

AN  
INAUGURAL DISSERTATION

ON

*Man Anatomically & Physi-  
ologically considered*

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BY

*James William Williamson*

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To Professors G. R. Jennings & A. H. Buchanan,  
of the University of Nashville, Tenn.

Man anatomically & Physiologically considered,  
"There is a nobler strife than clashing spears,  
A nobler peril than the battle field;  
'Tis when, with trust in God, worn as a shield,  
'Midst universal hisses, scoffs, & sneers,  
The man of truth with brow serene appears,  
And stands forth singly, for the right appealed,  
To the Eternal Umpire; nor will yield  
One backward step from policies & fears.  
The savage bandit, nay the brute, is steel'd  
'Gainst bristling danger - e'en the worm appears  
Beneath the foot his tiny sting, to crave  
A renowned vengeance; but immortal years,  
Are full of glory like the Christian brave,  
Who dare to suffer wrongs that they from wrongs may save."

It is wise & just & elevating for mankind, to entertain the belief that all things were created, in accordance with an eternal code of immutable laws; that these laws operate upon a divine & universal system of end, cause, & effect; and that all human individuals, as well as birds, flowers, minerals, worlds, & universes, have a message to deliver from on high - a mission to fulfill - an end to accomplish. Every thing is designed, to subserve an end, a purpose, in the vast & boundless laboratory of the all-wise Divine Mind. From effects we learn causes; but the end, always precedes & prompts the cause to the production of the effects, which effects embody, correspond to,

and represent the use, the end, for which they were made, and also the nature & specific magnitude of their producing causes. To properly comprehend man's anatomical structure & physiological functions, therefore, we must first comprehend the use or end, which such forms & functions were originally designed to accomplish.

Man has been, & ever will be, the great & leading contemplation of man. Every thing centers in him, & finds in his nature its counterpart, its companion, its dormitory, its representative, its correspondence, its explanation, & its home.

Every thing proceeds from God, through nature to man; and every thing returns from man

through gorgeous spheres to God.  
Hence man is the most complicated,  
the most wonderful, the most enig-  
matical, the most fearful, and  
yet the most simple of all crea-  
ted things. But how unprofitable  
& unsatisfactory are those scenes  
of anatomy & physiology now in  
the world, which have, for their foun-  
dations, the mere form & function  
which man's organization presents to  
the senses! The anatomy & physiology of  
the human constitution, can never be  
properly comprehended until the soul  
has ascertained the ultimate object  
of its development. To ascertain and  
teach, as physiologists have & do, that  
the stomach is designed, to digest food,  
the liver to secrete bile, the heart to

to circulate the blood, the lungs  
to receive air & maintain life,  
and the brain to control the entire  
system, is to ascertain & teach but  
the most external & superficial truths  
of human physiology. These things  
embrace no more of the boundless  
field which physiologists profess to  
explore & understand, than does a  
vestibule reveal the gargeness and  
possessions of the temple to which  
it belongs. And the same may be  
said of the present condition of  
anatomical science. It has enumerated,  
classified, and named, & also determined  
upon the apparent use of, the various  
bones, muscles, ligaments, tendons,  
&c. &c. of the human body, but here  
it ceases to advise. The science of

anatomy has, therefore, only progressed to a full understanding of the initiatory lessons which the philosophy of the human structure furnishes for contemplation. The field is but just entered; the curtain which has for centuries hung between man & this almost infinitude of knowledge, is only about to be rolled up; and the great anatomical, physiological, & psychological drama which has been enacted for thousands of years on the earth, is about to be comprehended by the human soul. But this comprehension of man's constitutional possessions must depend wholly upon the response which the stupendous organization of nature makes to the following interrogatory,

For what purpose was man made? Let the principle of intuition open its countless avenues to the reception of the answer, & let the principle of reason unfold to comprehend its magnitude & application. For should we ascertain that man was designed for some higher & nobler purpose than that of living, sleeping, eating, toiling & dying upon the earth's surface, then will we perceive higher uses & more beauties in the anatomy & physiology of his constitution. Then will we realize, not only the sublime truth that the stomach was not made merely to digest food, the liver to secrete bile, the heart to circulate the blood, and the brain to control the body; but we will discover & contemplate



deeper truths - structure within structure,  
function within function, - even a  
spiritual anatomy & physiology,  
of the most magnificent character  
& momentous import. But to the  
question, how & for what purpose  
was man created? Previous to the  
present structure of the Universe,  
the immeasurable realms of immensity  
were channels through which flowed,  
seas of unformed materials. Infinitude  
was filled with elements of divine power  
& with essences of progressive & eternal  
tendencies. And residing in the center,  
yet extending to an unimaginable  
circumference, was the Holy Artisan  
- the Divine Architect - the great  
Positive Mind. His Almighty Power  
and Creative Principle is called God.

The eternal elements of his being, con-  
ceiving in their utmost depths a sublime  
creation - a sacred embodiment of ce-  
lestial principles. For there was then  
but two great coeternal principles in  
all the wide spread universe - mind  
& matter, or God, and the elements of  
his physical organization. And having  
perfected the plan of the Universe,  
God said with the full cooperation  
of his indwelling elements & essences  
of love "Let us make man". And  
then the first attribute of Wisdom, which  
is use, said "Man shall be a culmination  
of universal nature; he shall be so  
organized in his body as to receive  
and elaborate the animating elements  
of nature into an eternal & unchangeable  
soul; and his soul, being constituted

of those principles which are in themselves pure, everlasting, and infinite, shall possess & obey the tendency to unfold & progress forever". And then the second attribute of Wisdom, which is justice, said, "Man shall occupy such a position in the Universe as will secure to all things organized or unorganized, visible or invisible, a permanent equilibrium of power, possessions & demands". And then the third, attribute of Wisdom, which is power, said, "Man shall be created through the mediums & instrumentalities of countless suns & planets, and also through the regular & continuous development of minerals, vegetables, and animals, each of which shall correspond to, represent, and embody,

some particular portion of this organism".  
And then the fourth attribute of "Wisdom,  
which is Beauty, said, "Man shall rep-  
resent & embrace all the suns & planets,  
all minerals & vegetables; & also the  
energy, & strength, & symmetry, & struc-  
tural beauty of all animals ~~& vegetables~~.  
in his form, organs, & functions". And  
then the fifth attribute of "Wisdom, which  
is aspiration, said, "Man shall know  
himself to be immortal, he shall  
be the king, the Lord, the Crown, the  
coronation of nature; he shall aspire  
to be an angel, a seraph, a God."  
Then the sixth & highest attribute of  
Wisdom which is harmony, said "Man  
shall be an exact embodiment of the  
great Spirit who creates him; he shall  
represent, in a finite degree, the

12  
elements & attributes of the Infinite; he shall desire, & be capable of, & enjoy, the most ineffable blessedness; he shall aspire after harmony, shall unfold it, & shall give his eternal existence to its maintenance; he shall be an embodiment of Nature, a revelation of harmony, & an image of God."

Such is deeply impressed upon my spirit as the far shadow of the divine plans & celestial contemplations of the Great First Cause, previous to the creation of man, & the elaboration of the present immutable universe. And immediately subsequent to this occurrence of plans & decisions in the wisdom of the supernal mind, there rolled forth into the sublime depths of infinite & endless chain of the

13

most magnificent orbs, suns of  
immeasurable magnitude & unutterable  
grandeur. And, in like manner,  
circle after circle of suns were un-  
folded from out the deep bosom  
of the previous seas of unorganized  
materials; and thus the universe  
was organized & spread throughout  
the innumerable realms of bound-  
less infinitude. But for what pur-  
pose were all these suns, planets,  
& satellites unfolded? What use was  
this universe of moving orbs to  
subserve? Why create them at all?  
Because the great attribute of Om-  
nipotence, in accordance with the  
immutable principles of being &  
doing, hath said that "Man shall be  
created through the medium & instru-

mentalities of countless stars and planets, & also through the regular & harmonious development of minerals, vegetables, and animals'. From these divine revelations we must draw the following conclusions:

1. That the stupendous universe is organized for the ultimate purpose of developing and organizing man.

2. That the anatomical & physiological constructions of man are designed to receive & elaborate the animating elements of nature into an immortal & endlessly progressive soul. The subject under consideration is now before the mind;

I will therefore proceed to a more minute examination of the proposition that man is a culmination of

universal nature. Notwithstanding  
the unpopularity of the philosophy  
which accounts for man's existence  
upon principles of progressive  
development. Nevertheless it  
is the only philosophy which  
reason can sanction, and  
the soul cherish as its own.  
But it is exceedingly difficult  
for those minds which have  
been educated in the midst  
& under the influence of myth-  
ological theology to see its truth  
& understand its application.  
It is easier for a blind man  
who never saw the light, to  
understand the properties and  
beauties of the distant landscape,  
than for an uneducated, or a



wrongly educated, mind, to comprehend the truths of this philosophy. Should you, therefore, have your reason clouded, or your intuition so buried, beneath a superficial & dogmatical education as to cause you to shrink from the present investigation, then you should arise with manly strength to unshackle your thoughts, and to burst open the dungeon door, that your imprisoned understanding may come forth & be free. One breath of liberty's atmosphere - one glimpse of the serene light, which emanates from truth & knowledge - is sufficient to

compensate the soul for years  
- yea, for a life time - of in-  
tellectual & spiritual slavery.  
Probably the most repulsive  
feature of this philosophy  
to the uninitiated inquirer, is  
the proposition that man  
came from the animal  
creation; or perhaps the implied  
denial of the generally received  
doctrine which maintains  
that man, as well as every thing  
else in nature, is a direct and  
immediate creation from God's  
own hand. But here, on the  
threshold of our examination,  
let it be deeply impressed that  
I do not teach that there is any  
sudden or miraculous meta-

morphosis of the quadrumana into man; nor that man is an effect of the immediate transfiguration of any particular organization to be found in the animal kingdom; but I think man was made & developed subsequently to minerals, vegetables, & animals, by a focal concentration of all the elements, essences, & substances, under the most perfect conditions & influences which exist in nature. The Deity operates & creates according to unchangeable & impartial laws. For as much as the general of any thing includes innumerable particulars, it is agreeable to the highest reason to believe that

19  
God made provisions for the  
immediate objects in the  
universal plan. Thus having  
a mighty & sublime end to  
accomplish, God instituted  
the wide-spread universe, with  
all its parts & powers perfectly  
& exquisitely adjusted. And as  
the growing plant arrives at  
a period when branches are  
unfolded, and at another when  
buds burst forth, at another when  
fruit is developed, & yet at an-  
other when the fruit is matured;  
so has nature, according to the  
unchangeable workings of divine  
law, arrived at a period when  
minerals were unfolded, and at  
another when vegetables burst

26  
forth, and at another when  
animals were developed, and  
at another period when all con-  
ditions, elements & essences con-  
spire to the organization of  
Man. It is just as reasonable  
to believe that God creates &  
shapes like the potter, from the  
dust of the earth, each little  
bud & twig, & acorn of the oak,  
and places them upon the tree,  
as to believe that he created, by  
any special & personal action,  
the multifarious forms and  
human structures that breathe  
& move upon the earth's surface.  
But here you may inquire - "If  
by perpetual & harmonious development  
Nature has produced plants, birds,

21

and man, why do we not see these different organizations springing up spontaneously without a germ, from the ever advancing earth? The answer is, that Nature is a vast & powerful organization, & that it was originally designed to unfold through countless series, degrees, & groups of physical & sentient organizations, the material & spiritual constitution of man. Therefore, when Nature arrived at the point where she could accomplish this portion of her mission, it was no longer necessary nor possible that she should continue in the old path of specific formation. The ultimate use of Nature is to

individualize & to immortalize  
the human spiritual principle.  
It is proper, therefore, to consider  
nature as a mighty & magnificent  
machine, and the Divine Mind  
as the omnipotent & omniscient  
Artisan. Now we may consider  
the machine as perfect, - as not  
wanting in any thing - as being  
complete & adequate to the great  
ultimate end for the accomplish-  
ment of which it was instituted.  
That Nature is perfect & complete  
in all her parts, is demonstrated  
by the perpetually preserved fact  
that human beings are born,  
and that human spirits ascend  
to higher spheres. If, then, God  
has constructed this great machine

upon principles of unchanging  
 order, harmony, & progression,  
 - and if it is perfect even to  
 the adjustment of an atom,  
 - it is unreasonable to inquire  
 why he is not still engaged  
 in constructing it. We must  
 understand that every mineral  
 bed is a foundation stone,  
 & that every class of plants is  
 a belt, & that every animal is  
 a wheel in the sublime mechan-  
 ical structure of Nature; and Man  
 - that wonderful, fearful, enigmat-  
 ical being - is the glorious result  
 of its harmonious movements. Hence,  
 should we see plants growing with-  
 out their germs, or the quadruped  
 changing into man, or man de-



veloping by other than by the familiar means of impregnation and reproduction. I say should we behold these phenomena which belong to centuries past, then would nature be imperfect because God would still be engaged in constructing & in perfecting this vast invention. But since the whole is in a high state of perfection, we may expect to behold such observations of creative principles; on the contrary, it is only right to expect the various wheels in Nature to move harmoniously in the ceaseless performance of their allotted labor. At an earlier period, in the earth's history, & subsequently to the formation of the primary & secondary strata, a mighty & universal

change occurred in the constitution  
of the atmosphere. This change  
being caused by a general earth  
quake, was attended with a correspond-  
ing alteration in the structure of  
many intermediate strata, & also  
in the improvement in the condition  
& refinement of almost all the  
terrestrial & divine elements which  
were previously tending to a higher  
formation. In consequence of the  
favorableness of this change, new  
strata were formed & new elements  
& essences were unfolded, capable  
of developing & sustaining new and  
various veritable organizations. Now  
let the mind pass rapidly over many  
centuries - remembering that the prin-  
ciples of progression & development

were incessantly working out their legitimate mission, that there was going on constantly a refinement & rarefaction of all atoms, substances & essences throughout Nature, & now we come to an interesting era in the system of physical development. The igneous rocks are formed, the primary, secondary, transition, and superficial strata are fully confined in their structure & position; the diluvial & alluvial systems are nearly complete, the mineral formations are perfect & are engaged in generating & eliminating many elements of life & vitality; & the various orders & growths of the vegetable kingdom have arrived at the summit of the susceptibility to the proliferation

20  
of surrounding substances, essences,  
and conditions. Now there occurred  
a marriage between the highest  
forms & essences in the vegetable  
kingdom - in other language,  
those particles of matter & elements  
of life in each system which  
experience an affinity for one another;  
& the consequence was, assisted by  
surrounding conditions & circumstances,  
a development of the first form  
of animal life. It is not my in-  
tention, at present, to examine  
the evidences which support this  
system of organic creation. My  
object now is to trace the progres-  
sive development of the animal  
kingdom up to man. By the  
first form of animal life I mean

the most inferior order of the radiata, including in its subsequent developments the various & almost innumerable classes of zoophytes, polyseria, &c. which then abundantly peopled the sea. But another era arrived in the order of creation, & then came forth a new & higher class of organization, fitted to the conditions & influence the food & atmosphere which then existed. Thus the saurian kingdom was unfolded, including in its many & various developments, every species of vertebrate animal, such as the crustacea, pterodactyls, ichthyosaurs, together with every species of crocodiles, reptiles, crustaceous fishes, & batrachians.

The last named order, batrachia, includes frogs, toads, salamanders, & every species of pacteria, which change their anatomy & physiology several times during their brief existence. This phenomenon in nature is illustrated by the frog, which, previous to assuming its ultimate form, undergoes two distinct & important anatomical changes. After the minerals & vegetables unfolded the pisces or fish kingdom, & after this kingdom unfolded the saurian kingdom, then the latter arrived at the point of extreme development & unfolded the bird kingdom. Of course the first order of birds are vastly inferior to those which now exist;

29  
but by constant progressive improv-  
ment in the physical condition  
of the earth & the atmosphere, the  
inferior orders gradually advanced  
into the conformation of the most  
perfect of the form of animal  
life. And then there was an-  
other focal convergence of the ele-  
ments & substances which planted  
the germ, which germ, being urged  
on & quickened into full development  
by the conspiracy of animal nature,  
resulted in the unfolding of the  
Marsupial kingdom. Marsupia  
are animals possessed with pouches  
in which they carry & cherish their  
young, such as the Opossum and  
Kangaroo. Succeeding this kingdom  
in consequence of a similar process

30

of concentrated germinal properties  
& circumstantial proliferation, the  
Mammalian organization was unfolded,  
Mammalia embrace all animals  
which suckle their young. Thus  
the higher we ascend in Nature the  
more closely allied do we find the  
organization of man. It is almost  
impossible to contemplate nature  
with a comprehensive generalizing  
eye & to determine which to first  
term man, whether the highest of  
the quadrupeds or the lowest of the  
human type, so gradual & progress-  
ive is the emergence of one king-  
dom into another. The mammalian  
order of animals include the cetacea,  
the ruminantia, the edentata, the  
pachydermata, the digitigrade, the



31

plantigrade, & the quadrumania, the primary change from the quadrumania into the inferior types of the human organism is so easy & unobtrusive, that to the scientific & systematic investigator the anatomical and physiological transformation is scarcely perceptible. For when Nature is sufficiently perfected, to unfold from out of her inexhaustible properties & essences, the fish, the saurian, the bird, the Marsupial & the Mammalian kingdoms, it had become an easy, imperceptible, and a comparatively harmonious work to develop man, every atom, every element, every essence, every mineral vegetable, & animal organization in nature aspired to be man. The vast spiral

and descending in nature strove to be man for he was the grand ultimate end for which those forms were originally designed to accomplish. Hence when every form of organic life arrived, at the consummation of its development, & when nature was spread all over with beauty & with good atmosphere & geographical conditions, the earth was prepared for man, & by a universal combination & conspiracy of tendencies & efforts on the part of each & every thing he was unfolded. Though at first huge & unrefined & resembling in his anatomical & physiological structure, the quadrumanus more than any other type of the animal creation,

32  
yet man's innate tendency was  
onward to perfection, & hence he  
finally became in his anatomical  
& physiological structure what he  
now is, a coronation of universal  
nature & an image of God. The  
anatomical or structural law, &  
the physiological or functional law,  
operate with an omnipotent influence  
throughout the empire of nature. Com-  
mencing with the elaboration of  
worlds, these laws display themselves  
in the geological, in the vegetable, in  
the animal developments & organizations  
which constitute & decorate these worlds  
surfaces. The anatomical law is  
manifested in various actions long  
prior to the physiological law; but  
when the vegetable organization is reached,

The two principles became married as it were & therefore move on and work upon parallel or nearly identical plans throughout all the descending kingdoms of nature up to & in man. Each kingdom is represented just as it was unfolded in nature, that is to say, minerals & vegetables converge at some distant era in the earth's physiological & organic history, & by the commingling of their forces, merged into & unfolded the fish kingdom. The fish kingdom expanded for many centuries & then it also converged & unfolded the saurian kingdom; & thus by a constant succession of convergencies & divergencies, on the part of each descending

The whole animated kingdom arrived at a high state of perfection, which state is represented in the anatomical, physiological, & psychological possessions of man. The diagram, therefore, is illustrative of the true order of nature's physical development. A full synopsis of man & creation may be obtained by simply interrogating nature, for she points up to the eternal Mind, which instituted laws that manifest themselves throughout their unfoldings and bid us consider the principles of association, progression, and development. Because under the powerful & constant direction of these ~~forces~~ laws we perceive the unbroken & the perpetual tendency

of all forms & substances towards perfection, unity, & organization. Every created thing demonstrates that <sup>the great central mind thus proceeded</sup> from the elements & substances which formed, throughout infinitude, innumerable nuclei. These nuclei individually extract their elements & substances that have corresponding individual affinities, and these accumulate, condense, & purify, & form suns, and systems of suns, and planets, satellites, & comets, and these planetary organizations form the central mass and fertile womb of each orb which rolls in space. And from such orbs rudimental particles ascend & by undergoing a process analagous to that whereby the planets were made, these particles

ultimate in & develop mineral combinations. Then, again, by the incessant action of body upon body, essence upon essence, substance upon substance, the mineral compositions, by such proliferation, not only generate vivifying fluids & mediums such as electricity, magnetism, &c. but actually & constantly lose themselves in vegetable organizations. By a similar action, & by a new & higher combination of appropriate particles, the vegetable loses itself in the animal organization, and in the development of man

James William Williamson