

AN

INAUGURAL DISSERTATION

ON

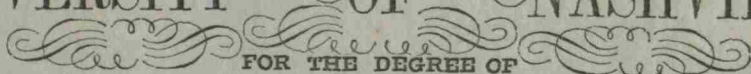
Depletion

SUBMITTED TO THE

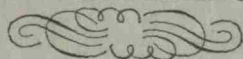
PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY

OF THE

UNIVERSITY OF NASHVILLE,



FOR THE DEGREE OF



DOCTOR OF MEDICINE.

BY

Thomas Denton Whitaker

OF

Tennessee



185

W. T. BERRY & CO,
BOOKSELLERS AND STATIONERS,
NASHVILLE, TENN.

Good J. F. E.

Depletion

A large number of the diseases to which the animal organism is subject are dependent on, or consist in either a local or general fulness of its vessels. Whether a knowledge of this fact first led physicians to the employment of Depletion as a remedial measure or not, I leave for Medical antiquaries to determine; but certainly a more rational mode of relief, could never have suggested itself even to a mind acquainted with this pathological fact.

Depletion in its literal sense signifies an emptying, or unloading, and hence every therapeutic means which acts by relieving the general system, or any part of it, of its surplus amount of

fluids, does so upon the principle expressed by the term which heads these pages.

From this it will be seen at a glance, from what an extensive field of enquiry, my subject permits me to gather in my harvest of observations. I might exhaust half the subjects treated of in our Materia Medica, and yet not transcend its legitimate limits. The term embraces substantially all those measures usually understood to constitute the antiphlogistic plan of treatment. I shall commence with the most important of these measures and descend toward the bottom of the list, until I shall have gone thru length into my subject, and then desist, whether I shall have done it justice or not, Bloodletting although not as frequently employed perhaps as some other

modes of depletion, from its acknowledged superior power and from the fact that it is the most direct depletory measure, to which it is possible for us to resort, claims our first attention. Several modes of bloodletting are employed. They are divided into general and local; to the first belong Venesection and arteriotomy; to the second Cupping, Leechery and Scarification. Before resorting to a remedy of so much potency, it becomes a question of prime importance, whether the case is one demanding the use of the lancet. In making up our minds in regard to its employment, several considerations are to be taken into account, 1st The character of the disease, 2^d Its stage and extent 3^d Its seat and the character of the tissue affected, 4th The age and bodily habit of the patient, 5th

The force and frequency of the ~~heart's~~ action, to be determined by the use of the stethoscope as advised by Laennec, and the sensation communicated to the finger by the pulse at the wrist.

The principal diseases requiring the use of the lancet, are inflammation and congestion of the important organs of the body, as the brain and thoracic and abdominal viscera, and some forms of fever, especially those characterized by a high degree of vascular excitement. In cerebral inflammations and sanguineous determinations to the head, constituting, or threatening apoplexy, blood-letting is the only remedy that can be at all relied on, but should not be resorted to in apoplexy until the shock produced upon the nervous system has

passed off and reaction sets in. But there
 is a different class of affections in which
 the brain seems to be involved, that are
 not so obviously benefited by the lancet,
 and which require great caution in its use.
 These are such as occur in conditions of
 nervous irritability, from intestinal
 irritation, exhaustion and abstinence
 from an accustomed stimulus &c.

Inflammation of the serous membranes
 appear to be as a general rule more am-
 enable to the use of the lancet, than those
 of the parenchyma of an organ; and those
 of mucous membranes perhaps less than
 either. And it may also be stated as a gen-
 eral rule, in the same order does infla-
 mation of these different tissues enab-
 le the patient to tolerate the loss of blood.
 Pleuritis almost invariably demands

resuscitation, where as bronchitis may very
 often be successfully and scientifically treat-
 ed by local bloodletting conjoined with the
 use of emetic tartar &c. The same thing
 is true with regard to peritonitis and
 inflammation of the mucous lining of the
 bowels. While the latter will usually yield
 to leeching and fomentations, over the ab-
 domen; the former requires the most
 active general depletion.

Physicians have long and redoubtably sought
 for some indication by which the propriety of
 general bleeding might be infallibly ascer-
 tained on the one hand, or its impropriety
 made clear on the other; but as yet no
 single condition has been found, suffici-
 ently universal for either purpose in pra-
 ctice. The character of the pulse is perh-
 aps more generally depended on as indica-

ting, or contra-indicating blood-letting, than any other circumstance; but even this is very liable to mislead us, unless considered in connexion with the other symptoms of the disease. In some diseases highly inflammatory in their character, the pulse will be found small and feeble, yet bleeding is imperiously demanded; and when performed the pulse will swell, become fuller and softer under the finger as the blood flows; clearly evincing the propriety of the measure. This is particularly ~~true~~ with regard to inflammation of the peritoneum and other serous membranes. But should bleeding fail to produce this effect on a pulse of this character, great caution should be exercised in the farther detraction of blood. The reigning epidemic constitution, as

first pointed out by Sydenham, exerts a
 marked and decided influence over the
 effect of bloodletting. In what this differ-
 ence consists is not known. But we do
 know that at one time we may draw blood
 with impunity in nearly all inflam-
 matory affections; while at another the
 greatest caution is requisite in the use of
 this measure for fear of prostrating our
 patients. These facts are to be kept in
 mind, and always duly considered before res-
 orting to a remedy of so much potency.

In determinations to the brain or lungs,
 threatening cerebral or pulmonary apoplexy,
 it is necessary to bleed ^{ad} deliquium animi;
 and in laryngitis attended with spasm of
 the glottis, the same thing is called for; but
 ordinarily it is better to be governed by
 the condition of the pulse, and the effect

9

of the bleeding, on the pain and other symptoms of the disease. When the pulse is found to grow natural, and the pain of the inflammation to subside, it is better to discontinue and repeat it if necessary; more especially, if the disease has existed for some days, and the inflammation has become established in the part. When sad is the case the capillaries having lost most of their tonicity, cannot regain their wonted contractility, before reaction would come on, and this prevents the good effects that might be obtained by a more gradual but permanent reduction of arterial excitement.

We cannot always accomplish all we desire by one bleeding and hence it becomes necessary to resort to it a second, third, or even an indefinite number of times. It is

just as necessary for us to have some general
 rules to govern us in the repetition of
 the remedy, as it is to determine its propri-
 ety in first instance. Our decision must
 here also be determined by the strength of
 the patient, the severity of the sympto-
 ms, and the existing state of arterial exci-
 tement. Dr Marshall Hall remarks "if at
 the first bleeding much blood should
 flow before syncope is induced, it must
 be received as a criterion that the disease
 may require, as the patient will bear
 the early and efficient repetition of
 the remedy." The "buffy coat" has been
 regarded by many as a very important
 indication for the farther abstraction of
 blood. But this cannot by any means be re-
 lied on, and we hear less of the buffy coat
 than formerly. It is not constant in

blood drawn from patients labouring under inflammation, and is often presented when no inflammation exists, especially in puerperal affections. Beside much depends on the manner in which the blood is suffered to flow, and some other circumstances, whether it presents this peculiar appearance or not. These facts show that much more importance has been attached to it than it deserves.

Venesection is the ^{mode} of general blood-letting to which we almost universally resort, and may generally be made from the median cephalic vein at the bend of the elbow. This is usually selected from its convenience, its prominence and its remoteness from any artery or nerve of importance. But if necessary we may bleed from the cephalic vein, just below where it enters the groove be-

between the pectoralis major and deltoid muscles; or from the jugular. Sometimes the veins of the foot and leg are selected with the view of blood letting. Arteriotomy is seldom called for, and the only cases requiring it are perhaps severe determinations to the head. The blood flows more rapidly scaturis passibus from an artery than from a vein, and in this way a more powerful and sudden impression may be obtained than by the usual mode of blood letting. This is perhaps the only advantage arteriotomy possesses over venesection, while the difficulty of controlling the flow of blood in the former, is a very serious objection to it under ordinary circumstances. The temporal artery presents the three conditions required in this mode of abstracting blood viz; it is small, superficial

and rests upon a hard surface, rendering hemorrhage from it controllable by the surgeon, and is therefore always selected for the performance of this operation.

Local abstraction of blood is very frequently conjoined with general depletion. When venesection has been carried as far as the strength of the patient will justify, and the severer symptoms have been subdued by it, local bleeding is of great service. There is often a disposition in the inflammation to linger, or run into a subacute character, in which topical blood letting acts very beneficially. Cupping is upon the whole a more efficacious remedy than leeching. the two forming the principal means of topical bleeding. In some mild acute inflammations in which there ^{are} none, or but slight general sympt-

Toms, cupping and leeching are the proper remedies. Also in some chronic affections, especially such as are local in their character our chief reliance is to be placed on them. Leeches may be applied to the temples, nape of the neck, along the region of the spine, on the chest, over the kidneys, liver &c. Leeches are generally preferred when blood is to be abstracted from the flabby walls of the abdomen, and may be applied with great benefit over joints affected with inflammatory rheumatism. They are also highly useful in certain conditions of the uterus, when applied by means of an appropriate instrument, to the region of the os. In diarrhoea dysentery engorgements of the liver, and fulness of the head, it is said that leeches have been applied with much benefit to the anus.

It appears highly rational that much good might be obtained by this means, in the affections mentioned; for a more direct method of unloading the portal system could not be devised. What is the modus operandi of blood letting, as a remedy? The general effect of a full bleeding, especially in a strong subject, is that of a sedative, as evinced by the muscular weakness, diminution of the force and frequency of the systolic actions of the heart and other symptoms of depression of the vital forces. This effect is probably produced first by a reduction of the quantity of the circulating fluid, by the amount lost; and secondly by rendering that which remains less stimulating, both to the sanguiferous system, and the nervous centers. It is doubtful according to

Mr. Andral, whether the fibrin of the blood which is generally in excess in inflammation, is diminished by blood letting; or rather it is doubtful whether its formation is retarded by the loss of blood. That the proportion of solid constituents of the blood are diminished in the aggregate, there can be no doubt. It is well known the stimulating quality of the blood is due to its solid ingredients; and hence in proportion as these are proportionately reduced in quantity by abstraction of blood must that remedy act as a redative.

The red corpuscles, which perhaps constitute the most stimulating ingredient of the blood suffer the greatest proportionate loss from bleeding. Abstraction of blood then acts in a therapeutic way, first by relieving engorgement,

secondly by diminishing the quantity of fluid circulated, and consequently the, pro rata share of the inflamed organ, and thirdly by diminishing the force with which the vital fluid is sent out from the heart.

Increased secretion is another very important mode of depletion, and one in daily and universal practice; but the limits designed for this sketch will not allow an extended notice of the various means by which this end is accomplished; The most important of them, however, are purgatives, diuretics diaphoretics and emollients. This class of depletories have one advantage over blood letting, in that they imitate a process of nature by depleting directly from the part affected, as exemplified by the action of purgatives

in muco-intestinal inflammation,
 expectorants in bronchitis, fomenta-
 tions in cutaneous affections &c. In
 many cases these measures are suf-
 ficient without the use of the lancet
 and cups; but in severe cases requiring
 depletion, it is better to use in conj-
 unction. They are perhaps always more
 or less demanded, after general and local
 bleeding has been carried as far as a
 due regard to the symptoms and for
 the patients strength, will justify.

Like blood letting, some of these meas-
 ures, ^{act} red directly particularly purgation.

It has been remarked that you may
 bleed a man to death by means of pur-
 gatives; and this is substantially true.

By constant and continued purgation
 the blood becomes impoverished, and an

anaemic condition of system is produced, probably, by preventing the chyle from being taken up by the lacteals. The blood may also be greatly debilitated by purgation, particularly if the saline cathartics be used, by which its stimulating quality is made less. By means of some of these medicines the blood is enabled to eliminate through the emunctories they stimulate, noxious matter which may be present in it.

In the use of these various remedies it should always be remembered, that though a slight stimulant impression produced upon a secreting organ, is followed by an increase of its peculiar secretions, yet the excitement may be, and of is above the secreting point" as it is termed; and therefore

where there is much inflammatory or febrile action present in the system, it is always proper to reduce it by general means, before attempting to excite the special secretions. If this caution be neglected we but heighten an action already too high, and it may be in an organ predisposed to inflammation, and thus add mischief to what we are attempting to relieve.

The excretants of all the various secretions are occasionally available as means of depletion; of these emmenagogues, erysines, and rialogues need but to be mentioned. I will merely remark in conclusion of this portion of the subject, that serious accumulation in the different shut cavities of the body are generally relieved by means of purgatives and diuretics.

They act by depriving the blood of its watery constituents, and the absorbents to meet the demand thus created, drink up the effused fluid.