1858

Diseases of nutrition are related to period of life at which they appear.

 Signed: [Signature]

Searles Dispensary
The causes of tubercular, fatty, actinomycotic, pleural
and pericardial deposits, considered in relation
to physiological phenomena of period of life, at which
these morbid conditions make their appearance.

As a law of the economy of organized tissues, all
the constituent particles of the tissues of the body, are forced
to live for a certain time, which is cut short if their function
are peculiarly active, completed if no particular strain of work
is imposed upon them. In all such, at once
a system of organs is constantly, while another is only periodic
really engaged in the performance of vital functions; the
structure of one tissue is more amenable to disintegrating
influence than another, it may be deduced, that as a general
principal, amount of work done is a large extent
controls duration of existence. Is the organic texture of
one system required to be renewed at one period of life
that of a different system at another

This law is only a general statement of the
reality involved in the observation, that while general
nutrition is a continual process, at certain periods in the
history of certain organs, or systems of organs, death
is proportionate activity of a muscle, for example, a greater
amount of nutritive activity takes place in that organ or
system than throughout the body generally.

Taking it for granted that the above proposition is true,
this of the utmost importance that the elimination and
accumulation necessary for the progress of nutrition, should
be kept steadily in order, as the proceeded loss, consumption
of balanced nutritive combinations is peculiarly liable to become
disturbed, and if so, to result in one or other of the pathological
changes mentioned as the subject of investigation.

These pathological conditions afford the fact
from which will endeavour to deduce arguments in
etiological elucidation.

The Digestive, Respiratory, Circulatory, and Excretory systems, are among the history of an individual life subjected during a particular epoch to decrees of nutrition, which, except in the case of the two first, are almost peculiar to the one time in which they are most frequently traced in childhood and youth. The ordered period of the Digestive, Respiratory, and Excretory organs, which are then menaced by insatiable hunger, during adult life, the Digestive system is subjected to its second great trial, half degenerates, and in advanced life to the third malignant affection.

During childhood and youth, the Circulatory system for the most part enjoys immunity, but towards middle age in the seat of fatty and in advanced life of hemorrhoids and Varicose dispositions, or rather transformations.

The Excretory urinary system is most of the time affected by morbid conditions having their origination in depraved nutrition during the early or middle stages of life. To this towards the decline becomes one of the most frequent causes of both innocent and deformed germs of all abnormal character arising in Preputial Enlargements of the male and Carcinomata of the female organs.

From this cursory analysis of the chronologic decades of the different systems, it would appear that the constituent tissues of the Digestive system underwent three distinct cycles of renewal, each being characterized by a disease taking its type from the time of life at which the cycle commenced. That the Respiratory underwent only one such cycle, with its consequent predisposition to accelerated renewal, and poor in this respect corresponded to the history of the Circulatory and Excretory systems, whose period of probation however, always at a later stage of existence, and the quality of whose danger was materially altered thereby. It is upon a Consideration...
The limitation of certain systems to the decades of particular periods of existence that we are imposed with not only the necessity but also the sufficiency of forming such laws as that which this paper commenced, viz., that amount of work determines duration of existence, and its corollary that that organ or system which undergoes most functional activity will be most likely to suffer from abnormal nutrition in advance and in most frequently renewed.

Before advancing another step, it will be necessary to dispose of what at first sight appears an insuperable difficulty. It has just been stated, that the digestive system undergoes three distinct cycles, while the circulatory, respiratory, renal, and urinary, are observed to pass through only one, and yet the functional activity of the digestive system is only occasional, while that of the circulatory and renal to a certain extent are constant. In the above enumeration we should have said, enteric pancreas, but that the excretion (would not have been very apparent) would necessitate a detailed reference to the normal consumption of organic structure which takes place during the processes of digestion and absorption, and the constant degradation of epithelium from the gastric and intestinal walls, and also the consumption is only periodic, far more than constant, being mechanically involved participation of the respiring and circulating organs in their peculiar vital offices. The destruction of tissue in the digestive system as compared with that which is then as time to time the respiratory, next as the digestive is most clearly in circumstances requiring renewal, first because its functions are as continual as those of the circulatory, and secondly, because even if it were not more integrally involved, it structure is more amenable to dissecting influences.

The circulatory system approaches the cycle earlier than the renal or urinary, because admitting the tendency to be nearly
clearly regards stability, the function of the digestive organs, are only occasional, while that of the Circulatory is constant. —

Upon the supposition that some cause has been indicated through decreases of the nutrition of the digestive organs, as long as they occur in childhood, earlierhood or advanced life, of the respiratory at or near adult life, of the Circulatory throughout the whole of life's decline or life, we must now endeavour to address some arguments to prove that the nature of this pathological lesion is in a great extent determined by the physiological process going on in the body, as preparation or necessary adjustment of the body generally, for the particular stage of its existence at which it has arrived. —

Here, it attacking the digestive organs from infancy to adult life, is the necessary result of any rapid elimination, imperfect assimilation, tendency, due to very activity of these processes, to make its appearance during any year from the time of twenty, but as the latter approaches, he state of it, most frequent attacks on the lung and arteries is the organ par excellence. In which it varies, nature and seasons, and, most definitely, experience, displayed a definite pulmonary, inferior in the type upon which to base my physiological inquiries. At puberty, the change which the body undergoes is to a much greater extent one of expansion than of growth, the attainment by which muscles' extent must be caused with little material, hence is purchased at the expense of stability. The bones become larger, prominent, the muscles expanded or stretched, and there is a departure of contour and irregularity of surface, pointing the absence of that balance which gives symmetry to the Cereus, and includes the tissue appearance in search the Kashmir and a universal falsehood there. Atrophy will be discovered. Hence, the physiological necessities of the body and carbon in a condensable form will be found to be among the chief coordinate objects.
in the nature of the Pulmonary Functions for the last year and a half, and you will discover an efficient means for the
lung being the most frequent victim to the kind asthma.

While the body is rapidly increasing in size, it is evident
that the eliminating organs are required to act with augmenting
activity, the lung the most efficient of all. Elimination comes to
become its full charge, and will support the internal heat, and
will continue to eliminate while life lasts. Even after the fuel
has consumed the part of its own indispensable tissue.

The proper respiratory fuel, to wit, carbonaceous material, is
often prevented from reaching the lung for the following reasons
The sugar, starch, gum, etc. of vegetable food, cannot
reach or be at the pulmonary furnace until it has passed
through the stomach coronary in a state fit for consumption,
until it has been converted into animal fat in the course of
the circulation. But after this transformation and its
adaptation to the muscular and other parenchymatous
issues, a necessary demand in their organization
therefore, by the time the circulatory blood circulates through it,
has been directed to that necessary element for the promotion
of health, our respiration ascension. The following
quotation from Dr. Waldo will strengthen this view. Breathing
Pneumonia he says "Pneumonia is as I have done in some Cases,
all other symptoms to an antigene. The obvious that unhealthy
of the lungs. Should rather be the condition necessitating itself
acts as an efficient Cause of breathing. What loss the
Appetite, diarrhoea, and cyanosis are subsidiary in
its influence. It is not only the cellular tissue and external
that, but that, the muscles and Parenchymata suffer for it,
you know the weight of the heart and blood of æthers are less in the victims of disease than in those of any other
because except cancer. To hang and adipose tissue exists
in any part of the body, and replaced in adipose in
which it may be reabsorbed into the blood and so
been taken up or consumed if the supply of carbonaceous material afforded to the cell be not greatly augmented, and presented in a form fit for consumption. One of two things must happen, either the constitutional lesion of the tissues itself must undergo excitation, or in other words a slow combustion or fuel, or the animal heat will fall so low as that all the vital functions shall be imperfectly performed._

How the Excitation Arises, whether in Tubercle or in lesions of tissue which has been deprived of its Carbonaceous Constituent, until assimilable lymph, cooled at such a low temperature, or otherwise kept in the way of organisation, by such a different nervous force, i. e. the method of becoming organized tissue, it assumed the form of tubercles and played the part of a foreign body._

That it is not a foreign body foreigner contained as such, in the blood, preceded when participating agencies come into operation, is almost certain from the many analyses which have failed to detect any considerable alteration in its constitution._

There are one or two very direct pathological observation which present a very decided negative to the supposition that tubercle is imperfectly organized lymph, for example, it is related by Dr. Wallace, that some of the most remarkable cases of rapid resolution of Pneumonia excitation he had met with, mine in Pneumonic patients, and that intercurrent Pneumonia attacking a Pneumonic individual does not accelerate the progress of Pneumonic Tuberculosis._

Besides, the Premonitory Symptoms of Pneumonia are, namely those, attending the appearance of an Inflammatory Affection. On the other hand, all the phenomena of Age, Precipitation from Imprisonment, Occupation, and Exposure, all the phenomena attending the action of Pneumonia...
agents, to which may be added those pathological observations, point to tissue oxidation as the cause of consumption. The scirrhous is supposed to be the typhoid ulcer of the tissue in which it is found. Whether in the heart, the pericardium membrane of the brain, or the pulmonary membrane of the lung or kidney.

The stromous epithelium, second conceives as the first stage of that death of the carbohydrate element of the tissue, which appears at the climax of its distillation and the its ultimate result, in the formation of vacuoles. A death not equally felt throughout the body, generally, but experienced by some particular system or organ from the unequal distribution of an indispensable material. The predisposing causes to tuberculosis other than the age, have already been referred to. The body temperament, will at once suggest either rapid elimination of carbon, or sluggish assimilation or absorption to supply the eliminating organ. Occupations whose tendency is to lower the tone of the system to such a great extent as to make it difficult to assimilate and make the assimilated materials, or the entire foodstuff, or make it difficult to assimilate and make it difficult to furnish the nourishing influence, whose impelling power should be equally distributed to all the functions of life, to make exertion in the accomplishment of any one particular function must produce either general or local exhaustion. And which does not contain a sufficient proportion of the making material of necessity varying in kind according to the transforming power possessed by the individual. Food which does not contain animal oil in which case it is an individual whom physiological powers are incompetent to effect the metamorphosis of sugars, starch, glycogen into oils, materials, such food must be classed as a powerful promoting agent in bringing about the formation of vacuoles.
One of the most successful remedial agencies may be spoken of as their mode of operation observed. The supply of that vital element which can prevent intense oxidation will be found to be the criterion and source of success. Sufficient reserve food-air, build up the cells and produce the phenomena of physiological oxidation. Food of good quality will act as the stimulus to the system in which the metamorphic process of assimilation of the various articles of food will be complete. All nutritional tendencies will speedily disappear. Muscular exertion in the open air with generous diet will conduce to the effects of such occupations as produce imperfect assimilation of both nitro-gaseous (especially carbonaceous) food with the consequent tonelapse and atrophy of muscular macerel vascular systems. Above all, some easily assimilated animal oil, may render the transformation of vegetable food more complete, and supplying abundance of Carbohydrate in the Sanguineus vigorously circulating rapidly approaching nourishing & strengthening will help. Adulteration which must after treatment on great care. Alcohol in the form of spirit or malt liquors will most meet to animal in the appropriateness of the supplied element and in combination with their true effect while often afforded miserable may indiscreet absence.

Weill prove fact, that Diabetes has many great tendencies to terminate in Phthisis, and that sugar in large quantities will eliminate in the urine of individuals laboured under the worst symptoms of this disease, does not as appears at first sight, militate against the hyperoxisation theory of tuberculosis, because, it surely confirms a statement already made, that Phthisis is often inaugurated by that tenement or state of the system which is incompetent to effect the transformation of vegetable hydrocarbons.

If the foregoing remarks are the etiology of phthisis or Maine, be founded on just physiological principles
Every different reason is given why the Cholera of the Blood is named Cured, and it will then go at far as to prove, that it very rarely can be cured.

The Complete Removal of all Timorible heat-making material, together with the wounds committed upon the heat-making Organs themselves, must have brought the System to a state in which the nervous force acting for efficient accumulation, must prove fitting unconnected to the maintenance of a healthy Nutrition, much less a powerfully Operating one.

Fatty degeneration is generally observed in those who are beyond the middle period of life, who have been leprous in their habits or Phlegmatic in their Temperament, or who have died of a lingering Disease. Fatty degeneration and tubercular deposition occur at different periods of life, and as a General rule in individuals of opposite Temperaments, but the predisposing Causes which in one case produce Tubercles are in many respects similar to those which in another produce Fatty degeneration. In the young different exercise & imperfect nutrition will be the cause already based produce Tubercules, the result of inefficient accumulation; in the middle aged, it results in different evolution & consequently abnormal accumulation of Fat. One of the few instances of the occurrence of fatty degeneration and tubercular infiltration in the same organs, is when a Partisan Lung becomes the seat of intercurrent Pneumonia. In youth the principal situation for the accumulation of adipose tissue is subcutaneous, and distait before accident age, that its agglomeration round internal organs is observed to take place. In youth this process is strong & evolving
proceed proceed with great activity, and an accumulation of carbon near the vascular, that is the rapidly. Eliminating organs can take place — they being which reduces the tone of the nervous centers, causes consequent aneurism in the functional duties of the intestinal organs, this merely by causing a still further loss of vital power in these organs, and the decay and the integration to which they are subjected in the performance of their several offices, is repaired by that tissue which is apparently eliminated at the least expense of vital force, viz. fat — that the loss of nervous force in this disease, is the result of deficient vital heat, or impaired rapidity in the evolution of carbonic acid, is apparent from the circumstances which more immediately produce it, and the Constitution of those individuals on others is most liable to take place. This is not the mere presence in the system, of fat as that, but its existence as a result of impaired vital energy, which originates the tendency to the superseding of nitrogenous by fatty tissue. To understand why deficient nervous power should produce such a derangement in the accumulative power of tissue, as that instead of the elements similar to itself, forming them into a tissue like that, it should appropriate that to substitute a mere adipose mass, it is necessary to suppose, that as carbonaceous matter is abundance to present in the blood, and the selective power of the accumulating tissue is impaired, little effort emanates from it the richest & most easily separable material is employed for the purpose of repair. Upon what other theory is it possible to explain the degeneration of analyzed muscles? or the fact that blanched circulation, and anemic disease, oily fluids, is the
unsuspected, as well as Consequence of a Flabby Heart. — As the voluntary muscular system is not so constantly in action, as therefore, its constituent particles are not so short-lived, changes produced in the constitution after the muscles have arrived at maturity, are less liable to affect them, than long time to involve alteration of the great involuntary muscular organs. --- It is also possible, that as this immediate repair is less necessary for the preservation of the economy of the body, more leisure is allowed for the expenditure of physical force. — Why, as sometimes happens, internal organs should become the seat of fatty accumulations as well as degenerations, while the surface of the body generally becomes vacated, may be accounted for on the supposition that while the current of the circulation is principally directed towards those organs whose function is essential, this at the same time languished, and leaving along in the course of Carbonaceous material, made of the extraction of more fat making material than is necessary to support the reparative demands.

The explanation of this phenomenon is also allowable to suppose, that the less vitalized absorbent of the voluntary muscular have been so much deludged by antecedent causes, that they are unable to absorb the fat which is thus thrown back upon the internal organs. — This latter imposition indeed appears better adapted to meet all the details of the pathological phenomenon of both degeneration and fatty accumulation than that first proposed. — The most important agent in the condensation of the tissue of muscles are first age, second want, and third Impairment. — As long as the evolution of Carbon is sufficiently rapid to maintain active vitality, it almost always
in youth, so long will a due proportion be maintained between the nitrogenous and carbonaceous elements of the blood, or rather, of those of the blood, and the part of the gaseous, and so long will the vital force be maintained unless a state of undue, abnormal, or abnormal distribution of blood be observed to the entire body. On the other hand, as soon as the "secret of consumption" of youth merges into the caldron of matured manhood, the tendency towards agglomeration and accumulative approximation of that vital idea itself is lost; every influence in bringing about a similar condition - the amount of carbon is essential for the healthy existence of the body in a natural state, because excellence of the function, and prevention from being performed with one activity, by breathing an air half-opiod half-atmospheric and by prolonged succulence in the blood becomes less, itself understood, and of a certain is retained in the system. The different portion of the blood being by causing loss of vital power, and therefore, morbid forces acting as already indicated, cooperate in taint in the ascent of developing diastatic transformation.

If fatty degeneration were to be considered as not a pathological condition of tissue merely, but as a disease amenable to treatment, it must be considered as a condition whose essential characteristics are, first, deficient vital energy, causing a generally degenerate with a disproportionate excels of carbon in the body. The word carbon may properly be applied in this case, for sugar, starch, and fat be introduced into the body, placed in the circumstance which pre-

dispose to leanness, they are now speedily converted into fat; and secondly, imperfect elimination of carbonaceous material, marked by a tendency towards continual accumulation.
in as much, as disintegrated tissue is constantly
alaking into the blood, while the effective proportion of
the ordinary aliment continues a great (considering
the circumstances of the affected individual) as an e-
state of health. Clearness of the theory, may be
readily accounted for, if the function of that organ
organ is diminished or considered as the probable
local paralysis following accumulation of tissue in the
blood of the limb perhaps.

From what has already been said, the following
law relating to the connection of disintegrated
elements to age may be deduced. During the earlier years of adult
life all the organs of the body are called upon to part
with some of their adipose constituents to supply fuel
for the vital flame; these tissues, which contain but a small
portion of this element are so affected by this
depression, that inorganic forces acquire the ascendancy,
and destruction of tissue is followed by functional insufficiency
in the result. It is a rule of life that the drain
is not experienced, and high is exceeded by comparability.
low vitality, affording a double cause for the accumulation
of carbon in the blood, and impairing the electric power
of highly organized tissues for the similarly organized
elements of blood function. After a natural change
has once taken place, the vital law by which every tissue
repairs itself, by the accumulation of a similar substance,
causes the tissues to make gradual but steady progress
and arrest every effort made to check the degenerating
tendency. The only remedial means which can be applied
by the physician are for this reason far less effective.
of the disintegrated adipose diathesis bear
any relation to the physiological processes transacting in the
organ at the stage at which they occur, this relation is
much more difficult to account for in trace, than is that
Which limit, Achromatous Tissue, success transformation of nitrogenous tissues, to the more advanced stages of life, existing often at the same time, and the nitrogenous parts of the circulating system, as if the accession of both of these changes was brought about by the same pathological causes. At one time, they are almost invariably found in the bodies of the infant, old, aged, or from some cause, severe. Bearing in remembrance the age, early, affected, and the constitutions of victims to these degenerations, a short inquiry into the physiological processes going on in the body, does afford a pretty good clue to the original nature of these pathologies. About, or soon after, the age of forty, the process of ossification of the cartilege commences, a gradual removal of gelatine and replacement by bone, takes place. Of the elements of gelatine, the entire, excepted by the kidney, thence, a process of renal substitute, goes on, along with the introduction of calcareous matter, an imperfect elimination of gelatine from the blood, takes place, then, the urine becomes a foreign tissue.

They explain the appearance of this turbidity, the coating of the larger arteries (unavoidably, the smaller capillaries) by suppose that the chyme, by means of the viscera, forming a broad, satisfactorily, account for their original location, that is, the urine. May be either chemically, or upon, or chemically, or precipitated, therein, and that a process somewhat analogous to literature absorption may become its introduction into the tissue of muscles.

The physical appearance, as well as chemical composition of such bones lead to the conclusion that it is nothing else than softened down, disorganized cartilege, now, if as already supposed, the elements of the desintegrated bones cartilege are not eliminated from
The blood it is obvious that gelatine may play the part of a blood protein as gelatine, that is, before its elements have been converted into bread. The gelatine in a state of solution in the blood, if once absorbed by the arteries and conveyed to that law which (as none of the other tissues participate in this abnormal nutrition) causes all tissues to accumulate materials chemically corresponding to those already constituting an integral part of their structure, this as a result of this law that formed explains the existence of the hemorrhages depicted in those large vessels alone, which contain a large proportion of gelatinous tissue in their elastic coats.

The rapid removal of large quantities of fibrinous matter at this period of life may in all probability be the primary cause of urinary calculi which are most frequent about this age. The gelatine albumin will account for the stone acid, the calculi for the phosphatic and the thallium calculi. The laws of similar similis, id est, in the case of the hematoma, and if iron oxide in the case of calcareous depositions, are incompetent to explain the cause of these lesions, it is only necessary to assume as was done in the case of fatty transformation, that the selective power of the affected tissues is furnish impaired, by putrefaction, age, and the profusion of effete matter in the blood, that those materials being present in great abundance, are most easily, therefore, are most readily, appropriated, and this cooperating with the principle which have endeavoured to establish, that the circulating fluid is about this age undergoing its great cycle of renewal of tissue, will account for its being the peculiar seat of abnormal nutrition of the above character.
so far as I can ascertain, the chemical constitution of carcinomata, growth, has not been determined. From their great density, hardness, gelatine might be expected to enter largely into their composition, and yet, it does not. Their composition is probably heterogeneous, as the lime stone to be produced from the dissolved portions of several systems. This results from a particular kind of impairment, by which the secreting organs peculiarly are liable at a particular time of life. The Calciy is not produced by the cancer, but the cancer is the result of the Calciy. It is not a particular Calciy which is united, but a particular system of secreting organs, whose power of properly fulfilling its duty, is limited to a certain time. The special coincidence of a genesus may produce impairment of the particular character, but this coincidence is comparatively rare, for cancer is much oftener hereditary than coincidental.

The Physiological law which inaugurates the carcinomatous tumour, is not the same as that which produces the fatal degeneration, in a way in which the latter is attended with renewal of old tissue replacement by new, whereas in the former, time is does not appear to be absorption of preexisting tissue, and the substitute (of the word may be employed) does not deserve the name of tissue. The attraction of the waffle in Sanskrit grammar, is probably a result of condensation. Contraction rather than absorption. This is the only organ in which anything resembling absorption takes place.

A very cursory glance at the tissues which are most frequently the seat of malignant growth, will give some plausibility to this hypothesis that retained secretions, from the mucous lining of the stomach, the Mamma, after the Catamenial discharge, has caused the return of the secretion of the same function, the
The Rectum after a long Course of unnatural stimulation by its secreting glands by Operation, The Stomach after a prolonged Course of similar unhealthy excitement. The lip after protracted privation from the use of Tobacco, and Obliterations (rather destruction) of its exhaling Portion by the involution of the Pipe, Beech-pitigation, selected as the most frequent Habitat of the Disease. Present Conditions peculiarly favourable for its origin, development, and that those Conditions may be unless these last referred to it is impossible to suppose. This the function of the Exhaliative Part of the affected tissue which is suddenly brought to a Stand Still, and it is because of this Last of Vitality of the Epithelium Generally, that noxious Action does not go on in a continuous Part. Their Organic forces are nearly worn out, and they refuse to put forth an extraordinary Effort. The Influence which aborts the eliminating Action of the Exhaliative, it not at first affect theStrictly secreting Organs, the result is a Consequent retention of secretion. The secretion whatever it may be, be cause of the Generally tranquil State of vitality, becomes Subject to the laws of Insoluble Chemistry, undergoes decomposition of a peculiar kind, and produces a State of parody of the Systemic Body Pupator hermetic. This is the Cancerous Case. The effect of the Catharca Ellis thoroughly established and inapposable, the Cause of the Catharca may in many Cases be removed. I showed that it is highly probable that local bleeding from the lesion, especially from the mamma itself, might prevent the tendency with degenerative effects, to the reception of Secretions. The sudden Insolubility of intestinal stimulant reagents stronger suppose to be particularly obvious from the probable Supernumerous of Disease of the alimentary System, and Insoluble always...
The habitual employment of these or gastric stomach an in the light of predisposing agents to the same disease. 

While the function of the exhalant organs (if a part are in allegiance) I should consider the exhalation of the secreting structures which supply them with the materials for exhalation as indispensable, and for this reason. 

These indubitable triggers of retained secretion or hypertrophy of the exhalant organs presented themselves, should assume not merely the hypertrophic structure, but also those tissues above which the effete secretions had been thrown back, and in prolonging should follow the plain indication of theoretical reasoning by performing the ordinary trepanned operation.

The prophylactics against Cancers and measures whose tendency is to restore to the exhalant system its original power, or measures, whose tendency will be to render its function unnecessary by a removal of the exhaled materials which can only be effected by excision of the secreting tissues.

Andrew Miller