AN INaugural dissertation,
ON
Determination of Blood
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Determination of Blood

The idea conveyed to the mind by the phrase "determination of blood,"
what we believe to be the true pathological condition of the affection.
By determination, we are to understand a certain direction, given or an absolute
tendency to some particular point the power of directing the blood, is said by some authorities to be the sole
province of the heart, and that the heart is the main organ concern-
cerned in producing determination of blood in all parts of the
system. This is what we wish to controvert, not the we are vain enough
to attach the opinions of those who have written on this subject.
But we merely wish to give
Our opinion is that right or wrong, in the determination of bloods and organs, or part, we believe the heart has nothing to do in producing it beyond its normal action. Newer taught by the professor of surgery that the action was contraction. The heart contracting on the contents forces the blood into the aorta. The sigmoid valve closing prevents regurgitation. The aorta contracting on the blood as it enters keeps up its onward movement; through the whole system. Now when the arteries are in their normal condition that is capable of exerting their true physiological function, which...
Must be remembered is, that in this instance all parts of the body will receive their due and normal quantity of blood. But on the contrary, if any part of this set of vessels, be in a weakened state, they will become expanded, dilated, they yield to the mechanical pressure of the blood; and of course receive and contain more blood than when in a healthy condition, whereas the coats of an artery yield, blood pushes in to fill the space, upon Hydrometastatic principals, independent of the heart's action. For instance a
Man is taken with convulsive form of apoplexy without a moment's warning, and he falls as if shot through the brain; at the time of seizure the heart may be acting perfectly naturally. Now where are we to look for the true cause of this much to be dreaded disease? It is our opinion that the true cause can only be found in the meshes of the brain itself. The nervous influence is not transmitted to this organ in due quantity. They yield to the contained blood, becoming turgid and in this way exert a considerable amount.
of pressure on the brain
producing all the symp-
tonic of Compression of
the brain. Again in blus-
thing we have another mar-
ked example of Determina-
tion taking place indepen-
dendent of the hearts action
the vessels of the cheek and
face become all at once
intensely red with gushing
blood the nervous influence being
withdrawn from these vessels
and more freely scattered in
the brain during the great
mental excitement, going on
with persons labouring un-
der great embarrassment, the
blood vessels of the face;
and check upon dilatation give way to the blood which, instantaneously enters to fill the vacuum thus created. If this was produced by the heart’s action, why not this flush appearance, extend to all parts of the body, for the heart’s action must be general, for it cannot send more blood to one organ than another. An illustration of my position. On this point we will take the Hydra and in the vicinity of Nashville let this basin represent the human heart, the main trunk leading off of the trunk now when the water leaves the basin and enters the main
Pipe leading off from this basin by what power is its future course directed, can any one tell its future direction in the City below. Or in other words has the basin any current over the stream after it enters the main trunk? unquestionably it has not, the future course of this stream must now be under the entire control of the main pipe, and its branches, and this will depend entirely upon the relative sizes of these branches, the houses are to represent the various organs of the human body. It is evident then that the house that gets the most water will of necessity have the largest pipe leading off.
from the main trunk. Just so
with the circulation in Man
in a healthy condition, all parts
receiving their due quantity of
blood. As otherwise, that is if
the vessels should be in a morbid
condition, obliteration, accretion
and determination of blood would
necessarily take place, and
it is of the utmost importance
to the individual that this
amalgamating state of the Arteries
should always be present
for it is this very condition
of the Arteries above stated
that gives rise to arterial
sacks for in the true
animal
can exist without the coats
of the Artery, for it
is the proper function of the
Arteries to keep closely contracted upon their Contents, for it is upon this principle that we account for the Arteries always being found empty after death, that of exerting their Contractile powers even in Articula Morte.

The throbbing feel that is present in an inflamed part, we take this as still further proof of their weakened and dilated Contraction. Which is generally ascribed to an effort of the heart to propell the blood through the inflamed part. If we recollect that the Arteries are bent tubes, being bound down at different parts by strong ligaments, and bands of muscular fibers at the same time burning.
They have two distinct actions, one transverse, the other longitudinal. Thus, when the heart is elevated by the systole, a jerking motion must be given to the artery, and this motion will be increased if the artery be lengthened, in the same manner as the string of the violin is made to vibrate, fuller as it becomes less tense. So if the artery possesses its une contractile powers, the increased fullness of its pulsations cannot take place. Again, we can produce these determinations of blood as remedial means for instance, we apply a blister for the purpose as we call it of producing a determination of blood.
from a labouring organ. This is done by the lips abstracting the
vessels fluids from the parts
the vessels yields. Give way done
an undue quantity of blood. This
is not done by exciting the heart
to increased action, but upon
the principle above stated.
We will next speak of the treatment
of apoplexy, in sustaining our pos-
ition. We bleed and bleed copiously,
not to moderate the actions of the
heart for it is generally found to be
beating slow and soft but we
bleed to lessen the amount of blood
in the general circulation. So in
so doing, it of necessity, makes a
law upon the vessels of the brain
by which we give those vessels
some power act which actions is
Contractions are under them to expel the superabundance of blood from the brain. Drastic purgation has the same general effect that of determining the blood to the bowels also connected with purgation. Some nervous excitement may be produced in the spinal cord and transmitted to the brain by reflex spinal action. And in this way aid the brain in discharging into its vessels nervous influence. Nervous fluid, electricity or whatever it may be, a minute of which was the primary cause of the attack, the good results of blood letting in all local determinations wherein by cupping or the lancet has the same general effect. To wit that of reoxygenating congested and engorged state of the blood vessels thereby giving them power to contract.
In taking leave of my subject
I would ask the lenient criticism
of the faculty, upon this
my mardue piece, it being
written without reference to a
single book, the data being
gathered here and there during
the arduous labours of the
faculty in imparting knowl-
dge to the medical mind which
is afterwards to operate over
wide tender fields, as messenger
of ease to suffering man.