Observations

ON

HYPO-VENOSITY OF THE LOWER LIMB.*

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THE term "*hypo-venosity*" is used to express a condition of the limb in which there is a deficiency in the number and size of the veins belonging to the saphenous system; as *hyper-venosity* might be used to express the opposite condition, or that in which there is an excess in the development of these veins, even to varicosity.

The characteristic features of a *hypo-venous* limb are the reverse of those which obtain in a limb affected with *hyper-venosity*; for whereas in the latter, especially with varicosity, the limb is usually lean, and the outlines of bone, muscle, and tendon are, as a rule, sharp and well defined, in the former these outlines become gradually effaced, the skin becomes of a dusky colour, the whole limb dense or brawny, and muscular action difficult and painful.† With the exception of sometimes, it may be, a few dilated or varicose venous twigs below the ankles, or on the dorsum of the foot, there is scarcely a vein to be seen, except, as it may be, here and there as a thin blue line, which exercise or heat fails equally in filling.

The *objective* symptoms of this disease, to which its nomenclature applies, imply imperfect venosity in the subcutaneous or saphenous system of veins, with thickening or hypertrophy of the dermoid and subdermoid tissues; whilst the *subjective* indicate a state of the muscular system in which its fibres are under restraint, and their action attended with difficulty and pain.

The cases are such as these:—

1. An eminent physician broke his ribs. Slight pneumonia followed, and, six weeks afterwards, crural phlebitis, with œdema of the whole limb. He completely recovered. Two years passed away, during which time he favoured his leg, and wore an elastic bandage. He then began to complain of rheumatism of the muscles of the thigh. To this phlebitis, in one of the saphenous branches, ensued and passed away; succeeded again, at short intervals, by like attacks in different parts of the limb, excited by slight and those usually physical causes, such as rubbing a vein against some foreign body, even against the edge of his elastic stocking. The limb was constantly rested, and gradually became dense and brawny; the skin of a dusky hue. The veins on the surface gradually disappeared; locomotion became difficult and painful, and attended with cramps. There was no œdema.

2. A gentleman, aged forty-eight. The limb in this case presented the same external features. It has come on gradually, and of its origin or causes the patient could give no account. He was ordered rest and elastic stockings; but with no advantage, for the symptoms have progressed, and all traces of superficial veins have disappeared, save only a few tegumentary venules around the malleoli, which are varicose. Some weeks before I saw him he galled his leg, and an attack of phlebitis in a vein near the knee-joint ensued. There is no œdema. The gentleman is goutily disposed. The date of this case is rather more than a year.

3. A gentleman aged forty-six. In this case the attack was preceded by pains across and on either side of the patella; at times across the leg three or four inches above the ankle-joint, and at others across the dorsum of the foot. These pains set-in usually after he had gone to bed, and became more severe after entire rest in the recumbent posture. They occur also by day, but are not so constant or severe. At times he is obliged to dart suddenly from his chair or bed, and to walk about, which invariably mitigates

his discomfort. There is always some difficulty in getting his muscles into play, which exercise removes. The leg is somewhat dense; its muscular outlines are becoming effaced; the skin is slightly dusky; and, with the exception of a few small veins on the foot, the external inferior communicating vein, and a small varix on the middle and inner aspect of the thigh, there is no visible trace of a vein in the skin.

In this case the disorder commenced gradually, about six months ago; and has gradually increased, although, under advice, he has rested the limb and worn elastic stockings.

The disease appears to commence insidiously; to be advanced by rest and elastic stockings, the remedies usually employed; and, with its advance, the skin and subdermoid fat layer become dense and lose their elasticity. Degeneration and consequent incompetence of the saphenous veins and their branches appear to be associated with its progress in a manner to justify the conclusion that these are its direct or exciting cause; whilst, it is presumed, the deep trunk veins become secondarily dilated and their valves partially inert, and fatty deposit and degeneration take place in the muscles and their connective tissues.

The grounds for this inference are: first, with regard to the saphenous system, that functional deterioration of the saphenous system, through thickening, atrophy, retrecissement, or thrombus, is an occasional pathological fact; and, secondarily, with regard to the deep veins, that saphenous inefficiency, as shown by a varicose condition of the venous radicles—tegumentary or figurative varicosity,—as well as by a dusky colour of the skin, otherwise than from melasma or skleroderma, is habitually associated with, and indicates, dilatation of the deep trunk veins. These facts I observed in the course of dissections made some years since, with a view of elucidating the subject of varicosity.

Antecedent to and during the advance of this disorder, phlebitis affecting the superficial veins is a common occurrence. But it is not more than this; it is not, as in phlegmasia dolens, its cause.

Throughout the systems of organic and muscular life the venous system is double—the *superficial* and *deep*, or in other words, the *complementary* and *main*; the former playing to the latter the part of a waste-pipe, or compensating system, ready to relieve it when its vessels are unduly filled; or, to use Mr. Nunn's words, in his essay on the Venous System, "a safeguard against the contingency of the active organs of locomotion. One may compare them," continues Mr. Nunn, "to the adjustment of the chronometer, both having for their object a uniformity of performance under varying conditions." The *deep* veins—viz., those which are radically interwoven with the organs of vegetative and animal life—constitute, therefore, the *real* venous system. The current through these veins, in the healthy performance of the double circulation, is consequently maintained by a combination of forces, which, like those of the heart, are independent of the will, and continuous during rest as during periods and conditions of muscular activity. The current through the *superficial* veins, on the other hand, derives its chief importance from the fact that it receives its principal impulse, in the limbs more especially, from voluntary muscular action; so that, in case its vessels become inefficient, the surplus quantity of blood due to muscular exercise, which they should receive, is poured into the deep veins with a force that, expended on their coats, results in dilatation, valvular incapacity, muscular deterioration, and such other secondary changes in related tissues as prolonged imperfection of the functions of the venous system gives rise to.

It seems to follow, then, in relation to the class of cases to which I am referring, that the practically entire absence of the superficial or *complementary* system of veins, accompanied as it is with the particular condition of the limb that has been described, points inevitably to the *deep* venous system as that to which the symptoms are directly and principally due; and that, as the occasion for the use of the collateral veins is of constantly repeated occurrence, so these, the *deep* trunks, become passively dilated and incompetent to the discharge of the sum of the duties of both systems combined. Even in case of the ordinary competence of the saphenous systems, an excess of muscular action would be attended with like results, but for the development of those supernumerary branches which are often met with as an unusually complex network of veins, and which frequently become varicose. Hence the too common treatment of veins

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† Complications occur which apparently compromise this rule, such as varicosity in obese persons, or in persons with disease which interferes with the ordinary nutrition of the limb; but a *typical* case of varicosity, as seen in the lower limb, is usually thus characterised.

by ligature, *simply because they are varicose*, is not only a useless but a detrimental practice.

As bearing upon this subject, though somewhat discursively, I will call your attention for a few minutes to the forces by which the return of the blood from the extremity of the arterial system is effected. These forces are complex, of which the principal are alleged to be the heart's action, arterial elasticity, and the influence of the nervous system. These are coefficients, each to a certain extent only; for experiments seem to show that each may separately be cut off and yet the blood will find its way back to the heart; and, moreover, that the blood will pass from the arteries into the veins during the suspension of all these forces. Thus the blood still passes into the femoral vein although the corresponding artery is tied, its flow being only retarded; and separation of the nerves of a part from their connexion with the spinal cord does not appear materially to interrupt the same process. To complete the sum of the required forces, therefore, another has been hypothesized—a "capillary" force. Can any such force be shown to exist? or, rather, is there any other force to which the capillary system is especially subjected which will explain the phenomenon? I made the following experiment on dogs some few years since in the presence of many members of the profession. The whole of a dog's thigh was enveloped in ligature with the exception of the femoral artery; the free ingress of blood into it was thus permitted, whilst its exit was completely prevented. The result was that, after complete repletion, the whole of the saphenous system, to its minutest capillary vessels, and the deep trunk veins were filled to their utmost point of endurance, in parts even to ecchymosis, but there was no corresponding repletion of the muscular tissue. From it the blood was as much expressed as in dogs in which no such experiment had been made. It is to be observed that the *muscular capillaries* were alone emptied, and not the *tegumentary*. This, with another ascertained fact—viz., that after death the temperature of the body may rise and muscular contraction occur, giving rise to its well-known "hum" and the peculiar disposition of the minute capillaries in relation to muscular tissue (as shown by Bowman in his "Anatomy and Physiology," and in some beautiful injections by my friend Dr. Dempsey)—together go far to prove that such a force exists, and that it is in a condition of perpetual activity. It would appear, moreover, that the capillaries derive it from their connexion with muscular tissue, in which it might be supposed to be a power akin to that organic molecular action which is said, with much appearance of truth, to be an attribute of all sarcode, from that of the amœba to the higher organisms; and that to this force the venous current is mainly due;—that, in fact, as an agent in the circulating system, it is to the *capillary* very analogous in some respect to what the heart is to the *arterial* system. In illustration of this force, and its relation to and independence of the nervous system, I might refer you to the experiments of Dr. J. Reid, from which he conclusively showed that the only ascertained final causes of all endowments bestowed on nerves in relation to muscles is, not to make muscles irritable, but to subject their irritability in different ways to the domain of the acts and feelings of the mind, and, I might add, to the exigencies of the organism. I cannot but regard this force or power as inherent to each form of muscular tissue, for I think, if we take a general view of the relations of the *main* venous tubes throughout the body, with the exception of those of the brain, that their radicles, one and all, commence in muscular capillaries—some in those belonging to the striped, and others to that of the unstriped class; whilst the capillary radicles of the *complementary* veins have no such origin.

It follows that any degeneration of muscular tissue, either as a concurrent or consequent process in this disorder, must necessarily add fresh difficulties to the venous circulation, so that the sum of the final organic changes, of a pathological nature, will be thereby greatly augmented.

It will now be clear, I think, that embarrassment to the current of blood through the venous system at large must inevitably result in defective elimination of the hydrocarbons and their allies from the tissues implicated,—in solid cedema superfascially, fatty deposit and degeneration subfascially, and ultimately in elephantiasis, or a disease closely akin to it. Are not other like changes in tissues

due to embarrassment to the venous current appertaining to them respectively? and, moreover, would not a more close investigation into the mutual organic changes between *venous* blood and the capillary and the next succeeding portion of the venous system throw a considerable amount of light upon the nature of morbid changes generally?

As the *deep* or *main* system of veins is thus especially associated with the nutritive processes, so the *superficial* or *complementary* is as especially eliminatory, for it is from these veins in the lower limb, at all events, that dropsical effusion takes place. Œdematous fluid is chiefly and usually solely superfascial; and it is not improbable that in other dropsies, as of the pericardium, pleura, or peritoneum, the fluid escapes from veins of the same class—viz., from those of their respective complementary systems.

The disorder I have attempted to describe is due, then, *primarily* to inefficiency in the saphenous system of veins, followed by deep vein dilatation and embarrassment.

The treatment is the reverse of that ordinarily employed—viz., an entire freedom of the limb from all compresses; enforced walking exercise, begun in moderation, and periodically increased; hot applications, especially hot seawater, to the limb; friction; and it may be the internal administration of the liquor potassæ. In short, by the use of all those measures, hygienic and therapeutical, which can, on the one hand, restore the circulation of the limb, upon the principle that its right use is its stimulus to health and perfection; and, on the other, relieve it of its superabundant fat.

PSYCHIC FORCE.

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UNDER the name of "spiritualism" is included apparently every conceivable occult influence which can produce phenomena of an extraordinary character, or feats beyond the range of human knowledge. It seems remarkable that clear-headed men, in their investigations of the subject, have not perceived how spiritualists have been maintaining doctrines of most opposite tendencies: as, for instance, when a person holds his hand over a table, and the latter moves, an influence is supposed to pass from his body, to which such a name as "animal magnetism" may be given; but when a woman's hand is guided to draw those remarkable pictures which were lately exhibited in London (like twisted rainbows or balls of coloured worsted), it is said that "a spirit" is at work; and the same, I suppose, would be asserted when a lady residing at Highbury desires a lobster for supper and immediately it flies through the air from her friend at Liverpool (see *Spirit. Mag.*). What is said to be the exact influence which operates on the clairvoyant when he reads a newspaper by sitting upon it, I do not know.

It seems, I say, remarkable that anything in the shape of what is called "animal magnetism" should be included in the subject of "spiritualism"; for the two powers seem to be diametrically opposed. For my part, I know nothing of any influences exerted by man upon man except those which are bound up with his material body. Whether if I considered vital force distinct from the properties of matter I might indulge in spiritual vagaries, I need not inquire. At present I am in accord with those who know of no forces in nature except such as are intimately associated with matter; and, more than this, that in all living objects the latent energies may be expected to become manifest in one form or another. A belief, therefore, in what may be called "animal magnetism" or "mesmerism," as the product of certain operations going on in the body, has nothing in common with the idea of a spiritual influence outside us, and which we cannot grasp. In fact, the two ideas seem of a very contrary nature. It is, indeed, because I disbelieve in spiritualism that I feel inclined to seek further information about real animal forces. When a man says that his hand placed near an object can cause it to move, he is speaking of an influence arising from a material machine—a statement not irrational; but when he says his hand is moved by a spirit, he is asserting something of a totally different