An Inaugural Dissertation

On The Symptoms and Differential Diagnosis of the Great Eruptions

Submitted to the President, Board of Trustees, and Medical Faculty of the University of Nashville,

For the Degree of Doctor of Medicine.

By

E. P. Breton

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To

John M. Fratson M.D.,

In Admiration of Thos High Attainments in Medical Science,

and of his many virtues and Excellencies, this Dissertation

is most Respectfully

Inscribed by.

the Author.
Symptomatology and Differential Diagnosis of the Greater Etyanthenata.

No disease or class of diseases demands more attention than the Etyanthenata. The importance of a thorough knowledge of the various phenomena characteristic of these will at once be manifest when we take into consideration their extensive geographical area, the fatality of some of them, their sequelae, their contagiousness, and the fact that all ages, classes, and conditions of mankind are
subject to their ravages. I have been induced to select the Exanthematicata as a subject on which to write a Thesis not by the vain hope of advancing anything new, or adding to what has already been said, for indeed a Thesis on a subject of purely medical interest is but a compilation of the writings and teachings of others, but because I thought that the study and investigation necessary for the preparation of a Thesis would be as useful, and perhaps better, practiced here than elsewhere. The diseases comprised in this form Exanthematicata are Varicela, Verruela, and Varicellina. In treating of these the symptoms
of each will be noticed separately, then the special or pathognomonic signs by which they may be distinguished from each other. Before taking them up in this way a few things may be premised which wholly alike to each of them. They are essentially contagious, and although they sometimes prevail epidemically and sporadically, and we in many instances are unable to trace them back to their starting point, yet they begin and are propagated by contagion and contagion only. There is a certain poison peculiar to each generated in the body of an individual;
This coming in contact with the blood of another, by inhalation, inoculation or cicatricous absorption, acts on this blood causing it to undergo the process of generation, thereby generating morbid phenomena analogous to those which existed in the first individual. The potency of this poison depends not upon the amount or its concentration, but rather upon the "susceptibility of the blood" to its influence. Do A certain period of time elapses from the exposure of the individual to the poison until the development of the disease; this is called the
period of incubation, and differs, of course, according as the disease be Varicella, Rubella, or Scalectina. 3d. In each there is a peculiar eruption on the skin, preceded by, and in some accompanied with, febrile phenomena; this eruption appearing at a certain time, running a definite course, and disappearing at a certain time; these stages differing in each Scalectina. This eruption at once distinguishes them from the other ailments. Persons having had these diseases once, are, thereafter, secure against their
in ages. To this, however, there are some exceptions; persons have been known to have a second attack, and cases are recorded of the third: about this there is all probability was some mistake; at all events, there was in these cases a greater susceptibility than is usually seen, and at least it may be stated as a general rule that persons have contracted a but once. In this they differ from those contagious diseases which are communicable only by actual contact, as the venereal diseases, scabies, leprosy, eye, tuberculosis, the former chiefly
gives an immunity, whilst the latter, not only does not become the individual, but also actually brings about a predisposition in this system to take the diseases whenever he comes in contact with the virus. The Exanthematous are self-limited diseases, and unless complications arise the "his medi-canty natural" is, in most cases, sufficient for the accomplishment of all that is necessary to restore the patient to the art.
Variola is usually fourteen days; during twelve of these nothing occurs which would induce me to suppose that the patient had been exposed to the variolous poison; at the expiration of this time rigors appear, then a chill followed by undue fever with severe pain in the head and back, nausea and vomiting, sometimes coma and excessive exhaustion. In the beginning there is sometimes delirium, and sometimes convulsions; the latter are of rare occurrence in adults, more frequent in children. When the pain in the lumbar region is very acute it is said
to be manifestations of evil. The fever continued forty-eight hours, then
the congestion marked its appearance.
This consists of minute red points
radiating from the center,
arranged in a semicircular
or circular form, appearing
first on the forehead and face,
then on the throat, and occasionally
only at the same time on the
ear, lastly, on the trunk and
superior extremities. This, however,
is not always the case, the
scattered are sometimes seen
first on the trunk, and, in rare
cases, on the extremities; but
there is always a greater display
of the violence of the poison on
the cranio-sacral region than elsewhere. On the third day there is a deposition of lymphatic and the lymphatic is now convoluted into a residue; the residue now begins to undergo the process of maturation and is gradually convoluted into a constant; while undergoing this process it increases in size and presents an unmistakable appearance. This appearance is caused by the cartilage being bound down by the cartilage and by a small filament of areola tissue; the areola tissue around the edge of the residue becomes inflamed. As the process of inflammation
goes on, and is formed in
the vesicle; the little core of
an active tissue is disintegration,
and that which was an
umbilicated vesicle now became
a projecting placenta. These
changes rapidly take place
between the first and second
or eighth days of the disease,
the fourth and fifth of the
jaundice. When the placenta are
five or six days old they present
two colors; "a central whitish
disc of lymph, set in, or surround-
ed by, a circle of yellow or jaundiced
mutton." It is thought that this
"central disc" contains the most
violent portion of the poison.
About the eighth day a small black spot may be seen on the top of the fontanel, at this point the entire gives way; the parenchymatous matter is discharged and dissipation begins; this begins first on the face and is said to be accompanied with a peculiar disagreeable odor similar to that exhaled by the cattleman. There are two varieties of small pox, the distinct and the confluent. These may not distinguished from each other by the following signs:

in the distinct variety the febrile phenomena subsides upon the appearance of the eruption; in the confluent the eruption...
After an earlier, and is convulsed. The fever is greater in the beginning and continues after the rash has disappeared, though in rather a modified form. The fear of malnutrition is greater in this than in the distinct variety; the mucous membrane lining the mouth, fauces, larynx, and trachea is frequently involved.

Rubeola. This disease was first described by Cazes in the ninth century, but it is a remarkable fact that writers up to the time of Sydenham treated of it as but a form of smallpox; by him it was
separated from the latter disease and its distinctive characteristics pointed out in the year 1670. This may be said to be a fever of a week's duration; the first three days of which it exists in association with catarchical phenomena, the remaining four with an eruption. The period of incubation in ambroia is from ten to fourteen days. The disease begins with the usual stibide phenomena, to which are super-added catarach, a copious secretion from the Schneiderian mucous membrane, sometimes deceptive lack of eruption, sometimes redness
and pain of the lips without Raehamnation: This state of things usually exists for twenty-two hours, the first twenty-four of which the fever is severe, than in the remaining forty-eight; this time having elapsed, the fever, as a general rule, is increased, and with this in Case the Red Meat eruption. According to some authors the catarrhal symptoms now fade out, according to others they not only do not fade out, but in some cases, are actually increased. It however is spread that the weight of testimony is in favor of those who say
that with the appearance of
the eruption there is a subsidence
of the cataract. There is a hollow
cough and a peculiar brilliant
cry of the eyes, said to be a charac-
teristic of measles. The
eruption comes out suddenly,
the pimplles are of various
sizes, of a dark, dingy reddish color;
somewhat elevated, more so in
the negro than in the white
man; these pimplles may be
seen on the mucous membrane
of the fauces turbae or twenty-
four hours before elsewhere;
then a few spots appear
behind the ears; then on the
face and neck; and finally,
on the trunk and limbs. The papularae in their progress in large, coalescent and form large, irregular, semilunar, patches with healthy interspaces. In three or four days the fever begins to decline, desquamation begins and, if no complications arise, the patient soon recovers.

Scantolina. Of this disease there are three varieties, Scantolina simplex, Scantolina anginosa, and Scantolina maligina.

Although Scantolina has been thus divided by authors, yet each variety is dependent on a cause common to the others, and in this respect
all may be said to be one and the same disease. The period of incubation in scarlatina is from four to six days; this time having elapsed there are febrile convulsions, gastric phenomena, inflammation of the mucous membrane of the mouth, fauces, pharynx, 

The tongue is red at the tips and edges, and, although covered with a white or whitish yellow film, it presents numerous projecting red papillae. The rash makes its appearance first on the body, then on the face, and neck. Most authors say that the eruption appears first
on the face and neck, then on
the arms and extremities. But
by an early and careful
examination it may be seen
on the trunk before elsewhere.

The eruption consists of
many minute, intensely red points,
thickly set, never, as in measles,
creatinic, is not elevated but
presents a smooth surface,
differing in this respect also
from measles. Sometimes mit-
itary vesicles are found in
connection with the erup-
tions, but their presence or absence
is a matter of no consequence.
A burning, itching sensation
also attends the eruption.
The color of the rash is most intense when the fever is highest. The fever in scarlatina does not subside upon the appearance of the eruption, but continues and often increases in violence; the pulse is more frequent than in other febrile affections of like character; the skin is remarkably hot, the temperature of the body is sometimes as high as 112°F. In some varieties the throat is but slightly affected; in others frightfully so. The symptoms of scarlatina usually begin to decline in about a week; desquamation takes place,
and, if nothing unpleasant occurs, the patient is soon restored to health again.

Scandalina Simplex may be distinguished from the other varieties by its mildness; in this variety there is simply a slight fauclid reaction, slight inflammation of the mucous membrane of the mouth and fauces, and the scandalitious eruption. Scandalina Anginosa. In this form both the skin and throat are affected: but the prominent symptoms, and those most to be feared are, inflammation of the throat and adjacent parts; the
mucous membrane of the fauces,

tongue, eustachian tube, sometimes extending to the tympanicum,
sometimes there is epistaxis,
sometimes an avian, fistly

deflection from the nose. In

the cavity of the larynx there is
swelling of the parts in the
region of the larger salivary
glands, either the parotid and
submaxillary or glands them-
selves, the adjacent sympathetic
glands, or the surrounding
adipose tissue. The eruption, as

a general rule, does not appear
as early as in the simple
form, it left abundant, some,
times disappears and then
reappearance again; the pellis and central phenomena are more severe, Searealina Maligina. This is the most fearful and fatal of all the varieties of Searealina. Sometimes the sufferer is overwhelmed at once and dies in the very beginning of the disease; at other times persons of a powerful constitution are enabled to withstand even this form of the disease and at last recover. Often in Searealina Maligina there is no eruption at all, and when it does appear it is but partial. There is a great
tendency to a languid and slothful state; the subcutaneous areola tissue is sometimes destroyed; sometimes there is destruction of the eyes and irrational eye. The term malignant is very applicable to
this form of laceration. Either of the other varieties may terminate in this, though this, perhaps, is very rare.

From this imperfect consideration of the symptoms of the lacerative form I proceed to a brief notice of the signs by which they may be distinguished from each other. The subject of
Differential Diagnosis, not only of these but of all other diseases is worthy of particular attention on the part of the student of medicine. Discrimination is one of the highest accomplishments of the young physician; indeed it is this that distinguishes the real physician from the mere quack. The fame and fortune of the young physician often depends on his powers of discrimination. So therefore while a student should cultivate those powers with assiduity and study diagnostic signs with utmost energy and unceasing perseverance. With an apology
for this digression I assume the subject beginning with smallpox. The incubation from of smallpox cannot be distinguished with absolute certainty from any other from. If, however, there be some pain in the back, excessive gastric indigestibility, for which no cause can be found, and if the individual have been exposed to the various Contagia some twelve days previous, it may infer what he is suffering under the breeding from of smallpox; but because of the latter Charity from the Physician by the unlearned the should withhold this opinion, especially
if she is a young mammy, however, after the expiration of about forty-eight hours, during which the flux has continued, there should appear on the face and neck small red pimples, arranged in a circular or semi-circular form, the flux at the same time disappearing, and if on the third day there should be a deposition of lymph, and the vesicle assume an embibilated appearance, the marked pronouncements must inevitably a case of smallpox. So the observant physician the arrangement of the pimples in many cases, a sufficient
diagnostic sign. The only one of the major rhamnemata with which smallpox is likely to be confounded is measles. The disappearance of the fever in the distinct variety would enable us at once to distinguish this form of the disease from measles. The confluent variety may be distinguished by the following sign: in smallpox the eruption makes its appearance in about forty-eight hours after the beginning of the fever; in measles not until the expiration of about seventy-two hours. In measles there are not so many feverish phenomena; in smallpox unusually
The varioloid sensation does not come out so suddenly nor so abundantly as the varioloids; the varioloids are constant, more insidious, harder; from varioloids they are consolidated into arguloids, and from arguloids into varioloids; the varioloids remain undergoing no such change. By these signs they may at all times readily be distinguished from each other.

It now only remains to speak of the differential diagnosis of measles and smallpox, and for the sake of clarity both will be considered at once. As in smallpox it is
difficult to diagnose the initial stage of these diseases, yet there are some signs which would vary as in the form, but in no case to designate an opinion; these are the length of time since the exposure of the individual; it appears frequently that the history of the case cannot be traced; then the period of incubation of each disease, if it of importance to consider it may, is of no avail. But there are other more important and much more reliable signs given out in phthisis; these are, in meases, the Catarrhal phenomena, the nasal secretion.
The subjective examination, the peculiar brilliancy of the eyes and the absence of the throat affection in scarlatina, the presence of the last named symptom, the frequency of the yaws, the great treat of the skin and the condition of the tongue and face.

When the efflorescence appears, the diseased are easily distinguished. This in measles, as before stated, comes out in about thirty-two days after the beginning of the fever; in scarlatina in twenty-four; it appears in measles first on the face and neck; in scarlatina first on the
Trunk, then on the face and neck. The multicolored eruption is sudden and conspicuous; the pimples are of various sizes, slightly elevated, somewhat zedoary, leaving the healthy interspaces, one of a dingy red, reddened where the plant is exposed to the atmosphere than on the leaf. The deantagonistic reaction presents itself in minute, extremely red points of uniform size, not elevated but persisting on a smooth surface; the points soon become crowded together, are much redder than in measure, the redness is uniform on the surface, no healthy interspaces are
to the form; the spots are redder than the surrounding
surface, and are of a deeper
sear on those parts which
are covered than those which
are exposed to the atmosphere.
There are other diagnostic signs
such as the manner of desquama-
tion, ulcuminous ulcer, destruction
of blood disease, but these are
seen too late to do more than
confirm the diagnosis.

E. T. Becton.