On the Clinical Investigation of Disease

By James Black, 

Candidate for the Degree of Doctor of Medicine in the University of Edinburgh 1851.
The Clinical Investigation of Disease is the proper study of disease at the bedside of the patient, or from notes there recorded, and afterwards duly weighed and considered by the physician. This mode of study, although of comparatively recent adoption in our hospitals and medical schools, has most highly been productive of immense benefit to medical science. Its good effects have resulted in the production of more scientific, practical, and accomplished physicians than formerly, as well as in an improved method of the treatment of diseases and the consequent increased prolongation of human life. The system of Clinical Investigation of diseases therefore, is of paramount importance to all who are preparing for this medical profession and claims especial consideration in the present thesis. But in order that this system of acquiring knowledge be fully and properly carried out, there are certain requisites necessary on the part of the investigator as well as certain conditions bearing reference to the patient, himself and the institution into which they are admitted. This is necessary...
that the investigator, be he student or physician, should have a cultivated understanding, a ready perception, and a mind capable of calm and dispassionate reflection. His love of the art and science which he proposes to him to embrace should be manifest in his entire zeal and perseverance in the pursuit of professional knowledge. Minds thus constituted are capable of dealing with the phenomena which disease in its varied forms presents and of turning to good account the various opportunities which are presented to them. But some persons there are whose mental constitution is ill-adapted to this method of observation of phenomena as they occur in disease and to the group of reasoning to which such observation sometimes enables. Such persons nevertheless may defend for themselves by strict attention to the method of clinical instruction as imparted by their teachers, by carefully recording the cases to which their attention is directed, and by subsequent reflection thereon. This system leads to an acquired ability to observe the phenomena of disease to
investigate the source and cause of such phenomena - to arrive at a justifiable appreciation of the issue of the case under consideration and to determine the rationale of treatment on the part of the patient and institutions into which they have been admitted, it is necessary for the full investigation of disease as before stated. That the cases of the same nature should be sufficiently numerous to as to familiarize the observer with their features - to admit of comparison - and thereby to lead to correct results - 2. That every disposition on the part of the patient himself should be manifested for the due investigation of their case - and 3. That every facility should be afforded by the medical institutions in the form of instruments and appliances to for the proper study of disease. These things being recognised, we may at once pass to the consideration of 1 - Disease and the constitutional peculiarities by which it is influenced.

Disease may be defined to be - a deflection in the relative ratio of action of one or more parts of the human body
Both from what is observed in health arising out of nervous function or organic change or both. Hence according to this definition disease may be either functional or organic. It is likewise said to be acute or chronic accordingly as it runs a rapid and short course or is of slow progress and long duration. Again it is called ethereic or asthenic accordingly as it is characterized by high action and constitutional power or by created action with marked debility. Disease is also simple of specific— the former requiring no particular cause for its production, whilst the latter invariably requires the application of a particular agent to the system. Disease is likewise contagious or infectious— the former being propagated by contact— the latter the medium of the air. We further recognize disease as epidemic, endemic, sporadic and intercurrent. An epidemic disease is one which affects a number of persons at the same time from causes which are general as from excessive heat, contagion of this class are cholera, influenza, pestilence etc. An endemic disease is one which is confined
to particular locality, and whose cause is generated in that locality; instances of which we have in intermittent fever, produced by the peculiar emanation from marshy grounds and hence termed "marsh fever."

A sporadic disease is one which occurs in single and scattered cases arising from occasional causes as cold, fatigue, etc.

An intercurrent disease is one which is an epidepidemic disease occurring in a district in which epidemic or endemic disease is then prevalent.

Such then are the different kinds of disease, which it is necessary to distinguish at the very outset of clinical investigation.

In a pathological point of view, disease may be very differently arranged and divided into classes, genera, and orders. Perhaps the best division of this kind is that which arranges all diseases under two classes or heads, i.e., febrile and non-febrile.

Under febrile diseases we have the two orders: inflammatory diseases and those properly so called. We again divide the inflammatory diseases into acute and chronic.
- c. Simple - d. Specific. In like manner we arrange the former proper into:

- Simple Inflammation
- Continued
- Intermittent
- Compassing
- Pyogenic.

Careful observation has determined that in all these cases the amount of functional disturbance is not uniform in cases of the same nature. This difference we distinguish by the application of the word "type" to the particular diseases. Hence we have the inflammatory and typhoid types of disease - the former characterized by fever, the latter by evident debility. In like manner, in fever we may have merely the symptoms proper of the disease or these with the addition of those denoting the existence of a local inflammatory affection, as of the lung, bowel or.

In the former instance the leading affection - i.e., the fever is called Simple - in the latter complicated. The non-typhoid diseases are divided into functional and organic, by which we mean, with reference to the former, diseases in which...
Chang is appreciable, and diseases with respect to the latter in which the natural fluids of an affected part have undergone some organic change, which is cognizant to our senses. But this change, except in of structure may either depend on simple condensation, which are only dangerous to the well-being of the system by the altered function which they produce in the part in which they are suffered; or by the presence of a matter for generic, which can form on part of a healthy organism, and which when once present, often rapidly extends itself. Hence organic diseases are clasped under the terms Simple and Malignant. Admitting it to be the above definition and classification of disease, it is met of importance in clinical inquiry to ascertain by what constitutional peculiarities disease is modified or influenced. Here again, observation and experience at the bedside, have led physicians to distinguish certain constitutional peculiarities which in every individual are evidenced by physical appearance, and functional manifestations of a peculiar kind; and which, no more
or help influence over the system, in not only predisposing it to certain diseases but likewise in granting a degree of control over the symptoms and course of such diseases. These constitutional peculiarities have received an expression in the word temperament of which in recognizing the following four varieties.

Nervous, Sanguineous, Bilious and Phlegmatic.

With each of these we have a certain development of the body — often a particular cast of features — certain peculiarities referable to the circulation and to the functions in general — and a peculiar manifestation of mind. It is hence evident that the study of temperaments should form as it were a preliminary step to the investigation of disease at the bedside. The physician should, by the aid of a single glance at the patient, be able to say to what particular temperament he belonged. By the assistance of this knowledge he will be enabled to determine to what extent disease may be expected to be influenced by such constitutional peculiarity. But he must not expect to find in every individual, a pure temperament. It is the mingling of the different temperaments by
Marriage has as must necessarily be the case, almost done away with singularity of temperament in every individual. The conformation of temperaments which has once taken place is manifested by the union of the nervous with the sanguineous hence termed Nervo-Sanguineous, the nervous with the bilious hence called Nervo-Bilious and the nervous with the lymphatic distinguished by the term Nervo-Lymphatic. But although it is seldom that we see a pure temperament yet in every individual one particular variety of it predominates and influences the system to a certain extent in its particular manner, under all circumstances in which temperament is capable of acting. For this and other reasons to be gathered from what has already been said, it will be proper to describe the different temperaments as they are arranged under the heads—Nervous, Sanguineous, Bileous and Lymphatic.

The nervous temperament is characterized by a spare body, thin, delicate skin, light hair and eyes, a regular cast of features, small and somewhat frequent pulse, great activity of the functions, anxiety of mind, quickness of
of thought and action, yet an inability to
undergo both bodily and mental labor. This
temperament predisposes to diseases of the
nervous centres—functional disturbance of
the heart, stomach, liver, and kidneys—and
to fever more particularly implicating the
brain. Individuals of this temperament bear
badly the loss of blood, violent perspiration, and
stimuli of every kind. Hence their treatment
under disease should be directed to allaying
the moderate sensibility and activity of the
nervous system, to preserving mental quietude
and to a due maintenance of the strength.
As far as any particular affection present in
the system, will allow.

The Sanguineous Temperament is recognized
by a full habit of body, regular features,
florid complexion, usually light hair and eyes,
full development of the vascular system, full
and somewhat frequent pulse, activity of the
functions and a mind energetic, but not
prone to intense study. The innate powers of
the system are strong and capable of considerate
bodily labour. This temperament predisposes
to active inflammations, sanguineous effusions.
and the debility of different organs especially of the heart. It admits of active depletion by bleeding and purging, of the free exhibition of depurative medicines, as astringent, stimulants, digitalis, etc., and of the use of a simple diet. Such means, therefore, became the method of treatment in the generality of diseases affecting individuals of this temperament.

This bilious temperament is characterized by a moderate development of the body, strongly trabeculated features, by a coarse skin, rough complexion, dark hair, and eyes activity of the functions and capability of great physical endurance and intense mental application.

This temperament predisposes to functional and organic diseases, simple and malignant of the digestive organs, especially of the stomach and liver, to paralytic affection of the nervous system, and to diseases of the mind. The use of medicines is based alternately with the judicious use of purgatives, a proper regulation of diet, and moral treatment. Here generally required. The sympathetic temperament is known by a certain restlessness of the body, disposition
to the accumulation of flat-flableness of the muscular system—laxity of the general structures—very moderate development of the vascular system—regularity of features—pale complexion, usually brown noisy and either slight or dark eyes. The functions in general are inactive and the mind is sluggish and indolent to study. This temperament predisposes to diseases arising from imperfect assimilation of food—too low-inflammations often of the excretions fluid—leprosy dropsy—exceplastic debility—and mental degenerations of structure.

The particular nature of the disease must determine the plan of treatment. In general speaking, the system requires to be supported and the functions invigorated by tonics, and occasionally by the addition of stimulants. If purgatives be required, their use will often require the addition of tonics and stimulants.

A glance at the above must convince every physician of the necessity of studying the different temperaments as being important elements in predisposing the body to certain diseases, as well as in indicating to a certain
extend the treatment that ought to be pursued of not the importance to him in clinical inquiry is the knowledge of the causes of disease; inasmuch as a just appreciation of cause not only in many instances tends to confirm our diagnosis but likewise indicates the plan of treatment. Thus as an example of what is here meant an artisan who is daily in the habit of handling lead is attacked with violent and frequently recurring pains in the bowels which his medical attendant recognizes as symptomatic of colic. This diagnosis is to a certain extent confirmed by the fact that the absorption of lead into the system frequently produces colic, and that in this instance the patient is daily exposed to its influence. There is also a just appreciation of the cause at once points to the proper method of treating the case — namely, by the exhibition of those medicines which allay pain exert in a chemical point of view a neutralizing effect on the lead — and promote its expulsion from the system. It is therefore evident that for the proper investigation of disease a due knowledge of causes in general is absolutely
required. All causes have not all an equal
power in the production of disease, neither
do they admit of equal demonstration. Hence
their division by modern authors into proximate
and remote. By proximate cause is understood
that change in the elementary composition of
an affected part which gives rise to the symptom.
This term corresponds with the cause at disease
continents of the ancients as well as with
the occult causes of later physicians.
A remote cause is one which either predisposes
the body to disease or directly produces disease
action. Hence the division of remote causes
into predisposing and exciting. These terms
correspond, in a great measure, with the
causa evidentes of the ancients of which Galen
made the following subdivision: praecur-
litice, rel principiantes, et propter mel
anticipantes. The former being etiologic agents
of disease. The latter internal conditions di-
versifying to modifying action. Causes have like-
wise been divided into external and internal
as well as into chemical, mechanical, and
central. But by far the best and most rational
arrangement of causes is into proximate and

Remits imminent as these lines prepare the reader
in which they occur as witnesses of the disease.

The clinical investigations of cancer have shown
reference to:
1. Age
2. Sex
3. Heredity
4. Constitution
5. Mode of Life
6. Surfeit
7. Climate
8. Genetic
9. Contagion and Infection
10. Previous disease
11. Influence of the Mind
12. Defective Nutrition
13. Infection

Infancy: Each period of life is found to pre-
determine more or less a disease. Thus during the
infancy, the caloric power of the body is
converted into heat owing to which external
cold exerts a powerful influence in causing
contraction of the small vessels of the skin
and the subsequent retroflection of blood to
the internal organs, which thus become en-
gorged and frequently run into inflammation.
During this period, the extreme tenderness of the
skin at this period and to the irritating
effects of air upon it, various popular eruptions
are apt to occur. The condition of the alimentary
canal for some time after birth, unless properly
nourished to maintain, acute vomiting, imperfect
nutrition later presented symptoms and
This disorder arising out of disorder digestion. The brain too, rising to the acuter for its early development, and to its continual excitement by the novelties of the external world, is prone to active congestions, hydrocephalus, and inflammations. To these causes may likewise be added the process of teething which frequently disturbs the healthy action of the nervous system, the bowels, and the lungs.

2. Childhood. During childhood the digestive and assimilative functions take the precedence of all others. Hence the predisposition to derangement of the stomach, liver, and bowels—persistent fever—and the generation of phlegm that goes into the blood at this period of life, which in fibrinous or proteine elements for the purpose of maintaining the growth of the body, and hence the great liability to plastic inflammations. More inflammatory action. Hence the assimilative action of the system has for some time been at quiescence, hence gives rise to excess, plastic, and apleastic inflammations constituting the various forms of scrofula. It is also to be observed that the nervous system is as yet extremely susceptible of impositions.
and therefore prone to disease.

C puberty.—With the attainment of puberty various functions which have hitherto been in abeyance are established; and in this way the body acquires fresh possibilities. The establishment of the menstrual function is fraught with importance to the female sex and constitutes an object of great solicitation. Its non-appearance at the proper period is soon followed by nervous and vascular derangements which manifest themselves in irritability of temper, instability of mood, headache, Herbertus nerves, palpitations, seminal elevation, arising from deficient hormone in the blood, imperfect nutrition, and deprived functions, more particularly those of the liver and glands of the stomach. In the male the seminal fluid is non-secreted, and the establishment of this function gives as it were a certain impulse to the nervous system which when properly controlled by moral emotions imparts energy and vivacity to the body but which under the too early or too frequent indulgence of the passions predisposes to disease arising from over-excitement and relaxation.

At Puberty. This period is likewise a pre-di...
ement cause of disease, inasmuch as the body having ceased to grow, the blood abounds in putridine elements and the vascular system is in a state of constant dilatation, hence the disposition to spontaneous or of various organs, active hemorrhages and inflammatory exudate. Where however the general health has been deficient the blood from defective alimentation does not acquire that highly vitalised condition which normally attaches to robust health. Hence the disposition in all such cases to deposits of the encrustating kind, particularly to uric acid. At this age too the passions and moral emotions exercise considerable influence over the system and therefore medicine is more or less uneffectual in cases arising from such conditions.

2. Middle Age. This is the period which is the least influenced by those conditions of the mind and body which characterize the earlier epochs of life. The functions have now acquired a uniform rate and the health is consequently steadily maintained. The predispositions of this period are generally the result of habits which manifest error in diet and drink. Thus indulgence in highly carbonised foods, in wrong fluids,
or mastication not only distracts the healthy action of the digestive organs but likewise produces an altered condition of the blood which under the influence of an exciting cause results in joint disease or rheumatism. This state of the blood, in instance of joint and rheumatism, depends in the presence of an excess of uric acid which, although a constant constituent of healthy human urine forms but a very small proportion of that fluid. Exchange is required to prevent the formation of uric acid in the system by converting its elements into more amenable of ammonia and even oxalic acid. Hence sedentary habits. Carbohydrated foods, unlike as before named, tend to its production. The first by an insufficient supply of oxygen and the last two by denying the oxygen to the exclusion of the uric acid. Persons suffering from the uric acid diathesis by a moderate amount of exercise convert this acid into oxalic acid and this again by a still greater amount of exercise causes it to form into elements helping off as urea and carbonic acid. This knowledge, therefore, is of practical importance in our investigation of the cause as also in our treatment of the above diseases.
With age - as the body approaches old age, many changes of structural and functional relation take place in it which dispose it to disease. By degrees the vascular system is altered in its proportions - the capillaries undergoing a progressive diminution and the veins increasing in quantity. The former condition leads to a diminished nutrition of the tissues generally - the latter causes the stagnation of blood in the veins. With a deficient nutrition there is a general thinning of the tissues, owing to which the skin becomes thin and wrinkled - the features more prominent - and the body lean and wasted. Fat is absorbed from beneath the skin and only a scanty amount of it is found in the interior of the body. In those persons however whose digestive powers are as yet good and whose habits and mode of life are favourable to the accumulation of fat, this substance continues to give a degree of fulness to the general contour of the body and most infrequently increases to a great extent within the abdomen. In the fibrous structures the altered nutrition disposes to structural change of a fatty and retroactive nature.
Degeneration of function is thus the paroxysmal
of the heart is at this period apt to undergo
fatty degeneration by which it is unable to
persevere in any unusual exertion. The middle
coat of arteries the retrogressive change which
causes these takes more to the same accident.
This disposition in the arterial system is mani-
fest more by the vessels of the brain than
by those of any other part of the system and
hence the disposition to apoplexy and palsy,
which is usually observed at this age.
Hence too a diminished elasticity in the
arterial coats and the increased hardness
of the venile tube. This retrogressive change
produces in the muscular system rigidity,
imperfect contraction and a tottering gait
in the nervous system increased density, frailty
and consequent liability to fracture. The heart
deficient in power and enfeebled in its pro-
fusive energy by the arterial lumens fails
to force the blood with sufficient velocity
through the veins in what is therefore accumu-
lated, rendering them tortuous and varicose.
Hence the disposition to hemorrhoids con-
gestion, pyorrheic droppings and deficient action.
of the secretion organs. In the respiratory organs the
lacrimation of the mucous membrane bipices to
congestions more or less, than an active
nature being to which pruritis and chronic
inflammations, pituitaries, cutaneous conditions,
are apt to occur. In short, throughout the
whole system there is a manifestly diminished
vital action — a tendency to gradual alteration
of structure — and deficient, or disfunctional-
muscular relations which, partly of themselves,
or by favouring the occurrence of other diseases
limit the term of human life.

Sex: The peculiarity of sex predisposes the
system to its respective diseases. In the male
the full development of the muscular and
voluntary re sist - mot or y systems — the force of
the passions — and the demands on the intellec-
tual and reasoning faculties dispose to disease
of the muscles, joints, heart and bloodvessels;
at effects arising from physical care
and to diseases of the brain and mind.
In the female the nutritive sensitive and
involuntary resist - mot or y functions are
dominate — bodily, whilst the mind manifests
great sensitive and perceptible faculties and
is strongly influenced by moral emotions.

Hence these conditions discharge changes of
nutrition, alterations in the composition and
quality of the blood, disorders sensation
psychomotor and convulsive affections, disease
of the brain and mind, irregularities of function
and structural alterations of the uterine, etc.

Hereditary Constitution - By the transmission
of individual peculiarities from parent to
offspring the hereditary tendency to particular
diseases is acquired. Thus the disposition
to mania, epilepsy, puerperal, gout, rheumatic,
and blindness is already impressed on the
infantile constitution at birth; nevertheless
such diseases may not manifest themselves
until after the lapse of many years and
the continued operation of exciting causes.

May an hereditary propensity to certain disease
shall exist and make the subject of it under
circumstances favourable to the maintenance
of health shall never suffer from the
particular disease to which he is predisposed.
In this way pulmonary consumption after com-
mittting its devastations in a family may
disappear as if it were from the following
our or two generations of the same family, and subsequently reappear in the child. The mode of life then - i.e., occupation, habits, food, and drink - had great influence in favouring or preventing the occurrence of diseases to which there is an hereditary predisposition.

Mode of Life: Under mode of life, as a cause of disease, may be clasped occupation, habits, food, and drink. Now it is a well observed fact that certain employments and trades dispose to particular diseases. Thus a sedentary employment favours constipation, the hand's indigestion - hepatic congestion, farmers' kidneys, lymphatic headache, and, in persons who live with the uric acid disthesis, with its concomitant affection of joints, rheumatism and stone. Persons engaged in occupations requiring much bending of the head, as is the case with matchmaking, gardening, and pitchers of streets, are liable to affections of the head. Sailed and shaven heads, or the thin heads, are prone to affections of the stomach and liver, from their continually interacting the due action of these organs by the position which they are obliged to assume. Spinners, cloth-workers in wool and cotton, curriers,
and multitudes are disposed to disease of the chest. Again, persons before-hand, fasting, and yielding to the absorption of heat into the system, whilst those who are occupied in taking in carbon and in the reduction of arsenic from its ore are more prone to local kidney, bowel, and chronic stomach ulcers. But habits predispose to certain diseases. Thus a want of personal cleanliness not only predisposes to but often precedes diseases of the skin, diarrhoea, typhoid, and affections of the lungs. This arises from similarity of functions between these organs and the skin, as to the decarbonization of the blood, by virtue of which the deficient action of the skin arising from an want of cleanliness is compensated by increased action of one or other of the above organs which form an excess of function, is thus predisposed and sometimes excited to disease. C. - Interference by producing over-stimulation and subsequent prostration of the nervous system interfered with the process of healthy digestion, and thus leads to an infirm condition of the body favorable to the production of invalidism. Hence the frequent occurrence of
pulmonary consumption, carcinosis of the liver, and granular degeneration of the kidneys, in constitution and abused. Hence also by direct stimulation of the stomach, liver, and brain. The liability of organic diseases of the first two organs and to great functional disturbance of the last, particularly to that state which is known by the term Delirium Tremens.

2. Food and Drink. A deficiency of food either in quantity or quality engenders a debilitated state of the digestive organs and of the system generally, which is incompatible with a highly vitalized state of the tissues. Hence urine diseases of the blood, and encephalic depressions under the influence of local irritation. On the other hand an excess of rich food under a deficient amount of exercise disposes to phthisis, obesity, pungentuous affections, acute inflammations, hypertrophy, and the urine acid diathesis. In reference to drink, notice has already been taken of the predispositions occasioned by the intemperate use of alcoholic fluids. It therefore only remains to be stated that solids impregnated with gases evolved from decayed vegetable matter may give rise
to expel their urine, remittent and yellow fever.

In the opinion of the late Professor Daniel Rees, which prevailed in the coast of Africa are produced by the sulphuretted hydrogen arising from decomposing vegetable matter which is brought down by the rivers to the sea. By some the late epidemic of cholera was stated to depend on the presence of minute fungus in the water and air of the localities in which the disease prevailed.

Seasons. The influence of seasons is great in the production of disease. They are more particularly to be regarded as exciting causes acting directly on systems predisposed to disease or on healthy subjects in a sudden and powerful manner. Each season has its particular influence, thus the cold of winter and of the early spring, by lowering the temperature of the body, and by causing a retroversion of blood from the skin to the internal organs leads to congestion, inflammations, active fluxes, etc. At these seasons too, but more particularly at the close of autumn and the very commencement of spring when the winds blow with cutting, febrile diseases of the skin are apt to occur.
If dry winds prevail, the preputial organs are more prone to suffer than others; and hence arise chronic bronchitis, pneumonitis, and pleurisy. If moisture be combined with cold winds, neuralgia, acute rheumatism, hepatitis, and peritonitis are associated with the above diseases. During the latter part of spring and the whole of summer, the internal heat by relaxing too much the body, and by the stimulating effects induced the different forms of fever, hepatitis, bilious diarrhea, and dysentery. If also the hand be much exposed to the heat of the sun, amebic, catarrhal, appendicitis, and other diseases predisposed to many acute affections of this disease are apt to arise. During autumn the principal diseases are those arising from suddenly suppressed transpiration by the skin and from the ingestion of acid and ripe fruits. Hence at this season we chiefly meet with cholera, diarrhoea, dysentery, gastric rheumatism, erysipelas, and the common rheumatismous diseases.

Climate—The influence of climate is observed in attracting a certain specialty to diseases. The flexibility of the constitution of man enables
from it bear with more or less impunity, the various extremes of heat and cold to which he is subjected from the equator to the pole. In this respect he stands alone amongst the living creatures now on the surface of the earth. A reduction of temperature to the extent of 30° below their natural standard is fatal to all warm-blooded animals except those which hibernate; whilst the elevation of their temperature to the same extent is alike injurious to their well being. Thus monkeys and other animals brought from warm regions require an artificial temperature approaching that of their native climate, in order to maintain life for any length of time, and even under these circumstances they not infrequently become diseased and die shortly after their arrival in this country. Animals in the hand coming from the frigid zone suffer from the increased temperature into which they are brought, and consequently require certain means of refrigeration, to enable them to bear for even a comparatively short period the altered conditions of external temperature which they have been compelled
to assume. Thus the polar bear in his climate requires repeated refrigeration by cold water or continual currents of cold air to maintain an existence which is never characterized by a state of health which he enjoys in his own latitudes. But on man as before noted, these changes of climate do not produce so remarkable a manner. Rather they produce a certain effect which is in one or his injurious to his well being. He thus becomes liable to certain diseases which if not peculiar to the climate into which he has forced yet rage with greater severity in that climate than in his own. Thus a European going to the East renders himself liable to leprosy, diarrhea, dysentery, and cholera in their very worst forms, whilst he also becomes common to plague, yellow fever, and feverous enlargement of the peritoneum, diseases which are very rarely witnessed in our climate. In cold regions on the other hand diseases of the lungs and heart inflammations of the peritoneum, bowels, and kidneys generally prevail, whilst in the temperate zone the climate disposes with some exceptions
Diseases of both hot and cold regions without the attendant severity of either locality. In addition to climate, locality exercises a manifest influence in predisposing the body to disease as well as in exciting particular diseases. With locality may be combined the consideration of habitation, light, air, and drainage. From a low, confined dwelling with a deficiency of light, with foul air, and insufficient drainage very quickly induces a destitute state of the body peculiarly favourable to the recurrence of local typhoid fevers, diarrhea and dysentery, under the least exciting cause. Such conditions of themselves gradually induce an altered state of the blood, which leads to imperfect nutrition and the degeneration of the body, liberation of deposits, various eruptions, and syphonic eruptions. Anemia, chlorosis, jaundice destroying, nervous palpitations, and sympathetic disturbance of the brain and mind. In certain localities we find particular diseases to prevail - thus in the Feng counties of Lincolnshire and Cambridgeshire in England - in the neighbourhood of the Oxtime mountains near Rome - in the
in many of Hungary, and in some of the Northern states of Germany—In the West-Indies and on the coast of Western Africa, the defective drainage and impure state of the atmosphere give to the persons of those districts an intermittent character. In Verolme and amongst the Swiss Alps, yellow and tertianism prevail to an alarming extent; in these particular localities is not well understood, although it has been variously ascribed to the nature of the soil, air, and water. There is however one fact connected with these diseases which is—that they frequently prevail in valleys associated with mountains districts, but whether this topographical condition acts in any way as a cause is difficult to determine in the manner without being able to assign the cause we find Bollag, an endemic disease of particular parts of Bohemia—Loj Druse, Astronomers of the banks of the Volga—Rhadegge of certain pea coast districts of Russia—Malam Schm, of Naples and the neighbouring villages situated on the river Crook and Alpin—and Elephantiasis Antica, of the West-Indies, Egypt, and Africa. In such cases, therefore,
we can merely record the fact that certain

diseases attach to particular localities, i.e.,
in other instances in which there is defective
drainage or an insufficient light with foul
air. The cause admits of explanation.

Contagion & Infection: Amongst the existing
causes of disease, contagion and infection
hold a prominent place. By some writers
these terms are used as synonyms, but this
is evidently an error which has been adopted
from too loose an attention to the literal
meaning of terms. Contagion means the com-
munication of a disease from one person to
another by actual contact of their bodies
or through the medium of a third substance
in actual relation with the two alike. This
relationship needs not take place at one and
the same time. Infection on the other hand,
signifies the transmission of disease from
one person to another. It is the medium of
the atmosphere alone unaccompanied, in any
way by actual contact of the affected and
affected bodies. In this sense the above terms
will be used in the description of diseases
which are thus communicable from one
person to another. In this light some diseases are contagious only—other infections, whilst these again are both contagious and infectious. Thus hydrophobia, diseases equine, porcine, species, infecting? venereal gonorrhea, and syphilis are propagated by contagion. In 1778 the Faculty of Medicine of Paris declared cordially to be likewise contagious, but the experience of Baudeloque at the Hôpital des Enfants, as well as the negative evidence afforded at the Hospital de Baïas completely put aside this opinion. As simply infections diseases we may enumerate the different forms of continued fever, yellow fever, cholera, influenza, epidemic plague, and perhaps霍乱, cough, whilst amongst diseases regarded as both contagious and infectious may be ranked small pox whose symptoms plague and the different forms of focal portal fever.

The real or intimate process of the propagation of these diseases has been the subject of recent discussion. Thus Gabin maintains that infection propagates itself by the presence of an arterial poison which, after its entrance into the blood is capable of altering the molecular relations
of compound matter after the manner of fermentations by which the poison itself is generated.

Opposed to this view is that of Cagniard De la Tour and Tepin which maintains that fermentation depends on the production and growth of living molecules or vegetables by the propagating influence of which it spreads. Simiador on the other hand adscribed the existence of epidemics to the presence of animalculae tubes in the atmosphere and this view has more recently been advocated by Dr. Holland and Henle as the chief source of infection. With respect to contagious diseases it is a well ascertained fact that scabies depends on the presence of an insect. Téns centri as formerly maintained by Anenzour, Bonomu, Joubert, Mouget, Ingrand, Costini and more recently by Renzi. This fact admits of demonstration inasmuch as the insect in question is readily detected at the end of a small reddish furrow about two lines long beginning at the cutaneous vesicle and extending outwardly sometimes in a straight line, at other times in a curved direction.

It is also certain that foreign-furred insects
on mycological researches, as demonstrated by Smyth; and impetigo and apthas in the presence of fungus, as shown by Professor Bennett. In the case of sycosis therefore its propagation is dependent on the transmission of the one of the Acorns scatie from one person to another, and their subsequent development and increase, whilst pox, impetigo and apthas are propagated by the seeds and spores of their respective parasitic vegetables. It is further asserted by Smyth that he has discovered certain animalcula in the stomach of the ox, yet small in size, to which he seems to ascribe some importance, as being the mode by which this disease is propagated. But the theory of Faltig, i.e. that of an animal poison, is in my opinion the most tenable, as to the propagation of small pox, scabies, and syphilis by injection, whilst it is evident that for their transmission by embroyon, in such condition of the atmosphere is necessary. In the latter case the mere introduction of the specific poison into the body, in the form of a fluid by inoculation, or the absorption of it by the skin, in the form of gas
whilst the affected and non-affected bodies are in mutual contact, or whilst the latter is in contact with others previously entering the former, immediately produces the same diastatic change in the blood as occurs in the process of infection by air, or which similar results are produced. Hence the operation of the cause of both infection and contagion is one and the same within the body. The only difference between them is the mode of transmission from one person to another.

Previous Diseases: With some exceptions a disease once affecting a body predisposes that body to a similar attack in future. Thus one attack of erysipelas is almost certain to be followed in time by a second, and such is the case with respect to inflammations generally. Disease here is residing on the surface of the body does not so manifestly predispose to a recurrence of the same, but tends rather to the predisposition of internal disease. Thus an disease affecting the skin must in its disappearance leave that structure in a highly sensitive and delicate condition by which it is rendered eminently sensible to
amusing states of the atmosphere. A sudden change, however, which brings with it an increase of cold, also causes contraction of the small capillaries of the skin in which the blood is thrown in undue quantity on the internal organs, thereby producing congestion which, under the continuance of the cause or from an instability in the system to equalize the circulation, gives rise to inflammation. In this way we explain the recurrence of pneumonia or bronchitis after measles—congestion of the kidney after smallpox, &c.

The exceptions to the rule. In most general rule—that one attack of a disease predisposes to a second of the same nature—are observed in sicknesses resembling scarlet fever, plague, and the different forms of continuous fever. These diseases do not absolutely confer an immunity on the system from a second attack, since all of them have been observed to appear a second and even a third time in the same individual. Careful observation in a great number of cases of the scarlet fevers, those and of fever which came under my notice during my residence in Derbyshire, and subsequently in Lancashire, have enabled me to decide that scarlet and
Ambroise Cooper the greatest immunity in the system—then infections—and last of all the different forms of continued. The immediate source of the Plague, I have reason to believe, is in many cases in the disease frequently prevalent in ancient Egypt, where the disease frequently prevails. I have been repeatedly informed that a second attack in the same individual is of very rare occurrence, but that he himself had intrusted me with instance among several thousand cases of the disease which had come under his notice.

Influence of the Mind as a cause of Disease:—
The influence of the mind is manifestly great both as a predisposing and an exciting cause of disease. Thus a continual state of anxiety, the changes in the functions of the digestive organs, causes the palsy of the nervous system, impairs nutrition and shortly induces a debilitated condition of the body. Favourable to the occurrence of disease are the application of an exciting cause to the other hand, mental agitation by inducements and keeping up a congestion of the brain becomes...
An exciting cause of disease which may at length terminate in apoplexy, palsy, and various diseases of the brain and mind. In reference to the passions and emotions, hope, anger, and joy, increase the action of the heart and arteries, and may therefore excite disease of those organs, whilst strong grief, by depressing their action and in this way altering the balance of the circulation and thereby producing congestion of different organs, or predispose to disease by producing a general depression of the functions and a diminished vital action throughout the system. During the existence of epidemics as cholera typhus fever, or any instances of the influence of fear as a predisposing cause came under notice. In all such instances it is observed that those persons who manifest the greatest fear of the disease and who take the greatest pains as it were, to防护 themselves from the due to the very first to take it on exposure to the exciting cause. Again, similar evidence is gathered from the results of expeditions of armies when the soldiers were the subjects of continual depression of mind. Like, for example, the Falkland expeditions in which,
so long as the soldiers were bunged up with
the idea of rescue but few suffered from the
epidemic fever which then prevailed in con-
fusion with the fearful numbers that afterwards
incurbed when protest by the Army of Napoleon
Evacuated.

The excessive loss of
blood proves a direct exciting cause of a
deficiency of vital action. Throughout the
system which manifests itself by a group
of symptoms designated by the term
"anemia". Other wasting discharges such as
an excessive fever, than meningitic discharges
lead to the same result provided the digestive
and assimilative powers are unable to repair
the waste which is thus produced. This is not-
long the case when the discharge is profuse,
immersed as the stomach is one of the first
organs, the functions of which is depressed by
such discharges. Hence arise indigestion,
 toxicity of the liver and bordered imperfect
nutrition drops from debility - amenorrhea
and disturbed function of the circulatory
and nervous systems. An excessive secretion
of semen however debilitates the body to a
great extent, and produces a more lasting and irreparable injury to the functions in general than any other. By this cause stiffness of the body generally and of the testicles in particular — the incubation of hereditary predispositions to disease — mania, epilepsy, and even idiocy may be induced. Hence the necessity for a proper government and due restriction of the animal propensities.

Without further reference to this point in particular, it is evident that general debility arising from excessive imbibition or secretion not only excites the diseases before named, but also predisposes the body to the diseases which have for their exciting cause, variations in external temperature, excess of diet and drinks, infection and contagion.

Defective secretion or degeneration. A defective secretion or the imperfect casting off of every secretion is quickly followed by a deteriorated state of the blood, which retards every function and most frequently endangers or destroys life. Thus, the secretory cells of the liver after having been over-stimulated by the heat of the summer or having been weakened by the long continued
elimination of the carbonised elements of the food and of alcoholic drinks fail to separate from the blood the elementary constituents of the bile, which thus accumulate in the blood and are carried by it to every organ and tissue of the body, imparting to each the characteristic colour of the bile and thereby constituting the disease—whichever is known by the term jaundice. Were this state of matters to continue and were no other organ in the system to supply in part the deficient action of the liver, the bile—constituents would rapidly accumulate in the blood, and by their direct poisonous agency on the brain and spinal cord, quickly induce death. Happily, however, the kidneys in many instances take on this compensating action, and by eliminating the elements of the bile along with those of the urine, keeps down this accumulation in the blood sufficiently long to allow the liver under proper management to recover its functional activity. In older persons, however, the time required for this purpose is much longer than in the earlier periods of life—the eliminating power of the kidneys are proportionately deficient—and hence a
slow but gradual accumulation of bile-constituents takes place in the blood, which, despite the most judicious treatment, ultimately induces death in the manner already stated. Hence the prognosis of jaundice, at an advanced period of life, is always unfavourable. With respect to the secretion of urine, the results of any interruption to its elimination or to its complete evacuation from the bladder are more unsatisfactory than even those of the non-elimination of the bile. Thus the suppression of the urinary secretion, from whatever cause occurring, excites secondary disease of the blood, which becoming impregnated with toxic poisons, the nervous substance of the brain and spinal cord, and thus leads to death by coma. This result is much more serious than in the case of jaundice, probably from the more direct poisonous influence of urea, some of the elements of the bile, but also from the deficient action of the kidneys not being so fully compensated by that of the skin as occurs in the case of the bile and the kidneys themselves which thus admits of a more rapid accumulation of urea in the blood. In reference to defective secretion as a cause of disease, it may be
observed that the bile may be only eliminated by the hepatic cells and passed into the bowels, but owing to a deficient secretion from the glands of the bowels, the nature of the food, deficient sensibility of the mucous membrane, imperfect tenuity of the muscular coat or sometimes from the influence of the will in preventing an evacuation and the other constituents of the forces are not expelled. Their more fluid contents are consequently re-absorbed and thus thrown back upon the system whilst their more solid portions lodging in the cells of the colon cause irritation and inflammation, colie peritonitis and mucous diarrhoea, dysentery, &c. Then the urine also, properly secreted by the kidneys and passed into the bladder, is not expelled from that viscus it simply accumulates there, and at length distends the bladder to an unusual and dangerous extent thereby rendering the viscus liable to rupture or producing inflammation in its mucous lining which propagates itself backwards to the kidneys and invades those organs in disease which quickly leads to the suppression of the urinary secretion and consequent death by coma. If this mechanical
distension does not excite inflammation in the lining membrane of the bladder. The urine throughout is secreted until it meets and fuses with the bladder to their full extent at which point the secretion ceases to be formed. The bladder becomes congested - inflammation excited, and death takes place in the manner before described. Frequently in old men, the prostate gland has become indurated and enlarged, which condition of parts impedes the flow of urine and prevents the full evacuation of the bladder. A quantity of urine continually remaining in contact with the mucous coats ultimately excites in that structure a low kind of inflammation which gradually leads to ulceration and, perhaps, death; or from the want of due caution to evacuate thoroughly the contents of the bladder more and more urine is gradually retained after menstruation until at length the bladder is brought to a state of permanent distension, and insensibility of urine from paralysis of the detrusor, urine takes place. In the case of defective secretion by the skin, the constituents of the body accumulate in the blood, and of not being off by a
Compensating action of some organ as of the lungs, liver, bowels or glands, disease is quickly induced. If this deficient action of the skin is consequent to an accumulation of the toxic constituents of the secretions of the sebaceous, superior, and pudendal eruptions are apt to arise. Defective secretion may likewise proceed as a cause of disease, examples of which we see in the appearance of disease immediately following the sudden suppression of long established discharges. Thus the healing of an old sore or ulcers, the suppression of bleeding piles, or the arrest of a long standing dew drop, is often quickly followed by local congestion and inflammation (particularly of the skin), atypical fever, chills, mania, systemic melanuria, gout, rheumatism, etc. These results seem to show that in addition to mere vascular fullness consequent on a suddenly suppressed discharges or matter is likely thrown back upon the system, which was likewise cast off in the discharge, but which is now the chief cause of the supervening disease.

Such then are the causes of disease in general, a proper knowledge of which is necessary at the bedside. With this knowledge also must
It cannot be too strongly emphasized that the various physical signs and symptoms, which not only indicate the presence of disease in the system, but also help to determine its nature and extent. It is therefore, of the greatest importance that the study of signs and symptoms should be thoroughly pursued in order to make a scientific and good practical physician.

Any deficiency in this respect leads to errors in diagnosis, prognosis, and treatment, which may at times compromise the safety of the patient and the credit of the practitioner. It is clear that the first duty of a physician is to make a correct diagnosis. To do this he must in addition to a correct anatomical and physiological knowledge of the parts under investigation, be fully conversant with the various signs and symptoms which distinguish one disease from another. Considered in reference to its intrinsic nature and locality, I shall endeavor to classify signs and symptoms of disease, which are properly classed under the term

HEMATIC.
Here let it first be determined what is a sign and what a symptom. A sign of disease is any deviation from the standard of health accompanied by physical alteration in the tissue or function of a part which is recognizable by one or other of our senses.

A symptom is a modification of the vital properties recognizable by one or other of our senses, but not necessarily dependent on any physical or organic change. Thus in reference to the former variations in size, form, position, differences in colour or other, secretion, temperature, and the acoustic properties of a part set determined by perception, concentration and succussion are signs by which we recognize disease when contrasted in reference to a standard of health. Since the enlargement of an organ beyond its natural dimensions the feeling of a tumour where none existed before constitutes evidence of an internal disease. The alteration of form occasioned by contraction or distension of one side of the chest alone, the pulsations of the heart felt at the right instead of at the left side of the sternum, the yellowness of the skin in jaundice, the other symptoms communicated to the breast by gangrene,
The enlarged increased temperature of an inflamed lung the presence of tussle in the secretion of the pulmonary mucose membrane the substitution of a dull sound on percussion in a part from which a clear sound is elicited in health the substitution of bronchial respiration where the vesicular respiration is naturally heard the absence of the vesicular respiration the modification of the intensity or of the relative duration of the respiratory and vibratory sounds the presence of various phrenic not heard in health the presence of bronchial sounds distant from the site of the bronchial tubes and the recognition of friction of ciliated membrane rubbing or the rushing occasioned by expansion of the chest in hydrothorax are good examples of signs of disease. They are clearly the result of physical changes in the system arising out of a local cause and as such they are of more importance in the mining the nature and extent of disease than are vital symptoms which are more common to disease in general. But they may sometimes require the agency of vital symptoms in addition to the evidence gathered from physical signs to determine the particular nature of disease.
Thus the physical sign of congestion in the posterior portion of the base of a lung is a certain indication of a congested state of the lung and of the presence of fluid in the air cells; but reference must be made to the vital symptoms before it can be determined whether or not the congestion is of an inflammatory character. Also there may be physical signs of congestion of the lungs or of tubular disease of the heart; but the vital symptoms alone must determine whether these are of recent, recent or distant origin. Hence the necessity for a careful study of both signs and symptoms and of the invaluable aid which they afford in detecting disease as well as in determining its nature and treatment.

Now the manifestation of the symptoms of disease has its explanation in a modification of the elementary vital properties of sensibility, toxicity, irritability, accommodation, secretion and the more complex functions which result from a combination of these. This pain is a symptom referable to increased sensibility, spasm of increased contractility and reflex motion, cough to increased excitability of
The nature of the air-passages and muscles of respiration: coming to undue irritability of the gullet, gums, and of its associated motions. Again, symptoms are further exemplified in the state of the various functions in which vital properties are concerned. Hence the pulse, skin, tongue, bowels, and kidneys afford considerable evidence of disease and require more strict attention at the bedside. To furnish a complete account of symptoms, it would be necessary to consider every function of every part of the body and the symptoms arising therefrom — or lack which is too extensive for a thesis like the present. The more important — as well as the more cognizable symptoms — deserve the greater attention. But first let me state that symptoms have been variously classified under the terms — local, general, or constitutional; idiopathic, sympathetic, muscular, or sensory; communicative, anamnestic; objective and subjective; positive and negative; diagnostic or prognostic; and therapeutic. A local symptom is one which is confined to a diseased part; whilst a general symptom affects more or less the whole system.
An idiopathic symptom directly proceeds from a primary disease; but a symptomatic one arises from disorder occasioned by the primary disease. Symptomatic symptoms are those which precede the full development of disease — Commencement — those which arise in the previous history of disease — Anamnestic — those which refer to the previous state of health — Objective — those recognizable by the functions — Subjective — those describable only by the patient himself — Positive — those actually present — Negative — those which consist in the absence of phenomena — Diagnostic — those which make manifest the nature of the disease — Diagnostic — those which indicate the sense of the disease — and Therapeutic — those which suggest the treatment.


Altered function — It is certain that disease affecting any part of the body modifies the function of that part; but this in some instances may be so slight in fact as to elude our
Theonosis. These however, disease of a part is at all extensive or violent, the functions of that part are sensibly perturbed and are affected not only by the suffering organ itself but generally by some change also in the functions of the system at large. In investigating disease at the bedside we should closely examine the state of the functions of different organs as by this means we are often led to a knowledge of the seat of disease. Thus when disease affects the head to any considerable extent there is a manifest perversion of the intellect which may either express itself by delirium or furious mania, or the mind may be entirely cast into abeyance in which owing to the life of the will and the voluntary muscles the motor-nervous system may be called into action and hence convulsions may arise. These results generally attend deep congested and inflammatory conditions of the brain or its membranes; but when effusions of serum or serosanguineous of blood take place into the substance or upon the surface of the brain the intellect and motor-nervous system are both abolished and the patient lies in a profound stupor with complete relaxation.
Of the muscular system. Next to be manifest disturbance in the functions of the brain itself, we witness disturbance in organs which are in closest connection with the brain such as the lungs and stomach, which, owing to the disturbance of the parasympathetic, are no longer sensible as it were of their vital action existing within the head. Hence the breath is altered and sickness prevails at the outset of the attack.

Again, in disease of the lungs, the respiration is the first affected and this takes place in degree proportionate to the importance of the affected part in the physiology of respiration. So also in disease of the heart, the circulation is at once disturbed, and the functions in close alliance with it—namely, those of respiration and of the brain—are likewise immediately perturbed. In the manner disease of the brain influences primarily the function of that organ and secondarily those of the organs with which the brain is in intimate connection as for instance the stomach, bowels, and brain. The latter may be said of disease of the kidneys or of any other organ which immediately manifests itself primarily by perturbation of the
Question of the suffering organ itself. And secondary by disturbance in the function of the organ which are in close anatomic or physiologic relations with it. In this way disturbance is ultimately propagated to the whole system, and thus a chain of mutual action is established between organs. The most striking link is as to anatomic structure and function.

Pain is another important symptom of disease requiring strict attention at the bedside.

There are few diseases in which it is not more or less present. The question "Have you any pain?" ought imminently to be asked of any patient. If the answer be in the affirmative, the part and nature are of necessity to be determined. It is generally referred to the part of disease; but such is by no means invariably the case as is proven by the pain arising from a calculus in the bladder being referred to the pole of the foot — pain arising from arthritis being felt in the testes. That distant and indirect affection the left side — pain of the spleen frequently being referred to the upper part of the shoulder — thus far as its local origin has been made only it is if most importance to determine its
nature—i.e., its inflammatory or non-inflammatory character. Now, an inflammation so fixed, constant, and always aggravated by pressure, whilst a non-inflammatory pain is often inconstant, migratory, and frequently relieved by pressure. Also, the side is frequently attacked by pain, which, unless the above distinctions are borne in mind, is very apt to be referred to a wrong cause. Thus, rheumatism affecting the intercostal muscles simulates the pain of pleurisy, but the application of the above distinctions, together with the absence of general excitement, putting aside the physical signs of the chest, will generally lead to a correct diagnosis. In young, delicate females, subject to menstrual irregularities, the sensibility of the viscera often becomes considerably increased, and this condition often probably manifests itself by pain about the angle of the sixth or seventh rib. This too closely simulates the pain of pleurisy, as to be sometimes mistaken for it; but attention to the distinctions before drawn, the condition of the patient—as to general health, and the almost invariable tendency over some part of the spine, with sufficiently demonstrate its non-inflammation.
origin. In malignant as well as affecting the facial
and dental nerves from cold, the pain is sudden-
shooting, migratory, and intermittent, while in
phrenic pain it is not uncommon to be aggra-

givated by pressure along the course of the
nerve. In the former instance the pain would
seem to be purely muscular, but in the latter
there is reason to conclude that the nerve or
its sheath is more or less inflamed. In chronic
phrenic pain the pain is migratory, dull aching,
or shooting, in nature it is always lancinating,
and aggravated alike by motion and pressure.

Hence the one appears to be the result of nerves
irritation arising out of a certain condition of
the blood—the other to be dependent on this
same condition (i.e., excess of lactic acid) of
the blood and the presence of local inflamma-
tion.

Countenance: From the expression of the
countenance we are frequently able to gather
important information as to the state of disease.
This change of the face is often indicated
by contraction of the brow and by the altered
expression of the eyes, which in the case of
paralysis and mania is wild, restless, and
staring—in fever, dull, heavy, and lethargic.
In affection of the chest, the middle region of the face indicates to a certain extent the seat of disease, and this it does in the unnatural motion of the eye, the colour of the lips, and the abnormal expression of the countenance in general. When disease on the other hand affects the viscera of the abdomen, the lowest part of the face is that which more particularly indicates its existence. Thus we have a strengthening and elevation of the lips with slight depression of the angles of the mouth as the pain occasionally becomes more severe. In peritonitis, however, a peculiar curling up of the upper lips has been noticed by Dr. Marshall Hall; but this symptom has not been noticed by myself until effusion into the peritoneal cavity has taken place. It is then probably owing to the imperfect descent of the diaphragm which requires the mouth to be somewhat open in order to admit sufficient air into the lungs and to render the process of breathing more easy than when the air has to pass through the mouth alone. From the foregoing remarks it seems evident that the three great cavities of the body have corresponding parts of the countenance in which their respective
diseases stamps certain symptoms which become valuable aids to the very physician in determining 
the seat and frequently the nature of disease. 

Atudes: — from the attitude which a patient 
assumes we are often enabled to judge of the 
seat and nature of his affection. Thus when 
the head is affected, stooping produces vertigo, 
interruption of vision, wearing in the ear, de 
sin, dyspnoea. The patient is unable to lie 
down. Hence he is found sitting erect or bend- 
ing forwards with his head and arms resting 
on a firm support. In other disease of 
the heart violent palpitations often attends the 
first attempt to lie down, which also creates 
difficulty of breathing and a frequent return 
to the sitting posture. By and by the increased 
action of the heart-pallides, and the recumbent 
posture can then be maintained. When having 
there is fluid in the pericardium, the recumbent 
posture is at all times most to the patient and 
dangerous in the extreme. In dyspnoea the 
sudden straightening of the body from the propping 
posture produces a feeling of nausea which 
is probably excited by the pressure of the chest 
muscles on the distended stomach.
Suppurative. The patient is unable to lie on the left side owing to the stretching of the suspensory ligaments of the liver, and the dragging pain experienced nearly. Sometimes he is unable to lie on the right side, which is probably owing to the want of sufficient room for the liver, occasioned by the non-expansion of the lower ribs of that side during inspiration. An inflammation of the bowels the patient lies on his back, but in colic he is found writhing in all positions.

Pulse: for ages the pulse has been regarded as an important indication of the nature and progress of disease. When properly studied and considered in reference to the symptoms and signs of disease it is a very valuable symptom, but under all other circumstances it is an uncertain guide. The varieties with which the pulse presents are numerous, and would require a lengthened treatise for their consideration. I cannot do justice to these varieties in the present place, but shall notice the chief of these varieties, and apply them as it may seem to the various diseases of which they are signs or symptoms. Thus, then, in reference to velocity, the pulse may be quite slow or natural, or to strength, it may be strong and hard, or
soft and weak. In reference to volume it may be large, full and bounding; or small and feeble; — as to rhythm, regular or irregular.

These elements of the pulse, in their different combinations under disease produce the following varieties: frequent, large soft; frequent, quick, small; frequent, large hard; rare, frequent, full slow (colours); frequent, large hard, quick; frequent, large, hard, thrilling, unequal and irregular frequent or infrequent, infrequent, large, hard, infrequent, quick. (Compound of an infrequent- and a quick beat of the heart.) A pulse thus once met with in the hysteretic female.

Now the pulse varies according to the type and the stage of the disease, the nature of the type affected, and the age, constitutional power, and idiosyncrasy of the patient. In inflammation the pulse is generally full strong and quick; but in fever of the lymphatic type it may soon lose its power and becomes quick, weak and easily compressible. Hence the influence of the type of a disease in modifying the pulse. As to the stage of disease, it is found that a pulse which, in the outset, is full quick, and strong, becomes as the disease progresses —
towards an unfavourable termination quicker, more sudden and very compleatible. These are some exceptions to this general rule; but they are few, and referable to affection of the heart. As to the influence the nature of the bony cavity and the pulse, it has been observed, that where the parenchyma of an organ is affected, the pulse at the outset of inflammatory action is generally full, large, strong and quick; and this is generally the case in inflammations of the mucous membranes, fibrous tissue and skin. But in inflammation of serous membranes it is usually quick, hard, dry, and not easily compressed. Often in inflammation of the brain the pulse is remarkably slow and moderately strong. This condition of pulse has been thought more particularly to attend inflammation of the substance of the brain itself; whilst in diseases it presents its characteristic signification of inflammation of serous membranes generally. In apologie the pulse may be either full and slow or small, feeble and but little quicker than natural. The former condition generally attests extravasation of blood into the substance, or upon the surface, of the brain.
The latter part of serous effusion in affection of the heart, the pulse may be full and strong, or small, weak, and irregular. The former tends to simple hyperpyrexia; the latter, to pleurisy of the visceral and active valvular, or periarticular, effusion, as also in hydrothorax. The presence of the fluid may interrupt the due action of the heart and render the pulse small, irregular, and flickering. In spasm the pulse is not slightly accelerated during the first agonies of pain, or the remission of which it again falls to its proper standard.

The younger the subject the quicker the pulse is. So also the more robust and vigorous the individual, the fuller and stronger will be the pulse generally be. Again, in reference to idiosyncrasy, the pulse, owing to a peculiar irritability of the nervous system, is more influenced in one individual than in another. Thus the pulse of a delicate sensitive person is quicker, sharper, and more irritable under disease than that of a strong and robust individual. Sex also renders the pulse of the female naturally quicker than that of the male, and this difference is likewise observed during the presence
of disease. The above observations will show the necessity of strict attention to the pulse at the side, and the information that may be derived from a proper interpretation of it.

General Surface: Previously to the full establishment of febrile movement the skin is pale, contracted, and somewhat lowered in temperature below natural. The fever, for itself, or from attending local inflammation, is fully established the skin is more or less tinged, hot and dry. Should the disease progress to a favorable termination it ultimately becomes relaxed and perspiring and in this way, its increased temperature is brought down. In acute rheumatism however the skin is frequently bathed in perspiration without its having any apparent beneficial effect on the disease. When disease is about to terminate fatally the capillaries, particularly of the extremities, become distended and this is accompanied by a falling of the temperature of the general surface which together indicate the failing power of the heart and the near approach of death. Then beneath the surface
In case of an organ affecting the flow of blood to its supply, the skin of the organ is affected. The affected part often becomes considerably enlarged and sometimes becomes tense. The skin is generally perspiring and its temperature is slightly increased; but in spasmodic actions, it is relaxed and perspiring, its temperature is considerably below its natural standard, owing to the partial exclusion of oxygen from the pulmonary cells and the consequent inhibition, in a proportionate degree, to the colorifying process.

Tongue: From the state of the tongue, much valuable information is drawn. It should be considered in reference to the state of its surface, as to fur and load, its fulness, its form and size, and the mode of protruding it. In the outset of acute diseases, the tongue is generally congested and loaded with a white or yellowish white fur; in chronic cases and in those accompanied by nervous irritation, this substance forms but a very thin film on the surface of the organ. The former condition is generally much sooner removed than the latter. The a disease is about to subside,
The tongue begins to show off its load, first at its points and edges which presents a clean surface and subsequently on its whole bottom. Then in the hands of disease proposed is an unfavorable termination. The load on the tongue becomes first yellowish brown after wards brown and dry and the whole organ is shriveled and contracted. This condition of the tongue generally accompanies the second stage of typhoid fever in which all the local symptoms it is by no means a fruitful. Of all the acute diseases, however, it is of primary import. Sometimes in continued febrile the tongue which has hitherto been greatly loaded will blow off its load in twenty-four hours and present beneath a bright red shining moist surface, in which the papillae are apparently elongated and dilated. This appearance is by no means favorable for we invariably find that the tongue quickly becomes dry, brown, and shriveled, and death soon follows. Sometimes the surface of the tongue is almost diagnostic of the disease. This in small pox its surface is loaded with a white fur, brown which the
Ingested and enlarged papilla protrude giving to the organ a very characteristic appearance. In acute dyspepsia it is often large, flabby and indented at the sides from the pressure of the teeth, whilst in the cases of dyspepsia marked by the atonic and irritable condition of the stomach, the tongue is contracted and irregularly patented. In acute dyspepsia it is coated with a thick, white, creamy, coat, and the organ itself is congested. The manner in which a patient protrudes the tongue is occasionally characteristic of the disease from which he is suffering. Thus in Typhus and Typhoid Fever the organ is protruded in a very hemolous manner, whilst in Paralysis affecting one side of it, the tongue on being protruded invariably inclines to the affected side.

Bowels - In all diseases the state of the bowels should regularly be inquired into, from the nature of the secretions we judge of the state of the liver and of the glands of the bowels. In this way much information is frequently acquired. Thus in deep congestion of the liver, the bile is sometimes not formed.
into the intestinal canal and hence the stools are of a lighter color than natural. At other times this condition of the bile causes an excessive secretion of bile which renders the stools extremely dark. Again, in organic changes of the liver, the bile is often irregularly dispersed through the stools, which then acquire some or all of a conjugated color. The duct of which the biliary is, nevertheless, left from natural or jaundice too, the color of the stools is generally of a very dark shade. They are likewise imperfectly formed and consist of small round, granular pieces. In mania, particularly at the commencement of an acute attack, the stools are of a dark pitchy color, and extremely offensive to the smell. When the lining membrane of the bowels suffers from congestion and irritation, the result either of cold or any improper article of diet, the consistency of the stools becomes more watery than natural, and hence diarrhea. Under these conditions they also usually contain an excess of mucus which in dysentery forms their chief fluid. Again, in some forms of cholera, the stools are
copies, of the consistence and color of feces, and
and pits in all men; whilst in meconium-
disease of children they are more or less white-
from their impassivity with Apple. Generally
in the outset of inflammatory affections not
peeled in the bowels there is more or less
of constipation, and the stools are somewhat
deficient in quantity. The examples might
be adduced in proof of the influence which
disease exerts over the functions of the per-
and bowels. But enough has already been
stated to show the necessity of attention to
these matters at the bedside. The last point
therefore which will be noticed under the
head -- "Gynecology" -- is the state of the
urine as symptomatic of disease.

Weine -- This secretion during health varies
in quantity from 30 to 40 Ovs. during the
twenty-four hours. Its specific gravity is
usually estimated from 1015 to 1025.
The latter is the more correct estimate. It is
in the outbreak of inflammations and febrile
movements in the system. This secretion is
usually much reduced in quantity, sometimes
not exceeding five ounces in the twenty-four
The excreta, but generally amounting to one half the accustomed quantity. Under this condition it requires a deeper color than natural: but its specific gravity is not increased in a corresponding ratio to the diminution in its quantity. This may possibly be owing to the general congestion of the capillary system which retards rather than promotes the molecular changes in ultimate urine. Be this as it may, such is nevertheless the state of the urine in the commencement of inflammatory and febrile diseases, but as soon as the turning point of these diseases arrives or the crisis appears in it is cooling. This deposit consists of the alkaline salts with which in my opinion indicate the re-establishment of the molecular changes which take place in the ultimate urine during health. Such deposits, therefore, are in the absence disease to be regarded as a favourable prognostic in chronic and wasting diseases. Former their abundance in the urine is no longer a favourableomen but a presage indication of the rapid breaking up of the textures which shortly leads to death in inflammatorystate.
cases of the kidneys. The urine is greatly diminished in quantity and often of a cherry red color. It is also sometimes coagulable by heat and nitric acid, thus indicating the presence of albumen. Aluminous urine does not however always attend inflammatory diseases of the kidneys, but it is invariably present in that fluid during some stage of tubular degeneration of those organs.

In other instances the quantity and constitution of the urine are otherwise materially affected by disease. Thus in diabetes the quantity of urine discharged in twenty-four hours often amounts to two or three gallons; whilst at the same time, it is deeply imregnated with mucilaginous matter.

Again, the urine may acquire a chylous imregnation which is due to imperfect assimilation of the resulting constituents of primary digestion. At other times it is found furnished with different kinds of gravel. The intermittent nature of which is determined by the peculiarities of the concurrent causes. Sometimes in disease the urine is entirely superseded or
Condition which quickly turns fatal by
the poisonous agency, with the retained urea
exercises upon the brain and spinal cord.
Again, the retention of urea may be partially
deficient, as is frequently the case in Contined
Fever, and hence a gradual accumulation
of it in the blood, and the consequent de-
struction of life. By the aid of the
that invaluable instrument of Pathological
research the urine is occasionally found
to contain numerous symptoms, and thus
to demonstrate the cause of certain symptoms
which may have long baffled the attential
physician to define. In short, such are the
changes manifested in the quantity and consti-
tution of the urine for disease generally, but
more especially in affections directly connected
with the urinary regions themselves. But it
ought in all its forms to receive especial attention
at the bedside as affording considerable
assistance in a diagnostic, prognostic, and
therapeutic point of view.

Having thus treated of the most important
points of the clinical investigation of disease
I shall conclude this thesis by a few observations.
In the Method of Conducting an Examination at the Bed-side.

On entering a sick room the physician should observe if free, open, kind, and gentlemanly bearing towards his patient. On taking his seat by the bed-side he may make a few flattering remarks as to the time the patient has already been suffering. A little time gained in this way allows the patient's first recollection to subside, after which the investigation may commence. Immediately however on entering the room the physician should observe the attitude of his patient and also the general expression of the countenance. When all recollection is over the patient should be closely questioned respecting this particular disease - the date of its commencement - its alleged cause - the mode of its attack - and the subsequent disturbance in the system.

In many instances pain is generally one of the first symptoms remarked by the patient. Then therefore, the disease is not at once apparent to the physician. The patient should be asked whether he has any pain and if so, to place his hand on the part in which it is located. This generally leads the physician at once to the seat of the disease.
In order, however, to determine the internal or external cause of pain, the surface of the body should be examined with a view to eruptions on the skin &c. Having ascertained the seat of disease, it should be particularly observed in what way the functions of the suffering organ are altered — in what manner and to what extent this alteration of function in the diseased part affects other functions in close connection with it, and lastly in what degree the general system sympathizes with the local affection. These points will necessarily lead to a due inquiry into the state of the vital functions, the secretions, and excretions. But the point of inquiry must invariably begin with the suffering organ itself, and gradually as it were proceed to the investigation of the whole system and organs more and more remotely connected with the affected part. In determining the nature of the disease, particular attention must be directed to the points of which I have before treated under the head "Semiaiology." On all affections of the chest we must bring to our aid the invaluable assistance of percussion and auscultation, without a proper knowledge
of these means of diagnosis no physician is able to give anything like a correct opinion of the state of the chest; but having arrived himself of them in a proper manner, he may deliver his opinion with a confidence which the result of the case will generally justify. It is not here necessary that I should particularise the process of examination by these means. Suffice it to say, that in examination, particularly in females, should at all times be conducted with as much delicacy as possible — that in some instances it is more satisfactorily conducted with the chest quite uncovered — that a comparison of the two sides of the chest should attend every stage of the process — that should be made at the extreme points of the respiratory movements, i.e. at the end of inspiration and expiration, as also during the respiratory movements — that the patient should be in symmetrical position — and that the position of the auscultator should be such as not to interfere with the hearing. These should be taken at the time or immediately after the examination in order that they may afford ground for reflection as to diagnosis, prognosis, and treatment as well as for comparison with the
result of any subsequent examination.
Sometimes, without the further application of the above
means of diagnosing the physician is left in doubt as to the
true nature of the morbid action going forward in the lungs.
Thus carcinomas of lung organs may be present. The occasional
incidental signs are duly recognized, but the intimate
nature of the disease is still unknown. Often then the
examination of the sputum by the microscope
will probably detect the presence of cancer cells in the
sputum, which at once determine the nature of the disease.
In like manner the microscope may be employed to determine
the prospect of disease. Thus the examination of different times
of sputum from the same part will determine the improvement
or non-improvement which has taken place, and in like
manner the frequent microscopic inspection of the urine,
during granular degeneration of the kidneys, will by detecting
the presence of the broken-down tubules, enable the
physician to announce the progress of the disease towards
an unfavorable close. Hence, then, the value of the
microscope as an adjunct to the other means of
physical diagnosis.

As the subject of prognosis the physician
should be guided by the particular of the case.
His opinion should not be formed too hastily, but
should come as a necessary result of the due consideration.
The nature of the disease - its degree and extent - as determined by signs and symptoms - the age, skin, constitutional peculiarity, habits, and previous mode of life. It is not at all times judicious in the physician to state the extent of his fears to the patient himself, but he, for his own safety, should invariably represent the case in its proper light to some one of the patient's immediate relatives.

In this way the reputation is never compromised, confidence in the while is not lost. These directions are strictly followed, and every chance of recovery that the art can afford is respected by the patient.

The treatment will be in accordance with the nature and peculiarities of the case and the principles which observation and experience have established and confirmed.