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AN

INAUGURAL DISSERTATION

ON

Venesection.

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Venesection

Pafs. Examined by P. F. S.

The great and transcendent importance of venesection was known and had recourse to by the earliest physicians. They employed it with the greatest freedom in diseases of an unambiguous inflamatory character: & although they were entirely ignorant of the circulation, yet they had learned from experience the great benefits resulting from sanguinous depletion.

Hippocrates has spoken extensively on bloodletting, and Celsus in attacks of pestilential fever calls blood-letting "optimum remedium. Galen was much addicted to this powerful remedy, and transcended the bounds of its practical applicability as taught by his immortal master Hippocrates. Through the revolving centuries which have elapsed since the time of this celebrated author, amidst the mutations of the Arabian, Egyptian, and European schools of medicine, blood-letting has maintained an almost undiminished popularity as the first and most effective cure in many

forms of disease. And is it of less importance in our diseases of the nineteenth century? No Sirs. Experience has placed its brightest and most enduring signature upon the great and varied benefiant results which arise from the use of sanguinous evacuations in morbid actions of a diversified character. Two of the most fatal, and general generic divisions of disease are in an especial manner amenable to the curative power of this remedy. Fever and inflamation assume many forms, and in most of these forms bleeding, as a topical or general evacuant is required.

Many of our most eminent practitioners have made egregious blunders in the use of this great remedial agent in the treatment of disease, as well as the use of other therapeutical agents. It was truly said by an eminent poet, "mans inhumanity to man has made countless millions mourn;" and surely ignorance of palpable facts, which I think indirectly speaking is inhumanity, &

which the great poet must have had in his immortal mind, when he penned the above sentence, has sent thousands and tens of thousands to an unnatural and premature death. To be ignorant then of many things, is tantamount to being inhumane: for the great majority of mankind are more ignorant than they should be, or would of necessity have been, had they adopted a course of unmitigating study and research, especially in this enlightened age, and land where the glorious light of Truth shines resplendent as the summer midday sun, or like corruscations of the ignited diamond penetrating every dark and hidden corner.

Although, bleeding is appropiately designated, the chief anchor in many inflamatory diseases; for it has often been known suddenly to arrest the onward march of a severe attack, and release the energies of life from the controling dominion of a disease which threatened soon to terminate existence; yet by an injudicious use of this great "weapon of medical warfare," we may augment to a fearful extent the inroads of disease, and

precipitate our patients beyond recovery into a fatal prostration of vital power.

We shall confine ourselves principally to the physiological and therapeutical effects of blood-letting.

What are the immediate effects of loss of blood in health? To arrive at a correct conclusion on the effects produced by the abstraction of blood from the system, we should distinguish between the results arising from the mode in which the evacuation is effected. A small depletion or small quantity of blood taken from the system exerts a comparatively insensible impression. No interruption of activity in the controling function of life is produced by the gradual exhalation of large quantities of blood from a hemorrhoidal discharge. Frequent small bleedings from the arm do not debilitate in any degree like one copious effusion from the circulating fluid. One great physiological truth of repeated small bleedings in health is to increase rather than diminish a plethoric condition of the vascular system. When blood is evacuated to a certain extent so as not to materially or sen-

sibly disturb any of the more important functions of life, the appetite for food is observed to be increased, with an equal improvement in the process of digestion and assimilation: so that the body is evidently better nourished afterwards, and the loss it has sustained is speedily compensated. This is known to the ignorant butchers, who availing themselves of the advantages derivable from small and repeated abstractions of blood are known to prepare their calves for the slaughter by repeated bleedings. What is the rationale of this mode of procedure?
A subdued and calm state of the circulation is thus induced and the loss by secretion and exhalation being reduced, greater corpulency results from the deposition of adipose matter into the appropriate interstices of the body. When six or eight ounces of blood are abstracted from a person in good health, possessed of a vigorous constitution, and the orifice through which the evacuation is made is of moderate size, no perceptible effects follow.

There is indeed a slight hilarity and a more alert condition of the intellectual powers by a moderate loss of blood. This excited state of the sensorial energies from abstraction of blood is witnessed in a prominent light when a considerable quantity is lost in a short time. Delirium will then arise or convulsions will be the result.
Where sixteen or eighteen ounces of blood are abstracted quickly, and the patient is in the erect posture, feelings of rapid exhaustion come on – the pulse becomes slow and then imperceptible, the countenance has a blanched appearance – the breathing slow and accompanied by deep sighs, cold drops of sweat roll down the cheeks – the eyes have a glassy look, and Syncope closes the scene. If left in an erect posture the individual may never recover from this syncopal state. Or convulsion may come on and continue for sometime 'till the restorative efforts of nature triumph over this violent disturbance of the nervous function.

Subsequent exhaustion from loss of blood to any amount may persist for sometime, the individual being troubled by a train of most distressing symptoms, such a palpitations, muscular trembling, sense of sinking, and loss of sleep, with throbbing of the carotid arteries. The phenomena of animals bled to death are familiar to all. It is observed to become weak and uncertain in its attitude, and if it attempts to walk it staggers and falls. This state is soon succeeded by convulsions which, in death from hemorrhage, always precedes dissolution. The rationale of these phenomena would appear to be as follows; as the blood flows from the vessels, the great nervous centres cease to receive that supply which is requisite for the due performance of their function; hence the proper amount of energy is no longer transmitted to the muscles; their contraction cannot be energetically maintained; alternate contractions & and relaxations occur in the form of tremors,

if the flow of blood continues there is not enough of nervous influence transmitted to keep the extensors in a state of contraction; the animal now falls, and unless the hemorrhage be immediately arrested death will be the inevitable consequence.

Whenever the vital fluid is lost beyond a certain amount, and in particular habits this amount need not necessarily be large, a series of symptoms are apt to present themselves, which are of a nervous kind, dependent upon a loss of balance between the nervous and sanguineous systems. Uterine hemorrhage affords an excellent example of great loss of blood in the human subject, although too many cases of mischief occur from the lancet of the ignoramus. When the blood is discharged to an inordinate amount from the uterus a feeling of faintness is experienced, impaired vision, and depraved audition in the form of tinnitus aurium, or other unusual noises occur & if hemorrhage be not arrested fatal syncope ensues, generally preceded by more or less convulsive movements.

If the woman ever does recover it rarely happens that the restoration is effected without symptoms presenting themselves which are referable to the effects produced by the loss of blood on the nervous system. It often happens that there is presented a stumbling block to the young practitioner, in such cases, for in the course of a few hours, although the female to all appearances may have been exsanguious, she may be found complaining of violent headache, suffused face, with throbbing of the temporal and carotid arteries: yet the symptoms are not referable to a state of the blood that further blood-letting is capable of remedying. A further abstraction of blood would unequivocally add to the existing pathological condition. Whether the state of reaction be one sthenia or asthenia is difficult to determine. An instance is where a man's leg had been amputated; he was found next morning almost exsanguious from the giving way of an artery. In a few hours he was seen by an experienced colleague in a state of reaction, who was unacquainted with a history of the case, and who so soon as he had placed his hand upon the pulse enquired why the surgeon did not bleed him.

Those who understand rightly the physiology of the blood in a normal condition of the organism, will readily suspect the occurrence of disease when the relative proportion of its constituent elements are changed, and this change in the blood may originate from some local disease of the organism; and they can then readily comprehend the necessity of venesection in certain forms of disease.

Blood letting cures or palliates disease in the following ways; first by its alterative influence; second, by an actual diminution in the circulating mass, thus diminishing the general momentum of the circulating ~~blood~~ fluid, and removing irregular determinations & local accumulations; third by the positive impression imparted to the nervous system; and fourth, by modifying the state of the blood.

The great Rush thus speaks of repeated small bleedings in chronic diseases of and inflamatory type. We shall quote his language verbatim. "We use mercury, antimony and diet drinks as alteratives in many diseases, with advantage. We do not expect to remove debility by two or three immersions in a cold bath. We persist with patients in pre-

scribing the above remedies for month and years before we expect to reap the full benefits of them. Why should not blood-letting be used in the same way and have the same chance of doing good? I have long adopted the alterative mode of using it, and I can now look around me and with pleasure behold a number of persons of both sexes, who owe their lives to it. In many cases I have prescribed it once in two or three months, for several years, and in others every two weeks for several months with manifest advantage. What is the modus curandi of small bleedings? The persistence of a morbid action of a subacute inflamatory character, depends upon an increased general momentum of the circulation, or relative plethora creating excessive local accumulation. Small bleedings in either of the above ~~vascular~~ conditions of the vascular system effect much good by. Tranquilizing the excited action of the heart, and relieving the organ or part diseased of the excessive quantity of blood thrown upon its irritable structure. There is no disturbance of the functions in small bleedings, and the strength of the patient is not lowered, and the reaction is

is hardly perceptible. The therapeutical effects of a copious depletion of blood is great reduction of the hearts action caused by a removal of its appropiate stimulus and a decreased power of the nervous system, with a revolutionary impression, which is subversive of the existing morbid action.

We have stated above that blood-letting cures or palliates disease by a reduction of the circulating mass; and this is conspicuously brought to light in diseases of a decided inflamatory character, such as Pneumonia, Pleuritis, Laryngitis, and Croup. Here we have evident congestion of the parts inflamed, as indicated evidently by the symptoms; and if we bleed copiously and in a full stream we shall soon be delighted with an amelioration of the existing symptoms, such as the excruciating pain, vascular excitation, or a rapid and full pulse, hurried breathing &c.

Thirdly, bloodletting cures by an urgent impression imparted to the nervous centres. We have noticed the impressions of venesection in a physiological point of view. The functions of the blood-vessels are carried on under the presidency of the nervous system, and where-

ever we have local congestion or inflamation, such as that for instance, of the brain producing violent Cephalalgia, or in, of the Pleura, producing torturing, lancinating pains; by the operation of venesection we relieve our patients directly. Now the rationale of this is readily comprehended. The sentient extremities of the nerves supplying the organ, are mobid-ly effected, by the pressure of the congested capillary circulation. Now by removing a considerable portion of the blood we relieve the organ or part inflamed of its undue proportion, thereby removing ~~congestion~~ congestion and consequent pain produced by that congestion. It not only cures by relieving the parts congested, but by making a decided impression on the nervous centres, it acts as a direct sedative, removing nervous excitability, for all who understand physiology, know the intimate connexion between the vascular and nervous systems, and when one is abnormally effected how soon the other assumes the a morbific action.

Blood letting is ordinarily one of sedation, yet there may be states of the system in which

the abstraction of blood, instead of being followed by signs of sedation, gives rise to greater activity of vessels, and to a greater tone of the system than was apparent prior to the operation. In congestive fevers, where the powers of life seem depressed in consequence of the accumulation of blood in the internal organs this is clearly exemplified; for by removing the oppressing or depressing cause, by the evacuation of a due amount of blood, the powers of life develope new energy, the blood being distributed equably through the different organs and tissues of the body.

Blood-letting is one of sedation from the first and consequently it is one of our most conspicuous and well attested agents in diseases of excitement. But if carried too far it frequently will develope capillary excitement, and this ~~was~~ is an evil, which was not formerly apprehended for if after great loss of blood Hæmæmia occured in any of the internal organs, or was augmented if it previously existed, blood-letting was repeated again and again, until there

was produced a fatal prostration of vital power, the practitioner being ignorant of the cause not suspecting that he, by the injudicious use of the lancet, had sent his patient to his long home.

Where Hyperæmia occurs in individuals of very great nervous impressibility, we should be much guarded in the use of the lancet for by using it too freely we may develope greater or add to the pre-existing neuropathia by the reaction which succeeds the operation.

It is in such impressible habits that great advantage is derived from a combination of blood-letting short of inducing syncope, with other sedative agents: the bleeding diminishing the exaltation of vital manifestations by acting on the nerves through the medium of the blood vessels, and opium for instance preventing the subsequent development of nervous excitability. This course is adopted in the treatment of many internal inflamations, the bleeding being carried so far as to make a decided impression on

impression on the system, followed by a full dose of opium, by which a sedative influence is exerted on the system generally and the inflamed tissue particularly; By this mode of treatment the Hyperæmia is effectually subdued. Often many of the signs of inflamation are present, and yet it would be highly dangerous to resort to copious depletion.

In the case of a delicate female, who was attacked with excruciating Cephalalgia, intolerance of light and sound, so that it was absolutely requisite to avoid those two irritants. Of course she possessed great nervous impressibility; but along with this impressibility however, her tongue was moist, and pulse though rapid, was not forcible. She was bled the second time, but without any benefit resulting from the evacuations, but on the contrary so much palpitation and exacerbation were induced that it was not practised the third time, but leeches were applied to the epigastric region for the removal of some gastro-enteritic symptoms.

She recoverd more by time and quiet, than by any particular mode of medication.

We see then that the irritability of the nervous system becomes formidably developed by repeating venesection too often, whereas if it had not been repeated too often, but followed it up by sedative doses of opium, the results would have been highly more favorable, especially in peritonitis of the puerperal state.

Blood-letting we have seen is capable of exerting a sedative agency on the organism if appropiately practised, but if not judiciously had recourse to, it may give rise to all the horrors of excessive loss of blood; therefore it becomes an interesting topic of inquiry, how to regulate the operation when it is required so as to have the sedative agency without any of its concomitants or sequelae. Our object in bleeding in internal inflamations is to diminish the amount of the circulating mass and thereby depress the vital manifestations. But the effect of copious

depletion is principally exerted upon the nervous system, and where excessive loss of blood takes place either naturally or artificially, irregular actions are apt to supervene, as where hyperaemia exist there is already a part of the nervous system disposed to be morbidly affected; under the influence of excessive irritability of those nerves, the vessels of the inflamed part resume their inordinate action, and the hyperaemia after a full bleeding is speedily reproduced.

We have obviously therefore, to be careful not to abstract blood in these cases to too great an extent for we may develope nervous irregularities, but this state of excitability varies materially according to the individual organization, and to the character and intensity of the Hyperaemia. The toleration of the loss of blood varies in different individuals, and in the same individual at different times. In a case of decided inflamation, syncope occured after the abstraction of three or four ounces of blood, yet on repeating it two hours

afterwards she was able to bear the loss of twenty five ounces without any approximation to syncope.

The extent to which we should resort to sanguineous evacuation in many diseases is a matter of difficulty and often perplexity with the judicious and discriminating practitioner, but none to the reckless, uninformed thrasonical charlatan, who in a state of blissful ignorance and conspicuous temerity plunges his lancet into the living stream of life without regard to any sort of rationality.