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ESSAYS, MONOGRAPHS, AND CASES.

The Yellow Fever at Port au Prince. By G. VAN ARCKEN, M.D.

Yellow Fever is a disease whose occurrence is limited to certain districts and to certain times of the year; a long-continued temperature of from 75° to 90° F. favors its appearance and increases its ravages. In cold and temperate climates it appears generally towards the end of summer, and is suddenly cut short upon the setting in of cold. In the tropics its usual time is at the commencement of the dry season. It is hardly ever met with north of 42°, either because the heat of the summer is not intense enough, and does not continue a sufficient length of time, or because there are other concomitant causes necessary for its production that are not present.

Yellow Fever presents itself by preference in large cities and ports, and at all places where a large number of human beings are congregated into a small space. It occurs periodically at most places; still, there are some where its ravages never cease, and are only influenced by the presence or absence of the human material.

The worst of these latter places is no doubt Port au Prince, in Hayti, which has of late acquired the not very enviable reputation of the "*grave-yard of the whites;*" and it is to the Yellow Fever at that place that these remarks in particular apply.

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The different epidemics of yellow fever, such as we have them upon the strength of the testimony of medical witnesses, appear to have been marked by individual symptoms of a very different character. The effluvia and miasmata generated amongst the houses of a large mass of people, together with the heat of a tropical climate, may have given them either a bilious or a typhoid character, and a scorbutic tendency may also have considerably modified their character and severity.

Owing to the different constitutions, the method of living, and the peculiar susceptibility of some persons, yellow fever may assume all grades of violence, from a slight indisposition to the most fatal form. An attack of yellow fever is sometimes preceded by the usual febrile symptoms, but more frequently it comes on without any warning whatever.

There is generally some chilliness at the beginning, and the duration and violence of this is often a sure indication of the character of the disease, and of the remedies that must be employed; the case being a slight one and easily managed if the chilliness has amounted to a rigor. In some cases there is no chilliness at all, and these should, however slight they appear, always be viewed with suspicion. Among the most constant symptoms are, a deep-seated and severe pain in the supra-orbital region, and a weakness in the back and limbs, amounting sometimes to a sort of spasmodic pain.

When febrile action has fairly set in, the skin is found to be hot and dry, the respiration hurried, the face flushed, and the eyes red and watery. The tongue is mostly covered with a thick white fur, and the throat occasionally sore.

In the majority of slight cases there is more or less vomiting from the beginning, the ejected matter being of a decidedly bilious character, although the later vomitings sometimes have the appearance of boiled barley water. But in fatal cases the gastric symptoms are not fully developed until about forty-eight hours afterwards, when frequently the black vomit all of a sudden makes its appearance.

Patients complain sometimes, from the beginning, about a feeling of weight and oppression in the epigastrium. When examined, that region is found to be very sensitive upon the slightest pressure. In a generality of these cases, the stomach rejects everything that is swallowed. At this time the bowels are mostly very costive, and when at last discharges are obtained, they are of an unhealthy character, and very offensive. The mind of the patient is usually very much disturbed; he is apprehensive and restless, and his countenance is strongly marked with these feelings. Delirium is not an uncommon symptom;

it amounts sometimes to maniacal violence, but it soon gives way to a deep coma.

These symptoms, indicative of the first stage, continue mostly from two to four days, and then a great apparent amelioration is experienced. The pulse becomes nearly natural, the respiration calm, and the pains in the head, back, and limbs disappear almost entirely. At this stage of the disease, it is not uncommon to find the patient sitting up in bed, and perfectly confident of recovery; but, unfortunately, this is only a temporary calm; the fever still continues internally with unabated violence, and the partial subsidence of its outward symptoms only shows the inability of the system to struggle any longer against its powerful enemy.

To distinguish this stage from a genuine convalescence, it is only necessary to make slight pressure over the epigastrium, when great tenderness will be discovered, and very often a hard lump, of the size of a goose egg, may be felt there, distinctly pulsating, although these pulsations cannot be attributed to pressure of the stomach upon the abdominal aorta, the pulsations not being synchronous with the contractions of the heart. The redness of the eye has now changed to a yellow or orange color. A pale violet or bluish color sometimes shows itself on the forehead and cheeks, extending in some cases over the whole body. It is owing to a stagnation of the blood in the capillaries. The pulse is lower than in health; it falls to fifty pulsations per minute, and sometimes less. These symptoms continue for about twenty-four hours; but in fatal cases they make place in a few hours for a quite different class of phenomena, to wit: extreme debility and prostration.

The pulse now becomes frequent and irregular, forming distinctly marked intermissions. The tongue is dry and brown, and its edges red; and on the teeth and gums appears a deposit peculiar to typhoid diseases—I mean the formation of sordes.

The stomach is now exceedingly tender; everything swallowed is thrown up again, and with it a matter consisting of black flakes and particles, floating in a colorless or slightly yellow liquid, which ultimately becomes opaque and black.

The heart and large vessels, especially the carotids, are beating violently, the already mentioned epigastric pulsation increases, and still at the wrist the pulse is almost imperceptible.

The urine becomes very scanty now, often entirely suppressed; hæmorrhage takes place from the mucous membranes, and blood is not unfrequently vomited up, and discharged by stool.

The extreme restlessness of the first or febrile stage has now given way to a gloomy indifference. The pulse gradually ceases, hiccough sets in, the skin becomes cold and clammy, the body exhales an offensive odor, and death takes place quietly or amidst convulsions.

In slight cases, after the febrile symptoms have passed off, a gradual improvement in the state of the stomach, a general perspiration, or the discharge of a dark brown urine, show that the vital energies are not yet exhausted. After this convalescence takes place, either with typhoid symptoms, or more frequently without them.

This is the ordinary course of the fever; but, as I have stated before, it is liable to great diversity. The febrile action of the first stage may be inflammatory, with a strong and full pulse, or typhoid and asthenic; in which case the pulse is, from the beginning, very feeble and frequent. In this latter case the general prostration is such as to warrant the assumption that the patient has received his death blow at the beginning.

The most prominent symptoms of this malignant state are: a general weakness, with a sense of stupefaction in the head; pain in the back and inferior extremities; a very feeble pulse at the wrist, while the carotids beat violently; a pale and purplish face, and a countenance expressive either of gloomy indifference, or of intense horror and agony.

Sometimes the patient has been suddenly struck down in the midst of apparent health, with symptoms of overwhelming precordial oppression. When examined, his pulse is found to be very weak, or entirely absent. In such cases the tongue may be clear, and the pulse almost natural; still the great restlessness of the patient gives cause for alarm, which is soon confirmed by black vomit, convulsions, and death.

The expression of the countenance in this disease is peculiar, and by carefully observing it the practitioner may often see clearly depicted in it, what a sulky or cross patient does not want to acknowledge. From the beginning of the fever the white of the eye is reddened, and appears as if bloodshot. The forehead and cheeks have at the same time an unnatural red color, which is found in no other disease so strikingly as in this. The color, as also the redness of the eye, gradually gives way to a deep yellow or orange.

The black vomit, the most striking symptom of this disease, mostly makes its appearance on the third or fourth day, although it is by no means a universal symptom; for plenty of cases prove fatal without its occurrence. It was formerly thought to be black bile; but at

present the most generally admitted opinion is, that it is blood thrown out to relieve the congested and inflamed vessels, and which has been altered by the acid of the stomach.

Still, the blood must undergo some changes in making its exit from the capillaries; for were it simply blood altered by the action of acid, it should return to the state of natural blood upon the exhibition of magnesia, instead of remaining unaltered. Black vomit separates, upon standing, into two parts—an insoluble black matter, like coffee grounds, which subsides, and a clear liquid ; the first is the altered coagulable matter of the blood—the liquid, the serum.

According to some authors, animalculæ of the genus Acarus have been discovered by means of the microscope in the black vomit very recently ejected ; the same has been said of the vomitings and evacuations in cases of Asiatic cholera. It remains yet to be seen whether this will assist in clearing up the obscure nature of the yellow fever. There is, however, no doubt that the black vomit is essentially disintegrated blood.

Great diversity of opinion exists as to whether the cause of yellow fever is a peculiar and specific one. It has also been said that the nature of bilious and yellow fever is essentially the same, and that the latter is only an aggravated form of the former. But the authors of those statements undoubtedly have never seen the yellow fever at Port au Prince, or they would have been convinced that bilious fever, typhus, and yellow fever may exist at the same time, aye in the same hour, and still there be to the experienced physician not the least trouble in drawing an exact line of demarcation between them.

The predominance of the gastro-bilious symptoms in slight cases, and of those of malignant typhus in the fatal ones, has suggested to me the idea that yellow fever might be a combination grown out of gastro-bilious fevers on one side and a malignant typhus on the other, and that according as the one or the other is predominant the character of the disease changes.

Another question of some importance is, whether yellow fever is to be considered contagious or not. With regard to this I have only to state, that during the time that I have practised in the West Indies and on the Spanish Main, I have never seen anything which could convince me of the contagious nature of yellow fever, and I would just as soon admit intermittent fever to be contagious.

The diagnosis of yellow fever is not attended with many difficulties. In the beginning, the redness of the eye, the white-coated tongue, together with the pains in the back and limbs, and the bluish color of

the forehead and cheeks, afford plenty of cause to suspect the true nature of the disease, and the black vomit soon comes and dissipates any doubt that may have remained.

The prognosis is more difficult, and it requires some experience to distinguish between slight and fatal cases, especially in the beginning.

Among the most unfavorable symptoms are excruciating pains in the back, limbs and forehead, great feebleness of the pulse, sometimes an entire absence, a bronze color of the face, bloodshot eyes, together with extreme restlessness, epigastric tenderness, black vomit, and suppression of the urine.

The favorable symptoms are, first, the absence of any of the above mentioned ; then a prolonged continuance of the primary fever, which subsides only gradually, and under the effect of a general diaphoresis, the passing dark brown urine, salivation, a gradual clearing of the tongue, and a diminution of thirst, and epigastric tenderness.

Much has been said about the treatment of this most malignant disease, and books have been written to prove the good effects of this or that medicine, which may not have proved by far as effective in all hands, as was at first anticipated. Bleeding has had its partizans, and the employment of emetics and strong purges also ; I have never liked either.

As I make especial reference to the yellow fever at Port au Prince, I shall abstain from all speculations on this subject, and limit myself to giving a description of the method of treatment which has proved most successful in my hands at that place.

Port au Prince is the capital of the negro Empire of Hayti, of which at present a certain Soulouque calls himself the Emperor and autocrat. Only colored people are allowed to settle on the island, and only in the seaports an exception is made in favor of a few foreigners, most of whom are merchants. But these, having been for a long time residents on the island, have consequently already become acclimated; the only subjects, then, who are exposed to an attack of fever, are the crews of foreign vessels, of which there arrive yearly about three hundred at Port au Prince. My position as physician to the American Consulate made it my duty to attend to them. It will thus be seen that all my patients were strong and able-bodied men, mostly from twenty to thirty-five years of age, about half of them being Americans, and the other half from the different commercial nations of Europe.

When called to a patient, my first care is to decide, whether it is a case of an inflammatory, or of a typhoid character.

The inflammatory cases may generally be known by the full and strong pulse, which seldom runs above one hundred to one hundred and five per minute ; the tongue is covered with a white or slight yellow fur, the taste in the mouth is very foul, with an occasional feeling of soreness in the throat. There is usually some pain in the head, and also a peculiar giddiness, together with a weakness in the back and limbs.

The typhoid or asthenic cases are characterized by a very frequent and feeble pulse, which sometimes makes regular intermissions from the outset. The tongue is either natural or covered with a white fur. The patient complains of intense pains all over his body, and his head feels, as some have told me, like an empty paper box. The eyes are very much bloodshot, and in the whole countenance there is depicted an intense feeling of horror and agony. In these cases the bowels are generally obstinately costive from the beginning, and the stomach very tender.

As soon as I make a case out to be of the inflammatory kind, I administer thirty grains of calomel, which I place dry upon the tongue, and allow only a few spoonfuls of water to swallow it. To obtain a mercurial action being my object, I give then every two hours from one to two grains of calomel, which I continue for two days. In cases of yellow fever it is a most difficult thing to obtain a mercurial action, the process of absorption having entirely ceased; I generally continue the mercury for about forty-eight hours, and then stop, having found it entirely useless to continue any longer. Salivation, if it takes place, will do so within thirty-six hours, and there is no danger at all of discontinuing it, as soon as it occurs. To allay the frequent desire for cold drinks, I let the patient take small quantities of grateful acid drinks, such as tamarind water, or cream of tartar lemonade. If the bowels have been costive, I also prescribe several purgative clysters, composed of castor oil, common salt, and tepid water.

On the next day, the patient having had several stools, feels himself considerably relieved, and now I make a careful examination of the epigastric and right hypochondriac region, and if upon pressure there I find the least tenderness, or anything like a pulsation, I immediately order a dozen leeches to be put around the anus. After this a tepid bath is given, and then a large emollient poultice applied to the stomach.

With this the patient passes the second day well, and on the next morning ten grains each of calomel and quinine are again given.

On the morning of the fourth day I usually give again ten grains of

quinine, but this time combined with one grain of powdered opium, partly to procure sleep, but more especially for the purpose of bringing about a general diaphoresis, which is then kept up by small doses of liquid acetate of ammonia. On the next day the patient is allowed a cup of weak soup, and also to sit up for a few hours. After this, all the medicine I give is an occasional dose of citrate of magnesia, to keep the bowels loose; and at the end of eight or ten days the patient is well enough to go to work again.

But matters do not always progress so favorably. Frequently on the third day I find the epigastrium very tender, and the patient evinces a tendency to vomit. Upon this I apply from six to ten wet cups to the seat of pain, and wait then a few hours to see the effect. If the tenderness diminishes, I go on with the already given method; but if it increases, I immediately put two large blisters to the inside of the thighs. Blisters have at such a critical moment often worked like a charm, calming the tenderness of the stomach, breaking up the fever, and restoring the interrupted equilibrium between peripheral and abdominal nervous sensibility.

But to be productive of such good, they must be applied in time, and before the black vomit sets in; if this has once taken place, they hardly ever do any good, and always torment and exasperate the patient very much.

Should the blisters not produce the desired effect, and the disease proceed to black vomit, then I follow the treatment hereafter to be specified.

Cases of a typhoid character are easily distinguished, and, as a matter of course, require a method of treatment altogether different. The nervous system being from the beginning evidently broken down, it requires a powerful remedy, acting at once as a sedative and tonic, to assist the system in rallying from under the first blow of the disease. This medicine we have in the sulphate of quinine. But to be productive of good it must be given immediately, and in very large doses. If the stomach is still quiet, I give immediately about thirty grains in about half a dozen spoonfuls of coffee, without either sugar or milk.

If given in this vehicle, I have found it to sit better on the stomach than in any other. But should the state of the stomach not admit of any medicine being given internally, then I dissolve sixty grains of quinine in one ounce of sulphuric ether, with the addition of two drachms of liquor ammonia, and have this rubbed in under the armpits and over the whole abdomen about three times during the day.

If the bowels be costive, the already mentioned purgative enema should also be administered.

On the following day the patient frequently feels himself better; if formerly not successful, quinine will now mostly stay on the stomach; but whether it does or not, the external application of it should by no means be forgotten, but repeated in about half the strength of the day before.

During this day the symptoms of epigastric tenderness return frequently more intense than ever; they should be immediately combatted by leeches to the anus and (no cupping in these cases) hot fomentations to the seat of pain, putting them on as warm as the patient can bear them, changing them at least every fifteen minutes.

Should this not have the desired effect, then blisters must be resorted to, under whose action either an abundant discharge of dark brown urine takes place, or a slight diaphoresis appears, which has then to be encouraged by opiates, etc. Still, in a great many cases all these remedies prove in vain, and the so much dreaded black vomit makes at length its appearance.

To combat this, I have ransacked all the known and recommended remedies, and given them all a trial; but, from gum kino to acetate of lead and nitrate of silver, none has succeeded in my hands. Thrown back upon my own resourses, I resolved to try the corrosive sublimate, and I am happy to say that seven people, who had the black vomit, recovered under the effect of this remedy.

To employ it, I proceed in the following way: Six grains of bichloride of mercury are dissolved in two ounces of pure water, with the addition of twelve drops of muriatic acid. A small teaspoonful, (one of those manufactured out of horn or ivory for the use of children,) and which may contain about a drachm and a half, is my usual dose.

I commence with making the patient drink about half a cupful of tepid water, with a little common salt in it; this has the effect of causing him to vomit immediately, and thereby cleaning the stomach effectually; I then make him open his mouth and let the mentioned solution run down drop by drop in his throat.

It generally causes a slight burning sensation in the stomach, for which I always have an emollient poultice ready, which soon relieves it; and directly after this has been effected, I order a purgative clyster to be administered, for the purpose of assisting in checking the vomiting.

This same process has to be repeated, according to the urgency of the symptoms, every two or three hours.

If it proves effectual, it will do so after three or four doses have been taken; in such cases the vomitings assume first a brown mahogany color, which gradually goes over to a greenish opaque, until they cease altogether and the matter is passed off by the bowels.

The black vomit, if it does not yield to remedies, continues from two to four days, after which it spontaneously ceases.

Then commences the last or true typhoid state of the fever, which in most cases is followed soon by convulsions and death. But in some cases the disease has run its course so quickly, that the system is not yet entirely broken down.

The patient is mostly found to lay in a half-inclined position. He complains of no pain, except in the forehead; but says, to use a sailor's expression, that he is as weak as a new-born baby.

A nutritious diet should now be ordered, together with wine and water and other stimulants, according to the degree of prostration.

In some cases the carbonate of ammonia in an emulsion of gum arabic is sufficient, while in others egg punch and brandy, together with tincture of musk, must be resorted to.

The oil of turpentine, so much lauded by some practitioners as an alterative to the mucous membrane of the stomach, may now be employed.

Sulphate of quinine in small doses may now be administered with very good effect, and the whole must be conducted upon the principles laid down for the treatment of the latter stage of malignant typhus fever.

The wandering pains that are now frequently felt all through the body are generally relieved by slight frictions with some aromatic spirits, which, to make it feel more comfortable, may be slightly warmed. Frictions, besides, produce very good effects all through the course of yellow fever.

At this stage patients may remain in pretty much the same condition for fifteen or twenty days; still it should be recollected that every additional day brings also additional hope.

The greatest care is now necessary to guard the patient against imprudence in diet; it should be kept strongly impressed upon the mind of the nurses that he needs a generous and nutritious diet; but crude things, for which sailors have always a strong liking, should be scrupulously avoided, for a single mistake of this kind is sufficient to bring on a sudden and fatal relapse, followed in a few hours by convulsions and death.

I have sometimes been called to patients, when, after the most careful examination, I could not decide as to whether it was an inflammatory or asthenic case, the distinguishing symptoms being equally strong on either side. Experience has taught me to regard these cases as of a most fatal malignancy. Quinine should be immediately given in large

doses, and the case treated on the most active principles possible; for the black vomit sometimes makes its appearance only twenty-four hours after the patient is taken sick.

With regard to the prevention of yellow fever at Port au Prince, a great deal might be done by keeping the city and harbor clean; but to clean them effectually at present, would be a job worse than the one Hercules had in cleaning the cow stables of King Augean.

Cleanliness may mitigate the violence of the fever; but some will undoubtedly be always present.

A great deal may also be done by paying attention to the selection of sailors for a trip to Port au Prince; none should be taken under twenty-eight or thirty years of age. These resist the fever the best, and, if taken sick, have a fair chance of recovering.

All the nationalities are alike subject to the fever; still the Americans have a better chance of recovery than any other, and the worst cases are found among the Germans, Swedish, Danes, and Irish.

The French, Spanish, Italians, and Belgians hold about the middle rank.

The fever appears to have a particular liking for cabin boys; out of twenty that are taken sick, hardly one recovers.

During my stay at Port au Prince I attended two hundred and forty-three cases of yellow fever.

Of these, forty-eight had the black vomit, of which number only seven recovered. Eleven more died without having the black vomit, making the number of deaths in the whole number of two hundred and forty-three, just fifty-two.

Of the fifty-two that died, only fourteen were Americans, and of the seven that recovered after having the black vomit, five were Americans. But as among the whole number of patients more than half were born Americans, the chances in their favor are very great, as may be seen from the above stated facts. As another singular fact, I must state that the only cabin boy which I brought over the fever was an American.

Marshall Hall's "Ready Method" in the treatment of Laryngismus.
By WILLIAM C. ROGERS, M.D., Green Island, Albany Co., N.Y.

During the first week of February, 1858, my youngest child, a boy five months old, of robust constitution, and of excellent general health, was suddenly, and without any previous illness or premonitory symptoms, seized with laryngismus and sank back breathless, pulseless, and