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JUDICIAL EXECUTIONS.

BY JOHN J. DE ZOUCHE MARSHALL, L.R.C.S.I., ETC.

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My name having been for some time before the public in connection with the execution of criminals, I am anxious to explain to the profession the suggestions which I have had the honour of laying before Lord Aberdare's Capital Sentences Committee,¹ and also some of the evidence, as well as the recommendations contained in the report of that distinguished body; thereby submitting to the physiologists of the country an issue on which they are so competent to decide.

The subject of hanging seems never to have received any scientific attention until the year 1875, when an important meeting of the Surgical Society of Ireland was held at the College of Surgeons in Dublin, which was attended by many surgeons who had experience in gaol executions, and to which Professor Samuel Haughton submitted his famous tables, regulating the length of the drop in proportion to the weight of the criminal, founded on his mathematical principles of animal mechanics.

Up to then the "long drop," even to the extent of 17 feet, was "traditional in Irish goals," while at the same time in England the custom of Calcraft, who held office until 1874, was to allow from 2 to 2½, and never more than 3 feet drop. In Ireland, two executions took place in 1865 and 1870, the culprits being about the same weight, 11st. 6lbs., and getting the same fearful drop of 14½ feet, the knot being placed behind ("suboccipital"). The second was decapitated, and the first, nearly so, which is not surprising. That no more decapitations occurred or were reported must be due to the employment of a much thicker rope than that now in use ($\frac{7}{8}$ in.) In 1874 Marwood succeeded Calcraft, and went in for the long drop, being guided, it is supposed, by Dr. Haughton's tables, though I have not the smallest belief in an executioner being guided by anything save his own ignorant vanity, which points to himself alone as *the* authority.

The most important point in the whole proceeding is admitted by experts to be the position of the knot or eye, which has often been placed at the back of the head ("suboccipital"), but is now invariably put under the left ear ("subaural"), though every surgical work that mentions the subject states that the "submental," that under the chin, is the most deadly position. The members of Lord Aberdare's Committee seem to be in favour of this submental knot, as I intend to show, but, strange to say, "they never mention it" in the recommendations of their report, simply contenting themselves by laying down a scale of long drops to be used with the subaural knot, *plus* brute force much in excess of anything I have ever seen Berry use, even at Newgate. The Committee give as the chief reason for their attachment to the barbarous "long drop" that it is better to risk the shock to the public with painless decapitations than to risk painful suffocations. I should say "by all means," that is, if I was as strong an advocate of the total abolition of capital punishment as the noble Chairman is suspected of being, he having (it is said) reprieved every convicted murderer during his tenure of the Home Secretaryship. Now suffocation has never been proved to be so very painful, the opposite being more likely from the fact of suicides by hanging always giving themselves as short a drop as possible, and never (probably owing to the sudden supervention of apoplectic unconsciousness) rescuing themselves by the many means generally at hand. Besides, it is quite possible for insensibility from concussion to take place with suffocation, as I saw at Winchester (a culprit named Whelan, weighing thirteen stone, getting a drop of but four feet).

¹ This Committee on Capital Sentences was appointed in January, 1886, by Sir Richard A. Cross, the Home Secretary, and consisted of Lord Aberdare, G.C.B., Chairman; Sir Henry Selwin Ibbetson, Bart., M.P.; Sir Frederick Bramwell, F.R.S.; the Rev. Professor Haughton, F.R.S.; and Dr. Gover, Medical Inspector of Prisons, and having the most courteous of secretaries in Major Alten Beamish, R.E.

Dr. Carte also testifies to this possibility in paragraph 434 of the report. I admit that Berry's interpretation to the reporters of "instantaneous death" means in most cases intense and needless torture for many minutes; but this is due to excessive constriction of six inches by a thin rope into the neck, compressing the multitude of nerves against the spine, when no concussion or dislocation has rendered the wretched culprit insensible, both of which circumstances I have witnessed. If, however, the cases submitted by other surgeons were as freely dealt with as were mine, the Committee's preference for the extra long drop might seem justified; for of five cases on which I reported I gave the cause of death in three as "strangulation"—including one unconscious from shock (Whelan) one "instantaneous from dislocation" (Currell) and one "instantaneous from dislocation and fracture" (Lipski). In the report I find Currell's case tabulated with the three suffocations and Lipski left out altogether. I should state that Dr. Haughton refuses to admit the existence of insensibility except the pulse beats at the rate of 140 or more, which theory I think completely upset by Currell's case, whose pulse, notwithstanding fearful injuries to the spine from a seven-foot drop (weight 147 lbs.) beat normally at about 80 to the minute. Drs. Gilbert and Morgan, of Newgate Prison, can bear me out in stating that Currell's neck was completely dislocated, the dislocation being as easy to reproduce after the body was "cut down" as in the case of a fractured thigh. However, I can see that in the face of the new tables, it would never do to admit that a dislocation could be produced by an energy of 1,029 foot-pounds (Dr. Barr's lowest being 1,121 foot-pounds, and his highest for asphyxia being 1,106 foot-pounds), or dislocated and fractured with one of 1,120 foot-pounds (Lipski 140 lbs. \times 8), though this latter case had the *fætal* pulse of 160 for fourteen minutes.

I examined these cases digitally through the mouth, and could easily introduce the finger between the vertebræ; but this evidently does not satisfy Dr. Haughton, who must have a *post-mortem* examination made by "a skilled anatomist and not by a mere surgeon," which shows what an awkward twelfth he would make on a jury with "iliven obstinit min." As I consider the great flaw in this report to be its ignoring in its "recommendations" the "submental knot," I wish to reproduce the evidence in favour of that method, there being none against it, which can be verified by reference to the report itself, a copy of which can, I presume, be easily obtained by any member of Parliament.

Professor Haughton says (par. 1), in reference to the important meeting of surgeons in Dublin in 1875, "the results of their discussion were two. In the first place, it was recommended that the knot should be placed under the chin," and also "to diminish the drop to about 8 feet, as a rule," that is, from between 14 and 17 feet. Again (par. 7), "my opinion would be that half the decapitating energy with the knot under the chin would be necessary."

Mr. J. R. Gibson, F.R.C.S., twenty-seven years surgeon to Newgate Prison (1855-82), says (par. 220), in reply to the Chairman's question, "Have you ever considered the expediency of preferring one method of placing the knot to another?"—"The position of the knot has always been at the side. I think that if the knot could be placed in front it would secure the breaking of the neck;" and, subsequently (par. 221), "I recollect reading some case where an execution took place rather by accident than by design in that way, and it was most efficient. I can quite understand that with a knot coming under the chin a sudden jerk would be almost certain to snap the spinal column."

During my own evidence (Mr. J. de Z. Marshall, L.R.C.S.I.) (par. 385), in reference to my invention, the Chairman said, "*as far as your object goes it quite falls in with what we wished, namely, to keep the knot under the chin;*" and, later on, in reference to the risk of decapitation with the long drop, the Chairman says (p. 404), "that arises from the fact that the rope is not properly adjusted under the chin; but if you could be sure of the knot remaining here, and so jerking the head back, you would then be sure of producing the fracture" to which Dr. Haughton added "*we can produce fractures now by moderate drops, by securing the head being thrown back; this is a step in the right direction.*"

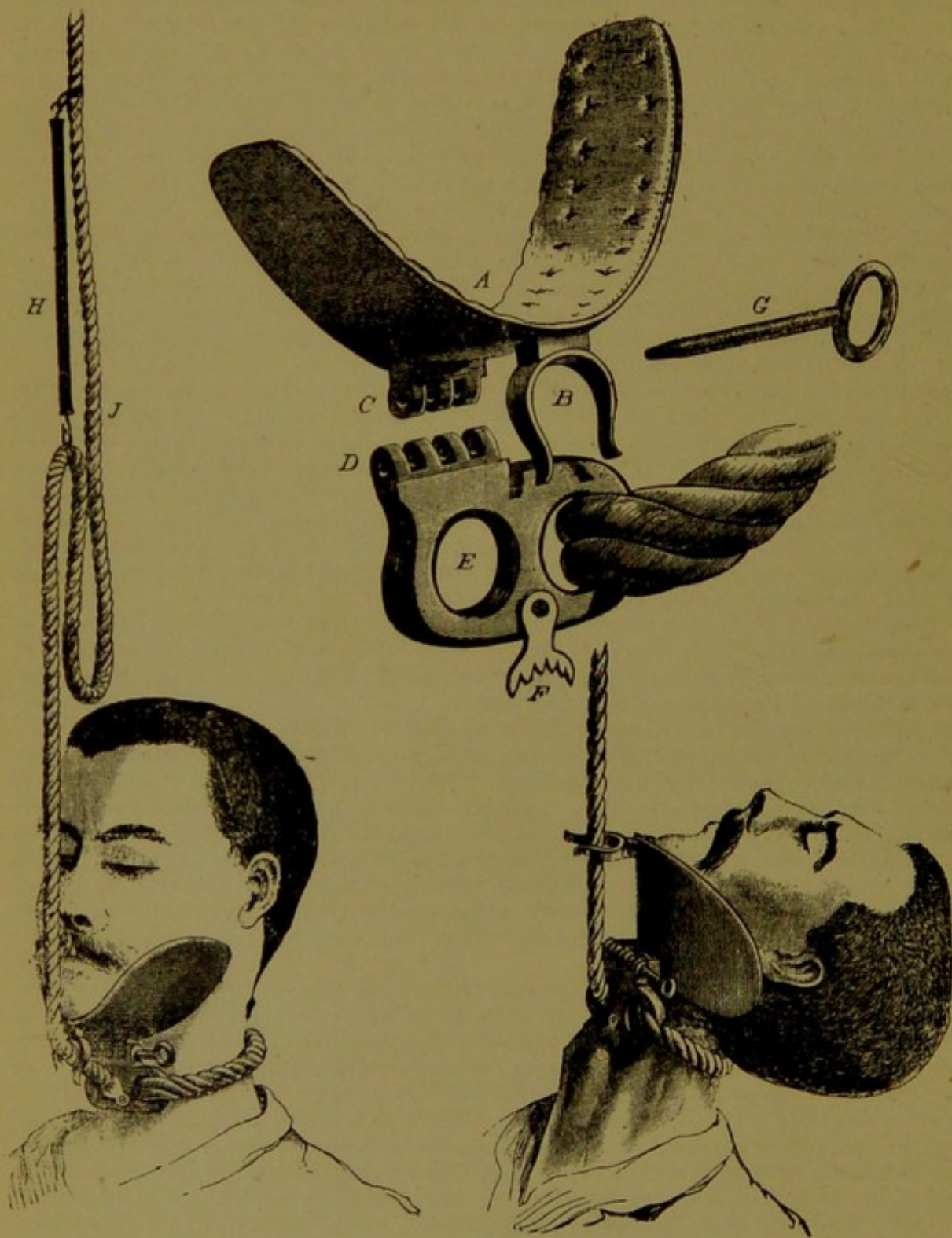
Dr. W. A. Carte, M.B., Coldstream Guards, late acting Medical Officer to one of

Her Majesty's Prisons, says (p. 419), "In the cases where I have seen the most satisfactory results, that is to say, dislocation perfectly produced, the knot has been adjusted almost under the point of the chin, just a shade to the left; that, I think, is the best position, because the shock thus falls at right angles to the spinal column, in the weakest part of the neck;" and, further on (p. 420), "I have witnessed five executions where the rope was thus adjusted, and, in four of them, death was instantaneous, owing to the complete severance of the spinal cord produced by dislocation; but, in the fifth case, there was a hitch, the rope caught under the man's elbow. That would be one of my methods of making it more certain. You must have your knot 'submental,' as we call it, that is, under the point of the chin." Later on the same witness says (p. 439), "I remember carefully contrasting that with another case, both cases being almost precisely the same, except as regards the position of the knot; in the one case it was occipital, and in the other case it was submental, death being caused by asphyxia in the former and resulting from dislocation in the latter."

Mr. James Barr, M.D., Surgeon to Her Majesty's Kirkdale Prison, Liverpool, says (p. 768): "I think it is better underneath the chin, but the position of the knot is not of so much importance as is generally supposed;" while later on he says (p. 770): "My own opinion is that it should be placed underneath the chin. There is a slight leverage action, and it also tightens better; if it is placed underneath the chin, the head is thrown so far back that the tightening takes place very quickly." Again (p. 773): "The submental knot is best?"—"Yes: and the ring should be directed forwards, so that there should be no risk of its slipping backwards to the nape of the neck." And, finally, at par. 797: "What was the position of the knot in that case in which there was separation between the fifth and sixth vertebræ?"—"The position of the knot in that case was exactly on the chin."

Long before I was aware of such overwhelming evidence from experts in favour of the submental knot, I felt instinctively as a "mere surgeon" that it must be the best, and I fully believed, until I witnessed my first execution, that it was firmly established in our prisons. I soon found, however, that no attempt was being made to carry out the sentence of death in the most humane manner, the prison surgeons taking little or no interest in the matter, and leaving everything to Berry, the hangman, whose vanity is only equalled by his ignorance. This man changes and "improves his system" where and when he likes, trusting alone in very tight pinioning, which renders movement almost impossible (the expression of the face being concealed by the white cap) and the gullibility of newspaper reporters, who base all their reports on his statements, which are often backed up (as the Committee seem well to know) by the prison surgeons, more especially, I have noticed, since I (an outsider) have dared to suggest humane improvements. Thus but very little dependence can be placed in newspaper reports.

My worst case of painful strangulation (Hewett, of Gloucester, June, 1886), after a drop of 6 feet 6 inches, was reported, as usual, "instantaneous," though the wretched man struggled in the most apparent and desperate manner for about three minutes, and his face, which I uncovered, showed unmistakable and terrible signs of torture. In a recent case some reporters said "the neck was broken by the fall," while others said that the culprit "struggled for a few minutes." I can only say that in the cases of Currell and Lipski, whose spinal cords must have been ruptured, the bodies after the drop were as absolutely free from movement as they were at the end of the prescribed hour for hanging, the action of the heart not being, of course, visible. Believing, then, that the submental knot was in vogue (before I ascertained the contrary), and meditating over a remedy for the slow and struggling deaths reported, I set myself to render more perfect and certain this submental knot system, believing, as I now do, that if the ascending rope could be maintained on or opposite the tip of the chin (the eye from which said rope makes its exit being, of course, in front of the neck), the leverage upwards and backwards would be more complete, and the process rendered absolutely certain to produce dislocation with about half the drop used with the clumsy subaural knot, which depends entirely on brute force, gathered in the fall, to produce a violent *circular chop* on the neck. My first invention with this object consisted in a leather-covered trough, which could be rapidly



A chin trough; B spring fork for ascending rope; C half hinge; D half hinge; E eyelet for noose; F toothed spring in place of leather washer to prevent noose relaxing; G centre pin to complete hinge; H india-rubber tubing to support trough to chin and keep slack rope in safety; J slack rope representing length of drop (in drawing only about eighteen inches, really three feet).

fixed on the ascending rope after the noose had been adjusted, and immediately outside the eye of that noose. It was fixed by a toothed, tubular, hinged clamp of brass, with a fly-nut, and it met with decided encouragement from the Committee. On the drop taking place, it would have given the chin a violent push *upwards and backwards*, the *impetus* of which, taken in conjunction with the sudden and forcible jerk *forwards* by the posterior segment of the noose, must, in my humble opinion, have resulted in a dislocation, with rupture of the spinal cord. At the time of my exhibiting this contrivance to the Committee, Sir Frederick Bramwell suggested that the chin trough might be fixed on the metal eye (which I had designed for my rope), to which I at the time demurred, thinking the proposition to involve a rigid angular metal structure supporting the trough, which would really protect the chin from the force of the ascending rope.

However, some time afterwards, in thinking the subject over, the "happy thought" of a hinge occurred to me, and I made drawings from which Messrs. Maw, Son, and Thompson (who had admirably carried out my first design) made the improved instrument, as shown in the drawing. The first trough had the disadvantage of affording the executioner great temptation to draw his noose excessively tight, so as to get the trough as far back as possible under the chin. The improved instrument can be safely applied without this necessity, is more simple of, and consequently quicker in, application, the noose being made with the simple eye, and the hinge completed afterwards in a second by a centre pin. The noose is prevented from opening out by means of a toothed spring, and the ascending rope easily pressed into its guide, a spring fork on the base of the trough. The whole adjustment would, with practice, take little, if any, more time than the present process, which in Currell's and Lipski's case occupied forty seconds. I may add that one of my original suggestions for the safety of the slack rope was to have it held up with a piece of light india-rubber tubing, both ends being furnished with hooks, one to be attached over head, and the other to a small ring on the rope, about eight inches from the noose. This would have the extra advantage of keeping the trough in contact with the chin, notwithstanding any movement of the latter.

I may now quote the reference to my suggestions, etc., from the report of the Committee, which is as follows:—"Dr. J. de Zouche Marshall, of Lamberhurst, who has given much consideration to this subject, and who, with praiseworthy zeal, has attended several executions lately for the purpose of noting the present practice, has recommended, as an improved mode of attaining these ends, the use of a chin trough, by which the rope might be held at the very point of the chin. He attaches great importance to the use of such an implement, as he maintains that the head can in this manner be thrown back by the rope when the fall takes place, and that dislocation can be effected with a drop of less length than is required by the existing system, and thus he believes there would be secured instant loss of consciousness, and painless death without danger of decapitation."

"The Committee have carefully considered this suggestion, but have come to the conclusion that the leverage which would be thus exerted would not be sufficient to throw the head back to an angle which in all cases would ensure the dislocation required and they are not prepared to recommend the adoption of Dr. Marshall's ingenious device of the chin trough. Impressed as they are with the necessity for the utmost simplicity of mechanism and rapidity of action in the operations connected with executions, they are averse to the use of any apparatus involving extra time in preparing the culprit, and they are of opinion that, without resorting to this mechanical contrivance, other and simpler means may be adopted for producing instantaneous loss of consciousness and death."

It will be seen from the above that one of the objections put forward against my chin trough is the insufficiency of leverage, which would prevent its throwing the head back far enough. This objection was advanced in the Committee room by Dr. Gover and Dr. Barr, who argued that anybody could throw his head back to an angle of 75°, and that I only claimed an extra 15°—to a right angle—for the chin trough. My reply to this was, and is still, that we *can* throw our heads back to a great extent, but we must do so *slowly*. I should be very sorry to throw my head

swiftly back till its own ligaments checked it, and especially if someone was ready behind to thrust the edge of the back of a chair against the top of my spine at exactly the same time; but this is precisely what my system proposes to do *with twenty times the amount of force* our own action could command, the very *impetus* conveyed to the hinged and heavy head being sufficient to jerk it irresistibly backwards, after contact with the floor of the trough had ceased, which floor by-the-bye is nearly an inch (and could be made more) from the hollow of the spring fork, representing the rigid vertical rope. I have long seen, too, that the leverage could be increased if necessary (which I doubt) by the introduction between the chin and the trough of a simple pad, while it could also be increased to almost any extent by standing the culprit sideways on the drop of a couple of feet or more out of the vertical line of the overhead attachment of the rope, the back being of course towards that point. With regard to time or delay, I can only say that the adjustment of the apparatus, though it may seem complicated to the uninitiated, would not take much if any more time than the ordinary method, there being no leather washer to adjust, which takes at least ten of the forty seconds on the drop. The time might even be reduced by having the feet strapped by one of the warders, which would give the executioner more opportunity of performing his duty with care, instead of hurrying to "make a record" for the newspapers, through which haste, according to his own admission, he nearly brought off a decapitation at Oxford Gaol quite recently.

The Committee now recommend the following scale of long drops to be authorised by the Home Office, which I very much doubt any hangman will carry out, their basis being that an energy of 1,260 foot pounds is necessary and safe wherewith to break the neck, this being, however, the exact force used in decapitating the culprit at Norwich, whose weight was 15 stone, that is 210 lbs., falling through 6 feet.

Scale of Drops recommended by the Committee.

Weight of Culprit.		Drop.		Energy developed in Foot Pounds.
Stone.	Pounds.	Feet. Inches.		
7	98	11	5	1,119
8	112	10	0	1,120
9	126	9	6	1,197
10	140	9	0	1,260
11	154	8	2	1,258
12	168	7	6	1,260
13	182	6	11	1,259
14	196	6	5	1,258
15	210	6	0	1,260
16	224	5	7	1,251
17	238	5	3	1,250
18	252	5	0	1,260
19	266	4	8	1,241
20	280	4	6	1,260

That the Committee should have found reasons for rejecting my recommendations has not altogether surprised myself, when I consider the gulf which separates me from the Prisons Board, namely the fact of my not belonging to the select brotherhood of prison surgeons; but that they could sacrifice on the altar of departmental red tape the recognised principles of the "submental knot," in order to do so after the foregoing evidence adduced in its favour is difficult to understand. Ordinary mortals, on examining the evidence taken before this two-years Committee, would

have concluded that the submental knot had been clearly proven to be the most efficient, and that so even with a less drop than required in the ordinary method by long drop, which often led to decapitations, and that as this chin trough plainly emphasised the best points of the said submental system, and could not take very much longer time, or cause any unnecessary cruelty, it would be at least advantageous to give the system and invention a fair trial. I may point out that Surgeon Carte and myself reported cases of painless death by concussion without dislocation, and I believe that a blow on the base of the skull, turned up by the chin trough to receive it, would be even more likely to produce this concussion. By the Committee's classification (page vii) of the causes of death by hanging as (a) "suffocation," (b) "shock of base of brain, with dislocation, fracture, and unconsciousness, etc., etc.," they imply that there is no possibility of shock or concussion with (a) "suffocation." If any more evidence were required to prove the deadliness of forcibly throwing back the head, I could relate the case of a plasterer who was at work on the ceiling of a low room, when his foothold giving way he fell, his chin being caught by the upper angle of a shutter which was lying open into the room. The man could not have fallen more than a couple of feet before his chin was struck upwards, which was however enough to dislocate his spine and render him a corpse.

In conclusion, I must state that I look upon the main recommendation of the Committee—the "long drop," which I consider barbarous as a system, as sure to bring about many ghastly scenes at executions, calculated more than anything to foster the sentimental agitation for the abolition of capital punishment. On the other hand, I believe that executions carried out by the means which I suggest on the principle of *arte non vi*, which governs all surgical proceedings, and properly superintended by a humane, responsible, and practised expert would prove swift, painless and merciful, an opinion for the confirmation of which I confidently look to the physiologists of the country.

