, showed a lowered opsonic index after walking. It is, of course,

possible that some, if not the whole, of the variation might occur in healthy persons. Taking this into consideration, and having the opportunity of examining the blood of several men training for a boat race, I determined to put the matter to a preliminary test. The subjects might be taken as good types of men in normal health, and the exercise of rowing is rightly called exertion.

As the index had previously been studied in exercised tuberculous patients, I used the tubercle bacillus as my indicator. Samples of the bloods were collected in the early morning, before any exercise had been taken, and again in the afternoon, when the men had returned from their day's outing. With a view to eliminating any possible effect from the intake of food, the samples were taken, as far as could be assured, before meals. This precaution I was led to adopt from the observation of a slight fall in the opsonic index of my control subject after a meal. Wright's method of preparation of emulsion and dilution of serum were followed as closely as possible; and the same control subject was used almost throughout the experiments. I may add that the serum of my control subject, as also that of myself, which was used on several occasions, has throughout a considerable number of experiments given very consistent results.

In one case the blood was examined eleven times before exercise and nine times after exercise, and the indices averaged:

				O.I.
Before exercise	...	...	...	1.32
After exercise	...	...	...	1.17

In another case the blood was examined five times before and five times after exercise, with average of indices:

				O.I.
Before exercise	...	...	...	1.08
After exercise	...	...	...	0.78

The "before exercise" index is, I think, probably rather lower than it should be, for the reason that on one or two occasions the morning samples of blood were not mixed immediately on arrival at the laboratory; whereas the serum of the control subject was taken in every case just prior to the experiment, and was consequently fresh, and the "after exercise" serum was never more than one hour old. If this fact were taken into consideration, we should get a larger difference between the indices before and after exercise than is recorded in the figures given above.

In two other cases the blood was examined, but not with sufficient regularity to give any reliable results. These experiments, though few in number, took a considerable time to carry out. And though, naturally, they do not settle the point raised, they afford evidence that severe exercise has some influence in lowering the opsonic index even in healthy persons, in whom, of course, there can be no question of auto-inoculation, as is claimed in the case of the tuberculous patients.

In his report on the trade of Germany, Mr. Oppenheimer, the British Consul-General for that country, gives some interesting statistics on the relative meat consumption of the Briton and Teuton. One of the most remarkable incidents of last year's record was the existence of what was practically an approximation towards a meat famine. Formerly the importation of animals into Germany was considerable. Now the free traffic in pigs from Russia, etc., is entirely forbidden, the importation of foreign cattle has practically ceased, and the duty on fresh meat has this year been raised from 17 marks per centner to 27 marks. The idea has been to encourage home production, in the belief that German agriculture could eventually succeed in producing a sufficient supply of meat for the population. This expectation has proved erroneous. The estimate has assumed a consumption of 40 kilos per head, but it seems that it amounted to as much as 50.4 kilos. This is the first year for which accurate statistics have been available, and they have revealed some curious facts as to the great differences in kind between the British and German consumption. With us the basis of meat food consists of beef, which constitutes 45.1 per cent. of the whole consumption. With veal and mutton added the figure is raised to 69.7 per cent., leaving only 30.3 for the meat from pigs. This is almost exactly one-half of what is consumed in Germany, where 60.1 per cent. of the consumption is pork, ham, bacon, etc., and only 39.9 per cent. beef and mutton. These fundamental differences, it is stated, are not exclusively to be explained by national habits, but are also dependent on prices. The Briton pays just three-fourths of the price given by the German for his meat, with the result that the latter is largely induced to use the meat of pigs.