

II.—*English Psychological Literature.*

On the Weight and Specific Gravity of the Brain. By THOMAS B. PEACOCK, M.D. Edin., F.R.C.P., Physician to S. Thomas' Hospital.

(Reprinted from the 'Transactions of the Pathological Society of London,' vol. xii, 1860-61.)

"In 1847* (says Dr. Peacock), I published a series of weights of the human brain, collected at the Royal Infirmary of Edinburgh, together with tables prepared from these observations, together with the much larger number of weights previously recorded by the late Professor John Reid.† The observations which follow have been obtained since that time, and though comparatively few in number, yet, as they are not likely to be materially increased and may furnish a useful comparison with the former, I have thought them worthy of being placed on record.‡ The observations on the specific gravity of the brain are entirely new. They were obtained by a different mode from that followed by Dr. Sankey,§ in his observations of the specific gravity of the healthy brain, and by Dr. Bucknill || in his investigation of the density of the brain of insane persons. The former of these observers ascertained the specific gravity of the different portions of the brain, by placing pieces in solution of common salt of different densities; the latter adopted a similar plan, except that he employed solutions of Epsom salts. My own observations were made by first weighing the brain and its several portions in air, and then in distilled water, and calculating the specific gravity by the common formula, viz., as the weight lost by the brain in water is to the weight in air, so is the specific gravity of distilled water (1000) to the weight required."

From a series of elaborate tables Dr. Peacock deduces the following general results:—

1. The weight of the brain in the adult male averages about forty-nine ounces avoirdupois, and ranges from about forty-two to nearly sixty ounces.

In the adult female the weight of the brain averages about forty-three ounces and a half, and ranges from thirty-nine to nearly forty-

* 'Edinburgh Monthly Journal,' vol. vii (n. s., vol. i), 1847.

† Ibid., 1843.

‡ Some of these have been previously published, but no calculations have been based upon them. ('London Journal of Medicine,' vol. i, 1851.)

§ 'Brit. and For. Med.-Chir. Review,' vol. xi, 1853, p. 240.

|| 'Lancet,' 1852, vol. ii, p. 588; and 'Brit. and For. Med.-Chir. Review,' vol. xv, p. 207.

seven ounces. The mean difference is thus about five ounces and a quarter.

In the previous series of observations,* which greatly exceeded in number that now published, the male encephalon had an average of about fifty ounces, the female of nearly forty-five ounces, or a difference of nearly five ounces and a quarter; and the range was in both sexes more extensive.

The average weight of the encephalon in these calculations corresponds, therefore, sufficiently with the previous results, as well as with those obtained by Dr. Reid, and does not differ greatly from the conclusions of Sir W. Hamilton, Dr. Sims, and Dr. Clendinning. The average weight of the brain, as deduced by these observers, ranges from forty-five ounces and three-quarters to fifty ounces and a quarter in males, and from forty-one ounces and a quarter to forty-five ounces in females. The observations of Portal, Tiedemann, M. Lelut, and M. Parchappe, are also similar.

2. The encephalon increases in weight up to adult age, and again declines in advanced life. This fact is, from their comparatively small number, less satisfactorily illustrated by the observations now published than by the previous series and by the observations of Dr. Reid and Dr. Boyd.† In a table published in 1851,‡ embracing the whole of Dr. Reid's observations and my own up to that date, it is very clearly shown that, though the brain of young persons is occasionally found to be very heavy, it does not usually obtain its full development until between twenty and thirty years of age, and undergoes a decided decline in weight in advanced life.

3. The proportion which the whole encephalon bears to the body varies greatly, according to the state of obesity or emaciation of the subject, but it generally decreases with the advance of life. In the adult male, aged from twenty-one to forty-four inclusive, the mean proportion was as 1 to 32·73, and the range from 1 to 23·5 to 1 to 37·9. In the adult female from twenty-four to forty-two years of age, the mean was 1 to 39·2, and the range 1 to 29·3, and 1 to 45·8.

4. The cerebellum bears much the same relation to the whole encephalon throughout the duration of life, at least after very early age. In the adult male it averaged 1 to 9·03, and ranged from 1 to 7·7 to 1·02. In the adult female it averaged 1 to 8·9, and ranged from 1 to 8·3 to 1 to 9·5.

5. The specific gravity of the brain in the adult is similar in the two sexes (1·036 in both the male and female); nor is there any very material difference in the density of the several portions of the encephalon; the specific gravity of the cerebellum and of the pons

* See Paper in 'Edinburgh Monthly Journal,' vol. vii, 1847.

† 'Wagner's Physiology,' by Willis, 1844, Appendix, p. 700.

‡ 'London Journal of Medicine,' vol. i.

Varolii and medulla oblongata being, however, in both sexes, somewhat greater than that of the cerebrum. The observations do not afford satisfactory information as to the influence of age on the specific gravity of the brain.

6. The observations in the weight and specific gravity of the diseased brain are too few to warrant any conclusions being deduced from them; but there can be no doubt that the brains of persons who die of inflammatory diseases of that organ, or of diseases which interfere with the free transmission of the blood through the lungs and occasion general venous congestion, are usually heavier than those of persons who die of other affections.

Notes on Hæmatoma of the External Ear in the Insane. By W. PHILLIMORE STIFF, M.B. Lond., Medical Superintendent of the County Asylum, Nottingham.

(*British Medical Journal*, 1st August, 1863.)

“The subject (says Dr. Stiff) of sanguineous cyst of the ear in the insane is of importance in a medico-legal point of view. Some writers allege that these hæmatic cysts are the result of injuries, either self-inflicted or from the employment of violence on the part of attendants and nurses. The statement of Gudden, in support of the latter view, has been most extensively circulated. He maintains that these swellings are entirely owing to mal-treatment, and points out that ears closely resembling those of the insane are not unfrequently met with amongst sculptures depicting pugilistic *athletæ*. Singularly enough, in his efforts to bring this home to the attendants, he avers that he has never met with an instance in which the injury could be traced to the patient himself, or to other patients. How this can be reconciled with the fact that patients frequently fall on the ear in fits, and are struck on it by their own associates, I am at a loss to imagine. Again, in the lately published work of Dr. Kramer, ‘*On the Aural Surgery of the Present Day*,’ the observations of that author are calculated to encourage the theory of the physical origin of the disease. He says—‘The causes of these bloody tumours on the cartilage of the ear are unknown, though we must admit that they are especially likely to be produced by violence (blows on the ear), which, perhaps, explains their more frequent occurrence on the left ear.’ (New Sydenham Society’s edition, page 41.) In the ‘*British and Foreign Medico-Chirurgical Review*’ for January, 1858, I published a short memoir on this peculiar disease, illustrated by engravings after photographs of the altered ears; and I therein advocated the contrary opinion, based upon observation and inquiry, that the lesion is not occasioned by physical