

Warren Hastings the troops on board that vessel, who behaved with so much courage, coolness, and perfect discipline under the most trying circumstances, met with great kindness and assistance from the French authorities and inhabitants. The circumstances of the *Drummond Castle* disaster are still fresh in the recollection of most people. We are glad to notice that a clock for the church tower of Molène has recently been presented, in commemoration of their charitable and friendly conduct to the curé and the rest of the French population of that place. The medals struck by order of Her Majesty to mark the memorable services of the fisher-folk at the time of the loss of the *Drummond Castle* will be presented by Sir E. Monson, the British Ambassador, on the 27th inst.

THE TURKO-GREEK FRONTIER FORCES.

No information has been published regarding the health of the Greek force. There has been a heavy fall of snow in the vicinity of Trikhala, and some of the Italian volunteers who took part in the late invasion of the Turkish frontier have been unable to endure the cold and have returned. The Turkish army is said to be healthy and fairly well provided. The number of their sick in the four divisions posted in the neighbourhood of Ellassona only amounts, it is reported, to 1 per cent. Edhem Pasha has authorised the *Times* special correspondent to contradict the rumour as to the prevalence of small-pox in his force; there is not a single case in the whole army.

The Queen has granted the under-mentioned officers Her Royal licence and authority to wear the Insignia of the Imperial Order of the Medjidieh of the Fourth Class, which has been conferred upon them in recognition of active and distinguished service before the enemy during the recent Dongola Expedition:—Surgeon-Captain Charles Stuart Spong, A.M.S., and Surgeon-Captain Henry Ernest Hill Smith, A.M.S.

Correspondence.

"Audi alteram partem."

"RIGHT-HANDEDNESS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of to-day Professor G. V. Poore remarks—"I believe that right-handedness is a necessity and depends upon the distribution of the weight of the viscera in the thorax, and that our four-limbed ancestors were right-pawed long before they began to stand on their hind-legs for oratorical or other purposes. The weight of the viscera in the left half of the thorax is considerably greater than that of those in the right half." That is so, but it is mainly in the abdomen the disturbance of equipoise arises, the liver more than balancing the cardiac preponderance on the left side, and placing the centre of gravity to the right side. For the demonstration of that, reference may be made to the evidence contained in my paper "On the Relative Weight of the Viscera on the Two Sides of the Body; and on the consequent position of the Centre of Gravity to the Right Side."<sup>1</sup> From experiments made in the dissecting room and post-mortem room, extending over several years, the conclusion reached was that the viscera give a preponderance to the right side of 22½ oz.; or, if deduction be made for the weight of food in the stomach, of 15 oz. clear preponderance on the right side, in the adult. And that is not an over-estimate. We have thus a natural physical cause. The greater weight on the right side leads to resting most on the right leg, and, from this pillar of support, we naturally use the right upper limb preferentially.

The question is—Why the hand of that side is the preferred one among all races of mankind? In view of the close correspondence in internal structure among all races of mankind, it is not easy for the anatomist to believe that the human species arose otherwise than from one centre. That may be held although the phenomena of development, the presence of rudimentary structures, and the occurrence of minor variations point to the descent of man from some previous form. On the hypothesis of unity of origin the

explanation of right-handedness is easy. One hand would naturally be fixed on; the young would be trained to use the same hand; and the influence of that on the left hemisphere of the brain would ere long give a hereditary or "instinctive" tendency to prefer the right hand. But from the beginning there has been the natural physical cause in visceral preponderance on the right side, and whatever hypothesis we adopt as to the origin of man, that cause has been in operation as a potent accompaniment of the erect posture.

The late Professor Andrew Buchanan of Glasgow had, in 1862, propounded the hypothesis of the above-mentioned physical cause, founding it on the idea that by the descent of the diaphragm in inspiration the liver is pushed to the right side, disturbing the supposed equipoise. My research, above referred to, gave his hypothesis a basis in anatomical fact, that there is naturally a considerable visceral preponderance on the right side, and the mode of operation of that physical cause is evident. To that passive physical cause would soon come to be added the effect of the greater use of the right hand on the activity of the left cerebral hemisphere; thus bringing heredity to strengthen the tendency to prefer the right hand, originating in the visceral preponderance. Thus, the greater activity, or it may be also the greater bulk, of the left hemisphere of the brain is not the primary cause, but merely the secondary or ancillary cause.

The whole question is ably discussed by my late esteemed friend, Sir Daniel Wilson,<sup>2</sup> but it will not do, as he concludes, to put aside the hypothesis of the influence of visceral preponderance from the difficulty of its not fitting every exceptional case. For example, cases of transposition of the viscera in which the person was not left-handed. We do not know what the early domestic training of these persons was, and it does not follow that the hereditary transmission to the left brain had also been transposed. No explanation that I have yet seen propounded can account satisfactorily for the occasional occurrence of instinctive and inveterate tendency to left-handedness, of which Sir Daniel Wilson himself was an example. The supposition of variation in the direction of the heredity, going to the right hemisphere instead of the left, might, however, be a satisfactory explanation. There is no accounting for some of Nature's variations. Why not the occurrence of transposition of heredity between the two sides of a bilateral organ *per se*, as well as the occurrence of transposition of unilateral organs *per se*? We can give no reasonable explanation of the latter occurrence.

The preferential use of the right hand does not, according to my observation, show itself in very young children, but only after they have assumed the erect posture and begun active exertion. Nor does it follow that the part heredity plays will operate from the very beginning. Heredities have their period in showing themselves. The visceral preponderance hypothesis applies to a much less degree in the quadruped, but leather merchants tell us that the right side of the hide is known as the "lying" side. The want of equipoise tells more in the human form, owing to the erect posture and the greater lateral development of the trunk; and the less intelligence of the quadruped dispenses with the advantage of a skilled limb. In regard to the use of our feet, relatively there is not much difference, but we use the right preferentially in vigorous acts. The right lower limb has become the stronger from being the chief pillar of support under visceral preponderance, and the reaction of the consequent greater development of the left cerebral hemisphere will come to contribute. I think most persons, who have never had an injury to either lower limb, will find that the sole of the right shoe wears before that of the left.

I am, Sirs, yours faithfully,

Edinburgh, April 10th, 1897.

J. STRUTHERS.

"THE HOSPITAL REFORM ASSOCIATION: REPORT OF THE COMMITTEE APPOINTED TO INQUIRE INTO THE WORKING OF THE SPECIAL HOSPITALS OF LONDON."

To the Editors of THE LANCET.

SIRS,—Permit me, as a hospital secretary with an experience in both general and special hospitals of close upon a quarter of a century, to make brief comment on the "Report of the Committee appointed to Inquire into the

<sup>1</sup> Edinburgh Medical Journal, 1863.

<sup>2</sup> The Right Hand: Left-Handedness, Nature Series, 1891.