AN INAUGURAL DISSERTATION
ON
Yellow Fever
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BY
Joseph Preston Jones
OF
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In taking a retrospective view of the various diseases which affect the human family, I find that there are few more interesting or meritorious to the deep consideration of the physician and especially of the southern practitioner than yellow fever.

This fever is confined to ships and to garrisons and cities situated on the coast, or at a great distance from navigation. It is a disease of hot weather and warm climates. It is seldom met with north of 40°. It occurs generally in the latter part of summer or beginning of fall, for it is usually thought to require 78° to 80° of Fahrenheit, continued two or three months to produce it. I have seen cases of yellow fever, occurring during the winter in Key West, Florida, when the previous summer was perfectly healthy. When such was the case, the fever would appear sooner the following summer and rage with more than its usual violence.
A singular fact, noticed by various authors, is that this fever does not occur in all countries, where everything appears to exist for its production.

Symptoms, Course &c.—This fever begins in various ways. It may have the usual premonitory symptoms of fever, such as feelings of general discomfort, weariness, or languor, sense of weight or oppression about the epigastrium, deficiency of appetite, pain in the back and other parts of the body. Instead of commencing as above stated, it may begin with a chill, but seldom amounting to rigor. Again it may come on in the midst of apparently good health. When the disease is fully developed, the skin is hot and dry, the pulse accelerated, the respiration hurried, the face flushed, the eyes red and watery, the throat sometimes sore as to render deglutition difficult. The stomach is very irritable, rejecting everything swallowed.
If pressure be applied over the epigastrium, it will be found quite tender. The bowels are usually constipated, sometimes very obstinately so. The nervous symptoms are those from which the patient suffers most. The pain in the head, which is generally confined to the super-orbital region, is often exorbitant and for the most continues in a greater or less degree, through the whole period of febrile excitement. The pain in the back and limbs is often of the most agonizing character. In this stage the countenance is generally marked with apprehension and anxiety. Delirium and coma are not uncommon symptoms. The febrile symptoms continue from a few hours to three days and sometimes longer; usual shorter the stage of febrile excitement more violent the case and vice versa. After the subsidence of the fever, great apparent amelioration takes place; the skin becomes cool
and soft, the pulse nearly or quite natural, the respiration calm, and the stomach comparatively quiet. The nervous symptoms also disappear or are much relieved. This apparent amelioration is not like the remission or intermission of miasmatic fever, for the disease is still marching on; and a continuance of the fever would be a favourable sign, as it would show greater power of the system to contend against its mighty enemy. As a proof that the disease is still marching on, the tenderness over the stomach, instead of being mitigated along with the rest of the symptoms, is increased, so as not to support even the slightest pressure. It is true that the redness of the conjunctiva and flushed face may be gone, but in their place we find a yellow colour, which gradually extends over the face, neck, and ultimately over the whole body. The urine also has a yellow tinge.
The period of apparent abatement continues from a few hours to twenty-four. A new set of symptoms now follow, namely, those of debility or prostration. The pulse is quick, irregular and feeble. The skin yellow or a bronzed aspect. The capillaries are in a sluggish condition, and when pressure is applied to the skin, the colour returns very slowly. The fingers, toes, scrotum and back often assume a purplish hue. The tongue becomes brown and dry; sordes collect about the gums and teeth. The stomach becomes excessively irritable and a new matter is ejected consisting of brown or blackish flakes diffused in a colourless liquid, which may be at first slightly tinged by them, but ultimately becomes black and opaque. This constitutes the black vomit of this fever.
In very malignant cases, this great prostration may come at any time less than twenty-four hours. The urine which was scanty and high coloured during the fever now becomes natural. Hemorrhage takes place from various parts of the body, especially from the mucous membranes and petechiae and vesicles form on the skin. The anxiety and distress of the stage of excitement are replaced by an extraordinary apathy, and the countenance expresses a gloomy indifference. The pulse becomes weaker, the skin cool and clammy. The bowels give way discharging large quantities of the same kind of matter as that ejected by the mouth, and the respiration becomes slower and slower until the breath calmly leaves the body, but sometimes the final struggle is ended by convulsions. Instead of pursuing the fatal course above described, a second fever
may set in, which is considered, as I stated before, a favourable sign. The secondary fever has nothing peculiar in its symptoms, and may last a variable length of time, sometimes ending in speedy health, and sometimes terminating in fatal exhaustion, and again it may run into the leprous form, which only lasts with variable results for two or three weeks. Convalescence is usually tedious and obstinate sore, often breaking out on various parts of the body. This fever admits of great diversity, for instead of being as above described, it may be asthenic from the very commencement, with the pulse sometimes frequent, but often slow and always weak, and with such great muscular prostration, that the system is seldom able to react. Again, the patient is struck down with inanition or coma, which is soon followed by convulsions and death.
The pulse and tongue should not be too much depended upon in this disease, for the tongue is often clean and the pulse natural. The distinguished Rush was accustomed to warn his pupils against the natural tongue and pulse in this fever. It is said, that in epidemics of yellow fever, an eruption sometimes occurs of a rash or papular character.

Various other phenomena have been observed by different authors, which I scarcely consider requisite to mention.

Anatomical characters.—The blood is always coagulable before death, but the clot is softer than in health, and the buffy coat, when present, is of a gelatinous consistence. In malignant cases, it loses its vitality and becomes dark and dissolved. After death it is in a liquid state distending the veins. The brain and lungs are generally found healthy. The livers is variously affected, some-
Times engorged, sometimes dry, anemic and of a yellow colour, rarely inflamed; fatty degeneration is considered characteristic of fatal cases. The gall-bladder in its natural state.

The stomach contains more or less of the matter denominated black vomit; occasionally it contains blood in different stages of alteration. The muscular and peritoneal coats of the stomach, are usually found, but the mucous coat reddened, sometimes thickened and softened, but rarely eroded. The bowels usually contain the characteristic black matter of the disease. The veins of theomentum and mesentery, are usually distended with fluid blood.

Causes.—As regards the cause of yellow fever, much diversity has existed, but it appears to be peculiar and specific. The hypothesis which considers the cause, the same as that which produces bilious fever, is, I think,
erroneous, as we shall see when I come to investigate the nature of the disease. But I believe the causes of yellow and bilious fevers may cooperate and thus produce a modified case of the disease under consideration. What ever may be the special cause of this fever, it is aided by epidemic influence and a long continued elevation of temperature. Among the exciting causes, may be mentioned exposure to wet and cold, to night dews, fatigue, hot sun, intemperance in drinking and excesses of all kind. Most part contribute to the disease but is thought to augment the number of cases, by developing the disease in those upon whom the cause had already acted.

Nature. — This fever has been regarded only as a higher grade of bilious fevers, and even the celebrated Rush entertain the opinion
If yellow fever were only a higher grade of bilious fever, we ought to see it "expiring out" whenever there was any unusual prevalence of the latter. The symptoms and pathological conditions are also different. All fevers in the beginning have symptoms in common, such as headache, dizziness, pain in the limbs, and the like, but we must wait the progress of the case before we can decide.

Yellow fever is essentially a fever of one paroxysm, but the paroxysm is of very unequal duration, as before remarked. The acclimated are less subjected to it than the unacclimated. The pulse is often natural, seldom amounting to a hundred in the minute. In bilious fever the chill is distinctly marked; there is also a marked periodicity. The pulse more accelerated often reaching in the paroxysm 120 or 140 in
The headache is not of that super-orbital character, as in yellow fever, but is more diffused over the anterior portion of the brain. In bilious fever, if there be nausea and vomiting, the bile continues to be thrown up to the last. When a person is attacked by yellow fever, there is usually some bile in the system, and it is generally thrown up in the commencement of the attack, but it is never seen in the advance stages of the disease. The liver also presents different appearances in this fever to what it does in bilious fever. In the latter, liver is of various shades, dark brown, amber, bronze, and always gorged with blood. In the former, it is always paler in colour, being pale and destitute of blood. The brain is often affected in bilious fever but seldom in yellow fever. From these few remarks, on the relation of bilious and
yellow fever—although there is scope left for a good essay, I hope it is sufficient to prove that yellow fever is a disease sui generis, and not a higher grade of bilious as has been thought by many.

Diagnosis.—In the initial stage, it is almost impossible to distinguish this fever from other febrile affections. If anything arouses our suspicion, with regard to the nature of the disease, it would be the severe pain in the loin and lower extremities, the red suffusion of the upper portion of the face, sozoo. In the advanced stages, by the great irritability and tenderness of the stomach, the subsidence of the fever in one, two, or three days, with the superincision of yellowness of the eyes and skin, lastly and most characteristic the occurrence of black vomit.
Prognosis. From the records of the number of deaths from yellow fever, we cannot help from considering it an extremely fatal disease. Its mortality appears to be greater in some epidemics than in others; at least, this is the case as I have myself observed. I also noticed during the prevalence of this disease in Key West, Florida, that the first cases were almost uniformly fatal. For the intemperate and unacclimated there is little hope. According to Dr. Dickson of Charleston, S. C., the Irish, German and Scotch afford the worst cases; the Spanish, Italians and French are apt to recover. Midway stands the Englishman, northerner and mountaineer. The unfavourable symptoms in any individual case are a short febrile stage, a disposition to get out of bed and walk, a doggish indifference in reference to everything around.
him, a hemorr-hagic tendency with petechia and vesicles, but the most unfavorable symptom is that of black vomit. I know of nine cases of recovery after the occurrence of the last named symptom; I mention this simply to show that one should never relinquish his attentions to the patient, even after the occurrence of black vomit.

Treatment:—In regard to the treatment of this disease, I need not say a great deal, for there have been a good many deaths and recoveries from very different plans of treatment.

In the beginning of the disease, if the stomach is full and cannot digest, I would give a dose of ipecac or sulphate of ridge. Purgatives are useful here, and the one, almost universally preferred, is calomel combined with calomel or followed by a solution of sulphate of magnesia.
Blood-letting in the early part of the disease, is sometimes beneficial, but it should not be carried to that prodigious extent, with which Rush employed it. Experience, says Gregory, has proved that though occasionally, it is not generally beneficial. The great object of the physician in this disease, ought to be to bring the system under the mercurial impression. This may be best effected by administering two grains of calomel every two hours. In very severe cases the dose may be increased, in milder ones diminished. Should the calomel irritate the stomach, it may be combined with opium. Mercurial friction, and dressings to blistered surface will sometimes be found very useful in bringing about the mercurial impression. In support of the mercurial plan of treatment,
I will quote, a learned author of great experience in this disease, he says, "in the whole of the practice in yellow fever which I have seen, I have not met, nor do I recollect a single case, in which phlegm was induced during the continuance of the first stadium or febrile paroxysm which terminated fatally. During the fever, febrifuge remedies should be employed. Sponging or affusion with cold water is very effectual in removing the morbid heat, and should be repeated, when dryness of the skin heat and redness return. In asthenic cases sponging with warm water. Diaphoretics are generally considered beneficial; none perhaps suits better, than the effervescent draught, which also acts beneficially upon the irritable stomach. The patient ought to have as much ice or ice water, as he may wish..."
For pain in the head lice he and an ice cap with
hot pediluvium may be resorted to. For the pain
and irritability in the first stage, we may
use a syrup of the epigastrium.

Dr. Matthew Irvine of Charleston, S.C., has
introduced the acetate of lead into the
treatment of yellow fever. He claims for
it the beneficial influence of diminishing
the inflammatory excitement of the gastric
mucous surface. He gave it from the
very commencement of the attack, ad
ministering it while pursuing the mercurial
treatment in weak solution. This last preparation
is thought by some to prevent black vomit.

In conclusion I will remark, that
when the patient begins to sink, our
only remedies lie in tonics & stimulants.
Sulphate of quinia or compound infusion
of Peruvian bark, the mineral acids, capsicum
egg-nog, tandy strong animal broths are our chief reme
