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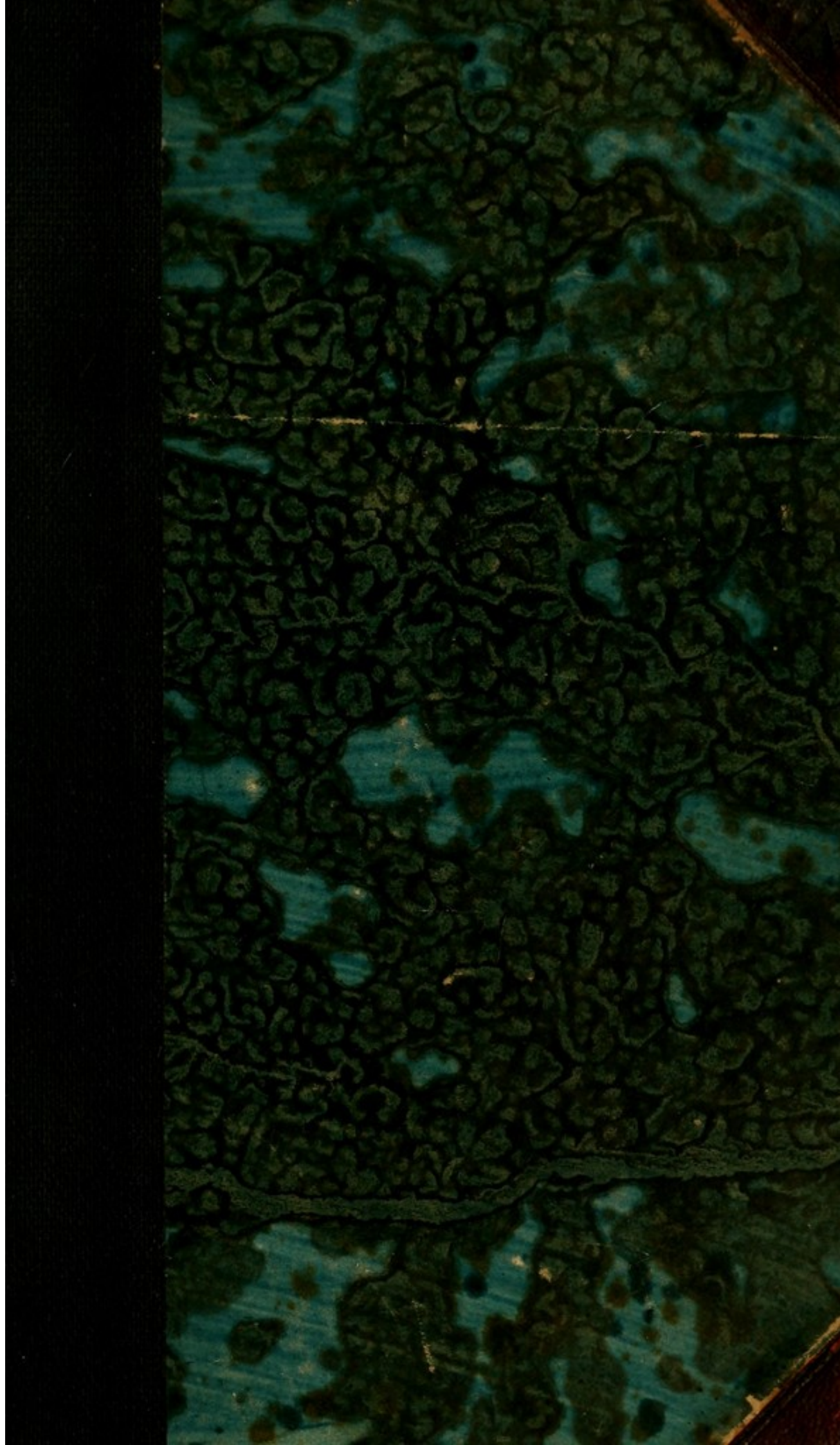
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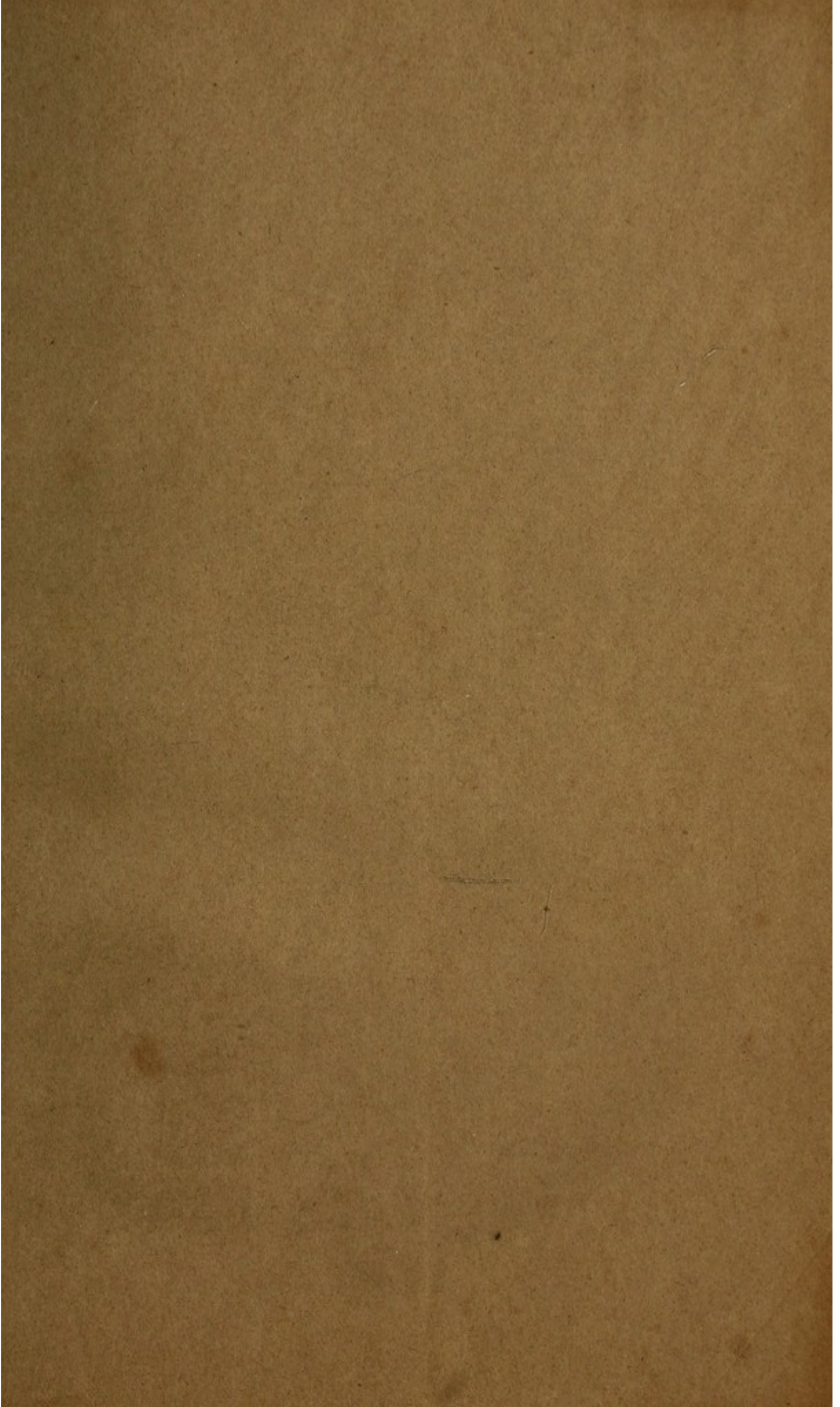
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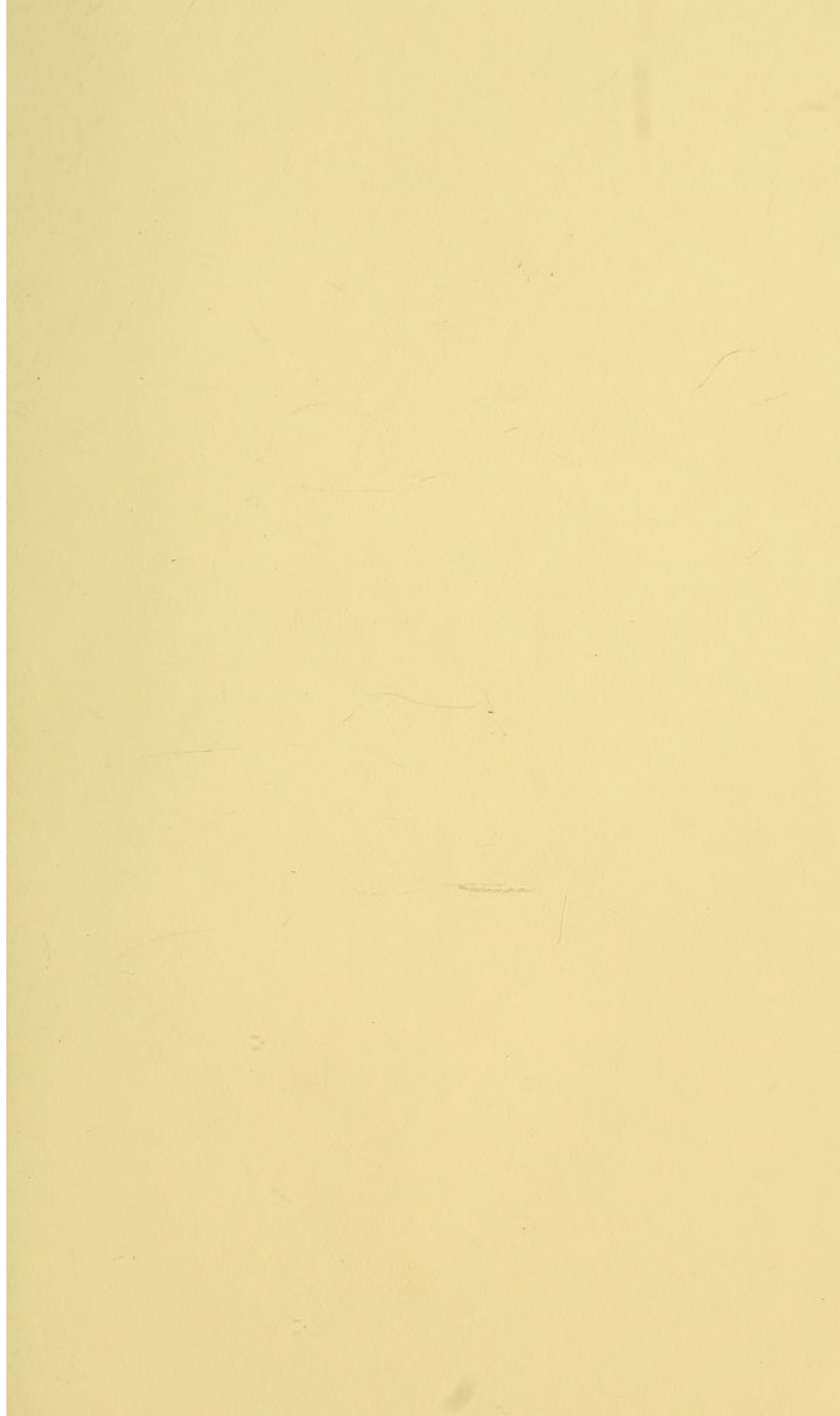
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CLINICAL OBSERVATIONS

ON THE DISEASES OF THE

DISEASES OF BENGAL,

THE RESULT OF AN ENQUIRY

INTO

THEIR ETIOLOGY AND TREATMENT

—

BY

WILLIAM TWINING,

Physician to the Royal College of Surgeons of London, and Assistant
Surgeon, General Hospital, Calcutta.

LONDON:

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1855.

CLINICAL LECTURES

ON THE

DISEASES OF THE

RESPIRATORY

SYSTEM

BY

JOHN H. B. ...

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CLINICAL ILLUSTRATIONS
OF THE MORE IMPORTANT
DISEASES OF BENGAL,
WITH
THE RESULT OF AN INQUIRY
INTO
THEIR PATHOLOGY AND TREATMENT.



BY
WILLIAM TWINING,

*Member of the Royal College of Surgeons of London : First Assistant
Surgeon, General Hospital, Calcutta.*

“ Nihilque uspiam proposuisse nisi quod probe exploratum habeam.”

SYDENHAM.

Calcutta :

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"William Twining's paper on the pathology of the liver is a valuable contribution to the knowledge of the disease."
Edinburgh.

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1892.

TO THE RIGHT HONOURABLE

LORD WILLIAM BENTINCK, G.C.B.

GOVERNOR GENERAL OF INDIA,

&c. &c. &c.

THIS VOLUME

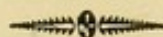
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PRINCE OF WALES

LORD WILLIAM BENTINCK, G.C.B.

THIS VOLUME

PREFACE.



IN the following work, I have endeavoured to comprise a series of observations on the more important diseases of Bengal; and have wished to make it a book of facts, which might be useful to medical men on their first arrival in this country. I claim no merit for the undertaking, except the patient industry requisite to accomplish an examination of the nature of the diseases on which it treats; and to ascertain the most appropriate methods of cure. I have endeavoured to add to our knowledge of these diseases, by a diligent observation of the phenomena attendant on their origin, progress, and termination; with the strictest attention to the effects of the several remedies employed: and in fatal cases, by a careful post-mortem examination of the ulterior changes that are produced by disease.

The importance of ascertaining the early symptoms by which the insidious approach of internal disease may be known, is strongly felt by every one in this country, where the habitual relaxation of the whole system, and probably the more especial relaxation of the cutaneous capillary vessels, prevent that degree of arterial re-action which usually attends corresponding diseases in cold climates. At a large Hospital, opportunities are occasionally found, of ascertaining by dissection the state of internal organs at the commencement of several important disorders; which usually prove fatal only at a remote period, and when the actual visceral disorganisation bears no resemblance to the condition of the same organs at an earlier period of the disease. Thus, sudden death from Cholera, has more than once afforded me opportunity of observing the condition of internal organs at the early stage of some diseases in which the patients either recover after a long period; or die from abscess, or other extensive disorganisation. The inspection

of subjects, where death occurred from other causes, during an incipient disease, the early symptoms of which were known ; has enabled me to state with confidence the importance of observing any morbid tension of the right rectus abdominis muscle, and marking it as one of the early symptoms of that visceral disorder which often terminates in central abscess of the right lobe of the liver. The state of vascular engorgement and serous infiltration into the cellular structure, as well as ecchymosis, at the root of the mesentery and mesocolon, and near the bodies of the lumbar vertebræ ; more especially behind that portion of peritoneum which is spread over, and binds down the duodenum ; have been observed in a similar manner, as attendants on the early stage of fever. There is also a high interest in the post-mortem examination of subjects, where we know the person was cured of acute disease at a former period, by active and persevering treatment : especially where the whole history of the case has been recorded. For then we

are often able to form a precise judgment of the actual extent of the disease which has been subdued, and thus arrive at a correct estimate of the confidence justly due to the mode of treatment that had been adopted. But in these pursuits, we must not forget that morbid anatomy only affords useful information, when the appearances observed, are compared with the symptoms which formerly existed : as the actual morbid condition during life, and even that condition which had been chiefly instrumental in the destruction of life ; is often evanescent, so that we find but slight traces of it on dissection. For example, when patients die with the skin in the highest degree of redness from variola, or scarlatina ; or when an erysipelas over the whole of a limb, has existed in the most intense degree up to the moment of death ; how different is the trace left six hours after dissolution. When a man has died from any disease attended with severe inflammation of the eyes ; how little of its characters remain after death. On the other hand, venous congestion of blood in parts of

loose and soft texture ; and gravitation of blood, which is liable to take place at the last moments of life, as well as after death ; and some other appearances, are liable to be mistaken for inflammation. These considerations would make us cautious in estimating, by the apparent changes observed after death ; what might have been the actual condition of the brain or other viscera, in the course of Fevers, and some acute diseases.

Among the advantages which I have enjoyed at this Institution, for acquiring a correct view of the diseases of the climate ; may be enumerated, the free daily intercourse on professional subjects, with Dr. W. Russel, during several years, while he was Chief Medical Officer of the Hospital. This acknowledgment is more especially due for that courtesy which enabled me to profit by the practice of the Hospital, at a time when I had no positive right to that advantage : and for the readiness with which the results of his extensive experience were imparted.

Nor should I speak with less estimation of the benefit derived from a similar intercourse with his successor, John Turner, Esq. whose anxiety to facilitate and promote every useful pathological inquiry, and to apply the strictest results of that inquiry directly to practice ; afforded me the highest satisfaction.

A large number of the cases adduced in the following pages, are those of Hospital patients ; and I have no doubt they will be recognised by the medical gentlemen who were attending the practice of the Hospital at the time. In the course of this work, the directions appear in English, under the Latin prescriptions ; which is the custom followed here, in the Hospital diaries, for the purpose of preventing mistakes in the administration of the medicines by the young apprentices : and I have not thought it important to make any alteration.

In those instances where the treatment advised in this work, is different from that ordered by

authors on the diseases of tropical climates; I have proceeded with great caution, and on grounds of the most ample evidence, afforded by my own practice; for the support of which I have relied on the proofs of its utility rather than on theory: and I am happy to find those proofs substantiated by the testimony of my professional brethren in this country. Referring to Dysentery, and the efficacy of Ipecacuanha, with active depletion, aided by the strictest attention to a regulated diet;—I may mention that the plan of treatment is confirmed by the practice of Mr. Geddes, Surgeon of the Madras European Regiment; who is well known as the author of a scientific work on the Seringapatam Fever: I have lately seen his report, stating that the employment of Ipecacuanha with the usual adjuvants, generally precludes the necessity of having recourse to mercury in Dysentery. Dr. Mortimer, of Fort St. George, is very much of the same opinion. In fact, Ipecacuanha has been a favourite remedy with some of the medical men at the Madras Presi-

dency. The experience of Dr. Baikie, of the Bombay Service, is equally satisfactory. Mr. Egerton has employed this plan of treating Dysentery, at the Hospital of the Orphan School; and his statement of its efficacy, corroborates the accounts I have received from Dr. French of H. M. 49 Regt. and indeed from every part of Bengal: so that there are sufficient grounds for speaking of the utility of the mode of treatment advised in this work. Those who allow their patients' bellies to be filled with food, and permit the use of much diluent drink, must expect but little success in the treatment. In dysenteric convalescents, the abdomen is often found tumid, and doughy or inelastic, although the stools are natural: this frequently depends on a state of vascular engorgement, or serous infiltration of the mesentery and mesocolon, as well as congestion of the liver and spleen; and if a very spare diet, tranquillity, and a course of mild purgatives, be not strictly followed for some time, in such cases, dangerous relapses are inevitable.

Practitioners who are conversant with the Diseases of India, will admit that after Hepatitis has arrived at a certain stage, its spontaneous termination is suppuration ; which in general proves fatal. In this malady, as well as Dysentery, it is necessary to ascertain the progress of the disease daily, by carefully but gently examining the belly. I have advised a very active antiphlogistic treatment, for severe acute cases threatening to terminate in abscess ; because I am satisfied that no other plan is safe. We may trust to the candour and impartiality of Curtis' evidence in this matter ; he bled his patients little, and seldom, from a fear of debility ; and he used much Calomel. No comment is necessary on the result of such treatment ; his work shews that he had a most extensive acquaintance with Hepatitis terminating fatally by the formation of abscess. The utility of mercury in Hepatitis is readily admitted, but it is subordinate to V. S., and its efficacy may be accounted for on the same principles on which its use in the remote stages of other inflammations depends. We

have been told that mercury is beneficial in Hepatitis, in the way that the breast-pipe or pump relieves inflammation of the female breast when milk-abscess is impending. But a legitimate parallel cannot be established in the action of the respective remedies :—the pipe relieves the inflamed breast by drawing off the superfluous milk, *without exciting increased secretion*. Has the action of mercury an analogous effect on the liver? Among the diseases of the liver and its appendages, I have mentioned inflammation of the capsule of Glisson; an affection often combined with acute inflammation of the duodenum; but occasionally existing in an acute as well as a chronic form, when the intestine is not evidently implicated in the disorder. I should have spoken with more confidence of the uniform existence, and position, of those absorbent glands in the capsule of Glisson, by the tumefaction of which, compression of the biliary ducts is liable to be occasionally produced; if Cloquet's 4to. work on Anatomy had reached Bengal before the 2nd chapter

of this volume was printed. When the last sheets were in the press, that work was received; and I am happy to find that it affords essential support to my views, in shewing the position of the absorbent glands of the capsule of Glisson to be correctly indicated by the diagram which I have given.

Medical men who reside in the lower provinces of Bengal, as well as those who have observed the effects produced on the human constitution in many other places, by humid atmosphere and variable temperature; will not think that too much has been said, or any unsupported opinions advanced, in the chapter on Diseases of the Spleen. There are some districts in Bengal, having a dry sandy soil, where Diseases of the Spleen are comparatively very rare: the vicinity of Meerut and some other stations might be mentioned.

We must acknowledge that the peculiar nature of tumid spleen, and of the state of

constitution usually co-existent, have been strangely overlooked by many modern writers on the practice of medicine: still it would be unjustifiable to propound the doctrines and observations now published on Spleen Diseases, as entirely new discoveries. Several phenomena connected with diseases of the spleen, were well known to the older authors. The frequency of foul and intractable ulcers often attendant on Spleen Diseases, was noticed by Aretæus. Pliny makes mention of the influence of dry situations, on the size of the spleen; and some valuable though brief observations may be collected from the works of a few modern physicians. It is surprising that this branch of pathology, has not been more industriously cultivated in those countries where diseases of the spleen abound.

The chapter on Cholera has been extended by a detailed account of a few of the experiments, which were made to ascertain the nature of the true Cholera stools; on which subject it appeared requisite to adduce the

evidence which authorized me to differ from the opinions of some of my professional brethren. When Cholera with symptoms of collapse, supervenes suddenly, in a patient suffering from a severe attack of acute Dysentery ; several of the appearances at first sight would make us suspect that extensive mortification had taken place : and I have known the collapse in such cases to be mistaken for mortification.

On the important question of contagion, I have stated a few facts, which shew that in India the worst cases of Epidemic Cholera may be collected in large numbers in an Hospital, or at a station ; without the disease being communicated to any of those who have daily had free access to, and personal intercourse with the sick. I have not ventured an opinion as to the mode by which Cholera may be produced or propagated in Europe ; for some of the accounts we have received, would afford reason to believe, that the febrile affection which frequently appears there, in combination with Cholera, is unlike any thing

we see in India. The mortality among the medical attendants on Cholera patients in some parts of Europe, is also stated to be different from what has happened generally in this country.

In the concluding chapter, I have only attempted to give a sketch of the more important modifications of Fever which are common in Bengal. It was requisite to treat of the subject under different sections, for the purpose of pointing out those modifications of disease, which are met with in this part of India. These Fevers possess of course a common character, such as the Fevers of all countries are acknowledged to have: in consequence of which, some common objects of treatment will be observed in the whole of these diseases. The recent practice of bleeding in Intermittents, as recommended by Dr. J. Mackintosh, not only accords with the acknowledged pathology of that class of Fevers; but seems to bring our system of therapeutics, as applied to them, within the limits of those established principles adapted to the treatment of other

Fevers; from which, formerly, Intermittents were almost excluded: and to this exclusion, and the frequent substitution of astringents and stimulants, instead of correct treatment, doubtless was due the remark which has been commonly made; namely, that the ordinary result of protracted Ague, though in general unattended with danger, was an impaired constitution; while a patient who had suffered a severe continued Fever, during which he had been for a time in a state of extreme danger, often rose from his bed of sickness to enjoy a better state of health than for a long time before. It is unreasonable to assert the invariable efficacy of any new remedy, however scientific and accurate the indications for its use may be; therefore I have expressed with some reserve, my opinion of blood-letting in the cold stage of Ague: this plan of treatment has proved so successful in India, that it will doubtless be soon extensively tried in this country; and the causes for occasional exception to its general employment, may then be ascertained. I have not made use of the term *Jungle Fever*,

being unacquainted with any exact definition of it. The Fevers arising from actual exposure in the jungles in Bengal, vary considerably under different circumstances ; I trust the more important modifications have been duly pointed out. There is reason to suspect the use of the term *Bilious* Remittent, has led occasionally to error ; in consequence of the general opinion of English Practitioners, that a large quantity of Calomel is indispensable in the treatment of all *Bilious* Fevers ; whereas, it appears that some Autumnal Remittents are in their latter stages connected with vascular engorgement of the spleen, and a morbid condition of the system, in which the most pernicious consequences follow the use of mercury. The ground on which Autumnal Remittent Fevers of warm climates, are deemed to be principally dependant on disorder of the hepatic system, deserves a more deliberate and exact inquiry, than has yet been bestowed on that subject. Those Fevers do often commence with a vomiting of as much bile as is thrown up during the first hours of sea-sickness, when there

is no question about disorder either of the bile, or liver. The black matter which is voided both upwards and downwards in severe Autumnal Fevers, attended with gastro-enteritis, has not been proved to consist in general of bile ; on the contrary, it has been often distinctly ascertained to be principally composed of disordered blood : and black secretions are voided from the intestines independant of bile. I have been most anxious to fix on some criterion, whereby the presence of bile in the evacuations and secretions may be certainly proved ; and with a promptitude and facility rendering it applicable to practical purposes.

Scarcely any mention has been made of typhus : it is a rare disease in India ; but in the course of almost every protracted Fever, which terminates fatally in this country, there is a period marked by tremor, or subsultus tendinum, rapid and feeble pulse, low delirium, and the brown sordes over the tongue and teeth, usually considered typhoid ; which condition most frequently occurs

where the early stage of Fever has been neglected, or improperly treated : but some of these symptoms occasionally appear in the course of Fevers, even where the most skilful employment of remedies has been followed.

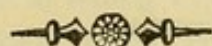
At the end of each chapter, such remarks have been made, as appeared requisite regarding the modifications of disease, to which the Natives of this country are liable. Such of their maladies as may be reasonably ascribed to high temperature, and the result of inflammation, are generally much slighter than corresponding diseases in Europeans ; which is probably in a great degree owing to the peculiarities of their constitutions, adapted to the climate : but the difference is doubtless in some measure dependant on the simplicity of their habits with respect to food and drink ; which must be acknowledged in many respects much more reasonable than ours. Under protracted exposure to malaria, with much fatigue, and privations, their constitutions are soon subdued by malignant Fevers of the most

destructive description. Although hepatic abscess is very rare among them ; I have often noticed the frequency of acute abscess in the muscular parts of the thigh, leg, arm, and back, in robust and young persons ; just at the commencement of the cold weather, when abscesses of the liver are prevalent among Europeans : and at the same season, old Natives are liable to be afflicted with large carbuncle at the back of the neck ; and with a very obstinate description of ulcer of the sole of the foot ; the latter disease commences at that period, and sometimes remains incurable for several years.

The following chapters were written and arranged with the intention of being published separately ; but that appeared objectionable, as it led to repetitions, without which some of the essays would have been incomplete. These repetitions I hope have been avoided, by bringing the whole together, to form this work. The plan now adopted, may save me from the imputation of founding my opinions on facts collected by the

industry of my professional brethren : a miserable expedient, tolerated only in a degenerate state of science, the decline of which it strongly evinces ; and worthy only of those authors who have no practical knowledge of the diseases on which they write. The spirit and philosophy of medical science, in the present day, require a diligent investigation of the foundation on which opinions are advanced ; and such foundation is only to be established by the laborious and accurate observation of facts : a system of late years happily substituted for the vague conjectures of former ages.

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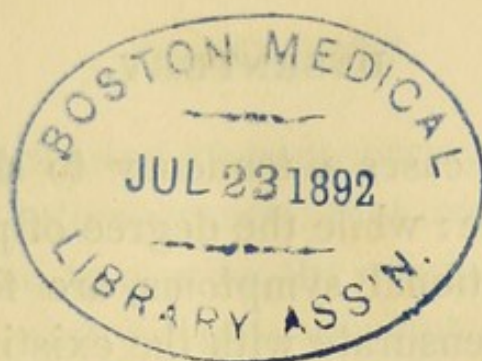
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DISEASES OF BENGAL.



CHAP. I.

DYSENTERY.



DYSENTERY may be generally looked on as a severe disease in India; a small proportion of the cases that occur in this country are trivial, and even those which differ only in a slight degree from common diarrhœa, are occasionally found, suddenly to take on the most acute symptoms. In any given class of people, it is a much more rapid, and more fatal disease, than that which we designate by the same name in England.

The most remarkable circumstances connected with the dysentery of Bengal, are, the extensive local inflammation of the mucous membrane of the great intestines, coeval with the commencement of the disease; the early existence of ulceration;

and in many cases a tendency to sloughing of that membrane: while the degree of pyrexia and other constitutional symptoms, are for the most part, incommensurate with the existing local affection; the general disorder, being apparently infinitely less than is often observed, attending a much slighter degree of local disease in other climates.

We find dysentery occurring here at all seasons of the year, but it is more frequent and more severe during the rains, and at the commencement of the cold weather; or from the beginning of June to the end of December. A predisposition to the disease in autumn, is supposed to be gradually produced, by the changes which the constitution undergoes in the previous hot season; though very severe cases are met with every year, among persons who have recently arrived, after a quick passage from Europe. In fact Europeans recently arrived in India, are very liable to severe acute dysentery. Considerable and abrupt diurnal changes of temperature, great heat with humidity, and the transition from the hot to the cold season; appear to be the most frequent exciting causes of the disease in Bengal. Exposure to the influence of these causes, is liable to be so much increased during intoxication; and the unfavorable tendency of local inflammations, is

so much aggravated when occurring subsequently to habitual intemperance ; that we are probably apt too often, to ascribe the origin of dysentery exclusively, and without sufficient reason, to this cause : for we find the disease very often occurring in Bengal, among persons of the most exemplary temperance and regularity of living. Bad water, and unwholesome food, have appeared occasionally to give rise to the disease ; and then numbers of persons exposed to these causes, have fallen ill about the same time. Some practitioners assert, that dysentery in India, is generally, if not always dependent on disorder of the liver. It is true that ulcerous disease of the great intestines, and abscess of the liver, are often found existing in the same subject in this country ; but the general relation of these diseases, as cause and effect, may be reasonably questioned : for we do not find on dissection, any marks of disease in the liver, in the majority of Europeans who die of dysentery ; moreover, dysentery is observed to be very frequent and very fatal among the natives of Bengal, while affections of the liver are exceedingly rare among these people. The greater number of well authenticated facts bearing on this question, will not authorize us to ascribe the disease, generally, to functional disorder of the liver. The assumption of functional disorder of the liver, as the ordinary cause of dysentery, rests on very equivocal foundation, and must be admitted with great

caution. If this were acknowledged the ordinary cause of dysentery, it would open the way to fanciful speculation, and a corresponding practice equally erroneous in principle: therefore, in cases of such dangerous and rapid disease, involving in many cases, the question of life or death of the patient; our safest plan will be to admit only the best established evidence of the existing morbid condition, for the foundation of our opinions, and guidance of our practice. The Hakeems, or native physicians of Bengal, assert that dysentery arises generally from the same causes as fever, viz. high temperature and humidity; exposure to changes of weather; fatigue, and privations.

We generally find the ordinary dysentery of Bengal, to begin as a common purging; the evacuations differing little from the character of healthy stools, except in being copious and fluid; uneasiness and griping pains in the belly soon succeed, and are followed by tenesmus: blood with mucus is observed in the stools, often forming the greater part of them; and pressure over the course of the colon gives pain. There is anxiety and restlessness, the pulse is little affected, the tongue often moist and white, occasionally quite clean and moist; hardly any pyrexia exists, though the thirst is commonly urgent. The severity of the symptoms increases

gradually, though sometimes very rapidly, until the evacuations consist entirely of blood and slime, or of a bloody water, like the washings of raw meat. In such severe cases of only a few days duration, masses of sloughing membrane are voided.

Sometimes dysentery comes on suddenly, the most violent symptoms arising within 36 hours, and not preceded by any previous evident disorder; pure blood being poured out from the bowels in large quantities, at an early period of the disease, which is attended with little distress, except the disturbance from frequent calls to rise to stool. In three or four days, the stools have a horrid odour of putrid blood, which has been compared to the smell of an anatomist's macerating tub; and there is a foetid cadaverous exhalation from the patient's body. This odour of the stools, a rapid weak pulse, and hickup, are almost always signs of a fatal termination. These extreme symptoms, are often found to depend on numerous distinct circular ulcers in the colon, with elevated thick and abrupt edges which are in a sloughing state; while the muscular fibres of the intestine are apparent at the bottom of the ulcer, as if dissected clean. The disease seems to commence so suddenly, that we might suppose an extensive affection of the mucous membrane of the colon to

take place, much in the way that eruptive diseases of the skin arise, and ulceration follows; the sloughing edges of the ulcers, pouring out copious discharges of blood: so that the patient dies from the hemorrhage and irritation, in four, five, or seven days. Notwithstanding this dreadful state of disease, there is often little or no pyrexia, the tongue does not shew much sign of disorder, the pulse is frequently soft and compressible, the skin cool and perspiring freely; and pressure on the belly gives little uneasiness until we examine with care over the cœcum, and then the patient almost always feels pain.

In other cases, from the very commencement of the disease, the desire to go to stool is incessant, and attended with urgent straining while on the commode, the patient being obliged to rise ten times in an hour, and having very scanty evacuations from the bowels, which consist of slime and blood, without any feculent appearance; the pulse is rapid, often at the same time small and hard. An uneasy sensation above the pubis, pain in the bladder, and suppression of urine, frequently attend the worst cases of this sort; these symptoms arise from irritation extending to the lower portion of intestine, contiguous with the fundus and back of the bladder. Anxiety and restlessness increase early in the course of this form of the disease, which in its latter stages is

often attended with more pyrexia than the cases already described; and the patient dies miserably emaciated between the eighth and twelfth day. In some protracted cases, which are approaching a fatal termination, the tongue becomes covered with brown mucus, or it is dry, and the teeth loaded with sordes; delirium and low fever existing at the same time.

The above symptoms depend on the different stages of inflammation, ulceration, or sloughing of the mucous membrane of the great intestines, and the consequences thereof. Dysentery may occur during various morbid states of the constitution, such as the scorbutic, or splenic cachexia; and may be attended by various coexistent diseases.

On dissection we find the following appearances:

1st. Inflammation, ulceration, and at times sloughing or mortification of the inner coats of the intestines; principally affecting the cœcum, colon, and rectum.

2nd. Morbid vascularity of the mesocolon, mesentery, and omentum; adhesions of the omentum to the parts adjacent, and of contiguous portions of intestine to each other. The latter

usually only happening when ulcers of the intestine have nearly perforated through the whole of its coats, and a breach that would admit of effusion of fæces into the abdominal cavity, is thus prevented.

3rd. Glands of the mesentery and mesocolon often enlarged, sometimes inflamed, and more rarely suppurating ; the corresponding portion of intestine usually contains a deep and large ulcer.

4th. The omentum is occasionally found adhering to these diseased glands, forming a band that may strangulate a portion of intestine, and cause death.

5th. The ulcerations within the great intestine, are generally most numerous, and most extensive at the cœcum, and first portion of colon : the valvula ileo-colica, has in some cases, been found quite destroyed by ulceration, and the lower end of ilium has formed an intus-susception into the cœcum ; and becoming there strangulated has caused death. In a few more fortunate instances of intus-susception, when the lower portion of ilium descends into the cœcum, and forms a circumscribed tumor in that region, attended with suppression of stools, and rapid pulse ; which prove the obstruction of the canal at that part : the strangulated portion sloughs off, after adhesive union

of adjacent parts has taken place, so as to maintain the continuity of the canal; and then stools are again passed, together with masses of slough, or entire portions of intestinal tube, and the patient slowly recovers. In eight years I can mention five cases of this sort, two of which have recovered.

6th. The right portion of the omentum is frequently found adhering to the cœcum, and this morbid attachment gives rise to symptoms that are liable to be mistaken for hepatic abscess. When these adhesions exist, we find that irritation or distention of cœcum, or pressure over that part, produces pain at the transverse portion of colon, which is drawn downwards by this attachment to the part most diseased; the patient cannot stand erect, nor extend the body as he lies down, without feeling pain, which is referred to the region of the liver: the same pain is excited by raising the right arm above the head; there is occasionally cough, and sometimes a pain in the right shoulder, rendering the diagnosis very difficult*.

* Staff Surgeon Marshall has stated, that the most frequent adhesions of the omentum are to the cœcum; and Mr. Annesley says, that the omentum is often adherent to the brim of the pelvis: but neither of these authors has adverted to the direct influence of those adhesions, in causing a pain at the epigastre, or at right portion of the colon and edge of right false ribs, which is liable to be mistaken for liver disease.

If the practitioner be impressed with the belief that dysentery is generally dependent on an affection of the liver, he will find so many reasons to confirm his suspicions in cases of the sort now described, that he may administer remedies with a view of curing a liver disease that does not really exist, while he pays comparatively little attention to the dysentery of which his patient may be actually dying. I am anxious to direct particular attention to this circumstance, and I believe it will be found, that if the dysentery have existed in acute form, for a few days only, and have arisen suddenly, unattended by tumefaction or hardness in the region of the liver; we ought not without strict inquiry, to suppose that the pain in the side depends on liver disease. A pain in the right side, attending diarrhœa which has gradually assumed a dysenteric character; especially if it occur in a person suffering from daily returns of fever for several weeks, with frequent pulse and gradually increasing emaciation; is more likely to be the attendant on liver abscess. And we may feel the less disposed to doubt the nature of a case of this sort, if the above train of symptoms be attended with any fulness in the region of the liver; or with more tension and resistance of the right rectus muscle, than of the left, when we press carefully over those parts.

7th. In a few instances, the size of the intestine is increased by thickening of its coats, so that

when a transverse section is made, the canal of the colon stands up like a thick leathern tube; the interior of the intestine being covered to a great extent, with numerous large ragged ulcers, in the intervals of which, the mucous membrane is partly destroyed, and hanging in shreds. In several of these cases, I have observed the cœcum, and lower portion of ascending colon, nearly covered with a thick layer of coagulable lymph, deposited under the peritoneal coat of the intestine, and beneath the gut, extending a considerable distance along the iliacus muscle; in some instances, an unusual quantity of fat has been found at the same part, mixed with this inflammatory exudation. In other cases, when the disease has been more protracted, the whole of the great intestines are contracted in diameter, resembling a chord; and numerous small superficial ulcers are observed on their interior. In several of these cases, the internal surface of the cœcum, and four or five inches of the colon, are of a fleshy appearance, and lurid red color, inclining to brown; as if from a growth of granulations. I have met with but few cases of this sort, and when this condition of cœcum has existed, a smaller space of sigmoid flexure of the colon has exhibited a similar appearance. The patients have been much emaciated, with flat retracted belly and dry skin, the tongue of a slate color, glossy and morbidly clean, as if

skinned; the stools, an opaque dirty brown water.

8th. Sometimes we find in the whole course of the colon, not above eight or ten large deep ulcerations, with sloughing, thick, abrupt, raised edges; surrounded by an extensive thickened base, into which, sinuses and undermining cavities are seen to penetrate: these appearances have reminded me of the foul ulceration at the centre of a small carbuncle. I have seen several patients die, with not more than six or eight of these spots of disease in the colon. These persons had flushed face, restlessness, and continued symptoms of fever; which were not easily subdued by remedies. They seemed to die from protracted irritation, without the ulcers penetrating through the whole of the coats of the intestine. The patients with this sort of disease, were generally recent arrivals from Europe, of light complexion, and not in affluent circumstances.

9th. In those who die of dysentery, the last three or four inches of ilium, adjoining the cœcum, are generally affected with superficial ulcerations and roughness. With this exception, we rarely see any disease of the small intestines, on the post-mortem inspection of dysenteric cases; unless we look to the dysenteric termination of protracted fevers; in which, ulceration of the small

intestines frequently exists, and may be deemed one cause of the tardy and imperfect convalescence after fever.

10th. In the post-mortem examination of subjects who have died long after protracted suffering from dysentery, we often find the cellular structure at the root of the mesentery and mesocolon, and across the bodies of the lower lumbar vertebræ, void of its usual elasticity and pliability, and to a certain degree indurated; in many cases quite void of fat. This change, can only be considered the remote effect of the previous inflammatory condition of those parts; an interstitial exudation of coagulable lymph having taken place in the course of the disease, (as is commonly the result of acute inflammations,) and being afterwards absorbed. If chronic pains in the loins and lower extremities, ever depend on this morbid condition; there would be little hope of benefit to those pains, from the remedies commonly advised for rheumatism.

Seeing on dissection, such local disease as the result of severe cases; we can have no doubt of the nature and seat of morbid action, in those of milder description, and of the previous condition of the parts affected at an early period. The whole history of idiopathic dysentery in Bengal, indicates strongly the existence of more or less

local inflammation; and according as that is promptly and fairly treated, the result is favourable, or fatal.

The cure of severe acute dysentery in plethoric patients, should be attempted, by the early, free, and repeated use of the lancet; with the aid of every other means, by which we can subdue local inflammation and pyrexia. It will in general be requisite to bleed from the arm, two or three times, at the interval of 8 or 12 hours, and to take as much blood each time as shall decidedly reduce, and permanently keep down any frequency and hardness of the pulse that may exist. And 12 or 16 leeches should be applied at the intervals of the V. S. to that part of the belly, where pressure causes the greatest pain. In most cases it will be proper to continue this repeated detraction of blood, as long as pyrexia exists; or pressure on the belly gives pain; or there is any blood in the stools. A tepid bath should be used once a day, and the best time for it, will be two hours after the leeches are removed. With this system of depletion, a dose of castor oil is given immediately after the first blood-letting; and when it has operated freely, the patient is made to take six grains of ipecacuanha powder, with four grains of extract of gentian, and five grains of pil. hydrarg. in three pills; which are repeated every night and morning, and 20 grains pow-

dered jalap, with 40 grains of cream of tartar, are given daily at 11 o'clock in the forenoon. I rarely deviate from these remedies, except by occasionally using calomel in place of the blue pill, and that is not very often done. In some patients, who have recovered from the more acute symptoms for many days, and have become emaciated, with dryness of the skin; I have after a few days omitted the purgative of compound jalap, and ordered a drachm of sulphur, mixed with half an ounce of mucilage, and one ounce cinnamon water, to be taken in the morning early; giving the ipecacuanha, gentian, and blue pill at four and nine P. M. In such cases, the sulphur is a mild aperient, it has the property of acting on the skin, and I believe one of its effects in chronic dysentery, is produced by its actual contact with the ulcerations of the intestines, inducing them to heal. Injections of cold water have the most certain and quickest effect, in removing the painful affection of the bladder, with suppression of urine, that attends bad cases. It has been many times found an excellent remedy in cases where copious discharges of pure blood take place. A solution of ten grains of sugar of lead, in $\frac{3}{4}$ of cold water, is often of great effect in the like circumstances; and where tenesmus is severe at night, sixty drops of laudanum with two ounces of cold water, given as an injection, has often remained in the rectum all night, and procured excellent rest. Tenesmus is usually depen-

dent on ulceration low down in the rectum ; and may frequently be relieved by using an ointment composed of 30 grains of sugar of lead, mixed in one ounce and a half of fresh lard, of which a portion half the size of a nutmeg, may be introduced into the rectum three times a day. Blisters are seldom advisable in the commencement of acute dysentery ;—probably large blisters are always injurious in that stage of the disease, by producing constitutional excitement, and local increased action : after due depletion has been employed, a small blister near any local induration, is often serviceable, especially if kept open for a week or ten days. When we remember the actual condition of local disease, which is to be removed before we can cure severe acute dysentery ; we shall hold opiates in great contempt. I have very often seen opium exceedingly injurious, by masking the most deadly symptoms, until the patient was past recovery. About one case in 50 derives benefit from 10 grs. of Dover's powder at bed time, after the ipecacuanha and gentian have ceased to do good : and perhaps one in 150, does in like manner find benefit from a night dose of vinum opii, or of an opium pill. Generally speaking, opium is only admissible in the small enema above directed.

In all cases of acute dysentery, the greatest attention is requisite to the quantity, as well as quality of food and drink allowed, so as to keep the

colon as near as possible empty, while in an irritable state, and during the subsidence of inflammatory action, or healing of ulcers. We must order the patient to be restricted to tea, barley-water, and thin sago, either of which may be given in the quantity of a coffee-cupful every six hours; and if the patient call urgently for drink, in the intervals, a wine-glassful of cold weak infusion of chamomile flowers may be taken every two hours: this is the best drink, and does not increase thirst. By attending strictly to this rule, it is probable that the food will be almost entirely absorbed in the stomach, and upper portions of the small intestines. If the detraction of blood have been properly followed up, in a degree suitable to the inflammatory condition of the intestines; the ipecacuanha and gentian with blue pill, produce a restoration of alvine evacuations of healthy appearance, and removal of the uncomfortable sensations, so quickly, that patients are with difficulty restrained from using an undue quantity, and improper kind of food during the early stage of convalescence; while the intestines are still weak, ready to be irritated by slight causes, and incapable of digesting any thing but the most bland food, in very moderate quantity. Errors in diet are the principal causes of tardy recovery, and frequent relapses; therefore, we must use the greatest caution in allowing a patient to resume his ordinary food. Next to suffi-

cient depletion and limited food, is the importance of quiescence in the recumbent posture ; which tends to preserve a tranquil and uniform state of the circulation. While we are following active antiphlogistic measures, the erect posture, or rising frequently to stool, is liable to induce faintness ; and then the patient becomes anxious for stimuli, which will, for a time, counteract the plan of cure. Patients with severe acute dysentery, should use the bed-pan.

The success of the above plan of treatment, is the best proof that it is adapted to the actual condition of disease existing in severe acute dysentery. After having relieved the patient from all the more urgent symptoms, let us remember that a permanent cure is only effected, when the diseased parts are restored to a perfectly healthy state. When we reflect, that severe local inflammations, are in most cases attended with an interstitial deposit of coagulable lymph, or of serous fluid, in the structures affected ; and that this interstitial deposit is more certain to exist, and probably does exist to a greater extent, where inflammation has gone on to ulceration ; we shall not hesitate to take some means to relieve this state. For which purpose, the best treatment is to give six grains of blue pill, with as much compound extract of colocynth, every second night at bed time ; and one ounce of in-

fusion of quassia, and the same quantity of infusion of senna, with half an ounce of compound infusion of gentian, and two drachms of Epsom salts on the following morning. Great caution is requisite in the administration of saline purgatives, in all stages of dysentery; for the mildest saline solutions, are sometimes apt to irritate by carrying off the natural mucus of the intestines. These remedies may be continued every second day, for a fortnight after convalescence is established; observing a moderate diet, using a tepid bath every 2d or 3d day, and taking care that the clothing be so adapted to the season, as to insure a moderate degree of action of the skin.

The general tenor of the foregoing pages, is by no means intended to exclude due consideration of the state of the liver in dysenteric cases. The usual causes of dysentery, being sudden alternations of temperature combined with an humid atmosphere, doubtless act by producing a degree of morbid plethora and congestion of internal organs; and we can hardly doubt, that the liver often partakes of this state. The most decisive means we possess, for relieving this condition of the liver, are the active depletion by blood-letting, leeches, and purgatives recommended above; at the same time, that we use remedies to determine the circulation to the surface. These remedies may be sufficiently assisted by the small quanti-

ties of blue pill, or calomel, already advised, without producing salivation. Our earliest attention and most constant care, in the treatment of the acute dysentery of Bengal, must be directed to subdue the local inflammatory condition that exists. Many cases, if treated at the commencement of the disease, appear to be cured at once by blood-letting, leeches, and the tepid bath. The following examples, may serve to shew the modifications of the disease, which are most commonly met with in this country ; and the effects of the remedies above recommended. The case which is inserted first in the series, required little medicine after blood-letting and purgatives had been duly employed. In the very early stage of slighter cases, the disease may undoubtedly be cured by restricting the patient's diet to tea, and gruel in small quantity, keeping him warm in bed, and giving a dose of castor oil, every day, in the morning ; at the same time that we administer two or three nauseating doses of ipecacuanha, or antimonial wine, in the course of the afternoon, daily. As a common domestic remedy for slight cases, I have often advised with success, an infusion of two drachms of ipecacuanha root, with half a drachm of fresh ginger root sliced, in a pint of boiling water : of which, when cold and strained, a table spoonful is directed to be taken every half hour ; and no food or drink used except a tea-cupful of tepid barley water three times a day.

OBSERVATION I.—Thomas Bullery, *Æt.* 38. A stout man, of light complexion, arrived from England six weeks ago, he had been in India before, and has been now living on board ship. Was attacked with dysentery on the 18th Oct. 1829, and his complaints increased daily until the 25th, when he was landed in the evening, and sent to the General Hospital. The belly was then rather full and inelastic, pressure over the course of the colon caused pain, but there was very little pyrexia: he stated that his evacuations were very frequent and scanty, consisting mostly of blood; and that he was up to stool 24 times last night.

V. S. ad lb. i. ss.

R. Calomel. gr. xii.

Extract. Hyoscyami, gr. iv. in 2 pills at bed time.

October 26th.—Blood not buffy; he has been up to the stool very often, but voided nothing. He had a slight rigor in the night; there is no pyrexia now. Pulse 80, tongue clean at edges, with white mucus on its centre. The belly is rather full, doughy, and inelastic; pressure across the navel causes pain.

Apply 20 leeches to the belly immediately.

Let him take Pulv. Jalap. Comp. $\frac{3}{4}$ i. at seven in the morning.

Tepid Bath at noon, and give

Olei Ricini $\frac{3}{4}$ i. after the bath.

Vesper.—Had 12 free stools, with very little blood, and he is better.

R. Pil. Hydrarg.

Extract Colocynth. Comp. āā. gr. iv. at bed time.

Oct. 27th.—He had only three stools in the night, and is better in every respect.

Pulv. Jalap. Comp. ʒ i. immediately.

Oct. 28th.—Had five stools in the day—none at night.

Medicine repeated.

Oct. 29th.—Convalescent. No more medicine used. Discharged well on the 2d November, 1829.

OBS. II.—Henry Pritchard, *Æt.* 21, a middle-sized man, of dark complexion, recently arrived from England; was taken ill with dysentery, on the 20th November, 1830, and became gradually worse every day till he was sent to Hospital on the evening of the 25th. He stated that he was passing much blood with his stools, which were attended with very distressing tenesmus. The belly was full and hard, face flushed, pulse 92 and full.

V. S. ad lb. i. ss.

R. Calomel.

Extract. Colocynth. Comp. āā. ʒ ss. in pills at bed time.

November 26th.—The blood drawn last night, is buffy, and cupped. He had eight stools in the night, consisting of blood and mucus, attended with dreadful tenesmus; the belly is hard and hot; the tongue moist, and loaded with brownish mucus. The fever and flushed face continue. Pulse 96, and full.

V. S. ad lb. i. ss. immediately.

R. Pulv. Jalap. Comp. ʒ i. at 7 A. M.

Apply 12 leeches to the belly at noon.

R. Pulv. Ipecacuanhæ gr. xii.

Extract. Gentian. gr. viii.

Pil. Hydrarg. gr. x. misce et divide in pil. No. vi.

Three pills to be taken at noon, and three more at bed time.

Nov. 27th.—Had 24 stools in the night, consisting of fæces, mixed with slime and blood; he has suffered much from tenesmus and straining. His belly is hard and hot, and some pyrexia remains; but the pulse is 80, and soft.

V. S. ad lb. i. immediately.

Sixteen leeches to the belly at noon.

Medicine repeated as yesterday.

Landanum ʒ i. to be given in two ounces of cold water, as an Enema at bed time.

Nov. 28th.—Blood florid, and not buffy: he had five stools in the day (consisting of blood and mucus), 14 at night; and he is feverish.

Apply eight leeches to the belly.

Medicine repeated as yesterday.

Nov. 29th.—Eight stools, yellow fæces, and mucus without blood. He feels easier, but the cheeks are flushed, the pulse 76, weak and soft: some enlargement with induration of the liver is now perceptible.

Apply 12 leeches to the liver.

Tepid Bath two hours after the leeches.

To take Pulv. Jalap. C. ʒ i. at 10 o'clock.

Three of such pills as were ordered on the 26th, to be given at 7 A. M. and repeated at noon, and at 8 in the evening.

Anodyne Enema at bed time, as on the 27th.

Nov. 30th.—Was frequently purged yesterday, but has had only five stools since the enema last night; the evacuations contain much mucus. He has still some pyrexia, and elastic tension of the belly.

Apply 16 leeches to the epigastre immediately.

Three pills as on the 26th, to be taken at 7 A. M.

Pulv. Jalap. Comp. ʒ i. at noon.

R. Extract. Colocynth. Comp.—Pulv. Ipecacuanhæ.

——— Hyoscyami.—Pil. Hydrarg. āā. gr. iii.

In pills at bed time.—Enema repeated at night.

December 1st.—Was freely purged by the jalap, had only two stools in the night; the liver is still hard.

Apply eight leeches to the region of the liver.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v. in pills at 7 A. M.

The anodyne enema, and night pills repeated at bed time, as yesterday.

Dec. 2d.—Has only had five stools, which are scanty and slimy. There is no pyrexia at present. The right *rectus abdominis* muscle is more tense than the left.

Apply six leeches over the liver.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. ãã gr. v. to be taken in pills at 7 o'clock.

Tepid Bath at noon.

Pulv. Jalap. Comp. z i. after the bath.

Two of the pills at bed time, as prescribed on the 26th November.

Dec. 3d.—Had four copious, dark, feculent stools. Ordered to take two of the pills prescribed on the 26th November, morning and night; and Compound Powder of Jalap z i. at noon.

Dec. 4th.—He had three natural loose stools last night, and his gums are sore. Belly still hard and tense; which I find is caused, by his having clandestinely obtained an improper quantity of food, therefore an emetic is now ordered; and its repetition promised daily, if the belly should be tense.

From this date, he took one drachm of Compound Powder of Jalap, daily at noon; and the pills such as prescribed on the 26th November, night and morning, till the 10th December. After that, his bowels were kept free by Pil. Rhei C. which

was given daily, till he was discharged on the 12th January 1831.

OBS. III.—Joseph Robinson, *Æt.* 48, admitted into General Hospital on the evening of 9th September, 1831. A small man, of light complexion, arrived five weeks ago from Europe, has been ill 11 days with purging; for the last three days he has passed much blood, and has been as often as 20 times to stool. He has taken pills and other medicine, but has not been bled. His gums are swollen, apparently from mercury; the evacuations now consist of blood and slime, and he has been 13 times to stool this day.

V. S. ad lbj.

R. Ol. Ricini.—Aq. Cinnamon. āā $\frac{3}{4}$ i. at 5 P. M.

R. Pulv. Ipecac.—Extract. Gentian. āā gr. iv.

In 2 pills at 8, and to be repeated at 10 and 12 o'clock.

September 10th.—Blood buffy, he had six scanty stools in the night, nearly black, and tinged with blood; he has vomited twice; his belly is flat, soft, and elastic; but pressure over the transverse colon gives pain. Pulse 84 and soft, tongue slightly coated with pale grey mucus; there is no morbid heat of skin.

V. S. ad lbj.

R. Pulv. Jalap. C. $\frac{3}{4}$ i. at 7 A. M.

Tepid Bath at noon.

2 pills as ordered above, at 12, 3, and 6 o'clock.

Sept. 11th.—Blood very buffy; he was purged severely in the forenoon, but went only six times to stool during the night; belly soft and flat, but little tender when pressed. He has no pyrexia, and feels much better.

Apply 6 leeches to epigastre.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at 7 A. M.

Vesper.—During the day he has had six stools, not very copious, and composed of blood and slime in nearly equal parts.

Give 2 of the pills as above ordered, at 9 o'clock.—And an Anodyne Enema of Laudanum $\frac{3}{4}$ i. in $\frac{3}{4}$ ii. of water.

Sept. 12th.—The enema was retained till past midnight, since which he has had two loose, feculent, fluid stools, of natural color, with very little slime or blood. Pulse 84 and soft, belly soft, flat, and elastic: he sighs often, but says, he is much better. There is a little pale grey mucus on the centre of the tongue, but its edges are moist and clean.

Give ipecacuanha and extract of gentian, of each 4 grains, in pills, night and morning.

R. Pulv. Jalap. Comp. $\frac{3}{4}$ ss. in Aq. Cinnamon. $\frac{3}{4}$ i. at noon.
Anodyne Enema at bed time.

Sept. 13th.—He appears much better; had eight fluid, dark and feculent stools in the day; was

not purged at night, and he slept well; tongue clean.

Repeat all treatment as yesterday.

Sept. 14th.—Four stools during the day, none at night; pulse 76 and soft, he feels easy.

R. Ext. Colocynth. C.—Pil. Hydrarg, aa gr. v. in 2 pills.

Sept. 15th.—Several loose natural stools; medicine omitted.

OBS. IV.—Andrew Fagan, *Æt.* 31. A small but muscular sailor of dark complexion, recently arrived in Bengal: never on shore until landed sick, and sent into General Hospital, on the evening of 26th September, 1827. He has suffered for 5 days from dysentery, and has taken no medicine except one dose of salts. He has been purged 26 times, in the last 24 hours; the evacuations are mixed with blood, and he has pain in the lower belly, but there is very little pyrexia.

On admission, he was bled from the arm to lbj. and ordered 1 oz. of castor oil. Next morning 16 leeches were applied to the lower belly, and he was put into the tepid bath: six grains of ipecacuanha, and four grains of extract of gentian, were given morning and night.

Sept. 28th.—He has had only two stools in the last 24 hours, there is no pain or pyrexia.

Tepid Bath.

Pills repeated morning and night; and he was ordered to take one drachm of Compound Powder of Jalap at noon.

Sept. 29th.—Four stools after the jalap. One natural loose evacuation at night, no pain.

Pills repeated daily, morning and night.

Oct. 8th.—Discharged well.

OBS. V.—Sharpe, *Æt.* 25. A slight made man of light complexion, and sober habits, two months in India. Admitted into General Hospital on the 30th November, 1827. Ill with dysentery or 8 days; goes to stool ten times every hour through the day and night, and passes much blood, with small quantities of yellow feculence. There is little pyrexia, and pressure on the belly gives pain.

Apply twenty leeches to the belly.

Tepid Bath after the leeches: and he was ordered to wear a flannel dress.

R. Pulv. Jalap. Comp. ʒ ss.

December 1st.—Was at stool every five minutes during the day, but less frequently at night; evacuations scanty and mixed with blood; those

last voided this morning, consist of a little fluid blood and water; there is no pyrexia, skin dry, very little pain on pressing the belly, and no griping.

R. Pulv. Ipecac. gr. vi.—Ext. Gentian. gr. iv.

Pil. Hydrarg. gr. v. in 3 pills, morning and night.

Pulv. Jalap. C. ʒ i. at noon.—Tepid bath at 2 p. m.

Dec. 2d.—Had a dozen stools in 24 hours, without pain; the skin is soft, but there is very little evident perspiration. Nausea and vomiting after the last dose of pills.

R. Pulv. Ipecac. gr. iii.—Pil. Hydrarg. gr. v.

Extract. Gentian. gr. ii. in 2 pills, morning and night.

Pulv. Jalap. Comp. ʒ ss. at noon.

Dec. 3d.—Four natural stools in 24 hours, passed no blood, and is free from pain.

Ordered to take half an ounce of castor oil.

Vesper.—Had many loose stools after the oil.

To take 3 grains of Ipecacuanha,

And 2 grains of Extract of Gentian in a pill.

Dec. 4th.—Had no stool in the night, three free evacuations this morning.

Pills repeated at bed time, as last night.

Dec. 5th.—Had three stools yesterday, but was not up all night; two natural stools this morning.

Extract. Colocynth. C.—Pil. Hydrarg. āā gr. ii. in a pill.

Dec. 6th.—Bowels free, no pain or pyrexia: medicine omitted.

Dec. 8th.—Discharged.

OBS. VI.—A stout man of dark complexion, 26 years of age, and two years in India; applied for my advice on the 28th March, 1827. He had been suffering for four days from dysentery, which commenced as a common looseness of the bowels, and became rapidly worse, until he passed scarcely any thing by stool except blood and mucus. There was little pyrexia, a white tongue, anxiety, thirst, and total loss of appetite: he had pain in both iliac regions, morbid sensibility on pressure over the course of the colon, and was tormented by incessant desire to go to stool, which in great measure deprived him of rest at night. He had used mild aperients, a very spare diet, and kept quiet in his room, but the disease became worse daily.

R. Pulv. Ipecac.—Extract. Gentian.

Pil. Hydrarg. āā gr. v. in 3 pills night and morning.

R. Pulv. Jalap. ʒi.—Potassæ Supertart. gr. 45.

Tinct. Sennæ ʒ i.—Aquæ Anethi ʒ i. ss. daily at 11 A. M.

March 29th.—He is much better, less frequently at stool, and has voided less slime and blood : no nausea from the medicine.

Treatment repeated daily.

March 31st.—He slept well, the irritation and frequency of purging are much abated. Ordered to take pulv. ipecac. gr. vi. extract. gentian. gr. iv. in pills every night. Purgative repeated every morning early. On the 4th of April, his bowels were quite regular, and medicine omitted. During this treatment a very spare diet was allowed. This patient had dysentery in August and September, 1825 ; and was then treated according to the usual course of evacuants, and calomel to salivate : by which, he was reduced to the lowest degree of debility, and his life was only saved by a voyage to sea. He considered the second attack much of the same description as the early stage of his former illness ; and ascribed his recovery entirely to the ipecacuanha and gentian.

OBS. VII.—Hing, aged 46, of spare habit, and light complexion ; resident in India, nine years : admitted into General Hospital, on the 26th September, 1828, in the evening. Says, he has had dysentery for three days, and that he goes to stool a hundred times in 24 hours, the evacuations of blood and slime : he has taken medicine

for two days, but is ignorant of its composition. It is now an hour since he came to the ward, and he has been above seven times to stool: the dejections are scanty, and consist of slime and blood, with some dark feculence. There is no pyrexia: pressure on the belly causes pain.

Diet ordered to be strictly confined to tea, with two ounces of bread, night and morning; and four table spoonsful of sago, repeated four times a day.

Apply twelve leeches to the belly.

Let him take immediately, Ipecacuanha, 6 grains; Extract of Gentian, 4 grains; Blue Pill, 10 grains; in four pills.

September 27th.—Stools copious and of dark color, mixed with blood and slime: he is less frequently purged since midnight.

Repeat the four pills now, and again at night.

One drachm of Compound Powder of Jalap at noon.

Sept. 28th.—Had 25 stools yesterday, and 20 at night; they consist of much bloody water, with some grey feculence. A clean moist tongue; no pyrexia; he has passed little urine.

Repeat the four pills now.—Tepid bath, at 10 o'clock, and afterwards apply a large blister to the belly.

Pulv. Jalap. Comp. ζ i. at noon.

Vesper.—Twenty-one stools in the day, almost entirely of blood and slime.

P. Ipecacuanhæ gr. vi.—Ext. Gentian gr. iv. at bed time.

Sept. 29th.—Fourteen scanty stools in night ; there is less blood voided than on admission.

Pulv. Ipecac. gr. vi.—Extract. Gentian. gr. iv. in two pills at 7 A. M. and repeated at bed time.

Pulv. Jalap. Comp. ʒi. at noon.

Sept. 30th.—Fifteen scanty stools in the day, with very little blood ; eight watery stools at night, moderate in quantity, with much grey and slate-colored powder at the bottom of the stool-pan ; tongue clean and moist ; no pyrexia.

Medicine repeated as yesterday.

October 1st.—Had three copious, loose, feculent stools yesterday ; six stools at night, less free, but without blood or slime : there is much reddish grey powder at bottom of the stool-pan ; no pyrexia.

Treatment as yesterday ; blister to be kept open.

Oct. 2d.—One fluid stool of deep orange color yesterday, and one this morning.

Repeat the pills this morning.

Vesper.—No stool this day: he is free from pyrexia, and has no pain except from the open blister.

Give Sulphur 3 ii. with mucilage 3 ss. in water 3 i.

Oct. 3d.—He had two stools in the night; fluid feculence, without odor or appearance of sulphur: the blister is very sore, and discharges freely.

Repeat the Sulphur as last night.

Oct. 4th.—Three free, fluid stools, in 24 hours; with odor and appearance of sulphur.

Repeat the Sulphur.

Oct. 5th.—Two stools in 24 hours: no pain.

Allow the blister to heal.

P. Jalap. Comp. 3 ss. at noon.

P. Ipecac. gr. vi.—Ext. Gentian. gr. iv. in two pills at bed time.

Oct. 6th.—Two copious, loose, feculent stools in 24 hours. Treatment of yesterday repeated.

Oct. 7th.—Two copious, feculent stools, with odor and color of sulphur, though none of that medicine has been taken since the 4th. Treatment of yesterday repeated.

Oct. 8th.—Medicine omitted.

Oct. 9th.—Two copious, natural, loose stools: he feels well.

Soup was allowed this day, and a chicken on the 12th. He took no more medicine except on the 13th, when he was costive, and had then, compound extract of colocynth and blue pill, each 5 grains in the morning.

The above are fair examples, of the ordinary results of this plan of treatment, in severe acute cases. I speak with the confidence due to trials on many hundreds of patients, in the course of several years past; and if this mode of treatment, were employed on a large scale, and its results contrasted with the immediate, as well as the remote effects of the ordinary mercurial treatment, to the extent of producing salivation; or of the calomel and opium practice, followed without the intention of salivating:—I am satisfied that a much more limited, and much more rational employment of mercury than was formerly adopted, would be fully authorized by the event.

Extensive experience, has established the efficacy of ipecacuanha, in the dysentery of Europeans in Bengal; whether they be recent arrivals, or old residents: and it is not less pro-

per, in the cases of Indo-Britons. In the dysentery of children, it is unequalled by any remedy I have ever tried. For patients under two years of age, I usually give ipecacuanha, extract of gentian, and blue pill, each half a grain, night and morning (the pill being mixed in syrup): or, calomel and ipecacuanha each half a grain, hydrargyrus cum creta, four grains, night and morning; and a small dose of castor oil, or of compound powder of jalap, daily at noon. As soon as blood and slime cease to appear in the stools, the morning dose is omitted; and the purgative is given only every second day, three hours after breakfast.

Wishing to advise the best mode of obtaining all the benefit possible, from the use of ipecacuanha; I object to the practice of making dysenteric patients swallow a certain quantity of calomel and opium with each dose of ipecacuanha. The calomel often has an immediate bad effect on ulcerated intestines; and opium frequently serves to cultivate local congestions, and to lock up the secretions. The best effects of opium may be procured for dysenteric patients, by using the small anodyne enema, of 2 oz. of water, with ʒi. of laudanum; which not only soothes local irritation, but diminishes any morbid constitutional irritability that may exist, without the usual evil consequences of swallowing opium.

The extract of gentian, as above prescribed, almost always restrains the emetic properties of ipecacuanha, but does not interfere with its anti-dysenteric effects; on the contrary, the vegetable bitter, diverts the action of the ipecacuanha from the stomach; and directs it towards other organs. The efficacy of the two remedies above named, is much increased by the addition of blue pill.

Compound powder of jalap, is preferable to other purgatives; its primary effect on many dysenteric patients, is more mild than that of castor oil; and the relief that in almost every case follows, is infinitely greater than happens after the use of any other medicine. It appears to act principally on the small intestines, the copious evacuations from which, reduce the plethora and congestion in the vessels of the mesentery; and the morbid vascular turgescence, is diverted from the colon and mesocolon. It also effectually evacuates the great intestines. The remote effects of this purgative, depend partly on its diuretic properties, and partly on its increasing the activity of the absorbents; and enabling them to remove the interstitial deposit, usually accompanying severe acute inflammation. In these respects, and particularly in increasing the activity of the absorbents, its influence in dropsical cases is generally admitted; and where there is more decided local congestion and

inflammation, as in dysentery, the blue pill doubtless performs an important office.

Calomel has not been found so useful in this disease, as might have been expected; from observing that some authors urge us to employ it generally for the cure of dysentery, in large and repeated doses, with a view of producing salivation as soon as possible: while other practitioners of long experience in India, advise the same remedy just as indiscriminately, and in as large doses; always followed by drastic purgatives; but deny that any benefit arises from salivation. Either of these plans, if generally adopted in Bengal, would very frequently destroy life. The advocates of each of these systems, act on erroneous principles; and expect to cure dysentery, by producing some change in the liver, and in the secretion of bile, which they imagine to be in a disordered state. When dark-colored stools are observed, they are ascribed to disordered secretion of bile; and the patient, if dysenteric, is sentenced to undergo the discipline of large and repeated doses of calomel, and drastic purgatives, daily. If the stools are pale-colored, calomel is still held in reverence, as the best corrector of the disease. The pathology on which such practice rests, is incomprehensible.

If dysentery be ascribable to a disordered state of the bile; I would ask, how does it happen that

the great intestines are the parts principally diseased in dysentery; while the small intestines are very seldom affected, although the bile has to pass along the course of the small intestines before reaching the cœcum and colon? I would also ask, if the black and discolored stools depend on disordered bile; how it happens that the contents of the small intestines, are almost always of different shades of yellow or orange color; while in these same subjects, we almost always find the fæces immediately on passing into the great intestine, become of a dark grey, dark brown, or black color? There must be something besides bile to produce this. I would further ask, what evidence we have that the dark color of the fæcal evacuations, is always dependent on the presence of disordered bile? Until some proof is afforded on this point, we may reasonably hesitate to ascribe the occurrence of dark-colored or black stools, in this climate, invariably, to disordered secretions from the liver: we should be less apt to speak constantly of the black cystic bile, when the evacuations are of a very dark color; and we should be less inclined to suppose, that calomel, is indispensable in all these cases.

Notwithstanding all that has been written in praise of the general employment of large and repeated doses of calomel, in the dysentery of

India; whether that medicine be used to the extent of producing salivation, or not; it will be easy to shew, that calomel is often not only useless, but that in many cases of the dysentery of Bengal, it is exceedingly injurious. I speak without hesitation on this subject, from having too often seen the fallacy of trusting generally to the effects of calomel, for the cure of severe acute dysentery; and having tried that medicine extensively, in every form of the disease.

However, there is one description of case, in which I have several times seen the most remarkable and immediate good effects from a large dose of calomel: that is, in robust subjects, where there is considerable pyrexia, and the patient has been not above two or three days ill of dysentery, having frequent calls to evacuate the bowels, but only voiding about half an ounce of reddish mucus, each time he goes to stool. In such cases, let the patient be bled from the arm to lb. i. ss. or lb. ii. while in the recumbent posture; immediately afterwards, let him take 20 grains of calomel, with as much ipecacuanha in pills; avoiding any food or drink for four hours, except two spoonfuls of barley water every half hour:—at the end of four hours, let him take a drachm of compound powder of jalap; after which, he is to use only the limited quantity of food, directed at page 17; and have an anodyne

enema at night. Patients are sometimes almost cured, by one day's treatment of this sort: other cases, require for two days more, half the dose of calomel and ipecacuanha in pills each morning; the compound jalap in four hours, and anodyne enema at night:—observing the same restrictions in point of food and drink. This large dose of ipecacuanha with calomel, does not very often cause vomiting: it forms eight large pills, and the principal difficulty with most patients, arises from the abhorrence of swallowing such a number of large pills, at one time. This plan of treatment is very rarely requisite, but I have seen it in some cases admirably successful. It was formerly tried, and much approved by Mr. Job.

We often meet with cases of dysentery in Bengal, in which the disease remains in a very distressing degree, after salivation has been fully established; and we only relieve the patient, by changing the treatment. In many cases, the effects of mercury are evidently injurious, through the whole course of the disease; and persistence in the mercurial plan of treatment, is sure to destroy the patient. The unfavorable effects of mercury are very conspicuous, in cases where a scorbutic diathesis exists; and in patients suffering from splenic cachexia. Mercury is also very injurious to many dy-

senterics, who are voiding large quantities of blood, partly coagulated and exhaling a putrid odor; while the patient's skin is perspiring freely, and there is little or no disorder of the pulse.

Notwithstanding the utmost care, and most scientific treatment; dysentery within the tropics, must always be, to a certain extent, a fatal disease. Those patients who do not apply for medical aid, until severe acute dysentery has existed for several days; and those who do not come under treatment until sloughing has taken place in the mucous membrane of the intestines; more especially if a scorbutic diathesis be present, will hardly ever be saved, by any plan of treatment.

OBS. VIII.—Francis Chaffer, *Æt.* 19, a slight-made sailor, of dark complexion, 2 years in India; has been 10 days ill with purging, which he says was brought on by drinking infusion of tamarinds, on board ship, when he arrived from sea: admitted into General Hospital, at noon, on the 23d April, 1831. Pulse 120, skin covered with cold perspiration; tongue moist, clean, and cool; belly rather tumid, and elastic; he goes to stool every quarter of an hour, and passes nothing but fluid blood; eyes sunk, and countenance anxious: has taken medicine on board ship, and had a blister to the belly, that is now healed.

An ounce of castor oil was given on his admission; and an enema of laudanum 3 i. in six ounces of cold water.

R. Plumbi Superacet. 9 ss.—Aq. Font. 3 x.—Tinct. Opii 3 i. misce: to be given as an Enema at bed time.

Let him wear a flannel dress.

April 24th.—Had 14 stools during the night; not less than 5 pints of pure fluid blood, with a few films of membrane: he has no pain, and the belly is less tumid, and softer; he lies quietly on his back, with eyes closed; skin cool, and covered with a profuse cold sweat, like a man in advanced stage of cholera. Pulse 120 and soft; there is much anxiety, and oppression at the chest.

R. Calomel. 9 ss. Opii gr. i. at 6 A. M. and repeat in two hours.

He died in the afternoon.

Dissection 12 hours after death.

Subject not much emaciated. Liver of rather paler color than natural, but otherwise not apparently diseased. Omentum adhering to the colon in several places; and many patches of puriform fluid were observed, at those parts where the intestines touched the omentum.

The coats of cœcum and colon thickened, and several purple spots were apparent on the exterior of the colon, corresponding to gangrenous ulcers within. A vast number of deep ragged ulcers, existed on the interior of cœcum and colon; and those intestines were distended with coagula of blood. Much morbid vascularity at the root of the mesocolon. Glands of mesocolon inflamed.

Obs. IX.—John Wilson, a slight-made man, of light complexion, and delicate constitution; 31 years of age, and only six months in India: was admitted into the General Hospital in the evening of the 1st April, 1831. He was then much emaciated, and had been ill 70 days: his first complaint had been a pain in the region of the liver, but for the last 39 days, he has suffered from a distressing purging; he goes to stool fourteen times in the 24 hours, and the evacuations consist principally of blood, with a little mucus. His belly is flat and much retracted; region of the cœcum indurated, and pressure at that part causes pain; there is a slight enlargement of the liver. Pulse 92, and rather hard, but small; tongue covered with a dry brown crust.

V. S. ad lb. i.

R. Calomel.—Pulv. Ipecacuanhæ āā ʒ ss. to be made into pills with mucilage, and the whole taken at 9 o'clock.

April 2d.—The blood drawn last night, was not buffy; he rose to stool ten times in the night, the evacuations entirely blood, part of which is coagulated; there is no sign of fæces; tongue less dry; it is coated with grey mucus. Pulse 74 and soft; he is very pale, and feels weak; the induration in the region of the cœcum has disappeared, and the liver is less tumid.

Apply four leeches over the region of the cœcum.

R. Pulv. Ipecacuanhæ—Extract. Gentianæ.

Pil. Hydrarg. āā. gr. vi. in three pills at 6 A. M. and repeat at bed time.

Pulv. Jalap. Comp. ʒ i. at noon, in mint water.

Apr. 3d.—He had ten stools after 9 o'clock last night; the evacuations about three pints of fluid blood, without any fæces: he has made urine. There is a brown fur on the tongue, the centre of which is dry. The pulse is 82 and soft; skin perspiring.

An enema of a pint of cold water to be given at 6 A. M.

Two pills as above prescribed at 8 A. M. and to be repeated at 11, and at 3 P. M.

Vesper.—He was 16 times at stool in the day: evacuations, a bloody water, with horrid putrid odor.

Two pills as above at 6 P. M. and repeated at midnight.

An enema at bed time of laudanum ʒ i. in 2 oz. of water.

Apr. 4th.—Has not been up to stool since the enema; belly not tumid; but there is some hardness across the epigastre. He is troubled with hickup. Pulse 86 and soft.

R. Infus. Gentian. Comp.—Infus. Sennæ āā. $\frac{3}{4}$ iv.

Magnesia Sulphatis $\frac{3}{4}$ i.—Quininæ Sulph. gr. iv.

Tinct. Sennæ $\frac{3}{4}$ ii. misce.

Two ounces to be given every three hours till twice purged.

Vesper.—He took three doses of the mixture, and has had four stools; a bloody fluid with some feculence, of most horrid odor: he has made urine, and thinks he is better; experiences a sense of dull weight across the lower belly, but has no acute pain.

Two pills as above ordered at 8 p. m., and repeated at midnight.

R. Plumbi Superacetat. ʒ ss. Tinct. Opii $\frac{3}{4}$ i.

Aquæ Fontis $\frac{3}{4}$ ii. misce, for injection at 8 p. m.

Apr. 5th.—He was only twice up to stool during the night; evacuations with the urine not above a pint, of same sort as last night. Pulse 96 and soft; tongue brown, but its edges are cleaner.

Repeat the mixture as yesterday, every three hours for three doses.—Give at 6 a. m. an enema of 10 grains of Sugar of Lead, in 10 oz. of water.

Vesper.—Seven stools in the day, with rather more appearance of dark grey fæces; tongue cleaner; belly retracted.

The enema and pills repeated, as last night.

Apr. 6th.—He has had no stool since the enema, and has passed the night without pain; otherwise, there is no change.

Give 2 oz. of the Mixture prescribed on the 4th, at 8 A. M. and repeat at noon.

Let him take two pills such as were prescribed on the 2d, at 2 P. M. and repeat at 4.

Vesper.—He has had five stools during the day; altogether not 24 ounces: a dark brown fluid, without the horrid odor of putrid blood, which formerly existed.

Let him take two pills as on the 4th, at 8 P. M., and repeat at midnight.

R. Plumbi Superacetat. gr. v.—Tinct. Opii $\frac{3}{4}$ i.

Aquæ Fontis $\frac{3}{4}$ ii. misce, for an enema at 9 P. M.

Apr. 7th.—One scanty stool in the night, like those last reported; he slept tolerably.

R. Olei Ricini $\frac{3}{4}$ i. at 6 A. M.

Repeat the enema and pills at night, as yesterday.

Apr. 8th.—He had five stools yesterday, of a yellowish color, without blood, and having little

foetor ; one stool of the same sort in the evening ; his tongue is clean and moist.

Give 1 oz. of the mixture prescribed on the 4th, at 8 A. M., and repeat at 11 o'clock.

Diet heretofore has been tea, bread, and sago.

Arrow root and 3 oz. Port-wine now added.

Vesper.—He has had four copious, fluid, feculent, greenish stools in the day, without any blood or mucus ; and has voided urine.

Laudanum ζ ss. in 2 oz. of water : for an enema at bed time.

He was allowed a small quantity of soup with 3 oz. of Port-wine for dinner daily, after this date.

Apr. 9th.—He slept, and was not at stool during the night ; but has had one moderate, fluid, dark-brown evacuation this morning. Belly much retracted ; tongue moist and clean at edges, still somewhat brown in the centre. Mouth not sore from the mercury.

R. Sulphuris Loti—Pulv. Gum. Arabic. āā. ζ i.

Aquæ Cinnamoni ζ i. misce : to be taken at 6 A. M.

Ordered to take two of the pills prescribed on the 2d, at 8 A. M. and repeat at midnight.

Rather more farinaceous food allowed, and a coffee-cupful of soup at noon.

Apr. 10th.—He vomited both doses of pills last night ; had three moderate fluid stools, of

nearly natural color in the day, and two small stools of same sort at night. No pyrexia; tongue cleaner; he is very weak. Repeat the sulphur as yesterday, daily.

Apr. 11th.—Two moderate loose stools, with the odor and appearance of sulphur.

Apr. 12th.—He had four natural loose stools in 24 hours; tongue clean, moist, and of morbid red color.

R. Extract. Colocynth. Comp.—*Pil.* Hydrarg. āā. gr. v. daily.

Apr. 15th.—Had two stools on the 13th, and one on 14th, nearly natural and of healthy appearance. Has had 3 loose feculent stools, of reddish color, with some mucus in the last 24 hours. Sulphur given daily as ordered on 9th.

Apr. 18th.—His diet has been gradually increased, and he has had two natural loose stools daily; this morning he had one scanty stool, and was griped, therefore instead of sulphur, he was ordered to take, daily in the morning,

Magnesiæ ʒ i.—Pulv. Rhei. ʒ ss.—Pulv. Zinziberis gr. v.—in Aquæ Menthæ ʒ i.

On the 21st he was rather too much purged, and slightly griped, but the stools were of healthy character: the belly was still flat and retracted, but free from pain, except the slight griping when at stool.

Former medicine omitted.—Anodyne Enema ordered at bed time.

Apr. 22d.—He had 4 fluid, dark-brown stools in the night; is free from pain, but much weaker.

A Blister to the belly, ordered to be kept open.

R. Pulv. Ipecacuanhæ.—Extract. Gentian.—Pil. Hydrarg. āā. gr. ii. in a pill: to be taken 3 times a day.—Pulv. Doveri ʒ ss. in Aquæ Cinnamon ʒ i. at bed time.

Apr. 23rd.—He had six stools during the day, 4 at night; a loose feculence of dark grey color, without blood or mucus, and voided with very little griping. Tongue moist, its centre is coated with a little white mucus. He perspires much, and is becoming weaker, but any increase of food causes uneasiness and oppression; various kinds of farinaceous food with milk have been cautiously tried, but he cannot take them.

Ordered to take ʒ i. of Sulphur, with Mucilage, in Cinnamon water in the morning; and to have at night Pil. Hydrarg. gr. v.—Opil. gr. i.—at 8 p. m. and repeated at midnight.

Apr. 24th.—He slept tolerably well and had only one fluid feculent stool since 8 last night, it

is of a greenish color, and moderate in quantity. He is free from pain or pyrexia, perspires much, and is becoming daily weaker.

R. Vini Opii ʒ ss.—Acid. Nitric. ʒ i.—Sacchari. ʒ i. Aquæ Fontis lb. i. misce. A wine-glassful to be taken every 2 hours.

Died in the afternoon.

Dissection.—Subject exceedingly emaciated. Some old adhesions were observed in the right side of the chest. Liver of natural color, its surface deeply marked with the impressions of the cartilages of the ribs, as an œdematous limb is indented by pressure; its structure rather soft, but otherwise quite healthy. The gall-bladder rather diminished in size, and covered with a false membrane of organised lymph, apparently not of recent formation. There was some vascular turgescence, and serous infiltration, at the root of the mesentery and mesocolon. Numerous glands of the mesentery and mesocolon enlarged and of pale pink color. The small intestines were in a healthy state. The large intestines were slightly thickened generally, but more diseased in that manner at the cœcum; and the cicatrices of numerous ulcers were very distinct in that intestine, as well as in the ascending and transverse colon: the sigmoid flexure of the colon was slightly thickened, and the mucous membrane at that part vascular and softened.

OBS. X.—Cockburn, *Æt.* 53, a stout man of dark complexion, 2 months in Bengal, a ship's carpenter, residing on board. Was attacked with dysentery in the beginning of September, and voided blood and slime. He was treated on board ship, at first with salts and castor oil; then with laudanum and brandy; and lastly he was salivated, by taking 15 grains of calomel daily, for 5 days. The calomel caused a very sore mouth, but he felt no benefit from it; on the contrary the dysentery became daily worse, and therefore he was sent to the General Hospital on the evening of the 27th September, 1828; having in 24 hours as many as 32 scanty stools, which consisted of a fluid grey feculence, mixed with blood and slime; great pain was caused by pressure over the cœcum, and at sigmoid flexure of the colon; he had a sense of weight in his chest, and shortness of breathing, but no pyrexia.

Apply twenty leeches to the belly.

R. Pulv. Ipecac. gr. vi.—Extract. Gentian. gr. iv. in 2 pills, at 6 P. M. and repeat at midnight.

September 28th.—Nauseated by the pills; only 6 stools (he has of late usually had above 12 stools each night); the morbid sensibility of lower belly is little abated.

Apply 12 leeches to the iliac regions.—Tepid Bath 2 hours after the leeches. Repeat 2 pills as above at 7 A. M.—Pulv. Jalap. Comp. 3 i. at noon; and 2 more pills at bed time.

Sept. 29th.—He had fourteen copious evacuations after the jalap: only two stools, consisting of a light-grey feculence with little slime or blood, since the last dose of pills.

Treatment repeated as yesterday.

Sept. 30th.—Eleven scanty stools after the jalap, with little slime and no blood. One scanty fluid stool of a grey color in the night, after the pills. There is a distinct fulness in region of the cœcum, and pressure over the sigmoid flexure of colon causes pain; some thirst and loss of appetite, but no pyrexia.

Ordered to take Sulphur $\frac{3}{4}$ ii. with mucilage $\frac{3}{4}$ ss. and water $\frac{3}{4}$ i. in the morning. Tepid Bath at noon.

Apply a blister over each iliac region.

Oct. 1st.—One stool in day, two at night: loose feculence of natural color, with strong odor of sulphur.

The morning medicine repeated.

After this date, the ipecacuanha and extract of gentian pills were repeated for 5 nights; and he took no other medicine; except twice sulphur, and four times a mild purgative. He left hospital well on 14th October.

OBS. XI.—Thomas Sweeney, *Æt.* 29, a volunteer from H. M. 30th, to 26th Foot: of middle size, and dark complexion; has been nine years at Madras, from whence he has now arrived, after a voyage of 22 days, during the last 15 of which he has had severe dysentery. Sent to Hospital on the evening of 4th November, 1830. He has been bled once, and has been in a state of salivation for the last five days; his mouth is now very sore, and the gums are much ulcerated. He has been 37 times to stool in the last 24 hours, the evacuations consist of blood and mucus, with some feculence; he makes water freely, therefore that part of intestine near the bladder is probably not the chief seat of the disease. Belly soft and flat generally, but there is some fulness towards the right hypochondre.

R. Pulv. Ipecac.—Extract. Gentian. āā gr. iv. in two pills.

November 5th.—He was only six times at stool in the night, evacuations copious and feculent, with some slime and blood; stools more free than of late, and he has less pain than at any time since his illness. No food allowed except tea and bread.

Repeat two pills, as above; morning and night.

Pulv. Jalap. Comp. ʒss. at noon.

Nov. 6th.—He had four free evacuations after the jalap, but was not up at stool during the night; belly soft, and he is much easier. Diet, bread and milk.

R. Pulv. Jalap. Comp. ʒ ss. at 7 A. M.—Two pills as above at bed time.

Nov. 7th.—The jalap procured four stools; and he had one natural loose evacuation during the night.

Treatment repeated.

Nov. 8th.—He had one free stool. Medicine omitted. After this he took a mild purgative twice, and was discharged on the 15th November, 1830.

OBS. XII.—John Park, *Æt.* 22, a tall and stout recruit, of light complexion, just arrived from England: he is sent from the ship to the Hospital, in a state of extreme distress, from frequent purging and tenesmus; rising 20 times to stool in 24 hours, and voiding blood. He has taken calomel which has salivated him severely, and has had a blister on the lower belly; but is becoming worse every hour. Admitted at 9 P. M. November 13th, 1830. He has now slight pyrexia; the tongue is white and

moist; pulse 98 and soft; abdominal muscles tense.

V. S. ad. lbj. ss. immediately.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā ð ss. in pills, at 9 p. m.

November 14th.—Has felt better since the blood-letting; he had eight dark colored stools in the night, with some blood and mucus, belly softer; he is now perspiring. Pulse 96 and soft.

Apply 16 leeches to the Epigastre.

P. Jalap. Comp. 3 i. at 7 a. m.

R. Pulv. Ipecac.—Extract. Gentian. āā ð i. misce et divide in Pil. No. x. Two pills every three hours, beginning at noon.

Nov. 15th.—He had eight dark-grey stools in the night, moderate in quantity, mixed with some slime and blood; pulse 82 and soft. He is in all respects much better.

Nearly the same treatment was continued daily, with some occasional variation in the purgative; an anodyne enema was given for three nights at bed time, and he had one dose of 10 grains of Dover's powder. He recovered, and was discharged well on the 2d December, 1830.

OBS. XIII.—Serjeant Avery, *Æt.* 37, a tall and stout man, many years a soldier, recently landed from England: he has been ill with

dysentery for ten days, and his mouth has been sore from calomel for seven days, but he is not getting better; and therefore was sent to Hospital at noon, on the 15th November, 1830. He goes to stool 20 times in the 24 hours, and voids much blood; his skin is moist, and pulse quick.

R. Pulv. Ipecacuanhæ—Extract. Gentianæ āā gr. v. in two pills at noon, and to be repeated at 6 P. M. and at midnight.

November 16th.—He has had eight stools since admission, consisting chiefly of blood and pus, altogether not amounting to two pints. Pulse 72 and soft; there is some fulness of the lower belly, and pain in the region of the bladder increased by pressure; urine very scanty.

V. S. ad lbj.

R. Pulv. Jalap. Comp. ʒ i. at 7 A. M.

Sixteen leeches to lower belly, at noon.

Vesper.—He has had six stools during the day; a fluid, dark-grey feculence, with some slime and blood. No pyrexia, and no pain, except when he is at stool.

To take two pills at bed time, as prescribed on the 15th.

Laudanum ʒ i. in 2 oz. of water, as an Enema at night.

Nov. 17th.—He had no stool during the night; the flow of urine is increased; he complains of some thirst, and a full inspiration causes pain in the belly.

The medicines prescribed on the 16th were continued with little variation, except an occasional dose of Colocynth and Blue Pill, when the stools were deficient in quantity; he was discharged on the 28th November, 1830.

I have met with a vast number of cases, in which mercury had been used, so as to cause salivation, without curing the dysentery; and have almost always found benefit from employing ipecacuanha and extract of gentian, as above prescribed: taking care to use the lancet, even at late periods of the disease (if the patient had not been sufficiently bled at the beginning), in those cases where there was any pyrexia, and the general health admitted of bleeding.

SCORBUTIC DYSENTERY.

Persons suffering from that disorder of the constitution, denominated in this country land-scurvy, are very liable to dysentery at the latter end of the rains, and when the cold weather is commencing. The land-scurvy here differs from the porphyra hæmorrhagica of Mason Good, in not being so often accompanied by the profuse flow of blood from slight causes. The disease is

found to prevail at many low and unhealthy stations in Bengal; and occasionally appears at almost every place situated near a terrae, (or morass,) or on the low and marshy banks of a river. Land-scurvy often affects natives; but Europeans are not entirely exempt from its attacks. Those persons are most liable to suffer from this disease, who live on a poor, insufficient vegetable diet, and do not take exercise: it frequently attacks native prisoners in the jails, at low swampy districts. Much mercury given in the dysentery, which affects persons laboring under this sort of disorder of the constitution, generally proves exceedingly injurious.

The practitioner who trusts principally to calomel for the cure of dysentery, is in a sad predicament when he has to treat scorbutic dysentery; or rather the patient is in a sad predicament: for when scorbutus and dysentery are combined, the smallest quantity of mercury is often destructive*. In these cases, we can safely go on with a mild purgative of compound jalap powder, in such doses as may effectually

* If authority were requisite, to prove the pernicious consequences of administering mercury, to patients in whom the scorbutic diathesis exists; we might refer to Sir Gilbert Blane's Medical Logic, 3d Edit. p. 272. It is there stated, that in the year 1720, four hundred scorbutic patients were subjected to courses of mercury, and all died. Numerous other authors might be cited on this subject.

carry off the vitiated secretions, without irritating; and use the ipecacuanha and extract of gentian, as now directed: while a more restorative diet is allowed, than would be consistent in cases not complicated with a scorbutic diathesis. Still I would say, in all cases, beware of undue quantity of food.

OBS. XIV.—Alexander Knight, aged 27, of middle size, and light complexion. A sailor, recently arrived in Calcutta, after a voyage of five months. Admitted into General Hospital, in the evening, on the 11th January, 1830. He has been ill 12 days with a purging, and has usually had in the 24 hours, thirteen watery stools, mixed with blood and mucus: there is no pyrexia. He has scorbutic spots on the legs, swollen gums, and a great degree of scorbutic induration, at the outside of the right knee.

R. Pulv. Ipecac.—Extract. Gentian. āā ʒ ss. misce et divide in Pil. No. xii.—Two pills to be taken at 7 P. M. and repeated at midnight.

Low diet; with sago, and 3 oz. of wine.

January 12th.—He had nine copious, watery, dark-green stools during the night, mixed with blood and mucus, but thinks he is rather better.

Repeat two pills, as above ordered, three times a day.
Tepid bath at noon.

Jan. 13th.—Four watery stools, of grey color, without blood or slime, in the day; one evacuation of same sort at night. There is no pyrexia, and he has no pain in the belly.

R. Pulv. Jalap. Comp. ʒ ss. at 7 A. M.

Let him take one of the pills above ordered, six times a day, at intervals of two hours, to begin at 10 o'clock.

Jan. 14th.—He had only four stools, in the 24 hours; the evacuations are nearly natural.

Let him take two pills, night and morning, daily.

Jan. 18th.—Bowels regular; scorbutic symptoms decreased. Medicine omitted. Allowed a diet of stewed chicken, with boiled vegetables, and 3 oz. of Port-wine daily. He was discharged well on the 15th February, 1830.

The comforts of an airy ward, in a good Hospital, with warm baths, and regulated diet, go far in aiding the cure of all cases of dysentery; and, more especially, in the scorbutic dysentery of men landed from ships after a long voyage. The most scientific medical treatment on board ship, is liable to be constantly contravened by exposure to cold, when the patient goes to stool; as well as by want of almost all the juvantia,

which are easily and constantly procurable at an Hospital.

DYSENTERY CHIEFLY AFFECTING THE RECTUM.

There are some cases of dysentery, in which the rectum and lower portion of the colon only are affected; the patient has almost incessant calls to stool, with dreadful tenesmus and straining, the evacuations are not generally very scanty, but they consist of viscid tenacious mucus, that adheres strongly to the bottom of the stool-pan. In the early stages and more acute forms of the disease, the color of the evacuations is a reddish brown; and occasionally the stools appear to consist chiefly of blood: in other cases of longer duration, and less acute description, the color is paler, and often the mucus is quite white, resembling mucilage of gum tragacanth mixed with chalk: this has been called the white flux. There is usually great desire to make water, and frequently no urine is secreted; the strangury adding greatly to the patient's distress. The constitutional symptoms of an inflammatory nature, are not generally very urgent; but the anxiety, restlessness, irritability, and strangury, are exceedingly severe. The disease is seated in the rectum, and the inflammation extends to the urinary bladder. In the treatment of this kind of dysentery, blood-letting and constitutional

remedies should be employed in the early stage, quite to the extent that the indications of local inflammation demand; and leeches applied to the anus are often very serviceable: but the disease very generally remains for some time after that treatment has been fully practised. The ipecacuanha, so generally useful in other forms of dysentery, only helps to mitigate some of the early symptoms of this description of the disease; but the irritation of the rectum, and strangury, are often very little influenced by this remedy. The treatment which has proved most efficacious in the latter stage of this complaint, after due depletion; is to give moderate doses of blue pill and compound extract of colocynth, in the morning; and to administer \mathfrak{z} i. of laudanum, with \mathfrak{z} ii. of cold water, as an enema at bed time.

Some patients with this description of disease, derive much benefit from inserting about \mathfrak{z} ss. of Goulard's ointment into the rectum; which has a good effect in healing the ulcers that occasionally keep up much irritation quite low down in that intestine, and excite constant painful contractions of the levators and sphincter ani.

Doubtless the affection of the rectum, and lower part of colon above described, may co-exist with very extensive disease of the colon and cœcum; but, I believe, it is more generally

limited in its extent: the rest of the great intestine being either sound, or affected in a minor degree.

OBS. XIV.—James Cuddy, *Æt.* 23, a slight-made man, of light complexion, six years in India. Had a dysenteric purging with blood, at Poonamalee, in September, 1830; but concealed his illness and came to Calcutta, with the disease increasing during the voyage, so that on arrival at this place, on the 12th October, he had 18 calls to stool in 24 hours, voiding only a little blood and slime: his belly was soft, flat, and pained by pressure. Some enlargement and induration of the sigmoid flexure of the colon existed; there was also great thirst; face flushed. Pulse 72 and soft; tongue moist, and loaded with grey mucus; little general heat of the surface: he passed but little urine, with straining and pain in the bladder.

On admission he was bled from the arm, had leeches applied to the belly, went into the tepid bath, and took one drachm of compound powder of jalap. The blood was buffy; he had nine stools during the day, mixed with some blood, and felt better. Ipecacuanha, extract of gentian, and blue pill, each 5 grains, was given at 5 P. M. and repeated at 8.

On 13th October, the jalap and pills were repeated, and he had twice an enema of a pint of cold water.

Oct. 14th.—No material change for the better, calls to stool very frequent, and he is passing much white mucus ; his chief distress arises from tenesmus and strangury.

Extract. Colocynth. Comp.—Pil. Hydrarg. āā. gr. v. in the morning.

Ol. Ricini $\frac{3}{4}$ i. at noon. An Enema of cold water twice in the day, and Goulard's ointment inserted into the rectum.

From this latter remedy, he derived much ease ; he had only four natural loose stools during the day, and two at night ; has made very little urine. The treatment was repeated on the 15th.

Oct. 16th.—He had frequent calls to stool in the day, with much straining ; the evacuations consist of natural fæces with slime.

Ordered to take Extract. Colocynth. Comp.—Pil. Hydrarg. āā. gr. v. in the morning ; and an Enema at bed time of Tinct. Opii. $\frac{3}{4}$ i.—Aquæ Font. $\frac{3}{4}$ ii.

After which he only rose to stool once in the night, and made urine freely.

The same treatment was repeated daily for four days. He was convalescent on the 19th October, and well on the 25th.

OBS. XV.—Wm. Davis, *Æt.* 36. A tall and rather thin, but strong man, 13 years in India. Had a quotidian intermittent fever with headache, from the 1st to 12th October, 1830; he was then seized with a purging, which obliged him to go to stool 50 times in the day, and voided a dark-brown slimy feculence in large quantities; after two days, the stools became very scanty, so that although he went 40 times to stool in a night, the evacuations were not in quantity a pint, and consisted of a brown bloody slime: his abdomen was soft, elastic, and rather full; pressure over the lower belly gave pain; there was not much pyrexia, but great irritation in the rectum, and a painful straining to make water, which was increased till the 16th October, and then there was suppression of urine.

He was bled from the arm, and had 16 leeches to the belly. He was ordered to take Calomel.—Extract. Colocynth. Comp. āā. ʒ ss. in the morning; had a warm bath at 10 o'clock, and took castor oil 1 oz. at noon.

The pills of ipecacuanha, blue pill, and extract of gentian, each 5 grains, were given at 5 P. M. and repeated at 10 o'clock. A very spare diet was ordered. These pills were repeated daily for three days, and he had a dose of castor oil, or compound powder of jalap at noon; by which treatment the number of stools was much decreased,

and he felt easier: still no urine was secreted, though he had distressing inclination to make water.

He was now ordered to take blue pill and compound extract of colocynth, each 5 grains, every morning; and an anodyne enema of one drachm of laudanum in 2 oz. of water was administered every night at bed time. After following this treatment for two days, using a warm bath; and taking no food but tea and bread in very small quantity, the secretion of urine was restored: he had only four stools during the night; the greater part of which was a white adhesive slime, like mucilage of gum tragacanth mixed with short cotton. The enema was only used for two nights more, and the pills repeated every morning; he then had three natural loose stools in the day, and felt well, but weak. His food was gradually increased; and he took no medicine after this, except one dose of colocynth and scammony pills, and two doses of rhubarb. He was well on the 24th October.

In the two last cases, I consider the disease to have been seated principally in the rectum, which was indicated by the tenesmus and painful strangury, with suppression of urine. In all such cases very great benefit is usually derived from

the enema of laudanum in a very small quantity of water, given at bed time; while we take care to purge the patient moderately in the morning with compound extract of colocynth and blue pill. Enjoining a very spare diet; and above all, bleeding freely while inflammation exists.

In some cases, where the patient is suffering almost as much from tenesmus and strangury, as in the two examples last cited; but also voiding much pure blood by stool: I have seen great advantage derived from the administration of 10, 15, or 20 grains of sugar of lead, in an injection of 10 ounces of water every 8 hours; and one drachm of laudanum may be added, to an enema of this sort once in the 24 hours.



PARTICULAR AFFECTIONS OF THE CÆCUM DURING DYSENTERY.

There are several local affections, referrible to the cœcum, which are liable to take place during dysentery; and which do in fact take place so frequently, among patients suffering from the severe acute dysentery of Bengal: that they deserve particular mention. These local affections to which I allude, depend on various modifications of disease, and may be described under three heads.

1st. Thickening and induration of the cœcum: sometimes an abscess exists between that intestine and the iliacus muscle.

2nd. Adhesions of the lower edge of the omentum majus to the cœcum; which has been alluded to at page 9 of this chapter, as giving rise to symptoms, liable to be mistaken for hepatic abscess.

3rd. Destructive ulceration of the valvula ileocolica, and consequent intus-susception of the lower portion of ilium into the cœcum, as already described at page 8.

The circumstances tending to give a peculiar character, to those diseases referrible to the cœcum, which occur during dysentery; are, the valvular apparatus at the termination of the ilium, and the fixed situation of the cœcum in the right iliac region; where it is bound down on the iliacus muscle, by the peritoneum, while its posterior part is not covered by that membrane.

A discreet attention to the nature and treatment of these several local affections, is of vast importance in the cure of dysentery and its sequelæ; and a neglect of them, leads to almost certain de-

struction of those patients in whom they occur*. Still, no difficult or complicated employment of remedies is requisite; for all these local affections depend on the degree of severity, or on the extent of local inflammation at the part affected: to this principally, the especial attention of the practitioner is requisite; and it is only by the most undeviating perseverance in the employment of means for subduing local inflammation, (applied especially to the part affected,) that the patient is saved. At the same time, the practitioner must not entirely lose sight of the general treatment of dysentery; and of the state of constitution connected with any extensive ulceration or sloughing, which may exist at other parts of the intestine. A few of the cases which au-

* It is probable that a complete knowledge of the actual local affection in many of these cases, has been prevented or retarded by the extensive ravages of disease, and by the destruction of parts that takes place towards the termination of many fatal cases: in consequence of which, and the cohesions and alterations in the appearances of parts, it is difficult to trace the various stages of the disease, except they be carefully observed in a multitude of cases, with the opportunities afforded at a large hospital. Moreover, the termination of most of these cases in sloughing, or mortification, by shewing at once a sufficient and unquestionable cause of death; has probably very often prevented a patient enquiry into the nature and gradual progress of these cases, at earlier periods of the disease; when a careful, persevering, and discriminating treatment, might in some of the cases, have averted the fatal event.

thorise me to make these observations, may be adduced; and the more perfect elucidation of the subject, left to future industry.

I will only propose in this place, to direct attention to those diseases of the cœcum, which are more or less immediately connected with, or dependent on dysentery: being desirous to avoid any disquisition, respecting abscesses which occasionally form in the cellular structure of the iliac fossa, between the intestine and iliacus muscle; or the enlargement and thickening of the cœcum, from effusion of coagulable lymph; in consequence of acute or sub-acute inflammation, independent of dysentery.

When a considerable enlargement of the cœcum takes place during dysentery; it is usually first noticed about 10 or 14 days after the commencement of that disease: and I have observed it most frequently in firm and muscular Europeans of dark complexion, who were below middle age. The disease is not usually attended with so much pain, as to make the patient complain particularly of the part affected; and unless the practitioner habitually examine the abdomen of those he is treating for dysentery, he will occasionally be told of "the swelling," at a period of this disease when the patient is past recovery: or he will find on dissection such

a mass of disease and inflammation, with induration in the right iliac region ; that he will be surprised how it could have escaped his notice, during life, when it must have been very palpable. Except in fat persons, the rounded, doughy, inelastic tumefaction of the cœcum, is easily detected by examination with the hand ; and, in fact, is often visible on inspection.

This affection depends on a great degree of interstitial deposit of coagulable lymph, between the coats of the intestine, and in the cellular structure between the cœcum and iliacus muscle. It requires to be treated, by daily repetition of leeches to the part ; fomenting, and applying hot poultices to the leech-bites while they are bleeding. After the morbid sensibility of the part is removed, and the tumefaction much reduced ; it is requisite to disperse the remaining induration, by a blister kept open over the part, and by just such a course of Plummer's pill, and extract of colocynth, at night ; followed by compound powder of jalap, in the morning ; as would be suitable to remove induration that had immediately followed an inflammatory swelling on the arm, or thigh, or any other part of the body : only, here we must remember, that no part of the disease can be left unsubdued, without hazard to the patient's life. I have made no mention of blood-

letting from the arm, in the above plan of treatment; concluding that the early stage of the Dysentery, will have been properly treated by blood-letting, and by the other essentials to the cure of that disease, already described. There is no case in which rest in the horizontal posture is more requisite, than in these affections of the cœcum; and a spare diet of milk, with sago or gruel, in very small quantities only, should be advised; as directed for the worst cases of acute Dysentery.

OBS. XVII.—Moffett, aged 33, a tall thin man, of dark complexion, and red face, subject to bilious and febrile attacks, in consequence of intemperance in drink. Two years in India, and employed as clerk in an office. Admitted into General Hospital, on the evening of 19th July, 1831. He stated that for five days past he had suffered from very distressing diarrhœa, and went as much as 30 times to stool in 24 hours; he had not observed any blood in the evacuations. On the day of admission, he had only two stools, and there was but little pyrexia: face flushed; belly doughy and inelastic. He was bled from the arm to lb. iss. and ordered to take calomel 10 grains, with extract of hyoscyamus 4 grains, at bed-time.

July 20th.—Blood buffy : he had 10 stools during the night ; scanty, fluid, and of bronze color, without blood. Pulse 96, and full ; tongue little coated with yellowish grey mucus, and rather dry. Has pain in the region of cœcum, and there is slight hardness at that part : whole belly doughy, and inelastic, but not tumid.

V. S. ad. $\frac{3}{4}$ xx.

R. Extract. Colocynth. Comp. \mathfrak{D} ss.

Pil. Hydrarg. gr. v. misce fiant pil. ii. statim sumend.

R. Pulv. Jalap. Comp. $\frac{3}{4}$ ss. at noon.

Apply 10 leeches to the belly, in the afternoon.

July 21st.—Blood drawn yesterday, not buffy. He had seven very scanty stools, and vomited often. Tongue white and moist ; induration in the region of the cœcum increased.

Apply 16 leeches over the region of cœcum.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\mathfrak{a}\mathfrak{a}$ gr. v. misce fiant pil. ii. statim sumend.

Vesper.—Had no stool during the day, and there is not much pyrexia ; tumefaction at region of cœcum not decreased.

Apply 10 leeches over the region of cœcum.

R. Extract. Colocynth. Comp.

Extract. Hyoscyami.

Pil. Hydrarg. $\mathfrak{a}\mathfrak{a}$ gr. v. misce fiant pil. iii. H. S. sumendæ.

July 22nd.—Was four times at stool in the night ; voided about 24 oz. of a reddish brown

bilious water: tumor of cœcum rather larger; pulse 108, and soft; pyrexia, trivial; and he is perspiring. Tongue little loaded, white, mealy, and rather dry.

Apply 10 leeches over the cœcum.

Pulv. Jalap. Comp. 3 ss. at 6 A. M.

Vesper.—Had four foetid, fluid, dark-brown stools, altogether not a pint: urine kept separately as ordered; it is very high colored. Tumor at region of cœcum increased since the morning, and more painful on pressure; there is also some general fulness of the belly. Tongue as in the morning, but rather more dry. Pulse 120, and weak; skin cool; extremities cold, and perspiring; there is slight morbid heat of head, and he is at times incoherent.

Blister over the region of cœcum.

July 23rd.—During the night, he had only one scanty, watery, reddish stool, not eight ounces in quantity. Pulse 132, hands and legs cold; there is rather more heat of head, and little more flatulent distention of the abdomen.

R. Ol. Ricini, $\frac{3}{4}$ i.

Vesper.—Had three dark reddish-brown watery stools, with very offensive odor; no material

change in the condition of tongue, and pulse; rather more heat of head, and the belly is hot; tumefaction at region of cœcum increased in size.

Four leeches round the blister over the cœcum.

To take very thin arrow root, five table-spoonsful, every two hours.—Cream of Tartar drink.

Was delirious all night, and died at 4 A. M. 24th July.

On post-mortem inspection, the subject was not much emaciated. Morbid vascularity of the omentum majus, and mesentery was observed; as well as of the parts behind the peritoneum lying over the spine, and towards the ascending colon, and cœcum. Slight morbid vascularity of the small intestines existed, and five inches of the lower portion of ilium were adherent laterally, by the side of the cœcum; and that intestine was adhering to the peritoneum anteriorly. Numerous deep and large sloughing ulcers, covered nearly the whole interior of the cœcum; the coats of that intestine being enormously thickened. One of these sloughing ulcers was found to penetrate into that part of the ilium which was adherent longitudinally by the side of the cœcum. The termination of ilium projected considerably within the cœcum, and its whole circle was ulcerated and sloughing. The ascend-

ing colon was free from ulceration: there was one small foul ulcer, with grey elevated surface, at the centre of transverse colon; and numerous small ulcers of the same sort in its descending and sigmoid portion, which part was very much contracted in size, and quite pale externally; there was very little inflammatory appearance about the small ulcers at this contracted portion of the colon. Duodenum and jejunum much loaded with greenish bilious fluid: ilium nearly empty; its contents had probably passed through the ulcerated hole into the cœcum, at a late period of the disease. Liver somewhat enlarged, and of a dusky drab color; its section not bleeding much; the fissure for the gall-bladder large and deep; gall-bladder smaller than usual, elongated, and filled with dark-green bile, and its exterior covered with a thin adventitious membrane.

OBS. XVIII.—A gentleman, 23 years of age, tall, muscular, and of dark complexion; two years in India, of active habits, and occupied in mercantile affairs, about 160 miles from Calcutta: was attacked with dysentery on the 26th September, 1830. He had frequent scanty stools, mixed with blood and mucus; at the same time he lost his appetite, and became languid and feverish. He tried to cure his complaints, by taking small doses of purgative salts in the mornings, and weak

brandy and water at bed time. His dysenteric ailments continuing to get worse, he resolved to come to Calcutta, for medical advice: during a week that he was in his boat on the river, he suffered extreme misery from the constant tenesmus, and frequent calls to stool. He voided much blood and mucus, and was affected with nausea to such degree that he could take no food, and subsisted on tea alone, for a week. The purging had almost ceased on the 3rd October, though he was obliged to go to the commode, ten times a day; and sometimes he voided a little blood or mucus, with severe tenesmus.

On arrival at a friend's house in Calcutta, on the morning of the 5th October, he felt faint and weak, and was induced to eat some fish and rice, which produced distressing sense of distention in the belly. When I first saw him, at noon, he was suffering from considerable pyrexia, his forehead was hot, pulse 98, neither full nor hard; the tongue moist, but exceedingly loaded with brown-colored mucus. The belly was full, hard, and hot; the abdominal muscles tense; there was a large and distinct oval tumefaction in the right iliac region, which could be seen as well as felt, when the patient was placed on his back; there had been no considerable stool for the last two days.

He was immediately bled from the arm to lb. ii. and ordered to remain quiet in bed.

R. Calomel. \mathfrak{D} ss.—Saponis Duri—Cambojiæ āā gr. i.
Extract. Colocynth. Comp.—Scammoneæ āā gr. ii.—

In 3 pills, at noon.

Give Pulv. Jalap. Comp. 3 i. at 2 P. M.

Twelve leeches were applied over the cœcum at 4 P. M. and the part fomented and poulticed afterwards.

R. Pulv. Ipecacuanhæ—Extract. Gentianæ.

Pil. Hydrarg. āā. gr. iv.—to be taken in pills at 6 P. M. and repeated at 9, and at midnight.

October 6th.—The blood was very buffy; he had seven copious, black, and slimy stools, during the day; four at night, attended with some tenesmus. There is less pyrexia; pulse soft and free. Tongue still much loaded with brownish mucus; tumor of cœcum not decreased, nor has its morbid sensibility on pressure abated: but the muscles of belly are less tense.

Ordered to take Pulv. Jalap. Comp. 3 i. at 7 A. M. To apply 20 leeches over the cœcum at 10, and to foment and poultice afterwards. The pills with Ipecacuanha, Extract of Gentian, and Blue Pill, each four grains; were directed to be taken at 2, 5, and 8, P. M.

Oct. 7th.—He had six copious black stools before mid-day yesterday, no evacuation since that time; there is still considerable tenesmus. He is quite pale and weak, and there is no morbid heat of surface except his forehead. Tongue much

less loaded; belly soft, flat, and elastic; tension of the muscles has subsided, which renders the tumefaction of the cœcum more evident, though it has decidedly decreased in the last two days; pressure about the navel gives him pain at the cœcum.

Apply 8 leeches over the cœcum; foment and poultice the part afterwards.

R. Calomel 3 ss. Pulv. Ipecacuanhæ.—Extract. Gentian. āā gr. xii. misce et divide in pil. vi.

Two pills to be taken morning and night.

Pulv. Jalap. Comp. 3 i. at noon.

Oct. 8th.—Tumor of cœcum slowly decreases; he had eight dark slimy stools, less copious than heretofore; no pyrexia; he is very pale and weak. Tongue clean, moist, and blanched.

Apply 8 leeches over the cœcum, and repeat the fomentations and poultices.

Take 2 pills as yesterday, every morning at 7 A. M.

Pulv. Jalap. Comp. 3 i. at noon.

Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. vi.

Extract Hyoscyami gr. iv. in pills at bed time.

Oct. 9th.—Six stools, the same as yesterday; tumor of cœcum not decreased. Pulse 82 and soft: he is pale and weak; mouth sore.

Apply 6 leeches over the cœcum; foment and poultice afterwards.

R. Pulv. Jalap. C. 3 i. Tinct. Sennæ 3 ss.

Aquæ Menthæ Sativæ. 3 iss. misce, to be taken at 7 A. M.
Pills repeated at bed time as last night.

Gargle of Borax, Honey, Tincture of Myrrh, and Rose Water.

Oct. 10th.—Five stools during 24 hours ; tumor of cœcum not decreased. Medicine repeated as yesterday, on the 10th, 11th, and 12th. On the 13th, he had a dose of castor oil, which produced frequent scanty stools of much lighter color than any voided since his illness ; and caused much uneasiness in his belly. The diet hitherto has consisted of a cup of tea, and 2 oz. of bread, night and morning ; and a coffee-cupful of arrow root twice in the day. A small quantity of milk is now given with the arrow root.

Oct. 14th.—The induration at the region of cœcum is slowly subsiding, and he is becoming stronger.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā 3 ss. misce et divide in Pil. No. x. Two of which are to be taken every night at bed time, and 3 i. of Compound Powder of Jalap, every morning.

Oct. 19th.—Distinct induration of the cœcum still remains, though there is no morbid sensibility on pressure ; he has three or four stools daily from the jalap ; the leech bites are healed many days ago.

Apply a Blister over the region of cœcum, to be kept open for ten days, with savine cerate.—He is directed to take two tea-spoonsful of Epsom salts, in tepid water, every morning.

Diet—soup, milk, bread, and sago.

Oct. 30th.—He is well, but weak; the induration of cœcum entirely subsided. He recovered robust health, and is well at this day.

We have rarely an opportunity to examine the state of the parts, at early periods, when abscess is forming in the cellular structure between the cœcum and iliacus muscle: though this description of abscess sometimes takes place in the course of dysentery; as well as at other times, unconnected with that disease. The existence of the small earthy mass in the abscess, in the following case, would lead us to believe that this man would probably have had an abscess exterior to the cœcum, at no very remote period; even if he had never suffered from dysenteric irritation.

OBS. XIX.—James Post, *Æt.* 20, a recruit of H. M. 16th Lancers, landed from Europe, and sent to Hospital at 8 A. M. on the 14th November, 1830. A tall man, of dark complexion; has been ill 14 days with dysentery, during which period, he has passed much blood. His mouth has been sore for a week past, from the use of calomel; but he is still extremely ill, going to stool a dozen times in 24 hours. Pulse now 114, belly hard and doughy; abdominal muscles

tense. He was ordered to be bled immediately to 20 ounces, and afterwards to go into the tepid bath. His food was restricted to tea, bread, and sago, in very small quantities.

Capt. Olei Ricini. $\frac{3}{4}$ i. statim.

Vesper.—Blood buffy, and cupped; he had only two stools in the day, and feels much better. Pulse 108, and rather hard; face flushed; belly full, doughy, inelastic, and somewhat hard; pressure over the abdomen gives pain.

V. S. ad lb. i.—and apply 16 leeches to the belly.

R. Calomel.—Extract. Colocynth. C. āā \varnothing ss. misce. fiant pil. iv. H. S. sumend.

November 15th.—Had two stools during the night, which are not kept for inspection. Pulse 110; tongue white and moist. Belly hard, doughy, and painful if pressed.

V. S. ad lb. i.

Let him take Pulv. Jalap. Comp. $\frac{3}{4}$ i. immediately.

Olei Ricini. $\frac{3}{4}$ i. at noon, if not four times purged.

Vesper.—Blood not buffy. He has had seven stools since the oil, but the belly remains tense.

R. Pulv. Ipecacuanhæ.—Extract. Gentian. āā gr. v. misce fiant pil. ii. statim sumend.

Nov. 16th.—He had four fluid yellow stools in the night. Epigastre still remains hard.

Apply 12 leeches to the Epigastre.

R. Pulv. Jalap. Comp. 3 ss. statim.

Vesper.—Had five scanty, grey, feculent evacuations, with very little blood or slime; there is distinct induration of the cœcum. He is weak; the pulse 116, and feeble; tongue cool, moist, and white; skin cool.

R. Calomel. \mathfrak{D} i.—Opii gr. i. misce, fiant pil. ii. statim.

On the evening of 17th November, this patient was seized with Cholera, marked by deadly coldness of the skin, sinking of pulse, and watery stools; which symptoms continued till he died at 2 A. M. next morning.

Dissection, 11 hours after death.—Subject not much emaciated. Great venous congestion was observed at the base, and dependent part of the lungs, from gravitation of blood. Omentum, mesentery, and mesocolon very vascular. Stomach and small intestines distended with gas; their peritoneal coat of pink color, very little thickened, and their mucous surface shewing no sort of morbid vascularity. Some thin subalbid mucus, such as usually occurs in the early stage of Cholera,

was found in the stomach and small intestines. The cœcum distended with flatus; the coats of that intestine were much indurated, and thickened. An abscess was found outside and behind the cœcum, but not communicating with its cavity: a round earthy mass, larger than the stone of an olive, was found in the centre of the abscess. There was a communication between the appendix vermiformis and the abscess; but the aperture of the appendix into the intestine was closed. The whole of the colon was contracted, except its ascending portion; and several large ecchymosed spots of deep purple color, were observed on the exterior of the transverse portion and sigmoid flexure of the colon; but there was no corresponding ulceration on the interior of the intestine; though there were a few small superficial ulcers scattered over the mucous membrane of the colon at other parts.

Adhesions of the omentum to the anterior and medial part of the cœcum, are very liable to take place during the progress of the acute Dysentery of Bengal; and this local affection must be deemed important, on account of its giving rise to symptoms resembling liver disease; as already stated at pages 9 and 10 of this chapter. The practitioner, who considers Dysen-

tery as almost always the result of hepatic disorder, and esteems mercury, the principal remedy to be relied on for the cure of the former disease; wants only the evidence usually furnished by these cases, where cohesion of the lower edge of right portion of omentum majus, with the cœcum, exists, to confirm his opinion of the necessity of following a mercurial course; his principal attention being directed by the deceptive indications of liver disease, which he deems the parent disorder. Notwithstanding the difficulty of critical diagnosis in cases of this sort, the patient has a much better chance of recovery in the hands of a practitioner, who in both hepatic and dysenteric complaints, trusts chiefly to a steady persistence in the antiphlogistic treatment; for the removal of the acute stages of either disease, and of the local changes of structure, which he knows usually attend on, or follow that stage. I have very often found these adhesions of omentum to the cœcum, in post-mortem inspection of dysenteric cases, where pain at the epigastre and towards the right hypochondrium had been observed during the course of the disease; and, where no actual change of structure in the liver existed. I hope the observations of practical men, will be directed to elucidate this subject, the diagnosis of which it must be acknowledged, is obscure.

OBS. XX.—Neville, aged 20, of middle size and light complexion: arrived in Bengal in the beginning of June, 1828. He suffered from low spirits while on boardship, and had pain in the region of the liver during the greater part of the voyage from England, for which he was bled, blistered on the side, and took calomel. About a fortnight after arrival at Calcutta, he was attacked with pain and cramps in his feet and slight pyrexia. Sixteen leeches were applied to his temples. Calomel and extract. colocynth. comp. each 10 grains, with camboge gr. iii. were given in pills, which purged him freely. Next day he had more fever, with general tension of the belly, and pain when pressed over the epigastre. His fever went on increasing very slowly for some days, attended latterly with bloodshot eyes, and hot forehead. Blood was taken freely by leeches, and he was well purged with calomel and colocynth, and slight salivation excited. By these means the fever was removed; but he was in a few days attacked with dysentery, attended with pain under the right false-ribs, which was increased by pressure, or by the erect posture, and by raising the hand over the head; he had a troublesome cough, and full inspiration gave pain in the right side of chest, and at the region of gall-bladder. This young man had, during the greater part of his illness, a flushed face, and more fever than dysenteric patients in Bengal

generally suffer. He was bled, and leeches applied in large numbers: also mercury again used to salivation, under the impression that hepatic abscess was impending. The dysenteric symptoms went on increasing, but were supposed to depend on abscess of the liver, though no enlargement of that organ could be felt; pressure near the liver, and especially at the region of gall-bladder gave pain, and this symptom was never entirely removed. At last he had incessant desire to remain on the stool, and voided nothing but blood, which exhaled a horrid putrid odor; he was exhausted, and died in two months after landing in Calcutta; during which time he had the assiduous attention of a medical man, many years in this climate, besides all the care I could bestow.

On Dissection 21 hours after death—the body was emaciated; abdomen rather tense; coats of cœcum much thickened, and its interior very extensively ulcerated. There was also much ulceration along the course of the colon. A portion of the lower edge of omentum majus was firmly adherent to the cœcum: lungs and liver perfectly sound, the latter contained more blood than usual in emaciated subjects. Gall-bladder moderately filled with dark-green bile.

Although the ulceration and destruction of the valvula coli, permitting a portion of the ilium to descend into the cœcum, so as to form an intussusception, occurs in but a small proportion of the severest cases of dysentery, it is an important fact to bear in mind; for when it happens, the patient's life is in the utmost danger. The most active antiphlogistic measures are requisite until inflammation is subdued; after which entire quiescence in the recumbent posture must be observed; and the greatest forbearance in purgative medicines, and allowing little food, is requisite until the invaginated portion has separated, and the consequences of adhesive union and sloughing of the intestines, have time to become repaired. I have no reason to believe that the degree of inflammatory action requisite to insure adhesive union, when the sloughing part of intestine separates, is ever deficient in these cases; on the contrary there is ground for the utmost apprehension on the score of excessive local inflammation.

OBS. XXI.—The first example of intussusception, accompanying dysentery and ulcerous disease of the valvula ileo-colica, which occurred to my notice in this country, was in a young man recently arrived from Europe, who came under my care at rather a late period of an attack of severe acute dysentery: but there was nothing

very remarkable in the symptoms, or differing from the ordinary course of acute dysentery ; except a disposition to profuse, warm perspirations, frequent nausea, and at latter periods of the disease, a difficulty in procuring by purgatives, moderate evacuations from the bowels. The pulse was soft and weak, and the belly generally elastic and little tumid : so entirely absent was any urgent symptom indicating particular local disease at the right iliac region, that there was not even suspicion of intus-susception during the life-time of this patient, and the region of the cœcum had not been noticed. On proceeding to the post-mortem inspection, a fulness in the right iliac region was visible, and on opening the abdomen, inflammation with considerable deposition of coagulable lymph was seen about the cœcum ; and when handled, a sensation was communicated, as if there were an enormous knotted mass of lumbrici within the intestine : on opening the gut, this was found to depend on an intus-susception of lower portion of ilium, into the cœcum ; the folded and puckered portion of gut within, having felt like a mass of worms. There was not much ulcerous disease of the intestine beyond the cœcum. This patient had died of general constitutional irritation, before sloughing took place, and the parts implicated in the disease were remarkably distinct.

The unlooked for result of this dissection, has been the cause of my directing particular attention to the state of the cœcum, in all cases of severe acute dysentery; and ascertaining the state of every part of the abdomen by a most careful examination. I feel assured that the information thus obtained, has been the means of saving many lives, since the occurrence of this dissection.

OBS. XXII.—J. Balmain, *Æt.* 17, light complexion, and slight make: only 3 weeks arrived from England, and had usually resided on board ship; was sent to hospital on the evening of 21st August, 1830; having been ill four days with dysentery, which had been treated with calomel, laudanum, and castor oil, while on board ship; but without benefit. He said he was at stool 22 times in the day; and 18 times in the last night. On admission he was suffering from pyrexia, his pulse 110, belly hard, flat, and inelastic; the region of the cœcum tumid, hard, and painful on pressure; he had frequent scanty evacuations of a bloody water, passed with great agony, but his urine was free, and there was no distress referred to the region of the bladder; from all which symptoms, it was evident that the lower portion of great intestine was the least affected. He was bled from the arm as freely, and repeatedly, as his strength would admit; leeches were ap-

plied over the cœcum, and strict antiphlogistic regimen observed in every respect; while the usual medicines for dysentery were given. By these means the pyrexia was reduced, and pain diminished; but he remained in a state of great anxiety, and the pulse gradually rose to 142: he had frequent calls to stool, and the evacuations assumed the appearance of a black watery fluid with horrid odor of putrid blood.

On the 25th August, the tension and fulness at the cœcum, and over right side of lower belly were greatly increased; the stools became more scanty, in fact nearly suppressed, and they had a reddish tinge; the patient was weak and irritable, apparently sinking; the following medicine was ordered:

R. Infus. Gentian. Comp.
—— Sennæ Comp. āā ʒ iv.
Magnesiæ Sulph. ʒ i.
Tinct. Sennæ ʒ iss.
Quininæ Sulphatis. gr. iv. misce.

To take 2 oz. every 2 hours for three doses. Some wine and water was allowed; but it produced febrile excitement, and he was so sensible of its effects, that he was unwilling to take more.

August 26th.—There was a horrid putrid odor from the body; he had been 17 times at stool in the last night, but the evacuations extremely scanty, and not improved in quality.

Through this day (26th) he had no stool, and seemed easier; the pulse fell to 116, and the belly was less tumid.

The above mixture was repeated, but no wine was given, and he had two enemas, each of which produced a moderate fluid evacuation; his belly was becoming softer. On the following night he slept at times, and had seven calls to stool, voiding altogether not more than a pint of brown fluid with slight tinge of blood, and less foetid; exhalation from his body less offensive; belly softer: he wished to eat bread and milk. At 8 A. M. a tube of small intestine, five inches long, and some fragments of equal length, were passed per anum, with some pus and bloody ichor; the tube appeared to consist of the whole of the coats of the small intestine inverted, and on its surface some sloughing ulcers were very distinct.

The mixture was repeated; and he was ordered one dose of Ipecacuanha and Gentian pills, at bed time.

Aug. 29th.—He was much better, had three fluid light brown stools; belly soft and flat; a slight fulness in cœcum remained; tongue moist and clean at edges, centre and base furred. He has passed some more small portions of intestine. The remaining hardness of cœcum gradually subsided, and he was able to go on board

ship on the 16th September, still very weak and emaciated; but having a good appetite, which it was difficult to restrain.

OBS. XXIII.—William Brown, *Æt.* 23, a stout man, of light complexion and florid face; arrived from England 5 weeks ago, and has been living on board ship; landed on the 9th October 1829, having been very ill with dysentery for 3 weeks. He sometimes had 48 stools in 24 hours: has now above 20 stools in day and night; the evacuations are merely a bloody water; he suffers from nausea and vomiting; the pulse is moderate and soft, tongue white, moist, and little loaded; belly flat and soft, but there is some morbid sensibility on pressure. Has followed no regular medical treatment. Although so late in the disease active antiphlogistic measures were deemed requisite; he was bled from the arm, leeches were repeatedly applied to the belly, and afterwards a blister. He took calomel in \mathfrak{D} i. doses, followed by purgatives for the first three days after landing; and on the 4th day 12 grains of calomel, by which his mouth was affected; still his stools were a black water with horrid odor of putrid blood. The calomel was omitted, and he seemed better for a few days; feverish symptoms then came on, with pain at the cœcum, followed by enlargement and hardness at that part; and he complained of pain at the edge of the right false ribs and epigastre. Sometimes

there was a total suppression of stools, and active purgatives were always requisite to procure evacuations. At the urgent request of a practitioner who supposed the whole of the ailments to depend on liver disease, and who had much confidence in calomel, for the cure of such cases; this patient took 10 grains of calomel with half a grain of opium three times in the course of the day, and a 4th dose at bed-time, with four grains of extract of hyoscyamus: the same was repeated next day, but there was evident aggravation of the disease. The patient died on the following day. On dissection, the cœcum was found extensively adherent to the adjacent parts; the coats so nearly ulcerated through, that on pulling aside the parietes of the abdomen, the intestine was torn open; many long sloughs were found in the cœcum, apparently the remains of an intus-susception of part of the ilium, whereby the tumor at cœcum and suppression of stools had been caused. There were numerous and large ulcers in the cœcum and transverse colon. The coats of the intestine thickened; in many places there were circumscribed indurations, and on these there were deep ulcers, the edges of which were undermined, and contained sinuses leading to ulcerated cavities, between the coats of the intestine.

However difficult it may sometimes be, to distinguish accurately which of these morbid

conditions of the cœcum is in progress; it is advantageous to know that they do often actually exist; that moderate attention of the practitioner is sufficient to detect them, as well as to ascertain all that is essential towards the correct treatment of these cases; and, that their dangerous tendency depends on unsubdued inflammation, and extensive ulcerous disease of the cœcum.

I have been disposed to enter into minute details, concerning those affections of the cœcum which occur in the course of the dysentery of this country; because most of them, when existing to a severe degree, are exceedingly dangerous; and some of them, cause delusive indications of liver disease, leading to improper treatment. In protracted cases of dysentery, where the ordinary means of cure succeed but imperfectly; the cause of tardy and imperfect recovery very often consists in some morbid affection of circumscribed extent, at the cœcum. I know that these protracted cases are not unfrequently sent to sea for recovery, during the insidious progress of this kind of local disease; and that they sometimes die at sea, because sufficient means of proper medical treatment are not available on board ship.

MUTUAL INFLUENCE OF DYSENTERY AND HEPATITIS.

In pursuing an inquiry, concerning the reciprocal influence of dysentery and hepatic disease;

we have abundant opportunity of seeing that the advanced stages of abscess of the liver, are almost always attended with dysentery; and ulcerations of the mucous membrane of the great intestines, are found on the dissection of these subjects. There appear also, sufficient reasons for concluding that extensive acute disease of the great intestines, occasionally excites hepatic irritation, with tendency to suppuration; and sometimes deep-seated or central abscess of the liver takes place, in spite of the most decisive and accurate treatment. The circumstances attending the origin and progress of the hepatic disease, will in these cases, confirm the belief, that the liver affection has been excited by the disorder of the intestines, the irritation of which so often extends to the mesocolon. In my experience, this consecutive description of liver affection, has happened most frequently among patients of a light complexion, with delicate and irritable constitution; though I have occasionally met with the same morbid affection in persons of robust make and dark complexion. In those cases to which I allude, the symptoms of liver disease are not evident until the dysentery has existed many days; and they frequently only commence when the bowel-complaint is decidedly on the decline, when the quantity of alvine evacuations is considerably decreased, and when the patient has ceased to void blood except in small quantity. In fact, there is an apparent con-

valescence for a day or two; and then we find the patient complaining of a hot forehead, dryness of the skin, and hectic flush in the cheek; his pulse is accelerated, and there is usually some fretfulness and irritability of mind. At a very early stage of these affections, when the hepatic disease is seated in the right lobe, the right *rectus abdominis* muscle is more tense than the left, and it resists pressure by an involuntary resiliency. In a few instances the patient has pain at the point of the right shoulder. These symptoms may exist a day or two, before palpable enlargement of the liver is detected; and before pressure over the right hypochondre causes pain. At the same time the stools become frequent and scanty; and in those cases where there is distinct hectic appearance, or much febrile excitement, their color is of a deep orange inclining to red: but in other cases nearly similar, only having the hectic flush and febrile excitement in more obscure degree, the stools are very scanty, black, viscid, and adhesive. This dangerous affection of the liver, seems to arise from the abrupt cessation of copious secretions from the mucous membrane of the intestines, while some degree of the inflammatory condition is unsubdued; the decrease of the discharge from the bowels, giving rise to relative plethora of the mesenteric vessels, and consequent hepatic congestion and irritation. This consecutive hepatic affection is dangerous,

because it takes place when the practitioner is generally relaxing in the diligence of his examinations, and remitting his remedies; as well as allowing more food, under the impression that his patient is cured.

In the treatment of the hepatic affection above described; although the patient may have been previously subjected to the most active anti-phlogistic measures, still more depletion will be requisite in the greater number of cases: the degree and repetition of which, must depend much on the nature of the symptoms, and the fidelity with which the former depletions have been pursued. If the patient's strength will bear V. S. it is by far the most decisive and effectual measure we can adopt; and if employed while the patient is in the recumbent posture, a small blood-letting will generally be borne. The patient must submit to use no food, except tea and bread in very small quantities, for some days: leeches must be applied to the right hypochondre, and repeated once a day until the symptoms subside, and all tension or fulness indicating liver disease is reduced. At the same time that this system of blood-letting and leeches is carried on, eight grains of compound extract of colocynth, with four grains of calomel, and two grains of aloes, are to be taken early every morning; and compound powder of jalap 3 ss. is to be repeated every three hours, after the

pills, till four stools are procured. As soon as the flushed cheek, dryness of skin, and morbid sensibility on pressing over the liver, subside; a blister is to be applied over the region of the liver, and the discharge kept up for ten days, continuing the pills above prescribed once every day, and giving a dose of one drachm of sulphur 12 hours after each dose of the pills. When acute disease is thus subdued, should some slight symptoms of dysentery return, and the patient be very pale; two grains of calomel with ten grains of rhubarb may be given every morning, and the sulphur in the afternoon. During this treatment, it is important to keep the patient perfectly tranquil, in the recumbent posture; and a tepid foot-bath should be used twice a day, as long as the skin continues dry. The foot-bath may be placed alongside the bed or couch, so as to be used while the patient is lying down*.

SLOUGHING OF MUCOUS MEMBRANE OF INTESTINE.

The greater number of those patients die, who void much mucous membrane of the intestine in a sloughing state; and in whom the exhalations from the body as well as the stools, have that

* An example of consecutive hepatitis is remarkable in Dobell's case. See Reports of 10th to 15th June. Obs. XXVII.

peculiar smell, described as the horrid odor of putrid blood. On dissection of these subjects ; when the cavity of the gut was opened, I have found a large extent of the great intestine with its mucous membrane in a sloughing state, and hanging in ragged masses and shreds. So few of these cases recover, that I am obliged either to consider this stage of disease almost inevitably fatal ; or that our ordinary modes of treatment, are not the best adapted to its cure. Quinine is so useful in sloughing sores of the surface of the body, in debilitated constitutions ; that I have been induced to try it in some of these desperate cases, where I had reason to believe, there was sloughing of the mucous membrane to a considerable extent : I have ordered at the same time a little opium, just in the way we would do for a sloughing sore on any other part. In cases where acute inflammation was not progressive, and before profuse cold sweats have taken place ; I have seen such remarkable benefit from this treatment, that I am unwilling to omit mention of it, as affording the means of occasionally saving a man's life, under circumstances, in which I know of no other plan that ever does any good.

OBS. XXIV.—John Newby, *Æt.* 25; a tall and stout man, recently arrived from Europe; came to hospital on the 16th November, 1830. He was suffering from very acute dysentery,

attended with pyrexia ; for which the usual treatment was pursued. The evacuations soon became of a black watery appearance. On the 21st November, he had 20 stools in the day and as many at night, copious black and watery, mixed with much fluid of puriform appearance, and some flocculent sloughy masses. The exhalation from his body resembled the odor of putrid blood ; his belly was soft, flat, and inelastic ; pulse 108, tongue rather dry, and of a mealy appearance, but almost clean : there was great anxiety, and he complained much of thirst.

The former treatment was now omitted, and he was ordered,

Pil. Hydrarg. gr. vi.—Opil. gr. i. to be taken at 7 A. M.

R. Infus. Sennæ Comp.—Infus. Gentian. Comp. āā lb. ss.

Magnesiae Sulphatis $\frac{3}{4}$ ii.—Quininæ Sulphatis gr. xvi.

Acid. Sulphuric. Aromat. gtt. 50 misce.

Give 2 oz. of this mixture at eleven o'clock.

Vesper.—He appears better, and has had eight stools.

R. Pulv. Ipecac.—Extract. Gentianæ.—Pil. Hydrarg. āā
3 ss. misce et divide in Pil. v.—One pill every 2 hours, during the night.

Anodyne Enema of Laudanum 3 i. in 2 oz. of cold water at bed time.

November 22nd.—He had 14 stools in the night, a copious dark-brown fluid feculence, with-

out slime or blood: he feels better; the tongue is moist and cool, pulse low and weak; there is no pyrexia, putrid odor decreased: morning pill, and mixture at eleven o'clock, repeated as on the 21st.

Vesper.—He has had only 5 stools during this day; a brown fluid feculence, with some white mucus; putrid exhalation has ceased, and he feels better.

Pulv. Ipecac.—Extract. Gentian.—Pil. Hydrarg. āā gr. v. made into 3 pills, and taken at 8 P. M.

Anodyne Enema repeated.

He slept well all night after the enema, and the same treatment was repeated on the 23rd. On the 24th he took no medicine, and had four dark fluid stools. The anodyne enema was repeated at bed time.

Nov. 25th.—He had six free stools in the night, and is in all respects much better. Mild aperients, and a very careful attention to diet, were requisite for a long time. He recovered very slowly, and had for many days after this, a smooth glazed tongue of morbid red color, but perfectly clean; like a piece of crimson satin, moistened in water and stretched. He was discharged well on the 12th January, 1831.

The improvement which took place in this case, after taking the mixture containing quinine, when portions of sloughing membrane were separating; as well as in Balmain's case, page 92, in which a portion of the entire tube was separated and voided per anum: would lead me to hope, that an attentive and discriminating practitioner may be able to take advantage of that prescription in similar cases, and sometimes to save life, by a mode of treatment not entering into the ordinary plans of curing Dysentery.

CHRONIC DYSENTERY.

Chronic Dysentery, takes place in consequence of extensive injury of the coats of the intestines; and sometimes the damage done by the acute stage of the disease, locally, as well as to the constitution, is such as not to admit of repair: an example of this sort is related in Obs. IX. page 45, where the transition from the acute to the chronic state is seen. It also frequently occurs, without much preliminary acute disease, in persons whose constitutions are broken either by long residence in India, or by the gradual invasion of different kinds of visceral disorder, both functional and organic. These visceral changes may exist in parts remote from the intestines; though most commonly they are dependent on

the state in which the mesentery, and mesocolon, and parts situated behind the peritoneum, are left by the acute stage of the disease.

In Chronic Dysentery, the patients are generally much debilitated, and complain of frequent watery purging; the fæces are mostly of a pale-grey color, mixed with some mucus, and more or less of white matter. A portion of the aliment often passes through the intestinal canal, undigested; and then the evacuations are of various colors. The stools are sometimes a copious paste-like brown mass, in a state of fermentation; occasionally they are frothy, with a subalbid, or pale-grey sediment, like a mixture of chalk and beer: and in a few very protracted cases, the matters voided are very copious, quite watery, and varying from bright orange to a pale straw color. Blood is rarely present in the stools; and the patients do not suffer from pyrexia, except in those instances where there is extensive irritation of the mesenteric glands; and then, occasionally, evening hectic may be observed. The belly is generally flat, inelastic, and somewhat retracted; though in a few cases tympanites is a troublesome symptom. The skin is often arid, shrivelled, and desquamating.

In our treatment of the Chronic forms of Dysentery, we must remember the degree of affinity that

may still exist, with the previous acute disease; and pay due attention to any visceral disorganization that may have been produced by that stage. Considerable irritation does assuredly often exist in many of these cases, but from habit of enduring excitement for a long time, the constitutional symptoms produced thereby, become less distinct, although the intestines are left in a state of exquisite morbid irritability; and the actual condition of local disease, which we have to combat, is this general irritability of the digestive organs, with more or less of circumscribed local congestion, and patches of passive inflammation. The objects to be held in view in treatment of Chronic Dysentery, are to remove the local morbid affections above described, and restore the patient's strength. For these purposes, our remedies must be directed to procure a regular and uniform secretion from the mucous membrane of the intestines, by the influence of mild purgatives; and by such remedies as have the property of restoring the capillary circulation to a healthy state, and moderating profuse discharges: for this latter purpose, frequent small doses of ipecacuanha answer very well. In the Dysentery which is really Chronic, there is seldom occasion for general blood-letting, as the system is commonly in a state quite the reverse of plethoric, but leeches are frequently of much service; and whenever indurations can be felt,

unattended by morbid sensibility on pressure, or by any pyrexia, blisters are generally very important remedies. With respect to medicines, it is generally proper to begin with a moderate dose of compound powder of jalap, or castor oil; after which the patient should take ipecacuanha, extract of gentian, and blue pill, four grains each, every night; a drachm of sulphur every morning, mixed with cinnamon water by means of thick mucilage, or of powdered gum-arabic; and a wine-glassful of the following mixture daily at noon.

*R.** Infus. Ipecacuanhæ ℥ i.

—— Gentian. Comp.

Misturæ Camphoræ āā ℥ v.

Tinct. Cardamom. Comp. ℥ ii.—misce.

If there be any degree of morbid heat, with the dryness of the skin, a mild purgative each morning, of compound powder of jalap, will be found most effectual; but if there be a dry and shrivelled skin with coldness, the daily aperient of sulphur will usually answer best.

The diet proper in Chronic Dysentery, is almost as limited in quantity as that directed for acute

* This Infusion is made with ʒ i. of Ipecacuanha root, to ℥ i. of boiling water.

cases; for the whole course of the alimentary canal has now become permanently so much disordered, that increased quantity of food adds to irritation, without augmenting the ratio of nourishment taken up by the system, in a corresponding degree. When the above treatment is commenced, the diet should consist of sago, gruel, or other farinaceous food, four times a day; in quantity not exceeding 6 oz. each time; two ounces of milk may be added to the breakfast and supper, and one ounce of wine to the mid-day meal; it is beneficial not to give great variety of food on the same day, at any period during the progress of convalescence.

OBS. XXV.—Vaill, *Æt.* 31. Admitted into General Hospital, on the evening of 15th September, 1828. A tall thin man, of dark complexion; five and a half years in India; generally healthy for the first three years and a half, since that he has twice had fever, with pain in the left side. Has been ill seven months, with constant purging; at first great quantities of blood and slime were voided, and he used to go to stool five or six times every hour. Says,—that at the commencement of his disease he took calomel and opium for six weeks without much benefit; he then went to Dacca, and continued the calomel

to salivate him; since which he has usually ten or eleven stools in 24 hours, without blood. No medicine was given during the first 12 hours after he came to Hospital, that the stools might be observed.

September 16th.—Had five very fluid, dark-grey stools in the night; moderate in quantity, and passed without pain or straining: tongue white and moist; urine free: he has some pain if the lower belly be pressed.

Pulv. Ipecac. gr. vi.—Extract. Gentian. gr. iv.—Pil. Hydrarg. gr. v. in three pills at 7 A. M. and repeated at bed time. Apply a blister to the lower belly.

Sept. 17th.—He has had four loose foetid stools in moderate quantity during the twenty-four hours.

Repeat the three pills, morning and night.

Sept. 18th.—Two stools yesterday; only one at night.

Repeat the three pills, morning and night, and give one drachm of Compound Jalap Powder at noon.

Sept. 19th.—Two stools after the jalap yesterday, and two more at night.

Give one drachm of Compound Powder of Jalap in the morning. Three pills as usual at bed time.

Sept. 20th.—Four natural loose stools in 24 hours ; he feels much better.

Give the Compound Jalap Powder in the morning as before. Pulv. Ipecac. gr. vi. Extract. Gentian. gr. iv. in two pills at bed time. The same treatment was repeated daily.

Sept. 24th.—Four stools in the day, and one at night.

Jalap omitted. Two pills repeated night and morning daily, as prescribed on the 20th.

Sept. 28th.—Two stools in 24 hours ; a natural loose feculence, in moderate quantity : says he has not been so well since March.

Two pills at bed time every night.

October 13th.—He has had only one stool every 24 hours ; feels well. No more medicine.

OBS. XXVI.—Mrs. Costello, *Æt.* 19; a delicate woman, much emaciated; had been ill with purging one month before she came under my care in the General Hospital, on the 25th September, 1830. During the last six days she has been worse, and passed much blood. At present there is no pyrexia, the belly is flat, and pressure over the abdomen painful; she has latterly had above 30 stools a day. She took a dose of laudanum last

night, which suppressed the evacuations of fæces; but the calls to stool since that have been incessant, and only blood is voided.

R. Pulv. Jalap. Comp. ʒ ss. statim.

R. Pulv. Ipecac.—Extract. Gentian.

Pil. Hydrarg. āā ʒ i.—misce et divide in Pil. No. x.
To take one pill at 12, 2, and 4 o'clock.

Vesper.—Was purged ten times before noon, but not once since she began to take the pills.

To take one pill as above at 7, 9, and 11, this night.

Sept. 26th.—One copious watery stool during the night, of dark-grey color, and very foetid; no pyrexia: there is a peculiar dysenteric odor about the bed and person of this patient.

Pulv. Jalap. Comp. ʒ i. in Aquæ Cinnamon. ʒ ss. at 6 A. M.—
One pill as above at 12, 2, and 4 o'clock.

Sept. 27th.—She had been nursing a stout child, aged 11 months, which was ordered to be weaned; and in consequence the breasts are now painful, and her head is hot. She had four stools since yesterday morning, but voided no blood.

R. Pulv. Jalap Comp. ʒ i.—Pills repeated.

Sept. 28th.—Eight stools in the forenoon yesterday, without blood or slime; no stool at night.

Jalap omitted.—Pills to be continued daily.

Sept. 30th.—Only one stool in 24 hours, of nearly natural appearance; appetite returned.

Two pills at bed time.

October 1st.—Three stools; she has slight mercurial taste in her mouth. Medicine omitted.

Oct. 2nd.—Five fluid, pale, clay-colored stools.

To take 2 pills at bed time.

Oct. 3rd.—She has had only two stools in 24 hours.

R. Extract. Gentian.

Pulv. Ipecac. ãã gr. v.—misce et divide in Pil. ii.

Two pills at bed time: to be repeated every night.

Oct. 10th.—No stool in last 24 hours.

Medicine omitted.

Discharged from Hospital on the 11th October, and continued well. The return of the purging when the pills were omitted on the 1st and 2nd October, may shew, that recovery was owing to the medicine, and not to the cessation of nursing her child, though that circumstance may have contributed to the restoration of her strength.

OBS. XXVII.—Henry Dobell, *Æt.* 19, a sailor; left England 13 months ago, and has just now arrived from China. Admitted into the General Hospital, Calcutta, on the 29th May, 1830. A slight made man, of dark complexion, and emaciated; ill six months with dysentery, during which period he has been often salivated, but only experienced temporary and imperfect relief of the disease. Has now a sore mouth, and frequent purging; rises to stool 18 times in 24 hours. Evacuations to be observed, and no medicine taken.

Alum 3 i. Tincture of Myrrh 3 ss. in a pint of water; to be used as a gargle for the mouth.

May 30th.—Had 15 calls to stool during the night; the evacuations are a dark, reddish-brown, watery fluid, attended with severe griping; the belly is flat, tense, and very painful if pressed: region of the cœcum tumid and tense. Pulse 96 and soft; skin cool; tongue white, moist, and nearly clean; he feels weak.

V. S. ad 3̄ xiv.

R. Pulv. Ipecac.—Extract. Gentian. āā ̄ i.—misce et divide in pill No. x.—Two pills to be taken at 8, 10, 12, 2, and 4 o'clock.

Apply six leeches to the belly at 10 o'clock.

Tepid Bath at noon.

Vesper.—Blood buffy: he has been to stool every 10 minutes; evacuations a red water, with

blood and films of membrane. Pulse 96, and full; leeches still bleeding freely.

V. S. ad $\frac{3}{4}$ xx.—Calomel. \mathfrak{D} ss.—Pulv. Ipecac. \mathfrak{D} i. made into six pills and given at 6 P. M.

R. Tinct. Opii. 3 i.—Aquæ Fontis $\frac{3}{4}$ ii.—misce, to use as an Anodyne Enema at 8 P. M.

May 31st.—Blood buffy and cupped. He slept little, and was on the stool every half-hour since 10 P. M.; the evacuations a bloody mucus, altogether not three ounces: belly flat, retracted and inelastic, much softer than on admission, and there is less pain on pressure.

R. Calomel.—Pulv. Ipecac. $\bar{a}\bar{a}$ \mathfrak{D} i. in pills at 6 A. M.

R. Pulv. Jalap. Comp. 3 i. in Aquæ Menth. Pip. $\frac{3}{4}$ i. at 9 o'clock.—Hot fomentation to the belly.

Vesper.—Seven free stools; the first was mixed with much blood, the four last were a green fluid and feculent, with little blood. Pulse 96, and soft; skin cool; tongue clean and moist.

R. Pulv. Ipecac. Extract. Gentian. Pil. Hydrarg. $\bar{a}\bar{a}$ gr. vi. in 3 pills at 7 P. M.

Half past 10 P. M.—He has had two scanty stools, consisting of about 3 iss. of bloody slime.

Repeat the enema as last night.

June 1st.—He slept tolerably, but had eight calls to stool; evacuations a scanty bloody slime,

in quantity about 6 oz.; belly soft, flat, and elastic. Pulse 84 and soft; tongue clean and moist; and he has no pain.

Pulv. Ipecac.—Extract. Gentian.—Pil. Hydrarg. āā gr. vi. in 3 pills at 6 A. M.

Pulv. Jalap. Comp. 3 ss. to be given in water at 1 P. M.

Half past 4 P. M.—He has had seven stools; a dark-grey fluid feculence, with much transparent slime, and a little blood in masses: he feels better; belly soft, elastic, and retracted.

Pulv. Ipecac.—Extract. Gentian.—Pil. Hydrarg. āā gr. iv. in two Pills at 7. P. M.

Enema of Laudanum 3 i. in 2 oz. of Water, at 9 P. M.

June 2nd.—He slept tolerably at short intervals, but had seven calls to stool; evacuations dark-brown and scanty, not tinged with blood, but horribly foetid.

Repeat the Pills at 6 A. M. as yesterday.

Vesper.—Six stools during the day, altogether about 24 ounces of grey fluid fæces; no pyrexia.

Repeat the Pills at 7 P. M. as yesterday.

June 3rd.—Five stools in night; about a pint of dark-brown feculent fluid, with horrid odor: he feels much better.

Extract. Gentian.—Pil. Hydrarg.—Pulv. Ipecac. āā gr. iv. in two Pills at 6 A. M.

Vesper.—Seven stools, as above. Repeated the pills, as in the morning.

June 4th.—Three fluid stools, of light yellow color; tongue dry and clean; he has no pain.

Repeat the Pills, morning and evening; and give Compound Powder of Jalap \mathfrak{z} i. in an ounce of Mint water, at noon.

June 5th.—Four stools during the 24 hours; the last partly figured: he feels better than for four months past. Treatment repeated daily.

June 7th.—Four stools: his general appearance is improved; stools feculent. Treatment continued daily.

June 8th.—Five stools in 24 hours, a copious dark feculence.

Extract. Colocynth. Comp.—Pil. Hydrarg. $\mathfrak{a}\mathfrak{a}$ gr. v. daily.

June 10th.—Three stools in 24 hours; there is some tension of right rectus abdominis muscle, and uneasiness on pressure over the liver.

Apply 6 leeches to the region of the liver.
Pulv. Jalap. Comp. \mathfrak{z} i. at 6 A. M.

Vesper.—Three stools; belly softer; leeches bled profusely.

Extract. Colocynth. Comp.—Extract. Hyoscyami.
Pil. Hydrarg. āā gr. iv. at bed time.

June 11th.—Three stools during the night, there is a slight fulness in the region of the liver.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v. at
6 A. M.

Apply 4 leeches to the region of the liver.

Vesper.—Freely purged. Pills repeated as last night.

June 12th.—Three stools during the night; his belly is soft.

Apply four leeches to the right side.

Extract. Colocynth. Comp.—Pil. Hydrarg. gr. v.

June 13th.—Better; four stools. Repeat the pills.

Vesper.—No stool. Repeat the pills, as on the 10th, at night.

June 14th.—He had four copious dark stools; and feels well; belly soft.

Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v. at
6 A. M.—and repeat the pills as last night at bed time.

June 15th.—Treatment repeated.

Vesper.—Two stools.

R. Calomel.—Extract. Colocynth. Comp. āā gr. viii.
Extract Hyoscyami. gr. iv. in 2 pills at bed time.

June 16th.—He had four copious lumpy stools during the night.

R. Pulv. Jalap. Comp. ʒ ss. at 6 A. M.
Repeat the pills at bed time.

June 17th.—Two stools in day, three at night; the last of small size, and very hard.

Ol. Ricini. ʒ i. at 6 A. M.
Repeat the pills at bed time as on the 15th.

June 18th.—He had four stools during the night, very copious; belly soft and flat.

Extract. Colocynth. Comp. ʒ ss.
Pil. Hydrarg. gr. v. daily.

June 29th.—He improves slowly, and feels very weak; has 3 stools in 24 hours, a copious loose dark feculence.

Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. vi.
every night at bed time.

July 7th.—Discharged well.

In this case, salivation had been fairly and repeatedly tried, but without decided or permanent benefit: and although the man had been ill six months, the existing inflammatory condition required V. S. and was benefited by it, in a remarkable degree. On the 5th June, the Dysenteric symptoms were in a great measure removed; and he continued slowly improving till the 10th, when symptoms of irritation of the liver were sufficiently evident, and soon relieved by leeches and mercurial purges. Had the blood-letting in the early part of this man's treatment in Hospital been less free, much more active depletion would have now been requisite. The diet allowed in this case, was only tea and bread in small quantities for the first six days; after that a pint of milk and some sago was taken daily in divided quantities; and in the last week, when convalescence was well advanced, a chicken, with vegetables, and a pint of beer, were allowed.

Europeans, who have been many years in Bengal, are occasionally affected with a chronic purging, which comes on slowly, without any previous distinct acute stage. The evacuations are copious, quite watery, and of a yellow color; varying in different individuals, from a bright orange to a pale straw color: the nearer it approaches to the latter color, indicates the more intractable disease. The patients who came to me with

this description of disease, have been persons in good circumstances, and in whom the disorder could not be ascribed to want, or carelessness. They were generally of light complexion, active habits, and sober. The belly was soft, flat, and elastic; skin dry and relaxed; but there was no pyrexia. The appetite was usually reported tolerable, and most sorts of food seemed digested, except potatoes, cheese, and some kinds of raw vegetables. The patients are generally slowly reduced, and exhausted: sometimes a profuse purging of a pale straw-colored fluid, has existed for many months, without much evident progressive change in the condition, or increase of debility. All sorts of remedies have been tried in these cases, with little or no success. The sulphate of copper and opium, seem admissible; but when used in this country, they have failed ten times, for once that they have succeeded. These patients do not often recover, without change of climate; for the disease is connected with an impaired state of constitution. When I have had occasion to make post-mortem examinations in such cases, the coats of both small and large intestines have been found remarkably thin and transparent; and there were a few small superficial ulcerations over a considerable extent of the mucous membrane of the lower portion of the ilium; and the same sort of slight ulcerous disease in the cœcum, and at sigmoid flexure of the

colon: the omentum and mesentery extenuated and void of fat; their glands enlarged. The liver was found of greyish color, occasionally approaching to a drab; its size decreased; its structure soft and pliable, but tough; and when cut, the section is almost bloodless, unless some of the great veins be divided. The hepatic duct of these subjects has been found much enlarged; the gall-bladder soft and flaccid, containing a pale oily yellow fluid: the cystic duct not changed. Patients suffering from this sort of disease, require a sea voyage, and prolonged absence from Bengal. I have known some persons return from the Cape, not much improved.

The Chronic Flux which attends advanced stages of Spleen disease, is also often very intractable, and the patients require removal to a dry station, or change of climate.

DYSENTERY IN NATIVES OF BENGAL.

In the Dysentery of Asiatics, we have to consider a disease which is marked even in its early stage, and in plethoric subjects, by symptoms less distinctly and less generally inflammatory; though the acute stage is often attended with pyrexia, tenesmus, and evacuations of blood from the intestines. The chronic stages of the disease, are more generally prevalent; and those forms of the

complaint in many cases come on slowly, marked only by debility, emaciation, and watery purging of pale grey color. The sequelæ of this complaint which are most troublesome to natives, are dyspepsia, obstinate and protracted spasmodic colic, mucous stools, aphthæ, and emaciation.

My own practice, as well as frequent communication on this subject, with hakeems or native physicians, leaves me no room to doubt, that with some slight modifications, the same plan of treatment advised in the foregoing pages, is exceedingly successful in the Dysentery of natives of India, both Hindoos and Mahomedans. It has never been necessary to use active depletion by blood-letting, among natives, to such extent as among Europeans; and frequently, the application of leeches can be dispensed with: neither have we occasion to employ purgatives so freely. It is also better not to alter the ordinary relative functions and sensibility of the skin, in people who habitually have the greater part of the body uncovered; and hence I would not advise the tepid bath in natives of Bengal, except on urgent occasions, and when other remedies fail. The habitual temperance of these people, and the peculiarities of their constitution, render many of the more active resources for severe acute Dysentery, unnecessary. In treating this disease in Asiatics; I advise leeches to be applied to the epi-

gastre, in the early stage of the disease, whenever any pyrexia exists; their number, and repetition, to vary according to the nature of the disease, and the more or less robust habit of the patient. Ipecacuanha is the most important remedy we can employ in the cure of Dysentery among Asiatics; and it may be prescribed in the same manner as for Europeans, only that we must be more reserved in the combinations with calomel and blue pill. We seldom need use more than half the dose of jalap, or castor oil, that is prescribed for Europeans; and the combination of sulphur and gum-arabic, given in mint water, is a useful aperient, in the Fluxes of natives of Bengal. For patients who suffer from the more chronic form of the disease, I have often added oleum menthæ sativæ to the ipecacuanha pills, in the proportion of half a drop with each dose; at the same time that the blue pill is diminished to half the quantity given to Europeans. I have also found benefit from adding one grain of asafoetida, and as much myrrh, to each dose of ipecacuanha pills; ordering a weak infusion of cheraytta, with camphor and tincture of cardamums, to be taken at 8 A. M. and 2 P. M.; or, half an ounce of the infusion of ipecacuanha and gentian, with camphor, prescribed at page 108. In obstinate cases, where the above remedies failed for some time, I have seen patients quickly and permanently improved, by the application of a

small oblong blister to each iliac region, and keeping it open for a week. Tenesmus is the most distressing symptom, in the severe Dysenteric cases of Asiatics ; and the general aversion of the natives of this part of India to injections, precludes us from using the best remedy for that affection, namely, the small anodyne enema ; therefore, we are obliged sometimes to prescribe opium in other modes. That which has appeared to me most useful, is a night-draught, composed of an ounce of weak infusion of cheraytta, with ten grains of Dover's powder, and one grain of ipecacuanha. Some native patients when in great distress, will use an opiate suppository, or employ the mixture of sugar of lead with cerate, in the same manner, and with great benefit.

The natives of Bengal are so scrupulously attentive to propriety in diet, when they are ill, that we have no difficulty in restraining them to as small quantity of food as may be consistent with the cure of their diseases. We must remember, that at an early period, and during the transient inflammatory stage of their Dysentery, thin sago, and rice-water are alone admissible ; for that which would be to Europeans a low diet, is stimulant and injurious to Asiatics, while any degree of acute disease exists. Therefore, milk and all articles made of milk, or rice, are unfit food for them, in the early stages of Dysentery.

OBS. XXVIII.—Shaik Yasseen, a tall and stout Moosulman, about 28 years of age, a prisoner in the Jail, applied for relief from Dysentery, on the 20th October, 1828. He had been ill eleven days, was going 26 times to stool in 24 hours, and passing much blood and slime: he had severe pain in the lower belly when at stool, but there was not much pyrexia present; though his thirst was urgent.

Was ordered $\frac{3}{4}$ i. of Castor Oil in the morning.

Pulv. Ipecacuanhæ.—Extract. Gentian.

Pil. Hydrarg. āā gr. iii. in two pills, at 4 P. M.

October 21st.—He was purged by the oil, which caused much pain, and still passes blood; but thinks he is better.

Pulv. Jalap. Comp. $\frac{3}{4}$ ss. at 7 A. M.

Repeat the two pills at 3 P. M. and again at 6.

Oct. 22d.—Several copious watery evacuations after the jalap, with little pain, and hardly a trace of blood. Much mucus voided.

R. Pulv. Jalap. Comp. gr. xv.

In Aq. Cinnamon $\frac{3}{4}$ i. at 7 A. M.

Pills repeated, as yesterday at 3, and 6 P. M.

Oct. 23d.—Says he is nearly well.

One pill at 7 A. M. and repeated at 4 P. M.

Oct. 24th.—Says he is well, and will not take more medicine.

OBS. XXIX.—Joynarain, a stout and rather fat Hindoo, aged about 37, also a prisoner in the Jail; was attacked with Dysentery, in the latter end of October, 1827; and after suffering ten days, applied for medicines on the 6th November. He had then slight fever, and thirst; pulse not much accelerated. He was going to stool 15 times in the day and night; voiding much blood and slime, and suffering great pain in the transverse colon: belly tumid, soft, and elastic.

R. Pulv. Jalap. Comp. ʒ ss. at 7 A. M.

R. Pulv. Ipecac.—Extract. Gentian.—Pil. Hydrarg. āā gr. iii. misce et divide in Pill ii.—to be taken at 4 P. M. and repeated at 7.

November 7th.—Purged by the jalap, which caused much griping, but he is very easy since taking the pills: has been six times to stool in the night; and he says voided much blood.

R. Ol. Ricini ʒ vi. Vini Opii gtt. viii.

Aquæ Cinnamon. ʒ i. misce,—at 7 A. M.

Repeat the two pills at 4, and again at 7 P. M.

Nov. 8th.—Much better; pyrexia and thirst abated. Still passes some blood and slime.

Treatment repeated, as yesterday.

Nov. 9th.—He is very nearly well.

Ordered to take Pulv. Jalap. Comp. \mathfrak{z} i. at 7 A. M.

Two pills at 4 P. M.

Nov. 10th.—He had four stools in the night, without blood. He took one pill morning and night ; and no more medicine after this date.

OBS. XXX.—On the 2d December, 1830, I was called to see a Hindoo girl, 11 years old. She was rather small for that age, and had been suffering above three weeks from Dysentery, which had gone on increasing, though treated with care by some of the best native practitioners. I found her in great agony, passing small quantities of blood and slime by stool every five minutes ; the belly tense, and thirst extreme ; tongue white, dry, and very little loaded ; pulse rapid and small, slight morbid heat of surface. I saw her at 10 P. M. and ordered,

Pulv. Ipecacuanhæ—Extract. Gentianæ—Pil. Hydrarg.
 $\mathfrak{a}\mathfrak{a}$ gr. iii.—in three pills at midnight ; and to be repeated at 4 A. M.

Pulv. Jalap. Comp. \mathfrak{z} ss.

In Aq. Menth. Sativæ \mathfrak{z} ss. at 8 A. M.

I saw this patient again at 10 A. M. 3d December. She was then crying aloud with pain, and had been very little better all night, but the

stools were more copious, and contained some dark fæces.

The three pills were repeated at 3 and 6 P. M.

Vesper.—When I visited this patient at 9 P. M. I was assured she had been crying vehemently, ever since the morning visit; the stools were copious and mostly feculent, but the pain seemed unabated. The pills had produced nausea.

Two pills were repeated every 3 hours.

A small portion of Goulard's ointment was ordered to be introduced into the rectum every four hours.

Pulv. Jalap. Comp. ʒ i. early to-morrow morning.

Dec. 4th.—Much easier; stools feculent and of dark color.

2 Pills at 4 and at 8 P. M.

Pulv. Jalap. Comp. ʒ i. early to-morrow. Ointment repeated.

Dec. 5th.—This patient was visited at noon, and found much better; tongue clean and moist; she has very little pain, and voids no blood, but has been eight times to stool since taking the jalap.

Ordered to take 2 pills at 4 and repeat at 8 P. M.

R. Ol. Ricini. ʒ vi.—Vini. Opii. gtt. iv.—Aquæ Menth. Pip. ʒ ss. misce,—to be taken early to-morrow.

Dec. 6th.—She had six stools during the night, and four after the oil; no pain. One pill was taken at 4, and repeated at 8 p. m.

Dec. 7th.—Much better; she was desired to take one pill, (such as those which were prescribed on the 2d Dec.) morning and night, daily. She was quite well on the 11th December.

I think such severe cases of Dysentery, ought to have leeches applied over the region of cœcum and sigmoid flexure of the colon: but we are obliged sometimes to use as much of good and correct treatment, as our native patients will permit. This child belonged to a respectable family, and had suffered no sort of privation; her friends considered her past recovery when I was sent for, and her state was such on the morning of 3d December, that I hardly expected to find her alive in the evening.

The native practitioners have an idea that there is a peculiarity in the Dysentery arising after parturition, (which is denominated *sutheke*,) they consider it *a cold disease* of very formidable description; and usually treat it with a spare diet, and small quantities of warm spices and astringents. I have found a pill composed of one grain of ipecacuanha, with as much blue pill, and extract of gentian, every four hours, useful in such cases;

and, that they might not be entirely deprived of their favourite prescription of aromatics, I have ordered one drop of oleum rutæ in each dose of the above pills. The high temperature in which the lying-in-room of native women is kept, for many days after parturition, may occasion some peculiarity in the Dysentery which happens to them, of which we are not well able to judge; as European medical men are seldom called to such cases.

The treatment recommended in the foregoing pages, for Chronic Dysentery of Europeans, has been found remarkably efficacious in the old and protracted chronic cases which occur among natives; and many of them will recover after having been reduced to a very low state, if they have the means to procure a moderate quantity of wholesome mild nutritious food, and the constitution be not entirely worn out by prolonged suffering and enlargement of the spleen, before they apply for medical aid. Many emaciated subjects, apparently in the very last stage of the disease, may be cured by the method above stated; also allowing some sago, with a dessert spoonful of French Brandy, daily: and besides which they may be permitted to take a sort of gruel called in the Bengalee language *coee munda*,

made by boiling parched rice in water, until it resembles thin sago. The *coee*, or parched paddy, is prepared constantly in all the bazars, (without reducing the grain to a charred or brown state,) by placing the unhusked rice on heated sand, until each grain swells and bursts, forming a large irregular white morsel, which is very light, and would not be recognised as a grain of rice by those who had not seen it prepared. This is considered in Bengal a very light food, and recommended by the natives in the early stages of convalescence from Fever or Dysentery : it is eaten in the dry state, and used made into gruel.

OBS. XXXI.—A young Hindoo woman, of an opulent family, 19 years of age, (the mother of one child, three months old, which she had been unable to nurse,) was affected with a frequent purging; which commenced five months before her child was born, and had been very distressing ever since: so that for eight months, there had been eight or nine stools daily; whereby she was gradually much weakened. She had been carefully treated by hakeems or native physicians; but continued gradually to get worse, until I was requested to see her, on the 24th January, 1831. This patient was then emaciated and weak, the evacuations were watery, and of a pale-grey color; she never had less than eight stools in 24 hours, and was

often much more purged. There was a total loss of appetite, and constant uneasiness at the scrobiculus cordis. I ordered her to take very little food, and that of the lightest description: and prescribed,

Pulv. Ipecac.—Extract. Gentian.—Pil. Hydrarg.
āā gr. i.—to be taken in a pill, every night.

January 29th.—She had only one loose stool yesterday, and another this morning; the uneasiness at the scrobiculus cordis is decreased, but not removed.

R. Pulv. Jalap. Comp. ʒ ss.—Pulv. Rhei. ʒ ss.

Tinct. Sennæ ʒ ss.—Aquæ Cinnamon. ʒ i.—misce.
Half of this mixture to be taken on the morning of the 30th January, and the other half on the morning of the 3d February.

The pill to be repeated every night.

February 8th.—This patient's bowels are regular, her appetite restored, and her appearance already manifestly improved; she was directed to take one pill every 2d night, and to continue up to the end of this month, using daily not above one-fourth the customary quantity of food; she recovered excellent health without any other medicine.

In the Chronic stages of Dysentery among natives, the patients occasionally become emaciated,

and the belly is retracted: they have 4 or 5 mucous stools in the 24 hours; and once or twice a loose fluid feculent evacuation with a little blood. They suffer daily several paroxysms of severe pain near the navel; and these pains will sometimes return at nearly the same hour for several days. The patients fall into a dejected state of mind, and the disease is difficult to cure. I have not ascertained the precise nature and seat of the local affection attending this complaint. The treatment from which the most benefit is derived, is to give,—compound extract of colocynth, blue pill, extract of hyoscyamus, each 3 grains, ipecacuanha, and asafoetida, each 1 grain; made into two soft pills, which are to be taken at 7 A. M. and repeated at 5 P. M. daily; with 2 oz. of very weak infusion of cheraytta: omitting the blue pill if there be any indication of spleen disease. Natives from the Upper Provinces who suffer from the above symptoms, seldom recover good health until they return and reside for some months at their own homes; where, I believe, they seldom take any medicine. A similar disease, named *sool*, afflicts natives who have not had Dysentery.

CHAP. II.

DISEASES OF THE LIVER.



DISEASES of the liver, occur so often among Europeans, in combination with the Fevers, and Alvine Fluxes of Bengal; that it is hardly possible to give a correct and complete account of Hepatic affections, without alluding to the cases wherein Fever or Dysentery may have been the original or more important complaint; to which the liver affection has supervened. It may serve to convey some idea of the various Hepatic diseases which take place in this country, if a general statement be given, of the morbid conditions I have met with in the liver and its appendages, in the course of several years. We must at the same time bear in mind, that many liver diseases, do not prove fatal in their early and acute stages; and therefore the first marks of disorganisation, are not often to be met with in post-mortem examinations, unless on the rare occurrence of a person dying from accident, when his disease is commencing. Moreover the functional disorders of the liver, which are considered numerous and important; do for the most part

elude anatomical investigation: and I apprehend that the number of those which are said to exist, would very much diminish, if a critical inquiry were instituted respecting their pathology. It must be acknowledged, that functional disorders of the liver, are often assumed to exist, on very vague and trivial grounds; and modes of treatment adopted, in consequence of some imagined affection of the liver, which are often unnecessary; and it is to be feared sometimes absolutely injurious. The uncertainty of the results of treatment pursued on such grounds, is much to be lamented. I trust, we shall not meet many practitioners in the present day, who are satisfied, without any distinct evidence on the subject, to ascribe every obscure chronic disease, to some functional disorder of the liver; and who suppose they are acting on reasonable principles, while they injure the constitution by persistence in the use of mercury.

The following morbid appearances have been observed in the liver and its appendages, in the subjects which I have dissected in this country. Those diseased conditions first mentioned, have been the most frequent, nearly in the order now stated.

1. Morbid changes in the gall-bladder: the two opposite conditions of which part, appear in

some measure, to depend on the period of the person's residence in India.

α The gall-bladder increased in size, and distended with bile ; by the pressure of which, the sulcus at the right lobe of the liver, for lodging the gall-bladder, becomes enlarged and deep. This state is most common in persons recently arrived in India.

β The gall-bladder decreased in size, and disproportioned to the large sulcus in which it is lodged. In many of these cases, a false membrane is found covering the gall-bladder, and sometimes agglutinating it to adjacent parts. This morbid condition occurs in persons long resident in Bengal.

Frequent repletion, and habitual over-excitement of the gall-bladder, and irritation of parts in its vicinity, with a disordered state of the upper portion of the intestinal canal, give rise to transient and circumscribed inflammation; which is followed by a deposition of coagulable lymph, that covers the gall-bladder: while a similar exudation sometimes occurs in the cellular structure of the capsule of Glisson. This lymph soon becomes organised, and like other newly formed parts of a similar nature, it is after a time subject to absorption and shrinking; whereby the gall-bladder, which had been formerly enlarged by frequent over-distention, becomes ultimately contracted. In the course of numerous dissections, we meet with every intermediate change in these parts, during the transition of

disease from one condition to the other. In the early and more active stages of these circumscribed inflammations, the pain is acute, and at times attended with some pyrexia. The pain at the part affected, returns often during many years; it is ultimately attended with no constitutional affection, and is then little noticed by the patient.

2. Enlargement of the liver; its color being darker than in a healthy condition from morbid accumulation of blood: the texture of the organ when in this state, usually softened; and the section made with a knife, bleeding freely; the peritoneal surface often marked with numerous clusters of minute vessels, like the veins on the nose of an old gourmand.

3. Abscesses of the liver. These vary much in appearance; and their peculiarities seem in some instances, influenced by the existing diathesis of the constitution. At present, I will hardly venture to do more than enumerate the morbid conditions that have been observed.

α A large quantity of puriform matter in a cavity, the contiguous parts of the liver exhibiting not much appearance of disease. The contents of the abscess, are frequently a dark-brown, or reddish serum, and then the adjacent parts of the liver are softened and gorged with blood. The acute abscesses which form in the course of fevers, acute dysentery, and in drunkards.

β In other cases, there is only a small quantity of matter, compared with the extent of the disorganization; a considerable portion of the disease consisting in a quantity of large, tough, white or grey sloughs, hanging from the sides of the cavity, and nearly filling it: the parts on dissection much resembling the advanced stage of a large carbuncle. This disease more frequently happens in scorbutic subjects than others.

γ In a few cases, we find a circumscribed abscess, the size of an orange: the matter deeply seated, and contained in a cavity, which is bounded by a thick coat of coagulable lymph.

δ Numerous small abscesses, the size of a filbert, dispersed through the substance of the liver; the cavities of some, lined with a thin coat of coagulable lymph; others without any lining, appearing as if scooped out with a sharp instrument: the intervening parts of the liver soft, but not otherwise diseased. This morbid appearance is rare: it sometimes exists without much evident tumefaction of the liver. The subjects have been mostly delicate, and of scrophulous constitution.

On inspecting the bodies of persons who have died suddenly from accidents or otherwise, I have several times met with appearances in the liver, which were considered to be the incipient or preliminary stage of abscess. These were, distinct, circumscribed, ecchymosed spots, at the concave surface of the liver; and serous interstitial effusions into the structure of that organ, near its convex surface: the latter spots, if diffused and extensive, rendering the part very soft for a considerable space. These may be considered the early changes induced by acute disease, not

very rapid in its progress; and had the patients not died suddenly from other causes, these effusions would have probably terminated in abscesses, if not treated in the most judicious manner, for a long time.

In dissection of subjects, who died of Abscess of the Liver, I have twice found a small quantity of puriform matter in the right ventricle of the heart; and in both instances, was able to trace the same appearance with small filamentous coagula, quite into the veins of the liver. The internal membrane of the hepatic veins was inflamed, but I could not discover any communication between the abscess of the liver and these vessels; and am therefore disposed to ascribe the formation of pus, to inflammation of the hepatic veins. Both these patients were recent arrivals in India, not of very temperate habits, and their complaints began as common Diarrhœa of severe description. On referring to their cases, the only difference observed between these and the usual course of Liver Abscess, was the more active pyrexia in the early part of the disease; and towards the conclusion unquenchable thirst, extreme anxiety, and frequent disposition to faint: but the patients never complained of palpitation, or any other symptom directly referred to the heart. In these cases, some degree of morbid heat of skin, continued to the last.

4. Adhesions of the liver to the diaphragm, colon, or stomach ; with more or less thickening of the peritoneal coat. It is surprizing how often suppuration of the liver occurs, without any adhesions of its peritoneal coat to adjacent parts, although the abscess be near the surface.

5. Black discoloration of a part of the liver. The concave surface towards the anterior edge more commonly affected than any other part; this discoloration in some cases does not extend above half an inch into the substance of the liver, and it is rare that so much as the surface of half of one lobe undergoes this change of color : it is usually attended with some softening of the structure of the liver. This morbid condition has been observed in patients who have died after lingering febrile affections ; and in whom there had been no very distinct indications of liver disease during life : it has also been occasionally noticed in the post-mortem examinations of Dysenteric subjects. I have not observed this appearance in those persons who died dropsical. We are not certain what has been the state during life, of the parts which are found after death, discolored as above described : I am disposed to consider the local diseased action during life, to have been of a slow inflammatory description, with great congestion.

6. Tumors, varying from the size of a grain of barley, to the size of a bean; situated in the capsule of Glisson. Two small bodies can always be found by careful dissection; which from their structure, appearance, and uniformity of situation, I am inclined to believe are absorbent glands. One of them is situated near the termination of the gall-bladder in the cystic duct; the other at the upper part of the ductus communis choledochus. Enlargement of these bodies, with inflammatory excitement about the capsule of Glisson; may cause closure of the biliary ducts. I have found the ducts obliterated, exactly at the point where these enlarged glands were causing pressure. If my view of the influence of these parts in disease, be correct; we shall have a satisfactory explanation of one mode in which transient obstructions to the flow of bile into the intestine are produced, from temporary irritation of these glands, on the occasion of disorders in the vicinity: and we see a distinct reason for obliteration of the cystic or of the common duct, in the chronic disease of old drunkards; which is just the description of subjects, in whom the closure of the ducts most frequently takes place.

7. The liver is found enlarged, its color being generally unchanged, though sometimes paler than in a healthy state; the surface of the organ

distinctly marked by the pressure of the cartilages of the ribs. This affection seems analogous to the œdema of the lower extremities, though rather firmer ; and when the surface of the liver is punctured with a needle, it is seldom that any serum flows : a section of a liver in this state, bleeds but little. The patients have all been pale for a long time, and laboring under Chronic Leucophlegmatic disorders.

8. The liver of pale slate-color, with slight induration, and toughness of texture ; the section bleeding but little : it has been seen in patients who were known to have had severe remittent fevers about 18 months or 2 years previously ; and after a period of tolerably good health, they were again attacked with fever, which proved fatal after a protracted struggle.

9. Enlargement with paleness of color, texture somewhat softened ; and leaving an oily stain on the knife with which a section of the liver is made.

10. Induration and enlargement, color a pale drab ; structure resembling cow's udder that has been boiled : the section bleeding very little. We sometimes see the same structure and color, in a liver that is decreased in size, and has its anterior edge rounded, notched, and adherent to the colon.

11. Puckered depressions, which appear like cicatrices on the convex surface of the liver: these are very rarely adherent to the adjacent parts. An incision through some of these, shews induration from the deposit of coagulable lymph: though we find no condensation or fibrous structure, on making an incision through other marks which have the same resemblance to cicatrices.

12. Concretions, in color and consistence like yellow soap, extending along the biliary canals, through a considerable space; the left lobe has been observed more frequently affected in this way than the right: it is a rare disease in Bengal.

13. Enlargement (relaxation?) of hepatic duct; this has been observed in patients of light complexion, long resident in India. They complained of Chronic Diarrhœa for a long time, the stools being numerous, copious, fluid, and of pale yellow color.

14. Obliteration of the biliary ducts; only observed when the liver had undergone the change described in sections 9 and 10. The patients for the most part drunkards.

15. Tubercles dispersed through the substance of the liver.

16. Hydatids; most frequently found about the anterior edge, and at the fissure near the ligamentum latum.

17. Biliary concretions in the gall-bladder.

Acute Inflammation of the Liver, is indicated by pain at the right hypochondrium, or at the epigastre; which is increased on pressure: there is enlargement or fulness in those regions; and more or less pain at the lower part of the chest, with impeded or oppressed respiration, and sometimes a cough. Bowels at first, usually costive. The patient cannot lie easily on the left side; nausea and vomiting are often present, especially in the early stage of those acute cases where the concave surface is chiefly affected; I have seen a patient in whom the vomiting was so urgent and distressing, that it was mistaken for Cholera, and from omission of sufficiently active treatment at the commencement, abscess rapidly formed, and the patient died. In some cases there is pain at the top of right shoulder, and in others jaundice, though we do not often meet with either of these affections. The urine is generally high-colored, the tongue loaded and moist; but these symptoms vary as much as the degree of pyrexia, which in the Hepatitis of Bengal, is seldom of an ardent description. The

constitutional disorder attendant on incipient liver disease, often commences like a common cold, or a slight fever; which goes on increasing for several days, without being much impediment to ordinary occupations. When the attack is more sudden, it is sometimes preceded by transient coldness, but there is rarely any rigor. The state of the pulse for the most part corresponds with the degree of fever present; but when suppuration has taken place, the pulse commonly rises above 108; and then symptoms of Dysentery almost always occur, in the latter stages of the disease.

Inflammation of the liver is often far advanced towards suppuration, without the patient having suffered much pain; but I have never seen a case terminate in abscess, without our being able by a careful examination, to detect the disease that was in progress, long before there was any reason to believe that suppuration existed. The best mode of examination, is to place the patient on his back, on a couch, the head not being raised; removing the clothes from the chest and belly, and then to stand at the foot of the bed, so that we can see if the right side be enlarged, the cartilages of the ribs heaved up, or if there be more fulness at the right side of the epigastre than at the left. We must remember that inflammation sometimes takes place, and abscess forms in the left lobe

only. We ascertain the existence of pain, or induration, by careful pressure over the right hypochondre; while the right false ribs and side are raised by one hand, so as to carry the liver forward. Having examined the state of both hypochondria, and the epigastre, during a full inspiration, as well as during a full expiration; and when the right thigh is bent, as well as when it is extended; we afterwards turn the person gradually over towards the left side, so as to be lying almost on his face, and then press carefully over the region of the liver desiring the patient at the same time to make a full respiration.

The symptoms already enumerated, are the outline, or general signs of acute disease of the liver. From observing a large number of cases, in the course of several years past; it appears to me that *acute superficial inflammation* at the convex surface (not exclusively peritoneal inflammation), is more frequent during the hot months of April and May than we usually observe at other seasons of the year: the disease is then more commonly ushered in by slight rigor; the enlargement of the liver is less distinct at the commencement of the attack; there is more pyrexia, and more acute pain on a full inspiration, or on compressing the cartilages of the lower ribs with the palm of the hand; cough is also a frequent symptom.

Differing from the above, we have the *inflammatory congestion, with tendency to central abscess*; which is the most prevalent form of acute liver-disease in Bengal. Cases of this sort become more frequent during the rains, (from June to September,) but the greatest proportion happens during the two first months of the cold season, from 10th November to 10th January. The enlargement of the liver, with tension at the epigastre and hypochondria, are more evident in the early stages of this affection; there is also more oppression at chest with impeded respiration: but there is less of acute pain on taking a full inspiration, and less morbid sensibility on pressing over the liver, than in the acute superficial inflammation. One very common symptom of this tendency to central abscess of the right lobe of the liver, is a much greater degree of *tension of the right rectus abdominis muscle*, than of the left; the muscle on the right side resisting pressure by a quick involuntary action, while the left rectus is lax, and other parts of the patient's belly soft and elastic. I consider this one of the most undeviating symptoms of congestion, with incipient interstitial deposite into the texture of the liver, which commonly goes on to deep-seated abscess; unaccompanied by urgent symptoms of pain, or pyrexia. I have seen the left rectus muscle alone affected in this way, in patients who have afterwards died of abscess in the left lobe

only. This symptom is of the more importance, as it takes place at an early period of the disease, when we can almost always effect a cure, by due persistence in a proper system of treatment.

In cases of protracted hepatic congestion, with tendency to the formation of central abscess; especially those which occur at the latter end of the rains, and beginning of the cold season: I have had occasion in the dissection of dead bodies, to observe the cellular structure of the mediastinum affected with some degree of interstitial deposit of an albuminous appearance. The cellular structure at the root of the mesentery and mesocolon, particularly across the upper part of the lumbar vertebræ, is also often in a state of vascular engorgement, with more or less of serous infiltration: oppression at the chest, and tension of the belly, are frequently produced and kept up by these morbid conditions, as well as by the turgescence of the liver. I would wish here to observe, that where there has been distinctly a precedence of Hepatic disease; and Dysenteric symptoms have come on afterwards, when abscess in the liver had formed; the ulcerations of the intestine have been for the most part small, superficial, and circular; though this is not invariably the case.

Another description of liver affection sufficiently distinct from either of the former, is common at

all seasons of the year ; it is found sometimes to follow Fevers, where the patients have not pursued a system of mild purgatives for a sufficient length of time during convalescence ; but in far the greater number of cases, we cannot assign any reason for its origin : the patients complain of pain at a circumscribed space about 4 inches above and to the right of the navel, on a line drawn from the umbilicus to the point of the right shoulder ; and the disease is attended by the following circumstances. The attack sometimes commences suddenly after eating, and in that case the food is usually vomited, whereby a transient relief is experienced ; the respite is but short, for the pain soon returns, and pressure over the part cannot be borne ; a full inspiration increases the pain, and the patient is unable to stand erect, or to lie straight in bed ; he rests with the body bent forward, and inclining to the right side ; there is great anxiety, and the nights are passed without sleep, there is usually a sense of weariness and pain in the loins ; tumefaction of the liver is seldom evident. In severe cases the pain shoots back towards the lower angle of the scapula or up towards the shoulder ; and is of the acute kind that is usually spoken of as a stitch or spasm, which prevents coughing or sighing. The bowels are usually costive at first, the urine high-colored, and jaundice sometimes takes place : there is a dry tongue, thirst, head-ache, and frequent

pulse, but not generally very high fever corresponding with the acute pain. In the latter stages of the disease, a distressing purging of black watery fluid takes place, and sometimes much blood is passed by stool. Severe cases, if not arrested by a very decisive and persevering treatment, will run their course in 20 or 25 days: during the last 6 or 8 days, the profuse discharge from the bowels usually attracts most attention; and the patient dies from irritative Fever, produced by inflammation and congestion, which affect not only the liver, but the capsule of Glisson; and in some measure extend to the cellular structure round the duodenum, and at the root of the mesentery. It is not common for abscess in the liver to form, after the course of disease above described; though that is sometimes the case.

A less acute affection of the same parts, is very frequently met with; the pain at the same circumscribed spot above described, less severe and without shooting to the shoulder or scapula, and it is not very distressing even when pressure is made over the part: there is occasionally slight pyrexia; and almost always a moist, yellowish, loaded tongue. In protracted cases, the tongue sometimes becomes clean and moist; the urine is often high-colored for several days at a time, and then resumes its natural

color; there is occasional nausea, the digestion is much impaired, the face becomes sallow, haggard, thin, and lurid; the limbs slowly emaciated, the belly tense, and sometimes tumid. The bowels are usually irregular, there being scanty, black costive, evacuations for a day or two; and then fluid scanty unsatisfactory stools, sometimes nearly white, at other times tinged with blood. I have seen cases of this sort, which had existed eight and ten months; the patients having been repeatedly salivated and blistered, without a persistence in any very rational system of treatment. The disease is liable at any time to take on the acute characters before described, and terminate in abscess of the liver: though in emaciated persons, it more commonly causes jaundice, or dropsy.

The causes of Inflammation and Abscess of the Liver in Bengal, appear to be a humid atmosphere, and high temperature during the day, followed by cold nights: the more superficial acute inflammation certainly occurs most frequently during the dry hot months of April and May; while we observe the inflammatory congestion, with tendency to central abscess, more commonly taking place towards the latter end of the rains; and at the beginning of the cold season, when considerable diurnal changes of temperature happen. Europeans recently arrived

in Bengal are very liable to liver disease, from slight exposure to atmospheric vicissitudes, or to the common causes which produce fever in Europe.

Habitual plethora, and superabundance of stimulant food, beyond the real wants of the constitution; doubtless keep the greater number of Europeans in India, in an almost perpetual state of proclivity to inflammatory and suppurative disease of the liver. This is especially the case in Bengal at the beginning of the cold season, when the profuse action of the skin that had existed for many months, becomes restrained; the predisposition to disease from the past hot season and rains, remaining. Hepatic abscess, often arises from the combined influence of several of the above causes, in Europeans of temperate and reserved habits of living. I do not remember ever having seen an abscess of the liver, in a man who was at the time suffering much, from numerous painful and inflamed boils.

There seems reason to believe, that the stimulant and opium treatment of Delirium Tremens, often lays the foundation of abscess in the liver: or I would rather express in other words, my belief that hepatic abscess would less frequently follow Delirium Tremens, if that complaint when

combined with febrile and inflammatory symptoms, were more commonly treated by antiphlogistic means*.

The following diseases are liable to be mistaken for affections of the liver, viz. : Empyema, or hydrothorax of right side of chest; disease of the right lung; ulcers and some chronic disorders of the stomach; disease of the duodenum, or of the cœcum, and a loaded state of those intestines without actual disease; a scirrhus pylorus; indurated pancreas; induration of the transverse colon, in severe dysentery, with a solitary large sloughing ulcer, and thickening of the coats at that part of the intestine; adhesion of the omentum majus to the cœcum, or to the brim of the pelvis, as noticed at p. 9, in the remarks on Dysentery.

* The following extract from the London Medical and Physical Journal, shews the safety and benefit of antiphlogistic treatment, in the inflammatory and febrile stage of Delirium Tremens:—"In Friedrich's Hospital, Copenhagen; when delirium tremens was treated partially by antiphlogistics, with personal restraint of the patients, in 1820, one out of every four died; and in 1821, one out of $4\frac{2}{3}$; but in 1822, when a more strict antiphlogistic treatment was pursued, under the direction of professor Herboldt, the patients being allowed their liberty, only one died out of $9\frac{4}{5}$; in 1823, one out of 12; and in 1824, one out of $9\frac{2}{3}$. In the same institution, an exciting treatment, (by opium and stimulants, we presume is meant,) without distinction of the cases, gave as its result; in 1817, one death out of every $2\frac{3}{4}$ patients; in 1818, one out of $2\frac{4}{9}$; and in 1819, one out of $2\frac{1}{11}$."—*Barkhausen on Delirium Tremens.*

In two cases of young women, I saw an affection of the spine, attended with pain at the right side; which had been mistaken for diseased liver, and treated with mercury, to the manifest disadvantage of the patients. A careful consideration of all the symptoms, with the history of the complaint, will enable us to ascertain when liver disease exists: though it is sometimes difficult to point out the precise nature and seat of the disorder.

The object, in the treatment of severe acute cases of Hepatitis, is considerably to diminish the quantity of circulating fluid, and permanently to subdue the action of the heart and arteries; and by abstaining from food, and taking very little drink, at the same time that we use purgatives; to keep the system so empty and low, that absorption shall be performed with activity. This condition is to be maintained by a steady perseverance in purgatives, and repeated vascular depletion, until we have effected the dispersion of the vascular turgescence, and absorption of that interstitial deposite, more or less of which exists in almost all acute inflammations of the liver, very soon after the disease commences. Supposing the patient to be first seen in the

morning ; an active purgative should be given, and he should be bled from the arm to lb. iss. or lb. ii. The bleeding must be repeated every six hours, until the pain in the side, and fulness of epigastre are relieved. Three hours after the second bleeding, 20 leeches should be applied to the side, or epigastre, where tumefaction or pain exists. It is very rarely requisite to bleed from the arm oftener in the worst cases, than twice or three times on the first day, and once on the second day : after which leeches must be repeated every forenoon, until the pain and fulness of the liver, with other symptoms of hepatic disease, are removed ; reducing the number of leeches to 10, or 6, as the patient's strength fails ; and as the progressive subsidence of disease may permit. I prefer applying leeches in the forenoon, because faintness is then less likely to take place than towards evening ; and because a continued flow of blood in the night, is apt not only to alarm the patient and prevent rest, but occasions him to take stimulants.

In all severe acute cases of Hepatitis, the patient's life depends on systematic pursuance of general and local blood-letting ; with quiescence, and strict attention to almost entire exclusion of food : even drink should be taken in limited quantity, while we are endeavouring to empty the vascular system. If the above plan be

properly followed up, nearly all the active depletion that is requisite, may be accomplished in three or four days. After the purgative advised for the morning of the first day; it is proper to give 10 grains of calomel, with six of compound extract of colocynth, and four of extract of hyoscyamus, in pills every night: followed each morning by as much compound powder of jalap, or infusion of senna with salts, as shall produce four free stools in twenty-four hours.

If the patient's strength become much reduced, and still tumefaction of the liver remain after pyrexia is subdued, a blister of three inches square is to be put on the epigastre, and kept open; while six or four leeches are to be applied round the edge of the blister daily, so as to maintain such a drain from the capillary vessels, as the strength may admit its continuance for several days. After which, 3 ss. of camphorated mercurial ointment is to be well rubbed over the right side once a day; and moderate purging kept up. By these means, we give the patient all the advantage possible from the properties which depletion and mercury possess, of promoting absorption of inflammatory interstitial deposite, and removing congestion in the liver, as well as equalising the state of the circulation in the capillary vessels over every part of the system.

It appears that when copious depletion is premised, these effects of mercury are produced to the greatest extent, when its repetition has been carried on so as to produce the commencement of salivation; and even then, we are often induced by the good mercury has done, to try one or two doses more at longer intervals: or to prolong the favorable action already produced, by giving blue pill instead of the calomel at night.

Blisters, like mercury, are capable of producing infinite injury, if improperly used. The best time to apply a blister, in the treatment of acute disease of the liver; is, when depletion has been pursued till it is ceasing to be of service, and when the pyrexia and excitement of the system, as well as the severity of local disease are subdued. We are then justified in trying the effect of counter-irritation, and a discharge from the surface; by which we may hope, at this stage of the disease to accelerate absorption, through the means of an external stimulant: though we fear yet, to make much increase in the patient's allowance of food; lest by filling up the vascular system, we should cause a return of acute symptoms. I know that blisters are sometimes applied in those stages of the disease, when injury may be done, by exciting some acceleration of the pulse and that slight increase of pyrexia, which

are to be expected from a blister, in the early stage of almost any acute disease. Its premature application, is also liable to be attended with the negative evils of interfering with proper depletory measures; and preventing examination of the state of the liver, before acute disease is removed.

The active treatment above described, is requisite in the acute disease of robust subjects; where there is palpable enlargement of the liver, with pyrexia. In very delicate habits, when the patient is seen early, some modification of the remedies may be admissible: indecisive and unsteady treatment, will insure a prolonged disease, hardly less destructive to the delicate, than to the robust constitution; and I hardly know how to advise indecisive measures in any case, until the disease is entirely subdued.

In acute cases, that have suffered a considerable time before they come under treatment, we must employ our remedies with great perseverance, as well as precision: and the order in which those remedies already specified, are applied, is by no means unimportant. The attempt to unload the vessels of the liver in a plethoric subject, by leeches without previous V. S. is as unreasonable as an attempt to drain a morass at one side, while a large stream is flowing into it on the other.

After cutting off part of the supply to the liver, by diminishing the quantity of blood in the system, leeches are of the greatest benefit.

In all cases of Liver Disease, where we have occasion to use the lancet, I would bleed the patient while in the recumbent position ; because I know of no good that follows syncope in such cases : the abrupt changes of the circulation that occur in fainting, and in subsequent recovery from that state, are of no use. In almost every acute case of Hepatitis, the urgent symptoms are mitigated, long before the internal disease is subdued. The history of a large proportion of the abscesses of the liver that prove fatal, would shew us a remission of acute symptoms after a few days of very judicious treatment ; which remission occasions a deviation from a proper course, both in diet and medicine : a gradual return of an unfavorable state is the consequence ; and a more intractable disease becomes established, although the symptoms are usually slow and less urgent ; but the result is the loss of the patient's life. Even where the early treatment of a severe case has been exceedingly deficient, a deceptive cessation of acute symptoms sometimes occurs ; this is at the time when inflammation and vascular engorgement have gone on until effusion or interstitial deposit takes place : the morbid tension of the

vessels is then much decreased, and an incautious person is led to remit his attention, just at the moment that the utmost vigilance is requisite, and in fact, when the greatest science and skill can hardly save life.

The acute superficial inflammation of the liver, and the inflammatory congestion with tendency to central abscess, both require nearly the same treatment above described. The latter disease is usually more tardy in receding, and requires to be pursued during its decrease by a more prolonged and undeviating system of depletion, regulated diet, and employment of the less active antiphlogistic measures: followed by a course of resinous purgatives, with blue pill at night; and small doses of Cheltenham or Epsom salts in the mornings.

The inflammatory condition more especially affecting the capsule of Glisson, attended with much hepatic congestion; requires, in its acute forms, all the same science and precision for its removal, which we could wish to see employed in the other acute affections above described. The milder description of the same affection, which is much more commonly met with; is only dangerous when entirely neglected, or treated in an unsteady unscientific manner. In persons of spare habit, we find this slighter degree of

disease, frequently not demanding blood-letting from the arm: but a daily repetition of leeches is requisite for a long time. The protracted cases, that come for treatment at a late period, require leeches daily, from two to six weeks; at the same time, that mild purgatives are used, and a regulated and very slender diet is allowed. The patient should remain in tranquillity, in the most healthy situation available, during the progress of cure. Some of the slighter cases, doubtless, occasionally admit of spontaneous recovery after a protracted period: but life should never be trusted to this chance.

OBS. XXXII.—James Gray, *Æt.* 30, admitted into Hospital, on the evening of the 14th November, 1830. A soldier, eight years in India, of middle size, and light complexion; ill four days with purging and griping; belly generally tense; liver tumid, and painful on pressure. Pulse 98, and full; tongue white; illness ascribed to drinking spirits.

V. S. ad $\frac{3}{4}$ xx.

R. Calomel.—Extract. Colocynth. Comp. āā. \mathfrak{D} ss.

November 15th.—Blood not buffy; he had eight stools during the night, which are not kept; says he passed some blood: the tumefaction of

liver has not subsided, and he is not relieved in any respect; he has now most pain at the epigastre, his face is flushed, and there is slight morbid heat of skin; pulse 96, and softer.

V. S. ad lb. iss. at 7 A. M.

Calomel.—Extract. Colocynth. Comp. āā. ð ss. after the bleeding.

Apply 16 leeches to the epigastre at noon.

And give Pulv. Jalap. Comp. ʒ i. at mid-day.

Vesper.—Blood slightly cupped, and buffy; he had eight stools during the day, and is cooler.

R. Calomel.

Extract. Colocynth. Comp. āā ð ss. at bed time.

Nov. 16th.—Had five stools; belly softer; less morbid sensibility on pressure over the liver.

Apply 16 leeches over the liver.

Pulv. Jalap. Comp. ʒ i. at 7 A. M.

Oleum Ricini ʒ i. at noon.

Extract. Colocynth. Comp.—Extract. Hyoscyami.

Pil. Hydrarg. āā. gr. v. in three pills, at bed time.

Nov. 17th.—Some hardness remains in region of the liver, but there is very little pyrexia; he has been freely purged.

Apply eight leeches to the region of the liver.

Extract. Colocynth. Comp. ð ss.

Pil. Hydrarg. gr. v. in the morning.

Ol. Ricini ʒ i. at noon.

Nov. 18th.—He has been freely purged, and is much better in every respect.

Apply four leeches to the region of the liver.

Extract. Colocynth. Comp.

Pil. Hydrarg. āā. gr. v. morning and night.

After this date, he was purged daily with jalap, or colocynth and blue pill. On the 21st November, his belly was soft and flat, no sign of induration of the liver remained; mild purgatives were continued daily, and on the 23d, he was reported convalescent. The only food allowed was tea, and four ounces of bread twice a day until 17th; after that a small quantity of thin sago daily, at 3 P. M. and on the 22d milk diet.

OBS. XXXIII.—A small but muscular man, of dark complexion, aged 20; (in India for four years, employed in mercantile affairs:) applied to me on the 12th June, 1830, in the evening, on account of acute pain in the region of the liver, which affected respiration, and prevented his lying on the left side. There was slight pyrexia; and fulness with tension, at the epigastre, and towards right hypochondre. He ascribed his illness to a bruise on the liver, by a fall 19 days previously, and he had been gradually getting worse for four days. Had followed no treatment, until yesterday, when he applied 30 leeches, and took one dose of salts.

He was bled to oz. 20; and four hours afterwards 20 leeches were applied to the right side. The only food allowed was tea, and two ounces of bread twice a day.

R. Calomel.—Extract. Colocynth. Comp. āā. 3 ss.

Misce, et divide in Pil. x.—Ordered to take three pills at bed time.

Pulv. Jalap. Comp. 3 i. early to-morrow morning.

June 13th.—He was purged freely, and can breathe more easily, but turning on the left side causes some pain in the liver. Blood not kept.

Apply 20 leeches to the right side, at 10 o'clock A. M.

Three pills repeated at bed time; and Pulv. Jalap. Comp. 3 i. early to-morrow morning.

June 14th.—Purged freely; tumefaction of liver subsided; he is pale, and free from pyrexia; but still has slight pain in the liver on a full inspiration, or on turning to the left side.

Apply four leeches to the region of the liver.

Two of the Pills ordered on 12, at bed time.

Ol. Ricini 3 i. early to-morrow.

He was now allowed some more bread with his tea; and a small cup of thin sago, at noon.

June 15th.—He is free from pain or pyrexia, and quite pale; there is now slight yellowness of

the eyes, not before noticed; urine not much colored.

Apply four leeches to the region of the liver.

Repeat two pills at bed time; and let him take a small dose of Cheltenham Salts, early to-morrow.

June 16th.—Feels well; but is pale, weak, and hungry.

R. Scammon. G. Resin.—Extract. Colocynth. Comp. āā ʒ ii.
Saponis Duri.—Cambogiæ āā ʒ i.
Misce, et divide in pill xx.

He was directed to take one pill every night, and a small dose of Cheltenham salts, every morning; observing a restricted diet, and taking gentle exercise.

On the 20th June, he felt a slight return of pain in the region of the liver, which was increased on the 21st, and then he applied again for advice. There was at that time a distinct fulness at the edge of the right false ribs, and morbid sensibility on pressure at that part. Pulse 96, while he was recumbent, and 104, when sitting up; urine pale-colored, slight thirst; tongue clean and moist. He was very pale, and had by no means recovered from the effects of the active antiphlogistic treatment pursued during the previous week.

He was directed to live on bread and tea. A dozen leeches were applied over the region of the liver daily, on the 21st, 22nd, and 23rd: eight on the 24th, and as many on the 25th. Ten grains of calomel, and ten of compound extract of colocynth, were given on the nights of 21st and 22nd; followed by a brisk purgative of compound jalap with scammony on the following mornings. After which, he took two of the purgative pills ordered on the 16th June, with six grains of blue pill every night, for a week; and on the mornings some Cheltenham salts. By these means the pain in side and tumefaction of the liver were subdued, and he soon afterwards proceeded to sea; but was repeatedly leeches, and blistered during the voyage: he has since recovered robust health.

The above case is inserted, to shew how apt Hepatitis is to relapse, if not carefully treated during convalescence.

OBS. XXXIV.—Thomas Chamberlain, *Æt.* 36. A soldier, 10 years in India; a tall and rather stout man, of light complexion. Admitted into General Hospital on the 13th October, 1830. Has been suffering for five days from pain in the right shoulder, to which part a liniment has been rubbed, and he has taken two purges. He is now suffering from pyrexia, a flushed face, and

tense full belly; the respiration is quick, and his ailments are believed to have arisen from intemperance in drink.

V. S. ad lb. iss.

R. Calomel.—Extract. Colocynth. Comp. āā. ʒ ss. at 6 A. M.
Pulv. Jalap. Comp. ʒ i. at noon.

Four P. M.—He has been freely purged; blood florid, and not buffy; face less flushed; pain in shoulder not easier; the right rectus abdominis muscle is more tense than the left.

Apply 16 leeches to the belly at 4 P. M.

R. Calomel.—Extract. Colocynth. Comp. āā. ʒ ss.

Oct. 14th.—Seven stools during the night; pain in the shoulder remains, and fulness at the epigastre with tension of right rectus abdominis muscle; edges of the tongue are moist and red, there is some grey mucus on its centre; less pyrexia.

V. S. ad lb. i.

Apply 10 leeches to the Epigastre.

Oleum. Ricini. ʒ i.

Oct. 15th.—Blood buffy, leeches bled profusely; he was purged four times; has less pyrexia but slight heat of forehead remains;

tongue dry and white in centre ; he has less pain in the right shoulder.

Sixteen leeches applied over the liver.

Calomel—Extract. Colocynth. Comp. āā. ʒ ss. at 7 A. M.

Pulv. Jalap. Comp. ʒ i. at noon.

Oct. 16th.—He had eight stools ; leeches bled well : some morbid heat of forehead remains ; no pain in the shoulder ; belly not tumid, but the muscles are still tense.

Apply 10 leeches to the region of the liver.

Pills repeated as yesterday morning.

Castor Oil ʒ i. at noon.

After this he had purgatives daily, and was getting better till the 22nd ; when there was slight indication of increased hepatic congestion, without pyrexia ; which was ascribed to his having eaten meat the day before. He was restricted to milk diet.

Six leeches were applied to the belly.

Calomel gr. v.—Extract. Colocynth. Comp. ʒ ss. were given in the morning.

And Pulv. Jalap. Comp. ʒ i. at noon.

From this time he took purgatives of extract of colocynth and blue pill ; or of jalap, daily, and was discharged well on the 1st November, 1830.

OBS. XXXV.—John Bruce, aged 25. A small man, of light complexion; eight years in India. Admitted into General Hospital, on the evening of the 1st June, 1830; having been ill ten days with pain in the region of the liver. The belly is now full and elastic, right hypochondre tense and painful; the right rectus abdominis muscle is more tense than the left, and reacts strongly if pressed. Pulse 96 and soft: there is slight morbid heat of skin; tongue moist and covered with little white mucus. He complains of diarrhœa.

V. S. ad lb. ii.

R. Calomel.—Extract. Colocynth. Comp. āā gr. x. To be taken in three pills, at bed-time.

June 2nd.—Blood buffy and cupped; he has been purged three times; the belly appears less tumid, and he has less pain: there is very little pyrexia; tongue moist, pale, and nearly clean.

V. S. ad lb. iss.

R. Pulv. Jalap. Comp. ʒ i. at 6 A. M.

Apply 16 leeches to the region of the liver at noon.

Vesper.—Blood buffy and cupped. No pyrexia; the belly is softer; he has not been freely purged, but has been vomiting; the leech bites are bleeding freely.

Enema Purg. statim.

R. Calomel ʒ i.—Extract. Colocynth. Comp. gr. vi. misce, fiant Pil. iii.—Three pills to be taken at bed-time.

June 3rd.—The leech-bites are still bleeding; he had four stools during the night, and slept at intervals. There is slight pyrexia; pulse 102, and soft; tongue loaded, white, and moist. He appears considerably reduced by the treatment.

Apply six leeches to the epigastre.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\bar{a}\bar{a}$ \varnothing ss. in pills, at 6 A. M.

Olei. Ricini. $\frac{3}{4}$ i. at noon.

Vesper.—Had three scanty stools, of dark color; there is no pyrexia at present, and he says no pain in the side.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\bar{a}\bar{a}$ \varnothing ss. in three pills, at bed-time.

June 4th.—No stool during the night; there is at present some pyrexia; muscles of belly still tense.

Apply 16 leeches to the belly.

R. Calomel.

Extract. Colocynth. Comp. $\bar{a}\bar{a}$ \varnothing ss. in three pills, at 6 A. M.

Pulv. Jalap. Comp. $\frac{3}{4}$ i. at noon.

June 5th.—He has been purged six times; some enlargement of liver still remains, but there is no pyrexia.

Apply 10 leeches to the region of the liver.

Repeat medicine as yesterday.

Vesper.—Leeches bled freely; he has not been sufficiently purged this day.

R. Olei. Ricini $\frac{3}{4}$ i. statim.

June 6th.—Purged three times during the night; mouth sore; pulse 90; liver decreased in size.

R. Pulv. Jalap. Comp. $\frac{3}{4}$ i.
—— Scammon. Comp. (Ph. Ed.) $\frac{9}{16}$ i.
Aquaë. Font. $\frac{3}{4}$ i. misce, statim sumend.
Olei. Ricini $\frac{3}{4}$ i. at noon.

June 7th.—Evacuations from the bowels still scanty; there is no pyrexia; he has become very pale; the enlargement of the liver is not yet entirely removed.

Apply four leeches to the right side.

R. Extract. Colocynth. Comp. $\frac{9}{16}$ ss.
Pil. Hydrarg. gr. v. in three pills at 6 . M.
R. Pulv. Jalap. Comp. $\frac{3}{4}$ i.
—— Scammon. Comp. $\frac{9}{16}$ i.
Aq. Font. $\frac{3}{4}$ iss. misce. to be taken at noon.
Ol. Ricini $\frac{3}{4}$ i. at 4 P. M.

June 8th.—He has had four stools; mouth sorer; there is less induration of the liver.

R. Infus. Sennæ Comp. $\frac{3}{4}$ ii.
Magnesiæ Sulphatis.
Sodæ Sulphatis $\frac{3}{4}$ ii. misce.
To be taken at 6 A. M.—and repeated at noon.

June 9th.—He has been purged five times.
No other change.

Medicine repeated as yesterday.

Apply a blister over the region of the liver.

June 10th.—No alteration in the symptoms.
Ordered to take daily

Pulv. Jalap. Comp. \mathfrak{z} i. in the morning:—and every night the two following pills.

R. Scammon. Gummi-resin.—Extract. Colocynth. Comp. $\bar{a}\bar{a}$ gr. iv. Saponis Duri.—Cambogiæ $\bar{a}\bar{a}$ gr. ii.—misce, et divide in Pil. ii.

June 18th.—He had four or five stools daily from these medicines, and was improving until this date; when some tension of the right rectus muscle was again observed, but pressure gave no pain, and he had no pyrexia.

Eight leeches were applied over the liver.

He had Pulv. Jalap. Comp. \mathfrak{z} i. in the morning.

Olei. Ricini \mathfrak{z} i. at noon.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\bar{a}\bar{a}$ gr. viii.

Extract. Hyoscyami gr. iv. in Pills, at bed time.

June 19th.—He has been purged five times, and there is less tension of the right rectus muscle.

Apply four leeches to the belly.

Pulv. Jalap. Comp. \mathfrak{z} i. to be taken at 6 A. M.

Night pills repeated as ordered on 18th.

After this his bowels were kept free, and he was discharged well on the 5th July, 1830. He remained in good health, and followed a very active occupation.

The diet was restricted to tea and bread, until the 17th June; after that sago was also allowed; and from the 20th June, he had bread and milk.

OBS. XXXVI. Henry Weager, aged 55. A stout man, of light complexion, 39 years in India, of active habits and temperate. Was admitted into General Hospital on the 11th July, 1827, at 1 P. M. He had been suffering for 10 days with pain in the region of the liver. His illness was slight at first, but the pain has increased much this day, and is attended with pyrexia. Pulse 98, and full; pressure over the liver causes extreme pain.

V. S. ad $\frac{3}{4}$ xxxiv.

R. Pulv. Jalap. Comp. $\frac{3}{4}$ i.

5 P. M.—The blood is buffy, and much cupped; he has been purged twice, and the pyrexia is somewhat decreased, but the pain in the liver is unabated. Tongue loaded with grey mucus.

Apply 12 leeches to the region of the liver.

Ordered to take Calomel.—Extract Colocynth. Comp.

$\bar{a}\bar{a}$ 3 ss. in Pills.

July 12th.—He has been purged, and is easier; pyrexia somewhat moderated, but pressure over the liver causes acute pain.

V. S. ad lb. i.

Apply 16 leeches to the right side, in four hours.

R. Calomel ʒ ss.

Extract. Colocynth. Comp. gr. v. in Pills, at 6 A. M.
and repeat at noon.

July 13th.—He has had only three scanty watery stools, and feels better, but still suffers from pain in the region of the liver.

Apply 16 leeches over the region of the liver.

R. Calomel ʒ ss, in pills, at 6 A. M.

Ol. Ricini ʒ vi. at noon.

Vesper.—He has been purged twice, and the pain is decreased. Tongue cleaner.

R. Calomel.

Extract Colocynth. Comp. āā gr. v.

July 14th.—He had two feculent bronze-colored stools during the night; is free from pyrexia, and has less pain in the liver.

Apply six leeches to the Epigastre, and repeat the Pills morning and night, as yesterday.

July 15th.—He has had three stools; mouth sore; he complains of debility, and has some pain

in the region of the liver, unattended with pyrexia.
Pulse 76, and soft.

Six leeches were applied to the Epigastre, and he took
Calomel—Extract. Colocynth. Comp. āā gr. v. at 6 A. M.

July 16th.—He is better.

Six leeches were applied to the right hypochondrium,
and he had Pulv. Jalap. Comp. ʒ ss. at 6 A. M.

July 17th. He was purged twice, and is now
nearly free from pain. Treatment of yesterday
repeated.

July 18th.—There is no change since yesterday.
He took an ounce of castor oil, and a blister
was applied over the region of the liver.

July 19th.—He was freely purged, mouth sorer,
and he has very little pain in the side.

R. Pulv. Jalap. Comp. ʒ ss. at 6 A. M.

July 20th.—He is free from pain and feels
better. The Jalap was repeated.

July 24th.—He remains without pain, and is
well but weak.

R. Decoct. Cinchonæ lb. i.

Sodæ Sulphat. ʒ i. misce—ordered to take 2 oz. daily.

This patient remained several months in Bengal, quite free from any affection of the liver; and then embarked for Europe. He returned to Bengal in 1830, suffering from a large Cancer of the left side of the face and orbit, of which he died on the 20th April 1831; and I had an opportunity of inspecting the body, nearly four years after the severe attack of hepatic disease. The liver was found of rather a darker color than natural, somewhat softened in its texture, and the section bled freely. The whole convex surface of its right lobe was adherent to the diaphragm, and the edge of the right, as well as a part of the left lobe was adherent to the transverse portion of the colon. The gall-bladder was enlarged, and contained bile of a deep yellow color; the ducts were pervious. A false membrane, (the result of inflammation at a remote period,) covered the whole of the gall-bladder and capsule of Glisson, connecting them with the adjacent parts. The spleen was slightly enlarged, of reddish grey color, and somewhat indurated.

OBS. XXXVII.—A small but muscular man, of dark complexion, aged 24, who had been two years and a half in India; (during which he enjoyed good health, and followed active occupations in a Mercantile house :) had, without evident cause, except constipation, an attack of Fever on the 4th

November, 1827; the prominent symptoms of which were head-ache, great anxiety, and the tongue exceedingly loaded with grey mucus. He was bled largely from the arm once, and leeches were repeatedly applied to the temples and nucha. Ten grains of calomel, with as much compound extract of colocynth, was taken every night, and infusion of senna with salts repeated every three hours in the forenoon, to produce free purging. This treatment was pursued for four days, and the pyrexia gradually subsided; but a great degree of languor and anxiety remained, with a moist white tongue.

Six grains of blue pill, and as much extract of colocynth, were now given every night; and a dose of Epsom salts in the mornings. The diet being restricted to tea, bread, and sago. At the end of a week, he was much better; the tongue was cleaner, and his appetite had returned, but he complained of extreme languor, anxiety, and restless nights; and had become exceedingly pale. For the purpose of avoiding inducements to attend to business, he was removed to a friend's house on the 15th November; directed to continue his medicines, and permitted to take more food, but no wine.

November 22nd.—I was again sent for, on account of slight pain at the centre of left collar-

bone and a swelling at the pit of the stomach. The patient had a tolerable appetite, and was free from Fever; but still very pale, and weak. He had taken only a very small quantity of meat, and no wine, since I last saw him; and had kept his bowels very free. On examination, I found the left lobe of the liver enlarged and painful on pressure: the swelling occupied the epigastre, extending towards the left, it was very prominent anteriorly, and must have extended through the whole left lobe of the liver, as it received a strong impulse from the action of the heart; which was in fact the principal cause of my being again consulted, for there was no great pain when the swelling was not pressed. I was truly shocked on observing the extent and prominence of this tumor, which had arisen in the course of a few days, and though not previously evident externally, I had no doubt must have commenced insidiously during the fever, if not previously. The cause of tardy convalescence, was now but too evident.

The patient was told that notwithstanding his paleness and sensations of debility, his system would still bear active treatment; and that his only hope of recovery depended on most rigid adherence to such plan of depletion, and absence of food, as should leave the vascular system very

empty, and excite the highest degree of avidity of the absorbents, to remove the enlargement of the liver. He was directed to remain on his couch, observing the utmost quiescence, avoiding conversation, or any thing that might in the slightest degree quicken the pulse. When requiring to go to the stool, which was placed near his couch, he was to be raised by a servant. Ten leeches were applied to the liver daily, and the bleeding allowed to continue. Twelve grains of calomel, with 8 of compound extract of colocynth, were ordered every night: one drachm of compound powder of jalap every morning: and if not freely purged four times by 2 P. M. a dose of compound infusion of senna with salts was taken. He was allowed a cup of tea night and morning, but no food, and no drink in large quantity; only a table-spoonful of water every half hour, if thirsty.

This plan was followed daily till the 29th November, without the slightest effect on the tumefaction of the liver. Debility and paleness were extreme, and I doubt if he would have survived another application of leeches. A blister was now applied over the epigastre, and kept open with savine cerate. The former medicines were continued daily. Leeches omitted; and he was allowed 2 oz. of bread with his tea, night and morning.

December 3rd.—Strength somewhat improved, and there is more firmness of pulse; tumor unchanged in appearance. The blister was ordered to be kept discharging, by the savine dressing; four leeches were applied to the blistered surface daily, just over the most prominent part of the tumor; medicine and diet not altered.

Dec. 6th.—Has four free stools daily, and there is a decided decrease in the size of the tumefaction of liver; the pain at centre of left clavicle has ceased; he feels weaker since resuming the use of the leeches. Mouth not affected by the large and repeated doses of calomel which he has taken. Former medicines continued daily, as well as the leeches: and he is directed to rub 3 i. of camphorated mercurial ointment over the right side of the chest and belly, round the blistered part. With a view of affording more nourishment, without producing redundancy of fluids or much excitement in the system, a boiled egg, and some salt was allowed once a day, without any increase in quantity of bread.

Dec. 11th.—Tumor much decreased, and the patient is not weaker. Mouth not affected. Ointment continued daily, leeches and former medicine omitted. Quantity of bread increased, and a tea-cupful of soup allowed.

He was directed to take a tea-spoon full of Cheltenham salts, in half a tumbler of water, every morning.

R. Scammon. Gummi-resinæ.—Ext. Colocynth. Comp. āā ʒ i.
Saponis. Duri.—Cambogiæ. āā ʒ ss.—misce, et divide
in Pil. No. xxx. Capt. ii. omni nocte.

The fulness at epigastre and towards the left side slowly decreased. The camphorated ointment was omitted on the 19th December; but the above pills, and salts were continued daily for six weeks longer.

This patient recovered perfect health, and is still in Bengal pursuing active occupations. I have never seen a case that appeared to be so far advanced as this, which ultimately recovered. The youth of the patient, and his firm and resolute mind to undergo the extreme depletion, enabled me to save his life. When I first saw the tumefaction at epigastre, and towards the left lobe of the liver, I did not think myself justified in giving his friends any hope that an abscess of the liver could be prevented. It is remarkable that all the mercury taken, caused no sign of salivation. This gentleman had occasion to take a few alterative doses of calomel, about three years after this illness; and his mouth became affected by taking two grains every night, for eight doses, although he took some saline purgative every morning.

An insidious attack of liver disease very often shews itself, at the conclusion of fevers in Bengal ; in the same manner as occurred in the above case, and an abscess is impending, before the attention is called to the part principally affected, by urgent, and unequivocal symptoms. We should therefore never rest satisfied, until we have ascertained the cause of imperfect convalescence after Fevers ; more especially when it is attended with anxiety, a white tongue, and languor.

OBS. XXXVIII.—A middle sized man, 51 years of age, of dark complexion, and rather lax fibre ; had been 26 years in India, and during that period enjoyed almost uninterrupted good health, attending diligently his business, in an office. He met with severe domestic calamities in 1830, subsequently to which his appetite became somewhat impaired, and bowels slow ; but he did not relinquish business, or follow any medical treatment.

On the 2nd December, 1830, he felt sick soon after break fast, and vomited. At the same time he was seized with a severe pain at the epigastre, and on that account he took without advice, laudanum 3 ss. with twice as much Aromatic spirit of ammonia in tepid water, and had his belly fomented. I saw him in about two hours after the vomiting, and found him languid and weak ; there was much elastic tension at the

epigastre, extending generally over the belly; and he was suffering from anxiety. The pulse was 92, and rather full; tongue moist, and but little loaded with white mucus.

On account of this patient's long residence in India, and recent afflictions which had somewhat preyed on his health, I was anxious if possible to avoid a debilitating plan of treatment; therefore ordered a purgative enema to be given, and repeated in an hour. He took 15 grains of calomel, with seven of compound extract of colocynth, and six hours afterwards a dose of infusion of senna and salts. These medicines procured four scanty stools, of a dark brown color; and the pills were repeated at bed time.

On the 3rd December, he took two ounces of castor oil, which produced two stools; one was copious and of dark grey color, the other scanty: before 10 o'clock in the forenoon, he was freely salivated. There was still a considerable degree of general uneasiness of the belly, with some elastic flatulent distention; pressure between the umbilicus and right false ribs caused pain, that extended towards the right kidney. The pulse was 106, and attended with some morbid heat of skin. He was ordered to take

Extract. Colocynth. Comp.—Scammon. Gummi-resinæ
āā. gr. iv.

Cambogiæ gr. ii. in two Pills, at bed time.

Dec. 4th.—He passed a restless night, and had two free stools; there is increasing uneasiness in the belly, and rather more pain on pressure. The heat of skin is augmented and pulse now 106; he complains much of nausea, and there is a distinct fulness in the region of the liver.

V. S. ad lb. ii.

He took Pulv. Jalap. Comp. 3 i. at 7 A. M. and Castor Oil ʒ i. at noon.

At 4 P. M. The blood taken in the morning was buffy, and he had two copious dark-brown stools. He was rather cooler; the pulse 94 and softer. The enlargement of the liver, and morbid sensibility on pressure unabated.

Twenty leeches were applied over the liver.

Pills repeated at bed time, as last night.

Dec. 5th.—He was freely purged in the night, and had some sleep at intervals: is now free from pyrexia, and there is less anxiety; a deep seated pain remains under the three last right false ribs, much increased by pressure.

Sixteen leeches were ordered to be applied to the region of the liver; and he took a strong dose of Infusion of Senna with Salts. The Pills were repeated at bed time, as on the 3rd.

Dec. 6th.—He is free from pyrexia, and thinks he is better; but some pain remains in the

region of the liver, when he stoops or leans forward; and slight enlargement of the liver can still be felt, but the belly is soft and flat; he perspires; the mouth is sore, and he has a frequent hiccup.

Apply a blister over the region of the liver.

R. Extract. Colocynth. Comp.

Scammon. Gummi-resin. āā gr. vi.

Cambogiæ gr. ii. misce, fiant Pil. ii.—to be repeated every night.

R. Pulv. Jalap. Comp. ʒ ss. every morning.

Dec. 9th.—Freely purged, and he has no complaint except debility.

He was directed to take two Pills, as prescribed on the 6th, every 2nd night, for a week: he had no relapse.

This case, as well as Weager's, at page 174, shows, how very requisite it is to use decisive measures, when liver disease appears, even in aged persons who are long resident in India. I am inclined to say, that instead of trusting to leeches, in the Hepatitis of persons who have been several years in India, we had better first use the lancet freely, once or twice; for we very seldom see these patients satisfactorily recovered from acute liver disease, without bleeding from the arm. If the great extent of

general blood-letting sometimes necessary in the Hepatitis of younger subjects, be not requisite in such aged persons, by reason of the changes produced slowly by an Indian climate on their constitutions : a much longer perseverance in low diet, and warm resinous purgatives, with blue pill, must be advised, to restore a healthy state, when the liver has gradually become diseased. Observations XLVI. and XLVII. prove how important it is both for the old resident, and for those recently arrived, to adopt a proper system of treatment early, whenever the liver is inflamed : and to take advantage of every accessory aid afforded by spare diet, quiescence, and domestic management, as long as any symptom of Hepatitis remains. I have no doubt that both those cases above alluded to, might have been cured, by perseverance in a reasonable course of active treatment, at an early stage of the disease.

That diseases of equal severity with the foregoing, are very common in Bengal ; may be proved by the fact, that four such severe cases as Green, Bruce, King, and Craggs, which are detailed in this chapter, besides several with slighter affections, were admitted into one division of the Hospital, in less than a month. And the proclivity to severe hepatic diseases, in this part of India, will be evident, when I state that of the seven cases above detailed, four were in

persons of temperate habits, and possessing ample means of obtaining all requisite comforts in living. Two of them were old residents in India; and several of the cases in this chapter, will shew that those who have lived long in the country, are not exempt from such severe hepatic disease as is apt to terminate in abscess.

In the foregoing examples, we have distinct evidence that the liver was inflamed; and in many of the cases there was a great degree of enlargement of that organ. The symptoms were distinct, and in some of the patients the liver disease was certainly very far advanced towards suppuration, before they applied for medical treatment. Pain is not generally very severe in the Hepatitis of Bengal: and the central abscess is often actually formed, before this symptom is so troublesome as to excite alarm of the patient. In some cases, pain is hardly acknowledged, till the abscess has made its way to the membranes covering the surface of the liver; and these insidious cases of Hepatitis, are much more to be dreaded, than those which commence with distressing symptoms. When severe acute Hepatitis exists, the disease is only to be cured by the most scientific and persevering treatment; aided by resolute submission on the part of the patient. Milder attacks of the

disease than those above detailed, may sometimes admit of cure by less active treatment; but slight cases, as well as the more severe affections, certainly ought to be carefully watched for a long period during convalescence; as there can be no doubt, that the more urgent symptoms may subside, long before the disease itself is completely removed. When the attack is sudden, and accompanied by severe acute symptoms, the utmost promptitude is requisite, to meet the disease by corresponding remedies. But in ordinary cases, with less urgent symptoms, it is much better to clear out the bowels, and leave the patient a few hours without food, except tea and a cup of gruel; that we may carefully examine the state of the liver when the intestines are empty, so as to ascertain as accurately as possible the nature and degree of the existing disease, and decide on the treatment requisite. The evils arising from a little delay in commencing the more active system of treatment, are of infinitely less importance, than those which depend on the premature cessation of appropriate remedies. I am quite certain that a large number of cases may be cured, after much serous effusion has taken place into the structure of the liver; and we shall find no difficulty in acknowledging the degree of perseverance requisite, in conducting the latter stages of the treatment, of such

cases, if we advert to the ecchymosed state observed in some of the post-mortem examinations recorded in this chapter; and the circumscribed softening of the texture in some parts of the liver, in others.

ABSCESS OF THE LIVER.

Rigor is by no means a general attendant on the formation of abscess in the liver; in the majority of cases which I have seen, it did not occur. But I believe tumefaction, fulness, and morbid tension at the epigastre, or hypochondre, may be always detected long before an abscess has formed. When an extensive collection of matter takes place, the pulse almost always rises above 100; and distressing Dysentery is frequently present. If the abscess be situated near the stomach, vomiting often occurs. Many patients, having extensive suppuration in the liver, die before the abscess bursts.

The distinct and prominent intumescence, which occasionally exists, and after a time subsides; leaves us reason to believe that very advanced stages of hepatic abscess, in persons of sound constitution, are sometimes cured by absorption. This opinion is farther confirmed, by the marks like cicatrices, which we see occasionally

on the surface of the liver, in such unquestionable shape, that we cannot help believing that small abscesses very near the surface of the liver, are frequently absorbed: the collapse, and cohesion of the sides of their cavities, forming these marks. Equally unequivocal appearances, of condensed fibrous structure, are occasionally met with, more deeply in the substance of the liver: and in those cases where reference to the successful treatment employed during former attacks of acute disease, is accessible; we find that a *steady, active, and prolonged, antiphlogistic treatment* had been followed. I fear that patients in the advanced stage of severe acute disease of the liver, are sometimes lost, because we hope we have done enough when the symptoms first subside; but treatment ought to be persisted in much longer. When patients apply for advice too late, or when from any other causes the treatment fails to subdue the inflammation, and suppuration has taken place; we sometimes see persons survive that dangerous crisis, and the contents of the abscess are evacuated: a few of these patients may still recover, under a careful and discriminating treatment.

OBS. XXXIX.—Mr. J. M. aged 42, a strong man, of light complexion, but now somewhat emaciated, (who had resided eight years, in various parts of India,) came under my care on the 19th

October, 1830. He stated, that his bowels had been disordered ever since the beginning of the month, with frequent calls to stool; the evacuations scanty, and though loose, voided with some difficulty, as if more fæces remained: they were sometimes dark, and at other times of a rhubarb color. For the five days before he sent for me, the stools had been gradually becoming more frequent, and attended with tenesmus: and he was so much distressed by frequent calls to stool, on the previous evening, that he took 30 drops of laudanum without advice; but had passed a miserable night, rising above 30 times to stool, and voiding scanty, reddish, orange-colored evacuations, mixed with slime. He had a flushed face, and hot dry skin. Pulse 102, and full, the tongue much loaded with moist grey mucus. The belly was rather retracted, whereby an enlargement of the liver was easily perceptible, and pressure at that part gave pain; but there was some morbid sensibility on pressing over any part of the abdomen.

I saw him first at 8 A. M. and took lb. iiss. of blood from the arm, immediately, and prescribed

Calômel. Extract. Colocynth. Comp. āā ð ss. in Pills,
followed in 4 hours by Pulv. Jalap. Comp. 3 i.

On visiting at 4 P. M. the pyrexia was very little abated, the urgent calls to stool nothing easier: the blood exceedingly buffy, and cupped.

V. S. repeated to lb. ii.

Twenty leeches were applied over the tumor of the liver, and the Calomel and Colocynth Pills repeated.

October 20th.—Very little easier, enlargement of the liver not abated, evacuations more copious, but of reddish color, like a paste of flour and water tinged with rhubarb; pulse still 102, but much subdued in force; skin dry and hot; tongue loaded with grey mucus; he feels much exhausted.

Apply 30 leeches over the tumor of the liver.

R. Infus. Sennæ. Comp. \mathfrak{z} ii.

Magnesiae Sulphatis.

Sodæ Sulphatis \mathfrak{aa} 3 ii. misce,—to be taken at 6 A. M. and repeated at noon.

Vesper.—Less pain, and he goes less frequently to stool; evacuations still scanty, and of the same color, mixed with some mucus. Enlargement of liver not reduced; pulse 104, and rather more full: he feels very weak; skin hot, but perspiring; mouth sore.

Apply 12 leeches to the liver.

R. Extract. Colocynth. Comp. \mathfrak{D} ss.—Pil. Hydrarg. gr. v. In three pills at bed-time.

Oct. 21st.—Many ineffectual calls to stool during the night, and there is extreme anxiety ; he feels exceedingly weak, and is perspiring, but the skin remains hot ; pulse 106, his firmness of mind begins to fail, and he is with difficulty persuaded to go on with medicine.

R. Extract. Colocynth. Comp. \mathfrak{D} ss.

Pil. Hydrarg. gr. v.—in three pills, at 6 A. M. and repeat at night.

Oct. 22nd.—Stools more copious since midnight, and contain above a pint of pus, mixed with some florid blood ; swelling of right hypochondre decreased. He is much lower, and weaker, and cannot rise to stool ; pulse soft and feeble. Morbid heat of skin subsided in great measure, there is a circumscribed hectic flush of cheeks.

R. Pil. Hydrarg.—Pulv. Ipecacuanhæ.

Extract. Gentian.—Extract. Colocynth. Comp. $\mathfrak{a}\mathfrak{a}$ gr. iii. misce, et divide in Pil. ii.—Capt. hujusmodi Pil. ii. sexta quaque hora.

Oct. 23rd.—The first stool after daylight this morning, contained above 6 oz. of white thick slimy pus ; he had not above ten evacuations during day and night, of the same reddish color, very little tinged with blood : some pus is seen in almost every stool. The whole of the matter voided during the last 24 hours, is computed at

17 ounces, there is less heat of skin, and his thirst is abated ; he is weak, fretful, and desponding.

Pills repeated every six hours as yesterday.

Oct. 24th.—Liver softer and less tumid, otherwise not much change since yesterday ; the pills produced nausea, and he does not appear to have derived much benefit from them : he voided about eight ounces of pus little tinged with blood, in the last 24 hours. Has still a hectic flush in the cheeks. Medicine omitted.

Oct. 26th.—Tongue cleaner, and tumefaction of the liver, hardly perceptible ; countenance sunk, and there is a slight flush in the cheeks. Pulse 86, and soft, he perspire very freely. Had five stools in last 24 hours, and passed only one and half ounce of grey feculence, and not less than ten ounces of pus, in two of the stools ; it was much tinged with blood. He has only taken tea, thin gruel, and toast-water, up to this day ; but now feels hungry, and desires to eat bread and milk, which is permitted.

R. Infus. Gentian. Comp.

——— Sennæ Comp. ãã 3 ii.

Magnesiæ Sulph. 3 vi.

Acid. Sulph. Aromat. gtt. xx.

Quininæ Sulphatis gr. iv. misce,—half to be taken at

6 A. M. the rest to-morrow.

Oct. 28th.—He is much better, but very weak, and still has a slight flush of the cheek ; had six stools of dark-grey color, and has passed some pus with almost every stool.

Medicine continued daily as above.

Nov. 8th.—Discharge of pus ceased yesterday ; he has had four rather scanty stools of dark-brown color, and the consistence of paste.

To take 2 oz. of mixture as above, every morning.

R. Pil. Hydrarg.—Extract. Colocynth. Comp. āā gr. ʒ. every night at bed time.

This medicine was continued for a week. The patient gradually recovered, and remains well.

OBS. XL.—John Goddard, a delicate and pale lad, of light complexion, aged 18 ; arrived from England in 1827. He had occasionally voided portions of tape-worm with his stools, for above a year. About the middle of September he first experienced pain at the upper part of his belly, which was ascribed to his old complaint, and he took a strong dose of calomel and jalap, which he stated, had the effect of expelling a large quantity of the tape-worm, in separate pieces. A second dose of the same sort, and then a dose of oil of turpentine were afterwards taken, but no more of the worm observed. After

this his bowels became very costive, and he experienced a dull heavy pain at the right side, which he supposed depended either on some remains of the worms, or on constipation; therefore he was satisfied with taking such aperient medicines as served to affect the bowels: and he remained without any proper treatment for the affection of the liver until the 21st October, 1827, when I was requested to see him. He was then pale, weak, and emaciated, prone to constipation, and subject to occasional cold perspirations: the tongue white and moist; pulse 88, and soft. On examination, the liver was found much enlarged, pressure over the right hypochondre caused pain; and he complained of rheumatism in the right shoulder: according to his account, this was at least 22 days from the time he first noticed pain in the right side.

Sixteen leeches were ordered over the region of the liver, every morning.

Pulv. Jalap. Comp. 3 i. to be taken at daylight.

Extract. Colocynth. Comp. gr. v.—Calomel. ʒ ss.

—— Hyoscyami gr. iv. in Pills every night.

On the 24th October, he was made very faint by the leeches, therefore only 10 were applied daily, afterwards; and the former medicine was continued: by which, five or six free stools were produced daily.

Oct. 27th.—Mouth sore, but no material amendment in his condition; and he did not appear much weakened by the treatment, which was continued; but only six leeches applied to the epigastre daily.

Oct. 29th.—Œdema of the feet and scrotum; pulse 108, soft, and weak; enlargement of the liver more prominent at the epigastre, and the cartilages of right false ribs are less raised up. A blister was applied to the epigastre, and kept open. His former medicine omitted, and he took Pulv. Rhei.—Sal. Polychrest, āā ʒss. every morning. Diet had been previously restricted to tea, bread, and sago; but he was now directed to take a tea-cupful of milk, boiled, and thickened with a little flour, night and morning; and half a pint of soup at noon; and he was desired to remain very quiet. It was evident that a large abscess had formed in the liver, and his case was viewed with despair. His bowels were moved always once freely, and two or three times more scantily, every day by the medicine.

Nov. 14th.—He remained with very little alteration till this morning, when he awoke with a sense of great faintness and nausea; attended with thirst, flushed face, sense of flatulent distention of the belly, and frequent desire to go to stool: but he passed only a

little reddish slime, until half past 10 o'clock, A. M. when he had a free evacuation, which was found to consist of blood and pus, the whole supposed to be near lb. iss. After this he was very faint all day; had slight palpitation at the heart, and perspired much. Tumor at the epigastre considerably subsided. The blister was allowed to heal; the powders of Rhuburb and Sal-polychrest were omitted, and he was ordered to take

Extract. Colocynth Comp.

——— Hyoscyami.

Pill. Hydrarg. āā gr. iv. every night at bed time.

Nov. 18th.—He is very pale and weak, there is rather more tension at epigastre than usual, with flatulence and nausea; the quantity of pus in the evacuations did not exceed five ounces yesterday: and this morning there is only a scanty, loose, grey evacuation, with a little slime.

Vesper.—Copious evacuation of pus, tinged with blood since noon, and diminished tension at the epigastre; he seems much weaker. Pills continued every night.

R. Pulv. Rhei.—Pulv. Colombo āā ʒ ss. in
Aq. Cinnamon ʒ i. every morning.

Nov. 27th.—Œdema of the feet and scrotum subsided, and health improved; the quantity of

pus in the stools gradually decreased, and for the last two days ceased altogether. He is pale and weak ; but not very much emaciated. There is still some hardness at epigastre, and towards the right side, but no prominent swelling, as there was before the abscess burst : pressure over the part hardly causes any uneasiness ; mind tranquil, and appetite tolerable ; he has always had two or three stools daily. Medicines continued.

Nov. 30th.—Health slowly improving. Embarked for Europe this day.

The proportion of patients who recover, after the formation of an extensive Abscess of the Liver, in Bengal, is lamentably small. I have as yet seen only one case in which abscess of the liver was opened by an incision. In that case the opening was made near the epigastre ; the patient recovered, and lived by no means a temperate life afterwards. On his death, which occurred many years after, from causes unconnected with liver affection : I opened the body, and found adhesions of the convex surface of the liver anteriorly, and an extensive thick fibrous structure, occupying a space at that part, of about three inches in extent, and nearly half an inch thick. The liver rather small, of lurid brownish red color, slightly mottled internally ; the

gall-bladder small, and covered with a dense false membrane.

Though we have unfortunately too many examples of hepatic abscess in Europeans, going on to a fatal termination : the ordinary course of private practice, can rarely afford occasion to observe the morbid changes which take place at the incipient stages of the disease. But the practice of a large Hospital, in the course of many years, shows instances of patients dying from Fever and Dysentery, or from wounds and accidents, during the progress of incipient liver diseases ; such as we have reason to believe often lead to the formation of extensive abscess. Observations of the morbid conditions which exist in the liver, at the early period of its most important acute diseases, cannot fail to impress us with the impossibility of curing Hepatitis in two or three days ; and will at once show the hazard of omitting to pursue a careful treatment, and to enjoin proper diet and domestic care, for a sufficient period, to give reasonable prospect of restoration to health, in all those cases where we are certain Hepatitis has existed. Being satisfied of the accuracy of our diagnosis in the first instance, it will need little argument to convince any practical man, that the severer symptoms of hepatic disease may be moderated, long before the internal parts are restored to a healthy condition.

A memorandum of the following case may be worthy of notice, as an instance of the early stage of that condition which terminates in abscess.

OBS. XLI.—W. Green, *Æt.* 38, of dark complexion, a tall and large sailor, of the ship *Moir*a, recently arrived from England; was sent to Hospital on the 30th May, 1830, in the evening. He had been laboring under Dysentery of the severest description for 14 days. The belly flat, inelastic, and tender if pressed; the patient much reduced, and pyrexia moderate. Pulse varying daily from 96 to 116. He died in 52 hours after admission.

On Dissection—The liver was found slightly enlarged, of rather pale color, its texture soft and unctuous. An ash-colored tumor, half the size of a walnut, was observed imbedded in the substance of the liver, near the ligamentum latum hepatis: on cutting across this tumor, a teaspoonful of very thin subalbid fluid was found in its centre; and the sides of the cavity in which the matter was contained, were of a pale grey color, and much softened to the extent of half an inch. Colon thickened, somewhat contracted, and its interior covered with numerous large grey ulcers, with elevated rough surfaces.

OBS. XLII.—Charles Ambrose Craggs, *Æt.* 17, a sailor of the ship *Sir Thomas Munro*, a deli-

cate lad, of light complexion, one month arrived from England: has lived on board ship. Had been ill 14 days, with a very distressing purging, before he was sent to Hospital; and had taken no medicine, although he had as many as 20 stools per day, mixed with blood. He was admitted into the General Hospital on the evening of 24th June, 1830; complaining solely of the dysenteric symptoms: but on examination, a slight degree of fulness across the epigastre was evident, sufficient to afford room for the greatest apprehension of advanced hepatic disease; there was very little pyrexia, pulse above 100. He was bled to lb. iss. and 16 leeches were applied to the scrob. cordis the same night: ten grains of calomel with four of compound extract of colocynth, and as much extract of hyoscyamus were given at bed-time; and an ounce of castor oil, next morning.

June 25th.—Blood taken last evening, florid and not buffy, he was almost all night on the close stool; the evacuations about $2\frac{1}{2}$ pints, of a dark-green fluid: pulse 102; tongue rather dry, and little furred; muscles of belly tense. Sixteen leeches were applied, and as many the next day, which caused him to be very low, and faint; and he was covered with a profuse cold perspiration. A blister was now applied to the liver, and a smaller number of leeches round it. The

enlargement of the liver appeared reduced by these means, the tumefaction varying a little from day to day, sometimes hardly perceptible; but the muscles of belly remained tense. He became weak, languid, fretful, and desponding: the stools frequent and watery, sometimes tinged with blood, often nearly black. He sunk, and died on the 13th July.

On post-mortem inspection; the subject was much emaciated, and some fulness of right hypochondre extending across towards the left side was evident externally.

The lower portion of the right lung was of morbid red color, and adherent to the diaphragm. Liver enlarged, the convex surface of its right lobe slightly adherent to diaphragm; on separating which adhesion, a large abscess containing nearly two pints was opened, most of its contents were puriform, the rest a brownish serum. Left lobe adherent to the stomach, and there was an abscess in this part of the liver, containing five oz. of glutinous, brown, thick fluid; the sides of the cavity were in a sloughing state. Gall-bladder of pale color, much shrunk, and flaccid, contained about 3 iss. of opaque orange-colored, oily fluid. There were numerous small ulcerations over the mucous membrane of the colon; the internal coat of the rectum exhibited morbid vascularity, thickening, and slight appearances of abrasion.

Although the frequent calls to stool, were almost the only symptom of which this patient complained, there never was any great quantity of blood or slime voided after he came to Hospital; on many days, little or none of either. There was no rigor at any period of the disease; but the local enlargement, tension of the muscles of belly, rapid pulse, and irritation of the bowels, left no room to doubt what sort of disorganisation was in progress. I know not if suppuration of the liver, *with sloughing of the sides of the abscess*, be capable of recovery. This poor lad had not discretion, and resolution to submit to that system of abstemious diet; with the aid of which, only, we can expect that the best directed treatment, may sometimes effect the removal of incipient abscess of the liver: his ingenuity was exerted in procuring undue quantity of food, and prohibited articles were observed in his stools. Those who are disposed to ascribe tropical Dysentery, chiefly to disordered state of the bile; and the dark or black color of the alvine evacuations generally, to cystic bile; should compare the color of the stools during this lad's disease, with the appearance of the gall-bladder, and its contents as observed on dissection.

The following is one of those rare instances which I have met with, wherein the pulse was for several days below 90, though an abscess had formed in the liver.

OBS. XLIII.—H. King, *Æt.* 24; a sailor, two years in India: had ague in China in 1829, and was afterwards in good health, until his return to Calcutta in 1830. He had an attack of continued fever, and was treated in Hospital from 23rd April to 13th May: he was then bled from the arm, had leeches to the head, and was purged freely. He had been convalescent 17 days before leaving Hospital; but unfortunately instead of joining a ship, he went and lived at a punch-house for 32 days, during the last four of which he was exceedingly ill, with pain in the belly, and round the loins. On this second admission into Hospital on the 14th June, he had slight pyrexia, an enlarged liver, and pulse at 112. He was treated with repeated V. S. leeches, and the usual course of calomel, and purgatives; and subsequently blisters were applied. He became weak and fretful, the liver remaining large; and he died on the 25th June. From the 16th to 21st June, the pulse as he rested in bed, never exceeded 86, except on the evening of the 19th, when it was 110, and on the evening of 20th, 92. He never had any rigor, or any Dysenteric symptoms.

On post-mortem inspection, the subject was found emaciated; right side tumid. The right lung was adherent to the upper surface of diaphragm. Liver much enlarged, and the convex portion of the right lobe adhered to the

diaphragm; on separating this attachment, a large abscess was opened, which extended to the centre of the liver. The gall-bladder was contracted, and flaccid, covered with a false membrane, and its base adherent to the contiguous part of the colon.

OBS. XLIV.—G. N——. A stout, tall, and muscular seafaring man, of light complexion, 27 years of age: arrived in India in December, 1827, after a very long voyage from Europe; and lived temperately on board ship, in the river. Was taken ill on the 23rd January, 1828, with ardent fever, anxiety, tension, and fulness at the epigastre; and pain over the whole right side of the chest, and belly. He was freely purged, and bled four times in the first four days. On the 5th day he had no treatment, but a scruple dose of calomel with two grains of opium at bed-time; a purge was given next morning, and 30 leeches were applied. By these means the pain in right side was moderated, but not removed: the pulse remained full, skin dry, tongue much loaded with white mucus. An attempt was now made to salivate the patient by six or eight grains of calomel every six hours. This was repeated daily, on 29th, 30th, and 31st, without benefit; some pyrexia, and a dry hot skin continuing. On the 1st of February the same symptoms continued; the pain in the side was severe

and increased by respiration ; 30 leeches were then applied to the side, and the small doses of calomel repeated, but without effect. On the 2nd February, pain and pyrexia were unabated, and a blister was applied; various palliatives were used from this date till I was first called to visit this patient on the 10th February. He was then suffering from a troublesome cough, with copious puriform expectoration, of a yellow bilious color, and bitter taste. He gradually sunk under this sort of hepatic cough with bilious expectoration, and died on the 28th February.

On dissection, an enormous abscess of the right lobe of the liver, was found to have opened through the diaphragm into the right lung. Part of the right lung was adherent to the upper surface of the diaphragm, and in a state of induration, and suppuration. The early history and treatment of this case, were put into my hands, by the Medical man who requested me to see the patient with him ; and he concurred with me, in considering it a good example of the inutility of even copious V. S. in a severe case of Hepatitis; unless we persist in the blood-letting, with corresponding accessory treatment of every sort, until the symptoms of inflammation are entirely subdued. The patient was lost from the moment that daily detraction of blood, and active purging were omitted. The neglect of V. S. on the

five last days of January, while acute symptoms remained; the attempt to mercurialise the system, by small doses of calomel; and the application of a blister on the 2nd February, while pyrexia and severe acute symptoms still existed; were all injudicious.

The obstacles to the accurate and satisfactory treatment of acute Hepatitis, and of severe acute Dysentery, on board merchant ships in the river Hooghly, during the cold season, are almost insuperable.

The danger of omitting to employ appropriate diet, during the progress and treatment of severe acute Hepatitis, need not be better exemplified, than in the following case. The patient, though tolerably submissive to medical treatment in other points, was totally intractable on the subject of diet.

OBS. XLV.—D. Dominique, *Æt.* 44, a stout French sailor, of dark complexion; a hard-working man, of regular habits, and good conduct; recently arrived from France, and had been living on board ship; when he was taken ill on the 27th November, 1830. The surgeon stated his complaints to have been at first Fever, and then in succession Gastro-Enteritis, and Hepatitis; for which he had been treated on board ship until the 4th December; and in that interval had

40 leeches applied to the belly, was bled from the arm to *eight ounces!!!* and used purgatives. On arrival at the Hospital, on the forenoon of 4th December, he appeared exceedingly exhausted and fatigued by the removal, and he was very pale: his pulse was rather weak, tongue white, belly tense, liver very hard, and he had a troublesome cough. The bowels were costive.

He was washed with hot water, while he remained in the recumbent position; and had an Enema. In the course of the day; he took \mathfrak{a} i. of calomel, with \mathfrak{a} ss. of compound extract of colocynth; followed by one drachm of compound powder of jalap: which produced only two stools. After a few hours rest, his pulse had risen slightly, and though there was but little morbid heat, it was considered requisite to take 20 ounces of blood from the arm, and he had

Calomel.—Extract. Colocynth. Comp.

Pulv. Scammon Comp. $\bar{\mathfrak{a}}\bar{\mathfrak{a}}$ \mathfrak{D} ss.—which were given in Syrup, as he refused to take any more pills.

Dec. 5th.—He was purged freely, and felt better; cough moderated; belly generally softer, but the right lobe of liver was hard, large, and tender if pressed. Pulse soft, and natural.

R. Calomel.—Extract. Colocynth. Comp. $\bar{\mathfrak{a}}\bar{\mathfrak{a}}$ \mathfrak{D} ss. at 7 A. M.

Ripet. V. S. ad \mathfrak{z} xxii.—in the morning.

Apply 12 leeches to the region of the liver, at noon.

At 4 P. M.—Had only one scanty and very light-colored stool, after which he was seized with spasms in the belly, and some symptoms of Cholera, attended with great anxiety, a soft pulse, and the tongue was *cool*. Was ordered calomel ʒ i . Opii. gr. ii. after which he became easy, and slept well all night; the leech bites were bleeding freely next morning: the patients tongue was warm, moist, and white; there was no pyrexia, and the apprehension of Cholera had subsided. Leeches were applied to the belly daily for a week: and active purgatives with calomel, were taken every day.

Dec. 13th.—The belly had become less tumid, and softer; the tumor of liver more distinct and circumscribed; the mouth was sore, and he felt weaker. The pain of right side was subdued; (at least he did not acknowledge any pain on pressure,) the enlargement of the liver remained, but it was softer. After this a blister was applied to the right side, which was kept discharging by the savine cerate; a small number of leeches was applied daily to its surface: and liniment. hydrarg. was rubbed over the side of belly and chest, where the blister had not reached.

The patient now became low-spirited, said he was determined not to die of debility, and that unless unrestricted quantity of food were allowed, he had resolved to procure it. In this he was as

good as his word, for by the aid of his messmates and others, he was well fed, and had no wish to conceal that fact. The first unfavorable symptom which arose from improper diet, was a return of cough; then gradually increasing emaciation, and a sharpness of visage; followed by dysenteric symptoms, with blood in the stools. He lost all hope, and refused to take any remedies: the evacuations assumed the appearance of dark-brown water, mixed with blood, and were of a horrid putrid odor; he was unable to rise to stool. Still the pulse did not exceed 86 when he was in the recumbent posture. He died on the 8th Jan. 1831.

Dissection, nine hours after death.—Subject emaciated; universal adhesions of the right lung, apparently not recent. Liver much enlarged, and of pale drab color, its structure indurated; convex surface of the right lobe extensively adherent at the space between the 7th and 8th ribs: and at that part contained a large abscess, very near the surface; the margin of the right lobe adhered to the colon. There were numerous small ulcers in the colon and rectum. Mesenteric glands enlarged; cellular texture at the root of the mesentery consolidated.

It is not common to find abscess of the liver, as in this case, combined with pale degeneration.

Up to the 13th December, there appeared room to hope that the disease might have been cured, by persistence in a correct treatment, so as to promote absorption. In all cases of inflammatory congestion where there is interstitial deposite; and in cases of incipient abscess, where patients possess tolerable stamina; we can hardly advise too spare a diet: bread and water in small quantity, are sufficient while any pyrexia exists; after that is subdued, tea with a limited quantity of bread, not exceeding lb. ss. daily, and a small cup of gruel once a day; will assuredly help us to cure more bad cases, than any ample allowance of food. We are precluded from allowing any increase of diet, while the disease is tending to abscess; or while we can hope in any degree to aid the removal of the complaint, by persisting in restricted quantity of food. Small as the hope of cure may be, from absorption of an incipient abscess; I hold it to be infinitely greater than any chance of recovery, after the bursting of hepatic abscess; even in the most favorable direction. Patients of bad habit of body, with scorbutic diathesis, or having other degenerated condition of the blood; are difficult to manage at any stage of the disease: such subjects are exceedingly unlikely to recover after abscess has formed.

Sometimes a more slow and insidious disease of the liver, goes in to suppuration; with but few

indications to warn us of the patient's danger. The continuance of slow fever, with slight habitual diarrhœa, and tension of the belly generally ; or tension of the recti muscles only ; should make us very vigilant in our examinations, and active in our treatment : as we know how frequently liver abscess in Bengal, runs its course without active pyrexia, and with but little pain at the part affected.

OBS. XLVI.—On the 9th October, 1829, Hollman came to me for a prescription ; in consequence of a “ cold and head-ache,” with which he had been suffering for six days. He said his illness was caused by getting his feet wet. He was rather a spare subject, of middle size, and light complexion, 37 years of age ; 18 of which he had resided in India. He led a sober active life, as superintendent of a place that was not laborious, but required his being out early in the mornings, and he frequently got his feet wet, in the dew on the grass.

He had taken two doses of salts, and bathed his feet in hot water at bed time, for several nights, with no benefit, before he came to me : he had then no pain, except in the forehead, and but little pyrexia ; there was much elastic tension, and general fulness at the Epigastre, but he had

no pain at that part on pressure, and there was no pain in the right shoulder. The tongue was moist, and loaded with yellowish mucus ; pulse 92 and soft ; skin always dry, the urine very high-colored, and he usually had some exacerbation of fever in the evening. He refused to be bled from the arm, therefore 30 leeches were ordered to the liver, and to be repeated next morning. Ten grains of calomel with four of extract of hyoscyamus, and as much compound extract of colocynth, were ordered at bed time every night ; and a brisk cathartic of senna and salts in the mornings. I saw nothing more of him for some days, he afterwards told me the medicine was taken twice, and he only applied 20 leeches once ; which were put to the temples, as he asserted he had no fear of liver disease, and felt no pain in the side. At the end of two days, he went out, and attended to his business ; feeling as he said, only the remains of his cold. On the 16th October, he had a return of fever, preceded by much chilliness, but no rigor : pulse 92, and rather hard. He had frequent calls to stool, the evacuations were scanty, and of dark color : there was now an exacerbation of fever every evening, but he was never entirely free from pyrexia. The elastic tension at the epigastre was rather increased ; and he felt some difficulty of breathing. Thirty-six leeches were now applied to the epigastre. He had æi. of

calomel at bed time, and a purgative of compound powder of jalap next morning; which operated freely, but the pyrexia continued, and his tongue was loaded with a thick, moist, white mucus. On the 17th October, thirty more leeches were applied to the right side, and he had \mathfrak{z} i. of calomel, with extract of hyoscyamus and colocynth, each four grains, at bed-time.

Oct. 18th.—The exacerbation of fever last evening, was rather less than before; but he had a very restless night. There is some pyrexia this morning, with a loaded moist tongue, high-colored urine, cough, and anxiety; he is obliged to rest with his head and shoulders much raised, and is troubled with flatulent eructations; the elastic tension across the epigastre continues; but he says pressure over the liver gives no pain. Pulse 96, and weaker.

Apply Twenty leeches to the Epigastre.

R. Pulv. Jalap. Comp. \mathfrak{z} i.

——— Scammon. Comp. (Ph. Ed.) \mathfrak{z} i.

Aq. Font. \mathfrak{z} iss. misce. To be taken at 7 A. M.

Olei. Ricini. \mathfrak{z} i. at noon.

Repeat the Calomel, Colocynth, and Hyoscyamus, at bed-time as last night.

Oct. 19th.—No material change, and he does not appear much weaker; tongue cleaner; pulse 104, and rather fuller since the leeches yesterday.

He has been freely purged; and the stools are of dark-grey color.

Apply Twelve leeches to the Epigastrium.

All medicine of yesterday repeated.

Oct. 20th.—He is not much better; pulse 104, and weaker; the fever is not very ardent, and the evening exacerbation is less distinct. He has been frequently purged, evacuations copious, and a dark brown water. The sense of flatulence, and the tension across the epigastre continue; he asserts that he has no pain. Mouth affected by mercury; the gums are very painful and red, but there is no free ptyalism.

R. Pil. Hydrarg.

Extract. Colocynth. Comp. ãã gr. vi.

—— Hyoscyami. gr. iii. ft. Pil. ii.—two pills at bedtime.

Oct. 21st.—Four stools, watery and dark colored; no material change in other respects. Repeat the above pills, twice a day.

Oct. 22nd.—He is more purged, but the stools are of the same sort; his mouth is more painful. Pills repeated as yesterday.

Oct. 23rd.—There is some increase of pyrexia, and dryness of skin since last night; he is pale,

and very weak ; stools as above ; pulse 112, and rather fuller ; other symptoms not abated.

Apply ten leeches to the Epigastre.

R. Calomel \mathfrak{D} i.—Antimon Tart. gr. ii.—Cretæ. Præparat. \mathfrak{z} ss.—Sacchari.—Pulv. Gum. Acaciæ. āā \mathfrak{z} i. misce, et divide in chart. x. One powder every 3 hours.

Pulv. Jalap. Comp. \mathfrak{z} i. early to-morrow.

Oct. 25th.—He was freely purged, and feels weaker ; the powders were repeated yesterday, every three hours ; a slight morbid heat, with dryness of skin continues.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v.

Pulv. Jacobi. gr. iii. misce, fiant Pil. iii.—*M.* et v. quotidie repetendæ.

Oct. 28th.—No alteration, except that he is too much purged, and the mouth sorer ; some pyrexia remains ; pulse 120. Medicine omitted.

Oct. 31st.—No material change, except a slight increase of evening pyrexia ; pulse 116. He had six scanty watery dark-brown stools in 24 hours ; mouth still severely affected ; says he has no pain ; tension across the epigastre rather increased.

Apply a Blister to the Epigastre.

R. Magnesiæ. Sulphatis. \mathfrak{z} ii.

Magnesiæ. \mathfrak{z} i.—Aq. Menth. Pip \mathfrak{z} iss. misce.

To be taken at 7 A. M. and repeated at noon.

November 1st.—The stools are more copious, watery, and of darker color: tongue loaded in centre with brownish mucus, its edges are a morbid red. Repeat medicine as yesterday.

Nov. 2nd.—Purging of the same dark watery fluid, more troublesome; he persists that he has no pain. Tension at epigastre unabated.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. vi.
Extract. Hyoscyami. gr. iv.—misce, fiat. Pil. ii. n. s.
Magnesia and Epsom Salts as before, in the morning.

The pyrexia remained in slight degree, with a brownish tongue, which was dry in the centre, moist and red at edges; he gradually became weaker, and died on the 12th November, 1830.

On Dissection, the liver was found enlarged, its convex surface covered with a thick coat of coagulable lymph, and it contained two large deep-seated abscesses; the left lobe adhered to the stomach, the right to colon. There were numerous small circular ulcers in the colon.

This patient was a man of sober habits, and excellent conduct; his life was lost from want of V. S. on the 9th October, and two or three subsequent days. He had an idea that at his time of life, and after so many years residence

in India, with sober habits of living, he was not liable to liver disease ; therefore he would not at any time, submit to be bled : and after applying leeches once to his head, he attended to his daily business. He never acknowledged any pain on pressure at the epigastre ; but it is hardly possible to believe that so much superficial inflammation at the convex surface of the liver, with fulness at epigastre, could have existed without morbid sensibility on pressure. He was not an Hospital patient.

OBS. XLVII.—A medical man, 27 years of age, of dark complexion, and rather stout make ; arrived in Calcutta, in August 1827. He was habitually temperate in eating and drinking, but utterly careless of his health in every other respect. He had been used to field sports at home, and tried the same amusements here, in the most imprudent manner ; going out many miles before day-light, in the cold foggy mornings of November, and often riding and walking till near mid-day, when the sun was very hot : going sometimes half the day without food. He had several slight feverish attacks in the latter end of November, which were but indifferently moderated by saline purges. He continued his sporting excursions, and in the beginning of December, had a return of feverish attacks of increased severity ; there was now constantly some slight pyrexia present, which

however did not prevent his persisting to go out as usual : and he took some hot brandy and water at night, to check a troublesome purging.

He applied to me for advice on the 14th December, and gave the above history of his proceedings. There was then much fever, pulse 112 and full; face flushed; tongue loaded, brownish, and moist; urine high-colored. He was suffering from great anxiety, and pain under the right false ribs, that was increased by pressure : there was evident enlargement of the liver. He had at this time frequent stools, the evacuations scanty, fæculent, and of deep orange color, with a little slime.

He was immediately bled to lb. iiss.—and took Calomel ʒ i. with two grains of Camboge, added to Scammony, and Compound Extract of Colocynth. each four grains.

At 4 P. M. He had several copious stools, of dark-grey color, but the fever was unabated ; he was again bled to lb. iss. and ordered ʒ i. of calomel at bed-time.

Dec. 15th.—He is less feverish ; but the liver is very little decreased in size, and still pained on pressure.

V. S. ad. lb. iss.

R. Pulv. Jalap. Comp. ʒ i. at 7 A. M.

Apply 32 leeches over the region of the liver at noon.

Vesper.—He has had many stools, not very copious, but of various colors, partly of the deep orange appearance before mentioned, with some slime and blood; force of circulation much subdued, but face still flushed.

Apply ten leeches to the right side.

R. Calomel. \mathfrak{z} i.—Extract. Hyoscyami. gr. iv. fiant. Pil. ii.
To be taken at bed-time.

Dec. 16th.—Slept, and has very little pyrexia, but there is a circumscribed flush in the cheek; tongue dry, of morbid red color, not much loaded in centre. Pulse 116, rather hard, but small; tenderness on pressing over the liver unabated, and its size not much decreased; skin always dry; he suffers from anxiety, and his strength is reduced; at the same time, there is reason to fear that the acute disease in the liver is not removed.

Apply sixteen leeches over the region of the liver.

R. Calomel.—Extract. Colocynth. Comp. $\bar{a}\bar{a}$ gr. v.—to be repeated morning and night daily.

Dec. 18th.—Freely purged, stools a dark grey color; mouth sore; pulse 118. Heat of skin moderated, but a small circumscribed flush of cheek remains.

Apply a blister over the enlargement of the liver, which is to be kept open for 10 days; camphorated mercurial ointment to that part of side, chest, and belly not covered with the blister.

R. Extract. Colocynth. Comp.

——— Hyoscyami.

Pil. Hydrarg. āā gr. vi.—morning and night daily.

The circumscribed tumor of liver slowly increased; and in a few days dysenteric symptoms became very distressing, but were restrained by the usual remedies. On the 17th January another blister was applied over the tumor of liver.

January 20th.—Although there had been no distinct rigors since a very early period of the disease, it was too evident that an extensive abscess existed; while the patient's strength was declining: therefore colombo and mild tonics were administered, with the view of supporting his strength. These remedies were ineffectual. He went to sea on the 13th February; and I was informed that the abscess of the liver gradually increased in size, but had not burst on the 25th February, when he died.

There was probably an abscess in the liver of this patient, before the treatment was commenced on the 14th December; but I ascribed the want of success, principally, to his eating soup during

the use of active antiphlogistic remedies, when he should have lived on bread and water.

OBS. XLVIII.—John Thompson, *Æt.* 50, a sailor of the ship *Warrior*, rather a slight made man, of dark complexion. Has been 9 months in the Indian seas; and arrived from Batavia a few days ago. He was landed sick and sent to the General Hospital on the 20th September, 1830; having been ill 14 days with enlarged liver, for which he had been bled twice, on board ship, and had a large blister to the right side. The mouth was then sore from mercury; the liver enormously enlarged, so as to be seen as well as felt below the cartilages of the ribs; and there was reason, from the accounts of the progressive increase of the disease for 14 days, to fear that an abscess had already formed, although there was no positive proof of this. He had no pyrexia on admission, and no pain in the right shoulder; the pulse 84, was soft and rather full, and it did not exceed 86 while he was in the Hospital; until the day the abscess burst.

He was bled from the arm once on admission, and had the usual purgatives, with calomel, and leeches to the scorb. cordis and side; followed by a blister, and afterwards camphorated mercurial ointment was used: but nothing arrested the gradual enlargement of the liver, debility

increased, with anxiety. On the 29th September, at 10 P. M. he appeared very uneasy, and agitated, the pulse rose to 124; he was incoherent, the feet became cold, and the tumefaction of the liver subsided. He remained restless all night, and died at 3 A. M. On dissection, the subject was emaciated, old adhesions were observed in both sides of the chest. The liver enormously enlarged and of dark color, its texture soft, and easily torn; a large abscess at the lower edge of right lobe, had burst into the cavity of the abdomen. There were no adhesions of the liver either to the diaphragm or to other parts; there were ulcerations in the cœcum.

OBS. XLIX.—John Sticklie, *Æt.* 48, a tall thin man of light complexion; had an enlarged liver for four months, and had suffered from dysenteric symptoms during the last 23 days: therefore he was sent from his ship to Hospital, on the 25th January, 1829. He had been bled, and blistered, and had taken mercury to affect his mouth slightly, before he was landed from his ship. When admitted, he was weak and exhausted, had a dry brown tongue, pulse 116, general tension of the belly, and enlargement of the liver. He died on the 27th January. On dissection, universal adhesions were found in the right side of chest, apparently not recent; lungs not diseased. Liver large, and

slightly mottled on the surface. There were five distinct abscesses in the liver: of which, two were large, and deeply seated in the centre of right lobe; one small abscess not quite the size of a pigeon's egg, was situated near the anterior edge of the right lobe, low down at the right side; and two smaller abscesses, not half the size of a marble, were sunk just below the surface at the convex portion of the right lobe; but evident through the peritoneal coat. A distinct ecchymosed spot, the size of a small bean, was observed at the concave surface of the left lobe. Colon contracted; a few small circular ulcerations existed at its transverse portion: at which part there were also several very distinct cicatrices of large size, probably the effect of disease at a remote period. This is the only case in which I have met with the whole series of disease, consisting of ecchymosis, small abscesses, and large abscesses in the same subject. This man had never resided in Bengal: I was informed he had been at N. S. Wales, and had visited several Islands in the Indian Seas, within the last 12 months.

OBS. L.—In the only case where I have seen a superficial abscess of the liver, exactly under the ligamentum latum; the man was unable to lie on either side, but was obliged to rest on his back, with the shoulders very little

raised. This patient was an emaciated European, named Lowder; who had resided two years in Bengal, employed as a provisioner. He came to the General Hospital on the 22nd September, 1831, in the lowest state of misery and distress; having been ill with a purging for nine weeks: he went to stool 20 times per day, and voided much blood. He had tried various remedies without success; but can hardly be supposed to have followed any systematic treatment, as he said eight leeches had been applied to his belly, but he had not been bled from the arm.

On admission, he had frequent stools, and voided much blood; part of which was in coagula. His pulse was 124, and weak; hands cold; he had occasional hickup, and was very feeble, unable to rest on either side. There was a fulness at the epigastre, inclining somewhat to the right side; the rest of the abdomen was flat, and inelastic, pressure over the belly caused little pain, except at the epigastre. He continued low, and cold; without any favorable symptom, and died on the 27th September.

On dissection, numerous sloughing ulcers were found in the colon. The liver was rather larger and paler than usual, and there was an abscess under the centre of the ligamentum

latum, the size of half a large orange, there were slight soft adhesions, for the space of three-quarters of an inch round this abscess. The surface of the cavity was in a sloughing state; and the diaphragm only intervened between the upper edge of this abscess, and the pericardium. The gall-bladder was covered with a false membrane, and rather smaller than natural.

The forms of disease described in many of the foregoing examples, are with difficulty cured, even by the most active and persevering treatment. Certainly there are numerous cases in which Hepatitis is less violent in degree, and less rapid in progress: we would not expect that quite the same treatment could be required for a modified description of disease; at the same time, I would advise great caution, decision, and perseverance in the treatment of complaints which are so prone to run on to a dangerous state. I will only say that patients who ought to be cured; I fear, do sometimes lapse into a most hopeless condition, from one or other of the following circumstances:

1st. Where a system of very active treatment for acute cases, is suddenly remitted after two or three days; and at the same time a premature return to a full diet, gives rise to

vascular repletion, and increased action of the heart and arteries : causing serous interstitial deposit, and central abscess of the liver.

2nd.—When V. S. has been either omitted, or inefficiently used at the commencement of acute inflammation of the liver ; and the cure trusted to leeches and mercury ; at the same time that low diet and tranquillity in the recumbent posture have not been strictly attended to. The more urgent complaints may be moderated by such indecisive treatment ; although the disease, attended with obscure symptoms, is prolonged for several weeks ; after which an extensive abscess of the liver is almost inevitable.

CHRONIC DISEASES OF THE LIVER.

SOME of the following cases might perhaps from their long duration, and slow progress, be deemed Chronic Hepatitis : but it appears to me that many of the cases usually denominated chronic, differ rather in degree than in any other essential, from the acute disease ; and require more perseverance in the use of remedies ; although the same active treatment is not necessary as in acute cases. In fact our distinct views of liver disease, and satisfactory modes of cure, refer almost entirely to the acute forms ; and as we lose sight of those, the management of the disease becomes vague, and uncertain.

Some persons lose their health in Bengal in a very gradual manner, becoming emaciated, and having returns of fever for a few days, once in two or three weeks; they then suffer from slight pyrexia almost every day, attended with more or less of diarrhoea, and followed after some weeks by hectic, and quick pulse: they very often die from abscess of the liver, which is attended with little pain during its progress. The muscles of the abdomen in these cases, are usually somewhat tense, especially the right rectus; the belly is frequently not tumid, and a careful examination detects only a trivial enlargement of the liver.

In the two following cases, we may be inclined to believe, that there was some slow inflammatory condition of the capsule of Glisson, the gall-bladder, and of the adjacent part of the liver; connected with disorder at the duodenum. This opinion of the nature of the disease, would arise from considering the exact situation of morbid sensibility when pressure was made over the right hypochondrium; (the pain being always fixed in the same spot, and of circumscribed extent,) connected with some of the other attendant symptoms. Cases nearly similar to these, are sometimes attacked with pain extending to the top of the shoulder, and lower angle of the scapula; and they are occasionally followed by abscess of the liver.

Obs. LI.—A gentleman, aged 33 years, of dark complexion, active habits, and very temperate in his living, four years resident in India; applied to me on the 5th February, 1827, for advice, on account of a fixed pain in the region of the gall-bladder, attended with irregular state of the bowels. He had generally a diarrhoea, the evacuations for the most part dark, fluid, frequent, and scanty; occasionally there was a suppression of stools for a day or two, and then the looseness returned. There was a slight degree of feverishness constantly present; marked by thirst, a frequent pulse, and white furred tongue: his appetite was indifferent, food always produced uneasiness, and sometimes nausea; a considerable degree of emaciation had gradually taken place.

These complaints were of 16 months duration, he had been several times under the influence of mercury, had used leeches, and the side had been blistered many times; but without benefit. Some of his friends despaired of his recovery in India, and others tried to persuade him that the pain in the side was *rheumatic*!! They all acknowledged that he had been gradually wasting in strength for many months, and was now much altered in appearance. On examination, I found a distinct tumefaction just below the centre of a line drawn from the umbilicus to

the right nipple; and pressure at that part, or holding the body very erect, caused pain. It was evident that he was suffering from a turgid state of the gall-bladder, with some inflammatory condition about the capsule of Glisson; probably attended with slight and circumscribed inflammation of a portion of the liver. The inefficacy of his former treatment appeared to me to have depended on want of sufficient perseverance in local blood-letting, while more food had been allowed than was consistent with beneficial operation of the medicine. He was therefore restricted to tea, bread, and toast-water. Eight leeches were applied over the region of the gall-bladder daily, for four times. He was ordered six grains of compound extract of colocynth, with four of calomel, and four of extract of hyoscyamus every night, and a drachm of compound powder of jalap every morning. Quietness in the recumbent posture was enjoined, for the purpose of not exciting frequency of pulse, and to prevent his feeling the debility arising from low diet.

February 9th.—He has had from three to five copious stools every day, and is certainly less feverish; his tongue is cleaner; morbid sensibility in region of the gall-bladder decreased. The same medicine was ordered to be repeated daily; eight leeches were applied to the seat of the pain every 2nd day; and he was allowed a tea-cupful of gruel daily at noon.

Feb. 21st.—Has had four or five free stools daily; evacuations of lighter color: mouth slightly affected by calomel. The pain at right side very materially decreased; the habitual febrile state has subsided; his strength does not appear much lowered by the treatment, and he is inclined to eat, if allowed. A small blister to be applied over the pained part of the side, and kept discharging by savine dressing. The former medicines and leeches were now omitted, and he was ordered to take

Extract. Colocynth. Comp. gr. vi.—Pil. Hydrarg. gr. iv.
every night at bed-time;—and

Pulv. Jalap. Comp.—Pulv. Scammon. Comp. (Ph. Ed.)
āā 3 ss. every morning.

March 3d.—The bowels have acted very freely, three or four times a day. The erect posture, and leaning back, cause no pain in the region of the gall-bladder; he is free from fever, has a clean tongue, and feels hungry, thin and active; declaring that there has been more relief from the medicines of last month, than he had experienced from all the treatment of the previous year. Blister allowed to heal. He was directed to take soup and bread pudding, or similar food for dinner; to take exercise in a carriage; and instead of the former medicine, a small tea-spoonful of Cheltenham salts in half

a tumbler of tepid water every morning, and two of these pills every night at bed-time.

R. Scammon. Gummi-resinæ.—Ex. Colocynth. Comp. āā ʒi.—Saponis. Duri.—Cambogiæ. āā gr. xv. misce et divide in Pil. No. xxx.

This treatment was continued daily, for three weeks; and after that the pills and Cheltenham salts were taken twice a week, during all the hot weather. The usual diet of health was gradually resumed, but wine proscribed for many months. After recovery, exercise on horse-back was advised. This patient recovered entirely, and has not since been one day confined to the house; but directs a mercantile business, requiring very active exertion.

A protracted disease of this sort, in a person not entirely tractable on the score of diet; is not likely to be remedied by any plan of medical treatment.

OBS. LII.—A similar case, but of slighter description, came under my care on the same season with the above; the patient was rather a smaller man, and only three years in India; his complaints were of eleven months' duration when he applied to me; and there was less tendency to diarrhœa, and less feverishness; but the circumscribed pain exactly in the region of the gall-bladder, had obstinately resisted treatment for

nearly a year, and a short sea-voyage had been tried without benefit. He also had taken mercury slightly to affect the mouth more than once ; and had applied leeches, in succession for a number of days, and he had been blistered. His residence and occupations were very unfavorable to recovery, and therefore I advised a removal for some months. Six leeches were applied daily for three days, and after that four leeches every 2nd day for 10 days more. Blue pill and colocynth were used at night, and a mild aperient in the mornings. The nitro-muriatic acid bath was also used to the feet every night for 15 times. A vegetable diet was advised in very small quantity : and all active exertion prohibited. This patient improved slowly from the middle of February to the 26th of March. I then found it requisite to follow a more active purgative treatment for near three weeks, and he was entirely relieved ; but on omitting medicine there was a great tendency to constipation, and the patient was pale and weak. He derived much benefit, when in this constipated state during convalescence, from taking in the morning a small wine-glassful of compound decoction of aloes, daily for a fortnight ; and two of the following pills every third night.

R. Scammon. Gummi-resinæ.—Colocynth. Comp. āā ʒ i.
Saponis. Duri.—Cambogiæ. āā ʒ ss.—misce, et divide
in Pil. No. xxx.

The more tardy recovery of this patient may be ascribed to want of active purgatives; and to insufficient number of leeches at first. A reliance on the nitro-muriatic acid bath, also in some degree stood in the way of better remedies. From these causes this patient was twice as long under treatment, as the more protracted and severer case that stands before it. However I had the satisfaction to find him fit to attend to business, by the beginning of June. I think no one will hesitate to follow the more active mode of treatment, by which the early recovery of the first of these cases was accomplished. We have occasion to see complaints of this sort every year in Bengal, and many of them in the early stage, or even at any period, if attended by pyrexia, or by much tension at the right side; require repeated use of the lancet.

OBS. LIII.—John M'Can, *Æt.* 20, of middle stature, light complexion, and delicate appearance. A recruit, by trade a painter: arrived from England on the 30th May, 1829. He was sent to Hospital with disease of the knee-joint, of five months duration, for which he had been cupped once, and blistered eight times. On his admission, there was not much swelling of the knee, and no external redness, but the part was rather hot, and tender on pressure: walking caused some pain; there was slight contraction of the

limb. Leeches were applied four times; purgatives were administered in the mornings, and Plummer's pill at night, and rest enjoined.

In ten days the morbid sensibility, and heat of the knee were subdued; a degree of elastic cold swelling of the joint remained, with slight lameness. The knee was therefore packed in the mercurial plasters, and bound up as recommended by Mr. Scott. The limb was kept at rest, and the plasters renewed once in 10 days. He was allowed chicken diet, and a pint of milk. Under this treatment the swelling of the knee decreased.

July 1st.—He is pale and weak, therefore ordered to take Pulv. Colombo \mathfrak{z} i.—Pulv. Rhei—Sodæ Carbonat. \mathfrak{aa} \mathfrak{z} ss. every morning: and on account of the remaining swelling of the knee, he had Pulv. Scillæ gr. iii. Pil. Rhei. Comp. gr. vi. every night; which usually moved the bowels three times a day.

July 7th.—He complains of cough and shortness of breath, attended with scanty viscid sputa, which have existed for four days. On examination, the chest is found well formed; a full inspiration causes pain in the breast; pressure on the abdomen gives no pain, except over the region of the spleen, and from thence up towards

the scrob. cordis. There is no pyrexia; urine scanty, high-colored, and coagulating slightly when heated: he is pale, and has a clean moist tongue. Pulse 120, and soft: he is obliged to sleep with his head much raised.

He was put on a diet of tea and bread, with sago; leeches were applied to the left side of chest daily, for five days, and that part was covered with a poultice after removal of the leeches: and purgatives with squill were administered. By these means the pain in chest ceased, cough decreased, and his urine when exposed to heat did not become turbid; but he had a pain about the middle of the left clavicle; the pulse was 120, and rather small. His bowels were kept free; and Tincture of Digitalis was administered twice a day.

July 15th.—The pulse remains 120; he has a return of pain in the chest; and his breathing is more hurried; face quite pale, and there is no pyrexia. A blister applied to the chest, and kept open; and four grains of Pulv. Digitalis are ordered to be given in the course of the day, with Pil. Scillæ Comp. and Extract. Colocynth. Comp.

July 20th.—He seems little better, but still has a troublesome cough with copious sputa,

in appearance like saliva, and readily mixing with water. Pulse 108, and rather small; skin moist; tongue white, and moist. Former medicine omitted, and he is ordered Mist. Ammoniaci, with Tinct. Digitalis, three times a day. Bowels to be kept free. Under this treatment the cough decreased. Pulse gradually came down to 96, on the 22nd; to 86, on the 24th; and on the 26th July, his pulse was 84, and soft; face pale, and he had very little cough. Resumed chicken diet, and was ordered

Pulv. Colombo. \mathfrak{D} i.

Pulv. Rhei.

Sodæ Carbonat. $\mathfrak{a}\mathfrak{a}$ \mathfrak{D} ss. daily, instead of his former medicine.

Seemed to be improving till the night of 8th August, when a profuse purging came on, and he said he passed some blood, but the stools were not kept. When seen in the morning, the skin was rather hot, tongue of dusky red color and somewhat swollen, the belly full and not elastic but doughy; he felt very weak. He was ordered a dose of Pulv. Jalap. Comp. 3 ss. which produced five scanty, fluid, black stools, in the course of the day. In the evening, he had no pyrexia, but there was a slight pain in the temples, and morbid sensibility when pressed over the cœcum; the tongue was clean, moist, and slightly fissured. Pulse soft; belly had still

a doughy inelastic feel. Six leeches were applied over the cœcum, and he was ordered

Extract. Colocynth. Comp.

Pil. Hydrarg.

Extract. Hyoscyami. āā gr. iv. at bed time.

August 10th.—He had seven stools during the night, equal to two copious evacuations, of deep rhubarb color, and not quite fluid consistence.

Six leeches repeated over the region of cœcum.

Pulv. Rhei. ℞ ss.

Calomel. gr. ii. in the morning, and repeated at noon.

He was ordered a mild purgative daily. On the 12th August, there was slight morbid heat of skin; pulse 108. He was free from pain: stools of dark color and slimy. On the 13th, some tension of muscles of belly was observed, but pressure caused no pain. Castor oil was given in the morning, and 10 grains of calomel with extract of hyoscyamus at night. On the 16th, the recti abdominis muscles were observed to be tense; but there was no pain in the right shoulder or on pressing over the liver. Pulse 112.

August 19th.—Pulse 90; belly lightly retracted, and the recti muscles are tense; he has pain in right shoulder and down the arm, which was first felt yesterday. On the 20th, slight hardness

of liver was observed; right rectus abdominis muscle more tense than the left; he was pale, emaciated, and weak. Leeches were repeatedly applied to the liver in such numbers as the strength permitted; and afterwards a blister, which was kept open, but the symptoms of liver abscess were too evident, and progressive. On the 24th, he had a rigor at 1 P. M. vomited often, and had six stools, with a slight appearance of pus in the evacuations. The pulse gradually rose to 120, and 126. On the 27th, he had copious perspiration, and a hectic flush in the cheek; the tongue was of morbid red color.

On the 31st August, enlargement of the right lobe of the liver was more prominent, and the skin slightly discolored; therefore potassa fusa was applied to the tumor for the purpose of promoting adhesion of the tumid liver to the abdominal parietes, and soliciting the approach of the abscess to the surface. On the 3rd September, he had a troublesome cough, with copious expectoration of yellow, muco-purulent matter, of a "*bitter stinking taste.*" The tumor of liver was less prominent; he felt easier. The urine was of a deep color, with a white powdery sediment at the bottom of the urinal.

On the 5th, the cough had decreased, and he expectorated a thin oily matter, slightly tinged

with greenish yellow bile. He died on the 7th September, 1829.

Dissection. Subject much emaciated. Universal adhesions in the right side of the chest; lung decreased, and contained many suppurating tubercles. Partial adhesions in left side of chest, apparently not recent, and several indolent tubercles in the left lung. Liver enlarged, its convex surface adherent to the diaphragm, through which an hepatic abscess had opened into the right lung. Gall-bladder elongated and flaccid, contained about 3 iiss. of straw-colored fluid, like varnish. The capsule of Glisson and gall-bladder were covered with an adventitious membrane, apparently not of recent formation. Cystic duct obliterated at its upper part. A small indurated tumor was observed near the cystic duct, which had probably by its pressure caused the closure, and cohesion of the duct, at the same time when the inflammatory process took place, by which the gall-bladder and capsule of Glisson had been covered by an exudation of coagulable lymph. Cœcum enlarged, its coats thickened, mucous membrane ulcerated: glands of mesentery and mesocolon enlarged.

OBS. LIV.—Herrick, *Æt.* 41, a tall thin man, of dark complexion: has been several voyages to India in the course of 12 years; and after residing 18 months in Calcutta, had a bad compound

fracture of the leg on the 3rd October, 1829. He was so far recovered on the 13th March, 1830, as to be able to walk with crutches; and then had an attack of pain in the region of the liver, which was not removed by a purgative: pressing over the right hypochondre caused pain. He was put on a low diet, and had 10 leeches to the side daily, for eight days; and took active purgatives with calomel, or blue pill, and compound extract of colocynth. The mouth became slightly affected, and pain of side was removed.

OBS. LV.—R. Child, *Æt.* 29, of middle size and dark complexion: 10 years in India. Admitted into General Hospital, on the evening of 2nd December, 1830: ill six days with pain in his liver, and fever; for which he has been purged, and has applied many leeches: he appears very low, and much exhausted, from the exertion of removal to Hospital. Has now an enlargement and hardness of the right lobe of the liver, attended with a slight cough; and is obliged to lie with his head much raised.

R. Calomel. gr. v.

Extract. Colocynth. Comp. ℞ ss. ft. Pil. ii. H. s.

December 3rd.—Had two stools; there is at present a slight degree of pyrexia, some cough, and

enlargement, with hardness of the right lobe of the liver. Diet—tea and four ounces of bread, twice a day.

V. S. ad lb. iss.

R. Calomel.

Extract. Colocynth. Comp. āā ʒ ss. at 7 A. M.

Apply twelve leeches to Epigastre at noon

And let him take Pulv. Jalap. Comp. ʒ i.

Dec. 4th.—Pyrexia decreased, and he coughs less; hardness of liver not abated: he has had six stools.

Apply sixteen leeches to the liver.

All medicine repeated as yesterday.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss.

Extract. Hyoscyami. gr. iv. in pills, at bed-time.

Dec. 5th.—He appears better; liver decreased.

Eight leeches to the region of the liver.

Pills repeated morning and night, as yesterday.

Dec. 6th.—He suffers little pain, and no pyrexia. Mouth sore; only two stools.

Apply four leeches to the region of the liver.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v.—in three Pills, in the morning.

R. Pulv. Jalap. Comp. ʒ i. at noon.

R. Extract. Colocynth. Comp.

—— Hyoscyami āā gr. viii. at bed-time.

Dec. 7th.—He suffers less pain; very little enlargement of the liver remains.

Eight leeches to the region of the liver.

All medicine repeated as yesterday.

Dec. 8th.—Had six stools; and has occasionally a slight pain in the liver.

Eight leeches to the region of the liver.

Repeat all medicine as yesterday.

Dec. 9th.—He has some cough, and a slight fulness in the region of the liver remains. Milk diet allowed.

Apply a blister to the side, which is to be kept open.

Repeat all medicine daily, as on 6th December.

Dec. 13th.—No pain; a slight cough remains.

R. Extract. Colocynth. Comp.

Scammon. Gummi-resinæ āā ʒ ss.

Saponis Duri—Cambogiæ āā gr. xv.—misce et divide in Pil. xv.—Two pills every night.

Chicken diet was allowed after the 16th.

Dec. 19th.—He remains much emaciated, and is very pale; tongue white, pale, and bloodless. On examination, the liver does not appear to be

enlarged at present. He has a slight cough at night, with some pain above the right nipple, and sleeps with his head much raised. Former medicine omitted.

R. Pulv. Jalap.—Pulv. Rhei
Pulv. Calumbæ—Pulv. Zinziberis
Potassæ Supertart. āā ʒ ss.
Ferri. Sulph. gr. v.—Tinct. Sennæ ʒ ii.
Aquæ. Menth. Pip. ʒ viiss. misce.
Capt. ʒ i.—Omni Mane.

January 10th, 1831.—Appearance much improved. Bowels free ; he has still some cough at night, and tough viscid sputa. Mixture omitted.

R. Extract. Colocynth. Comp.
——— Hyoscyami
Pil. Hydrarg. āā gr. iv.—in pills every night.

Jan. 14th.—Discharged well. I have very seldom seen tonics or chalybeates given with advantage, during convalescence from liver diseases. In the majority of cases, convalescence proceeds most favorably, by using a moderate and simple diet ; keeping the bowels very free, the skin perspirable, and taking care to reside in a good, cool, and airy house. If a sea-voyage be available at the time of convalescence, it is beyond all other means, the best to insure permanent recovery.

In the following case the same mixture of purgatives, with Calumba and sulphate of iron were tried, but could not be continued.

OBS. LVI.—Jacob Weaver, *Æt.* 26, a sailor, of middle size, and light complexion; a pale and rather bloated appearance : landed from the Barque *Monmouth*, on the 20th November, 1830; his first arrival in India. Has been, while at sea, ill three months with a purging, which now continues, (eight stools in 24 hours); but he has lately voided no blood: for the last three weeks he has been subject to occasional vomiting. The liver is now large, but he does not know how long this has been the case; the right rectus abdominis muscle is tense; there is slight pyrexia; tongue white, moist, and nearly clean.

V. S. ad lb. iss.

R. Calomel.

Extract. Colocynth. Comp. $\bar{a}\bar{a}$ \varnothing ss. at 7 A. M.

Sixteen leeches to the region of the liver at 4 P. M.

R. Extract. Colocynth. Comp. \varnothing ss.

Pil. Hydrarg. gr. v. at bed time.

By these means he was freely purged, and the pyrexia removed; the blood taken in the morning, was not buffy.

On the 21st, sixteen leeches were applied, and he was better. After this, a course of mild mercurial purgatives was continued daily; and

he had eight leeches to the right hypochondre every day, till the 27th; whereby the enlargement and tension in the region of the liver, were very much diminished.

Nov. 28th.—A blister was applied and kept open; the same course of mild mercurial purgatives was continued daily, till the 19th December: he was then pale, and reduced; some degree of elastic fulness of belly remained; the urine was copious and pale colored; and his remaining ailments were ascribed to languor. He had been heretofore on a vegetable and milk diet, in limited quantity: but was now advised to use meat, and to take daily some Calumba powder, and sulphate of iron, with mild purgatives, as prescribed at page 246. After two days continuance of these remedies; a vomiting came on, with uneasiness and tension of the belly; and it was found requisite to omit them, and use calomel and blue pill, with colocynth and castor oil; which had an immediate good effect. He was discharged on the 29th Dec. 1830.

OBS. LVII.—Mrs. Thornton, *Æt.* 29; a delicate and rather small person, of light complexion, two years in Bengal. Admitted into General Hospital, 27th August, 1830: she has been ill five days with Dysentery, the purging is now constant; liver enlarged, general health much impaired, debility extreme. The Dysentery was treated by the usual

remedies, and soon subsided; after which she suffered from Rheumatism, and œdema of the feet, and had occasional slight returns of Dysentery, the evacuations being generally of a pale-grey color, and occasionally watery and frothy. She gradually sunk, and died.

On post-mortem examination, the subject was found exceedingly emaciated. There were a few old adhesions in both sides of the chest. Liver slightly enlarged, and œdematous; its surface distinctly marked by the pressure of the cartilages of the ribs; color paler than natural; texture somewhat indurated. The whole course of the colon much contracted.

I have met with 13 cases, in which the appearance of the liver on dissection, was so like to that of œdema, that I should not know how to describe it by any other name; the impressions of the cartilages of the ribs being deep and distinct. The liver compared with the general appearance of the subject, was in most cases enlarged, its texture slightly indurated in the greater number; color when morbid, rather lighter than in health, and its section not bleeding much. The patients, had been nearly all, pale leucophlegmatic subjects, with constitutions impaired by climate. This pathological condition probably might be deemed unimportant, and in itself,

so far as we know, not conducive to fatal termination. The indications for the treatment of the constitutional disorder which coexists with these cases, is usually sufficiently distinct, if the patient's strength be tolerable. As the enlargement of the liver was in most of the patients evident during life, I am unwilling to pass without notice, a condition which occasionally occurs in debilitated patients in this country.

OBS. LVIII.—Louis de Antonio, a sailor of the Portuguese ship *Temerario*, received a violent contusion on the right thigh and hip, when at sea, three months before his arrival in Calcutta; which caused an extensive abscess in the limb, and disease of the bones of the hip; with which he was admitted into the General Hospital, on the 19th October, 1829: and remained with this lingering painful disease till the 29th June, 1831, when he died exhausted. During the course of treatment for the above complaint, he had symptoms of liver disease, which first began on the 14th February, 1831, attended with constipation and general uneasiness. Purgatives with blue pill were administered on the 16th; there was then general uneasiness of belly, with flatulence; some tension in the region of the liver, and a bitter taste in the mouth. On the 17th, fulness was apparent in the region of the liver, and some uneasiness

over the whole belly, but this was mostly felt towards the left hypochondre; and there was no pyrexia. He was briskly purged by 10 grains of calomel, and as much compound extract of colocynth. Leeches were repeatedly applied to the epigastre, active purgatives administered daily, and he was put on low diet; by these means, the pain and uneasiness in the liver, were slowly subdued.

On Dissection, eight hours after death, the subject was found much emaciated: the right leg œdematous. Extensive adhesions existed in the right side of chest, not of recent formation. Liver much enlarged, and of deeper color than natural, its section bleeding freely; concave surface of the right lobe extensively adherent to the stomach; there was a small distinct depression like a cicatrix at the concave surface of left lobe, but there was no adhesion exactly at that point. There was extensive caries of the acetabulum, and head of the femur.

The principal Chronic Diseases of the Liver, not yet alluded to, are as important on account of the circumspect and moderate treatment to be followed in their management; as most of the diseases already spoken of, are, by reason of the very active remedies which are requisite to save life in their acute stages. The following dis-

eases of the liver which are really chronic, have been observed in this country :

1st. The red disorganisation of the liver ; with slight enlargement, induration, and irregularity of surface. Red blood of an unhealthy description abounds in these patients ; they suffer much from various constitutional ailments, and are distressed by disorders of the stomach, and digestive organs. They generally die from extreme emaciation, which takes place rather suddenly ; and is attended with a troublesome cough.

2nd. The pale degeneration of the liver, is generally attended with some enlargement. It occurs most frequently in persons of pale complexion, who are long resident in India ; the patients are generally bloated, fat, and dropsical ; they are sometimes slightly jaundiced.

Either of the above modifications of morbid structure of the liver, are occasionally met with when the organ is diminished in size.

3rd. Concurrent with some of the chronic indurations of the liver, the biliary ducts are occasionally found closed.

The more we have to do with the above varieties of chronic cases, in aged persons ; the more shall we respect the opinion of Van Swieten, who says, “ they require to be treated with

the greatest gentleness, and are hardly ever to be cured." In many of these cases of extensive chronic disease, which we are obliged to acknowledge incurable; life may be prolonged, and suffering moderated, by a temperate and scientific plan of regulating the diet, exercise, clothing, and state of the digestive organs.

In Chronic Liver Disease, where there is some enlargement of the organ, and there appears superabundance of red blood in the capillaries as above described: the utmost temperance in food and drink, must be enjoined; with daily exercise. These cases are best treated as follows:

R. Pil Plummeri.

— Aloes Comp.

— Cambogiæ Comp, āā. gr. iij.

Pulv. Scillæ gr. ij. misce fiant Pil. ii.

These 2 pills are to be repeated every night; and two table spoonsful of Savory and Moore's fluid extract of sarsaparilla in the mornings. After 10 days, these medicines should be omitted, and some of the following mixture, taken every morning for 20 days.

R. Magnesiæ Sulphatis ʒ iss.

Potassæ Supertart. 3 i.

Sulphatis Potassæ cum Sulphure ʒ ii.

Aquæ Bullientis lb. i. misce et cola,—deinde adde Ferri Sulphatis gr. iv.

A wine-glassful, to be mixed with as much tepid water, and drank every morning early. A tepid bath should be used twice a week. This plan requires to be followed for three or four months; the pills and sarsaparilla being taken for the first 10 days, and the mixture for the next 20 days of each month.

In those cases where the patients are old, pale, and leucophlegmatic; and there is a deficiency of red blood in the capillaries generally; and we find a tumefaction of the liver, which we have reason to believe is the pale degeneration: mild aperients with a very minute proportion of chalybeates are beneficial. The extract. taraxaci in doses of ʒi. twice a day; taken in syrup, and washed down with infusion of cheraytta, are also frequently very useful: and the nitro-muriatic acid bath should be tried.

Enlargement of the liver, is not uncommon in Bengal, in children below four years of age. It sometimes takes place in an acute form during Fever; and is then generally removed by the leeches and depletion requisite for the cure of that disease. But the most frequent enlargement of the liver in subjects of this tender age, comes on slowly, attended with emaciation and occasional slight returns of fever; these children are

pale, and frequently have Diarrhœa, with some cough; and in the majority of cases, the enlargement of the liver is not very palpable, until the constitution is much impaired. This slower description of tumid liver, seems frequently the sequel of disorder of the digestive organs, of long continuance; marked by torpor of the intestinal canal: the evidences of liver complaint are preceded by the disorder of constitution, and so distinctly supervene on it; that we cannot reasonably ascribe the whole train of morbid phenomena to the disorder of the liver, which happens among the last in the series. In these cases, great care is requisite to afford the child sufficient mild food to live on, during the cure, without aggravating his malady by causing irritation and vascular repletion. Our means of cure are comprised in repetition of small numbers of middle sized leeches over the tumid liver, as long as any trace of pyrexia and inflammatory symptoms may demand: followed by a small blister, kept open for many days; and a course of mild purgatives, so as to procure four stools daily. Jalap and scammony with calomel, are the most effectual purgatives, in the majority of cases attended with pyrexia;—but I am bound to say that in nearly one half of those cases of tumid liver, which take place slowly in pale and delicate children, mercury is injurious. In those cases, omitting the calomel, we may occasionally

change the above purgatives for compound extract of colocynth and camboge, or for rhubarb and sal polychrest, or castor oil. The skin must be kept perspirable by regulated clothing and tepid baths, and a voyage to Europe should be enjoined in all cases where that is practicable.

Acute Liver Diseases, are much more rare in European women, than in the men of a corresponding class in society; by reason of their more temperate habits of mind, as well as less exposure to the exciting causes, and more abstemious modes of living. But women are often liable to insidious Liver Disease after Fevers, and in consequence of disorders of the digestive organs; that are very apt to terminate in hepatic abscess. Therefore, in the treatment of those diseases, it is important to attend carefully to the progress of convalescence; and to regulate both diet and medicine discreetly, until the *lentæ morborum reliquæ* are entirely removed.

JAUNDICE.

THERE is no occasion in this place, to treat of the Jaundice which occurs in the course of some severe Fevers; or to notice the yellow suffusion of the skin, which is occasionally observed during affections of the brain, which follow injuries of the

head: but the more chronic forms of Jaundice which occur in Bengal, unconnected with much febrile disorder, may here claim our attention. I find Jaundice, not only during its early stage, but for a long period afterwards, while the bilious discoloration remains; very generally attended with some morbid sensibility, when pressure is made over the situation of the gall-bladder and capsule of Glisson: though the uneasiness, during the absence of pressure, is most generally referred to the epigastre. The intense yellowness of the skin, and conjunctivæ, and very high color of the urine; in some cases, fades a little for a day or two, and then increases without any evident cause. The increase of yellow color, for the most part, corresponds with augmentation of the pain when the epigastre and region of the gall-bladder are pressed; and when the bowels are costive: while the decrease of color of the skin and eyes, seems connected with free action of the bowels, and diminished local pain.

During the continuance of Jaundice, and especially while it is increasing; patients are affected with loss of appetite, and indigestion, and sometimes are liable to sickness of stomach, flatulence, tension of the epigastre, and hypochondria; but even when acute symptoms are present, the principal pain experienced on pressure, is usually circumscribed, and fixed at one spot: sometimes there is pain in the point of the shoulder

and under the scapula. Dejection of spirits, lassitude, and a bloated puffy swelling of the face, often indicate the extent of constitutional derangement which the patient is suffering. Nevertheless, we sometimes see people attending to all their ordinary occupations, and eating and drinking as usual, while the skin and eyes are of an intense yellow color.

The stools assume a clay color, or become nearly white in many cases of this disease ; and this absence of color in the stools, when bile is abundantly absorbed and carried into the circulation, seems unattended with much constitutional disorder, referrible to the want of bile in the intestines, in many of those persons who are pale, weak, and leucoplegmatic : but plethoric subjects, in whom Jaundice takes place, and the stools are of a pale clay color, almost always suffer from pyrexia ; and in some cases, I have known robust patients die with symptoms of oppressed brain, within 36 hours after the sudden appearance of intense Jaundice ; for the accession of which last named disease, no cause could be assigned.

Much obscurity is acknowledged to exist respecting the pathology of Jaundice, therefore I have been anxious to ascertain the exact state of those parts about the liver and biliary ducts, which might be implicated in the production of

this disease. The almost invariable existence of pain, which is increased by pressure, and confined to a circumscribed spot at the right side, just below the centre of a line drawn from the right nipple to the umbilicus ; led me to believe formerly, that inflammation of limited extent in some part of the liver, was the most frequent cause of jaundice. The more certain, and more prompt cure, which in the majority of cases followed a regular system of depletion, served to confirm this opinion ; but if circumscribed inflammation of a portion of the liver, were the efficient cause of the disease in question ; I was not able to account for the general absence of Jaundice, during the progress of the most unequivocal and intense inflammation of large portions of the liver, even when that disease proceeded to suppuration. At least inflammation of a portion of the liver, alone, did not appear a sufficient reason for Jaundice ; although symptoms of moderate inflammation of limited extent so generally precede and accompany the yellow suffusion of the skin and eyes. Moreover, on the dissection of subjects who had recovered from icterus, only a short time before death took place from other diseases, I could not discover appearances in the liver, which enabled me to fix on any circumscribed spot as having probably been recently inflamed. But in the course of dissections, I found that albuminous infiltration sometimes takes place, into the cellular structure of the capsule of Glisson.

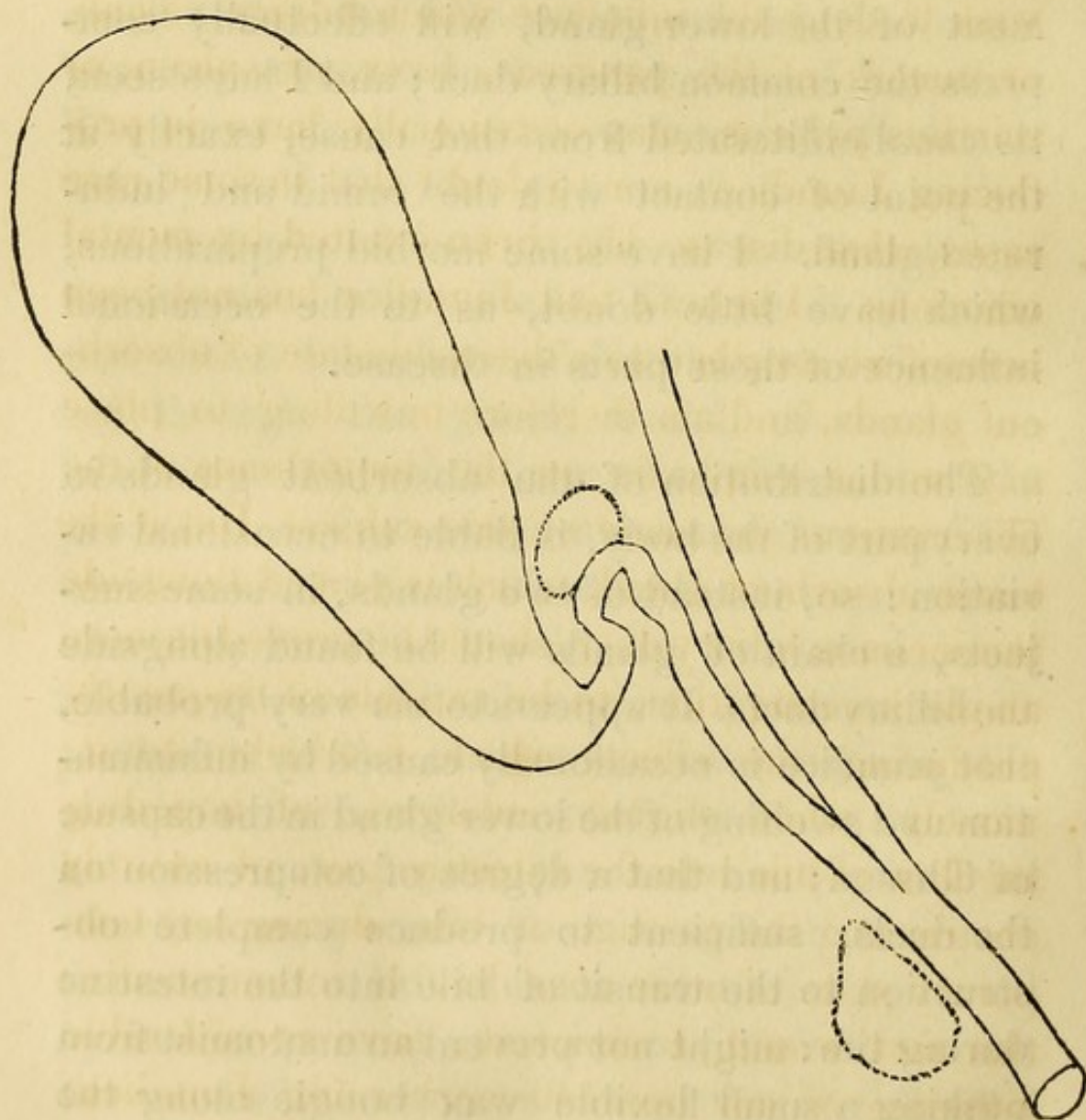
In the beginning of this chapter, at page 142, I have already spoken of oval bodies in the capsule of Glisson, which have the structure and appearance of absorbent glands. The superior gland is sometimes very small, and occasionally it is more closely attached to the side of the gall-bladder, than to the cystic duct; I have seen the cystic duct obliterated, where it was in contact with this gland, when in an enlarged and diseased state; but I do not apprehend, that could have any influence in the production of Jaundice. The lower gland is more uniform in bulk, being usually half the size of a small bean; and it is always placed just at the commencement of the common biliary duct. The result of irritation within the sphere of absorbent vessels passing through this gland, would, of course be liable to cause such degree of swelling, as might produce transient compression and closure of the common biliary duct; whereby the passage of bile into the intestine would be prevented, and in consequence of its absorption, Jaundice will be produced: if the obstruction be complete, the patient's stools will be nearly white, or of very pale-grey color; until the decrease of the local tumefaction, permits the bile again to flow into the intestine. But in cases of Jaundice attended by ardent pyrexia, and intense gastroenteritis; the color of the stools will very often be different, in consequence of the blood poured out by the

capillary vessels of the intestinal mucous membrane; as well as from other morbid secretions.

When previous inflammatory disease at the capsule of Glisson, has been attended with infiltration of coagulable lymph into the cellular structure of that part, at a remote period; and its subsequent absorption has left a degree of induration and constriction, a very slight enlargement of the lower gland, will effectually compress the common biliary duct; and I have seen, its canal obliterated from that cause, exactly at the point of contact with the tumid and indurated gland. I have some morbid preparations, which leave little doubt, as to the occasional influence of those parts in disease.

The distribution of the absorbent glands in every part of the body, is liable to occasional variation: so, instead of two glands, in some subjects, a chain of glands will be found alongside the biliary ducts. It appears to me very probable, that jaundice is occasionally caused by inflammation and swelling of the lower gland in the capsule of Glisson; and that a degree of compression on the ducts, sufficient to produce complete obstruction to the transit of bile into the intestine during life: might not prevent an anatomist from pushing a small flexible wax bougie along the ducts after death. Which might lead to the

erroneous conclusion, that the duct had been pervious, and thus prevent such accurate dissection as would have shewn the actual cause of compression. For the purpose of facilitating the inquiries of those who may be inclined carefully to dissect these parts, so as to form their own opinions; I have annexed an outline,



which may serve better than a verbal description, to direct their investigations with precision. The lower and larger gland, being placed close above the head of the pancreas; may, while in its healthy state, be easily mistaken for a part of that organ: but, in color, structure, and appearance, it is totally different from the firm, small-lobulated, or granular structure of the pancreas. I by no means wish to deny the influence which biliary calculi, or tumors of the pancreas, liver, or spleen, or scirrhus pylorus, may occasionally have in producing Jaundice; nor to doubt that in some rare cases, that disease has been excited by mental emotions. I believe that Jaundice has not been heretofore ascribed to a diseased state of absorbent glands, and am therefore unwilling to place any undue emphasis on the importance of the observations yet made on this subject. But if the lower absorbent gland, which is placed alongside the common biliary duct, should be proved on more ample investigation, to be capable of frequently producing the effects which I ascribe to it; namely, while slightly enlarged, of impeding the flow of bile into the intestine; or, of entirely obstructing the passage of bile, during any temporary state of more considerable intumescence: this fact would, I conceive, have considerable influence on our opinions concerning Jaundice; and on our general treatment of that disease.

? Herace
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Messrs Gen
Foulard
Sept 1839

For the purpose of making a satisfactory dissection of these parts, it is requisite, after opening the chest and abdomen in the usual manner, to saw or break the ribs within three inches of the spine ; so that the edge of the liver may be tilted back, and the parts brought fairly into view. Whenever the biliary ducts appear to be obliterated ; that portion of the liver to which the gall-bladder is attached, should be cut out, together with the capsule of Glisson and duodenum : that the ulterior stages of the dissection may be deliberately conducted on a table.

Before deciding what plan of treatment may be proper, in any case of Jaundice ; we should carefully inquire into the state of general health, and the nature and duration of the diseases from which the patient has recently suffered ; and ascertain the state of the abdominal viscera. If the liver be found enlarged and indurated, either generally, or in part, there would be no doubt of the most proper plan of treatment to be ordered : and the employment of our remedies, would be directed by considerations dependent on the state of that organ, and on the condition of the constitution.

In other cases of intense Jaundice, without enlargement of the liver, but with the usual circumscribed pain in the region of the gall-bladder and ducts ; the stools being nearly white, or of a pale clay

color: I would advise a treatment essentially anti-phlogistic; because I find the cases so treated, are cured easily, and by one series of remedies; while those cases, which either do not seem urgently to require depletion, or from any particular reason, are treated by other means, have tardy and imperfect recoveries, and frequent relapses. So that I am always sorry to meet Jaundice combined with circumstances which forbid depletion, as I have but little confidence in other modes of treatment. The most successful plan of cure, is a steady and undeviating line of practice, consisting principally of depletion by V. S. leeches, active purgatives, tepid bath, and sudorifics; aided by low diet, and quiescence in the beginning of the disease: followed by milder purgatives, and a small blister over the region of the gall-bladder, kept open for a long time. At more remote periods, a course of Cheltenham salts; or small doses of rhubarb and sal polychrest, (from six to 10 grains of each, every morning); with gentle exercise; and frictions with camphorated oil, or lard and camphor, over the right hypochondre, should be advised: at the same time it may be proper to allow a mild diet, void of stimuli, in such quantity as may improve the strength.

In any case of Jaundice, where the stools are *white, or of very pale-grey color*, the employ-

ment of mercurials is of doubtful propriety* ; since we have evidence of the abundant secretion of bile, which is absorbed, so that its color is visible in the eyes, urine, and skin : at the same time that we have reason to believe its transit along the common duct into the intestine, is obstructed. Mercury with a view to excite biliary secretion, in such cases, would be as unreasonable, as the administration of diuretics to a man with a distended bladder, and whose perspiration had an urinous odor, shewing that urine was freely secreted, and absorbed into the system ; while we knew that he had an impervious stricture of the urethra. Doubtless, calomel with active purgatives, and depletion by V. S. and leeches ; are the very best means of subduing local inflammation, and removing many of its consequences, in cases of Jaundice, where the bile can pass into the intestine.

I would be sorry to commend indiscriminate blood-letting, for cure of the Jaundice of old residents in India ; who may have broken constitu-

* Dr. Cheyne's experience favors the same conclusion ;—he says " In large establishments for the cure of venereal complaints, Jaundice not unfrequently appears during courses of mercury ; and if the mercurial is not laid aside, and purgatives given, and the antiphlogistic regimen adopted, a new and alarming series of symptoms is apt to arise ; the brain becomes affected ; the patient becomes at first frantic, and then falls into a state of coma."

tions, pale faces, and œdematous feet : most of these must die, if they do not remove to a better climate than Bengal. I fear we cannot well promise that many patients of this sort, shall recover any where, if the disease be of long duration.

As far as my present investigations regarding the pathology and treatment of jaundice, will enable me to judge ; I should be inclined to ascribe that disease more rarely to biliary concretions, than has been usual of late years by many authors : and I doubt much, the propriety of very frequent recourse to opiates, on the occurrence of acute pain in the course of the biliary ducts ; except in cases which afford tolerably distinct evidence of the existence of biliary calculi.

ICTERUS appears frequently to happen in Bengal, in infants soon after birth, to a very intense degree ; the deep orange color of the eyes, skin, and urine, being in a majority of cases very remarkable. The jaundiced tinge, has appeared from the 2nd to the 13th day. In all the cases of infantile jaundice, which have been under my care in this country, the color of the stools though much paler than natural, has evinced the presence of some bile ; which shewed that the ducts were not entirely obstructed, and justified a favorable prognosis. All the

infants whom I have seen with this disease in Bengal, have recovered; happily precluding the occasion of ultimate pathological investigation, as to the local morbid condition connected with their malady.

It is remarkable, that almost all the jaundiced infants I have seen in India, had suffered much compression, and considerable alteration of the shape of the head; during labours that were rather severe, compared with what is usual in Bengal. In stating this fact, I do not aver that the compression of their brain, was the cause of the Jaundice; nor that the disease always occurs in this country, when the shape of the child's head has been much altered during labor.

The treatment which I have pursued in infantile Jaundice, there being some bilious appearance in the stools, was to give Calomel. gr. i.—Pulv. Scammoneæ Comp. (Ph. Ed.) gr. ij.—Pulv. Jalap. Comp. gr. iv. every morning, for four days; and then, after an interval of two days, to repeat the powders for four days more: giving a small dose of castor oil every 2nd afternoon, and omitting the Jalap if the purging should be too frequent, or the evacuations very watery. While this treatment is pursued, the child's belly, and the hypochondria, are ordered to be rubbed daily with warm oil: a tepid bath twice a day is useful.

LIVER DISEASE IN ASIATICS.

ACUTE liver disease is exceedingly rare among Asiatics* ; nevertheless natives of Bengal are not entirely exempt from these complaints. It is remarkable how seldom we find any palpable disease of the liver of Asiatics, attending the Fevers, and Dysentery of Bengal. During my residence in this country, I have only seen two well marked cases of acute Hepatitis in natives. One of these was a Mahomedan servant of my own, not remarkable for his temperance either in meat or drink. He is rather a slight made but firm and sinewy man, who was attacked with acute pain in the right side, and distinct enlargement of the liver. He had been indulging more than usual in drink, and had the appearance of ill health ; but had no sort of tremor as if from great excess in the use of spirits, and there was very little pyrexia, when the disease appeared, in November, 1831. He was made to remain in tranquillity, and to live on sago, soojee, (thin flour porridge,) and *coee* with water. Six leeches were applied over the region of the liver, daily, for five days. Four grains of calomel, and ten grains of compound extract of colocynth, were given every night ; and a jalap purge every morning. After the leeches were omitted, he was

* Staff Surgeon Marshall speaks of having found abscess of the liver in Asiatics who were serving with the army in Ceylon. He also found abscess of the liver in Africans.

made to take a dose of castor oil daily for a week, and the same low diet was continued. This man recovered, and remains tolerably well, but has not since acquired his former stoutness.

The other case, was a Hindoo Kalassee, a short and rather stout man, whose duty was to pitch the tents; his illness commenced in November, 1823, when on the march in the Upper Provinces. The enlargement of the liver was very distinct; and pain on pressing the right side acute, but there was scarcely any pyrexia, or constitutional disorder. He ascribed the commencement of his illness to a recent injury, in raising the large tents; but from the slight constitutional disorder, I suspected that the disease was of longer duration. He had six leeches applied once, and took six grains of blue pill, with 12 grains of colocynth, daily, for four days; and the liver was decidedly decreasing: but he disliked the repeated purgative, and refused to follow any farther medical treatment. This man remained with the camp, and appeared in indifferent health. In February, 1824, he died of tetanus; which appeared to me to have arisen from cold, though his relatives ascribed it to a very trivial scratch on the top of the left foot. I could not get leave to inspect the body.

CHAP. III.

DISEASES OF THE SPLEEN.



DISEASES of the spleen may be deemed important, not only by reason of their frequency, severity, and the danger with which they are attended in Bengal ; but on account of the change which the constitution undergoes previous to their origin, and during their existence : as well as the modifications which they produce on the nature and tendency of other diseases, that may occur at the same time. Instead of viewing the enlargement of the spleen, as the principal object for investigation ; it will be consistent with a correct view of the disease now under consideration, to speak of the enlargement of the spleen, as one of the phenomena usually attendant on a peculiar description of constitutional disorder. The characteristic symptoms of this disorder are general debility, paleness, and a deficiency of red blood in the capillary system of vessels ; this is most remarkable in the pale and bloodless aspect of the conjunctivæ, hectic blueness or pearl-color of the scleroticæ, and chlorotic discoloration of

the visage, tongue, and gums. The circulation is generally languid, and the extremities are apt to become cold ; the skin pale, shrivelled, and arid. In the chronic disease, affecting emaciated subjects, we often find a dry furfuraceous desquamation of the cuticle.

We sometimes see a chronic enlargement of the spleen, in adults of pale, sallow, and unhealthy aspect ; who eat and drink as they did in health, and seem to endure the disease for many months without much suffering : except the inconvenience of a tumid belly, attended with shortness of breath, and occasional returns of indistinct ague. The disease is far more distressing to children ; in them, if careful attention to diet, and correct medical treatment be omitted ; the enlargement of the spleen, and corresponding decay of the general health are in most cases progressive, and they sink into a state of marasmus. In fact, a person who has arrived at a mature growth and strength, may exist for a while with a degree of induration and enlargement of the spleen ; which is incompatible with growth, or even the continuance of life in those below puberty : for we find that children with this disease, soon become poor, languid, weakly creatures ; whose breath and the exhalation from their bodies, have a nauseous, sickly odor, indicative of the unsound state of their constitutions. This distressing and obstinate malady is not peculiar to the natives of this country, nor is it confined to

the poorer order of Europeans. I have observed the disease in its severest form to come on after Fevers, affecting the children of wealthy Europeans who lived in every comfort, and were attended with the greatest care. It is not unfrequently accompanied in such patients, by the extreme degree of constitutional disorder, which marks its advanced stages in the poorer classes of natives.

Females affected with enlargement of the spleen, are liable to suffer from amenorrhœa; and cases of spleen disease, in which the periodical return is not obstructed, may for the most part be considered as having a favorable prospect of recovery. During the continuance of vascular engorgement of the spleen, patients are very prone to foul sloughing ulcers, from slight wounds or bruises: and when local inflammations exist, those peculiar characters of active inflammation, and that healthy constitutional energy, on which the deposition of coagulable lymph depends; and by which we find injuries repaired, and the extension of ulceration, as well as the progress of sloughing arrested, on ordinary occasions; seem to be in great measure, if not entirely subverted.

Blood drawn from veins varies much in appearance; sometimes it coagulates imperfectly, and no

serum is separated; in other cases the cruor is black and soft, and after being exposed to the air, its surface does not generally assume that more florid color, which we observe on the top of a coagulum of blood drawn from the vein of a healthy person: and it seldom exhibits a buffy coat, except when ardent pyrexia is present, or when the disease is attended with acute pain in the side. The serum when heated, coagulates as firmly as that of a healthy person, but the coagulum is more friable, and less tough; and this coagulated albumen, frequently has a slightly yellowish appearance: sometimes it has a greenish color.

Several of the characteristics of scorbutus, are present during the vascular engorgement of the spleen: there is a tendency to hæmorrhage from slight causes or injuries; leech-bites, blisters, and issues are apt to ulcerate during the rainy season; and at times the slightest ulcerations are apt to slough. Foul gangrenous ulcers of the lips and gums, are liable to form in consequence of slight local irritation, (and often without any obvious cause,) whereby the jaw-bones become carious, and exfoliate, and the teeth fall out. Hæmoptysis as well as hæmatemesis occasionally occur when the spleen is very large: and probably the blood which is vomited, sometimes flows into the stomach from vessels communicating directly with the splenic

vein, as the intumescence of the spleen has been observed in some cases to be immediately reduced by these evacuations of blood. It is true, that profuse hæmorrhages from the nose, lungs, or stomach, sometimes suddenly destroy life : but we see other cases, where the functions of the system not having been much disordered previously, the patients recover quickly after these profuse losses of blood ; and the disease of the spleen is thus entirely cured. The results of these spontaneous hæmorrhages should not be forgotten, in deciding on our plans of treatment in ordinary cases of spleen disease.

Most patients, with enlargement of the spleen, are affected with a short and imperfect respiration ; the general appearance of the patient, evincing that decarbonisation of the blood is insufficiently accomplished : and any attempt to take active exercise, excites panting and distress at the chest. Among the usual attendants on vascular engorgement of the spleen, we may observe impaired appetite, difficult digestion, and imperfect assimilation of the food. There is generally despondency and depression of spirits ; inactivity of body, and torpor of mind, with much muscular debility : and this latter symptom is remarkable, although the patients be not much emaciated. When active pyrexia is not present, the urine is pale, often copious. In the latter

stages of the disease, œdema of the feet is present, and sometimes the face and eyelids are swollen. The majority of protracted cases that terminate fatally, suffer from Dysentery, or dropsy of the belly ; and when the abdomen is much distended from this latter cause, the superficial veins on the side of the chest and belly, appear large and numerous ; shewing the extent, and degree, to which the circulation in internal organs becomes ultimately obstructed.

Diseases of the spleen often occur in conjunction with Dysentery, intermittent and remittent Fevers, scorbutic affections ; and sometimes with diseases of the liver.

The tumefaction of the spleen occasionally comes on very suddenly, in the course of remittent Fevers, in Bengal ; and in a few days the enlargement can be seen as well as felt, extending far below the cartilages of the left false ribs. The degree of enlargement which takes place is variable ; it is very common to see the spleen extending downwards on a level with the umbilicus ; and laterally, from its usual situation, as far as half way between the cartilages of the ribs and navel. In extreme cases the diseased spleen fills more than half the belly, extending to the right of the navel, while its lower extremity reaches the left iliac region. Several cases

of this enormous tumefaction, may be seen every year in Calcutta ; and some of them recover. Besides the globular tumefaction of the spleen above mentioned, there is a more oblong enlargement, in which the anterior edge of the organ is felt deeply indented with fissures. In this description of disease, there is more induration than attends the globular tumor ; and the patients are cured with greater difficulty. This is considered by the native practitioners, a very dangerous and intractable form of the disease.

The greater number of cases of the affections above described, are unattended with local inflammation ; although there is almost always morbid sensibility on pressure being made over the left hypochondre, during the early stages of enlarged spleen ; and sometimes slight pressure over that part causes exquisite pain. Splenitis, or acute inflammation of the peritoneal coat of the spleen, would appear to be a rare disease ; it sometimes exists without much enlargement of the organ, and then the symptoms very much resemble pleuritis of the left side : doubtless splenitis is occasionally cured, by the antiphlogistic treatment pursued, when pleuritis is supposed to exist. Pain in the left shoulder is rarely present.

The progress of vascular engorgement of the spleen is more or less rapid, according to the

injury which the constitution may have suffered from damp climate, and the nature and duration of the Fevers which the patient may have recently suffered.

Enlargement of the spleen sometimes appears as an idiopathic disease in children, and in persons of delicate and feeble constitution; and is produced by the combined influence of a damp climate, variable temperature, want of exercise, unsuitable clothing, and insufficient nourishment. During the slow and silent influence of long continued grief, and distress of mind; the secretions generally appear to be perverted, the cutaneous circulation becomes languid, healthy transpiration obstructed, and then we often find enlargement of the spleen take place in Bengal. The disease when dependent on such causes, is always difficult to cure. The most part of the cases of vascular engorgement of the spleen in this country, follow intermittent and remittent Fevers: and tumid spleen, may be stated as the most invariable consequence of acute and debilitating diseases, among children of weak constitutions in Bengal. The same sort of enlargement, takes place here in the spleen of adults, in consequence of various debilitating diseases, (but more especially after protracted remittent and intermittent Fevers,) which we occasionally meet with at all seasons; but they

are seen in their worst forms about the latter end of the rains, and commencement of the cold season : just when concentrated exhalation, and considerable diurnal changes of temperature coexist, which repress the action of the skin, and force the circulating fluids on the internal organs of the body. At that season of the year congestive Fevers are frequent, and lamentably fatal, at the low and damp situations in these tropical regions. These Fevers prevail not only in the country forming the delta of great rivers ; but in the marshy situations at the foot of hills and mountains, where the soil is composed of alluvion and vegetable remains, washed from the neighbouring hills, into situations where there is no drainage, and an imperfect ventilation. The assemblage of constitutional symptoms described in the foregoing pages, constitutes *the endemic cachexia of those tropical countries that are subject to paludal exhalations*. The enlargement of the spleen, is the most frequent attendant on this cachexia ; and its increase, or subsidence, generally corresponds with the unfavorable, or favorable changes, which are taking place in the constitution. It is however proper to observe here, that the constitutional symptoms sometimes exist in a very marked degree, where neither enlargement, nor morbid sensibility of the organ itself, are very palpable.

On dissection of subjects in whom disease of the spleen has terminated fatally ; we find a considerable variety in the morbid appearances of that organ : which may be described under the following heads ; the most frequent diseased appearances being placed first in order.

1.—A soft rounded enlargement of the spleen, the texture less firm than in the healthy state ; and easily broken if the finger be pushed abruptly against it. In some cases the part is so much softened, that it resembles a great clot of blood, wrapped in a thin membrane : this varies in color, from black, to brown or blue ; and in the extreme degree of softening, when we attempt to lift the tumid spleen, the fingers are thrust through the membrane, and the organ breaks down in the hands, becoming a putrid gore. This soft globular enlargement, from vascular engorgement of the spleen ; most commonly attends, or follows, the severe remittent Fever of the rains and cold season : when that disease attacks weak and unhealthy young persons.

2.—Oblong enlargement of the spleen ; the organ being more firm in texture than in its natural state, its edge thin and notched : the color being sometimes a pale brown, though more generally a dusky red. This morbid change of

structure, would appear to be the result of more slow and gradual degeneration, which in its earlier stages has probably been attended with some inflammatory condition of the internal structure of the spleen: in such cases we also find evidence of superficial inflammation, attended with adhesions to adjacent parts, more frequently than in the rounded enlargement from simple vascular engorgement.

3.—Opaque patches of various sizes, some of these extend over half the convex surface of the spleen, and are nearly $\frac{1}{8}$ th of an inch thick; they may be deemed the result of albuminous depositions during superficial inflammation.

4.—Adhesions of the peritoneal coat of the spleen to contiguous viscera; which adhesions are by no means a general result of tumid spleen in Bengal.

5.—In a few old cases, we find a more indurated friable spleen; that breaks when handled without much force, like a piece of old moist cheese.

6.—Still more rare, is the firmer induration intersected with septa of condensed fibrous structure; to which we give the name of scirrhus.

7.—Tubercles of various sizes, generally small, and of grey, or brown color.

8.—An organised coagulum in the splenic vein.

9.—Encysted tumors.

10.—Abscess of the spleen.

The four last mentioned morbid appearances, are exceedingly rare in Bengal.

Besides the above appearances of disease, we sometimes see an uniform pale-white, or milky color of the peritoneal coat of the spleen ; which tunic is unusually tough, like a thin bladder that had been dried and afterwards wet in hot-water : the substance of the spleen being soft and flexible. This has been observed in the post-mortem inspection of several persons who had been long subject to agues. In patients who have suffered from spleen disease, and are destroyed by a purging ; numerous small ulcers are found on the internal membrane of the great intestines, while the peritoneal coat appears either quite healthy, or paler than usual : the mesenteric glands in such subjects are often enlarged.

Our treatment of the early stage of enlargement of the spleen, must depend much on the nature of the co-existent pyrexia, and the degree of morbid sensibility when pressure is made over the left hypochondrium ; as well as the nature of

other acute symptoms that may be present. We would also be much guided by the degree of plethora, and general condition of the patient. But mercury must never be used, with a view to cure the disease of the spleen.

The treatment found most useful, in that modification of enlarged spleen, which consists in vascular engorgement of the organ; is, perseverance in a course of purgative medicines, combined with bitters, and some preparation of iron* : of which, small doses of the sulphas ferri appear to be the most efficacious. My usual formula, for cases where there is not much pyrexia is,

R. Pulv. Jalap.—Pulv. Rhei—Pulv. Calumbæ
 Pulv. Zinziberis—Potassæ Supertartratis, āā ʒ i.
 Ferri Sulphatis, ʒ ss.—Tinct. Sennæ, ʒ iv.
 Aquæ Menthæ Sativæ, ʒ x. misce.

This prescription is called the *Spleen Mixture*. The dose is one ounce and a half for an adult, at 6 A. M. and repeated at 11 A. M. daily. For children, the doses are regulated so as to produce not less than three, and not more than four stools daily. This medicine acts as a purgative,

* The efficacy of preparations of iron in the cure of enlarged spleen, is pointed out by Magnatus, in his *Thesaurus de Materia Medica*, vol. II. page 901, as well as in Pinel's *Nosographie Philosophique*, vol. III. page 547. See also Celsus *de re Medica*, lib. iv. c. i. sect. 5.

tonic, and diuretic. The purgative properties of the two first articles in this prescription, will be assisted by the cream of tartar; while that medicine with the jalap, generally act on the kidneys: the principal effects of the other ingredients, may be referred to their tonic and astringent properties. The cure of the enlarged spleen, may probably be in some measure owing to the effects produced on the circulation in that organ, by the frequent application of a powerful astringent to its immediate vicinity: the natives of this country are decidedly of that opinion; for on administering remedies containing sulphate of iron, in spleen disease, the patient is commonly directed to lie on the left side, that the medicine may flow to that part of the stomach in contact with the spleen. I have formerly used the above prescription, with treble the proportion of sulph. ferri now directed; and on dissection of some young subjects who came under my care in an advanced and desperate stage of the malady, and who died of the diseased spleen, while taking the mixture with the larger proportion of sulphate of iron, I found the stomach quite white, and exceedingly contracted; more resembling a man's thumb than a young child's stomach. I now consider the smaller quantity of sulph. ferri more proper for ordinary cases; and sometimes add 3 i. of Pulv. Scammon. Comp. to the above mixture, for patients who are very costive

and require stronger purgatives. On the other hand, in very delicate and emaciated subjects who are easily purged, it is requisite to substitute compound tincture of cardamoms, for the tincture of senna: and if there be any disposition to paroxysms of intermittent Fever, I add to the mixture, the same quantity of quinine as it contains of sulphate of iron.

When the disease is obstinate, there is an advantage in changing the prescription occasionally; and after the above has been used for 10 days, the patient, if an adult, is directed to take eight grains of compound extract of colocynth, with two grains of camboge, in pills at bed-time; and 20 drops of tinct. ferri muriat. in a wine-glass of water, with $\frac{3}{4}$ i. of tinct. gentian. comp. at 7, and repeated at 11 A. M. These medicines are to be continued for five days, and then, after taking the Spleen Mixture for 10 days more, the patient is ordered to take $\frac{3}{4}$ ss. of the powder of Black Myrobalan, with $\frac{3}{4}$ ss. of Black Salt every morning; and eight grains of compound extract of colocynth, with two grains of sulphate of iron, and two grains of aloes, in pills at bed-time. Thus for two-thirds of the time the patient is taking the Spleen Mixture; with the occasional change to another medicine for a short interval, whereby the efficacy of the principal remedy is not weakened by its

habitual use. It cannot be of importance to adhere invariably to a precise number of days in using each prescription, but an occasional change is requisite; and at any time during the treatment, if the patient becomes feverish, the above medicines are omitted, a dose or two of jalap is given, and leeches or V. S. employed. In a few cases we find enlarged spleen attended with cough, and the febrile stage of catarrh, and these cases are better treated for a few days by V. S. or leeches, purgatives, and tepid bath, before we commence the mixture containing sulphas ferri.

As a general plan of treatment for Europeans, those adult subjects who are not much reduced in strength, must be bled from the arm, and have from four to 10 leeches applied over the region of the spleen every 2nd day, for a fortnight. Should there be pyrexia, the V. S. may be repeated once or oftener; the blood should always be taken while the patient is in the recumbent posture, and it is seldom requisite to take more than one pound of blood at a time from an adult. In all cases where fever exists, or V. S. is requisite, I have found much benefit from directing a purge of compound powder of jalap; or of scammony with cream of tartar, and a grain of camboge; to be repeated for two or three days, before the sulphate of iron

was administered in combination with the bitters and purgatives as above directed.

In the treatment of diseases of the spleen, a careful attention to regulate the patient's diet is of the utmost importance. During the continuance of fever, the nature and quantity of food must be directed with reference to the degree of pyrexia, and symptoms of local inflammation that may exist. When patients not much reduced in strength are suffering from the early stage of vascular engorgement of the spleen, and having only occasionally slight pyrexia, it is advisable that the medicine should be given twice a day, so as to operate freely three or four times; no meat should then be allowed; they must live on tea, bread, sago, gruel, and chicken broth, or kid soup in very small quantity. But in the more chronic cases, where we must patiently wait for slower changes in the constitution, and the gradual removal of the enlargement of the spleen; the mixture is given once daily, in the morning; and in such dose as to act less powerfully, only twice a day: it is then not inconsistent to allow some roasted or boiled meat, and curry. A small quantity of port wine and water, or beer is also taken with benefit at dinner time, in most cases where meat can be allowed with propriety.

Natives suffering under the early stage of Spleen Disease, attended with Fever, live on

barley-water, sago, bread, and *coee*, or parched rice; but in more chronic forms of the disease, they may with safety be advised to eat their usual curry and rice. It seems generally admitted, that milk is improper food for patients laboring under disease of the spleen; and I am now quite satisfied that the prohibition of milk, is almost always justifiable. The native practitioners also prevent patients from eating fat, or oil; although castor oil is often administered by them as a purgative, and with great benefit.

Water which has been used for cooling heated iron at a blacksmith's forge, has been recommended as an auxiliary to other remedies employed in the cure of enlarged spleen. I have ordered it in some cases, at the time that purgatives were given, and apparently with benefit. This water is perfectly transparent, and if left exposed to the air for a short time after the iron has been cooled in it, there is scarcely any unpleasant odor or taste. This remedy is mentioned by Celsus.

OBS. LIX.—Nusseveen, a Mahomedan child, aged 3 years, was brought to me on the 26th June, 1831, suffering from Fever of 11 days duration. She was reported to have had an indistinct cold fit every 2nd day about noon, but this was not the ordinary day of a paroxysm.

The eyes were heavy and watery, the head was hot, belly tumid and elastic, spleen large and rounded, so that it could be distinctly felt two fingers breadth below the cartilages of the left false ribs, and extending half way from the ribs to the umbilicus. The conjunctival linings of the lower palpebræ were pale; the tongue was bloodless, moist, and coated with white mucus, through which the points of small red papillæ were evident; the feet were œdematous: appetite had ceased for several days, and the bowels were costive. Two leeches were applied over the spleen, and \mathfrak{z} i. of compound powder of jalap was administered, which purged the child freely.

June 27th.—Blueness of the nails, and coldness of the hands came on at 10 A. M. but no distinct rigor; though the nose and ears were quite cold. Two more leeches were applied to the spleen; and the purgative was repeated as yesterday: it operated well.

June 28th.—The morbid heat of head was much decreased, and the belly less tumid; but the size of spleen not altered. One leech was applied to the region of the spleen.

R. Pulv. Jalap.—Pulv. Rhei

Pulv. Zinzib.—Pulv. Calumbæ

Potassæ Supertart. $\bar{a}\bar{a}$ 3 ss.

Ferri. Sulphatis gr. v.—Tinct. Sennæ 3 i.

Aquæ Menth. Pip. 3 v.—misce.

Half an ounce administered every morning.

June 29th.—No return of coldness recurred this day.

One leech applied to the left side.

Mixture repeated daily.

July 3rd.—Is purged three or four times daily; spleen smaller; œdema of feet removed; tongue less coated with mucus.

A dose of Castor Oil was given this day; and the mixture repeated daily, afterwards.

July 8th.—Enlargement of spleen very nearly subsided, appearance of health restored, and appetite good: she was freely purged by a dose of compound jalap powder this day; and the mixture was ordered to be repeated daily.

July 14th.—Well. Medicine omitted.

This child was the daughter of one of my own servants. The leeches were applied in my house, and I know the medicine was faithfully administered.

OBS. LX.—Bannon, *Æt.* 26, a middle sized man, of dark complexion, was received into General Hospital, on the 19th December, 1825. He had been ill above six weeks at Arracan, and was now landed on arrival from that place: his illness had been at first continued Fever, but

for the last 18 days, a quotidian intermittent. On admission, his countenance was sallow and bloated; he complained of oppression at the chest, and cough; the tongue was clean and moist, bowels said to be regular: he was now suffering from a constant state of pyrexia, and much debility. The spleen was large, rounded, and extending far below the cartilages of the left false ribs.

Apply 10 leeches to the left hypochondre, and let him have a tepid bath afterwards.

Two ounces of the Spleen Mixture, such as prescribed at page 283, ordered to be taken three times a day; and ten drops of *Liquor Arsenicalis* were mixed with the first dose, daily.

December 24th.—The paroxysms of intermittent Fever have ceased. He is sufficiently purged by the medicine. The arsenical solution was now omitted, but the Spleen Mixture was continued daily.

January 2d, 1826.—He has been purged five times daily; the enlargement of the spleen has subsided: he is still suffering from some oppression at the chest, and complains much of debility.

R. Decoct. Cinchonæ. lb. i.

Sodæ Sulphatis. ʒ i. misce.

Ordered to take one ounce three times a day.

Jan. 10th.—His bowels have been kept freely open by the above medicine, and his health is improved. Discharged.

I had an account of this man, 16 months after he left hospital; and find that he had enjoyed tolerable health, with the exception of dyspnœa, which troubled him sometimes.

OBS. LXI.—John O'Brien, a stout boy, three years of age, was taken ill with Fever on the 30th September, 1826, and has had a paroxysm every second day since; but there has been no rigor. Admitted into General Hospital on the evening of the 10th October, 1826. The spleen is very large and round, extending as low down as the navel; there is morbid sensibility on pressure being made over the left hypochondre; the skin is dry and face pale. He had a paroxysm of Fever this day, and has taken medicine in the morning, which has had no effect.

Eenema Purg. statim.

October 11th.—He had two stools after the enema, and is now free from pyrexia.

R. Quininæ Sulphatis, gr. iv.

Aquæ Menthæ Pip. ʒ iss.

Acid. Sulphuric. Dilut. gtt. vi.—misce.

Three drachms to be given, four times a day.

Oct. 12th.—He slept well, and his bowels were sufficiently moved by the enema. Quinine repeated : and in the afternoon he had one dose of six drachms of the Spleen Mixture, mentioned at page 283, which did not purge him ; therefore the same dose was given at 7 A. M. and repeated at 11 o'clock A. M. daily. By these means he was freely purged, and the enlargement of the spleen quickly subsided. He had no return of Fever after the 12th, and was discharged well on the 19th October. The tumefaction of the spleen having entirely subsided, and the child had a healthy appearance.

This child had resided in a house overlooking the broad ditch of Fort William, and his illness was ascribed to a noxious exhalation from the mud of the wet ditch, from which the water had been allowed to run off at the usual time of the year ; and this patient was taken ill a few days afterwards. On recovery, O'Brien returned to the same residence, and was attacked on the 2nd November with tertian intermittent ; the cold stage of which was severe, followed by a prolonged hot fit. The child had a pallid countenance, when the hot stage of ague was not actually present. The bowels had been allowed to become costive, and the enlargement of the spleen had again appeared. He was re-admitted into hospital on the 4th November, 1826, in the

evening. Active purgatives of compound powder of jalap and rhubarb were administered: and he took the Spleen Mixture in the dose of one ounce, once every day, and had one dose of two grains of quinine, after coming to Hospital. He had a paroxysm of Ague on the 6th, and another on the 15th November; but there was some degree of pyrexia almost constantly present, for the first ten days.

He was discharged well on the 27th November. I had frequent opportunities of seeing this boy for 4 years afterwards; and know that he became a robust active fellow, and his health during that period was always good: his parents have removed to the Upper Provinces, and I have heard that he had no return of the disease since he left this place.

It is surprising to observe how quickly a very considerable enlargement of the spleen will take place, during the progress of intermittent and remittent Fevers, in the lower provinces of Bengal; this child had been only ill 12 days, when first admitted into hospital with the great tumefaction of spleen above described. Enlargement and softening of the spleen may take place in a very short period, and without any previous febrile disease: the most remarkable instances of which, are those reported in the cases of the epileptic patients, who died at Paris from a large

quantity of Prussic Acid, given by mistake. These unfortunate persons died in a few hours after taking the acid; and on their dissection, the spleen was found gorged with blood, soft, and pultaceous.

OBS. LXII.—On the 5th December, 1830, I was consulted by a lady, who had come to Calcutta, from above Rajhmahl. She was emaciated and pale, there was a livid circle round the eyelids, and the conjunctivæ were pale and bloodless: her skin was dry and cool, the feet slightly œdematous; tongue white and moist, but nearly clean; pulse 94, soft and weak. The spleen was enlarged, being nearly the size of a child's head, round, and very moveable, and rather lower down than a level with the umbilicus; it was very painful if pressed. The bowels were habitually costive. She was in the 5th month of her third pregnancy: and said that on the 9th November, she had been attacked with slight fever, which at first appeared little more than a common cold; but after it had continued for 10 days, she found herself very drowsy and torpid during the whole forenoon of every 2nd day; at the same time that she had slight head-ache, coldness of the feet and hands, pains in the palms, and blueness of the nails, but never any actual shivering: these ailments had been followed about noon, by flushed face, watery eyes, and extreme thirst. On the alternate days,

she was tolerably well; but had no appetite, and found herself becoming progressively weaker and lower.

Ordered to apply four leeches over the region of the spleen.

R. Infus. Gentian. Comp.—Infus. Sennæ, āā ʒ iv.

Magnesiae Sulphat. ʒ i.—Quininæ Sulphat. gr. viii.

Acid. Sulph. Aromat. ʒ ss. —Tinct. Sennæ ʒ ii. misce.

A wine-glassful to be taken immediately, and repeated at 6 A. M. daily.

December 6th.—At 10 A. M. her hands are cold, the nails blue, pulse 118; there is anxiety, and hurried respiration, but no rigor. She was purged twice freely yesterday: and took a dose of the mixture at 6 this morning, which has operated 4 times scantily: the stools are of a dark-grey color, and watery.

Four leeches repeated over the region of the spleen.

Dec. 7th.—She feels comparatively well this day; had scarcely any pyrexia after the coldness yesterday, and is much better: but is miserably thin and weak; the spleen not decreased.

The remainder of the mixture was taken this morning, and has purged her twice very freely.

Apply two leeches over the spleen.

Dec 8th.—No chilliness this forenoon, and she thinks herself better; morbid sensibility of

the spleen much decreased, and the tumefaction is rather smaller.

R. Pulv. Jalap.—Pulv. Rhei
 Pulv. Calumbæ—Pulv. Zinzib.
 Potassæ Supertart. $\bar{a}\bar{a}$ $\frac{3}{4}$ i.
 Ferri Sulphatis—Quininæ Sulphat. $\bar{a}\bar{a}$ $\frac{3}{4}$ ss.
 Tinct. Sennæ $\frac{3}{4}$ i. Aquæ Anethi $\frac{3}{4}$ x. misce.
 Two table-spoonsful to be taken every morning early.

Dec. 22nd.—The above mixture has been continued daily, with the effect of operating on the bowels, twice a day. The tumefaction of the spleen has entirely subsided, and her health and strength are very much improved. There has been no return of coldness or fever since the last report, and her appetite is increased.

R. Pil. Rhei. Comp.—Extract. Colocynth. Comp. $\bar{a}\bar{a}$ $\frac{3}{4}$ ss.
 Olei Menthæ Sativæ, gtt. v. misce et divide in pil. No. x.
 Two pills to be taken every night at bed-time.

R. Quininæ Sulphatis $\frac{3}{4}$ ss. Aquæ Fontis, $\frac{3}{4}$ x.
 Acid. Sulph. Aromat. $\frac{3}{4}$ ss.
 Tinct. Cardamom. Comp. $\frac{3}{4}$ ii. misce.
 Two table-spoonsful at 11 o'clock in the forenoon, every day.

January 10th.—No complaint, except that a slight degree of debility remains; there is a return of circulation of red blood in the capillary vessels of the conjunctivæ, and the leucophlegmatic pallor of visage has subsided. Bowels rather too free.

- R.* Decoct. Cinchonæ lb. j.—Tinct. Cinchonæ Comp. ʒ ii.
Acid. Sulphuric. Aromat. ʒ iss. misce.
A wine-glassful to be taken at 7 A. M. and at 12 daily.

This patient recovered excellent health.

OBS. LXIII.—Sperry, *Æt.* 38. Returned from Arracan, and was admitted into General Hospital on the 15th December, 1825. He states that he was at Arracan for eight months; during seven of which, he suffered from an intermittent Fever, that returned every second day. The bowels are now costive; the spleen enormously enlarged; and he is much debilitated.

Capiat Liquor. Arsenicalis gtt. x. bis quotidie.

R. Extract. Colocynth. Comp. gr. viii.

Pulv. Ipecacuanhæ—Camphoræ, āā gr. i. misce fiant pil. ii. quotidie mane sumendæ.

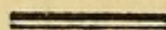
December 21st.—He has a return of ague daily; the left hypochondre is very tense. The above medicine was now omitted, and Spleen Mixture given daily, at 7, 11, and 2 o'clock: the Liquor Arsenicalis gtt. xv. at bed-time.

January 2nd, 1826.—The enlargement of the spleen has entirely subsided. Ague has ceased; bowels free, tongue clean, and there is now no complaint except debility. Discharged.

As soon as the purgative mixture, with sulphate of iron, acted freely on the bowels; the swelling of spleen subsided, and the ague ceased.

I had an account of this man's condition, 16 months after he left the Hospital. His health was then tolerably good, and he had suffered only one attack of ague with pain in his left side.

Probably change of air was of much service to this man, who had returned from the unhealthy climate of Arracan. But I have sometimes seen enlargements of the spleen which occurred here, quickly subside under the use of the Spleen Mixture, without any change of air. About 20 days appears to be the usual period required for the subsidence of recent vascular engorgement of the spleen in young subjects, under the most steady system of treatment, in those cases where mercury has not been administered; and where the early and febrile stage of the disease, has not been aggravated by undue employment of stimuli. On the other hand, the chronic induration of the spleen, is removed with the greatest difficulty; and many of the older cases are hardly to be cured by persistence in the best remedies.



CHRONIC ENLARGEMENT OF THE SPLEEN.

When enlargement of the spleen has existed for several months, the tumor becomes more indurated; it is less changeable in its bulk in the

course of a few days, and not so quickly affected by remedies, as the recent stage of vascular engorgement of that organ is. The size of the chronic enlargement of the spleen varies, in the adult it frequently is found to weigh five pounds. In children it often fills the space from the left hypochondrium, quite up to the umbilicus, and sometimes extends to the right of the navel; reaching in length, down half way, or even the whole distance to the pelvis. When a case of this sort has existed half a year; and the patient not being much emaciated, recovers on using medicine, in three or four months, it may be deemed a fortunate result of the most careful treatment. And when a spleen of this enormous size is completely cured, relapses are very rare: which is not the case in the early stage of vascular engorgement of the spleen; for then the local enlargement is apt to return on any slight indisposition. If the tumid spleen be of a globular shape, an enormous degree of disease may generally be cured by perseverance in careful treatment: but if the enlarged spleen be of an oblong shape, with a thin sharp edge, deeply indented by notches which can be felt through the abdominal parietes; a cure is much more difficult, and cannot generally be expected.

Indistinct Agues are apt to attend this chronic form of the disease, and the patients often have œdema of the feet and hands. If severe

Diarrhœa or Dysentery take place during the existence of chronic induration of the spleen, in emaciated patients; they very rarely recover.

In the commencement of the treatment of Chronic Diseases of the Spleen, we derive great benefit from applying leeches daily, or every 2nd day, to the left hypochondrium. The recovery of chronic cases is very often delayed on account of omitting to apply leeches in sufficient number at first. With local depletion, patients must persist in a moderate course of purgatives, and some preparation of iron; at the same time that they are enjoined to use a spare diet, with only a small quantity of meat, or fried fish, and to take some vinegar or pickles, with dinner*.

Blisters or issues over the region of the spleen are of service; but we should be careful of applying them to emaciated, leucophlegmatic, or dropsical subjects, during the rainy season: as sloughing ulcers are then liable to be excited by them. Much benefit is derived from a flannel bandage, or broad belt of flannel applied moderately tight, so as to support the weight of the spleen; and it

* Pickled capars eaten daily with the food, were considered of use in preventing spleen disease, in the time of Pliny.—Vide C. Plinii Naturalis Historiæ, lib. 20. cap. 15.

is important that the whole belly, but especially the left side, should be rubbed for an hour twice a day with heated flannel; if there be an open issue, the side may be rubbed round that. Liniments are not of much use.

OBS. LXIV.—John Brown, aged 7 years, a delicate child, of light complexion, and active habits, born in Bengal of European parents; was placed under my care on the 20th November, 1828: he was suffering from general ill health, and a swelling in the left side of the belly. The spleen filled the whole left hypochondre, and extended laterally quite to the navel; its lower extremity reached half way from the umbilicus to the pubis: it could be plainly seen when the child was laid on his back. The tumor was rounded, hard, firmly fixed in its place, and painful on pressure. The conjunctivæ of the lower lids were pale and bloodless, the face sallow, extremities wasted, the abdomen tense and very protuberant anteriorly; the appetite was indifferent, and the child suffered from irregular returns of Fever, the exacerbation generally in the afternoon; he never experienced any distinct rigor. The pulse was usually 82 and weak; but during an attack of fever, it was seldom less than 124. The bowels were regular, and the urine high-colored. I was informed that

this child was first taken ill with Fever in October, 1826 ; he had then a tedious illness, and imperfect recovery. During his convalescence the enlargement of the spleen was discovered, and he had not recovered good health from that time; the tumefaction of the spleen never having subsided.

The child was directed to be dressed in flannel. Ordered to eat no meat, and to take only a small quantity of soup for dinner. Five leeches were applied over the region of the spleen every 3rd day, he had two table-spoonsful of the Spleen Mixture, every morning early ; and half a grain of sulphate of quinine, in solution, every day at 11 o'clock in the forenoon : a dose of castor oil was given early on the morning of the day previous to using the leeches. By these means he was freely purged, and the irregular returns of Fever were prevented.

December 5th.—The spleen is not materially altered in size, but it is softer ; the child is rather weaker : it was impossible, that his face could be paler than when he first came under my care.

The leeches were continued every 3rd day. The castor oil, and quinine, were omitted : a large

table-spoonful of the Spleen Mixture was given every morning early, and repeated at noon; by which he was usually purged four times a day. The same diet was continued, and a very small quantity of vegetable curry with rice, and toasted bread, allowed for dinner.

Dec. 20th.—Spleen much decreased in size, the child has become very fretful, and many of the last-leech-bites have inflamed, and are suppurating. The medicine has usually produced three or four free stools daily; the appetite has improved. One table-spoonful of the Spleen Mixture, is to be now given every morning, and his diet increased by allowing some roasted or broiled chicken every 2nd day; alternately with a kid or fish-curry; and vinegar is offered with his food whenever he will take it. Half a glass of port wine is now given, diluted with twice the quantity of water, daily with his dinner.

January 12th, 1829.—He has usually two free stools daily. Health much improved, the leech-bites have all healed, and the size of the spleen is decreasing slowly. The whole of the abdomen and back ordered to be rubbed with a heated flannel, for an hour night and morning, daily.

Mixture continued.

February 10th.—The spleen is decreasing in size daily, and his health is much improved. The Spleen Mixture given every second morning.

March 2nd.—No enlargement of the spleen can now be discovered by the most careful examination. The child has become stout and fat, and has a healthy complexion. His general health has very rapidly improved since the middle of February, when the weather began to be warmer. Medicine omitted,

December 6th, 1831.—The health has been completely restored, and he is now the most active and healthy boy in Calcutta.

OBS. LXV.—Peter Crawley, aged 7 years, was brought to me on the 19th November, 1830; for advice, on account of an illness with which he had been afflicted for six months, during which time he had suffered from frequent attacks of Fever, and he was gradually wasting away. I found him pale, and emaciated, the feet slightly œdematous, the conjunctivæ pale, and bloodless, his face sallow, and bloated, and there was a livid circle round the eyes. Tongue slightly coated with white mucus, and so pale and bloodless as to resemble a piece of macerated veal; his gums were livid, pulse 116; there was some morbid heat of skin continually present,

but he had usually an exacerbation of Fever in the evening, not preceded by rigor. The spleen was large, hard, rounded, and heavy, not at all movable; it filled the whole left hypochondre, and extended more than a finger's breadth to the right of the umbilicus; its lower extremity, when he stood up, was felt three fingers' breadth lower than the level of the navel, in fact it reached nearly to the pelvis. Diet restricted to tea, bread, sago, and arrow-root.

Four leeches were applied over the enlarged spleen, every 3rd day, for five times.

He was ordered to take every morning, a table-spoonful of the Spleen Mixture with quinine: some of the following ointment was rubbed over the abdomen daily; and when the leeches were no longer used, it was applied more particularly over the enlargement of the spleen.

R. Camphoræ. $\frac{3}{4}$ i.—Spirit. Rectificati 3 ss.
Cerat. Cetacei $\frac{3}{4}$ v.—Olei Terebinth. $\frac{3}{4}$ ii.—misc.

February 18th, 1831.—The above medicines have been continued daily. He had no Fever after the second application of the leeches; and the spleen is decreased at least one-third. He has now an attack of continued Fever which commenced yesterday, without any evident cause. There is a great degree of morbid heat, with

some cough, and shortness of breath. Former treatment omitted.

Eight leeches applied over the spleen.

R. Pulv. Jalap. Comp. 3 ss.

——— Scammon. Comp. (Ph. Ed.) gr. xii.—misce.

Mitte tales chart. x.

One powder at 6 A. M. daily; and repeated at noon, if not freely purged.

Feb. 19th.—He was well purged by the second powder; the pyrexia is somewhat abated.

Apply six leeches over the region of the spleen.

Powders repeated as yesterday.

Feb. 20th.—Purged freely, and very little pyrexia now remains. Powders repeated daily.

Feb. 22nd.—He is free from Fever; the spleen is very slowly decreasing; he is pale, and weak. Ordered to take two table-spoonsful of the Spleen Mixture with quinine, every morning. Allowed chicken curry, or broiled kid, with pickles and vinegar at dinner.

March 8th.—Health considerably improved, and the spleen is slowly decreasing.

A blister 2 inches square applied over the spleen, and kept open.—Medicines continued daily.

March 23rd.—The spleen continues to decrease slowly, and his health is somewhat improved; but he suffers from occasional vertigo, and has a head-ache almost every forenoon, which is ascribed to the quinine. The Spleen Mixture ordered without quinine; two table-spoonsful to be taken every morning.

April 13th.—The head-aches ceased on omission of the quinine. There has been no change in any respect during the last 20 days. Half a glass of port wine given daily at dinner time. Former treatment omitted.

R. Tinct. Ferri Muriatis

Tinct. Gentian. Comp. āā ʒ i. misce.

To take 40 drops in a small wine-glassful of water daily at 6 A. M. and repeat at noon.

R. Scammon. Gummi-resinæ

Extract. Colocynth. Comp. āā ʒ i.

Saponis Duri.—Cambogiæ āā ʒ ss.—misce, et divide in Pil. No. xxx.—one Pill every night at bed-time.

May 4th.—Progressive and satisfactory improvement in the decrease of the spleen; health and general appearance somewhat mended: his appetite is good. Above treatment continued daily.

May 22nd.—There is no evident change in the last ten days: a scabby eruption has appeared

all over the head. Former medicine omitted ; and he is ordered to take a powder composed of Black Salt 10 grains, and the powder of the small Black Myrobalan* 20 grains, every morning early, in a wine-glass of water.

June 6th.—The above medicine has generally produced two or three stools daily ; his health and appearance are improving, and the spleen has decreased somewhat in the last fortnight. Eruption on the scalp better. Treatment continued daily.

* The black Myrobalan is known in the Bazars by the name of *Jungheia Haritakee*, or *Zungi Hur*. It is the small, black, withered, and dried, half-grown fruit of the *Terminalia Chebula* : it is a mild, and rather warm purgative, which is tolerably certain in its effects as an aperient, and possesses very considerable tonic properties. It has been found useful in some chronic visceral diseases attended with debility, where mercury did not act favorably. This article of *Materia Medica* is mentioned in Pomet's work on drugs, but the accounts there given of the different varieties of Myrobalan are somewhat erroneous. It is surprising that a medicine with such useful properties should be so little used in many of the *Cachexiæ* that prevail in low and damp situations in Europe. One ounce of the Black Salt, or *Kala Nemuk*, of the Bazars, according to the analysis made by Accum in London ; is composed of,

Six grains of black Oxyde of Iron ;

14 grains Sulphur ;

12 grains Muriate of Lime ;

444 grains Muriate of Soda : and there was a loss of four grains.—See Asiatic Researches, vol. xi. page 193.

July 10th.—He continues to improve slowly ; the powders purge him rather more than at first ; eruption over the scalp better. Powders omitted ; he is directed to take æ i. of iron filings, in a tea-spoonful of common oil of mustard seed every morning ; and a tea-spoonful of the Tincture of Aloes and Garlic, mixed with three tea-spoonsful of water, to be drank immediately after the former medicine : a dose of castor oil was given every Monday morning, omitting the other medicines for that one day each week.

September 22nd.—The above remedies have had a remarkably good effect ; the child's health is much improved in every respect ; the spleen is rapidly decreasing, but it can still be felt under the cartilages of the left false ribs ; it is round, moveable, and not pained by any pressure.

The same treatment was continued, and the enlargement of spleen disappeared entirely. He had a slight attack of Fever on the 12th November, 1831 ; for which he took infusion of senna and quinine for four days, and got well. He is now a fine healthy boy, residing in Calcutta, and can be seen at any time.

OBS. LXVI.—A tall and delicate woman, of dark complexion, 22 years of age : was brought to me for advice on the 16th December, 1828 ;

on account of a tumid spleen that was half as large as her own head. The disease was first observed in the beginning of November, and was very large when first noticed; it had not been preceded by Fever or any other ailment, except that she had been remarkably weak and languid, during the rainy season, more especially since the beginning of August: for the last 14 days her health has declined more rapidly, and she has restless nights. On examination, the spleen is found rounded, and very protuberant anteriorly; it extends two fingers' breadth to the right of the navel, and reaches half way from the cartilages of the left ribs to the pelvis, as she lies in the horizontal position: from its enormous bulk, the tumor is not easily movable. The conjunctivæ of the lower eyelids are pale, and bloodless, tongue white, clean, and blanched like macerated flesh. Pulse, when in the recumbent posture, 92, soft, and weak; when she is standing up 112; the extremities are cold, and appetite indifferent. The bowels are prone to constipation. This patient is the mother of one child, which is now nearly five months old, and she has been unable to nurse it. The catamenia are regular but scanty, and there is no other favorable symptom: for a more pale, ghastly, and leucophlegmatic visage; or more exhausted general aspect, never was seen.

She was directed to live on a small quantity of good soup, with a little broiled mutton for dinner, and to use only tea and bread, with sago, night and morning. Three table-spoonsful of the Spleen Mixture were ordered to be taken very early in the morning: with the intention that it should purge twice freely in the forenoon, and not interfere with the digestion of a sparing dinner of animal food at 3 o'clock.

For the purpose of unloading the turgid spleen, and at the same time of not arresting the feeble remains of regular menstruation; four leeches were ordered to be applied over the region of the spleen every second day, for four times each month; commencing their application on the second day after the menstrual period was over: so that for the ten days prior to the menstrual period, no leeches were applied. The medicine was also omitted during menstruation. The whole of the abdomen where leeches did not bite, was rubbed daily with hot flannel; and the patient was directed to wear an entire dress of flannel next the skin, besides her usual clothes.

February 20th, 1829.—The mixture has been occasionally increased or decreased a little, so as to purge twice freely in the early part of the day. The spleen has decreased very considerably, but there is not much improvement in the

general health. The mixture was now taken with exceeding difficulty and reluctance, often causing nausea; therefore it was omitted. The leeches were ordered to be continued for four times in each month as above directed; and she was allowed more meat, and two glasses of port wine, daily.

R. Scammon. Gummi-resinæ

Extract. Colocynth. Comp. āā 3 i.

Saponis Duri—Cambogiæ āā 5 ss.—misce, et divide in Pil. No. xxx.—Two Pills to be taken every night at bed-time.

R. Tinct. Ferri Muriatis 3 ii.

Twenty drops to be taken in a wine-glassful of water at 6 A. M. and repeated at noon every day.

June 10th.—The same treatment prescribed in February has been continued without intermission; except during the flow of the menses. The pills produce regularly two copious stools every day, early in the forenoon; and sometimes one or two scanty stools afterwards. The spleen has slowly decreased, and is now not a quarter the size it was in December last: the health decidedly improved. Some of the leech bites have inflamed, and are suppurating. The leeches were discontinued; the pills, and tinctura ferri continued.

October 6th.—The decrease of the spleen has been very slow since June, but the tumor

has now entirely disappeared ; and the patient's health has become in a great measure re-established, although this is the most distressing month in the year, for weak persons.

March 6th, 1831.—I have this day examined the patient, and cannot discover the slightest vestige of enlargement of the spleen. Her health for the last 18 months has been as good as at any period of her life.

OBS. LXVII.—On the 9th December, 1827, I was called to see a patient who had just arrived from the Upper Provinces, and found him laboring under an enormous enlargement of the spleen; which nearly filled the left side of the belly; it was tense, hard, and fixed, heaving up the cartilages of the ribs on the left side; extending laterally quite to the umbilicus, and horizontally three fingers' breadth below the navel. The whole belly was tumid, and tense; respiration hurried by slight exertion. The pulse was 88, soft, and oppressed, appetite tolerable, bowels regular. There was a slight serous oozing from a small ulcerated aperture, above and a little to the left of the umbilicus; round which aperture the muscles and integuments were indurated to a considerable extent. The movement of a palan-keen, or any attempt to take exercise caused pain

in the spleen. Though his face was pale and sallow, and the conjunctivæ of the lower lids bloodless, his constitution did not appear much impaired: his muscles being tolerably firm, and not much reduced in size. This man had led an active and temperate life, as a mounted officer, at one of the most healthy stations in the Upper Provinces of Bengal. The account of this patient's illness, which was sent with him, stated that an enlargement of the spleen had been first observed in March, 1826; and could not be ascribed to any particular cause: at first it was neither very painful nor accompanied with much pyrexia. The swelling gradually increased, and in the months of August and September, 1827, was attended with high fever, and extreme pain; suppuration then took place, and the ulcerated opening near the navel formed: after which the distressing pain, and pyrexia abated, but the tumor of the spleen was not remarkably decreased. The discharge was described as a serous fluid, with flakes of lymph dreadfully offensive; and it appeared to me to have proceeded from the interstices of the muscles, and not from suppuration in the spleen itself. Before coming to Calcutta, he had been treated by purgatives, and a small quantity of mercury.

The whole belly was rubbed daily with a liniment composed of Cajeputi Oil,—Aromatic

Spirit of Ammonia,—Oil of Turpentine, each 1 oz. mixed with 3 oz. of Anodyne Liniment. A small portion of blistering ointment was occasionally inserted into the orifice of the sinus, with a view to keep up a continued discharge.

R. Pulv. Rhei—Ferri Tartarizati āā gr. xii.

Pulv. Zinziberis gr. v. misce,—to be taken every morning early.

R. Acid. Nitric. ʒ ss.

Aquæ Fontis—Misturæ Camphoræ āā ʒ iv.

Tinct. Gentianæ Comp. ʒ ii. misce,—a wine-glassful to be drank every two hours, until the whole is used ; beginning four hours after the powder.

R. Aloes Extract. ʒ ivss.

Ferri Sulphatis ʒ ss. misce, et divide in Pil. No. xx.

Two pills every night at bed-time, if he have not had three stools in the course of the day.

December 28th.—The size of spleen decreased at least one-third ; general tension of belly much diminished, and cartilages of the left lower ribs less heaved up than formerly ; exercise is less painful, and he can now bear to ride in the buggy, without much uneasiness.

Powders and pills continued. The acid is omitted, and he is directed to take a claret-glassful of weak infusion of sage twice a day.

February 22nd, 1828.—The spleen has continued to subside slowly, and the belly is softer ;

the tumefaction at the left side is somewhat less than half the bulk it was in the beginning of December; exercise is now borne with hardly any pain, and his appearance is improved, but the appetite is uncertain and not good; extremities usually cold; no pyrexia.

Former medicines omitted.

R. Decoct. Cinchonæ lb. i.

Magnesiæ Sulphatis $\frac{3}{4}$ i.

Tinct. Gentian. Comp. 3 ii.—misce. A claret-glassful to be taken every morning.

R. Decoct. Aloes Comp. lb. i.

Tinct. Ferri Muriat. 3 ii.—misce. A wine-glassful to be taken every night at bed-time.

March 17th.—Very slow decrease of the spleen has continued since last report; the tumor is now less than one-third what it was on his arrival in Calcutta. He was advised to go a voyage to sea: during which he took daily some rhubarb and salpolychrest, with Calumba powder in the mornings; and when the bowels were not sufficiently free, a pill was taken at bed-time, composed of one grain of camboge, with two of colocynth, and two of scammony.

After little more than a year, I had an opportunity of again examining this patient's side, on his arrival from sea; and could not discover any remains of the enlarged spleen. His general health was very much improved, but not so good

as it was before the enlargement of the spleen commenced.

A more extended experience in the treatment of the diseases of the spleen, since the above case occurred; induces me to consider that notwithstanding the abscess in the side, and the late period of the disease when the patient came under my care; it would have been better to have bled this patient from the arm once, to have applied six or eight leeches over the spleen every second day, for a fortnight: and to have given for the first six weeks the Spleen Mixture; which might then have been followed by the rhubarb and ferri tartar in the mornings, and nitric acid during the day, with greater benefit. I have never yet met with an abscess in the spleen, in Bengal*.

During the existence of diseases of the spleen, attended with much enlargement of that organ; hæmorrhages from the nose, lungs, or stomach are very liable to occur: when moderate, they almost always afford relief; and in many cases recovery takes place so soon after their repeated returns, that there is reason to ascribe the cure

* In Andral's Clinique, vol. iv. p. 650. *Obs.* 30, is an instance of a tumor near the spleen, seated exterior to the peritoneum, the size of two large oranges, containing a sero-purulent fluid. I consider it somewhat similar to the above case.

to the bleeding. In young females, who are affected with tumid spleen just before puberty, the solution of that disease is very frequently preceded by bleeding from the nose. These facts coincide with the benefit generally derived from the repeated abstraction of a moderate quantity of blood, even in advanced stages of the disease; though there be no pyrexia present, and little or no morbid sensibility on pressing over the enlarged spleen. In adult females, with whom any degree of menstruation remains, we should be careful to apply leeches or take blood at such times as shall not interfere with the periodical return, abstracting blood after the regular period is over, as was done in Obs. LXVI.

Spontaneous hæmorrhages, if very profuse, sometimes suddenly destroy life; though they frequently appear to be the sole cause of restoration to health, in patients with whom all remedies have for a long time failed to afford any relief.

Obs. LXVIII.—In July 1828, I was requested to see a child, aged three years and half; who had been in a weak and languid state for nearly a month, in consequence of a slight attack of fever. The spleen was enlarged, extending below the cartilages of the ribs, but it was not very protuberant anteriorly: the paleness, debi-

lity, want of red blood in the capillary system generally, and other constitutional symptoms were strongly marked. This child had not been exposed in any unhealthy situation; on the contrary, he had lived in an upper-roomed house, with all the comfort and care, which opulence could command; and no cause could be assigned for the origin of the spleen disease, except the previous Fever, and the influence of the Bengal climate.

Before the enlargement of the spleen was discovered, a small quantity of calomel had been used with other purgatives; and from observing the injury generally produced by mercury in such cases, I do not hesitate to ascribe the protracted illness of this child, in great measure to the calomel that was used when the enlargement of the spleen was in an incipient state.

The patient was now treated for two months with the usual spleen-remedies, without success: as he appeared to be very weak, leeches were not applied. He had frequent paroxysms of Fever, his health continued to decline; and when sent on board ship in October, he was reduced to a very low state of emaciation and debility: the enlargement of the spleen had not been diminished by the remedies employed. I afterwards ascertained that during the voyage to England,

there was some improvement of health, and slight decrease of the spleen : but on arrival in Europe the child got worse, and sunk into a state of extreme debility. I was informed that he was for some time treated without avail, by professional men of the highest reputation : he continued to decline in strength and appearance ; the belly became very tumid, and the spleen larger than ever ; his lips were covered with a dry brown scab, and the respiration was much oppressed. His disease was considered by his friends beyond the reach of medicine, and in despair of recovery, all treatment was abandoned ; except rubbing the belly with hot flannel, which was continued, because it seemed comfortable. The slow decline was progressive, until a spontaneous bleeding at the nose took place, and returned for several days, to such degree that life was considered in great danger from the loss of blood. The first favorable change observed was a greater freedom of respiration ; and notwithstanding the extreme debility, there was increased playfulness, and in a few days, improved appetite. From this time he gradually improved, and in four months was restored to good health ; without any medicine except an occasional aperient of rhubarb, or castor oil, when costive.

OBS. LXIX.—Thomas Brooks, *Æt.* 46, a tall, and rather thin man, of dark complexion, 14

years resident in India ; is on his way to Europe, being lately invalided on account of chronic disease of the spleen and general ill health. He is now sent to Hospital on the 11th January, 1831, ailing from the remote effects of drunkenness. He states that he suffered from Fever and Ague at Rangoon in 1826, and the spleen then became enlarged ; ever since which period he has been subject to that disease ; never having been free from the induration and fulness under the left false ribs, which has been attended with a sense of weight, and so much uneasiness as to prevent his standing quite erect since he left Rangoon : he is of a costive habit.

R. Pulv. Folior. Sennæ ʒ i. at 7 A. M.

January 13th.—Was purged four times by the senna. He is now slightly feverish ; the spleen is hard and round, extending two fingers' breadth below the cartilages of the left false ribs. Ordered to take a dose of castor oil.

Jan. 14th.—Purged freely by the oil ; and he does not complain of any particular ailment, except enlargement of the spleen, and inability to stand erect. Senna powder repeated.

He was purged by the senna in the forenoon ; and at 3 P. M. was seized with a vomiting of

black blood, in coagula; the whole quantity estimated at above $3\frac{1}{2}$ pints; he became pale, and faint; the pulse 64, soft, and weak; and the tension at the left hypochondre at once subsided.

R. Magnesiae Sulphatis ζ iii.

Aquæ Fontis ζ ii.

Acid. Sulph. Dilut. gtt. xii.—misce. To be taken at 3 P. M. and repeated at 6.

Jan. 15th.—He has been restless and uneasy all night, and has had many stools, consisting of broken coagula mixed with fluid blood; the evacuations altogether are equal to five pints; he is pale and weak.

R. Olei Ricini ζ i. at 7 A. M.

Jan. 16th.—Has had nine stools in 24 hours, in all about $3\frac{1}{2}$ pints, the same sort of evacuations as yesterday, but more fluid.

R. Magnesiae Sulphatis ζ ii.—Aquæ Fontis ζ ii.

Acid. Sulph. Dilut. gtt. xii.—misce. To be taken at 7 A. M.

Jan. 17th.—Only two stools in 24 hours, the first contained blood. He seems less debilitated.

R. Pulv. Jalap. Comp. ζ ss. at 7 A. M.

Jan. 18th.—Purged four times by the jalap; there is no blood in the stools; he feels well, but weak. Jalap repeated.

Jan. 19th.—The tumefaction of the spleen has entirely subsided, and he is able to stand erect, better than at any time since 1826. He was directed to take *Pil. Rhei. Comp. gr. xii.* daily.

Discharged to embark for Europe, on the 21st January, 1831.

OBS. LXX.—Denis Cahill, *Æt.* 40, a tall thin man, of light complexion, emaciated habit, and broken constitution; 17 years in India. Admitted into Hospital on the 8th March, 1827, with enlarged spleen, attended by pain, and sense of weight at the left hypochondre, and in left shoulder blade, extending from thence round the loins. The belly is so elastic, tense, and full, that the dimensions of the enlarged spleen are not very distinctly defined. He is emaciated and pale, with bloodless lips, and dry skin; usually of a costive habit, but has suffered much from *Diarrhœa* for a week before he came to Hospital: evacuations copious, quite fluid, of grey color, and extremely offensive.

The most distressing symptom was the *Diarrhœa*, which defied all remedies; he became weaker, the tension of belly increased, and in the beginning of June ascites appeared. By the use of a weak solution of acetate of potass with *acet. colchici*, and *sp. æther. nitrici* the

hydropic tension of the belly was beginning to decrease ; without material amendment of other symptoms. On the 22nd June, at 10 o'clock A. M. he was suddenly seized with Hæmatemesis ; not less than two pints of dark-colored blood was vomited, which was not coagulated. He immediately felt the left side easier than usual. Eight leeches were applied to the left hypochondre. At 7 P. M. he began to void blood per anum, and during the night he was ten times at stool. The evacuations amounted to near four pints of pure blood, no part of which was coagulated. On the 23rd June, the belly was less tense, and no tumor of the spleen could be felt ; he vomited some clots of blood at midnight, and had many stools of thick and tar-like blood ; tumefaction of belly subsided, but these copious evacuations produced much debility. Slight incoherency of speech was observed, and he was affected with anxiety and hickup ; some blood was voided daily by stool till the 26th.

On the 3rd July, he was beginning to recover his strength, and the stools were reduced to three daily ; the spleen could now be felt, but exceedingly small compared with its former size.

He never recovered from the exhaustion of these repeated hæmorrhages, but gradually sunk, and died on the 23rd July, 1827.

On dissection—The spleen was found about double its usual size, and slightly indurated; the splenic vein was filled with an organised coagulum; part of which was traced extending along the porta, into those branches, which enter the liver: the porta was about half filled with this organised coagulum, and the other half was occupied by the ordinary recent coagulum, which is found in the veins. A preparation of the part has been preserved. The liver was slightly indurated, and of rather darker color than natural; mesenteric glands enlarged, and a few small grey tubercles in the lungs.

From the evidence contained in the foregoing pages, we see how great an influence, the diseases of the spleen, exercise on the human system: and what strong indications they afford for the observance of peculiar caution in the treatment of some of the Fevers of Bengal; and in all those diseases which may be complicated with tumid spleen, or its corresponding cachexia. On comparing the above account of spleen diseases, with other maladies; we will be able to observe that the disorders most closely allied to *Splenic Cachexiæ* are, Chlorosis, Scorbutus, and some species of Anæmia. The parallel of these diseases is so strongly marked, that I am surprised it should not have been generally noticed: the morbid condition of the blood is somewhat

similar, the progress of the local inflammations and ulcers which occur during these diseases, are alike difficult to manage ; and similar remedies are found useful in these complaints.

NATIVE REMEDIES FOR SPLEEN DISEASES.

IN the former chapter, I had occasion to remark how seldom we saw Diseases of the Liver occurring in natives of Bengal. It is quite the reverse with respect to Diseases of the Spleen, which are exceedingly frequent, tedious, and dangerous complaints, among the natives of this part of India : arising often as idiopathic diseases, but in the majority of cases ascribed to Fever, Dysentery, or other debilitating disorders.

The mode of treatment requisite for cure of spleen disease of Asiatics, does not differ from that directed for Europeans ; except that the same frequency and extent of depletion by blood-letting and leeches is not requisite : and in those cases where pyrexia does not exist, there is no need of such active purgatives as are advised for Europeans.

In some natives of delicate constitution, who live on a very poor diet ; the tumid spleen sometimes appears suddenly, unattended with any very urgent symptoms, except paleness and

debility: these subjects will often recover, if they are allowed a small quantity of good food, and are made to take a dessert spoonful of undiluted tincture of rhubarb early in the morning, and two ounces of infusion of cheraytta with 20 drops of nitric acid in the afternoon.

The following prescriptions are used by the natives of Bengal: and I have often tried them in cases of spleen disease of Asiatics, with benefit; though in the majority of cases their efficacy is very inferior to the Spleen Mixture. They may occasionally deserve a trial, in Europeans, when we wish to vary the patient's medicine: and natives will frequently take these prescriptions with more confidence than European medicines.

A.

Sulphate of Iron, 4 grains.

Garlic, 20 grains.—Aloes, 6 grains.

These ingredients are made into a bolus, which is repeated early every morning. Half this dose is given to a debilitated man; or to a woman; and a quarter to a child under 12 years of age. This is commonly used in the lower provinces of Bengal, and is often very effectual. A small dose of castor oil, or Teori, (*Convolvulus Turpethum*,) is usually given every 5th day.

B.

Garlic 32 cloves, (about 3 vii.)

Aloes one ounce.—Brandy two pints.

To be mixed and macerated in the sun for 15 days. Dose 3 ii. to 3 iv. twice a day for an adult, mixed with equal quantity of water. This is said to be best adapted for spleen cases, attended with emaciation and Diarrhœa. It generally acts as a diuretic and mild aperient.

C.

The same quantities of garlic and aloes, as above directed, are mixed in two pints of vinegar, and used after 15 days; in the same manner as prescription B. It is considered an efficacious medicine for those patients who appear stout and rather bloated, but are not suffering from Diarrhœa or an irritable state of the bowels. It is less generally used than prescription B.

D.

Iron-filings 3 ii.

Common oil of mustard seed 3 i.

These articles mixed and swallowed early in the morning; immediately after which a dessert-spoonful of the tincture of Aloes and Garlic, (B) is taken undiluted: and the patient lies down on the left side for half an hour after taking the medicine. Before commencing these medicines the patient is purged with castor oil.

The use of this last prescription, has in several cases of recent spleen disease, unattended with pyrexia, been followed by subsidence of the tumid spleen in very few days. The common oil of mustard seed of the bazars contains a portion of vegetable mucilage, in which a considerable degree of the pungent properties of the mustard are taken up; and with the aloetic tincture, the patient gets a tolerably strong stimulant dose in a small bulk.

The natives in some districts, occasionally employ Sulphate of Copper, in such small doses as barely to have an emetic effect. I have given this remedy in doses of two, and four grains, in pills with equal quantity of Pill. Rhei Comp. Its efficacy seems to depend on its tonic and astringent properties.

In some emaciated patients who were taking the aloetic tincture, prescription B, the subsidence of the enlargement of the spleen was not followed by a restoration of health; the patients sunk into a state of marasmus and died. The morbid appearance connected with the spleen in these cases was a firm and broad adhesion of the great curvature of stomach to the contiguous part of the spleen, appearing like a broad flat band; the extension of which passed across the middle of the spleen, and was attached to the peritoneum,

just inside, and above the cartilages of the ninth and tenth ribs, on the left side ; so that the spleen was found to be slung up in its place : in such cases the whole peritoneal coat of the spleen was found thickened and opaque. I have, however, seen a number of obdurate cases of spleen disease of long standing, permanently cured by persistence in use of prescription B ; and in some of those which I had an opportunity to observe carefully, while under the influence of the medicine, there seemed a slight increase of morbid sensibility on pressure over the spleen, and the patients complained of thirst, but had not other symptoms of Fever. Hence it would seem probable, that in patients whose constitutions are not much impaired, the permanent cure of tumid spleen, may be favored by a slight degree of superficial acute inflammation affecting the peritoneal coat of that organ : the permanent contraction which follows the absorption of the coagulable lymph, effused during the inflammatory state ; may tend to effect a permanent cure of the tumid spleen, in a manner somewhat analogous to the permanent contraction produced in the gall-bladder, as a remote consequence of slight superficial inflammation, which is alluded to at page 137. This opinion is supported by the fact, that appearances of superficial inflammation very rarely exist in those cases of great tumefaction of

the spleen, which have not been cured : while on dissection of subjects who had for many months or years suffered from enlarged spleen, and who had recovered from that complaint, and enjoyed good health for years afterwards ; some vestiges of previous inflammation have been noticed. I have observed these adhesions, (giving the appearance as if the spleen were slung up in its place,) so frequently after stimulant treatment employed in Chronic Spleen Disease ; that I do not hesitate to refer these appearances, to the effects of the remedies employed.

Long needles are said to be used by native practitioners, to puncture the spleen : and if they ever penetrated to the diseased organ, and a cure succeeded, it is very probable that the successful event might be ascribable to the peritoneal inflammation excited at the diseased part. I have seen them use needles, but so short, that I am quite certain the surface of the spleen was never touched in any of the operations which I witnessed. However, as they operate with the acknowledged intention of puncturing the spleen, it is probable that the use of needles for such purpose, is founded on practical acquaintance of the benefits to be derived from such operation when more effectually done. And it is possible that the benefit which is derived from it, may depend on a degree of

local inflammatory action, being followed by an effusion of lymph, which on absorption effects a permanent decrease of the spleen. I have in chronic cases, inserted 2, 3, or 4 needles, deeply into the substance of the spleen : the needles were introduced exactly two inches, and no unfavorable symptom has ever followed the operation : the effects were deemed by those gentlemen who witnessed these operations, useful in accelerating the absorption of the enlarged spleen ; but the patients were at the time taking the usual remedies. Two men now in Hospital, Pereira and Guthrie, have each had the spleen repeatedly and deeply punctured : they are recovering, and I think the spleen in each has diminished more rapidly since the operation, than for 3 or 4 weeks previously. We have yet to ascertain at what stage of the diseased spleen, the affected organ is likely to derive benefit from being punctured by needles. In some periods of the early stages of the vascular engorgement ; we have reason to believe that adhesive inflammation, or a healthy process is not very likely to follow local injuries, by operation, or otherwise. The natives of this country generally use remedies in disease, from practical knowledge of their efficacy ; without much reasoning : therefore I would not reject any of their therapeutical expedients as despicable, without an enquiry into their *modus operandi* ; and an experimental investigation of

their utility. I have repeatedly seen native practitioners apply the actual cautery* over the region of an enlarged spleen. Were it not for the pain, as well as cruel appearance of burning, I could recommend the moxa to form an issue.

EFFECTS OF MERCURY IN DISEASES OF THE SPLEEN.

PATIENTS who are suffering from enlarged spleen, are generally liable to be affected in the most unfavorable manner by mercury: and this is more particularly the case with pale and leucophlegmatic subjects, who are labouring under the early stage of vascular engorgement of that organ. In fact, the extreme debility, depression, and exhaustion, produced by mercury in most cases; and the premature salivation, destructive ulceration, and horrible sloughing of the gums, lips, and cheeks; which frequently take place in consequence of the administration of small quantities of mercury, are so shocking to contemplate; that the treatment of the endemic

* The cautery was used by the Arabian physicians, for the cure of obstinate spleen disease. See Albucasis, vol. i. sect. 30, Oxford edition, 1778, where the forms of the cauteries, and the mode, of using them are described.

spleen disease of the lower provinces of Bengal, should never be spoken of, without a preliminary caution respecting mercury. The state of constitution rendering the use of mercury improper in this disease, seems to depend on some condition of the solids, or fluids, or of the vital actions, superadded to that state, which is generally denominated debility: for mercury does not produce such evil effects, when given to patients who are debilitated in consequence of hæmorrhages, or of acute diseases. Whatever may be the essential condition of constitution, on which the destructive effects of mercury depends; the frequency, nay almost certainty of those effects in greater or less degree, whenever mercury is used during the existence of vascular engorgement of the spleen, cannot be too strongly stated.

Ulceration and sloughing of the mouth, though prone to occur during spleen diseases, from slight local irritations of any sort; happen much more frequently, and in more severe degree, after the use of mercury.

The disease of the mouth in cases of tumid spleen, commences in various ways; that most sudden in its origin, and most rapid and destructive in its progress, begins with ulceration and

slight tumefaction at the orifice of the parotid duct; the aperture of which becomes obstructed by the swelling, while the ulceration at its termination permits the saliva to be injected into the cellular structure of the cheek. A glossy semi-transparent swelling will then form, nearly half the size of a small orange, in the course of one night. The cheeks and forehead become hot, and inflammation takes place, attended with low fever: the internal ulceration increases, and if the patient survive four or five days, the cheek mortifies and falls out: so that the back teeth are bare, and this horrible sloughing ulcer allows us to see into the throat. In other cases, that are usually more protracted, superficial ulceration of the mucous membrane of the mouth extends slowly, until it passes over the red part of the lip; and soon after reaching the external skin, an inflamed patch forms, which becomes in a day or two black, and the mortified portion is thrown off, uncovering the front teeth: the event of such cases is generally the destruction of life. In still slower cases, the gums ulcerate slightly, while an extensive separation of the periosteum of the jaw bones takes place, and is followed by caries of the bones of the face: many of the teeth fall out, and extensive exfoliations of the jaw bones happen in these patients. Even after this destructive process, some persons recover; and live for many years,

examples of the evil effects of injudicious use of mercury. In some of these unfortunate cases the tongue adheres to the inside of the lower jaw bones, and cannot be protruded beyond the points of the few tottering teeth that remain. In others, the jaws are permanently closed to such degree that solid food cannot be used, and speech is much impeded. It is not among the indigent classes of society alone, that these misfortunes happen, where they might be ascribed to the patients' poverty, and negligence of themselves ; but they are liable to occur, and do occur among the most opulent, and to those who are provided with every domestic comfort, if mercury be carelessly exhibited during the unfavorable state of constitution that attends splenic cachexia. These people also often become permanent valetudinarians for life from rheumatism and general debility, in consequence of the excess of mercury, whereby the mouth and teeth suffer in the first instance : but many die from the debility produced by mercury, before ulceration of the mouth takes place. These evils from the excess of mercury, are infinitely more rare, where the spleen is not diseased.

The best treatment for these lamentable cases, is to obviate as far as possible every sort of local irritation, and to arrest ulceration by use of mild

astringent washes for the mouth and gums ; the most useful of which, is composed of

Spirit. Camphoræ

Tinct. Catechu āā ʒ i.

—— Rhatani. ʒ ii. misce. A dessert-spoonful to be mixed with a tumbler of tepid water, to wash the mouth every three hours.

One of the greatest, and most permanent causes of irritation, is the pressure of the teeth against the swollen and irritable membrane lining the inside of the cheeks. To remove this, I usually direct the patient to keep a piece of folded soft rag, wet in a weak solution of sulphate of zinc, always placed between the double teeth and the inside of the cheek. The medical treatment should be such as is suitable in sloughing ulcers of debilitated subjects. The Spleen Mixture should be given once every day, early in the morning; and quinine in solution, at noon, with the addition of the compound tinctures of bark, cardamums, and gentian, each 3 ss. for an adult: and at bed time a dose of quinine in solution, with as much acetate of morphia or black drop, as shall procure rest. The diet should consist of a small quantity of good soup, and a glass of port wine at noon; and if the patient be able to eat meat, a small quantity of roasted meat, or of mild curry, in the afternoon, with repetition of the port wine. Tea,

sago, and bread, night and morning. When the sloughing inside the cheek is commencing, it may in a few cases be checked, by one application of undiluted nitric acid to the part.

It sometimes happens that the spleen becomes suddenly enlarged during the progress of Fevers, in patients whose constitutions have suffered from the influence of this climate. If these patients should be using mercury at the time, it must be immediately omitted; and should they have already taken a considerable quantity of calomel in the previous stages of the Fever, their cases are most unfortunate; for the majority of such patients as do not fall into an incurable state in consequence, are almost certain of a tedious and imperfect convalescence. In these diseases, we have nothing to regret in giving up the use of mercury, for that medicine is useless in cases of Fever connected with vascular engorgement of the spleen; and the other resources against Fever must be relied on.

Several years ago, I undertook an inquiry relative to the remote effects of calomel, on patients who used that remedy for Fevers, at the same time that they were affected with Spleen Disease. I allude particularly to patients who had taken calomel at the commencement of Fevers, before it was discovered that the spleen was

affected. A most patient and prolonged investigation was pursued relative to numerous such cases; in many of which I ascertained the state of health above 18 months after mercury was used, and compared the reports on their condition, with the state of patients who had suffered from spleen disease attended with extreme degree of impaired health, but used no mercury. I found that those patients in whom mercury had been administered during the existence of Spleen Disease, almost always had the health permanently impaired; in fact, a large number of them might be said to have broken and ruined constitutions: while those who were treated for similar diseases without the use of mercury, almost invariably recovered good health in Bengal.

It is very difficult to treat cases where enlargement of the spleen from vascular engorgement, co-exists with enlargement of the liver, and biliary congestion; I have been frequently induced in such diseases to try the cautious administration of mercury, but found sudden and extreme exhaustion of strength, with ghastly and sunk countenance, to be produced by small quantities of calomel or blue pill. Not only have the effects of mercury in such cases been evinced by dangerous debility, as an early consequence; but the influence at remote periods has been equally to be regretted. The disease of the spleen in

these patients has been exceedingly obstinate, and in some instances intractable ; as the following examples will show.

OBS. LXXI.—John Hewett, *Ætat.* 27. Had Ague one month at Arracan, and on his return from that place was received into Calcutta General Hospital, on the 16th December, 1825 ; having then an enlarged spleen. The whole belly was very tense and full, skin dry, tongue white and moist, countenance of an unhealthy, lurid, cadaverous aspect, and there was bilious discoloration of the surface. He was exceedingly weak, though not much reduced in size. The Spleen Mixture was administered daily ; but not producing sufficient purgative effect, pills of Extract. Colocynth. Comp. grs. iii.—Camphor.—Pulv. Ipecac. $\bar{a}\bar{a}$ gr. i. were added ; after which he had four stools daily.

Nevertheless, the enlargement of spleen, and general tension of the belly continued. The bilious tinge of the skin was unabated, the urine was high colored, and he had pain in the region of the liver : there was also a severe cough, attended with viscid mucous sputa. These indications of biliary accumulation and disorder, induced me to prescribe Calomel.—Pil. Hydrarg.—Pulv. Antimon.—Extract. Hyoscyami. $\bar{a}\bar{a}$ grs. v. mane et vesper.

In three days the mouth became affected; the cough decreased, and in a few days ceased entirely: the bilious tinge of countenance, and other symptoms referrible to disorder of the liver were diminished, but the spleen remained large. At the same time when the mouth became affected, extreme emaciation suddenly took place; attended with increased debility and exhaustion. The mercury was omitted, and nutritious diet with wine was requisite to prevent his dying from debility. He was very weak for a long time, and some yellowness of face remained. He was able to proceed up the river in a boat to Ghazeepore, on the 19th January 1826; considerably better, but still much reduced.

This man suffered from Ague, with pain in the side and enlarged spleen, in October and November, 1826. By the kindness of Dr. Daunt I had an account of his state of health so late as 30th April 1827, up to which time he had suffered frequently from Dyspnœa, and an irregular state of the bowels: but was not considered unfit for military service.

OBS. LXXII.—W. Hoy, *Ætat.* 28, a very pale and weak young man: had intermittent Fever for 35 days at Arracan, where he was salivated. On his return from thence, he was admitted into General Hospital on the 16th December, 1825;

suffering from a large spleen, general tension and fulness of belly, cough, and intermittent Fever, of tertian type.

R. Scammon. Gummi-resinæ
Ext. Colocynth. Comp. āā 3 i.
Saponis Duri—Cambogiæ, āā 3 ss. misce et divide in
Pil. No. xxx.

Liquor Arsenicalis was given daily; and he took two or three of these pills every night, so as to be freely purged.

No benefit was derived from this treatment; therefore he commenced on the 18th December, to take one ounce of the Spleen Mixture three times a day, and persisted in its use until the 23rd. He was then not any better, but suffered from frequent attacks of vomiting; his urine was at times very high colored; skin and eyes bilious.

R. Calomel.—Pulv. Antimon.
Pil. Hydrarg.—Extract. Hyoscyami āā gr. ii. misce
fiant Pil. ii. To be repeated night and morning daily.

Only four doses of these pills were taken, when a most remarkable degree of debility was quickly produced, with very sunk anxious countenance: the mouth was slightly sore. The teeth had been loose ever since the former salivation at Arracan.

A very liberal use of wine was requisite for many days, to save this man from sinking. Various remedies were afterwards tried without effect; the spleen remained large.

On the 10th March, there was a bilious appearance of face, and high colored urine, to such a degree, that I was induced to try the blue pill; but after taking two doses of five grains each, there was great increase of debility, with such a lank and sunk countenance, that the pills were omitted. This patient's skin was certainly clearer, and he felt better after the debility had in a degree subsided. He became stronger, and had a more healthy appearance. But although he remained above four months in Hospital, the enlargement of the spleen could not be reduced.

OBS. LXXIII.—A slight made man, aged about 47, who had enjoyed tolerable health in India for many years: suffered from Dysentery and remittent Fever, for several weeks, in autumn 1824; at a station which was remarkably unhealthy during that season. He used a small quantity of calomel, (he said the whole that was taken in the course of several days, did not exceed 24 grains,) which moderately affected his mouth; and he came to Calcutta for change of air. I saw him the day after his arrival. He was emaciated,

had an enlarged spleen, and general tension of the belly: the right cheek was enormously swollen, hard, and shining; he ascribed the swelling of the cheek to cold during his journey to Calcutta. There was a dreadful mercurial odor from his mouth. Mortification took place in the tumor of the cheek, and in spite of every remedy that could be suggested, he died in six days.

OBS. LXXIV.—John Wilson, *Ætat.* 40, a slight made man, resident in Calcutta, was attacked with Fever, not preceded by rigor, on the 20th October; and admitted into the General Hospital on the 24th October, 1825. He was bled to lb. i. and took Calomel grs. viii. followed by Pulv. Jalap. C. 3 i. and a warm bath was used. The bowels were afterwards kept open by Ext. Colocynth. Comp. for four days. At that period, he had a dry skin, and brown but moist tongue. Was ordered to take Extract Colocynth. Comp.—Pil. Hydrarg.—Pulv. Antimon. āā gr. ii. This was repeated three times on the 29th Oct. once on the 30th, and once on the 31st. Several days afterwards, a slight mercurial fœtor of the breath was observed; but it gave no uneasiness, and attracted no particular attention. The soreness of the mouth went on increasing till the 20th November, and then a slight superficial ulceration

had extended round the right side of the upper lip; for which alum-wash was used, and his bowels kept open. The face up to this time had not been much swollen, nor the salivation considerable. On the 24th, he was very low and weak, with a feeble pulse; and mortification of the lip had commenced. He stated, that he had been seized with pain in the spleen during the night: this was the first time that he had complained of pain in the left side.

He was ordered to take decoction of bark, compound tincture of bark, and acids; under which the constitution seemed to rally: but the mortification extended, and the whole right side of the upper lip was destroyed, quite up to the nose. He died on the 23d December.

On dissection, the spleen was found enlarged and soft, like a coagulum of blood in a cyst. The liver was dark-colored, and harder than natural. The gall-bladder was contracted, and not larger than the end of the little finger: it contained some green gelatinous fluid.

OBS. LXXV.—A poor man, who had been exposed in an unhealthy and low situation; suffered from remittent fever and enlarged spleen in July and August 1824. He said some calomel was taken, with other purgatives. I

could not ascertain the exact quantity of mercury that was used. A dreadful salivation followed, with sloughing of the gums and destruction of the teeth, and part of the alveoli of the jaw bones. He gave me 14 teeth, and several portions of the jaw bones : some of the latter are above two inches long. This poor fellow still lives, a melancholy example of the baneful effects of mercury, in cases where men are laboring under the constitutional affections that generally attend vascular engorgement of the spleen. These teeth and portions of the jaw bone, are still in my possession.

It might appear unreasonable to ascribe the rapid increase of debility in some of these cases, and the extensive destruction of bone as well as of soft parts, to the small quantities of mercury used : but a multitude of facts might be adduced, shewing similar consequences from the use of small quantities of mercury ; in fact such evil effects might be stated almost invariably to follow, when much mercury is used during the early stage of tumid spleen, in the lower provinces of Bengal.

It is important to inquire, how soon after the subsidence of tumid spleen, calomel may be employed without hazard ; in case a patient recently recovered from spleen disease, should

suffer from any complaint urgently requiring the use of that remedy. I have some reason to believe, that mercury may be employed without danger, after the subsidence of tumid spleen, when patients have recovered from the debility which usually attends that disease: provided the functions of the skin are restored, and there is a return of red blood in the capillary circulation on the surface; and a healthy degree of vascularity of the lining membrane of the palpebræ.

The chronic enlargement of the spleen, if left without medical treatment, often remains for many months, or even for years: and in a few of such protracted cases, the constitutional symptoms begin to abate while the tumefaction of the spleen remains. In these cases, if mercury should be requisite in the treatment of any particular disorder that may supervene, we occasionally see that medicine given, without those destructive consequences before described; but no beneficial effects on the diseased spleen, ever arise from the use of mercury, even in the description of cases, and at the stage of disease above alluded to. I ought to repeat, that all cases of spleen disease, where mercury has been employed during any stage of the complaint, are found to be very obstinate and intractable; and the instances are exceedingly

rare, in which the effects of mercury are not evidently injurious.

OBS. LXXVI.—Craigie, ætat. 26, returned from Arracan in December 1825; suffering from ague and enlarged spleen: the tumor in the left hypochondre was but little benefited by medical treatment, and he was sent for change of air up the river out of Bengal, to Ghazeepore; where he did not recover. He returned to Fort William, an invalid, in December 1826; having an enlarged spleen, and general tumefaction of the belly. He was attacked with Cholera: and then, besides other treatment, he took five scruple-doses of calomel in 24 hours, and recovered from the Cholera. The gums were affected by the mercury, but the spleen remained unchanged; and he did not suffer more from the calomel, than a person of sound constitution would have done, from a like quantity of that medicine.

OBS. LXXVII.—Edgeworth, returned from Arracan in December, 1825; laboring under ague and enlarged spleen: he had been salivated. This man went to Ghazeepore for change of air; but the spleen disease resisting every remedy, he returned to Calcutta in November, 1826, the spleen being still large and hard, but not tender to the touch. Various remedies were administered without benefit, and afterwards he tried

Extract. Colocynth. Comp.—Pil. Hydrarg.—
Ext. Hyoscyami, āā gr. iii. daily, for 14 days.
The mouth was slightly affected, and no remarkable debility induced; but the spleen was not decreased in size.

In deciding on the nature of many diseases, we may easily avail ourselves of the accurate investigations of our professional brethren in other countries; and by comparing the character of each malady here, with that of its congener in a different climate; we are greatly assisted in forming a correct judgment. It is far otherwise respecting diseases of the spleen: for although many authors have taken slight notice of some of the diseases to which that organ is liable; we are up to this day without any extended pathological enquiries, on which we can rely for practical information as to the safest and most successful plans of treatment for these diseases; it is quite certain that the modes of treatment ordered in modern systems of medicine, are neither safe nor successful. The unconnected remarks of some authors, and the individual cases related by others, seem to be looked on as curious phenomena, not reducible to any rule; and hardly of sufficient importance to deserve consideration, or to afford any indications for guiding our practice. However, it

does appear to me, that many of the facts on record, are of the highest importance; and as some of the works in which they may be found, are obtained with difficulty in England, and are seldom seen in this country; I shall deem no apology necessary, while a few of such works are here noticed, as tend to throw any light on the subject.

Besides those varieties, dependent on the degree of intensity of constitutional and local disorder: some difference has been observed in the symptoms, and termination of spleen diseases in remote countries; the principal modifications of which may be stated.

The tumid spleen of the English soldiers, contracted during a service of but few months in Walcheren; was observed in a considerable number of instances to go on to suppuration. In Dr. J. B. Davis's work on the Fever of Walcheren and its consequences, published in London in 1810; forty-two cases are detailed, in which the disease terminated fatally: of these, abscess of the spleen was found in cases 13, 20, 21, 26, 30, 35, 39, 42, and the spleen is stated to have been ulcerated in cases 14, 16, 24, 28, 36, 37, 40. Supposing Dr. Davis to have had care of the worst cases of spleen disease that returned from Walcheren, and that his dissection-reports were taken from examples of the most aggravated

forms of the disease ; this ratio of termination in abscess or ulceration, surpasses any thing of the sort on record that has come within my reach. Among the Walcheren cases, sudden death from œdema of the epiglottis was not rare : and instances of ulceration of the interior of the gall-bladder were noticed in some of the cases.

At this remote period, it would be difficult to ascertain how far the frequent tendency to supuration of the spleen, and the very great mortality of the Walcheren Fever, may have been increased by the treatment employed. Dr. Davis states at p. 104 and 105, that his patients “were put upon a course of mercury, which was continued for weeks.”

Mr. G. P. Dawson, who published at Ipswich, in 1810, a short account of the diseases of those who returned from Walcheren, bears testimony to the appearances of ulceration and abscess of the spleen, observed in dissection. Œdema of the larynx, and abscess of the parotids, were among the untractable symptoms seen in his patients. It is well known, that at the worst periods of the diseases now alluded to, stimulants of wine and animal food were liberally used ; and that a majority of the cases were treated with mercury in no very sparing manner : these facts have been put on record by those who were

employed in the Hospitals on that occasion. See *Dr. Thomas Wright on Walcheren Remittent Fever*, p. 106 and 144.

By the accounts of Juncker, Kramer, and others; Spleen Disease seems to be a frequent attendant on the remittent fevers, in low and swampy parts of Hungary: but in the majority of cases, the visceral enlargement appears there, to have been a slow disease, very often attended with dyspepsia; cough and other indications of pulmonary disease were occasionally present.

I have seen some patients from Demerara, with Cachexia and less palpable tumefaction of the spleen; in whom distressing dyspnœa, with bloated swollen face, and the essential characters of Anæmia were most strongly marked. Less distinct symptoms of Spleen Disease have been noticed in some other countries.

Wherever Diseases of the Spleen have existed, and a careful record of their nature, progress, and termination can be obtained, with an account of the treatment that has been employed: the injury done by the exhibition of mercury in the majority of cases, has been acknowledged by those practitioners whose attention has been particularly directed to the subject; but in

general, the established belief of English Practitioners, that Calomel is the best remedy in all visceral obstructions, has caused the evil effects of mercury in Spleen Diseases to be overlooked; the injury done by mercury being usually imputed to the inevitable course of the disease, and not to the treatment. One man may say he orders mercury *as an alterative*; another may administer it *as a purgative*: but the destructive effects of mercurials in cases of splenic cachexia, are not modified by the intention of the prescribing physician. As far as we can judge from the observations of authors who have paid particular attention to the class of diseases now under consideration, there appears to have been a remarkable uniformity in the evil consequences which have followed the use of mercury in these diseases: in this assertion, I am supported by the accordance of facts, observed in different parts of the world, too numerous to allow any room for doubt on the subject.

In a Dissertation, *De Splenitide Chronica*, published at Berlin, in 1825, by Dr. Joan. Augustus Leue; the author says, “salivatio mercurio orta, omnia morbi symptomata valde auget;” and in detailing the case of a woman, 24 years of age, who suffered from obstinate disease of the spleen for many months, we find the following statement:—“Calomel quod hucusque nondum

adhibueram, veritus, ne salivatio paucas doses sequeretur, nunc die 21 Decembr. præscribere ausus sum (Calomel. gr. i. Magist. Bism. gr. i. c. sem. Tinct. Op. simpl. gtt. i. : ter vel quatuor quotidie assumendum)."

"Primum hoc remedio cardialgia valde immi-
nuta est, sed jam tertio die salivationis prodromi
apparuerunt, sex granis mercurii assumptis. Hoc
igitur remedio statim omisso tamen ægritudo
nunc duplicem vigorem obtinuit, ventriculi tor-
mina et omnia splenitidis symptomata in gradum
insolitum accrevit, cum virium prostratione
maxima, febre, capitis gravedine et fere omnium
corporis partium doloribus. Os multa aqua, in
qua salvia decocta sit, fovere jussi et flores sul-
phuris præscripsi. Die 29 Decembr. ægrotam
sudore perfusam inveni, quem morbi levamen
secutum est. Abhinc salivatio, quæ omnino mo-
dica fuerat, sensim decrevit, atque simul cetera
morbi signa."

In the fourth volume of Dublin Hospital
Reports, there is an excellent Essay by Dr.
Cumming, on the Cancrum Oris, which appears
frequently in unhealthy seasons among the chil-
dren of poor people in some districts in Ireland.
The symptoms described by Dr. Cumming, cor-
respond exactly with the characters of the Splenic

Cachexia of Bengal ; and among the few dissection reports given by the author, we find, that disease of the spleen is noticed. A relation between the constitutional disorder, the tumid spleen, and the ulcerated mouth ; or the remote influence of those morbid phenomena on each other, does not seem to have been suspected. His patients appear to have been the ordinary pauper applicants who are seen in Dispensary practice. It would have been interesting, if possible, to have ascertained whether these children had been previously ill of Fever, and if calomel had been freely administered to them during the course of that disease. Dr. Cumming alludes to the opinions of some physicians on the spot, who ascribed the ulcerated mouth to the influence of calomel.

In Mr. G. P. Dawson's observations on Walcheren Diseases, page 32, the author "denies that mercury was useful in the Walcheren Fever, and affirms that its exhibition was often attended with injury. There were visceral diseases in many cases, particularly of the spleen, yet mercury produced no good, but harm. Four, five, or six mercurial frictions, or a few small doses of mercury, generally produced the most dreadful salivation, which made death by suffocation, not a very improbable event." Mr. Dawson says, "the practice with mercury was little used in his

Hospital, in which there were more instances of recovery, and fewer deaths than in any other. The spleen was found diseased in almost every case, weighing from three to five pounds. The face was yellow, cheeks hollow, and eyes sunk, and all was despondency and distress."—p. 48.

The evil effects of mercury during the existence of spleen diseases, is also mentioned by the following writers in the Medical Journals :

Dr. Abercrombie, in vol. 22 of the Edinburgh Medical and Surgical Journal.

Dr. Vetch, in the London Medical and Physical Journal, vol. 51.

Mr. Henderson, in the Edinburgh Medical and Surgical Journal, No. 84.

Dr. Crane, in the Edinburgh Medical and Surgical Journal, No. 75, page 243.

I may be excused for earnestly pointing out the evils caused by mercury in diseases of the spleen, particularly in that state which I have denominated vascular engorgement; and in Fevers complicated with tumid spleen: because the

practical instructions laid down in the best systems of medicine of the present day, do not inculcate the avoidance of mercury in any cases of enlarged spleen. On the contrary, the use of mercury is recommended for the cure of spleen diseases, in works which are at present in high estimation, among which I may specify the following :

In Dr. Good's Study of Medicine, we are told, that the treatment of diseases of the spleen should be the same as that ordered for diseases of the liver. The functions and diseases of the spleen are treated under various heads in that excellent work ; but no allusion is made to the injurious effects of mercury, in any modification of tumid spleen.—See 2nd edition, page 484, vol. i. and pages 442 and 434, vol. ii.

The same sort of treatment for diseases of the spleen, as is applicable to the various stages of diseased liver, is recommended in Dr. Philip Wilson's work on Febrile Diseases.

Dr. Thomas, in his Practice of Physic, p. 192, orders “ in the acute state of spleen disease, frequent purging with calomel and jalap, besides other antiphlogistic treatment.” And in “*enlargement, induration, or scirrhus*,” he says, “ we must employ mercury, both as a purgative and

deobstruent, in the manner advised for inflammation of the liver."

Much the same sort of treatment is recommended by Cullen; as well as in the Edinburgh Practice of Physic, and several other medical works. Pemberton on the Abdominal Viscera, advises mercurial frictions, and small doses of calomel, with extractum conii, till the mouth be slightly affected. The mercurial treatment advised by Dr. J. P. Davis is already stated at p. 352.

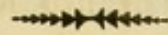
I will only add one reference to a recent work, which is likely to lead inexperienced persons in this country, into errors of practice, the most destructive to human life. I allude to Mr. Annesley's work on the Diseases of Tropical Climates, in which the free use of mercury is ordered as a general practice in Diseases of the Spleen. In vol. ii. page 5, "in cases of simple tumefaction, without inflammatory action, a full dose of calomel at bed-time, and a purgative in the morning, are advised to be continued daily, or on every other day, according to the circumstances of the case;" and at page 6, he says, "in congested or tumefied spleen; after having given two or three full doses of calomel, or of calomel and opium, at bed-time; we

should adopt with much benefit the blue pill and the aloes and myrrh pill, giving them every night, and the full doses of calomel every third or fourth night only." I am obliged to express my disapprobation of the above instructions, in the strongest terms: and trust I may do so, without deviating from the respect which is due to Mr. Annesley's high situation in the service, and to the industry he has evinced in professional pursuits.

It is probable, that Fevers similar to those which occurred among the Military at Walcheren, at Arrakan, and after Corunna, will always be remarkable for a large proportion of fatal cases, under any mode of treatment. The majority of such fevers, at a late stage, and many of them even at a very early period, are attended with enlargement of the spleen, and with the cachexia which usually accompanies the tumid state of that organ, wherein mercury is proved to be injurious. It would seem important in all such diseases, in future, to trust to V. S. and the general employment of the antiphlogistic treatment at an early stage; and the use of mild purgatives and Quinine, with bitters and tonics at a later period; without giving any mercury in cases where enlargement of the spleen exists, or the constitutional symptoms of Splenic Cachexiæ are strongly marked.

CHAP. IV.

CHOLERA.



VOMITING and purging are the symptoms of Cholera, which most commonly first attract the attention, and excite the alarm of patients. The importance and danger of these symptoms must be estimated according to the nature and duration of various concurrent phenomena. With the first efforts of vomiting and purging, the ordinary contents of the stomach and intestines, in most instances, seem to be entirely expelled; after which, as the disease goes on, an aqueous fluid like rice-water, is voided by stool: that which is vomited, is nearly of the same sort, but has generally its appearance modified by the remedies administered. The whey-like appearance of the stools is so commonly attendant in the worst cases, that it is often spoken of as the *true cholera stool*, or the *congee stool*. The evacuations are sometimes nearly as clear as pure water, and frequently some films of mucus are floating in this sort of fluid. The incipient degree of favorable change in the disease, is marked by a transition from the states of the evacuations above mentioned, to a drab color, then to a grey, and subsequently to a darker color as the improvement goes on.

Besides the above symptoms, we find in Cholera, sudden and extreme prostration of strength; the countenance is either pale or livid; the eyes are much sunk in their sockets, as if from the sudden absorption of the surrounding fat, and shrinking of the cellular structure of the orbit. The sunk eyes, shrunk features, and ghastly expression of countenance, are so remarkable and peculiar, as to be immediately recognised by those who have once seen a cholera patient. The medical man whose illness is mentioned in a subsequent part of this chapter had no suspicion of his disease being Cholera, till about noon of the day on which he died, when he desired his servant to bring him a small looking glass, and the instant it was brought, he said, "I see I have got Cholera*", which I did not even suspect before: there can be but little hope of my recovery." He had suffered no spasms, and from there having been a slight bilious tinge in the stools, he had not been aware of the nature of his complaint at its early stage, and thus lost his life. There is generally a degree of livid venous congestion of the scleroticæ and conjunctivæ, though sometimes a florid arterial suffusion of the eyes is observed.

* This gentleman had only seen a few well-marked cases of Cholera in the Hospital, about a month before.

In bad cases, the voice becomes feeble, shrill, and pectoral; respiration short, difficult, and imperfect; the tongue is cold and moist; coldness of the whole body, but more especially of the extremities, and a shrivelled state of the fingers takes place. This mortal coldness is sometimes coeval with the earliest symptoms of Cholera, but I have never known it attended with shivering or rigors, like the cold stage of ague, in which the patient earnestly demands more bed-clothes: on the contrary, the cholera patient when coldest, throws off the blankets, tosses about in anxiety, and calls for cold drink. The cessation of the calorific function, is as remarkable during the hot weather as at the coldest season of the year; in fact, the hot bath, hot vapor, or other means of producing artificial warmth, often have not the slightest effect; although inanimate bodies exposed to the same means of raising the temperature, are quickly heated. When the spirit vapor has been employed, the wood and cane of the bedstead may be felt quite hot, while the patient lies as cold as before the vapor was used. When the tendency to collapse commences, the surface of the body (particularly about the chest and upper extremities) is wet with a profuse cold sweat. The pulse becomes weak, rapid, and indistinct; there is often great oppression at the scorb.

cordis, and occasionally a sense of burning heat at that part, with anxiety and restlessness.

The belly is sometimes tense, tumid, and painful on pressure ; but this is rare, the usual condition of the abdomen being flat, doughy, and inelastic. In a few rare instances of irritable and nervous subjects, there is vast extrication of intestinal flatus, with a sort of roaring hickup. In advanced stages of bad cases of the disease, ordinary hickup is sometimes a transient symptom. Intense and distressing thirst soon takes place, in almost all the severer attacks of Cholera ; and a sensation of noise in the ears, or some degree of deafness, occurs in a considerable number.

Spasms of the extremities, though present in the majority of cases to a certain degree, during some period of the disease, are sometimes entirely absent in patients where death takes place very suddenly ; and even in some protracted cases, where nearly all the other more aggravated symptoms above enumerated precede the fatal event. The spasms generally begin in the toes and fingers, then, after affecting the calves of the legs very violently, they often proceed to the thighs and belly.

Some patients have very little of either vomiting or purging ; the earliest apparent symptoms,

seeming to announce the general failure of vital energy, and the incipient death of the patient. Such is the variety in the disease, that I could not mention any symptom of Cholera which is not occasionally absent, in cases which terminate in death with the most awful rapidity. I have met with a few cases, in which the patients came to hospital with the same coldness of the extremities, shrivelled fingers, and obstructed circulation, as above discribed ; at the same time that they were passing a thin bloody fluid, not unlike thin chocolate. These patients had usually been ill 3 or 4 days, and died within 12 hours of admission into Hospital. On dissection, the most intense degree of lurid, dusky-red color of the mucous membrane of the great intestines was observed, especially at the cœcum ; inflammation of the small intestines, and morbid vascularity of omentum and mesentery. This condition was only observed in neglected cases of several days duration, of which no distinct history could be obtained.

With almost every year I have observed the above symptoms to vary in severity, as well as in the order of succession ; and to be combined in different ways. In some seasons, the ordinary characters of the disease are in the majority of cases attended by a febrile affection more or less distinct ; spasms are then generally violent and

painful, causing the patient to cry aloud : the efforts to vomit are violent, but the quantity of fluid voided both upwards and downwards is frequently not very great. The pulse though rapid, not sinking very soon, and the warmth of extremities not suddenly ceasing. In such cases, the vascular congestion of the eyes is commonly of a florid arterial character ; the tongue furred, often brownish, and usually warm ; sometimes it is dry and very slightly furred. During other seasons, the greater number of severe cases become cold at an early period, the evacuations mostly very copious and watery, the pulse sinks rapidly, and becomes indistinct ; the voice is feeble, shrill, and pectoral or entirely inaudible ; congestion of the eyes of lurid venous character, and a lurid color of the face and neck take place, as if from stagnation of venous blood : spasms, when present, are then attended with less pain ; and torpor, insensibility, and death, soon close the scene. The affection of the head, in remote stages of the disease sometimes resembles coma ; and in a few rare cases transient delirium exists, but generally we find the intellectual faculties remarkably clear and undisturbed, during the whole course of Cholera. In other years, many cases are of a mixed character, beginning with febrile tendency ; and a few of them are found sometimes vomiting much green bilious watery fluid at first ; but rapidly sinking into the state

of collapse, with cessation of pulse, cold tongue, and shrivelled extremities. This appears to me a common form of the disease in the last two years, since Cholera has become much less frequent.

The commencement of the disease with febrile symptoms ; and their continuance, while the constitution shews signs of sensibility, action, and power ; the warmth and circulation remaining, and the evacuations though frequent never having been very profuse : indicate a tractable state of disease, in which the best results may be hoped from a cautious, steady, and discriminating treatment. While the early accession of torpor, which defies the effect of medicine ; with cold and shrivelled extremities, cessation of pulse, cold tongue, and copious evacuations ; indicate a modification of disease, in which we have but little to hope in the majority of cases, after these symptoms have existed for four hours.

We must always bear in mind, that those who are affected with the febrile form of the disease, do frequently in a short period sink into a state of coldness and torpor : and on the other hand also, that in the last stage of collapse, there are sometimes symptoms of a short and ineffectual reaction of the system, with morbid heat about the head and chest, for a few hours before death ;

but there is rarely a return of steady and regular pulse. Vomiting, purging, and spasms, frequently all cease for some hours before death.

Whenever an Epidemic visitation of Cholera occurs, affecting suddenly a number of persons in one place; a large proportion of the earlier cases are usually of a very severe description, with tendency to early accession of coldness, torpor and collapse: a considerable number of these, appear inevitably fatal. During the first 3 or 4 days of an Epidemic visitation, the rapidity of the progress of Cholera towards fatal termination seems to increase. I am not aware that the severer form of the disease has ever continued permanent in a station so long as 6 days; and by the 8th or 10th day we commonly find only slight cases occurring. Inattention to this fact, is liable to lead to erroneous estimation of the efficacy of any plan, or of the various modes of treatment employed. On one occasion, when Cholera occurred in a severe form in detachments recently arrived from Europe; 19 men died, of the 21 first attacked with the disease; and of the next 31 cases which occurred on the following days, in the same detachment, six only died: a still milder form of Cholera succeeded, and the whole of the patients then recovered. This occurred in May, 1827; and the plan of

treatment, which was inert in the early cases of the disease, was attended by the most happy results, at a more remote period of this Endemic Cholera, in the same detachment.

The invasion of Cholera most frequently appears in a violent form, between the hours of 2 and 5 A. M. Regarding the mode in which this disease begins, I may observe that a careful reference to my experience, authorises me to say, that its attack often commences suddenly, and without any premonitory symptoms: sometimes it abruptly supervenes on the advanced stage of severe acute Dysentery. The Cholera is occasionally preceded by a slight pyrexia: and it has also appeared to me, that congestive fevers do sometimes, though rarely, fall into a state of collapse resembling the low stage of this disease; not indeed very often attended with violent vomiting and cramps, but the patient suddenly becomes weak and cold; sometimes voiding one *true Cholera stool*: at other times, even this symptom is absent. After the sudden death of fever-patients in this manner, I have several times found, on dissection, the thickened state of the coats of the small intestines; and that portion of the canal loaded with pale, watery fluid, like rice-water; with much of the subalbid mucus, and thick white paste, which are usually considered characteristic of Cholera. In short, the sudden collapse, which occasionally

supervenes at the termination of a paroxysm of remittent fever, somewhat resembles the collapse in Cholera.

Prior to the more distinct and alarming attack, there are sometimes for a few hours, and in some cases for two or three days; symptoms of indisposition, evident not only to the patient himself, but to his friends. When Cholera is raging severely, the disease is often ushered in by diarrhœa; at other times it begins with catarrh, nausea, and oppression at the scorbiculus cordis; which are not in an early stage to be distinguished from the slight indisposition which often precedes Fever. The approach of Cholera in this manner, makes the patient suppose he is "feverish or bilious;" and if recourse be had to some of the medicines commonly used in slight ailments of that sort, the disease is said to be caused by the dose of medicine taken; when, in fact, it had been insidiously making considerable progress for some hours. When Cholera is prevailing in the vicinity; slight catarrhal, or febrile affections; and disorders of the stomach and bowels, whether tending to diarrhœa, or to constipation: seem convertible into Cholera, by the use of saline or drastic cathartics, more especially if they operate about two, or three o'clock, in the morning.

OBS. LXXVIII.—A gentleman of dark complexion, and generally very healthy; of regular and moderate habits, 28 years of age, and 5 years in Bengal; awoke on the morning of 18th March, 1830, with slight feeling of uneasiness, which he ascribed to indigestion, and therefore on returning from his usual morning ride, took a small dose of Epsom salts; soon after which, nausea took place, and a cup of tea was vomited two hours after taking the salts: the extremities soon became cold and shrivelled, voice weak and pectoral; tongue cold; countenance livid; eyes sunk, and cornea dull. The pulse gradually grew feeble, and indistinct: there were occasional slight efforts to vomit, at intervals of half an hour; and only four stools from the commencement to the termination of the attack: the two first of these stools very copious, and like grey water; the other two scanty, and of pale-drab color. There was dreadful anxiety, some thirst, and occasionally slight cramp, by which the fingers and toes were drawn up, but not very great pain. He died at 4 P. M. nine hours after taking the salts. The few cases of Cholera occurring about this time, had for the most part a tendency to sudden collapse.

OBS. LXXIX.—A stout and healthy woman, 22 years of age, eight years in India: was recovering in a satisfactory manner after her

accouchement, nursing her infant, and beginning to go about the house. On the 14th September, 1825; which was the 22nd day after the birth of the child, she felt slightly feverish; and took six grains of calomel at bed time, not being considered seriously sick, either by herself or the family. She rose at 2 A. M. on the 15th, to let her boy suck, but made then no complaint: soon after three o'clock a profuse purging of dark fluid took place; some of the evacuations passed in bed, and those that were last voided, were a pale-grey water; there was neither vomiting nor spasms; the hands and feet became cold, and she died at a quarter past 5, in less than two hours and a half after the first purging. This woman was living in tolerable comfort, in an upper-roomed house, had not been down stairs since her confinement; and the friends asserted, that she had not been imprudent in diet, or in any other respect. Cholera of a severe description was at this time frequent among the natives, in the immediate vicinity of this person's house.

OBS. LXXX.—Michael Hammon, H. M. 13th Light Infantry; a stout young man, 18 years of age, recently arrived from Europe: felt some slight ailment on the 20th May, and came to Hospital on the night of the 21st, with pain at upper part of belly, constipation, and slight

Fever: he had an enema, and castor oil in the night; and senna and salts on the 22d, by which he was freely purged, and appeared to be getting better; on the 23rd, 20 grains of jalap and as much cream of tartar were given, which acted very freely during the day; and about 2 A. M. on the 24th, a watery purging took place, with coldness of extremities, feeble pulse, dreadful thirst, and cramps: his life was saved with difficulty, and he was discharged on the 13th June.

There were several very bad cases of Cholera in the Hospital at this time; and within a few days, other men of the same detachment were admitted into Hospital with Spasmodic Cholera, and some of them died.

I have known more than one case, where persons feeling some slight indisposition, have taken a dose of rhubarb and magnesia, with a small quantity of ginger, early in the morning; after which, distinct Cholera symptoms appeared with the first purgative effects of the medicine, by 10 o'clock; and the disease proved fatal within 12 hours. It is evident in most such cases, that an insidious attack of Cholera was going on before the medicine was taken. However, I am of opinion, that when Cholera is prevailing, drastic purgatives, particularly senna and salts, or jalap, have frequently brought on the

disease in persons who had at the time only slight pyrexia; and who if left without active purgatives, would not then have had Cholera. The experience of many years has so far confirmed this opinion, that we usually are cautious in ordering either jalap or salts in the Hospital, when we have many patients with Cholera under treatment here; or when that disease is prevailing in the town; and at such times it is deemed hazardous to give a patient any medicine likely to act on the bowels, between 2 and 5 A. M.: therefore we have usually, if possible, avoided giving even to febrile cases on those occasions, calomel and colocynth, at bed time. I do not remember ever having heard the commencement of an attack of Cholera, imputed to a dose of castor oil.

Obs. LXXXI. Michl. Regan, a recruit, recently landed from Europe, who had been 11 days in Hospital, with catarrh: was quite well and ordered to be discharged in the afternoon of 10th Dec. 1825; to join his Regiment. He ate his dinner as usual, and in a few minutes he vomited: the worst symptoms of Cholera soon came on, and he died of that disease. There was no want of prompt and assiduous attention in this case, for I was in Hospital at the time that he began to vomit, and saw him in less than 15 minutes afterwards.

OBS. LXXXII.—A stout and healthy Lady, of light complexion, aged 26, who had been 15 months in India; was attacked with vomiting and purging, at 3 o'clock p. m. on the 2nd September, 1825; spasms of the extremities soon came on, and by 5 o'clock collapse had taken place to such degree that her life was despaired of: she died before dark the same evening. This person had been quite well, up to the moment of the attack: ate her tiffin as usual, and was afterwards occupied in arranging books in the library; standing on a chair to place those on the upper shelves. When so occupied, she felt sick, in consequence as she supposed of reaching too high: in a few minutes after the first sensation of sickness, she began to vomit, and all the worst symptoms of the disease quickly followed.

I have met with many instances, when in the Upper Provinces, where Sipahes, who marched from the Camp early in the morning quite well; have suddenly fallen to the ground, with violent spasms of the extremities: and in whom vomiting, purging, coldness, and all the worst symptoms of Cholera came on quickly.

Some other phenomena, not yet described; are so intimately connected with the character of Cholera, and indicative of the morbid changes which take place in that disease, that they de-

serve particular attention. When the patient, from the first attack, sinks rapidly into a low state, with feeble pulse, cold extremities, shrivelled fingers, (as if from long maceration in water,) and weak pectoral voice : the carbonic acid gas evolved by respiration, is much less than that contained in the air from the lungs of persons in health. I have several times found the quantity of carbonic acid gas, as low as 1·5· per cent* of the air expired from the lungs of patients in the state described above ; and seldom so much as 2 per cent. Whereas, air from the lungs of patients suffering from febrile Cholera, with violent and painful spasms, free pulse, and warmth of surface ; contained 3·5· to 4 per cent. of carbonic acid gas, and sometimes more. I have been particularly careful in the mode of procuring the air from the lungs for these experiments ; and have made numerous trials on the expired air of healthy persons, in order to enable me to speak confidently on this subject. I make the patient take rather a forced inspiration ; and then holding the nose till some of the air is expired by the mouth ; have the apparatus ready to collect the next portion for experiment : hoping by this means to procure a portion of air that has been fairly subjected to whatever vital

* In these cases, I have reason to believe, that the pulmonary vapor or exhalation, is much diminished.

and chemical action may be going on in the lungs. By always using these precautions, and operating on one given quantity of air; I hoped to insure a relative uniformity of results, and the greatest possible precision. It is often very difficult to procure even ten cubic inches of air in a satisfactory manner, from the lungs of a person in a state of lowness and collapse, when restlessness and extreme anxiety prevail. It appears to me, that the great discrepancy stated in the results of eudiometric experiments on the respired air of healthy persons; when those who conducted the analyses were men of equal eminence, and undoubted accuracy; must have arisen from their having not observed similar precautions in collecting the air for their operations: for there has been a tolerable uniformity in the result of the experiments made by each person; though in some cases a difference of nearly one-half, from the conclusions of others.

When we can succeed in bleeding a man, who is in the state of lowness and collapse, while torpor is impending; we find the blood is generally thick, black, and tarry, trickling down the arm in a slow and unsteady stream; and the flow very often entirely ceases as soon as the veins of the fore-arm are emptied. This blood usually coagulates into an uniform mass, without separating any serum; and the

surface of the cruor, after standing till it is cold, becomes somewhat more florid than when first drawn. In other cases, this dark-colored blood separates a small quantity of reddish serum, which exhibits no peculiar character except its color: and when heat is applied to this discolored serum, it forms a firm, dry, friable coagulum, which in a few instances is of a pale, dusky green color. When Cholera is attended with febrile symptoms, the blood generally separates into serum and crassamentum, nearly as in healthy subjects; though the quantity of serum varies considerably, and sometimes the surface of the cruor is remarkably florid; not unfrequently it exhibits the buffy coat, indicative of local inflammation: several examples of which will be detailed. I acknowledge having two or three times seen the cruor quite florid, and still the patient has rapidly sunk into a cold and torpid state after the V. S. and although the blood flowed freely, the patients were lowered, and made worse by it: but this florid appearance has been so rare, as not to have allowed sufficient opportunities of ascertaining satisfactorily the circumstances connected with it, in such cases as have terminated fatally.

The subalbid fluid, usually denominated the true Cholera stool, or the conjee stool, has been repeatedly and carefully analysed; as well as

the fluid ejected by vomiting. Of the latter it is impossible to speak with any confidence, except in cases where the patients have been a considerable time in Hospital, and carefully watched, so as to ascertain what fluids may have been drank, and what remedies taken: consequently, it has not been possible to make so many satisfactory examinations of the fluid that is vomited. In a case of febrile Cholera, attended with profuse evacuations, I have by the smell recognised peppermint water, which had passed through the intestines in about $2\frac{1}{2}$ hours: and have been able to detect in the stools, fluids acidulated with cream of tartar, which had been drank less than three hours before. Therefore, if the analysis of Cholera stools be deemed important, the circumstances of the disease, and nature of the ingesta should be attended to. The following results have been obtained, on examination of the fluid vomited; and of the watery and subalbid stools usually admitted to be characteristic of Cholera.

The Cholera stools frequently consist of two portions; a thin watery fluid, and a pale-grey thicker substance, like dirty mucilage, or the sediment in barley water, part of which will pass through a muslin strainer with the more watery portion; and if left in a large test-tube for four

hours, the thicker part subsides, and is found to possess the following properties :

α It is in slight degree soluble in cold water.

β The greater part is soluble in a mixture of equal parts of distilled water, and *Liquor Ammoniaë*.

γ Exposed in a small evaporating dish to the heat of the spirit-lamp, it dries into a thin pellicle, which does not contract much when heated : but in the progress of desiccation, it exhales a nauseous odor of putrid flesh.

The subalbid fluid, which floats on the top, when the true Cholera stools are left to settle in the test-tubes, affords the following indications :

α With litmus, very seldom any effect is produced ; and when any is observed, it is a slight reddening of the litmus paper, denoting the presence of an acid.

β Exposed to heat, it does not coagulate ; even if the temperature be raised to the boiling point.

γ Treated with pure alcohol, it is not coagulated ; but in a few rare cases, a very trivial cloudy opacity appears on the addition of the Alcohol.

δ Treated with a solution of oxymuriate of mercury in distilled water ; sometimes a slight opaque cloud is formed, which in 12 hours subsides to the bottom of the test-tube : forming a minute sediment like mucilage, not amounting to $\frac{1}{22}$ of the quantity of fluid tested.

§ Solution of subacetate of lead, when dropped into the fluid, even in the most minute quantity; instantly causes a curdled appearance, and a precipitate subsides in the course of an hour. This is in such remarkable quantity, that the sediment amounts to, from $\frac{1}{3}$ to $\frac{1}{8}$ of the quantity of fluid tested.

§ The infusion of galls, sometimes causes a slight turbidness; and in some of the experiments a few very light films were formed, which slowly subsided towards the bottom of the tube in the course of 12 hours. If left to stand for two or three days, the fluid at the top of the test-tube becomes of a rusty brown color, which after a longer period is changed to black.

The Cholera stools which appear like *clear water*, afford the same indications as above stated; when tried with the several tests: but on the addition of solution of subacetate of lead, the curdled appearance, instantly produced, is of a more snowy whiteness; and when this subsides, it is much smaller in quantity than the precipitate of a subalbid cholera stool, tried with the same test.

The fluid vomited in cases of Cholera, when obtained under circumstances which gave reason to believe that the secretion of the stomach was obtained free from the fluids recently drank, only differs from the above, in being more viscid and slimy: the results of analysis have been the same as those afforded by the more fluid portion of the conjee stools; but the indications of the presence of an acid, have been stronger.

The results of a multitude of experiments accord generally with these statements. Without entering into minutiae, concerning the conclusions deducible from the above; it is evident from Ex. β . that the subalbid evacuation, called the true Cholera stool, does not consist of the serum of the blood, as some authors have stated. I have found the conjee stools not coagulable by heat, when the blood of the same patient has separated a small quantity of serum, which has coagulated firmly on the application of heat. The occasional indications of an acid in the Cholera evacuations; while we know that uncombined soda is generally found in serous fluids: would be an additional reason for our not acknowledging the conjee stools to be the serum of the blood.

By the employment of Dr. Bostock's test, the subacetate of lead, in Ex. α . the peculiar secretion of Cholera is proved to consist chiefly of mucus. We may therefore conclude that the Cholera stools consist of mucus, and a peculiar morbid secretion; without any appreciable quantity of the serum of the blood.

In a subsequent part of this chapter, I will mention a few cases shewing the state of the patient, and the stage of the disease, when the evacuations were taken for analysis.

When the kidneys continue to secrete during Cholera, the urine appears to be nearly the same as that of a healthy person; in containing urea, and the ordinary salts of the urine: whether exactly in the usual proportions, I have not been able to determine. In some cases, the small quantity of limpid urine first voided after a suppression of that secretion for several hours; appeared to contain a large quantity of animal matter, and the putrefactive changes were observed to take place in it very early.

In the assemblage of symptoms which constitute the early stage of a sudden invasion of Cholera; we observe evidence of the disorder, or total cessation of the functions of those organs, which are supplied with nerves from the great solar plexus. In those cases tending to early collapse and coldness, the liver and kidneys cease to secrete as usual; the digestive powers are arrested, the mucous membrane of the stomach and intestines has its secretions altered; and the disorder of the respiratory function, reminds us of the alliance in the healthy, as well as diseased actions of the lungs*, with the diges-

* Whoever undertakes an accurate pathological inquiry, relative to the nature of Cholera, and has extensive opportunity to pursue his investigations; will find many reasons for concluding, that among the most important lesions of function which

tive organs ; through the influence of the nervous system generally, and more especially of the

take place in that disease ; the decarbonising power of the lungs is affected to a very great degree : more especially in those cases which are attended with early collapse and coldness, and are void of any febrile and inflammatory symptoms. In connection with this subject, we have occasion in post-mortem examinations sometimes to observe the contents of the cœcum and colon black, when the contents of the small intestines are of a lighter color. These facts will induce us to inquire whether the black color of the contents of the colon, and of the stools which appear during life in certain stages of Cholera, be in all cases dependent on black cystic bile. Is there not reason to conclude, that the black secretions in the cœcum and colon, may depend on an effort of nature to compensate by a carbonaceous secretion, for the inefficient action of the lungs and skin ? Many patients die of Cholera before such secretion is established.

Viewing the depressed state of the decarbonising power of the lungs, as an important pathological condition ; we would be especially cautious in administering to a Cholera patient in a state of collapse, such remedies as are known to have a direct effect in diminishing the quantity of carbon evolved by the lungs during respiration : among the most powerful of which agents we find Mercury ; ardent spirits, in such quantity as to produce a stupifying, in contradistinction to their exhilarating and exciting effect ; and the abstraction of blood.

Facts coincide with the above observations ; and I know of no case of *pure congestive* or *blue Cholera*, without febrile or inflammatory symptoms ; in which mercury does much good : in such cases, stupifying quantities of spirituous stimulants, like stupifying doses of opium, decidedly hurry on the fatal event ;

pneumo-gastric nerves. The most undeviating phenomena of Cholera attended with early collapse, are the recession of blood from the surface of the body, and its accumulation in the great veins of the abdomen and thorax; a gorged state of the capillary vessels of the lungs; and disordered secretion from the mucous membrane of the intestinal canal: at the same time that the mucous membrane of the bronchial tubes and cells of the lungs, occasionally has its secretion affected in a similar manner, though to a slighter degree.

In cases not fatal, the progress of recovery is often almost as rapid as the accession of Cholera;

and indiscreet use of the lancet has certainly in some cases shortened life. Although this view of the subject is here alluded to, in hopes that its legitimate application to practice may hereafter undergo the strictest examination and experimental investigation: I may state that I have, in very bad cases of the low form of Cholera, been so far influenced by these considerations, as to abstain from the free use of calomel; to stimulate with ammonia, and to use only small quantities of spirits or brandy, trusting to the warm resinous purgatives, given alternately with castor oil, and enemas: enjoining tranquillity, and supporting the system by mild farinaceous food in small quantity. The result has been satisfactory; the pulmonary system has resumed its healthy action, and ultimate recovery followed in the most favorable manner; without the appearance of black stools. Cautious trials of this sort, on a large scale, are requisite, before we should be authorized in recommending the general employment of such a practice.

and if the disease be promptly treated at the very onset, it is not uncommon to see a person well on the 3rd day after the attack of the worst symptoms, which had commenced with coldness and collapse; and who, if left without remedies, would probably have died in six or eight hours. In these instances, recovery seems almost as sudden and complete, as in cases of suspension of animation from submersion in water.

We see a person suddenly attacked with vomiting, and purging of cholera-stools, he quickly becomes cold and has a rapid feeble pulse: we know that if left to the course of nature, or supplied with a few glasses of cold water, this patient will be in a hopeless state in a few hours; whereas, if he get a table spoonful of tincture of rhubarb undiluted, or a teaspoonful of laudanum, and as much spirit of sal volatile, in an ounce of water; immediately on the first attack, the disease is very often at once arrested.

Many of the febrile cases, especially those where there is a dry tongue and feverish flush of the face, are slower in arriving at complete convalescence; and we have occasionally sufficient evidence, that, besides the disordered functions, and congestion with incipient inflammation, of the early stage; there is a decided tendency to

slow inflammatory condition of several internal organs, at remote periods. When reaction commences, it is irregular, and I have seen one eye suffused with bright arterial redness, while the other eye was pale.

Patients, who remain without pulse at the wrist above three hours, seldom survive the attack ; though we sometimes succeed by means of ammonia, camphor, asafoetida, and small quantities of opium, combined with warm resinous purgatives ; and some stimuli of spices, wine, or spirits ; to resuscitate the pulse, and restore the warmth of skin, in patients who have been a whole day cold and without pulse at the wrist. Yet the majority of those so excited, ultimately expire, after lying a longer or shorter period, sometimes several days, in a half-torpid state, without either spasms or purging : while in this torpid state they suffer much nausea, and continue to vomit whatever fluid is drank ; gulping up every eight or ten minutes, almost without effort, large mouthfuls of yellowish green bile, which is spat over the bed-clothes and floor, without moving the head. While this condition lasts, an attempt to sit up in bed causes faintness. This is almost as hopeless a condition as a Cholera patient can fall into : in cases of this sort, free blood-letting, or an active purgative is apt to sink the patient irrecoverably : stimulants excite

fever, and hurry on the fatal termination. By whatever mode these cases are treated, the most intense gastro-enteritis is found after death, and the intestines are loaded with superabundance of bile and dark-colored secretions. A few recover by the cautious application of leeches, as soon as the patient will bear them without sinking the pulse; repeated use of moderate V. S. is often requisite in the latter stage of these cases; and perseverance in a steady course of resinous purgatives: with the mildest food in small quantities, supplied in succession to the first effects of each purgative. An emetic, and particularly a sulphate of zinc emetic, is sometimes found in such cases, to produce the most complete beneficial change. In other cases resuscitated by stimulants, after long continued collapse, as above stated; a febrile condition follows, with frequent weak pulse, and lurid redness of face, resembling the remote stage of bad cases of remittent Fever.

The fatal termination of Cholera, in some of the most sudden cases commencing with extreme collapse; seems to depend on the intensity of the efficient cause of the disease, acting so powerfully on the nervous system as to produce total arrest of all vital energy; and death, as it were by suspension of animation: cessation, of vital actions taking place, with hardly any preliminary course of disease.

Many others die from venous congestion, with a remarkable stagnation of the blood in the great veins of the internal parts of the body, and cessation of most of the secretions; combined with a less degree of that sort of shock of the nervous system, which produces the sudden termination just described.

The fatal event at a still later period, has more or less of local inflammation, superadded to congestion; and combined with the remains of such disorder of the nervous system as in its more intense degree causes early death.

While a rapid and weak pulse continues, though there be not much purging and vomiting; the patient must be deemed in the utmost danger.

The severer cases of Cholera, with early coldness and collapse, tending to sudden death without reaction, have been already alluded to; and the absence of inflammation of the stomach and intestines, in many of those cases, has been pointed out. The peculiar nature of that description of Cholera, is still more remarkable, when we observe the same stage of that disease attacking dysenteric patients who had been for many days voiding bloody stools; but who, on being seized with Cholera, cease to void blood, and their evacuations change to the fluid resembling rice-

water ; examples of which were seen in the cases of Cox, and Post, which are mentioned in this chapter : affording evidence of the fact, that the circulation in the capillary system of vessels of internal organs in the febrile Cholera, is in a state totally different from what takes place when the Cholera with sudden coldness and early collapse comes on ; and when in fact the essential character of the disease consists in accumulation and stagnation of blood in the veins, and principally in the great internal veins. Robust and plethoric subjects suffering from this form of disease, also exhibit strong marks of stagnation of blood in the smaller cutaneous veins ; affording the appearance which has been denominated the blue Cholera : a state of disease often existing in the most intense degree, when totally void of inflammation.

MORBID APPEARANCES ON DISSECTION.

The appearances observed on the inspection of subjects that have died of Cholera, are various ; according to the nature and duration of the illness, and the circumstances that have preceded and accompanied the attack. In the damp hot climate of Bengal, we are obliged to perform our dissections at an early period after dissolution, generally from 3 to 12 hours. And it has frequently occurred to me to observe, that bodies are warm for some hours after death,

although the persons, while suffering under Cholera, had been exceedingly cold for several hours, and sometimes more than a whole day, before they died. The exterior of bodies after death from Cholera, is generally found livid from the stagnation of venous blood in the capillaries, especially about the chest and neck : and still more so at those parts which are dependent, and liable to be discolored by the gravitation of blood. The muscles are generally rigid, of a lurid red color : and robust subjects are seldom emaciated by those attacks of Cholera which are fatal after a short period of illness. But even in these, the eyes are sunk deeply into the sockets, and the fingers, hands, and feet, remain shrivelled. In a few weak and emaciated subjects, the surface is whiter, and corrugation of skin more extensively visible.

The most common morbid appearances, in the viscera of those who die after an illness of only a few hours ; are a pale color of the stomach, when viewed externally ; a thickening of its coats, so as to feel like a thick new doe-skin glove : its interior is also sometimes quite pale, but generally of a pink color, in patches of various sizes, and covered with a thick tenacious viscid mucous secretion. The mucous membrane of the stomach is often much corrugated into longitudinal folds ; and when its secretions are seen not tinged by

medicines, they are usually at this stage of the disease, a pale-grey water: frequently the stomach is relaxed, and this secretion is then in very large quantity. The small intestines, of a pale pink color, that in many cases could hardly be deemed morbid, their coats thickened and pulpy, as if œdematous; the villous coat sometimes quite pale: their contents usually consisting of a whey-like fluid, and a thick curdled mucus, in various proportions. More rarely we find the small intestines loaded with quantities of a substance resembling a thick paste of flour and water, and occasionally there is a fluid like dirty gruel, or like the sediment in barley-water. The great intestines at this stage of the disease, are of a pale bluish color, with little or no vascularity, their coats frequently remarkably thin; contents, copious and watery, or like rice-water in which some films of mucus are floating. The great portal and mesenteric veins, and the cavæ, turgid with blood. Liver and spleen usually tumid from venous congestion; especially if the subject be plethoric. The gall-bladder is found to contain bile of various shades of green, usually somewhat inspissated, but frequently appearing in a healthy state. In a few emaciated subjects, where the watery purging had been very profuse during life, and the extremities remained much corrugated after death; the peritoneal coat of the

abdominal viscera was sometimes dry, and not covered with the usual lubricating serosity; the whole of the viscera seeming shrunk and bloodless. The cavities of the heart are usually distended with black blood. The lungs generally exhibit a degree of venous congestion, which, at the depending parts, is much increased by gravitation. The bronchial tubes in some cases filled with frothy fluid; in others, lined with a tenacious mucus of a very viscid description, which when scraped off and collected, resembled a thick paste of wheaten flour. This latter appearance usually found in cases where the voice had been feeble and *pectoral*, and it is certainly more commonly met with in the cold season: suppression of voice occasionally occurs when this morbid bronchial secretion does not exist. Venous congestions in the brain and spinal marrow, inconsiderable in emaciated subjects; but remarkable in those who were plethoric. Bladder contracted, generally contained about two oz. of limpid urine; and a small quantity of white mucus can be seen on its internal surface.

The above morbid appearances of the viscera, in cases of Cholera proving rapidly fatal; are supposed to be the vestiges of a much higher scale of vascular turgescence during life: but this is doubtful.

When the patient has lived longer, and Cholera has been attended with violent and painful spasms ; but more especially, when a prolonged disease has been marked by any febrile symptoms, the congestions above described, are attended by distinct appearances of inflammation of the small intestines. The omentum, mesentery, and mesocolon, present a high degree of morbid vascularity : the mucous membrane of the stomach is more extensively and more highly colored with red, and this is often the case when on examining the exterior of the stomach, it is still pale, and its coats much thickened. In more advanced stages, the coats of the small intestines are found thin and diaphanous, so that masses of viscid mucus, deeply tinged with green bile, may be seen before opening the gut ; and in these cases, there is usually much flatus in the small intestines, with some pale-grey fluid. Proceeding to speak of those who have survived to the 3rd or 4th, or 5th day ; inflammations of the intestines are more distinct and extensive : the small intestines are then found to contain quantities of viscid mucus of various colors, and green bile ; the large intestines filled with dark-grey, dark-brown, or black thin fluid. The morbid appearances in the ulterior stages of febrile Cholera, very much resemble those seen in the dissection of subjects who have died during the remote stages of remittent Fever.

Some of those in whom the disease begins with early sinking and deadly coldness, survive that stage for two or three days; having a slight degree of lurid redness of face, with ineffectual re-action of the system, marked by returning warmth of skin and improved state of the pulse; but they are inclined to faint, when in the erect posture: such cases are often found to sink into a state of stupor, and die on the 4th or 5th day. Dissection then shews much venous congestion of the brain, still more of the lungs; and a general lurid redness of the small intestines, which approaches to a mahogany color; but sometimes no congeries of minute vessels is to be seen: we are inclined to speak of this state; as mortification of the muscular fibres of the intestine; for the intestines are very easily torn. In such cases, their contents are mostly a thin chocolate-colored fluid. The cœcum usually strongly marked by the lurid appearance of its coats, which are thin.

When febrile and spasmodic symptoms have predominated, we occasionally find intus-susceptions in the small intestine, and still more frequently portions of the canal contracted to the size of the little finger: the contracted portion of intestine sometimes red, but more commonly paler than the rest. I have very often seen a contraction at the sigmoid flexure of the colon,

of a foot in length, without any morbid vascularity at that part; the mucous membrane at the constricted part exceedingly corrugated and almost dry. Lumbrici are occasionally found in the intestines.

In the dissections of Cholera subjects, I have sometimes met with morbid appearances, which would not seem essentially the result of the disease; and they probably have been influenced by circumstances in which the patient was placed prior to, or during the commencement of the attack. In the post-mortem examinations of sailors who were seized by Cholera in the Bazaars, where they had been much exposed to the sun, and in habits of dissipation; a considerable serous effusion has been found between the arachnoid and pia mater, over the whole convex surface of the brain; and frequently there is serous effusion in the spinal canal. The same appearances have been observed in sober people, in whom Cholera came on after much exposure to the sun, and proved fatal. These patients have generally soon sunk into a torpid condition, without much suffering from spasms; they quickly became cold, and died within fifteen or sixteen hours after the attack commenced. The sailors of the H. C. ship *Bridgewater*, were exposed to severe privations and much hard work, during a succession of gales of wind

on the homeward voyage from China; and the ship was so much injured that she was brought to Calcutta. Soon after the crew landed, in June 1830, many of the men were attacked with Cholera, which quickly proved fatal to several of them. On dissection, serous effusion was found on the hemispheres of the brain; and in some of the cases, a large quantity of serum in the lateral ventricles. On several occasions, when ships in coming up the river in the rainy season, have got aground, or lost their anchors; whereby the crew have been obliged to work hard, and were much exposed to the weather, and probably at the same time living irregularly: the sailors have been attacked with Cholera—the peculiarities of which consisted in the patients having in several cases tympanitic distension of the belly, cold hands, and hot feet. On dissection, acute inflammation of the colon was found, besides the other morbid appearances common in Cholera.

CAUSES OF CHOLERA.

The cause of the more frequent appearance of Cholera for some years past, is unknown; and we are unacquainted with any circumstances which are sure to produce the disease, or by avoidance of which, residents in India can be certain of always escaping its attack. Cholera

occurs at all seasons of the year, and under all circumstances: people who live in the best houses, avoiding excesses of every sort, and who are exempt from any species of privation; are occasionally liable to be seized with the worst forms of this malady. However, we have abundant proof that the disease prevails most, among those who reside in low and ill-ventilated situations, exposed to humid atmosphere and sudden changes of weather; who are frequently using ill-cooked or bad food; and who indulge in eating cold or unripe fruits: more especially if they be at the time exposed to fatigue and unusual privations. People with impaired constitutions, or who are in a state of debility from any cause, are more liable to Cholera, than the robust and healthy: and it is certain that persons recently arrived from Europe, are very susceptible of an attack, if the disease happens to prevail at the time in the vicinity of their residence. The depressing passions, doubtless have much effect in rendering people more liable to an attack of the disease.

Sudden decrease of temperature appears to be among the most frequent exciting causes of Cholera; for we find it has commenced generally between 2 and 5 o'clock A. M. when the cold damp air is most sensibly felt in this country. Men are often attacked soon after exposure to rain,

when they are fatigued ; and many awake ill with cramps and other symptoms of the disease, after having slept in damp clothes. Soldiers on fording a river early in the morning, though the water be not a foot deep, are apt soon to fall ill, especially if they have marched several miles previously, so as to be heated and fatigued before they pass the ford : and they are often attacked in the night, or early in the morning, after encamping on the low damp bank of a rivulet. Hard work, and exposure to the sun and rain alternately, seem occasionally to bring on the disease : and a large dose of saline purgative has frequently excited an immediate attack. When 3 or 4 severe cases of Cholera have happened about the same time, at different parts of the town ; we know that any man who takes an active saline purge, is very likely to fall quickly into a state of Cholera with collapse. Severe cases of Dysentery, or even slight Diarrhœas, are apt in the most sudden manner to lapse into the low form of Cholera ; at those times when the latter disease is prevailing in the vicinity. Drunkenness has been followed by a severe form of the disease among large numbers, as happened in H. M. 14th Regiment, in 1828, at Berhampore ; where, after a distribution of 15,000 Rupees prize-money to the soldiers of the Regiment ; 94 cases of Cholera appeared within a few days, of whom 20 died. Of these

94 patients, 45 had been from nine to fourteen years in India. Nevertheless, at corresponding periods, in other years, we often see patients vomiting violently for hours, and others are purged profusely for several days, without Cholera coming on: intemperance to the utmost extent, exposure to atmospheric vicissitudes, and all the other exciting causes* above enumerated, often exist to an extreme degree, and the disease does not follow. Therefore we must acknowledge that some other cause, or circumstance, is essential to the production of Epidemic Cholera; since we see that these circumstances which seem to be efficient in exciting an attack in one year, are not productive of the disease in the next. The disease has been ascribed to some unwholesome condition of the atmosphere: and there seems reason to believe, that the Cholera in India may be ascribed to a distempered state of the atmosphere; which we have no means of appreciating, except by its effects: as we judge of the presence of malaria, in the case of intermittent Fevers. We know that at times every slight ailment

* The same observation may be made with respect to many other diseases which are influenced by atmospheric vicissitudes. We cannot give any reason why exposure to sudden changes of temperature, in England, causes Rheumatism to prevail in one year; Ophthalmia in another; Catarrhs in a third; and Fevers in a fourth.

seems convertible into Cholera of the most rapid and fatal description; among the inhabitants of a station where the disease had not previously existed, and where it cannot be traced to the arrival of sick persons, or to any mode of imported infection: the disease appearing about the same time at various and remote parts of the town, among persons of the most opposite habits of living, who have no direct or indirect communication with each other; as was the case in Calcutta in 1830, and on several other occasions. Strangers coming to a town when a general proclivity to Cholera exists, must be very liable to the disease; if they happen to arrive after suffering fatigue and privations, and just when the local distempered state of the atmosphere, with the usual exciting causes, are about to affect the residents of the place. Persons arriving at such a time, with any disorder of the digestive organs, may become the first sufferers; and thus the probability of imported contagion is suggested: though a strict investigation of the circumstances in detail, may be sufficient to negative any idea of contagion.

TREATMENT.

IN the treatment of Cholera, it is of the utmost importance that remedies be employed early; and that they be varied with careful reference to

the nature of the attack, and the existing stage of the disease: for the utmost vigilance and discrimination of the practitioner are often defeated. The cases which will presently be adduced, as well as the various accounts previously published in Bengal, shew us a great class of diseases to which the name *Cholera* has been applied. The whole of these have more or less of a common character so distinctly marked, that we rarely hear of a difference of opinion among practitioners concerning the identity of the disease: and still in some of the individuals of this class we find the prevailing tendency of the complaint, not only different, but diametrically opposite to what constitutes its predominant character in other cases. If the diseases which are acknowledged to be Cholera, were so ranged on a scale as to place those cases which have most affinity, together; and those most dissimilar, at a distance: we should find one end of this scale occupied by diseases in which the actions of the constitution are distinctly febrile, and in many of them the evidence of local inflammation is strong and unequivocal, as in the most intense examples of gastro-enteritis. At the other extreme of this scale, we should find the prevailing characters of the disease, as already stated, consisting in coldness, depression of vital actions, and extreme venous congestion; with tendency to sudden death, not preceded by much active

disease. Between these two extremes, every possible variety exists : the disease with early collapse and coldness, generally combines an intense degree of congestion of blood in internal organs, with some remote tendency to inflammation of the intestines, and sometimes (though rarely in Bengal,) of the brain : while the febrile cases, and those which are marked by distinct evidence of local inflammation ; are by no means void of congestion, and they frequently lapse suddenly into the low state, with coldness, and the most awful prostration of vital power. Our watchful attention to the course of the disease is urgently demanded, on account of this occasional tendency to sudden change ; lest we be misled, and induced to use depletion, by V. S. or other means, at a time when such treatment may be injurious. It will be evident that the treatment of Cholera must be varied according to the nature of the disease.

In the febrile and inflammatory stages of the disease, attended with violent and painful spasms, warmth of surface, and free circulation ; our chief dependance must be on V. S. leeches, and purgatives of calomel or blue pill, with cathartic extract ; alternated with castor oil : in a few of these febrile cases, we may venture on jalap and scammony at more remote periods of the disease. The earlier a case of Cholera of this description is bled, the more certain and effectual is the relief

which is obtained. While those patients, who come under treatment at a late period of the disease ; even though distinctly marked inflammatory symptoms be present ; require great caution in the employment of depletion, and still they are almost certain to die without antiphlogistic treatment. Opium is admissible for one or two doses, in small quantity, at the onset of these febrile cases ; when watery evacuations prevail : but except for the purpose of allaying the dreadful commotion of the system, and to arrest profuse purging ; we derive little benefit from this remedy. Nothing relieves the spasms of the early stage of febrile Cholera, so effectually as the lancet.

There is a more remote stage of the disease, in which local inflammations take place ; appearing sometimes to be excited by premature return to a diet of animal food, and in other cases to arise without any evident cause : we are obliged then to use the lancet, and to purge the patient freely, as in an ordinary inflammatory fever. At the same time, a word of caution is requisite ; lest the inexperienced practitioner, should mistake for fever or inflammation, the transient and ineffectual re-action which often occurs just before death ; attended with morbid heat of forehead and chest, while the patient is torpid, blue, and restless ; as vain attempts have been made to cure these cases by bleeding. The least that can be said of such treatment, is to acknowledge its total inutility.

Where the evacuations have been profuse, it is always advisable to give a small quantity of thin sago, or arrow-root; as soon as the stomach will retain it; and the employment of a small quantity of food of this sort, need not interfere with the general antiphlogistic plan above stated.

The majority of these febrile cases, can generally be saved; if seen early, and treated with careful discrimination and perseverance.

In the low description of Cholera, where the vital actions fall early into a state of torpor and collapse, with profuse cold perspirations; we have a much more formidable complaint to contend with. There is but little time for consideration in this form of the disease; it is rapid in its course, and deadly in its tendency: the most judicious measures that can be adopted, too often fail. It is necessary in the first instance to uphold the feeble remains of vital energy, and as it were to resuscitate the patient, otherwise the susceptibility to remedies is speedily extinguished. For this purpose, it is necessary to give some opium with stimulants. If the patient be seen early, and the vital actions have not been very much sunk; half a grain of opium with six grains of blue pill should be given every half hour, while frequent purging conti-

nues : and two ounces of hot sago with 1 oz. of brandy may be taken after the second dose of the pills. In the early stage of those cases where Cholera symptoms have supervened suddenly on diarrhœa ; we often see patients whose tongues are cold, the eyes sunk, and prostration extreme, entirely altered in two or three hours ; warmth being restored : and we have to manage diarrhœa with slight febrile symptoms. But after a few hours' continuance of the disease ; and when the pulse becomes low and weak, and the voice feeble, it is necessary to use more active remedies ; at the same time, we must always bear in mind the possibility of overpowering the system, either by opiates or spirituous stimuli, when the vital actions are sinking into a low and feeble state. I have seen in these cases, prompt and effectual relief more frequently afforded by opium than by any other remedy. But when this medicine is likely to do good, all the benefit derivable from it, follows quickly after taking one or two doses ; and it is more appropriate in those cases attended with profuse watery purging, than in others. Two grains of opium in a pill, sometimes arrest the most formidable symptoms. In other cases where the pill is immediately rejected ; the same quantity of opium dissolved in cinnamon water, and mixed with 3 i. of Spirit of Sal Volatile proves effectual. It is advisable to make the patient drink a cup of hot sago, with

some brandy or wine, as soon as the more distressing symptoms are moderated. If this be retained, and tranquillity with sleep follow, we may entertain hopes of recovery.

Under less favorable circumstances, where our early remedies do not produce such immediate benefit; the vomiting and purging are either arrested, or having been from the first less urgent; we find the lowness and coldness not removed. The thirst is extreme, pulse feeble and 120, or more frequent; while a weak pectoral whining voice, indicates the impaired function of the respiratory organs, and inward distress of the patient. In such cases, repetition of opium is apt to stupify the patient, without effecting any other purpose*; and spirits too often seem to overpower him, and render recovery more hopeless. *Liquor Ammoniae Puræ* is the best stimulant in such cases: I have given 3 i. every hour

* I consider Ammonia the best internal stimulant, in cases of approaching torpor, where repeated doses are requisite; it is more effectual, and safer, than either opium or brandy. I have also tried Enemas of four, and six pints of hot water, containing Ammonia in solution; with the view of stimulating the system, and at the same time of washing away from the great intestines, the tenacious paste-like secretion, which they contain. These Enemas were employed only in the most hopeless cases, when other stimuli had failed; therefore they were generally unsuccessful.

in 3 iiss. of water, for eight doses; and afterwards every two hours, until the circulation has been restored, and the warmth of surface has returned. An infusion of Cayenne Pepper may be made in the proportion of 3 ii. to a pint of boiling water, and a table-spoonful given every half hour, alternately with the *Liquor Ammoniae*. If the patient be calling aloud for drink; instead of giving brandy and water in such cases, I prefer letting him have an infusion of pepper, or ginger, either of which is to be made in the proportion of 3i. to the pint of boiling water; and a wine-glassful may be allowed every half hour, either tepid or cold, as the patient likes.

While these internal stimuli are used; much benefit may be derived from external applications. European flour of mustard is to be mixed with hot water, and when made to the consistence of an ointment, about one-eighth part of common salt added: this is spread on calico; and applied to the epigastrium, and across the lower part of the chest, and to the spine, and feet. If the skin retain any degree of susceptibility, this will soon act as a strong rubefacient, and when left on for five or six hours it blisters. I prefer this to any other external stimulant: after having tried Turpentine, common Blisters, and boiling-water, as well as pure nitric acid; and in extreme cases, the red hot iron has been applied to the epigastrium and

spine. The mustard plaster is not so irksome to bear as a blister, and it is free from the appearance of cruelty and harshness, which is an objection to some of the other stimulants just named.

If we are so fortunate as to arrest the progress of symptoms threatening sudden death, the patient generally sleeps for some hours. The subsidence of urgent symptoms, should make us satisfied to wait for three or four hours ; and then we must give some aperient medicine every four hours, until the bowels are made to act moderately. For this purpose, castor oil should be given every eight hours ; and in the intervals, 12 grains of compound extract of colocynth, with six grains of blue pill, and two grains of aloes. If a tendency to the low stage of the disease still predominate ; I would give only half the above quantity of blue pill, and would add two drops of cinnamon oil, or of the oil of peppermint to each dose of the pills. Supporting the patient with sago, arrow-root, or other farinaceous food ; and giving wine in small quantity, or omitting it according to the indications of pyrexia, or local inflammation.

After a patient begins to recover from the stage of collapse ; the disease seems to balance between a return of the lowness ; and the

accession of Fever with inflammation: the former condition is the most to be dreaded; it may be brought on by cold drastic purges, untimely bleeding, copious draughts of cold water, or imprudent exertion in attempting to rise to stool. After all that can be effected, by diligence and science; it must be acknowledged that a large proportion of Cholera cases which sink into the state of collapse, are then inevitably fatal.

The domestic management, and accessories to the medical treatment of Cholera patients, are very important. The sick person should be placed in an airy room, on a low and rather narrow bed; that he may be easily and effectually assisted: the room should not be crowded with attendants, nor should the patient be left in a draught of air, but the face may be fanned. If profuse perspirations exist; the surface should be frequently rubbed dry, with hot flannel; but the whole body need not be uncovered at one time, for this purpose. During the low form of the disease, with decrease of natural warmth; the patient should be placed between blankets, and the extremities diligently rubbed and cham-poed by attendants, whose hands are frequently warmed. Tin cases made to hold hot water, or bottles of hot water, or bags of hot sand, are frequently placed by the patient's limbs; but restlessness of the sick, renders these means of

affording artificial warmth, generally of little avail. It is proper to prevent patients from rising to stool, so long as there is any appearance of collapse, with lowness and frequency of pulse: and under any circumstances, while copious watery evacuations continue frequent, it is desirable to make the sick remain recumbent, and use a bed-pan. I have many times seen men rise to stool; and after a copious gush of watery evacuation from the bowels; to fall on the floor, sometimes apparently fainting, at other times convulsed: some of these have died within five minutes after rising to stool, who had not been 12 hours ill, and who had some degree of warmth of surface at the time of getting out of bed; having just before that been speaking rationally, though in a state of anxiety and restlessness. When the pulse at the wrist has ceased, or is very feeble and rapid, the patient anxiously tossing about in his bed, and when entire arrest of the circulation seems impending; any exertion of the patient is likely to prove injurious: either rising to the erect posture, or sitting up in bed, should then be prohibited. The most precise instructions to the attendants, are requisite, regarding the quantity of drink, or aliment to be given: for although a wine-glassful of some drink may be allowed, (to any patient in whom it does not quickly excite vomiting,) and in febrile cases, may be repeated every hour; a free use of fluids, is almost always injurious.

The following cases, are intended to shew the nature of Cholera in Bengal; and the effects of the treatment. Those in which a febrile or inflammatory condition existed, are arranged first in order; though that form of the disease is not always the most frequent in this part of India. After these are placed, some cases in which it would appear that V. S. was injurious, and others in which it was useless. Then follow some examples of the disease, in which the extraordinary venous congestion, and impeded circulation, were attended with such apparent agony, and laborious heaving of the chest, that I was induced to hope relief might be obtained by opening the radial artery; which was tried, and as much blood obtained as the most urgent advocates of blood-letting in Cholera have considered sufficient to alleviate the oppression. Next in order, are arranged cases in which the sudden coldness and collapse, with sinking of vital power, were so extreme; either that blood could not be obtained from the veins, or the attempt at V. S. was not deemed advisable; and therefore the patients were at first treated by opium and stimulants. These examples, will prove that no exclusive rule of practice can be followed; and that the utmost diligence and discrimination are requisite; to apply such remedies as are best suited to the nature of the attack, and the existing stage of the disease.

OBS. LXXXIII.—Thomas Greenwood, *Æt.* 21, of middle size and light complexion, recently landed from Europe: was taken ill with purging, at noon on the 16th November, 1830; and he was at stool as often as six times per hour. Cramps in the extremities and vomiting commenced at 10 o'clock on the 17th, and as he appeared to be getting worse, he was sent into General Hospital at 11 A.M. His pulse was then 116 and weak; tongue cool and moist; skin cool; and voice feeble: there was slight arterial or florid congestion of the eye-balls; eyes only half open, but a bright light was not painful.

V. S. ad lb. i.

R. Calomel. \mathfrak{z} i.—Opii gr. i. in a Pill.

R. Spirit. Ammoniae Aromat. \mathfrak{z} i.

Aquæ Tepid. \mathfrak{z} iss. misce. To be drank after the Pill.

Extremities rubbed with Spirit of Turpentine.

1 P. M.—Blood not buffy, the cramps have ceased, otherwise he is not much changed; he has been vomiting, and purged often: the evacuations are a clear watery fluid, with flakes of mucus.

R. Calomel. \mathfrak{z} i.

Extract. Colocynth. Comp. \mathfrak{z} ss.—to be taken now, in three Pills; and repeated in two hours. Draught as above, to be repeated with each dose of the Pills.

5 P. M.—Vomiting and purging continue; he complains of thirst; pulse rather more distinct; the last stool is slightly colored with grey fæces.

Repeat the Pills and Draught.

7 P. M.—Had one more stool, of the same appearance as the last; pulse unchanged; his voice is a little stronger; he lies quiet and is cold, the fingers shrivelled; but tongue warm.

R. Calomel. ʒ ss.—Extract. Colocynth. Comp.

Asafoetidæ āā gr. v.—misce, fiant Pill iii. To be taken at 7, and repeated at 9, 11 P. M. and 1, and 3 A. M. to-morrow.

R. Mist. Camphoræ lb. i.

Sp. Lavand. Comp.—Tinct. Hyoscyami āā ʒ iss.—misce.—To take two ounces every two hours.

A cup of hot sago with 1½ ounces Port Wine to be given immediately.

Nov. 18th.—He has had one scanty, slimy, pale-grey stool, and vomited often during the night. Pulse 102 and feeble; tongue clean, warm, and moist; voice very feeble; has occasional slight cramps in the legs.

R. Calomel. ʒ ss.—Extract. Colocynth. Comp. gr. v.—misce, fiant Pill ii. To be repeated every three hours, with some of the above mixture.

Apply a small blister to the Epigastre.

Let him have Port Wine, three ounces, in some hot sago.

Vesper.—He has taken five doses of the pills; has not vomited, and had no stool: cramps have ceased, and the shrivelled state of fingers has disappeared.

Enema Purg. statim.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v.—in three Pills at bed time.

Nov. 19th.—Had two free, dark-green stools, at night; pulse soft and weak; he is cold, but his voice is stronger: tongue warm, moist, and slightly coated with white mucus.

R. Calomel. ʒ ss.

Extract. Colocynth. Comp.

Asafoetidæ āā gr. v. To be taken at 6 A. M. and repeated at noon, and at 3 P. M.—Diet, tea, and three ounces Port Wine in a cup of hot sago at 11 A. M.

Vesper.—He took three doses of pills; vomits often; is colder and very thirsty; tongue cold. These unfavorable appearances are ascribed to his having drank much water, and tea; which he obtained contrary to orders. An attendant was directed to prevent his drinking.

R. Calomel. ʒ i.

Extract. Colocynth. Comp. ʒ ss.

Opii. gr. ss. To be taken in three pills, at six, and repeated at 10 o'clock.

Nov. 20th.—No stool, and very little change in any respect. Pulse low, weak, and soft; tongue not quite cold; he suffers from anxiety.

Habeat Enema Purg. statim.

R. Calomel. \mathfrak{z} i.—Extract. Colocynth. Comp. \mathfrak{z} ss.

In Pills at 7 A. M. and repeat at noon.

Give some hot sago with brandy, at 11 o'clock.

Vesper.—Had three stools, the last was black, feculent, and fluid. He is warmer; pulse improved. Has not vomited; the gums are sore.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. $\bar{\text{aa}}$ gr. v.

10 P. M.—He has had several free fluid stools; and is weaker.

Habeat statim Enema Purg.

R. Pil. Hydrarg. gr. vi.—Opii gr. i. fiant pil. statim sumend.

Nov 21st.—He has had several black fluid stools, since last report: he is now warm, and rather better; but there appears some lurid congestion of the face; pulse soft and low.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\bar{\text{aa}}$ gr. v. at 6 A. M.

Ol Ricini. \mathfrak{z} i. at noon.

Diet—Tea, Bread, and Sago.

Vesper.—Had four free, dark, feculent stools ; has not vomited, pulse more distinct, and he is much stronger and better.

After this a slight feverish disposition remained a few days ; he took a mild purgative daily, and gradually improved. Was allowed chicken and vegetables on the 25th, and was discharged on the 29th November, 1830.

OBS. LXXXIV.—Stephen Drewry, *Æt.* 31. A stout man, with a florid face, recently landed in Bengal, was seized with vomiting, and purging, and pain in his belly at 8 P. M. on the 21st May, 1827, but did not send for medical aid till daylight next morning. He was then bled to lb. i. had a blister applied to the epigastre, and took two grains of opium in solution in an ounce of mint-water, with Spirit Ammoniaë Aromat. 3 i. He was not seen by me till 8 A. M. on the 22nd May, when he was brought to Hospital ; he was then purged, and felt very weak. Ordered to take

Calomel.—Extract. Colocynth. Comp. āā gr. v. statim.
Ol. Ricini. ʒ i. at noon.

Vesper.—Had three stools, evacuations not kept for inspection ; pulse 98 and small, but rather hard, and he is feverish.

V. S. ad lb. i.

R. Extract Colocynth. Comp.

Pil. Hydrarg. āā gr. v. in two Pills at bed-time.

May 23rd.—Blood not buffy ; he had four watery stools during the night, the color of ink. Pulse 102 and weak ; there is still a slight flush of face.

R. Calomel.

Extract. Colocynth. Comp. āā gr. v. at 7 A. M.

Ol. Ricini. ʒ i. at noon.

Vesper. 5 P. M.—Had five, very scanty, fluid, black stools, since morning ; he has now pain in the lower belly, and oppression at chest. Pulse 70, soft, and weak ; tongue cool, moist, and clean.

Apply six leeches to the lower belly.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v.—Opii gr. $\frac{1}{2}$, to be taken now.

Ol. Ricini. ʒ i. at 8 o'clock.

May 24th.—He had several scanty green and yellow stools, and has suffered severely from cramps in his legs.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. aa gr. v. to be taken at 7 A. M.

Ol. Ricini. ʒ i. at noon.

Vesper.—The medicine has produced four stools of yellowish brown color ; tongue cool and nearly clean ; pulse better ; he has some cramps in the belly but none in the legs.

R. Extract Colocynth. Comp.

Pil. Hydrarg. āā gr. v.

May 25th.—Had three bilious yellow stools, in which many films of white mucus are floating. Has now pain in the belly, and slight morbid heat of skin. Pulse 92.

Apply 12 leeches to the belly.

R. Pulv. Rhei. ʒ i.

After this he took a purgative dose of rhubarb, or of colocynth and blue pill almost every day, and appeared to be improving.

June 2nd.—He was seized at 1 P. M. with violent pain at stomach, and spasmodic twitchings in the fingers and toes. Pulse strong and frequent. He was bled to 20 ounces; the blood on cooling was buffy.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v.—Opii gr. i. misce—to be taken at 6 P. M.

3rd.—Pain moderated, but not removed: a white tongue, and slight pyrexia; no stool.

Apply 16 leeches to scorb. cordis.

Enema Purg. statim.

R. Ol. Ricini, ʒ iss. at 6 A. M. and repeat at noon.

Six leeches were applied on the 4th, and again on the 5th; and he took a mild purgative daily.

June 10th.—Pressure over the belly caused pain, therefore a blister was applied to the abdomen, and mild purgatives were continued till 28th June, when he was pronounced well.

The above case of gastro-enteritis, is inserted to shew how that disease, in some respects, approaches the febrile form of Cholera; but wants the rapid pulse, conjee stools, and sinking of vital power.

OBS. LXXXV.—Henry Johnson, *Æt.* 40, a sailor of the ship *Cæsar*; of middle size and light complexion, one month arrived from England: admitted into General Hospital at 7 A. M. 28th June, 1830. Has had a purging for 48 hours, and began to vomit at 2 o'clock this morning; the purging abated since 5 A. M. and he has suffered from cramps in his thighs for the last half hour. Extremities now warm. Pulse 112 and free; tongue warm and dry. Has some chronic enlargement and induration of the liver, which can be distinctly felt.

V. S. ad $\frac{3}{4}$ xxvii.

R. Calomel. \mathfrak{z} i. statim sumend.

Ol. Ricini. $\frac{3}{4}$ i. at 9 o'clock.

Half past 10 A. M.—One cup of the blood taken at 7 A. M. is buffy, the other not; he has had two stools since admission; they are like rice-water.

He complains of dreadful pain at scrob. cordis, and is crying aloud for drink; there is great anxiety. Pulse 132, fingers shrivelled, but the extremities are still warm; he voids no urine.

Repet. V. S. ad. $\frac{3}{4}$ x.

R. Calomel. \mathfrak{g} i.

Extract. Colocynth. Comp. gr. v.—misce fiant pil. ii. statim sumend.

Allowed 2 oz. of Cream of Tartar drink, every hour.

2 P. M.—Blood not buffy, had only one return of cramps since half past 10 o'clock. There is at present great anxiety; pulse 120 and soft: has had since last report, six copious watery conjee-like stools, in quantity at least 8 pints.

R. Pil. Hydrarg. \mathfrak{g} i.

Extract. Colocynth. Comp. \mathfrak{g} ss.

Opii gr. i. misce et divide in pil iv.

Two pills immediately, and repeated in two hours.

5 P. M.—By mistake the whole four pills were taken at once. He has vomited once since 2 o'clock, and had one pale-grey watery stool, with some flocculi of mucus floating in it. Belly soft and elastic. Pressure over the abdomen gives some pain. Surface generally warm; tongue warm and dry; pulse 116; he is anxious and moaning.

Apply 12 leeches to the belly.

R. Calomel. ʒ ss.

Extract. Colocynth. Comp.

—— Hyoscyami. āā gr. iv. misce et divide in pil. ii.
statim sumend.

7 P. M.—Has had one scanty, feculent, dark stool; pulse free, and there is less anxiety.

Repeat the last prescription, at 8 o'clock.

June 29th.—Had during the night, one watery stool, of pale grey color; no sleep. He is now tranquil, and suffers no pain; pulse 116 and soft; tongue dry, and of morbid brownish-red color; edge of liver distinctly to be felt; pressure gives slight pain.

Apply four leeches to the region of the liver.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v. misce fiant, pil. iii. statim sumend.

Ol. Ricini. ʒ i. at noon.

Tea and thin sago allowed.

Vesper.—Had four free, feculent, fluid stools, nearly black; pulse 108; skin rather cool; he is very thirsty; has no pain except in the calf of the right leg.

Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at bed-time.

June 30th.—Had one stool at night, which is not kept for inspection; pulse 84; tongue clean

and moist at edges, but loaded, brown, and dry in the centre; skin cool; belly soft and elastic; edge of liver to be felt as before: urine copious.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v. in pills at 6. A. M.

Ol. Ricini. ʒ i. at noon.

After this he took a mild purgative daily.

In a few days more, there was increased tenderness in the region of the liver; for which reason he was bled to lb. i. and leeches were applied four times: and by these means he recovered. I was informed that this man had several feverish attacks during the voyage to India; but since his arrival in Calcutta he had been in good health, and lived on shore at the Captain's house; he was a sober man, of good character.

Discharged 10th July, 1830.

OBS. LXXXVI.—Thomas Cavender, *Æt.* 30, a sailor of the ship *Roxboro' Castle*; a stout and tall man, of dark complexion, recently arrived from England; admitted 26th October, 1830 at 8 A. M. Stated that he had been purged for three days; and worked hard in the ship's hold until yesterday. He began to vomit at 10 o'clock last night, and soon after had severe cramps in his legs and belly: the vomiting, purging, and cramps con-

tinue, and he has been purged often in the palankeen, while being brought to Hospital. Pulse free and rather full, and he is warm ; eyes blood-shot.

V. S. ad lb. i.

R. Calomel. ʒ i.

10 A. M.—Blood not buffy, he is cooler and weaker ; cramps moderated ; the stools consist of water, of a dark-brown color, with little feculence ; pulse 96, and weak.

R. Calomel. gr. xii.

Extract. Colocynth. Comp. gr. vi.

Ol. Menth. Pip. gtt. ii. to be taken in two pills now, and repeated in three hours.

4 P. M.—Has been purged four times ; cramps returned, and he has pain in the loins ; but is better in having the warmth restored, and less congestion of the eye-balls ; pulse risen, and rather full. The vein was again opened and eight ounces of blood flowed.

He was very faint, and vomited after the bleeding ; blood not buffy, it coagulated, but no serum separated.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v.—to be taken directly—and in half an hour let him have 3 oz. Port Wine with sago.

10 P. M.—The cramps continued till $\frac{1}{2}$ past 9; he is warm and tranquil, but very thirsty; has had two dark-grey stools, moderate in quantity.

Oct. 27th.—He passed a restless night, without spasms or vomiting; had much nausea, voided some urine; and had two fluid black stools, in quantity about a pint: pulse 86 and moderate; belly hot, full, elastic, and pained on pressure; tongue moist, cool, white, and very little loaded with mucus.

V. S. ad lb. i.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\bar{a}\bar{a}$ gr. v. in pills at 6 A. M.—and repeat at 10 o'clock.

Noon.—Blood buffy; he had one scanty loose dark-colored stool, and seems better.

Repeat the pills now; and again at 3 P. M.

Vesper.—Had three free stools, and is better.

Oct. 28th.—Had no sleep, but says he feels well; the tongue is warm, moist, and loaded with white mucus. One dark feculent stool, in moderate quantity.

R. Extract. Colocynth. Comp. \mathfrak{D} ss.

Calomel. gr. v. in pills at 7 A. M.

Ol. Ricini. \bar{z} ss. in Aquæ Cinnamon. \bar{z} i. at noon.

Vesper.—Had three dark, fluid, feculent stools; vomited the oil; suffers from pain at stomach and anxiety.

Apply four leeches to Epigastre.

R. Calomel. gr. xii. \mathcal{H} . s.

He was better on the 29th, but complained of some pain in head and chest, unattended with pyrexia; he took mild purgatives and had an enema which operated slightly: he passed a bad night. On the 30th October, he was feverish and had head-ache, for which reason six leeches were applied to the temples and four to epigastre: the head was shaved; and he was ordered to take

Extract. Colocynth. Comp. \mathfrak{D} ss.

Pil. Hydrarg. gr. v. in the morning.

Ol. Ricini \mathfrak{z} i. at noon—and

Extract. Colocynth. Comp.—Pil. Hydrarg. $\mathfrak{z}\mathfrak{z}$ gr. v. at night.

9 P. M.—These medicines have produced two dark fluid stools; he is anxious, and cool; pulse low. Ordered to take

Pil. Hydrarg. gr. vi.—Opii gr. i.

He slept at night; had two fluid stools of natural color; was cheerful and feeling well on the morn-

ing of 31st. In the evening there was some slight feverishness; and he took

Extract. Colocynth. Comp.
Pil. Hydrarg. āā. gr. v.
Opīi gr. i. in pills at bed-time.

On the 1st November, he felt better, and had slept, but had no stool; castor oil or other purgative was given daily: his diet was gradually increased, and he was discharged well on the 14th November, 1830.

OBS. LXXXVII.—James Cawson, *Æt.* 23, a small man, of light complexion, recently arrived in Bengal: ill 12 hours before I first saw him, on his arrival at the Hospital, on the evening of 7th June, 1827. He was then suffering with violent vomiting and purging, the stools a clear water, not colored in the slightest degree; he had no cramps; face flushed; pulse 92, and regular.

V. S. ad lbj.
R. Calomel. ʒ i. in pills.
R. Opīi gr. ii.
Spirit. Ammoniãe Aromt. ʒ i.
Aq. Menth. pip ʒ i. misce—to be drank after the pills.

June 8th.—Blood slightly buffy: he had four stools during the night, which are watery and of a pale-grey colour; he is better; tongue clammy;

pulse fuller ; he feels weaker, and has inclination to vomit.

Apply 8 leeches to scrob. cordis.

R. Calomel. \mathfrak{z} i.

Opii gr. ii.—misce fiant pill ii. statim sumend.

Ol. Ricini \mathfrak{z} ii. to be taken at noon.

June 9th.—He had three stools in the course of yesterday ; and three this morning.

R. Calomel.

Extract. Colocynth. Comp. $\mathfrak{a}\mathfrak{a}$ \mathfrak{z} ss. in 3 pills at 6 A. M.

Vesper.—Had two very free stools, and is improving.

R. Calomel. \mathfrak{z} ss.

Extract. Colocynth. Comp. gr. v.

Opii gr. $\frac{1}{2}$ —to be taken in pills at bed-time.

June 10th.—Had four brown watery stools in the night, says he is well, but his face is flushed ; pulse 60 and soft.

R. Calomel.

Extract. Colocynth. Comp. $\mathfrak{a}\mathfrak{a}$ gr. v. at 6 A. M.

R. Ol. Ricini \mathfrak{z} i. at noon.

He took a mild aperient daily, and was gradually improving till the 21st: when he appeared feverish, had a white tongue, and flushed face. Pulse 88 and full.

V. S. ad lbj.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at 6 A. M.

Pulv. Jalap. Comp. 3 i. at noon.

This purged him freely; he took a purgative on the 23rd, and was discharged well on the 28th.

OBS. LXXXVIII.—Pat. Whelahan, Æt. 27, H. M. 44th Foot, recently landed in Bengal. Was seized with purging early in the morning of the 22nd May, 1827; but not sent to Hospital, till 10 P. M. He then had cramps in the limbs; the purging and vomiting continued, and he had some pyrexia. Pulse 92 and free; face flushed; tongue little coated with white mucus.

V. S. ad lbj.

R. Calomel ʒ i.

Extract. Colocynth. Comp. ʒ ss.—misce fiant pil. iij. statim sumend.

May 23rd.—Blood not buffy, he had three copious feculent loose stools; is very weak and faint; tongue brownish and moist; cramps are still severe; pulse 98 and regular.

R. Calomel.

Extract. Colocynth. Comp. āā ʒ ss.

Opii gr. i.—misce fiant pill iij. statim sumend.

O. Ricini. ʒ i. meridiē.

Vesper.—Had four scanty dark-brown stools, and vomited once during the day ; he is warm and tranquil ; has some pain at the navel.

V. S. ad lbj.

Plister to the belly.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v.

May 24th.—Had four stools in the night, and he is better ; still has some pain in the belly. Pulse 86 and soft ; blood not buffy.

R. Extract. Colocynth. Comp. gr. v.

May 25th.—Pain in the belly remains, with slight pyrexia and flushed face ; pulse frequent ; tongue hot.

V. S. ad lbj.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at 6 A. M.

R. Ol. Ricini. ʒ i. at noon.

May 26th.—The blood last drawn was buffy, and separated a moderate quantity of serum. He was freely purged, and is much better in every respect. After this date, a small dose of rhubarb was given every morning, and he gradually improved. Was discharged on the 4th June, 1827.

In the month of May, 1827, the number of cases of Cholera received into the General

Hospital was 149 ; of whom the greater number were attacked with the disease, within 10 days of this man's admission.

OBS. LXXXIX.—Wm. Morris, *Æt.* 21, a middle-sized man, of light complexion, recently arrived in India, was seized with vomiting, purging, and cramps in his legs, at noon, on the 22nd August, 1830, which symptoms continued when he was seen at 2 P. M. ; his pulse was then 102 and rather small; he was perspiring profusely, and the skin was cold, but his tongue was warm, clammy, and nearly clean ; he experienced great thirst and anxiety, and felt very weak.

V. S. ad lbj.

Capt. Calomel \varnothing i. in Pil. ij. statim.

6 P. M.—He was faint, when only $\frac{3}{4}$ xii. of blood flowed, which was not buffy when it had cooled: vomiting and purging have ceased ; he has had no cramps for the last 20 minutes ; anxiety remains, but his skin is warm, and he perspires less. Belly hot, inelastic, and doughy.

R Calomel.

Extract. Colocynth. Comp. aa \varnothing ss.—misce fiant pil. iij. statim sumend.

Enema Purg. statim.

8 P. M.—The Enema has produced no stool. Cramps in his legs have returned ; there is

increase of heat on the surface, and slight perspiration on the face.

The vein was again opened; and when 14 oz. of blood had flowed, he became faint, and the perspiration increased.

R. Ol. Ricini. $\frac{3}{4}$ iss.

11 P. M.—He is very weak; pulse 116 and hardly to be felt; the surface is cool, and he is suffering from great anxiety; tongue warm. He has had one copious stool, of pale yellow color.

To have Port Wine $\frac{3}{4}$ iij. with as much hot sago.

R. Calomel. \mathfrak{g} i.

Opii gr. i.—misce fiant pil. ij. statim.

August 23rd.—Had cramps nearly all night, pulse 108 and weak, tongue clean and rather dry: he vomited once since 11 o'clock, and had a scanty fluid brown stool, not 3 oz. in quantity.

R. Extract. Colocynth. Comp.

Calomel. $\bar{a}\bar{a}$ \mathfrak{g} ss.—misce fiant pil. iij.—to be taken at 6 A. M.—and Castor Oil $\frac{3}{4}$ i. at 10 o'clock.

3 P. M.—Had two free fluid stools; the belly is hot, and he has some pain below the navel. A small cup of sago allowed.

Apply four leeches to the belly.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. $\bar{a}\bar{a}$ gr. v. misce fiant pil. ii. statim sumend.

9 P. M.—Pulse 106; he is free from pain, but feels very weak: has had another copious fluid stool, nearly black. Give $1\frac{1}{2}$ oz. of Port Wine, with 3 oz. of thin and hot sago.

August 24th.—He slept, and is much better; had one stool of the same appearance as the last. Diet—tea, bread, and sago.

R. Pil. Hydrarg. gr. v.

Extract. Colocynth. Comp. ʒ ss.—misce fiant pil. ii. statim sumend.

The above medicine produced free stools, and he was convalescent next day. A mild purgative was given daily till the 3rd September, with the exception of only two days. His recovery was progressive until the 27th August: he then for the first time ate some meat, and was feverish next day; therefore a reduced diet was enjoined for several days longer.

The bad effects of premature use of animal food, were very evident in this instance. In all cases of Cholera, where febrile or inflammatory symptoms have existed, the same caution is requisite as to the food used during convalescence as in ordinary cases where patients are recovering from gastro-enteritis.

OBS. XC.—George Mogg, *Æt.* 20, a middle-sized lad, of light complexion ; recently arrived in Bengal : received into the General Hospital at 7 P. M. June 7th, 1827. Has been affected during the whole day with purging and severe cramps in the legs. Pulse feeble and frequent ; skin cold ; he is suffering much from pain all over the belly, and has head-ache.

V. S. ad $\frac{3}{4}$ xx.—He was ordered to take immediately Calomel \mathfrak{z} i. in pills : and at the same time the following draught :

R. Opii gr. ij.
Spirit. Ammoniaë. Aromat. \mathfrak{z} i.
Aquæ Menth. Pip. $\frac{3}{4}$ ii. misce.

June 8th.—Blood buffy, very little serum separated. He had several feculent stools in night, of light-grey colour, and feels better ; but still has head-ache, and there is pain in the belly, increased on pressure ; no morbid heat of skin. Pulse frequent but more free, tongue clammy.

Apply 16 leeches to the belly.

R. Calomel \mathfrak{z} i.
Opii gr. i. fiant pil. ii. statim sumendæ.
Capt. Olei Ricini $\frac{3}{4}$ ii. meridie.

Vesper.—He has had numerous free feculent stools, and feels better : tongue white.

R. Calomel.

Extract. Colocynth. Comp. āā ʒ ss.

Opii gr. i. fiant pil iij.—H. s. sumend.

June 9th.—Had one scanty mucous stool, at night. Pain in the belly continues : tongue white.

Capt. Ol. Ricini. ʒ i.

Apply 16 leeches to the belly.

He took Castor Oil daily on the 10th and 11th June ; on the 13th, was considered convalescent, and meat diet allowed.

On the 19th June, he was attacked with fever, and head-ache : and the bowels were not sufficiently free ; pulse frequent but not very full. Diet reduced to tea and bread.

V. S. ad lbj.

Apply ten leeches to the temples.

R. Pulv. Jalap. Comp. ʒ i.

Vesper.—Blood buffy ; head easier, but he is still feverish and thirsty ; he was purged five times in the course of the day.

R. Calomel. gr. v.

Extract. Colocynth. Comp. gr. xii.

Pulv. Antimon. gr. iij.—misce fiant pil. iij. H. s. sumend.

June 20th.—Vomited twice, and had eight stools at night; he is now suffering from pains in his legs and thighs; pyrexia somewhat abated.

V. S. ad lbj.

R. Extract. Colocynth. Comp. ʒ ss.

Calomel. gr. v. in pil. ii. statim.

June 21st.—Blood buffy; he was freely purged; no pyrexia remains. After this, he was purged with Castor Oil, and on the 28th June, discharged to join his Regiment. The evil consequences produced by a premature use of animal food, were evident in the febrile and inflammatory condition, which took place on the 19th June; requiring active depletion and a return to low diet.

OBS. XCI.—Joseph Bowdem, Æt. 19, a sailor of the French Ship *Victorine*, admitted into General Hospital 25th October, 1830, at half past 6 A. M. A slight made lad, of light complexion; sailed from France 22 months ago, and has been to Peru, from whence he arrived in the river Hooghly 15 days ago; and has been working hard in landing the ship's cargo, which is of copper. He had a diarrhoea for a fortnight, which ceased for two days, and returned last night, with the addition of cramps in his limbs and vomiting. He is now in the act of vomiting the crude remains of food. Skin covered with a cold sweat; pulse

120 and weak; tongue warm, moist, and nearly clean; he is very pale, and has some oppression at chest. The cramps are at present severe in his feet and legs.

V. S. ad lb. i.

R. Calomel. \mathfrak{z} i.

Opii gr. ii.—misce fiant pil. ii. statim sumend.

8 A. M.—He was weak and faint when only 12 ounces of blood had flowed; it is black and not buffy, but a coagulum has formed, and the serum is bloody. Has had two brown, watery stools, about lb. iss. in quantity; has not vomited; he suffers from great anxiety and desire for drink. Pulse weaker.

R. Extract. Colocynth. Comp. \mathfrak{z} ss.

Pil. Hydrarg. gr. v. misce fiant pil. iii.—to be given at 9 o'clock.

2 P. M.—Has had one scanty stool, like barley water; vomited very often; cramps have ceased. He is cold and feeble; tongue white, cold, and moist; pulse 122, and very weak. He is thirsty, and appears stupid.

R. Calomel. \mathfrak{z} i.—Pulv. Jalap. Comp. \mathfrak{z} i.

Pulv. Scammon. Comp. (Ph. Ed.) \mathfrak{z} ss. to be given now, mixed in treacle.

6 P. M.—Had one scanty watery stool, almost white ; vomited several times, and suffers from cramps in his legs and fingers.

Half past 12 at night ; he has had one pale-grey fluid stool, and vomited twice since 6 P. M. Pulse low, weak, and rapid ; voice pectoral. He is torpid at times, and then lies in a restless state for a few minutes : fingers shrivelled, but there is not much perspiration except on the face ; extremities cold and damp ; he is certainly worse. Ordered to take three ounces of Port Wine with sago.

October 26th.—Slept after the sago and wine ; he is now cheerful and warm ; the tongue is warm, moist, and white ; pulse stronger : he has had two stools, chiefly of a dark-grey color, but a part of the evacuations nearly black. Diet—tea, and sago with wine.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. in two pills, to be taken at 7 A. M. and repeated at 10 o'clock.

4 P. M.—Free from cramps ; the skin cold, pulse low and weak ; he has had two scanty, black, paste-like stools. Repeat two pills such as ordered this morning.

Half past 9 P. M. Pulse feeble and frequent, hands cold, tongue white, cool, and moist : since

4 o'clock he has had two free fluid stools, like gruel in consistence, but black.

R. Calomel. \mathfrak{g} ss.

Extract. Hyoscyami. gr. vi. in pills \mathfrak{H} . 3.

Oct. 27th.—Had one scanty stool, like that last reported, but has not vomited, or had any cramps: hands cold, pulse 110, and he craves anxiously for drink.

R. Ol. Ricini \mathfrak{z} i. statim sumend.

R. Pil. Hydrarg.

Extract. Colocynth. Comp. $\bar{a}\bar{a}$ gr. v. in pills, at noon, and repeat at 3 P. M.

Diet of tea, bread, and sago, with 3 oz. of Port wine.

8 P. M.—Had two dark fluid stools, moderate in quantity, and thinks he is better.

R. Calomel. \mathfrak{g} ss. \mathfrak{H} . s.

Madeira Wine, three ounces, with Sago.

Oct. 28th.—Slept; had two scanty black stools during the night: one more free evacuation this morning, of yellow color. He is better; the hands warm, pulse feeble, and mouth slightly sore from mercury.

Ordered to take Calomel. gr. v. at 7 A. M.

Ol. Ricini.—Aquæ Cinnamon. $\bar{a}\bar{a}$ \mathfrak{z} i. at noon.

Vesper.—Pulse improved; face livid, and eyes very dull; he has had two free loose stools, is warm, and feels better.

R. Extract. Colocynth. Comp.
Pil. Hydrarg. āā gr. v.

At 9 P. M.—He was anxious, low, and colder.

R. Pil. Hydrarg. gr. vi.
Opīi gr. ss.—misce fiant pil. ℥. s. sumend.

Oct. 29th.—He slept, and is better; had one stool; mouth sore; tongue moist, and coated in centre with white mucus. After this; a slight feverish condition remained for several days, and he took some purgative daily. On the 2nd November, he was troubled with an eruption on the skin, resembling urticaria. Mild purgatives were continued, and his food very gradually increased.

Discharged well on the 10th November.

OBS. XCII.—Peter Mathews, *Æt.* 23, of middle size, and dark complexion; recently landed from Europe: was taken ill on the morning of 19th November, 1830, with purging and vomiting; which continued when he was admitted into General Hospital, at 5 P. M. He was then warm and had a soft free pulse, no cramps.

V. S. ad lb. iss.

R. Calomel. ʒ i.—Opii gr. ss. statim sumend.

R. Calomel. ʒ i.—Extract. Colocynth. Comp. ʒ ss.

Opii gr. ss. to be taken in pills at 10 P. M.

Nov. 20th.—Blood not buffy, and the surface of the cruor is florid; he vomited three times, and was purged often during the night; the stools are tinged with bile. Pulse 112, and very weak; he suffers from great anxiety and thirst; tongue cool, white, and dry; skin nearly cold.

R. Calomel. ʒ i.—Opii gr. i. in pills at 6 A. M.

Diet—Tea, and hot Sago with some Brandy.

2 P. M.—No stool or vomiting since the morning. Pulse low and weak; he is cold, and sinking.

R. Calomel. ʒ i.

Extract. Colocynth. Comp.—Asafoetidæ āā gr. v.

Ol. Cinnamon. gtt. ii. to be taken in two pills now.
Sago and Brandy repeated.

5 P. M.—Had five stools, partly watery and black, partly feculent. Repeat the pills at 5 and again at 8 o'clock.

10 P. M.—Had ten free, dark, and feculent stools; perspires, and is very faint.

R. Pil. Hydrarg. gr. vi.—Opii gr. i. in a pill now.

Nov. 21st.—Slept after 3 A. M. and is better ; had no stool. Pulse 98 and soft. Diet—tea, bread, and sago.

R. Extract. Colocynth. Comp.
Pil. Hydrarg. āā gr. v. at 6 A. M.
Ol. Ricini ʒ i. at noon.

Vesper.—Had four free, fluid, dark stools, after the oil ; feels very weak ; tongue cold, but the extremities are warm ; pulse free and natural.

R. Pil. Hydrarg. gr. vi.—Opii gr. i.

Nov. 22nd.—Had more dark-grey fluid stools in night, moderate in quantity : the surface of his body is warm and pulse free ; tongue continues cool, moist, and much loaded with grey mucus.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v.

After this, he took a purgative daily. Was feverish, and had a pain in chest on the 26th, for which he was bled, and a purgative of jalap used. Discharged well on the 29th November.

OBS. XCIII.—Daniel Watson, *Æt.* 25, a sailor of the ship *Bridgewater*, admitted 2nd June, 1830, at 6 P. M. A tall thin man, of light complexion, ill two days with vomiting and

purging. He is now in the beginning of collapse ; pulse feeble, 96, and soft ; he is covered with a profuse perspiration ; vomits water, which he has just drank. Purging, a grey watery fluid. Eyes blood-shot ; belly full, doughy, and inelastic ; tongue clean, moist, and of morbid red color. Has cramps at the pit of stomach now, and had cramps in the soles of his feet three hours ago.

R. Calomel. \mathfrak{z} i.

Extract. Colocynth. Comp. gr. vi.

Ol. Menthæ. Pip. gtt. ii. in two pills.

June 3rd.—Vomited twice ; and was purged five times ; the circulation is more free ; face flushed ; the tongue of morbid red color at edges, little white in the centre, and rather dry ; stools a conjee-like fluid, with some pale-grey powder at the bottom of the pan.

V. S. lb. i.

R. Calomel. \mathfrak{z} i.—Extract. Colocynth. Comp. gr. vi.

Ol. Menth. Pip. gtt. ii. in pills at 6 A. M.

Ol. Ricini \mathfrak{z} i. at noon.

Vesper.—Has had four dark, fluid stools, and he is better. Blood slightly buffy, it has separated a very small quantity of serum.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v. misce fiant pil. ij. statim sumendæ.

June 4th.—He has had four copious, dark stools during the night; and has now some pain in the region of the liver.

Apply eight leeches to the region of the liver.

R. Extract. Colocynth. Comp. ʒ ss.—Pil. Hydrarg. gr. v.

June 5th.—Has had seven stools, and is better.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v. at 6 A. M.

Ol. Ricini ʒ i. at noon.

After this a course of mild purgatives was followed, and he soon recovered good health.

OBS. XCIV.—George Patch, *Æt.* 24. H. M. 16th Lancers, admitted into General Hospital on the 18th November, 1830; in the evening. A tall thin man, of light complexion, recently landed from Europe: ill one day, with purging and slight fever; has voided no blood.

V. S. ad. lb. iss.

R. Ext. Colocynth. C.—Pil. Hydrarg. āā ʒ ss. statim.

Nov. 19th.—Blood florid and not buffy; he fainted when 8 oz. of blood had flowed; had six stools in night, which are not kept; he is now

cool and weak ; pulse softer and natural ; belly flat and hard, the abdominal muscles tense.

R. Calomel. \mathfrak{z} ss.

Extract. Colocynth. Comp. gr. v. statim sumend.

Apply six leeches to the epigastrium.

1 P. M.—One copious stool, like barley-water ; eyes blood-shot, skin hot ; has not vomited. Pulse 92 and free ; face flushed ; tongue white, moist, and warm.

V. S. lb. i.

R. Calomel. \mathfrak{z} ss.—Extract. Colocynth. Comp. gr. v. now.

Vesper.—Fainted after the V. S. The blood is not buffy ; he has had two stools. The tongue is cold, moist, and white ; pulse weak : he suffers from anxiety, is pale and low ; and has the Cholera visage.

R. Calomel. \mathfrak{z} i.—Extract. Colocynth. \mathfrak{z} ss.

Opii gr. $\frac{1}{2}$, now, and repeat at 10 o'clock.

Nov. 20th.—Two stools during the night, and he feels better ; the evacuations are watery and of dark color ; the right eye is still blood-shot, and there is slight morbid heat of skin.

R. Extract. Colocynth. Comp. \mathfrak{z} ss.

Pil. Hydrarg. gr. v. at 7 A. M. and repeat at noon.

5 P. M.—He has had two stools, consisting of a dark fluid feculence ; and is better.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. now, and repeat at 10 o'clock.

Nov. 21st.—He is improving, and has had several scanty, fluid, dark stools ; surface of body warm ; but the tongue is cool.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v. at 7 A. M.

Ol. Ricini ʒ i. at noon.

Vesper.—Much better ; three free stools.

Nov. 22nd.—One stool in the night, a whitish mucus, not in large quantity ; he is warm and seems better ; more arterial congestion of right eye. Pulse soft and free.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at 7 A. M.

Vesper.—Better ; two stools.

Pil. Rhei. Comp. gr. vi.

Nov. 23rd.—Has had one free, fluid, dark stool; he is rather better.

Pil. Rhei. Comp. gr. xii. at 7 A. M.

Ol. Ricini $\frac{3}{4}$ ss. at noon.

Pil. Aloes Comp. gr. v. to be taken at bed-time.

Nov. 24th.—Better.

Ol. Ricini $\frac{3}{4}$ i.

Vesper.—One stool; he is gradually recovering. After this he took a purgative daily and was discharged well on the 29th November.

The morbid vascularity of one eye, in this case, was very remarkable: the left eye was slightly red on the 19th, while the right was injected with florid red blood, to a most intense degree; and continued in that state, long after the redness of the left had entirely subsided. I have seen children suffering from Cholera, with very obscure inflammatory symptoms, in whom the cornea of one eye became dull, and an ulcerated groove formed at the lower segment of the cornea; by which the humors were evacuated before death.

OBS. XCV.—John Dempsey, *Æt.* 20, a very muscular lad, of dark complexion, recently

arrived in Bengal, was attacked with vomiting and purging at 10 A. M. on the 26th March, 1826; for which he was bled from the arm, and took two small pills; but does not know their composition. His complaints continuing to get worse, and, being attended with other bad symptoms of Cholera, he was sent to General Hospital, where he arrived at 7 A. M. on the 27th March; his countenance was then sunk and ghastly (the true Cholera visage). Pulse 80, and weak; he suffered from extreme thirst, and had pains in his legs; some pain on pressing over the belly: skin cool and lax; tongue cool, clammy, moist, and brownish.

V. S. ad. $\frac{3}{4}$ xx.

R. Calomel. \mathfrak{z} i.

Extract. Colocynth. Comp. \mathfrak{z} ss. misce fiant pil. iii.—to be taken now, and repeated in $1\frac{1}{2}$ hour.

As the patient appeared fast approaching a state of torpor from obstructed circulation, and the blood only came from the orifice in the vein by drops; 20 leeches were applied to the belly, and they filled very slowly: at the same time by pressing and rubbing the arm, the blood continued to drop from the vein for nearly two hours; and 20 ounces were collected in the cup.

At 10 A. M.—He is suffering from great anxiety and thirst; has a brown dry tongue; the

extremities are cold; pulse 110 and feeble; he has not vomited or been purged since admission.

R. Ol. Ricini \bar{z} iss.

Aquæ Cinnamon. \bar{z} iv.—misce; to be taken now, and repeated at 1 P. M.

4 P. M.—Pulse more distinct, but still low and feeble; the feet are cold; tongue brown and dry: he has very little uneasiness on pressing over the belly; has neither vomited nor been purged since he came to hospital.

Apply 30 leeches to the belly, and a large hot poultice after their removal.

R. Ol. Croton. gtt. iv.

Ol. Ricini—Ol. Terebinth.

Magnesiae Sulphatis $\bar{a}\bar{a}$ \bar{z} i.

Decoct. Oryzæ lb. i. misce, fiant Enema.

6 P. M.—Much in the same state as last reported; has had two copious, fluid, grey stools.

Capiat Ol. Ricini \bar{z} iss. statim.

Directed to drink 3 oz. of thin and hot sago afterwards.

Apply sinapisms to the feet.

March 28th.—Appears better; the anxiety and restlessness have ceased, the eyes are less sunk, and he has no pain if the belly be pressed; the extremities are warm, and pulse somewhat revived, but still low and soft. The tongue

continues brown and dry, and he suffers from extreme thirst. Had two copious, grey, feculent, fluid stools.

R. Ol. Ricini \bar{z} iss.

Aquæ Cinnamon. \bar{z} ss.—misce; to be taken at 6 A. M. and repeated at 11.

An Enema, such as ordered at 4 P. M. yesterday, is to be given at 6 A. M. and repeated at 11.

Vesper.—He has had two copious, loose, grey stools: skin warm; tongue moist and brown; pulse 110 and soft. The Cholera visage is no longer present.

Repeat the Castor Oil \bar{z} iss.; also the Enema as at 11.

March 29th.—He is easy and cheerful: pulse 98 and soft; tongue cleaner, but still rather dry, and little coated with grey mucus; had three copious stools of bright bilious yellow color.

Ol. Ricini \bar{z} i. at 6 A. M.

Enema as before, to be given at noon.

Tepid Bath.

He remained feverish, for several days; and required purgatives to be repeated daily, until the tongue became clean. He recovered, and was discharged from Hospital on the 17th April. Although this man was apparently so much oppressed and low; the pain on pressure over

the belly, on admission; and the dry brown tongue afterwards: shewed the existence of an inflammatory condition, for which depletion was the only proper treatment.

The next case affords an example of the difficult and unmanageable state of disease, which exists in those cases where Cholera is preceded by a diarrhœa of several days duration. This patient shewed some signs of re-action, after being a few hours in Hospital; and his actual condition then, if abstractedly considered, might have been deemed much more favorable than Dempsey's case: but it verified the observation I have often before had occasion to make, regarding the dangerous nature of those cases, which patients denominate a common bilious attack; more especially if it occur at a time when Cholera is frequent in the vicinity.

OBS. XCVI.—Pierre Francis Poussadore, *Æt.* 37, a French sailor, arrived in the river 15 days ago, from Peru; and has worked very hard in unlading the ship, which brought a cargo of copper. Had diarrhœa for five days past, and was seized with vomiting and cramps in his legs, at noon on the 24th October, and was brought to the General Hospital at 10 P. M.; he was then in the act of vomiting, his

pulse feeble, surface cold, tongue cool, skin of his hands shrivelled, respiration hurried, and voice weak and pectoral : thirst extreme.

R. Calomel. ʒ i.

Confect. Aromat. ʒ i. To be mixed with a little treacle and given directly. To take in two hours.

Ol. Ricini.—Aquæ Cinnamon. āā ʒ i.

October 25th.—No sleep ; and no stool during the night : he vomited about an hour after taking each dose of medicine, and at two other times in the night ; has occasionally cramps in the fingers and toes. Pulse 92 and free ; face little flushed ; skin warm ; tongue rather dry and brown. He suffers exceedingly from anxiety and restlessness ; voice continues pectoral, and he is quite frantic and unmanageable, calling constantly for drink.

V. S. ad lb. i.

R. Calomel. ʒ i.

Confect. Aromat. ʒ i. to be taken at 7 A. M.

Ol. Ricini ʒ i. at 10 o'clock.

To take Sago with 3 oz. of Port Wine at 11 A. M.

Extract. Colocynth. Comp. gr. xii.

Pil. Hydrarg. gr. vi. in three pills at noon.

At 2 P. M.—The cramps have ceased. Blood drawn in the morning not buffy ; circulation lowered ; he had two scanty white stools like

flour and water ; he is cool, and says he feels himself better.

R. Calomel. \mathfrak{D} ss.

Pulv. Jalap. Comp. \mathfrak{z} i. to be taken in treacle.

At 6 P. M.—Had no stool; thought himself rather better, but he was colder.

At half-past 12 at night, had one scanty stool, like that last reported ; no return of cramp, but the pulse is very feeble, and voice pectoral ; skin nearly cold, and he appears anxious, low, and weak.

To take Sago and three ounces of Port Wine.

Oct. 26th.—Slept for three hours, and says he feels much better ; has no pain ; tongue little furred and brown, but warm and moist.

R. Extract. Colocynth. Comp.

Calomel. $\bar{a}\bar{a}$ gr. v. at 6 A. M. and repeat at 10 o'clock.

Ol. Ricini \mathfrak{z} i. at noon

To have 3 oz. of Port Wine in hot Sago.

At 4 P. M.—Had two, black, paste-like stools ; moderate in quantity ; tongue brown and moist: he appears better, but is still cold.

R. Extract. Colocynth. Comp. \mathfrak{D} ss.

Pil. Hydrarg. gr. v. in three pills now.

At half-past 9 P. M.—Has had a very scanty black stool, in quantity not $\frac{3}{4}$ ss. Pulse feeble and unsteady; tongue moist, brown, clammy, and cool; voice pectoral; hands shrivelled, and covered with a cold sweat.

R. Calomel. \mathfrak{g} i. in pills.

To take 3 oz. Port Wine in hot Sago.

Oct. 27th.—Had one scanty figured stool; not $\frac{3}{4}$ i. Pulse 110; he suffers from urgent thirst, and inclination to vomit; surface cold. He has a troublesome cough, and copious mucous expectoration.

R. Pulv. Jalap. Comp. \mathfrak{z} i.

Tinct. Sennæ. \mathfrak{z} ii.

Aquæ Menth. Pip. $\frac{3}{4}$ i.—misce, to be taken at 7 A. M.

Noon.—Vomited once, and had one scanty stool, like the last: he is cold, weak, and the extremities are perspiring; tongue cold, moist, and white.

Habeat Enema Purg. statim.

R. Ol. Ricini $\frac{3}{4}$ i.

Cum Tinct. Sennæ \mathfrak{z} ii.

3 P. M.—Nothing voided but the enema: tongue cold, very brown in the centre, a narrow red clean streak at its edges. Increased

anxiety; he is eagerly calling for water, and at times delirious.

R. Calomel.—Pulv. Scammon. Comp. Ph. Ed. $\tilde{a}\tilde{a}$ ϑ i.
To be taken in treacle.

8 P. M.—Had one scanty black mucous stool; says he is better, but appears weaker; surface cold, and pulse hardly perceptible.

R. Calomel. ϑ ss.—Extract. Colocynth. Comp. gr. v.
Op \tilde{ii} gr. $\frac{1}{2}$ in pills.— $1\frac{1}{2}$ oz. Brandy in hot Sago.

Oct. 28th, 5 A. M.—He has had one scanty stool, like tar; pulse hardly perceptible: he is quite cold, and slowly sinking; cough and expectoration very troublesome in the night.

R. Calomel. ϑ i. in Sugar.

R. Pulv. Scammon. Comp. 3 ss.

Pulv. Jalap. Comp. 3 i.

Tinct. Sennæ 3 ii.

Aquæ Menthæ \tilde{z} iss. misce, to drink after the Calomel.

At 8 A. M.—Indifferent and torpid; no stool. Sago and wine was given; also an injection of four pints hot-water with the pump: which was repeated in an hour and brought away some flocculi of white mucus.

Died—at half-past 9 o'clock.

Dissection, at 4 P. M.—Subject emaciated. Stomach and small intestines contracted, the former pale, the latter of dull lurid color: a quantity of water in the stomach, much pale-grey mucus and yellow bile in the small intestines. Colon and rectum pale, thin, and flaccid: liver slightly enlarged, soft, and a few small pale-grey patches on its surface. Much venous congestion of the lungs, and thick mucus in the air tubes: no other disease observed.

This man belonged to the French Ship *Victorine*, and the history of the Cholera on board that vessel was most lamentable: she was 22 months from France, having first made the voyage to Peru; and brought a cargo of copper from thence to Calcutta, where she arrived in October. Her crew consisting of Frenchmen, worked hard for 15 days in landing the copper, and during the greater part of that time many of the crew suffered from diarrhœa; which was ascribed to drinking the Ganges water, when heated at work: they had all been on shore once or oftener. Several of the men without any evident cause became suddenly much more purged before mid-day, on the 24th October, and gradually sunk into a low state, in which they derived no benefit from any of the remedies tried on board. Nine men were therefore landed: one of whom died as he was carried on

shore, and another was found insensible and dying when he was taken out of the palankeen at the Hospital. The rest were admitted in an advanced stage of collapse, and four more of them died of the disease. The loaded state of the mucous membrane of the bronchial tubes and air cells, was less distinctly marked in the others who died than in this case. The appearance of re-action on the 25th, induced me to use the lancet, and although the force of the circulation was lowered by the bleeding, I would willingly have repeated the V. S. in hopes of giving more freedom to the circulation, but the man refused to submit to it. The progress of the sinking after the blood was drawn, though not rapid, was regular and undeviating. The general character of the attacks of Cholera on board this man's ship, was most distinctly of the low kind, tending to fatal termination with little re-action: and we are never certain of benefit from bleeding in such cases; on the contrary, we have evidence that in such forms of the disease, V. S. is very frequently injurious, and seems to shorten life.

At pages 403 and 404, I have endeavoured to point out the general character of Cholera attended with febrile and inflammatory symptoms, such as existed in the cases which have been detailed; in which, all the worst appearances are

usually moderated by the use of the lancet ; and cured by a system of depletion, regulated according to the severity of the symptoms. In the foregoing cases, wherever the state of the blood which was drawn is merely reported *not buffy*, it is to be understood that there was about the usual quantity of serum separated, and that the surface of the cruor did not materially differ from the ordinary appearance of venous blood drawn from persons in health.

BLOOD-LETTING FREQUENTLY INJURIOUS IN PURE
CONGESTIVE CHOLERA.

IN almost all the foregoing cases, Blood-letting seems to have been decidedly useful ; in some by removing congestion, and in many others by reducing pyrexia, and obviating early local inflammation : or by subduing the inflammation arising at remote periods. Still, to advise the use of the lancet in all cases of Cholera, would often lead to disappointment ; as happened in some of the succeeding examples, in which the early collapse, and general character of disease alluded to at pages 405, 406, 407, existed ; and in which it is often difficult to procure blood from a vein. But in many of the cases where blood will flow, the system is lowered, and all the important symptoms aggravated. The fact is, that in this low form

of the disease, which frequently prevails at the early stage of an Epidemic attack; we can often get as much blood from a vein, as does harm: and might almost always procure blood from the larger arteries; if the principal desideratum were simply to unload the vascular system. We are apt not to distinguish the low state, at the onset of the disease; from the collapse which supervenes on the latter stages of the febrile Cholera, when the patient dies because he was not bled early: while in the other form of the disease, he dies more quickly, because he was bled at all. We sometimes meet with cases of a mixed character, which are difficult to distinguish. The condition of the patient (Holt) in the next case, seemed fully to justify the use of the lancet; in fact the morbid sensibility of the belly on pressure, with warmth of surface, and spasms; at so early a period after the commencement of symptoms of the disease, seemed to demand the loss of blood: still the first effects of the depletion were unfavorable, and its ultimate result destructive. A large proportion of the Cholera cases, which commenced within a day or two of this man's attack, proved fatal, by the rapid accession of coldness and collapse.

OBS. XCVII.—W. Holt, H. C. Artillery, Æt. 20, of middle size and light complexion, recently arrived from Europe, and landed from

the Ship *Thames* five days ago. Admitted into General Hospital, at half-past 2 P. M. on the 20th May, 1826: affected with vomiting, and a purging of a pale and almost clear watery fluid. He vomited the instant he was taken from the doolie and placed on a bed; and was then suffering from cramps in his legs: the skin was warm; pulse 122, soft, and low; tongue warm, moist, and white; belly rather full and doughy, pressure over the abdomen was painful, and he complained of ardent thirst. His illness commenced at 10 A. M. with a simultaneous vomiting and purging, for which he took medicine in the Fort.

V. S. ad $\frac{3}{4}$ xx. statim.

12 ounces of blood flowed in a stream; the rest was obtained by pressing the arm. The vomiting recurred while the blood was flowing: at the same time the pulse sunk, and became imperceptible, and could never be distinctly felt afterwards.

A large blister was applied to the belly.

Calomel \mathfrak{z} i. was put on the tongue, in powder: and washed down with the following mixture.

Tinct. Opii \mathfrak{z} i.—Tinct. Sennæ. \mathfrak{z} iv.

An enema was ordered, composed of

Ol. Terebinth.—Ol. Ricini.—Magnesiæ. Sulph. $\bar{\text{aa}}$ \mathfrak{z} ii.

Ol. Croton. gtt. iv.—Aquæ. Tepid \mathfrak{z} x.

4 P. M.—Has vomited several times, and purged once, a watery fluid as before ; he lies in a state of extreme anxiety, the surface livid and cold ; fingers shrivelled, eyes sunk, and pulse not to be felt.

After this, no medicine remained many minutes on the stomach. Calomel combined either with purgatives, or with opium, was quickly rejected. The enema was repeated, and we attempted to alleviate the torpor of the venous circulation in the extremities, by keeping people constantly employed, with warmed hands, to champoo and rub the whole surface of the body. Brandy with hot-water, and hot sago were repeatedly given, and every means tried to restore the circulation, but without effect. The fulness of belly was decreased ; and on pressure the gurgling of fluid in the intestines was very evident. His countenance remained ghastly and sunk, and his expressions were incoherent at eight o'clock. He died at half-past 9. It was exceedingly distressing to see a patient sink so rapidly, and the pulse to fail so immediately on the abstraction of blood, as to leave no doubt that the treatment was injurious. I have seen several cases of a similar description, where the abstraction of blood decidedly did harm, in the early stage of pure congestive or blue Cholera: but in this instance, the warmth of

surface, with morbid sensibility of belly when pressed, and the existing spasms, seemed to afford reasonable hope that V. S. would be beneficial.

OBS. XCVIII.—Thos. Marren, *Æt.* 50, sailor of the Ship *Bridgewater*. Admitted into General Hospital, 3rd June, 1830, at 10 A. M. A large and muscular man, of dark complexion; was taken ill at 8 o'clock last night with cramps in his legs and belly. Vomiting and purging began at 1 o'clock this morning; and he says he was bled to a basinful (probably a pint) at 4. A. M.; but has not taken any medicine. On admission, at 10 o'clock, the fingers were shrivelled; surface cold; tongue cold, clammy, and pale; eyes sunk; pulse 162 and very weak; he was exceedingly restless, and suffering from cramps in his legs and hands; vomiting and purging a watery fluid, and calling aloud for drink. The belly was flat, doughy, and inelastic.

V. S. ad $\frac{3}{4}$ xv.

R. Calomel. \mathfrak{D} i.

Extract. Colocynth. Comp. gr. vi.

Ol. Menth. Pip. gtt. ii. To be given in pills now; and repeated every hour, for four doses.

R. Spirit. Ammoniaë. Aromat. $\frac{3}{4}$ i.

Aquæ Tepid. $\frac{3}{4}$ ii.—misce, to be drank after each dose of the pills.

2 P. M.—Blood not buffy; he has had one scanty stool resembling barley-water, but no vomiting since the bleeding. The pulse is not perceptible; otherwise he remains much in the same state; cramps at times violent; extremities cold.

A hot-water blister was applied to the scorbiculus cordis, and another to the centre of the spine.

No favorable symptom occurred, and he died at 5 P. M.

Dissection—Fourteen hours after death, and 21 hours after the commencement of the disease. Venous congestion of the brain, some milky serum effused between the arachnoid and pia mater, at the upper part of the hemispheres;—and 3 iiss. of serum in each lateral ventricle. Nearly an ounce of serum beneath the tentorium, some of which extended down the spinal canal.

An opaque patch on the anterior part of the heart, evidently not the result of recent disease. Liver rather large, soft and unctuous, its surface slightly mottled. Two very white patches on the surface of the liver near the ligamentum suspensorium, from effusion of coagulable lymph beneath the peritoneal coat; these are each the size of half a rupee, and evidently not the result of recent disease.

Gall-bladder distended with bile of a pale dirty green color. The cystic duct not one-fifth of the usual size, and it arose from nearly half way up the side of the gall-bladder. Omentum and small intestines very vascular; the coats of the latter, as well as of the stomach thickened, the interior of both lined with a thin pale-grey fluid, of the consistence of thin mucilage.

OBS. XCIX.—Thomas Holmes, *Æt.* 45, a sailor of the Ship *Bridgewater*, was admitted into General Hospital at noon on the 8th June, 1830. A stout man, of light complexion; has been drinking spirits intemperately: seized with vomiting and purging, and cramps in the legs at 4 A. M. These symptoms continue, with a flushed face, and pain in stomach and right side. Pulse frequent and full, body warm, feet cold; tongue white, moist, clammy and warm.

V. S. ad lb. iss.

R. Calomel. ʒ i.—Extract. Colocynth. Comp. ʒ ss.

Ol. Cinnamon. gtt. iv. in three pills. To be taken now.

R. Spt. Ammon. Aromat. ʒ i.

Aquæ. Tepid. ʒ i. misce,—to drink after the pills.

Half past 1 P. M.—The bleeding made him faint: blood buffy, and much cupped, pain alleviated; he is cold and appears to be sinking.

Pills repeated. Hot brandy and water to be given.

Half-past 2 P. M.—Vomited once; but has had no stool.

Repeat the pills, with addition of one drop of Croton oil.
Also let him have a purging Enema with
Ol. Terebinth. $\frac{3}{4}$ ss. and repeat it in half an hour.

Half-past 3 P. M.—He had two copious, dark-green, fluid stools, after the second enema; he is now warm and more tranquil; has cramps in the feet, but has not vomited in the last hour.

R. Ol. Ricini $\frac{3}{4}$ i. Ol. Menth. Pip. gtt. iv.
Sacchari. $\frac{3}{4}$ i.—Aquæ. Font. $\frac{3}{4}$ iv. misce—to be taken now,
and repeated at half-past four.
Turpentine Liniment to be rubbed to the extremities.

6 P. M.—He remained easier for above an hour; and in the last half-hour has had several black watery stools, altogether three pints; he suffers from great anxiety, and incessantly calls for drink; tongue cold and clammy. Pulse 126 and weak; cramps very urgent; fingers shrivelled.

R. Calomel. $\frac{3}{4}$ i.
Extract. Colocynth. Comp. gr. vi.
Opii gr. $\frac{1}{2}$ to be taken in two pills now;—and repeated
at 7 o'clock.
 $\frac{3}{4}$ iv. Sago, and Brandy $\frac{3}{4}$ i. to be drank after the pills.

10. P. M.—Has been gradually sinking, and becoming more cold. Pulse now imperceptible ; he had one stool, the same sort as above ; has not vomited ; says his “ head is light.”

Repeat the pills as at 6 P. M.

Also let him have Spt. Ammon. Aromat. ʒ iss.

Aquæ Tepid. ʒ ii.—to be drank after the pills.

Died half past 11 P. M. 8th June, 1830.

Dissection—Fourteen hours after Death. Subject stout ; eyes much sunk, and face very white.

Some old adhesions were observed in the right side of chest ; both lungs sound, their posterior part very dark-colored, from gravitation of blood. Liver large, soft, and exceedingly vascular, its surface covered with star-like patches of vascularity, like the nose and cheeks of a bon-vivant ; incisions into the liver bled freely. Gall-bladder small ; its coats thickened ; its base adherent to the colon. Stomach thickened and pale ; its interior corrugated, and covered with thick whitish mucus. Omentum and small intestines very vascular : the coats of intestines somewhat thickened, and their contents deeply tinged with dark orange-colored bile. Veins of brain

turgid; much effusion of serum between the arachnoid and pia mater—in some places this effusion very milky; 3 vii. of clear serum in right lateral ventricle, above an ounce of clear serum in the left, and 3 iii. beneath the tentorium: the substance of the brain was firm and tough.

OBS. C.—James McCabe, *Æt.* 23, a stout man, of dark complexion; four years in India, recently arrived from Madras; having volunteered from H. M. 89th to the 3rd foot; and therefore it may be presumed, he has been living in an irregular and dissipated manner for the greater part of several weeks past. Was admitted into General Hospital, on the evening of 11th November, 1830. Ill five days with head-ache, and griping in the belly. Was bled to lb. iss. that night, and the blood was not buffy. In the next three days, he took two doses of colocynth with blue pill; and one dose of castor oil, which purged him freely. He was discharged well on the 15th November.

This man was seized on the next day with vomiting, after eating his dinner at three o'clock; and was sent to the Hospital at 6 o'clock P. M. on the 16th November. He was then vomiting with great violence, and constantly passing by stool a conjee-like fluid, with white flocculi: the

surface of his body was cold, pulse feeble; and he had slight cramps in the legs.

V. S. ad lb i.

R. Calomel. \mathfrak{z} i.

Opii gr. i. to be taken immediately in a pill.

Extremities rubbed with Ol. Terebinth.

Eight o'clock P. M.—Only 8 oz. of blood could be got from the veins. No change for the better; he has just now vomited, and had a stool like conjee.

R. Calomel. \mathfrak{z} i. in pills, to be washed down with this draught.

R. Spirit. Ammoniae Aromat.—Tincturæ Opii āā \mathfrak{z} i.

Aquæ Cinnamoni \mathfrak{z} i. misce—the draught and pills to be repeated at 10, and again at 12 o'clock.

He gradually sunk into a state of insensibility, and died at one A. M. 17th November, 1830.

Dissection—Fourteen hours after death. Much engorgement of blood at the back part and root of the lungs. Liver appeared healthy, and rather smaller than common; its edge thin, and texture of natural softness. The gall-bladder was full of green bile; its exterior covered with an adventitious membrane, apparently not of recent formation. Stomach and small intestines enormously distended with flatus, and containing much whey-like fluid, and thick white mucus.

There was no bile in the duodenum. Omentum, mesentery, and mesocolon, highly vascular ; small intestines in the same state, mesenteric glands enlarged.

ARTERIOTOMY IN CHOLERA.

WHEN plethoric subjects labouring under Cholera, fall early into a state of collapse, with obstructed circulation; and we are unable to take a considerable quantity of blood from the veins ; we are apt to suppose that the measure fails to afford relief, because we do not get enough blood : and it is difficult to come to a different conclusion, when we contemplate a robust and plethoric man suffering from that form of Cholera, with the face, neck, and chest purple or livid ; while the patient is using great muscular exertion in respiration. But when we open a considerable artery in such subjects, and take blood as freely as we could wish ; and still find our patient not relieved, we are obliged to change our opinion. Some doubt may be entertained with respect to the propriety of taking blood from an artery, in those cases, observing that the congestion and obstruction, appear to be in the veins : and in taking away arterial blood, we deprive the patient of that which his system cannot again supply, so long as the de-carbonising functions of the lungs are arrested,

either in consequence of the disorder of the nervous system generally, or by means of a morbid coating of viscid mucus in the bronchial tubes and air cells. We are so apt to speak of the calorific, and decarbonising functions of the system, as allied to each other, that perhaps I may now be ascribing too much to the latter ; when I would speak of the failure of both, as among the most prominent phenomena of declining vitality, in cases of Cholera with collapse.

Obs. CI.—William Griffiths, a Gunner in the Artillery, aged 28, a stout muscular man, four years in India, invalided on account of the loss of an arm ; and recently sent from his Battalion to Fort William, on his way to Europe. Was taken ill with Cholera soon after midnight ; the first symptoms were vomiting and purging, followed by dreadful thirst, cramps in the legs, coldness of the whole surface, and extreme anxiety. He did not report his illness till day-light, and was then sent to Hospital, 26th December, 1829. On admission, he was quite cold, the fingers shrivelled, pulse imperceptible ; tongue cold, moist, clammy, and nearly clean ; the face livid ; eyes sunk in the orbits ; and there was much venous congestion of the eyes, giving the scleroticæ and conjunctivæ a lurid appearance. Respiration was laborious, and the chest heaving,

with expression of great agony in the countenance: voice pectoral, but not very feeble. He was tossing from side to side in bed, and constantly calling for water. Cramps in the legs and arms very severe.

Twenty grains of calomel and two grains of opium were given in a pill, but immediately rejected. A free incision was made into a vein in the arm, but not a tea-spoonful of blood obtained; the jugular vein was then opened, and only a trivial oozing of thick black blood, like treacle, issued slowly from thence. These attempts to procure blood from the veins having failed, and the symptoms continuing unabated, he was ordered to take 20 grains of calomel mixed with sugar, and washed down with the following draught:

R. Aquæ Cinnamon. \bar{z} iss.—Spirit. Ammoniaë Aromat.
Tinct. Opii aa \bar{z} i. misce.

These medicines were vomited up, with most violent efforts, the instant after being swallowed. The extremities and body were now rubbed with spirit of turpentine, by four men; and at the same time the radial artery was freely opened at the wrist, by an oblique incision with a lancet; the integuments being first divided down to that vessel, with a small scalpel. Blood flowed from the artery, at first in a languid

stream and of dark-purple color, trickling down the wrist. When about 13 oz. had flowed, the blood came in a jet with arterial impulse, its color was rather brighter red ; yet not like the arterial blood of a healthy person. At this time there was no evident relief of any symptom, and the man said he was weaker. The rubbing of the extremities was continued briskly, and a finger applied to arrest the flow of blood. Some brandy with hot-water was given, which he vomited immediately ; and after this he refused to take any thing but cold water : in fact he was totally unmanageable, and deaf to argument or entreaty of his friends. After the delay of about three minutes, the blood was allowed again to flow, and it came freely with a smart jet ; by which, and the restlessness of the patient, above $4\frac{1}{2}$ oz. was spilt on the bed and floor ; when lb. j. more had been received in the basin, the stream became smaller and more feeble, which was ascribed to the gradual formation of a coagulum at the orifice ; but the man seemed weaker and more exhausted. Therefore the finger was again applied to the artery for five minutes. The patient was now evidently more purple in the face, his breathing more laborious, and he appeared more feeble in tossing about in bed : the voice remained pectoral, but much weaker than on his arrival at the Hospital about one hour and a quarter ago. The principal

distress appeared at this time to depend on the stagnation of venous blood, and imperfect action of the lungs. The artery was again let loose; but the blood now flowed very feebly, and only 3 ounces more could be procured.

During the above treatment, this patient continued sinking; but I could not assert, that his dissolution took place more quickly than I have frequently seen in patients admitted in the same stage of disease, who had the calomel and opium treatment, with stimulants, and who were not bled. Although the blood sprung from the arm in a smart jet before a pound had flowed, and we might infer from hence that the heart's action was more free, I was never able to distinguish any pulsation in the radial artery; nor did the patient appear in any degree relieved. The blood received in three cups as above stated, was examined in half an hour; it had coagulated rather more firmly than we find the cruor of venous blood of a healthy person, its color not materially differing in the several cups, was of rather brighter tint than the cruor of healthy venous blood. When carefully weighed, the quantity taken in the cups was found to be lb. ij. 1 oz. making together with what had been spilt in consequence of the arterial jet, and the agitation of the patient, 2 lb. 5½ oz. No serum was separated in any of the cups of blood. The

patient gradually became weaker, less agitated, and indifferent to surrounding objects; occasionally calling out that he had cramps in the feet or belly: no sign of reaction appeared, and he died one hour and 37 minutes after the blood had ceased to flow from the artery.

OBS. CII.—Pierre Louis, a middle-sized lad, of light complexion, *Æt.* 18, a French sailor, of the Ship *L'Indus*; was brought to Hospital at 5 P. M. on the 21st March, 1828, having suffered from slight fever for six days. He began to vomit yesterday morning, and was 20 times at stool since: evacuations like water. Vomiting ceased during the night, but returned this morning, since which he has vomited three or four times, but had no stool this day. Has now severe head-ache and pain at scorb. cordis; pulse 108 and feeble; respiration panting and anxious; pupils dilated, but there is no venous congestion of the eye-balls; surface of the body cool; the tongue cold, moist, and white. He is suffering from dreadful thirst. He has taken no medicine, and for two days past no food.

Apply 12 leeches to the Epigastre, and six to the temples.

Calomel ʒ ss. was given in pills: and a draught of

Tinct. Rhei. ʒ iv.—Aque Cinnamon. ʒ i.

A blister was applied to the belly, and at 6 o'clock he was ordered to take

Ol. Ricini.—Ol. Terebinth. āā ʒ i. with Ol. Croton. minim. ii.

At 9 P. M.—The face is livid, tongue cold, pulse at wrist imperceptible, and fingers shrivelled; the hands quite purple from stagnation of venous blood: he calls incessantly for drink. Has been once on the stool, and voided from the intestine a small quantity of clear water, which has a peculiar cadaverous odor.

Repeat 12 leeches to the chest; and six to the temples.

R. Calomel. ʒ i.—Extract. Colocynth. Comp. ʒ ss.

Opii gr. ss.—misce fiant pil. iii. statim sumend; also let him have

Spirit. Ammoniae Aromat. ʒ i.

Aquæ Font. ʒ i. in a draught, after the pills.

At 10 P. M.—No vomiting, nor stool; cramps very severe; thirst unabated: pulse just perceptible and very rapid. His face continues purple, and respiration laborious; the chest heaving, with intense anxiety. Seven of the leeches have filled tolerably, the rest have been pulled off by the constant restlessness and jactitation of the patient. A vein was now very freely opened, but no blood flowed. As a last attempt to mitigate the extreme agony of the patient, I made an incision down to the radial artery at the wrist; and opened that vessel by an oblique section with a lancet. The blood which first flowed was warm, and of a purple color; it trickled down the arm for a few minutes, and afterwards started forth with a

jet, and by the time seven ounces had flowed, the arterial impulse was strong and steady : the livid color of the face had decreased, and there was less laborious heaving of the chest; but the coldness of surface remained, and there was no perceptible difference in the pulse at the wrist. Desiring to afford time to ascertain if this limited flow of blood from the artery, would be followed by acknowledged relief of respiration, and more free action of the heart and arteries: pressure was made on the orifice for five minutes, as soon as 7 ounces had flowed. The patient not expressing any relief at this time, the orifice was allowed again to bleed, until 7 ounces more had flowed, and after a similar pause of five minutes, the bleeding was carried to 21 ounces, besides about 5 ounces that were spilt on the bed and floor. The color of the blood last drawn, was more florid than the first, but the patient did not appear to derive any benefit from the operation. He was weaker, and as it was estimated that he had lost by V. S. and leeches, above 50 ounces of blood since admission ; the artery was closed with slight pressure and a bandage. The patient swallowed 20 grains of calomel in a small quantity of beer, which was the only thing he would now take : and the calomel was repeated at 11 o'clock, but not the slightest amendment took place, and he died at $\frac{1}{4}$ past 12 at night. Mr. Barrett, Apothecary to the General Hospital,

assisted me in the care of this case, and attended during the arteriotomy of the previous patient*.



THE LOW FORM OF CHOLERA WITH TENDENCY TO
COLLAPSE.

IN the succeeding cases, we have examples of a most formidable description of Cholera, from which the patient seems to have no chance of recovery by the unaided efforts of nature. V. S. at the commencement of collapse is a dangerous experiment, which has often done harm in such cases ; but we frequently succeed in saving our patients, by a careful and judicious treatment. Febrile and inflammatory symptoms, are not usually observed in persons suffering from this description of Cholera ; and early failure of vital energy, seems in many cases connected with profuse and frequent watery evacuations ; the course of the disease tending rapidly to that stage of torpor, in which remedies produce no effect.

It is when this description of disease occurs in the cold season, that we most frequently see

* I am happy to avail myself of this opportunity to do justice to the merits and unwearied industry of Mr. Barrett, in the discharge of his public duties at the General Hospital ; as well as to the respectability of his general conduct, and his ample medical acquirements.

the short and imperfect respiration, with feeble pectoral voice, and other symptoms, indicating that torpor in the functions of the lungs, which dissection proves to be sometimes connected with a thin coat of tenacious mucus on the surface of the bronchial tubes and air cells. Among the expedients that might reasonably be tried in this form of disease; the inspiration of medicated vapors, and of nitrous oxide gas may be mentioned. In fact, the effects of remedies inhaled into the lungs, have been almost entirely neglected: they may be useful in the treatment of this formidable modification of disease.

OBS. CIII.—John Simms, *Æt.* 24, of small size and light complexion, six years in India. An Artillery-man, was taken ill at 7 P. M. on the Battery Guard, and sent to Hospital at 9; affected with purging, vomiting, and cramps in his legs; the pulse at wrist had ceased; the surface of the body was quite cold, tongue cold; and voice pectoral: he was suffering from thirst, and indifferent to every thing but the desire to drink; hardly giving any answer to questions.

R. Tinct. Opii.—Spirit *Æther Sulph.* āā ʒ i.

Ol. Cinnamon. gtt. iv.—*Aquæ Font.* ʒ i. misce.

To be taken directly, with 20 grains of Calomel in powder—and to be repeated in one hour. The Calomel to be placed on the tongue and washed down with the draught.

At half past 10 o'clock, he was cold and insensible; respiration heavy and laborious; vomiting had ceased. Died at 11 P. M. 14th November, 1830.

Dissection—nine hours after death: stomach externally paler than usual, internally towards the pylorus of a pink color, and much contracted. Small intestines of a pale-pink color, their coats thickened and pulpy, as if from serous effusion between their membranes: their interior filled in some parts with great quantities of con-jee-like fluid, in other parts with mucus as thick as paste; the last foot of the ilium was quite empty, contracted and dry: no bile in the duodenum. No other morbid appearance observed.

OBS. CIV.—A medical man, 26 years of age, of slight make and delicate constitution, recently arrived from England, had a severe attack of Spasmodic Cholic, within a few weeks after landing in Bengal: the constipation attending this disease was most obstinate, and during the treatment he was twice largely bled from the arm, and leeches were repeatedly applied to his belly. After various purgatives had failed, the obstruction of the bowels was removed by large enemata given with the pump. He remained in the course of a tardy convalescence, for six

days more ; using little mild purgative medicine, and observing the greatest caution as to his food, but gaining strength so slowly that on the evening before the attack of Cholera, when some friends asked how he was ; he said this was the first day since his illness, that he really felt an increase of strength. At 9 p. m. on the 27th October, 1830, he was affected with a purging, the stools copious, watery, and of a pale-yellow bilious tinge. He did not send for advice till next morning, not suspecting Cholera ; he had then sunk into a state of collapse, affording no hope of recovery ; though he had not vomited, and had no spasms. Occasional attacks of vomiting took place during the course of the day, and he died in the afternoon. We had some bad cases of Cholera in the Hospital at that time, but the patient had not left his room for near three weeks. The disease was also occurring in Calcutta.

OBS. CV.—Thomas Price, *Æt.* 32, a stout man, of H. M. 38th Foot, arrived from England on board the Ship *Buckinghamshire*, and landed on the 2nd June. Admitted into General Hospital at 10 p. m. 14th June. 1827. Has been purged for two days past, but did not begin to vomit until he was put into the dooley to be brought to Hospital. Is at present vomiting, and purged incessantly, and suffers from distressing thirst.

Pulse 106, and hardly perceptible ; surface of the body as well as the tongue cold.

R. Calomel. ʒ i.

Opii gr. ii. misce fiant pil. ii. statim sumendæ.

Apply a blister to the scrobiculus cordis.

11 P. M.—Purged twice ; evacuations, a pale greenish water : he is constantly vomiting ; tongue cold, moist, and clean ; great anxiety and thirst.

R. Calomel. ʒ ss.

Opii gr. ii. misce fiant pil. statim sumend.

Apply Sinapisms to the feet.

June 15th.—Vomited only twice, and purged five times since last report ; evacuations watery, and of pale-green color : he is much better, and quite composed ; tongue warm and moist, but little furred ; pulse 108 and weak. Some sago and wine allowed.

R. Calomel. ʒ ss.—Extract. Colocynth. Comp. gr. v.

Opii gr. ½—misce fiant pil. ii.—to be taken at 6 A. M. and repeated at 10 o'clock.

Ol. Ricini ʒ i. at noon.

Vesper.—He is better, and warm ; had four stools, but no vomiting. Pulse 112 and weak.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v.

Opii gr. i. misce fiant pil. ii. H. S. sumend.

June 16th.—Has had frequent, brown, watery stools; and much nausea in the night. Pulse 98, face flushed.

R. Pil. Hydrarg.—Extract. Colocynth. Comp. āā gr. v.

June 17th.—Had five stools, a slight degree of pyrexia remains. Pulse 98; skin warm; tongue swollen and fissured.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. vi. in pills, at 6 A. M.

Ol. Ricini ʒ i. at noon.

By these medicines he was freely purged, the evacuations were of dark color, and he was much better: Castor oil was administered daily, and he was discharged well on the 20th June.

OBS. CVI.—Mrs. Ann Holt, *Æt.* about 24, landed from England on the 12th May, 1827, and was troubled with vomiting almost every day till the 18th, when I first saw her at 11 P. M. Her pulse was then 104 and weak; tongue cold; she had been vomiting, and purged violently since dark; and her extremities were cold.

R. Calomel. ʒ i. in pills.

R. Opii gr. ii.—Spirit. Lavand. Comp.

Spirit. Ammoniae Aromat. āā ʒ i.

Aquæ Menth. Pip. ʒ i. misce,—to be drank after the pills.

May 19th.—She has not vomited since taking the medicine ; was purged three times ; evacuations copious, like rice-water, with a light slate-colored sediment : tongue warm, moist, and white ; face somewhat flushed, pulse 108, and weak ; extremities warm.

Apply eight leeches to the temples.

R. Pulv. Rhei \mathfrak{z} i.

Aquæ Menth. Pip. \mathfrak{z} i. To be taken at 6 A. M.

Ol. Ricini \mathfrak{z} i. at noon.

Tea and Sago allowed in very small quantity.

1 P. M.—Vomited six times, but the castor oil was not rejected : purged four times ; stools copious and of a pale-grey color, as fluid as water ; tongue cool, moist, and white. Pulse 132.

R. Pil. Hydrarg. gr. v.

Extract. Colocynth. Comp. \mathfrak{z} ss.—misce, fiant pil. iii. to be given at two o'clock.

6 P. M.—No vomiting ; she has had six feculent black stools ; tongue warm, and very much loaded with white mucus.

R. Ol. Ricini \mathfrak{z} i.—Tinct. Opii gtt. v.

Half-past 10 P. M.—She vomited the oil ; had two, copious, watery, bronze-colored stools. Tongue warm, moist, and white.

R. Extract. Colocynth. Comp.—Calomel. $\bar{a}\bar{a}$ gr. v.

Opii gr. i.—misce, fiant pil. statim sumend.

May 20th.—Slept, and had one green bilious stool; no vomiting.

R. Extract. Colocynth. Comp.
Pil. Hydrarg. āā gr. v. at 6 A. M.
Ol. Ricini ℥ i. at noon.

4 P. M.—She has vomited the pills and oil; had two watery black stools; the tongue is warm, and loaded with white mucus.

R. Pulv. Rhei ℥ i.—Aquæ Cinnamon. ℥ i.

6 P. M.—Had one stool, and has not vomited; says she is better.

Ordered to take some Sago and Wine.

May 21st.—Had no sleep; has been purged, and vomited often in the night, stools a reddish bronze-colored water; tongue cool and moist; pulse 116 and soft.

R. Opii gr. i. statim.

May 22nd.—Was tranquil, and feeling remarkably well all yesterday, therefore no medicine was given in the evening. During the night she vomited occasionally, and had two copious bronze-colored stools; pulse 98 and soft.

R. Extract. Colocynth. Comp. ℥ ss.
Pil. Hydrarg. gr. v.—misce, fiant pil. iii. statim
sumendæ.

She was purged freely by these pills, and is much better in every respect. She had no return of unfavorable symptoms: some mild purgative was continued daily till the 29th, when no further treatment was requisite.

OBS. CVII.—Jas. Beck, *Æt.* 19, a slight made lad, of light complexion, a sailor of the Ship *Resource*, recently arrived from sea. Was attacked with Cholera, and profuse purging, on the 11th October, 1827, and in consequence of extreme coldness of the extremities, water was applied by his messmates, so hot that the skin was blistered on one foot, and also at the elbow. I could not ascertain what other remedies were used: and no cause could be assigned for the accession of the disease.

On the 12th, the most distressing symptoms, were cramps in the legs, and purging. He was sent to the Hospital at 5 P. M. on the 13th October; suffering from cramps in his legs, anxiety, and great thirst: he had a cold tongue, although the extremities were now warm; pulse 116, soft and feeble; and there was pain at *scrob. cordis*. The eyes were glazed, and suffused with florid or arterial congestion, the face was somewhat flushed. He now vomited immediately every fluid that was swallowed, but had only been purged four times since the morning. Some of the

existing symptoms might have authorised V. S. but the use of the lancet was at the present stage of the disease, deemed hazardous, in consequence of the long continued and profuse purging, feebleness of pulse, and coldness of the tongue: for although the extremities had been blistered by boiling water, the temperature of the body was not uniform.

Eight leeches were applied to the temples.

A blister was put to the scrob. cordis: and Calomel. \mathfrak{z} i.

Opii gr. i. were given in a pill immediately.

9 P. M.—No return of vomiting or purging since 5 o'clock; the leeches bled profusely, whereby the flush of face and redness of eyes are diminished; he suffers less from thirst, and the tongue is warm, but pulse continues 116, weak and low; cramps in the legs have ceased.

R. Calomel. \mathfrak{z} i.

Opii gr. i.

Extract. Colocynth. Comp. gr. v. in three pills.

11 P. M.—Thirst subsided, no vomiting or purging since admission.

Ol. Ricini \mathfrak{z} ii.

Oct. 14th.—Vomited once, and purged three times; the stools are as black as ink, and scanty;

he feels much exhausted; the pulse 104, soft, and weak, but face slightly flushed.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. in two pills at 7 A. M. and repeat at 11.

Ordered to take Ol. Ricini $\frac{3}{4}$ i. at 3 P. M.

Diet—Tea, and thin Sago, with 3 oz. Port Wine.

Vesper.—He has vomited twice, a pale watery fluid, nearly transparent.

7 P. M.—Had five stools, which are rather scanty, and of a very dark bottle-green color; pulse 98, soft, and weak; tongue quite cold, soft, clean, and moist.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. gr. v.

Opii gr. ss. in two pills at 7 P. M.—and repeat at 10.

Oct. 15th.—Had four copious, dark, watery stools; did not vomit in the night; suffers anxiety, but no head-ache; eyes still suffused.

Capiat Ol. Ricini $\frac{3}{4}$ i.

Vesper.—Vomited once, and purged four times during the day, evacuations partly of a yellow color. Pulse 98, soft, and natural; tongue continues quite cold.

After this date, he had mild purgatives repeatedly, and was discharged well on the 12th November, 1827.

OBS. CVIII.—Mrs. Mary Ann Kelly, *Æt.* about 24, a soldier's wife of the 44th Regiment, received into General Hospital, at half-past 9 P. M. May 19th, 1827 : states that she was seized with extreme sickness at 1 o'clock last night, ($20\frac{1}{2}$ hours ago,) at first she vomited and was purged about once an hour, but lately purged every minute; and she appears exceedingly exhausted.

R. Calomel \varnothing ss.—*Opii* gr. i. statim.

Half-past 10 o'clock.—Has cramps in her legs, great anxiety, and thirst; pulse 132 and not very weak; tongue warm. Neither vomited nor purged since taking the pill.

R. Calomel. \varnothing i. in a pill,—to be washed down with a draught of

Spirit. Lavend. Comp.

Spirit. Ammoniaë Aromat. ãã 3 ss.

Aquæ Menth. Pip. 3 i.

May 20th.—She has slept, the cramps have ceased, and she feels better: pulse 86; had one scanty green stool.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. ãã gr. v. at 6 A. M.

Ol. Ricini 3 i. at noon.

4 P. M.—No stool nor vomiting; cramps in the legs have returned.

R. Ol. Ricini $\frac{3}{4}$ i.

6 P. M.—She is quiet, and easy; had no stool.

Repet. Ol. Ricini $\frac{3}{4}$ i.

Half-past 10 P. M.—She remains tranquil, and is much better; had two dark watery stools.

May 21st.—Had one black watery stool in the night, with some lumps of fæces; pulse good, and skin warm; she feels weak.

R. Pulv. Rhei. \mathfrak{g} i. in
Aquæ Cinnamon. $\frac{3}{4}$ i.

Vesper.—She has been freely purged, and is better. Mouth sore.

May 22nd.—Had one stool, consisting of films of mucus in yellow bilious matter. After this date she used rhubarb as an aperient, and was discharged well on the 8th June.

OBS. CIX.—John Fergusson, *Æt.* 23, a sailor of the Ship *Euphrates*. A middle-sized man, of dark complexion, arrived in the Hooghly 10 days ago, from Europe; has not been on shore,

but he and the rest of this ship's crew, have been exposed to the sun, and worked hard for some days past in getting up the anchors, &c. the ship having met unusual difficulties in coming up the river. Admitted into General Hospital a quarter before 10 A. M. 18th June, 1828.

Has had a purging for five days, and began to vomit at 1 P. M. yesterday; says he has had 50 stools, like pure water, since that hour. Is now suffering from great anxiety, thirst, and cramps in the belly: face flushed; pulse low, and oppressed; tongue cool.

Apply twelve leeches to the temples.

R. Calomel. \mathfrak{D} i.

Opii gr. ii.—misce, ft. pil. ii. statim sumend.

Noon.—No vomiting or purging; excessive thirst. Pulse 114, and weak; face still flushed.

R. Extract. Colocynth. Comp.

Calomel. $\bar{a}\bar{a}$ \mathfrak{D} ss.—misce, fiant pil. iv. statim sumend.

Habeat Enema Purg. cum. Ol. Terebinth. \mathfrak{z} ii.

2 P. M.—Vomited twice, and had three stools; of pale-grey color. Pulse 114, weak, and oppressed. He seemed to be sinking; and therefore was ordered a small quantity of sago with Madeira wine.

5 P. M.—Pulse more free ; face flushed ; has pain at the navel ; he feels warm and better, and the tongue is warm, but he is suffering from great thirst.

Apply sixteen leeches round the navel.

R. Pil. Hydrarg. gr. vi. statim.

Cream of Tartar drink 4 oz. at a time.

June 19th.—Vomited once this morning, and had two scanty watery stools, of grey color. He is restless and very thirsty ; face flushed ; pulse 106, soft, and natural ; tongue warm and moist.

Apply sixteen leeches to the nucha.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v.

Opii gr. $\frac{1}{2}$ —misce, fiant pil. ii. statim sumend.

Ol. Ricini.

Aquæ Cinnamon. āā $\frac{3}{4}$ i. to be taken at noon.

3 P. M.—Vomited several times after taking the pills ; and the oil was quickly rejected. He has had two black, fluid, feculent stools. Is weak, and anxious ; and has been tossing about in bed all day.

Ordered to take Pil. Hydrarg. gr. vi. immediately.

A small quantity of sago and wine was given an hour after the pill.

9 P. M.—He feels much better : has had two black watery stools.

Repeat the Blue Pill.

June 20th.—He slept little ; has had no stool during the night ; one scanty brown stool this morning : lies on his back, in a state of great anxiety ; there is slight tension of belly, and some tenderness on pressing over the abdomen ; tongue moist, and white. Pulse 108.

R. Extract. Colocynth. Comp.
Pil. Hydrarg. āā gr. v. at 6 A. M.
Ol. Ricini $\frac{3}{4}$ i. at noon.

Vesper.—He vomited some of the castor oil, with bile : had three black watery stools, and feels better.

R. Pil. Hydrarg. gr. vi.
Opīi gr. ss. in a pill at 8 P. M.
Allowed Cream of Tartar drink.

June 21st.—He has had no stool or vomiting during the night.

R. Extract. Colocynth. Comp.
Pil. Hydrarg. āā gr. v. at 6 A. M.

Vesper.—Has had no stool, and says he is well ; tongue warm and moist.

R. Pil. Hydrarg. gr. v.—H. s.

June 22nd.—No stool ; says he is well, and hungry.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v.—misce, fiant pil. iii. statim sumend.

These pills had no effect until they were assisted by a purgative enema, and then he had four stools. Had a few mild purgatives after this, and was discharged well on the 1st July.

OBS. CX.—Edward Enderson, *Æt.* 30, an emaciated man of light complexion : a sailor of H. C. Frigate *Hastings* ; six years in India. Admitted into General Hospital 13th February, 1826. Has been ill for above two months, with quotidian intermittent, enlarged spleen, and general debility. Bowels free ; tongue moist.

Was ordered to be purged daily, with compound extract of colocynth ; of which 5 grains only were given at bed-time : and he took two grains of quinine in solution in two ounces of water, with six drops of aromatic sulphuric acid, daily at 6 A. M. and the same dose was repeated at noon.

Feb. 19th.—There has been no return of ague, and his appearance is more healthy ; spleen smaller.

Quinine omitted.—Comp. Ext. of Colocynth. continued.

Feb. 20th.—Was attacked in the night, with vomiting, purging, and dreadful cramps in the muscles of legs, and belly; but made no report of this illness till daylight, when he was observed to have the sunk ghastly visage, and hollow eye, peculiar to Cholera; the pulse at that time was not very low, the limbs and tongue not quite cold: but his appearance was exceedingly altered.

R. Calomel. ʒ i.

Opii gr. iii.—misce, fiat pil. ii. statim.

A blister was applied to the scrob. cordis.

Brandy and hot-water each 1 oz.—ordered to be taken now, and repeated in an hour.

The appearance of Cholera subsided in the course of the day, and the next morning he was ordered to take

Magnesiae ʒ ii.

Pulv. Rhei

Pulv. Jalap. āā ʒ i.

Aquæ Menth. Pip. ʒ iss.—to be repeated in six hours, if the first dose should not operate freely.

Feb. 22nd.—Purged freely by the first dose of medicine.

He recovered under the use of aperient medicine frequently repeated.

OBS. CXI.—Mrs. Brannigan, *Æt.* 30, a small and thin woman; was seized at midnight, with purging, vomiting, and cramps in the legs; and sent to General Hospital at 6 A. M. on the 23rd May, 1827. The commencement of collapse was at that time evinced by extreme prostration of strength, sunk eye, coldness, and a weak pulse at 120: the tongue was cool, moist, and nearly clean; voice feeble and pectoral. She had not taken any remedies.

R. Calomel. ʒ i.

Opī gr. ii. to be taken in pills immediately.

Apply a blister to the scrob. cordis.

At 8 A. M.—She had vomited twice, but not rejected the pills; had two stools, quite white, like magnesia and water; in other respects no change since admission: she has occasional cramps in the legs.

R. Calomel. ʒ i.

Extract. Colocynth. Comp. ʒ ss.

Opī gr. i.—misce, ft. pil. ii. statim sumendæ.

To take Ol. Ricini ʒ i. at 11 A. M.

Some sago with port wine to be given two hours after the castor oil.

Vesper.—Has had several stools; the pan of the night chair is nearly full of dark-brown

water ; surface of the body, as well as the tongue, warm. Cramps ceased, and the pulse free.

R. Pil. Hydrarg. gr. x.
Calomel. gr. iv.
Extract. Colocynth. Comp. gr. vi.
Opii gr. i.—misce et divide in pil. iv.
Two pills to be taken at 6, and two at 9 o'clock P. M.

May 24th, 2 A. M.—Has had several feculent stools, of brown color. Extremities and surface generally warm, tongue dry and hot, the pulse has risen.

R. Extract. Colocynth. Comp.
Pil. Hydrarg. āā gr. v.—misce, fiant pil. ii. statim sumendæ.

These pills had produced several dark-grey, copious feculent stools before 7 A. M. the patient was then suffering from hickup, but was free from other unfavorable symptoms ; pulse 84 and soft ; tongue warm, moist, and little white.

This patient recovered slowly, and required great care ; being twice during her convalescence affected with dysenteric symptoms ; and then she passed some blood with her stools. She used mild purgatives for many days, and left Hospital on the 25th June, to proceed in a boat to Chinsurah with her husband ; being still very weak.

This woman was nursing a child about 6 months old, when she was seized with Cholera: she would not be separated from the infant, which remained in the bed crawling over its mother when she was suffering severely from the cramps. While the bad symptoms of Cholera existed, no milk was secreted; but during convalescence the flow of milk returned, and after an interval of 12 days the mother nursed her child again, on the 5th June.

If Cholera were very liable to be contracted by personal communication, this child was exposed to its influence in the highest degree, but shewed no sign of ailment.

CXII.—John Berrigan, *Æt.* 19, rather a slight made man, with thin face, and red nose; recently arrived in Bengal: was admitted into General Hospital, on the 21st February, 1826, for a cough of two weeks duration. He was well on the 1st March, and would have been discharged next day, but he was attacked at 4 A. M. 2nd March, with watery purging, and was 20 times at stool before half-past 7 A. M. The eyes were then sunk, the countenance was anxious, and he suffered from dreadful thirst, had a white moist tongue, and the skin was moderately warm. He spoke of having pain in the belly, but

rude pressure over the abdomen was borne without complaint.

R. Opii gr. ii. statim sumend.

Apply a blister to the Epigastre.

Allowed brandy $\frac{z}{3}$ iii. with hot-water $\frac{z}{3}$ vi.—to be given in small quantities.

Ordered a flannel dress.

Half-past 8 A. M.—The brandy and opium were quickly vomited, and he is becoming colder and lower. Pulse very feeble, purging continues.

R. Tinct. Opii—Spirit. Æther. Sulph. āā $\frac{z}{3}$ ss.

Ol. Cinnamon. gtt. v.

Aquæ Font. $\frac{z}{3}$ iss.—misce, to be taken now.

11 A. M.—Much nausea and anxiety, with dreadful distress from thirst, continue; but the purging has ceased; his extremities are warm, and there is an equal general perspiration over the surface.

R. Extract. Colocynth. Comp.

Calomel. āā $\frac{z}{3}$ ss.

Camphoræ gr. ii.—misce, fiant pil. iii. statim sumend.

Vesper.—Had no stool since 8 A. M. he suffers much from thirst.

Habeat Enema Purg. cum. Ol. Terebinth. $\frac{z}{3}$ ii.

March 3rd.—Had no stool : he is suffering from great anxiety, but his pulse is soft, even, and moderate.

Enema Purg. cum. Ol. Terebinth. ℥ ii.

R. Pulv. Jalap.

Pulv. Rhei. āā ℥ i.—Magnesiæ. ℥ ii.

Aquæ Menth. Pip. ℥ ii.—misce, to be taken at 6 A. M.

March 4th.—He has been freely purged, the stools are black and feculent ; the circulation is free, and all bad symptoms have ceased.

Repeat the purgative as yesterday.

A slight feverish disposition remained after this, which required a repetition of mild purgatives almost every day, till he was discharged from Hospital on the 17th April, 1826.

OBS. CXIII.—Joseph Cocket, *Æt.* 19, a middle-sized lad, of dark complexion, a sailor of the French Ship *Magellan*, arrived in the Hooghly 20 days ago ; went on shore on the morning of 13th December, 1829, and was soon after seized with purging, which continued all day ; but he paid no attention to it, and took no medicine. In the course of the night he became weaker, and had spasms in his legs : finding himself very ill on the morning of the 14th, he desired to be sent to Hospital, but did not arrive there till a quarter past 12 at noon. The

stage of collapse was then established; the surface was cold, the fingers were shrivelled; pulse at the wrist hardly perceptible; voice feeble, tongue cool, purging and vomiting had ceased: he was drowsy, and did not appear to suffer pain. Torpor and death were evidently approaching, but we were unwilling to abandon the man while he was breathing; therefore an attempt was made to excite action by stimulants. A blister was applied to the scrob. cordis, and sinapisms to the feet, the limbs were rubbed diligently with spirit of turpentine. Twenty grains of calomel, with two grains of opium, and two drops of Croton oil were given in pills; and enemata with oil of turpentine were given at 2, and repeated at 4 P. M. These remedies had no effect. The galvanic pile had been in the meantime prepared, and when it was acting so strongly as to have a powerful effect on several healthy persons, who with myself tried it; shocks were passed through the patient's arms, chest, diaphragm and liver; and the galvanism was directed so as to pass through the situation of the great solar plexus of nerves: but he shewed not the least symptom of feeling its influence. Those persons in health, who touched the wires after we had ceased to apply them to the patient, received severe shocks.

Calomel. \mathfrak{z} i. with Extract. Colocynth. Comp. gr. vi.
Ol. Croton. gtt. ii. were given in pills at 6 o'clock.

The patient died at half-past 8 P. M. $8\frac{1}{4}$ hours after admission.

On dissection— $11\frac{1}{2}$ hours after death, we found extreme venous congestion of the brain and lungs; the auricles of the heart, and great veins of the chest and abdomen, were exceedingly gorged with blood. Liver soft, and of darker color than usual; gall-bladder somewhat flaccid; bile of lighter color than natural; spleen small and soft, adherent to the adjacent parts; the adhesions apparently not recent. Slight morbid vascularity of the omentum majus, and of exterior of stomach: interior of stomach covered with thick paste-like mucus, on scraping off which, much general redness of the mucous membrane was seen. The small intestines distended with flatus, and a fluid resembling thin gruel; they were exceedingly vascular, and of florid red color, their lining membrane much corrugated. There was some morbid vascularity of the great intestines; many of the mesenteric glands enlarged, but not inflamed. Much emphysema of the cellular structure, about that part of the duodenum which approaches the right kidney, was observed.

Although mercury is found so useful in the treatment of Cholera, especially in its febrile form; it will not prevent the accession of the disease, even if taken to such extent as to produce

salivation, of which the two following cases are examples ; and I have known several other instances where persons in a state of salivation, have been attacked with the worst descriptions of Cholera, with collapse.

OBS. CXIV.—James Day, *Æt.* 29, sailor of the Ship *Norfolk*. Had ulcers at the orifice of the urethra, for which he took mercury on board ship, and the mouth was sore : a looseness of the bowels became troublesome for two days, and therefore he was sent on shore, to the Hospital, in the evening of the 20th March, 1828. There were then no symptoms except those of common diarrhœa, but he was very thirsty ; the pulse was good ; tongue white but moist. He was directed to take some castor oil.

About midnight he began to vomit, and was attacked with cramps in the legs and arms. He did not make these symptoms known till day-light, when he was found in a state of extreme exhaustion, having been at stool 14 times, and the pan of the night chair was filled with a conjee-like fluid. There was morbid sensibility at scrobiculus cordis ; pulse 96 and soft ; tongue moist, warm, and white. Twenty grains of calomel, and two grains of opium were given ; and a blister was applied to the epigastre. Calomel, colocynth, and blue pill with a small quantity of opium were afterwards

taken. Vomiting and purging ceased before 11 A. M.; but cramps, thirst, and anxiety continued, attended with increasing coldness, which continued till he died at 2 A. M. next morning.

OBS. CXV.—William Shannon, *Æt.* 35, an emaciated man, came from England in the Ship *Herefordshire*: and had intermittent fever for two months during the voyage, for the cure of which disease he was salivated, and the mouth remained sore when the attack of Cholera came on. He landed on the 16th May 1827. His bowels were very costive on the 20th; and he was without any known cause, taken ill with symptoms of Cholera at 5 A. M. on the 21st. He was then bled to $\frac{3}{4}$ xiv. and took two grains of opium dissolved in water. At half-past 9 A. M. he was sent to Hospital in a state of collapse; and died at quarter past 3 P. M.

OBS. CXVI.—John Brown, *Æt.* 22, a sailor of the Ship *Moir*; a stout man of light complexion, arrived from England, 10 weeks ago: he was on shore all yesterday, but returned to his ship at 8 o'clock in the evening, and was taken ill at 11 P. M. with vomiting and purging, attended with cramps in his feet: for which he was bled in the night, and took some brandy, with a medicine, the nature of which he does not know. As he seemed to be in a dangerous state, he was landed and sent to the General

Hospital, where he arrived at 3 o'clock P. M. 20th February, 1832. He was then suffering from great anxiety, and pain in the head, loins, and epigastre: the peculiar expression of countenance indicative of Cholera was present in a very marked degree, there was a livid circle round the eyes, and his fingers were shrivelled; but the pulse was tolerably free, face flushed, and surface warm, although the tongue was cool. The pupils were dilated, and he was thirsty, but not calling anxiously for drink. He was ordered to be bled immediately, but only 10 ounces of blood could be got from the vein: it appeared black as it flowed; on being left at rest, a small quantity of bloody serum separated; and the cruor was very soft, and black. He was ordered to take

Calomel. \mathfrak{z} i. in pills, and a draught of
Tinct. Opii gtt. xx.
Aquæ Cinnamon. \mathfrak{z} i.

At 4 P. M.—He is much weaker, and his face is more livid, the hands are still warm, and he is not suffering from spasms; pulse 132, and much more feeble: he suffers from increased anxiety, and at times lies in a torpid state for a few minutes.

Apply a blister to the Epigastre and another to the spine.

R. Liquor. Ammoniaë. Puræ \mathfrak{z} i.

Aquæ Cinnamon. \mathfrak{z} iiss.—misce, to be taken immediately; after which, let him have brandy, 3 ounces, in hot sago.

At 5 P. M.—There is slight increase of warmth, but no other favorable symptom; his pulse continues rapid and weak, there are cramps in his legs at present, and he has occasional nausea, but has neither vomited, or been purged since admission.

Apply sinapisms to the feet.

Liquor Ammoniae to be repeated at 5, 6, 7, and 8 o'clock.

At 9 P. M.—He is weaker, and colder: the voice is feeble, pulse 132 and weak; he has had no vomiting or purging.

Let him have 3 ounces of brandy with hot sago.

Apply a large mustard plaster across the lower part of the chest.—The Liquor Ammoniae to be repeated every hour till midnight; after that, every second hour.

February 21st, at 6 A. M.—He has had a restless night, with constant distressing nausea, but he has not actually vomited, nor has he been purged. The voice is stronger: pulse 114, but very weak. His tongue is warm, and he says the pain at the epigastre and in the loins has ceased. The mustard plasters have blistered his feet; and the blisters which were applied yesterday had commenced to vesicate, when he pulled them off in the night.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā ʒ ss.

Ol. Menth. Pip. gtt. ii. to be taken in pills at 6 A. M. and repeated at 8 and 10 o'clock.

Ol. Ricini ʒ iss. to be given at 12, and repeated at 2 o'clock.

At 5 P. M.—He has had no stool, and has not vomited; there is now an uniform warmth of the extremities, the pulse is 104 and soft, the tongue moist and warm. He is free from pain, and the voice is much stronger; but debility continues to such degree that he cannot raise himself in bed without assistance; he has slept for two hours this afternoon. A purgative enema was ordered at 5 o'clock, and repeated at 7, by which a considerable quantity of dark-colored watery fluid, of a feculent smell was brought away; the lurid color of the face is much decreased. Hot sago with three ounces of brandy allowed.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v.

Olei Menthæ Pip. gtt. ii. to be given in three pills at 10 o'clock, and repeated at midnight.

Feb. 22nd.—He slept little; the pulse is 94 and soft; the tongue is warm, of lurid red color, moist, and nearly clean; the skin is now nearly of natural temperature, but not so warm as last night; the abdomen is doughy, inelastic, and rather full, and he complains of pain in the belly. He has not vomited, and had no stool during the night.

R. Extract. Colocynth. Comp.

Pil. Rhei. Comp. āā gr. vi.

Olei Menthæ Sativæ. gtt. ii. to be taken in two pills at 7 A. M. and repeated at 9, and again at 11 o'clock.

At noon.—Pulse 92. The skin is warm, tongue moist, and rather more loaded; he has had three fluid stools of a yellowish grey color; he feels sleepy and thirsty. There is a slight flush in the cheeks, and he has made urine for the first time since admission.

Let two more pills be repeated at 3 o'clock.

Allowed some hot tea and bread.

At 7 P. M.—Pulse 96 and soft; he had two free, fluid stools, of natural color; he made urine again when at stool.

R. Tinct. Camphoræ Comp. 3 ii.

Aquæ Tepidæ 3 iss.

Sacchari 3 ss.—misce, to be taken at 8 o'clock.

Feb. 23rd.—He had three fluid stools in the course of the night, of natural color; pulse 88, soft, and free; tongue moist, nearly clean, and still retaining some degree of the lurid red color before reported. The belly is soft, flat, and elastic; voice strong, and countenance cheerful; he is thirsty, but the appearances of Cholera have subsided. The feet are very sore from the strong mustard plasters.

After this date he required only mild purgatives, and regulated diet. On the 28th February he joined his ship as she was about to sail.

OBS. CXVII.—David Murray, *Æt.* 21, H. M. 26th Foot, a stout and tall man, of light complexion, two years in India; came from Chinsurah on business, and walked all day in the sun, in Calcutta. Was seized at a quarter before 9 o'clock, P. M. 24th Nov. 1830, with violent cramps in the extremities, and so much pain in the fingers and toes, that he roared aloud with agony. A serjeant of his regiment put him into a palankeen and brought him directly to Hospital, where he arrived just after 9 P. M. suffering the utmost pain from the spasms; but his circulation was free and surface warm: he had neither vomited nor purged. He was immediately bled to lb. iss. and ordered

Calomel. \mathfrak{z} i.

Extract. Colocynth. Comp. \mathfrak{z} ss in pills.

The spasms decreased while the blood was flowing, and ceased altogether within 10 minutes after the arm was bound up. When the blood cooled, a moderate quantity of serum was separated; and the surface of the cruor was rather more florid than usual with venous blood.

Nov. 25th.—He had one stool during the night, and feels well, but weak. Diet—tea, bread, and sago.

R. Extract. Colocynth. Comp. \mathfrak{z} ss.

Pil. Hydrarg. gr. v. in pills.

These pills purged him freely.

He was well enough to proceed in a boat to his regiment at Chinsurah, on the 26th November.

At the time this man was attacked, we had many very bad cases of Cholera in the General Hospital; and the men of his Regiment at Chinsurah, about 22 miles distant, were suffering from a severe description of Spasmodic Cholera. Therefore I am inclined to think, that if this patient had not been promptly bled, he would have had vomiting, purging, and other bad symptoms in a short time.

In many of the foregoing cases, there was coldness, sinking of vital power, and failure of the pulse; coeval with the earliest symptoms of the disease; and under circumstances in which blood-letting was not considered justifiable. We find that these patients derived benefit from opium and small quantities of stimulants: their most distressing sensations of debility, and the lowness of the pulse, were often relieved by hot sago and wine. In many such instances an opiate given early, and a dose of castor oil a few hours afterwards, seem all the treatment that is requisite.

In other patients, a slight and transient feverish affection, was followed by collapse of the most formidable description; in which it was necessary to give a small quantity of opium and stimulants, before it was safe to employ purgatives and apply leeches. The patients who were treated early, in the low form of the disease, had in general more prompt recoveries, and were less liable to relapses, or to febrile affections on returning to their usual food, than those who had febrile and inflammatory symptoms from the commencement.

I observe that the low form of Cholera with early collapse, has occurred in some parts of England. Should the disease prevail extensively in Great Britain, I think it probable that cases will occasionally be met with; which commence as Diarrhœa, Catarrh, or slight Fever; and after a few days, evince a tendency to Cholera.

CHOLERA IN CHILDREN.

EUROPEAN children under two years of age, do not very often suffer from Cholera; but among those who are attacked by the disease at that early period of life, a large proportion die: which I ascribe as much to the early treatment employed,

as to the malignity of the disease, for, when called to see children suffering from this complaint, I have usually found that Cholera had existed for several hours before the relatives were alarmed by suspicion of the real nature of the disease ; and then such powerful doses of laudanum were given, that the child has been found in a state of stupor ; the coldness of extremities remaining, and the fatal event quickly followed. In children under two years of age, the disease, if left to the course of nature, usually soon sinks into the stage of collapse, with mortal coldness ; and a distinct reaction rarely takes place : some morbid heat of head and chest usually occur just before death, but too transient to afford room for hopes of a favorable termination. Spasms are not a general attendant on the complaint in these young subjects, who are quickly oppressed by the venous congestion. After the contents of the stomach are thrown up, violent efforts to vomit usually cease ; occasional nausea, and slight ineffectual retching occurring now and then ; but unless the patient be indulged in much drink, nothing is vomited, though the watery purging continues, with gradual sinking of the pulse, and increasing coldness.

When Cholera in young children supervenes on Diarrhœa or Dysentery of several days' duration, the disease is almost inevitably fatal.

When Cholera attacks children under two years of age, the first symptoms of the disease are generally attended with extreme prostration, and cold perspirations. In such cases, four drops of *Cholera Tincture* *, mixed with a little sugar in a tea-spoonful of water, will very often completely arrest the disease. If the coldness and profuse watery evacuations from the bowels should continue, the dose may be repeated in an hour : after which, if farther stimuli should be requisite, we must make use of liquor ammoniæ, with infusion of ginger, or of capsicum ; and apply a mustard plaster to the pit of the stomach, spine, and feet. Should these means fortunately resuscitate the patient, much care will be requisite to prevent a return of the symptoms : mild aperients must be used, and great caution in diet observed for some days.

In the treatment of young subjects, when they are seen in the febrile stage of the disease ; I have usually given to patients between two and four years of age, four grains of calomel : and if the evacuations have been profuse, I add 15

* The *Cholera Tincture* is composed of

Tinct. Opii

Spirit. Æther. Sulphuric. āā ʒ ss.

Ol. Cinnamon. gtt. xv.—misce.

drops of *tinctura camphoræ comp.* in a tea-spoonful of hot-water; and repeat the dose in an hour if the symptoms continue. Should these means not check the disease, a third dose of calomel is given in an hour more, with six drops of the Cholera Tincture. And if the disease still be not arrested, the calomel is persisted in every hour; and the Cholera Tincture is given with every second dose. As soon as the stomach is tranquillized, and will retain food; let a tea-spoonful of brandy, or a dessert-spoonful of Sherry wine be mixed with a coffee-cupful of thin arrow-root; a table-spoonful of this may be given once every half-hour until the coldness of surface subsides: after which it is necessary to give a dose of rhubarb with two grains of calomel every eight hours, and a dose of castor oil in the intervals between the doses of rhubarb; so that a mild purgative shall be taken every four hours during the day, until a moderate purgative effect is produced; smaller doses, at more distant intervals, being requisite for some days afterwards, till the secretions are restored to a natural state. There is usually some obscure pyrexia, with much languor for some days, in European children who survive an attack of Cholera; and therefore the diet should be regulated so as to support strength, without exciting fever. Where the Cholera symptoms in children, are less severe and more protracted, while the cold-

ness, and low form of the disease remain; there is usually great thirst and anxiety. In this case, large draughts of cold water have decidedly caused a return of the vomiting, and hurried on the stage of collapse. The least injurious drink, is an infusion of mint, with a moderate proportion of cardamoms; or a weak infusion of ginger, or pepper in water, drank in small quantities, and cold.

During an attack of Cholera, children should be wrapped in warm flannel, and encouraged to be quiet in the recumbent posture. In patients between 6 and 8 years of age, the above doses of medicine are to be increased one-half; and may be doubled for those more than 8 years old.

CHOLERA IN ASIATICS.

When Cholera attacks robust Asiatics, who are living in affluence, they very seldom have that form of the disease which is at the commencement combined with pyrexia and inflammation: and that description of the disease which usually affects the poorer natives of Bengal, is still more rarely attended with febrile or inflammatory symptoms; they commonly suffer from the low form of Cholera, with sudden coldness and early collapse. Visceral disorders are seldom found to

occur as its sequelæ in natives ; though I have several times seen a sub-acute description of Dysentery ; and more frequently, dyspeptic symptoms and emaciation, occurring in native patients who had previously suffered an attack of that disease.

The Cholera happening to natives of this country, marked by early coldness and collapse, and occasionally attended with severe spasms ; is usually a more rapid and more fatal disease than we find it in Europeans : consequently we do not often see Asiatics in a state requiring V. S. or at that stage of the disease, when we might hope by bleeding, to relieve the system from increasing congestion. Very few natives of this country recover from Cholera, if left without remedies ; whereas, if promptly treated, the majority of ordinary cases are cured. A tea-spoonful of laudanum, with a spoonful of brandy, or a tea-spoonful of laudanum, with as much spirit of sal volatile, in a wine-glass of water, if given at the first moment of attack ; very generally arrests the disease instantly. A gentleman who had a numerous retinue of servants, used to keep a vial of laudanum, and another of spirits of hartshorn on his dressing table ; in charge of a sirdar bearer, who being always present in the house, had orders to administer a tea-spoonful out of each vial, mixed with a spoonful of water ; to any

native that might be attacked with Cholera. Under this mode of treatment, no man died, for many years. Others have been nearly as fortunate in checking the early stage of Cholera, by keeping a bottle of Tincture of Rhubarb in readiness, and giving a table-spoonful to any native immediately he was attacked with Cholera. If stimuli are requisite after the 2nd dose of laudanum; Liquor Ammoniaë is the best. I have found it convenient to keep the *Cholera Tincture*, mentioned at page 512, always in readiness: a dessert-spoonful, given in a wine-glass of water to an adult, I think generally answers better than any of the above remedies; if given equally early in the disease. By whichever of these modes, the first approach of an attack of Cholera in a native is arrested; it is usually proper to order a cup of hot sago, within an hour after the medicine; and if the patient be a weak person, and any degree of coldness remain, a spoonful of brandy ought to be added to the sago. If the first dose of either of the above medicines be rejected by the stomach, or fail to have the desired effect, it should be repeated in one hour; after which, if the symptoms continue, 6 grains of blue pill, with one grain of opium, and 2 of asafoetida in a pill, are to be given an hour after the 2nd dose above ordered; and repeated every 2nd hour, while vomiting and purging continue. More sago may be given after a few hours; and provided

the disease be arrested, we should allow the patient to remain quiet, wrapped in a blanket for 8 or 10 hours ; and then give him a dose of castor oil. In a few cases, where febrile symptoms remain after a Cholera-attack in natives, leeches are requisite to remove local congestions and inflammations ; and 4 grains of blue pill with 8 grains of compound extract of colocynth, may be given daily in the morning ; followed in six hours by an ounce of castor oil, if the patient be not purged by the pills. In native Cholera patients, having symptoms of Spleen Disease, mercurial preparations should be omitted. Asafoetida combined with opium, often has a remarkably good effect on natives who are slowly becoming cold, with Cholera symptoms ; the oriental mode of administering it, is to make a soft pill of 2 grains of opium with as much asafoetida, which is chewed and swallowed slowly with the saliva. I have ordered this prescription, with the addition of 6 grains of blue pill, and 2 drops of Ol. Menth. Pip. directing the medicine to be chewed and swallowed. It has been the means of curing many natives who had become cold, and had a rapid feeble pulse that was hardly perceptible. The warmth was gradually and slowly restored, and circulation recovered its natural strength, after the use of this medicine : nothing being required but a few moderate doses of castor oil ; and

attention to regulate the food used by the patient for some days.

There is such variety in the symptoms and course of Cholera in different patients ; that I am induced to state two cases of Europeans, and one of an Asiatic, in which the secretions were carefully analysed ; so that there may be no doubt of the exact nature and stage of the disease, corresponding with the fluids examined ; and I may observe that the general account of Chemical Analysis stated at page 376 to 382, is the result of experiments made in every stage of the disease. The conclusions deducible from all my investigations relative to this part of the subject, are adverse to the opinions of those authors who say that the sub-albid stools, resembling barley-water, are pure serum, as some state ; or serous evacuations, as others have asserted. This, like every truth connected with the pathology of acute diseases, may be deemed important ; for it will influence our opinions regarding the condition of a patient ; and our practice must of course be more or less modified by such opinions. Moreover, attention to the nature of those secretions, may be of use in fixing the identity of the disease now treated of, and establishing its affinity with the Cholera of remote countries ;

or with the varieties of disease which may hereafter appear in India. With this view, I have been willing to state particularly the nature of a few of the cases from which the fluids examined have been taken.

OBS. CXVII.—Pierre Vinceau, *Æt.* 19, a sailor of the French Ship *Cygne*, sent to Hospital in the most alarming state of disease: no written account of his case was received with him. Admitted 4th December, 1830, at 10 A. M. A slight made lad, of dark complexion, six weeks arrived in Bengal; states that he was taken ill at 5 P. M. yesterday, with a sensation of weakness, and pain at the heart; vomiting and purging took place soon after, and he had cramps in the legs during the night. He has been very often to stool, but only vomited four times in the night; the last time at 10 P. M. Has been thirsty, and drank much water. His voice is good and strong, and there is very little anxiety at present. Pulse 120 and feeble; extremities cool and perspiring, but not cold; tongue cool, moist, and nearly clean; the eyes are not sunk; he is tranquil and not now calling for drink. Had one grey fluid stool, in quantity about 10 oz. soon after admission.

When the bulb of the thermometer was placed under his tongue; the mercury stood at 91, and the temperature of the extremities was

ascertained to be 82. The atmosphere being at this time at 76 degrees of Fahrenheit.

Spirit of turpentine was rubbed to the extremities constantly. He was made to swallow half a drachm of Cajeputi Oil, in half an ounce of cinnamon-water ; and the dose was repeated in half an hour. No effect being produced by the two first doses, one drachm of the oil was given at eleven o'clock, and repeated every hour till 3, making in all, six drachms of the Cajeputi Oil.

Half past 3 o'clock.—The patient has been frequently visited, during the interval since 10 o'clock: the Cajeputi Oil has had no effect ; he appears rather worse, and is very slowly sinking into a state of torpor : there has been no vomiting ; but he has had three more conjee stools, each in quantity about 8 oz. Hot sago 3 oz. brandy 1 oz. directed to be taken just after the last dose of Cajeputi Oil.

R. Calomel. \mathfrak{D} i.—Opii gr. $\frac{1}{2}$.
Extract. Colocynth. Comp.—Asafoetidæ āā gr. v.
Ol. Menth. Pip. gtt. ii. to be taken in three pills ; and repeated every hour.

R. Spirit. Ammoniaë Aromat.
Tinct. Cardamom. Comp. āā 3 i.
Aq. Cinnamon. 3iss. misce,—to be drank after each dose of pills.

Six o'clock.—He continues slowly sinking. The same pills and draught as ordered at half past 3 o'clock, are to be given every hour till six doses are taken. Hot sago and $1\frac{1}{2}$ oz. of brandy at half past 9 o'clock. Castor Oil $\frac{3}{4}$ i. at 10.

Dec. 5th.—No stools or vomiting during the night; the extremities and tongue are cold, but the forehead, neck, and chest are hot; the face is livid; pulse at the wrist is barely perceptible: he is restless, and asking for drink; respiration hurried and feeble; voice weak and pectoral. Large sinapisms were applied to the belly, also to both feet. Ol. Ricini $\frac{3}{4}$ i. was given every hour, and 15 minutes after the oil, he was ordered an Enema of Ammoniae Carb. 3 i. in three pints of hot water, to be given with the pump. He derived no benefit from the remedies, and died at 11 o'clock A. M.

Dissection at 4 P. M.; five hours after death. Much venous congestion of the brain. Both lungs universally adherent, but not bearing marks of the adhesions being recent; there were a few small dark-grey tubercles in the lungs. All the cavities of the heart were gorged with coagulated blood; the anterior portions of the coagula white. The liver was rather large; its surface mottled; its structure soft, and bleeding freely when cut into.

The omentum and mesentery were in a state of high morbid vascularity; also that part of peritoneum placed across the bodies of the vertebræ: glands of mesentery and mesocolon enlarged.

Peritoneal surface of stomach, and intestines, rather more colored with pink than in the healthy state.

The mucous membrane of the stomach, was exceedingly vascular; the coats of the small intestines slightly thickened: there was much pale brown fluid in the stomach; and some fluid in the upper third of the small intestines, which was tinged deeply with orange-colored bile; the lower portion of the small intestines contained a pale-grey fluid. The large intestines contained much dark-brown watery fluid. No other morbid appearance noticed.

It may be sufficient to state the result of the analysis of the 3rd *conjee-stool* voided by this man after his admission into Hospital. That fluid was left to stand for two hours, and a quantity of grey paste-like mucus had then subsided; the following was the result of examination.

1. The mucus which had subsided to the bottom of the test tubes, was found partially soluble in cold water, affording an opalescent turbid fluid.

2. Another portion of the sediment, measuring ζ ss. and of the consistence of thick mucilage; was entirely soluble in a mixture of ζ x. of Liquor Ammoniaë, with the same quantity of distilled water.

3. Another portion of the same sort of mucus, measuring ζ ii. was heated in a small evaporating dish over a spirit lamp; and during the process an odor of putrid flesh was evolved. It dried into a thin film, which became charred and black, without burning in a flame.

The watery fluid was next examined.

4. It had a slight effect in reddening litmus paper; the color of which was restored by dipping the paper into a mixture of four drops of Liquor Ammoniaë, and half an ounce of water.

5. Heated slowly over sand, to 200 degrees of Fahrenheit, it did not coagulate. When the heat was raised to the boiling point, a few small grey flocculi formed.

6. The addition of a solution of oxymuriate of mercury, produced a slight turbid appearance, and at the end of 12 hours, a minute precipitate had formed, which was estimated at $\frac{1}{3\frac{1}{2}}$ of the quantity of fluid submitted to this experiment: the fluid at the upper part of the tube having a slight opalescent appearance.

7. Solution of subacetate of lead, instantly caused a dense curdled appearance, which quickly pervaded the whole tube, and in a short time began to subside; at the end of 12 hours it had settled down, so as to occupy $\frac{1}{8}$ the space of the tube that had contained the fluid examined.

8. The addition of alcohol to another portion of the fluid, produced no effect.

9. The addition of infusion of galls to another portion of the fluid caused a slight turbidness, and after some time a very few minute flocculi subsided.

The examination of the 4th conjee-stool voided by this patient afforded similar results.

OBS. CXIX.—Torrens, *Æt.* 29, a muscular man, of middle size and light complexion; a sailor of the Ship *Mount Vernon*; arrived from sea about the middle of October, 1831; and after remaining a week on board, he landed in the afternoon of the 21st, and drank some spirits in the bazar, but says he was not drunk. Late in the evening he was wet by a shower of rain; and failing to get on board, he slept in a shed near the bank of the river. About midnight he was seized with cramps, followed by vomiting and purging; at 9 o'clock A. M. he succeeded in getting on board, and the Captain gave him 60 drops of laudanum in a glass of brandy; after which, the vomiting and purging ceased: but he remained so much distressed by anxiety and feeling of debility, that it was considered best to send him to the Hospital, where he arrived at 1 P. M. 22d Oct. The stage of collapse was then commencing: his face was pale; he was covered with a profuse perspiration, and suffering from much anxiety; the tongue white and clammy; pulse tolerably free;

the belly tense and tumid. A vein was opened, and when $\frac{3}{4}$ x. of blood had flowed, the pulse sunk so rapidly that it was not deemed safe to take more. Twenty grains of calomel with two grains of opium were given. Within an hour the pulse rose, and the orifice of the vein being opened, six ounces more blood were allowed to flow, by which the pulse was rapidly and permanently sunk. A large sinapism was now applied over his belly, and spirit of turpentine diligently rubbed to the extremities. The 10 ounces of blood first drawn, coagulated; and a small quantity of bloody serum separated, which on exposure to heat of 160° formed a firm coagulum. The blood last drawn coagulated, but no serum was separated: the cruor of the blood in both cups was remarkably dark-colored.

Calomel, with colocynth, asafoetida, and oil of cinnamon were repeatedly administered; and stimulants used: and he took a dose of spirit of turpentine and castor oil, each one ounce; but no medicine had any effect; he gradually sunk into a state of torpor, pulse at the wrist ceased, and the fingers became shrivelled. He died at 3 A. M. on the 23rd October, 14 hours after admission into Hospital; during which period he had four scanty fluid stools of a brown color, and vomited several times.

Dissection.—Twelve hours after death :

Muscles rigid; lungs gorged with blood, especially at the depending parts; and there was a small quantity of mucus in the trachea and bronchial tubes. There were a few small ecchymosed specks on the right side of the heart. Some morbid vascularity of the omentum and mesentery was observed, and the glands of the mesentery and mesocolon were enlarged. The stomach was pale externally, and its coats much thickened; its mucous membrane corrugated, and covered with a large quantity of thick tenacious mucus: when that was scraped off, several vascular patches of deep-red color were seen. The pills, in solution, and some turpentine with castor oil, which had been taken several hours before death, remained in the stomach.

The coats of the small intestines were much thickened; at no part could they be deemed paler than natural, but several portions for the extent of a foot in length, had the minute vessels injected with red blood, in a very extreme degree. The small intestines contained much watery fluid; in some parts this was tinged with yellowish bile, in other parts of a pale-grey color, mixed with many large masses of white mucus. The coats of the colon presented no morbid appearance, and this intestine contained much fluid

of dark-brown color. The liver was large, and its texture soft ; the color was natural, with the exception of a slight mottled appearance, from a few small pale spots on the surface of the left lobe. Gall-bladder, adherent to the adjacent parts ; it was much enlarged, round, and distended with very fluid bile, of a natural color. There was a great degree of venous congestion of blood in the brain, and the large veins along the spine were gorged with black-colored blood. Some serous effusion was observed between the arachnoid and pia mater: there was 5 iiss. of serum in each lateral ventricle; and 3 iss. below the tentorium.

A portion of the fluid vomited, (and on the top of which some castor oil floated,) was filtered ; it was transparent, with a slight tinge of straw-color : when examined, the following appearances were observed :

1. Litmus paper was quickly changed to a pale-red color.
2. Solution of oxymuriate of mercury produced a slight turbid white appearance, but no precipitate formed.
3. Another portion of this fluid, exposed to heat, which was gradually increased up to 212° , assumed a slight smoky color ; and at the end of 12 hours, a few minute grey flocculi were observed floating in the fluid.
4. Solution of subacetate of lead, dropped into a test-tube containing some of the fluid, quickly produced a dense curdled appearance, which at first seemed to consist of all the fluid ; but a precipitate soon subsided, and in 12 hours occupied a quarter of the tube which had been filled with the fluid tested. This

precipitate was a dense pale-yellow mass, not easily mixed with the fluid on shaking the tube. The liquid which floated above the precipitate, was nearly transparent, with a slight bluish tinge; a few small white flocculi adhered to the inside of the test tube.

5. On addition of the infusion of galls, the fluid became turbid, and a pale lead-colored precipitate formed, which subsided in 12 hours, so as to occupy $\frac{1}{24}$ of the space in the tube, which had been filled with the fluid tested. The precipitate was light, and easily diffused through the fluid by shaking the tube.

The most fluid of the stools, voided while he was in Hospital, was filtered through paper; and then it had the color of weak coffee, of a peculiar foetid odor, not like fæces. The filtered fluid was diluted with equal quantity of distilled water, for the purpose of decreasing the color, that the effects of reagents might be better observed: and when tried with various tests, the following effects were observed:

6. Litmus paper was slowly and slightly changed to a reddish color.

7. A portion of the diluted fluid, exposed to heat gradually raised to 212° , became in a slight degree more transparent; it did not coagulate, but a few small black flocculi were seen floating in the fluid when it was cold.

8. When solution of oxymuriate of mercury was added to another portion of the diluted fluid; a dark chocolate-colored precipitate slowly formed, and in 12 hours subsided, so as to occupy $\frac{1}{20}$ of the space of the tube that had been filled with the fluid examined. The supernatant liquor was of a pale tea-color. The precipitate was dense, and not easily raised or diffused through the fluid by slight agitation.

9. The addition of solution of subacetate of lead to another portion, produced an immediate dense curdled precipitate, that

quickly fell to the bottom of the tube ; and at the end of 12 hours, it occupied $\frac{1}{5}$ th of the space in the tube that had been filled with the fluid : the supernatant liquor was nearly transparent ; a few pale-grey flocculi adhered to the sides of the tube.

10. In another portion of the diluted fluid, when treated with infusion of galls ; a precipitate slowly formed, of a pale-brown color, which in 12 hours was found to occupy $\frac{1}{5}$ th of the space of the tube that had been filled with the fluid examined : it appeared like a very light mucilage, and was easily again diffused through the fluid, on slightly shaking the tube.

OBS. CXX.—A Mahomedan Burkandauze, named Shaik Sonawalla, aged 35 years, employed at the Calcutta Great Jail ; was taken ill with Cholera, about 1 A. M. on the 1st December, 1831. He made no application for Medical aid, and was watched in the Guard-room of the Jail, by his comrades ; who kept him covered with blankets, and champed the limbs when the cramps were severe. My advice was not requested until 4 P. M., when the friends thought he was about to die : they asserted that he had been vomiting very often ; but not purged much until mid-day ; at which time cramps in the legs came on, and the purging and coldness were so much augmented as to excite alarm. I found him cold, his countenance sunk and ghastly ; eyes blood-shot ; the fingers slightly shrivelled ; voice weak ; pulse 138 and very feeble ; tongue moist, and clean ; he was anxious, and the respiration hurried ; he eagerly requested water to

drink. His friends asserted, that he had not swallowed any thing since noon ; and had taken only a few spoonful of water during the early part of the day. A large panful of clear watery fluid had been voided by stool : it was hardly more colored than pure water ; some uncooked rice, very little swollen, was observed at the bottom of this pan. The patient, on being particularly questioned, acknowledged that he had eaten raw rice at a very late hour on the previous evening. The fluid vomited was slimy, and not quite so clear as the stools.

He was made to take \mathfrak{z} i. of Laudanum, with as much Spirit. *Æther. Sulphuric.* and four drops of Oil of Cinnamon, in \mathfrak{z} iss. of water ; which quickly alleviated all the more distressing symptoms ; and he was neither vomited or purged afterwards.

At 6 P. M.—He was free from cramps: the pulse 118; there was slight return of warmth of surface; tongue clean and moist: he complained much of thirst. Some thin hot sago with \mathfrak{z} iiss. of brandy was now given, after which he slept.

Dec. 2nd.—Has had neither vomiting or purging, but is anxious, weak, and thirsty; the eyes blood-shot; extremities warm; pulse 92,

soft, and weak ; tongue nearly clean and dry, with little white appearance in centre. He was ordered $\frac{3}{4}$ iss. of castor oil with cinnamon water, which purged him four times in the course of the day, and he was persuaded to take a small quantity of sago, without brandy. The stools were copious and of dark-grey color. He now earnestly entreated that his friends should be allowed to take him home to his village, which was near. This request was complied with, and he remained at home nearly a month ; but took no medicines except two doses of castor oil. He recovered, and is now employed on the Jail duties.

The slimy fluid vomited, was strained through muslin ; and then had a very slight turbid appearance.

1. It quickly reddened litmus paper.
2. A portion was gradually heated to 212 degrees of Fahrenheit, but no part of it coagulated.
3. Another portion tested with solution of oxymuriate of mercury ; indicated no change, except a very minute milky cloud, which was dissipated on shaking the test tube.
4. Transparent solution of subacetate of lead, dropped into another portion of the fluid, caused an immediate white curdled appearance ; which slowly subsided to the bottom of the tube, leaving the supernatant liquor transparent, with a slight bluish tinge.

The clear watery fluid of the stools, was poured off from the small quantity of rice, and examined without straining.

5. Litmus paper was changed to a red color when wet with this fluid.

6. A portion of the fluid was exposed to heat, gradually increased to 212° ; it neither coagulated, nor did any precipitate form.

7. Another portion of the fluid was tested with solution of oxymuriate of mercury; which slowly produced a slight turbid appearance, and in 12 hours a minute mucilaginous deposit took place at the bottom of the test tube: the fluid above being opalescent.

8. Solution of subacetate of lead, dropped into another portion of fluid, in a tube; produced an immediate curdled appearance, which soon subsided in a dense white mass, and at the end of 12 hours was found to occupy $\frac{1}{8}$ of the tube that had contained the fluid tested: the liquid above was quite clear.

9. Another portion of the fluid, was tried with pure alcohol; which produced no turbidness, nor precipitate.

10. Infusion of galls was added to another portion of the fluid in a tube; which slowly produced a slight mucilaginous precipitate, of a pale-fawn color, which was easily diffused through the liquid when the tube was shaken.

To avoid probability of erroneous conclusions, I have tried similar tests on the various kinds of food and drink allowed to Cholera patients; so as not to mistake the effects of the tests on any of those articles, for their effects on the secretions of the stomach and intestines.

The Cholera stools, and the matter vomited, not coagulating on the application of heat, or on the addition of solution of oxymuriate of mercury ; and containing no uncombined soda ; shew us that they do not consist of the serum of the blood, and do not contain any appreciable quantity of albumen : while the indications, when we add the solution of subacetate of lead, give sufficient reason to conclude that the sub-albid evacuations in Cholera consist chiefly of mucus, and a peculiar morbid secretion. I am not aware of the grounds on which Dr. Bostock has stated that animal mucus is merely a modification of albumen* : though I am ready to place the highest confidence in his opinions.

FACTS RELATIVE TO CONTAGION IN CHOLERA.

It is an object of much importance to ascertain, if possible, whether Cholera be a Contagious Disease, and liable to be communicated generally to those in health, by means of a virus generated about the persons of the sick : and

* “ Animal mucus appears to be nearly related to albumen, and indeed the constituent upon which its characteristic properties principally depends, would seem to be a mere modification of this substance.”—*Bostock's Physiology*, vol. I. p. 48.

conveyed either indirectly, by means of clothes or goods; or received directly, by personal contact or near approach to patients: whereby the disease is produced, independent of other exciting causes. If it should appear, that Cholera is *generally* propagated by means of some noxious emanations from the persons of the sick; the strictest quarantine regulations would of course be advisable. On the contrary, should we observe that the disease is neither generally, nor even frequently, found to affect those who are most exposed to personal communication with the sick; under such circumstances, that if contagion existed, we might reasonably expect it would be present in its most concentrated and active forms: we would then doubtless abandon all idea of retarding the progress of Cholera, by interdicting direct intercourse with the sick, or with those who may be exposed to any emanations from the bodies of persons suffering under that disease.

I will now proceed to state such facts as appear conclusive with respect to the Cholera of India; shewing the results of unrestricted communication with the sick: and if the disease be neither generally, nor frequently, received, after the most extreme exposure; few persons will deem the danger great, from slight and transient intercourse with the sick. If the disease ever

possess contagious properties, assuredly there could be no difficulty in pointing out the particular instances of contagion, at the time that they occur.

The persons most exposed to contract Cholera in the General Hospital at Calcutta, (if the disease were contagious,) are those having charge of the bedding and clothing, and those employed in personal attendance on the patients. The man who has charge of the Hospital clothing, and his assistant, both attend in the wards every morning, changing the bedding of one ward each day, on ordinary occasions. But when Cholera exists, these people are obliged in the majority of cases, to change some of the bedding of the patients having that disease daily, or oftener when soiled ; for which purpose they come to the bedside, taking away with them the dirty bedding, which is given to the head-washer-man. The clothes-keeper, Shaik Selim, at present employed at this Hospital, has been on that duty for two and a half years ; his predecessor Dhowall filled the same office for 23 years, and died at his own house, of old age and debility ; having been pensioned for long service. The head washerman Gawhee, at present employed here, has been on this duty about one year and a half ; his predecessor Hassye, held that office for two years, and died of chronic disease of the

bladder, after an illness of near four months. Before this man, Beechuck was washerman for 21 years ; he died of chronic induration of the liver, and pulmonary disease. Not one of the subordinate washermen or people employed about the clothing and bedding stores has ever had Cholera.

The native dressers have daily the most unreserved communication with the sick, changing the applications over leech-bites, and the bandages to the arms of such as are bled ; dressing blisters, and applying sinapisms : not one of these men has ever suffered from the disease. Buctourie, the head native dresser, who instructs the subordinates, and attends with them alternately, while at their duty, has been constantly employed at the Hospital for 26 years. He is a clever man, of good character, and asserts that he has never known one of the Hospital servants to be attacked with the disease.

The sweepers who clean and change the close-stools, as well as the pans in which the matter vomited is received ; and who wash those patients who are helpless ; have never been known to suffer from Cholera. It may be supposed, that the occupations of the sweepers, are usually such as might be expected to blunt their susceptibility to disease, or to the effects of any ordinary exposure ; but this will not be urged

specting the Hindoo coolies ; who are employed in ordinary attendance on the sick, and are obliged to be much in contact with all bad cases of Cholera, to keep the blankets from being thrown off, and the men from falling out of bed, when in the worst stages of the disease, and suffering much from jactitation and restlessness. These coolies are also employed to rub and champoo the extremities of the Cholera patients ; and often cannot avoid inhaling the breath, as well as the exhalations from the bodies of patients, in the most deplorable stages of the disease. Not one of these men has ever suffered an attack of Cholera. The young students, who are under a course of medical instruction, at the H. C. School for Native Doctors ; are usually in attendance, and assisting at the Hospital when Cholera is prevailing in a severe form, and when great numbers of patients are admitted with that disease. In March and April, 1827, when the Hospital was unusually crowded with Cholera cases ; and all the attendants much distressed and exhausted by the severe duty : a number of the young students from the school, were brought to the Hospital, and placed in attendance over the worst cases ; being relieved regularly day and night. These young Asiatics, performed their duties with great diligence, assiduity, and humanity, for many days and nights ; and none of them suffered by this constant exposure to whatever may be con-

tagious in the emanations from Cholera patients; as well as frequent contact of their persons. I publish these statements, after having made the most careful observations on this subject, when the disease has been prevailing, during my residence at the Hospital: and after the most diligent inquiry relative to the same points during the last 14 years. A remarkable instance of exposure, with impunity, to any morbid causes arising from the person, during Cholera, is recorded at page 497 of this work.

By Mr. Henderson's account of the disease which appeared on board the H. C. ship *Berwickshire*, in Bombay Harbour, in June, 1830; it appears that 94 men were taken ill of Cholera within a few days: of whom 38 died. A large proportion of the sick was landed, and treated at the Bombay European Hospital, and 16 of the deaths occurred in that Hospital; where there were at the time more than 100 patients and attendants, not one of whom contracted the disease.

The History of Cholera in India, presents us with a vast number of instances, where, either a body of healthy troops, has joined and encamped along with those among whom the Cholera was existing in the most violent and fatal form; or where a detachment in which

the disease was raging, has joined a healthy encampment: and the disease has not been in either case, communicated to those in a healthy state. A body of Holkar's Reformed Cavalry, 500 strong, were posted at Mahidpore, adjoining to the camp of above 2000 Bengal troops and followers, among whom the Epidemic was prevailing; and the Cavalry did not suffer from the disease, although a Cholera patient from the Bengal division, was brought to their camp, and went through every stage of the disease among them. In like manner, Casement's Regiment of Irregular Horse, joined the Hansi division of the Army, and remained with that division without contracting the disease; at the time when the Epidemic Cholera was at its height. On the 11th May, 1818, a company of Bengal troops, 90 in number; encamped at an unhealthy spot on the bank of a small lake, sheltered by a few trees, and surrounded by low woody hills. The detachment arrived at this place all in perfect health; Cholera commenced at mid-night, and before sun-rise next morning, 20 men were ill of that disease: they were removed to the Saugor camp, in carts and doolies, in the course of the day; but before arrival there, five men had died, and two were moribund. By the end of the week, every man of this detachment had gone to Hospital with Cholera; or with a purging of some sort, resembling modifications of that dis-

ease : so that there could be no doubt of the malignity of the malady from which they were suffering. The men of this detachment, had unrestricted intercourse with the troops in camp ; not one individual of whom was attacked with Cholera. For these facts, I refer to the Bengal Report on Cholera, p. 133, 134, and 137. More than a hundred such instances may easily be collected, by any one who will take the trouble to make critical inquiries respecting the History of Cholera for the last 15 years. The facts above cited, are sufficient to prove that the Cholera in India, when existing in its most aggravated form, is not a contagious disease ; and that there is no virus generated in or about the sick, by means of which the disease may be communicated to persons in health. The facts which prevent our acknowledging that the Cholera of Bengal is contagious ; are numerous, well authenticated, and the details are precise.

It appears, that a body of troops joining a camp at an unhealthy station, after long marches, is very liable to suffer from Cholera : but if a camp in which Cholera exists, should move to a healthy station, and still numbers of their men continue to fall ill of the disease, in consequence of their past exposure ; troops joining them after their removal to the healthy camp, do not suffer from Cholera. It has often happened,

that this disease has raged among troops encamped on the low banks of a river ; without any evidence of Cholera having travelled to them, or having been propagated from them to others at a short distance, who communicated freely with those suffering from the disease. Epidemic invasions of Cholera, arrive at their acme so quickly, and then subside, as stated at page 368 ; continuing in their severest form so short a time ; that the effects of change of place can hardly be duly estimated. We know that a body of troops having suffered severely from Cholera, and remaining at the same station during the disease, and after its subsidence ; has in many instances been unhealthy for five or six months afterwards : suffering from fevers, and dysentery, with occasional cases of Cholera. Places where the residents are usually very subject to Fever, have of late years been frequently visited by Cholera. These and similar facts, afford the grounds on which we should be disposed to ascribe the Epidemic Cholera to some morbid influence connected with locality, sudden changes of temperature, and humidity ; more especially when these morbid causes have to act on persons debilitated by disease, or fatigue and privations. Troops having marched through an unhealthy district, and who have been subject to much exposure, fatigue, and privations ; are very liable to the disease ; both on

the march, and when they halt; whether they join a healthy or a sickly camp. Although we have positive proof, that the worst forms of Cholera have not been communicable by means of any virus arising from the persons of the sick, in India: we cannot ascertain why the causes usually exciting Cholera, do not invariably produce the same effect; and why numbers of persons are at times exposed to all those circumstances, which at other times excite the disease, and still Cholera does not appear among them. However, as already observed, the same immunity frequently happens when persons are exposed to the ordinary exciting causes of Fevers, and many other diseases; concerning the proximate cause, and essential nature of which, we can hardly boast of knowing more than we do of Cholera.

Contagious diseases differ in many respects from Cholera: they go through a regular course, and persons who are exposed to the virus by which they are produced, only shew signs of disease at a certain period after exposure; and that interval in the majority of cases is uniform. We find nothing of the sort in Cholera, which in some cases has attacked men the day after landing from ship, and 2nd day after arrival from sea, as reported by Mr. Scott, in the instance of a portion of the 41st Regiment

on arrival at Madras roads. If we examine critically the circumstances connected with any attack of Epidemic Cholera at a station, we find reason to conclude, that the disease is dependent on some morbid influence connected with the locality : for it often happens, that a short time before the appearance of numerous severe cases of Cholera in a town ; a disordered state of the digestive organs, and tendency to diarrhœa, and nausea from slight causes, have been observed among numbers of the inhabitants ; after which the Epidemic Cholera bursts forth suddenly, affecting numbers of persons at the same time ; and in many instances, attacking persons who have had no sort of communication with those who were suffering from the disease. Those who are sickly and predisposed, are destroyed in three or four days, and at the end of another week, the severe form of Cholera disappears. There is no progressive course, or succession of attacks in the individuals of a town, during a severe visitation of the disease ; so as to warrant the belief that it is communicated by a virus received from sick persons. Diseases which are distinctly proved to be contagious, namely Variola, Rubeola, Pertussis, and some others ; attack persons in good health, nearly as readily as they do the debilitated and infirm ; without being influenced by abrupt atmospheric vicissitudes, in the degree to which Cholera seems to

have been, on almost every occasion when the severest epidemic visitations have occurred. Nevertheless, we are obliged to acknowledge that the contagion of Fevers, readily affects persons suffering from poverty and mental inquietude, exposed to much fatigue, ill fed, and insufficiently clothed: while men who are in circumstances which enable them to preserve a tranquil state of mind, and whose digestive organs and general health are unimpaired, are very often exposed to similar degrees of febrile contagion, with impunity. The extreme proclivity to Cholera, produced by debility, from whatever cause it arises, is also a very remarkable fact.

Having already stated the entire exemption from Cholera, of those persons employed in the General Hospital, and who were most exposed to unreserved and constant communication with the sick ; I am desirous to mention that when Epidemic Cholera has prevailed in Calcutta, and we have had numerous admissions of that disease into General Hospital, more especially if the wards have been much crowded at the time ; we have very frequently had sick and convalescents attacked in Hospital ; and there has evidently been a strong tendency among the patients who have been for many days, or weeks under treatment for other diseases, to lapse into the low form of Cholera, with early accession of collapse, coldness and cessation of

the pulse*. It has generally happened that those attacked in this manner, have been in parts of the Hospital remote from Cholera patients; very often in a different building, and precluded from any direct communication with those who were brought in with Cholera. Moreover, these cases of the disease occurring in Hospital, have generally happened at times when we knew that severe and sudden attacks were frequently occurring in persons living at various and distant parts of the town and suburbs of Calcutta.

I have never known a man to be attacked by Cholera in Hospital, whose bed was next to that of a man suffering from the disease: and the only two instances where Cholera supervened on other diseases, in men already in Hospital, and in the same room with Cholera patients, were the following:

OBS. CXXI.—Benjamin Fowle, was admitted into Hospital on the 15th November, 1830, laboring under Cholera in an advanced stage of collapse; he died in the course of the night. His bed was the fourth from that of the patient whose case is next to be mentioned.

OBS. CXXII.—James Poste, a tall man, 20 years of age, recently arrived from Europe:

* See page 370 and 374, at the beginning of this chapter.

came to Hospital at 8 A. M. on the 14th November, 1830. He had been ill fourteen days with dysentery, and induration of the cœcum ; for which he had used calomel, and his mouth had been sore for one week before he came under my care. On admission, he was suffering from pyrexia, induration of the belly, and the usual dysenteric symptoms in an aggravated degree ; and he voided much blood. He was freely bled from the arm, and seemed to be improving daily, till he was seized with Cholera at 10 P. M. on the 17th November : the vomiting was frequent and violent, and he voided by stool a clear water, in which seven or eight small flat pieces of fæces were observed ; they were of natural color, and the size of a flattened pea. This man sunk rapidly, and died at 2 A. M. on the 18th November. On post-mortem examination, eleven hours after death, the subject was found not much emaciated. There was much venous congestion at the base of the lungs. Liver, gall-bladder, and biliary ducts perfectly healthy ; omentum, mesentery, and mesocolon, very vascular. The stomach and small intestines were distended with gas, and externally of a pink color ; their coats very little thickened ; but there was no sort of morbid vascularity of their mucous surface : there was a small quantity of thin subalbid mucus, like flour and water, in the stomach and small intestines. The cœcum was distended with gas : and there was a

small abscess, surrounded with much induration, found between the cœcum and iliacus muscle; and in the abscess a small rounded earthy mass, larger than the stone of an olive. There was no opening from the abscess into the intestine, but a small aperture communicating with the appendix vermiformis: and the natural aperture from the appendix into the intestine, was closed. The whole of the colon, except the ascending portion, was contracted, and a few superficial ulcers were observed on its mucous membrane: there were several dark purple ecchymosed spots, like scorbutic blotches, on the peritoneal surface of the transverse colon; but no corresponding ulcers on the interior of the intestine. Many of the men who came from Europe, in the same ship with this patient, were suffering from a scorbutic condition, on landing. This man in addition to Dysentery, had an abscess exterior to the cœcum; which appears to have been excited by the stone of some fruit having got into the appendix vermiformis, where it caused inflammation, adhesion of parts, and abscess exterior to the intestine.

The only other patient attacked with Cholera, in this ward, in the course of this month; was placed in the opposite side of the room, about 26 feet from the place where Poste died: but he did not come into Hospital

until four days after the death of the last-named man: and although I have no reason to suspect that his disease could be ascribed to any contagious influence generated by the other two patients; I will mention the particulars of his illness.

OBS. CXXIII.—Samuel Cox, *Æt.* 22, arrived from Europe on the 10th November, 1830, and was admitted into General Hospital on the 22nd, with very severe Dysentery, attended by much pyrexia, and some enlargement of the liver. This man was twice freely bled from the arm; and had leeches applied to the belly daily, till the 25th; and the other remedies usually ordered in Dysentery were employed. On the morning of the 26th, some slight appearances of Cholera were manifest; such as anxiety, languor, and exhaustion, with inclination to vomit. He had had ten stools between midnight and 6 A. M.; the evacuations a scanty watery fluid, tinged with blood.

The case was carefully watched, and medicine omitted. From 6 A. M. to 4 P. M. he had 20 stools, the same as above described: anxiety, and debility were much increased. Still we were unwilling to consider it an attack of Cholera, and as the man's ailments had been so distinctly febrile and inflammatory, there was less fear of sud-

den collapse from waiting a few hours. From 4 to 10 P. M. he vomited very often, and had four stools, in appearance like pure water ; he suffered from cramps in the right thigh and belly : the pulse was feeble ; tongue cold, moist, and blanched, or bloodless, like a piece of flesh that had been steeped in water ; and his countenance was expressive of that extreme anxiety and exhaustion so remarkable in Cholera. He was ordered to take two grains of opium with 20 grains of calomel in pills, and immediately after them a cup of hot sago, with $\frac{3}{4}$ iss. of brandy. He soon became warmer, and the pulse revived : the vomiting and disorder of the stomach and bowels were arrested ; he slept, and the Cholera symptoms ceased. Afterwards the dysenteric affection, with bloody evacuations, became again predominant, and was only cured by a long and careful treatment. He left Hospital quite well on the 12th January, 1831.

We have no doubt that debilitating diseases of any sort, and more particularly bowel complaints, render patients in Hospital very liable to attacks of Cholera of the worst description ; but I am unacquainted with the history of any hospital, which affords proof, that the most aggravated forms of Cholera have ever proved contagious.

Mr. Hitchcock's account of the Cholera on board the H. C. ship *Abercrombie Robinson*,

exhibits an excellent example of the proclivity, which debility and impaired health induce to attacks of the worst and most untractable descriptions of Cholera. That ship, direct from Europe, arrived at Bombay on the 4th June, 1828; and sailed from thence for China on the morning of the 10th August: during this long detention in harbour, the greater part of the crew had suffered from the ordinary diseases of Europeans on arrival in hot climates, by which the constitutions of many of the men had become impaired.

On the morning of the 10th August, before leaving harbour, the boatswain had a violent attack of Spasmodic Cholera: and no other case of the disease appeared till the night of the 12th, when two of the crew were taken ill with the low form of Cholera, attended by early collapse, but did not report their illness till next morning. In the course of a few days, 38 men were attacked with the disease.

Of these, ten men were at the time in the sick list, and they all died; ten more were weak and in bad health, in consequence of former illness, while in Bombay harbour—of these seven died, and three recovered; the remaining 18 were well, and at duty when attacked—of these seven died, and eleven recovered. The men who first fell ill, with the exception of the boatswain, had

the low form of the disease, which commenced with collapse : those occurring at a later period suffered from the inflammatory and febrile form of Cholera. Mr. Hitchcock's narrative, is the most complete account I have seen of a local epidemic attack of Cholera : it exhibits all the circumstances connected with the disease on board a ship, whose crew consisted of about 150 men.

When we observe Cholera to have appeared progressively along great roads and navigable rivers ; where frequent communications by travellers, and much commercial intercourse exist ; the idea of contagion is readily suggested, and it is not always easy for any one to give positive proof that such idea is erroneous ; except a person were on the spot, and able to examine all the circumstances connected with the origin of the disease, at the time when it was supposed to have been produced by means of contagion. When Cholera appears in a town on a much frequented road, it is always possible to ascribe its importation to the travellers last arrived. When a proclivity to the disease exists at a station, from some circumscribed endemic influence ; it is evident that when travellers arrive after long journeys, during which they had been deprived of their ordinary domiciliary comforts, and subjected abruptly to change of

air, water, and food : they are under circumstances in some respects resembling our recruits on arrival from Europe, who are prone to the severest forms of the disease. Thus predisposed, it is not surprising that travellers arriving at a town should be the first attacked, when the disease was on the verge of breaking out among the residents. Much the same observation may be made respecting ships trading to a port at which Cholera appears: the arrival nearest to the appearance of Cholera, is likely to bear the blame of having brought the contagion. If we assume that Cholera is contagious, and look only at those circumstances where it is *possible* the disease may have been communicated by personal intercourse; many circumstances may be found where contagion might be *suspected*: but proofs of the fact are wanting in India, while proofs adverse to the belief in contagion are numerous.

The character which the Cholera has assumed in many places in Russia, namely its going through a febrile stage in almost all cases, prior to the fatal termination; would render it possible that some modifications of the fever may be productive of contagion, among a crowded population, where numerous cases of the disease are occurring about the same time. However, the few accounts of the Cholera in Russia, which

I have seen, describe precisely the blue Cholera of India, as predominant among the most early and most frequent cases of each local epidemic visitation; terminating rapidly without re-action, as it often does in Bengal. I observe that Cholera has appeared at some Russian stations, in violent forms; attacking persons residing in distant parts of the town, who had no sort of intercourse with each other, or with those, who could be suspected of affording contagion: this was the case at Riga, as appears by the report of the Inspector *D. Dyrsen*, dated 14th May, 1831.

It is only by the most accurate inquiry at the time when the violent attacks of Cholera happen in a town, that any correct judgment can be formed, whether the disease be contagious or not. A remarkable instance occurred at Razupna, where there appeared strong reason to suspect contagion; but after the most rigid investigation, instituted by Dr. Schumov, it was proved on the clearest evidence, that there was no just ground for asserting that the Cholera had been on that occasion communicated by contagion. The circumstances alluded to, were as follow:

In the year 1830, when the Cholera prevailed at Orenberg, a man went from thence to Razup-

na ; immediately after his arrival at that place, he was attacked with Cholera, and soon died. Four days after this man's death, several of the garrison of Razupna were attacked with Cholera. A most careful inquiry was immediately instituted ; whereby it was proved that not one of those who were taken ill, had seen, or attended on, or been near the man who was alleged to have brought the disease from Orenberg : but on the contrary, several persons who had visited this man and attended on him during his illness, escaped without suffering any sort of indisposition : the result of the inquiry, afforded complete proof that in this instance the suspicion of contagion was unfounded.

I leave the question, whether the Cholera in Russia has been generally contagious ; to the decision of those learned physicians on the spot, who have such ample opportunities of investigating the characters of the disease. Having witnessed the ravages of the Cholera so long in this country, we have the most profound interest in the accounts of the nature and progress of the malady in Europe. When we observe that the inhabitants of the Hill-Provinces of British India, live in small, close, ill-ventilated houses ; and are clothed in woollen garments, which the poorer classes can rarely change ; we might expect to find that if Cholera were hereafter to appear in

those districts, its characters may resemble in every respect the disease now prevailing in Russia. Without assuming that we have sufficient grounds, to deny that Cholera may be contagious in those countries of the north of Europe, where it now rages; we might ask, what good has quarantine and the Cordon sanitaire done? Has it either prevented the appearance of the disease, or retarded its progress in any country: or can it be supposed to have excluded the Cholera from a single house or town, in half as many instances, as we know the severest forms of Cholera to have existed, where intercourse with the sick was in no manner restricted, and still the Cholera was not propagated? Whether quarantine regulations be deemed requisite or not; it is probable that the malignant nature, and rapid extension of the Cholera, may be modified and restrained, by improving the drainage and ventilation of towns and their vicinity; in those parts of the country where Cholera exists, or towards which it seems extending: by repairing the dwellings of the poorer inhabitants, and affording supplies of clothing and food, at such moderate prices as they can afford sufficiently to provide for their wants. Enjoining moderation in laborious occupations, and the strictest temperance in all habits: restricting the working hours in great factories, where the severity of labor, or continuance of occupa-

tion appear very exhausting to human strength. We might also advise early attention to any irregularity of the bowels, whether from diarrhœa or from constipation; and the propriety of avoiding drastic or cold saline purges, whenever a disposition to Cholera has been manifested in the vicinity.

The early symptoms of most cases of Cholera, appearing connected with general disorder of the mucous membranes; it will be proper in cold seasons to observe carefully the progress of febrile catarrhal affections; for the purpose of ascertaining whether any relation exists between those complaints: and to notice their mutual influence on each other.

CHAP. V.

FEVERS.



THE foregoing chapters have occupied so much more space than was expected, that I shall be obliged for the present to limit my observations on Fevers, and to mention only those circumstances in the nature and progress of the Fevers of Bengal, which occur generally; and although perhaps not to be deemed absolutely peculiar to this country; still appear to be so important, as to require a particular detail of the treatment which is usually found most successful. I will take an early opportunity to treat more fully on this class of diseases; and therefore now intend to avoid, as much as possible, any disquisition on the proximate cause of Fevers, or the more abstruse points relative to those diseases. Nevertheless, it may be necessary here to state, that I cannot subscribe to the doctrine which considers Fevers and Inflammation identical; and infers that Fever always depends on local inflammation: for although our Bengal Fevers are probably more generally attended with inflammation of some organs, at particular stages of the disease; and more frequently followed by ob-

stinate and extensive visceral disorders, than the Fevers of any other country; still we have strong evidence that Fever in its early stage, differs widely from the commencement of local inflammation. The most obvious point in which this difference consists; appears to me to be, the extensive, nay almost general affection of the system, with which Fever commences. The indications of disease, evinced by symptoms affecting every part of the body; would lead us to believe that the efficient causes of Fever act primarily on the nervous system: as the earliest phenomena of disease, consist of more or less disorder affecting that system, at a time when other indications of an invasion of disease are obscure. Thus, in incipient Fever there is morbid sensibility to external impressions; transient chilliness; languor, anxiety, and that sort of mental indisposition and loss of energy which render the patient unequal to ordinary attention and application to business: he passes restless nights; there are transient pains in the head and joints, with a sensation of debility, weariness, and soreness at all parts of the body. The secretions soon become disordered; and we very frequently find some degree of coldness of the extremities, and torpid circulation in the minute vessels on the surface of the body; at the same time that the action of the heart and arteries is weak, and sometimes, though not invariably,

more frequent than in health. Compare the incipient stage of fever, with the commencement of local inflammation, or with the symptoms during any part of its progress even to the conclusion; and the difference of the two diseases will be evident. If the early phenomena of Fever above noticed, were acknowledged to depend on inflammation, and we had any criterion by which we could be supported in the opinion that Fever and Inflammation are identical; we should be obliged to admit that when the febrile symptoms are slight, the inflammation is general, affecting all parts of the body; whereas, in most instances when the inflammation is limited to one organ, the Fever is much more intense: and in the progress of Fevers, when local inflammation of particular organs supervenes, (which sometimes happens at a very early period, after the invasion of febrile symptoms,) the character of the disease undergoes a change. No one can observe the manner in which incipient fever affects the system generally, without calling to mind Dr. Fordyce's comprehensive yet concise definition of Fever. "A Fever is a disease that affects the whole system; it affects the head, the trunk of the body, and the extremities; it affects the circulation, the absorption, and the nervous system; it affects the skin, the muscular fibres, and the membranes; it affects the body and affects likewise the mind. It is therefore a

disease of the whole system in every kind of sense. It does not, however, affect the various parts of the system uniformly and equally ; but, on the contrary, sometimes one part is much affected, in proportion to the affection of another part." If any thing can be more complete than this, it is Dr. Southwood Smith's definition ; and the distinctions which he so ably points out between Fever and Inflammation.

It is not in the early stage, alone, of the Fevers of this country, that we are obliged to recognise the difference between Fever and Inflammation ; we have every season opportunities of observing the progress of disease in the latter stages of some of the Remittent Fevers of Bengal ; in which the unfavorable condition of the patient does not appear to depend on any morbid changes, allied to inflammation : and then the disease is most promptly and effectually remedied by those means which are generally of little avail in inflammation.

I shall not here treat of those febrile affections, which are so slight as to require only rest for a few days, with mild purgatives and barley water : such cases do occur in this country ; but the relative proportion of severe and dangerous Fevers, is much greater here than in Europe ; and to those severer cases I would now direct my observations.

The circumstances which appear to me most remarkable in the Fevers of Bengal, are the rapidity with which those diseases proceed towards a fatal termination; and the violence of the reaction at some seasons of the year: while we occasionally find at the same season an equally rapid and fatal tendency, in patients where the symptoms are so obscure, that there is some hazard lest the disease be either entirely neglected, or allowed to make considerable progress before the practitioner adopts a sufficiently active treatment. The early accession of local inflammation to a dangerous degree, and the extent and obstinacy of the visceral disorders, which too often follow Fevers, in this country; may also be deemed peculiar. Typhus is rare in India. In other respects the Fevers of Bengal do not materially differ from the severe febrile diseases of unhealthy seasons in Europe.

The Yellow Fever, so justly dreaded in the western hemisphere, is hardly to be accounted an endemic of Bengal; although we every year meet with some patients in whom an intense yellow suffusion of the skin occurs, in Fevers of considerable severity; and they are mostly cases in which obscure gastro-enteritis has gradually and insidiously crept on to a dangerous extent, without having been counteracted by adequate depletion. If the cerebral

symptoms which attend those cases be not severe ; a prompt and judicious treatment, instituted after the yellowness of the skin, eyes, and urine has appeared, almost always proves successful. But if the cerebral affection, with any tendency to stupor, has existed at an early period, or has taken place to a considerable degree at a later date, in cases where early depletion by V. S. has been omitted; very few of these patients can be saved, by the most active and scientific treatment, which can be adopted after the bilious suffusion with much cerebral affection has taken place. These severe cases happen at all seasons of the year, and the deep orange color of the skin and eyes is occasionally met with in every description of Fever.

When the rainy season has commenced prematurely, and there has been an interval of dry oppressive weather about the middle of the rains, or towards their conclusion : I have in some years observed a large proportion of Fevers, unattended by any very violent or dangerous symptoms ; which were nevertheless accompanied with a slighter degree of general yellow suffusion. This symptom has been more frequent in the cases of natives who suffered from Fever on such occasions, than in Europeans. The natives in particular, often had tardy and imperfect convalescence ; and the health was subsequently in many instances so

much impaired, that I cannot consider their mode of treatment, (consisting of quiescence, abstinence from food, and very little medicine except at a late period of the fever,) the best practice that could be adopted, effectually and promptly to remove the disease, even in their cases. Experience enables me to assert that occasional V. S. to a moderate extent; and use of leeches in the early stages of Fever more frequently than the natives usually have recourse to them, would answer much better.

Several other observations on the nature of these diseases, must remain to be mentioned when we come to speak of the different descriptions of Fevers, on which I propose to offer a few remarks: namely, the Intermittent Fever; the common Continued Fever of the hot season; the Remittent Fever of the rains; and the insidious Congestive Fever of the cold season. Although I state the season at which these descriptions of disease are respectively most prevalent; it must be observed that nearly the same modifications of Fever occur occasionally at all seasons, but they are more frequent at the periods specified; and they appear to me generally ascribable to the existing season, perhaps in some degree influenced by the state of the weather during the three or four previous months.

INTERMITTENT FEVERS.

THE principal points in which it appears to me that the Intermittent Fevers of Bengal, can be deemed to have any peculiar characters, are the great frequency and obstinacy of the visceral diseases, which accompany those forms of fever in this country : and there is hardly any organ or structure in the body, which is not sometimes found affected with disordered function, or permanently diseased in structure, in patients who have been long subject to those Paroxysmal Fevers in which there is a frequent return of cold stage, with more or less regularity in its accessions. In the early stages of Intermittent Fevers, or to speak with more precision, within 2 or 3 weeks of their commencement, in persons of robust habit, there is very often a concurrence of disordered functions and secretions of the digestive organs, and particularly of the stomach, with congestion of the brain ; attended in some cases with tolerably distinct evidence of inflammatory condition either in the cerebral membranes, or in the brain itself. I have found Intermittent Fevers connected with these visceral diseases in Bengal, at various seasons of the year, but more frequently in the cold months. The liver also frequently shews signs of disorder, before patients are much exhausted by the long continuance of Intermittent Fevers ; but

Hepatic Abscess is not a frequent result of the visceral disorder produced by protracted Agues. At more remote periods of the disease, in patients exhibiting symptoms of broken constitution, and who at first sight would be pronounced unhealthy looking persons, the visceral changes of structure which accompany agues, will be more generally found in the spleen; which organ often exhibits various combinations of inflammatory and congestive disease, that terminate in induration of the most obstinate character. The mesenteric glands, and cellular structure at the root of the mesentery and mesocolon, are often found more or less diseased in these protracted and obstinate cases. These phlogoses and congestions of the spleen, are not the exclusive production of long continued disease; for we find them take place very suddenly in the agues which are brought on by much exposure to rain, fatigue, and poor living; and attended with mental despondency. The lungs are not unfrequently the seat of congestions and sub-acute local inflammations, connected with obstinate quotidians and quartans: and it is a remarkable fact, that I have more frequently met with these affections of the lungs in the intermittents during the dry hot season than at any other time of the year; the disease being the result of sudden vicissitudes of temperature, or exposure to the showers often attending north-

westers. In those subjects where I have had occasion to make post-mortem examinations, within such periods that it was probable the visceral disorder co-existent with the ague might be still evident; the lower thin edge of the anterior portion of the lung (and that generally the left lung) was most commonly diseased. I would not be supposed to assert, that the Intermittent Fevers of this country are to be looked on as the invariable concomitants of local inflammations, or diseases of structure; but I know they are very generally found to be so, by those who examine their patients with accuracy; and that obstinate intermittents are most easily and permanently cured by those practitioners who evince the greatest dexterity in detecting the co-existent local disorder, and the greatest skill in removing it. I am quite ready to acknowledge that many incipient intermittents, are perpetuated by, or connected with mere functional embarrassment, which is very often seated in the mucous surface of the stomach and intestines; the indications of the more transient congestions, being in all cases slight and indistinct: and we occasionally, though rarely, see a regular paroxysmal fever of long duration, in which we cannot detect any evidence of predominant local affection.

Malaria has been generally acknowledged the efficient cause of Intermittent Fevers; but

it is abundantly evident to every medical man in Bengal, the very first year that he witnesses the results of the change of season and temperature, between the 20th October and 1st December, that intermittents are intimately connected with the diurnal changes of temperature, which take place at the commencement of the cold season. At that time the evaporation is infinitely less than it had been for the six weeks previously ; and the frequency of intermittents is augmented beyond all proportion, after the cold nights and foggy mornings commence, and when the heat of the days is much decreased. The state of the human constitution induced in Bengal by the previous hot-weather and rains, doubtless paves the way for the influence of the commencement of the cold weather, in the production of many diseases which then prevail. To these causes, and to disorders of internal organs, and principally to a disordered condition of the abdominal viscera, I ascribe the Intermittent Fevers, which occur more frequently in November and December than in all the rest of the year. The existence of malaria is generally assumed, whenever Intermittent Fevers prevail at low damp, and unhealthy situations. The most extended observations substantiate to a certain degree the facts on which the theory of Malaria depends, or the influence of the product of septic decomposition of vegetable matter, in causing Fevers ;

but for its extensive operation in causing intermittents, the concurrence of cold nights abruptly coming after a previous hot season, seems essential. We have abundant grounds to admit the influence of exhalation from decomposing vegetable matters, as one of the most powerful agents in the production of the Remittent Fevers which prevail at the latter end of the rains, and during the hot and close month of October, which intervenes between the rainy and cold seasons. It is well known that parts of a camp, exposed to occasional chilling blasts from the gorge of a mountain pass or ravine; will suffer ten times more from agues, than a similar portion of the same camp, at a lower but more sheltered situation. Many similar facts would oblige us to ascribe the peculiar phenomena of paroxysmal fevers, in a considerable degree, to abrupt changes of temperature. A correct opinion as to the usual causes of Intermittent Fevers, and of the concurrent visceral lesions, must very much influence the measures deemed requisite to prevent the disease, as well as the means best adapted to accomplish a speedy and permanent cure. The above observations on the visceral diseases which accompany Intermittents, refer chiefly to Europeans. In natives of Bengal, of middle age, and moderate firmness of constitution; Agues are frequently found to exist for many months with little apparent visceral derangement of structure : but when in-

termittents are attended with emaciation, and the vigor of the constitution is much reduced; engorgements of the spleen, and at the root of the mesentery, are frequent and obstinate, generally producing dropsies, which are very often fatal.

To decide on the most proper plan of treatment in Intermittent Fevers, we must pay the strictest attention to the state of the patient's constitution, and ascertain if any visceral diseases exist. In recent cases, attended with loaded tongue, foul breath, anxiety, and any degree of hurried respiration; we shall be able to afford little relief to the patient, until a free exhibition of purgatives suited to the particular case, has effectually cleared out the bowels, and improved the state of the secretions. For this purpose, the purgatives selected as most proper, may be given in the intervals of the paroxysms: and these alone will be sufficient in some of the more recent and slight cases, to subdue the disease.

At the same time that we are administering purgatives; if the different stages of the paroxysms be severe, and attended with distressing symptoms affecting either the head, chest, or abdominal viscera; it will be most important that the practitioner make arrangements to be so near his patient when the cold stage comes on, that he may take some blood from the arm at the com-

mencement of the rigor, or just when the coldness and shivering are completely established. The quantity of blood requisite to be taken from a patient in the cold stage of an intermittent, must be determined by its effects on the rigor ; and may be regulated in some degree by the size of the subject, and plethora of his constitution. I know of no rule by which we can estimate exactly how much blood it will be requisite to take from any patient. In general it is sufficient to take 12 or 16 oz. of blood from an European of middle size : and in the most robust I would limit the quantity to be taken at one bleeding during the cold stage, to 20 ounces. In Bengalees I find from four to ten ounces sufficient in general to arrest the paroxysm. I would not advise above 20 ounces to be taken in the cold stage from a European ; or 12 ounces from a native, whether Hindoo or Mahomedan ; unless there existed some cause, independent of ague, to authorize the greater quantity. The benefit of bleeding in the cold stage of Intermittent Fevers, is now so well known in India, that I hardly need say that in the greater number of cases it arrests the paroxysm : and is the best mode of preventing those ulterior visceral engorgements and indurations, which too often prolong the disease till the constitution is ruined. The patient should be permitted to lie quiet for an hour or two after the bleeding, and not heated with too much bed clothes, but allowed a

blanket in the cold season, or a sheet in the hot weather : he should be supplied with a cup of warm tea, or gruel, or thin warm sago soon after the blood has ceased to flow. By these means he will seldom have either a hot or sweating stage, and the majority of patients who have used a sufficient course of mild purgatives before the bleeding, will not have a return of the paroxysm ; provided they are tolerably well furnished with clothing, and not exposed to atmospheric vicissitudes. I usually mix 3 ss. or 3 i. of Spirit. Ammoniaë Aromat. with 3 iss. of tepid water, and have it ready before I open the vein of an emaciated or weakly person who is bled in the cold stage ; but not one patient in 20 is desirous of any stimulant after the bleeding, they generally prefer a cup of warm tea ; and I think there is an advantage in allowing it. If a patient be much covered with blankets, and supplied with tepid drink in abundance, after the rigor has been checked by V. S., and a free perspiration be kept up for some time, he is almost sure to have a return of the paroxysm. The requisites to insure success of bleeding in the rigor, are, 1st, the preliminary course of moderate purging.—2nd, that the blood be taken from a large orifice, quite as soon as the coldness and rigor are fairly established.—3rd, that the patient be bled in the recumbent posture, and no more blood taken than arrests the paroxysm.

The patients, in whom those practitioners who have not often tried V. S. in the cold stage, would expect that remedy to be most beneficial; are robust and plethoric persons: these certainly are the subjects who do most require bleeding, and who suffer most if it be omitted; but they are not the patients in whom the most brilliant success of the remedy is exemplified. I seldom promise such patients that they shall not have one or more returns of the paroxysm, which may require repeated use of the lancet; because I know that in a considerable number of plethoric subjects who have had ague only for a short time, there are congestions and phlogoses in several parts of the system; and when an ague patient is in the interval of the paroxysm troubled with headaches, and morbid tenderness on pressing over the belly, with either uneasiness or pain in the chest; we can hardly expect to remove congestions from all those parts by one small bleeding. I have also found that patients in whom the paroxysm of intermittent, but more especially the cold stage, is attended with vomiting, are not quickly cured by bleeding; but they generally derive much benefit from the repeated abstraction of small quantities of blood during the rigors: the paroxysm being almost always mitigated; and the patients ultimately restored to health, principally by this remedy, and a free use of mild purgatives. Those who vomit in the cold fit, are very

difficult to cure ; and the most part of them derive little or no benefit from quinine.

Although I have above stated, that the most certain and permanent benefit from a single bleeding in the cold fit ; may be obtained by premising a sufficient employment of purgatives : it is not necessary that we should allow patients to suffer the distress of repeated paroxysms of Fever and Ague, pending the use of those remedies ; on the contrary, I think it advisable generally to bleed in the first cold fit in which the patient is seen sufficiently early. It is not with reference to its effects on visceral disorder alone, that V. S. in the cold stage of regular agues is advisable ; but with a view to its checking the existing paroxysm and preventing the return of another : for its influence is most remarkable on those natives in whom no local visceral disease is apparent, and these people are in general permanently cured by one small blood-letting, judiciously employed. At the same time, that we have recourse to purgatives and bleeding in the cold stage of ague : the sulphate of quinine should be administered in the intervals of the paroxysm, in the dose of 2 grains to an adult, every 3 hours for four doses, immediately before the paroxysm is expected. This remedy is of comparatively less efficacy in cases where there is any local inflammation ; when the head is much affected, it is in general improper and

injurious ; and those patients who suffer from vomiting during the paroxysm are better treated at first by a course of mild purgatives ; and, if the spleen be not affected, some calomel or blue pill and compound extract of colocynth are preferable ; after several days persistance in purgatives, and taking some blood from the arm at commencement of the rigors ; it is in general good practice, to give the patient daily in the interval of the paroxysms, some decoction of Bark with salts. My usual formula is,

R. Decoct. Cinchonæ lb. i.

Magnesiae Sulphatis ʒi.

Tinct. Rhei Comp. ʒss. misce. Two ounces are given every 3 hours, till 3 stools are procured.

In some cases of Intermittent Fever, where quinine has failed to produce any good effect ; the paroxysms have ceased in a few days after administering 30 grains of powdered Bark, with ten grains of Rhubarb, and 5 grains of ginger, daily, at 6 o'clock in the morning ; and repeating the dose at 10 o'clock. In other cases where Cinchona has failed, I have seen patients cured by giving ten grains of the kernel of the kutkuleja* nut, with 4 grains of long pepper, and two grains of asafoetida in pills twice a day. This is a very efficacious

* Kutkuleja, or kutoo kurunja, is the seed of the *Cæsalpinia Bonducella*.

prescription for natives in whom the disease has existed a long time, and the feet are slightly œdematous, but visceral diseases not apparent. The liquor arsenicalis, is also very effectual in the slighter cases of Intermittent Fevers of this country, in both Europeans and natives. After purgatives I usually advise it for Europeans, in doses of six drops, in an ounce of very weak infusion of cheraytta; which is to be repeated every 2 hours for four doses, on the days of interval : and for natives four drops every two hours for six doses.

The food of patients suffering from ague unattended with inflammatory symptoms, should be light and nutritious ; and after the free use of purgatives, some wine is in most cases useful. Natives when not using active purgatives, may be advised to eat their usual curries, with rice. Persons who have long suffered from agues at unhealthy stations, are not to expect a permanent cure, without change of residence.

It has been my endeavour to ascertain if there be any circumstances connected with agues, under which we ought to avoid bleeding in the cold stage : I have already stated some descriptions of cases in which the benefit derived from that treatment is neither so immediate nor complete as under other circumstances ; and still we could not doubt that V. S. was the most

proper treatment we could adopt, as the patients who had vomiting during the rigor, had the paroxysm more alleviated by V. S. than by any other remedy, and were permanently cured by its repetition. I have often felt reluctant to bleed emaciated persons, who were reduced by long continuance of the disease ; but in many of those, on whom I resolved at last to try the effect of V. S. or rather, in whom I was obliged to employ that remedy when others had failed : the paroxysm has been arrested by the time that four ounces of blood flowed, and there was no return of the disease ; therefore I may say that in all regular intermittents, with cold, hot, and sweating stages, and tolerable uniformity in the hours of accession ; the practice of bleeding in the commencement of the cold stage has proved always safe ; and generally more successful than any other remedy.

OBS. CXXIV.—John Gregg, *Æt.* 26, a stout and muscular man, of dark complexion, seven years in India : admitted into General Hospital on the 8th December, 1830, on account of Quotidian Intermittent of three days duration ; the accession happening at noon. There is now a slight fulness of the left lobe of the liver, attended with a tense state of the left rectus abdominis muscle. He has some thirst, but no pyrexia at present. Bowels regular.

He was ordered to be bled to $\frac{3}{4}$ xx. on the accession of the next cold fit.

R. Extract. Colocynth. Comp. \mathfrak{g} ss.

Pil. Hydrarg. gr. v.—to be taken at 7 A. M. and repeated at bed time.

Cream of Tartar drink allowed.

December 9th.—The paroxysm came on at the usual hour yesterday, and 20 ounces of blood were taken from a large orifice as soon as he shivered violently. The rigor ceased in five minutes after the vein was opened; he had a slighter hot fit than usual. The pills have not operated sufficiently.

R. Pulv. Jalap. Comp. \mathfrak{z} i. at 7 A. M.

Infusion of Senna with Salts at noon.

December 10th.—He was purged freely by the medicine ordered yesterday, and feels well; has had no return of ague, and is free from pyrexia.

R. Pulv. Rhei. \mathfrak{g} i.

Pulv. Cinchonæ \mathfrak{z} i. misce. To be taken daily at 8 A. M. and repeated at noon.

December 14th.—Continues well; discharged.

OBS. CXXV.—W. Murray, *Æt.* 21; a tall and rather stout man, of light complexion, 9 years in India, was attacked with Intermittent Fever on

the 1st July, 1830; the paroxysm returning every second day about 11 o'clock. He was freely purged by compound powder of jalap; and on the 7th July, he was bled to 14 ounces at the commencement of the rigor of the fourth paroxysm, which arrested the shivering in less than six minutes; he had a very slight feverishness in the afternoon, but no sweating. He took some mild purgative, either of Colocynth and Blue Pill; or of Pil. Rhei Comp. daily. On the morning of the 13th July, a shivering fit of great violence took place at $\frac{1}{2}$ past 7 in the morning; after a restless night, during which he suffered much pain in the liver, and some head-ache.

The arm was tied up and 20 ounces of blood taken from a free orifice, while he was shivering vehemently. The rigor ceased while the blood was flowing, and no hot or sweating stage took place: he had no return of the disease. I have chosen this case from a number, because he was a prisoner in the Great Jail, where his conduct was known; and, because he recovered without any change of residence or habits. The cure of Hospital patients, being much aided by change of residence, improved food, and living in a better house than is the usual lot of such persons at home; the effects of remedies are not so unequivocal in them, as in cases where there has been no change of residence.

OBS. CXXVI.—Jas. Hendy, *Æt.* 16, a tall and delicate lad, who had never been out of Bengal; was seized with shivering at 4 P. M. on the 12th January, 1832, and the cold fit remained about $2\frac{1}{2}$ hours; it was followed by heat of skin and headache, which lasted till past midnight. A perspiration took place towards day-light, and he got up on the 13th tolerably well; but had a troublesome short cough all day, and the forehead was hot; but he ate his usual food.

The rigor returned with much severity at 4 P. M. on the 13th, 14th, and 15th—and the hot stage became more intense each day. Still as he suffered little during the forenoons, except from cough, and was tolerably cheerful; the only medicine given was one dose of castor oil on the 14th; and some paregoric in the evenings after the cold fit commenced.

On the 16th January, he entirely lost his appetite, felt weak all day; and appeared so lank and ghastly, that he was considered seriously ill. I was then sent for, and saw him at 4 P. M.; he was pale and his features shrunk, he had a frequent slight cough, his pulse was 116 and feeble, the nails blue, hands cold; and a slight shivering had commenced: the tongue was moist and coated with grey mucus in the centre. The spleen was slightly enlarged. As soon as the

rigor increased, I opened a vein, and took five ounces of blood from the arm; and gave him at the same time 3 ss. of Spirit. Ammoniaë Aromat. in a wine glass of tepid water. The rigor ceased while the blood was flowing; he had very slight pyrexia in the evening; and slept better than usual at night. The relief from the V. S. was remarkable and immediate; he had no return of the ague after being bled, and the cough was almost entirely subdued.

On the 17th January, he appeared in every respect better, and took a dose of castor oil, which purged him freely. On the 18th, he had a dose of compound powder of jalap, and four leeches were applied over the region of the spleen. The Spleen Mixture was administered daily for a fortnight, and he recovered good health.

OBS. CXXVII.—A lady, aged 32, of small stature, and active habits, many years in India; was attacked with Tertian Intermittent, on the 2nd November, 1830. The rigors most vehement and distressing; attended with head-ache and pains in the loins; hot stage long and severe. I was called to her on the 4th November, when she was in the hot fit of the 2nd paroxysm; the pyrexia was then very high. In the interval after this, she took an active purgative, and I intended to have bled her at the next cold fit, but was prevented from

arriving until the rigor was over. She suffered a most intense paroxysm : after which the purgative was repeated, and I took care to be present at the commencement of the 4th paroxysm, which began just as violently as the former. When she was shivering most vehemently, and though covered with several blankets, calling aloud for more bed-clothes ; I tied up the arm, and made a free orifice in the vein. Thirteen ounces of blood flowed quickly, and the relief was almost instantaneous ; the rigor ceased, and she had the bed clothes removed, except one blanket. Neither hot nor sweating stage followed, and she had no return of the disease. No medicine was requisite after the bleeding, except a few mild aperients of Blue Pill, and Compound Extract of Colocynth.

OBS. CXXVIII.—Mrs. Stuart, rather a fat woman, of light complexion, 10 years in India, came under my care on the 28th December, 1829, having Quotidian Ague of five weeks duration ; the rigors exceedingly severe, the head affected with giddiness ; and she had a tumid spleen. She had been very judiciously treated with purgatives, Quinine, and leeches to the head. When the rigor, on 28th December was fully formed, I bled her to 14 oz. The rigors ceased in $6\frac{1}{2}$ minutes ; she had slight fever for rather more than an hour, and no sweating stage ; purgatives were administered, and leeches applied twice, to the region of the

spleen. She had no return of ague after the V. S., and remains well.

OBS. CXXIX.—Mongul Khan, a tall and thin Mahommedan, 32 years of age, who had been for two months a prisoner in the Great Jail, was attacked with Intermittent Fever on the 12th October, 1831; his tongue was white and moist, and there was slight redness of the eyes, but he was a healthy looking man, and no visceral disease was evident. His principal complaint was of head-ache and pain in the loins during the cold stage.

A dose of compound powder of jalap was given early on the morning of the 13th, and 5 grains of blue pill with as much compound extract of colocynth, every night at bed time; by which a moderate purgative effect was kept up: but his complaints were not alleviated; and the ague returned daily at about 10 o'clock A. M. When the fourth paroxysm commenced on the 15th October, and he was shivering much, he was bled from the arm, the effect of which was almost immediate; the orifice being very free, six ounces of blood were quickly obtained, and the shivering ceased in less than four minutes after the vein was opened: he had neither hot, nor sweating stage; and no return of the disease afterwards. No other remedies were given; and as he remained in the jail, we know that his cure was permanent.

OBS. CXXX.—Ramdhun, a Hindoo, aged about 34, a firm and muscular man, generally healthy ; was exposed to the sun for several hours, while fishing on the 30th July, 1831 ; and next day was attacked with high fever and severe head-ache, for which he took the usual native remedies, consisting of a few mild aperients ; and he strictly avoided all food ; but without benefit. He had a severe fit of shivering for one hour and 35 minutes every 2nd morning, at 5 A. M., the rigor being followed by great heat of skin, intense head-ache, and pain in the loins ; the pulse was rapid and not very strong ; he suffered much from anxiety and extreme thirst. The heat of the body in the intervals of the rigors remained uniform, except for about half an hour at 5 P. M. daily, when a slight degree of coldness took place round the knees and inside the thighs ; but at the same time, his face, head, chest, hands, and feet continued hot. One of this man's relations, who is remarkably clever and well informed on medical subjects, and who had heretofore treated him, gave me the above history of the case, when I was first called to see him, on the 7th August. The patient was then complaining of extreme thirst, with distressing anxiety, and a dry heat of skin ; his pulse was 132 and rather weak, and there was a slight degree of redness of the eyes ; belly rather tense. The paroxysms had been so uniformly aggravated on

each return of the rigors, that his friends were apprehensive of a fatal termination during the paroxysm which was expected on the following morning. His bowels had not been moved this day, therefore he was made to take immediately, 10 grains of calomel with 4 grains of compound extract of colocynth, and one grain of camboge; which operated powerfully in the afternoon, and arrangements were made to take blood from the arm on the recurrence of the cold stage.

On the 8th August the coldness came on as usual at about $\frac{1}{2}$ past 5 A. M. and the shivering was most vehement, attended with extreme anxiety. When the rigor was completely established, a large orifice was made in a vein, and as soon as $5\frac{1}{2}$ ounces of blood had flowed, which was in little more than three minutes, the rigor ceased abruptly. At 8 A. M. he took a dose of infusion of senna with salts, which operated seven times, and he remained cool all day; but there was no perspiration on the skin, and his pulse was 128, but soft. In the afternoon he was ordered to take every hour, a table spoonful of a solution of 2 grains of Tartar Emetic in one pint of water. On the 9th August he was much better in every respect, there was a slight moisture on the skin, and all febrile symptoms had abated. His friends acknowledged that his life had been saved by the bleeding, to which they were not

at first willing to let him submit, had they not considered the danger extreme; for they looked on his case as one of that severe description of Fever, which they denominate *Biggar*, as it differed from the usual course of that fever, only in the very distressing rigor which had returned every 2nd day prior to the V. S. This man had not the slightest return of cold shivering, nor any bad symptom after the bleeding. Some Quinine was given daily in the forenoon; and Colocynth with Calomel, at bed-time, to keep his bowels free. On the 15th August, he had no complaint, except some slight remains of debility: and his health has remained good ever since.

OBS. CXXXI.—Mich. Murphy, *Æt.* 40, a stout and muscular man, of dark complexion, seven years in Bengal. Had a severe paroxysm of Intermittent Fever, on the 14th July, 1831; the rigors lasted nearly two hours. The paroxysm returned with equal violence about 8 A. M. on the 15th; and when I saw him at noon, the hot stage was near its conclusion; the belly rather tumid, but soft and elastic; he was ordered to take

Extract. Colocynth. Comp.

Calomel. āā ʒ ss. in pills, at 2 P. M.

July 16th.—The pills operated twice; he was affected with much lassitude and yawning, dur-

ing the forenoon; and the rigor commenced at 1 P. M., attended with severe head-ache. As soon as he was quite cold, and shivering vehemently, 20 ounces of blood were taken from a free orifice. The rigors decreased while the blood was flowing, and ceased altogether in ten minutes from the time of beginning to tie up the arm. The head-ache was greatly alleviated by the bleeding. He had no stool this day, therefore an Enema was administered two hours after the rigor ceased; and he took a drachm of compound powder of jalap.

July 17th.—He has been purged seven times. The blood taken yesterday, is not cupped, but it has a peculiar appearance; a soft bluish coat having formed above the cruor; the serum does not differ from that of a healthy person.

R. Extract. Colocynth. Comp. ʒ ss.

Pil. Hydrarg. gr. v.—to be taken at 6 A. M.

The paroxysm returned at 9 o'clock this morning, and he was bled to 12 ounces. The rigor ceased sooner than yesterday. About two hours after the bleeding, he was seized with vomiting and severe pain at the scrobiculus cordis, attended with great anxiety; therefore he applied eight leeches to the epigastre, which relieved the pain, but he became very languid. A profuse

perspiration took place, and continued all the afternoon; the pulse was rapid and small; the countenance sunk and ghastly, as in Cholera, and he felt an inclination to vomit. I saw him in that state at 5 P. M. and ordered ten grains of calomel, with one grain of opium, in a pill; and three ounces of wine with sago.

At half-past 10 P. M. he had recovered from the symptoms threatening Cholera, and had one free stool; he took two grains of Quinine in solution.

July 19th.—He was affected with slight rigor at noon, which did not last ten minutes, and was followed by very little pyrexia: he again took two grains of Quinine in solution, and had no other return of ague. Mild purgatives were used daily, and he was pronounced well on the 1st August, 1831. It is worthy of remark, that a few cases of Cholera took place in the vicinity, at the time that this patient evinced a tendency to the low form of Cholera with collapse, on the 17th July. The leeches were applied without my knowledge; at the sweating stage of the paroxysm, when depletion of any sort is injudicious; and when, I believe, that a small quantity of opium, or some brandy, or sago and wine, would have been much more proper.

There are some circumstances, under which we find patients with Fever do not bear blood-

letting well ; for example, persons in the remote stages of those obscure Fevers, which are slowly produced by fatigue, privations, and exposure to atmospheric vicissitudes. The more active diseases which take place soon after the above exciting causes, and in which severe febrile symptoms are early developed ; bear depletion of every sort well, and urgently require the lancet in their incipient stages. But active depletion, and particularly blood-letting, is often not well borne in those Fevers which come on so slowly that the patients continue their usual occupations ; and if they be soldiers, go on with their usual duties ; the apparent disorder not being great, though pyrexia creeps on gradually for two or sometimes three weeks, attended with mental torpor, indisposition to business, and a slight dull pain in the forehead. When a febrile state of this sort has existed for many days, in persons suffering from mental anxiety ; the disease is very difficult to treat : and if an Intermittent should occur after a preliminary indisposition, such as is alluded to above ; I would advise caution in the use of the lancet. When an army is employed on active service, in an unhealthy climate ; agues must happen among men whose health has been previously so much impaired, that blood-letting is a doubtful remedy : consequently we may sometimes meet a number of patients labouring under Intermittent Fever, compli-

cated with constitutional disorder, which renders that remedy as inappropriate for the majority of those cases ; as it is excellent and efficacious, in the treatment of Intermittents in general. These observations, will I trust, be sufficient to guard against the indiscriminate use of the best remedy we possess in Intermittent Fevers.

There are two sources from which I am apprehensive that Dr. Mackintosh's excellent plan of bleeding in the cold stage, may be brought into disrepute ; 1st, from the operation being trusted to careless assistants, who do not bleed the patient at the proper moment, namely, the *commencement of the rigor* ; 2nd, from a much larger quantity of blood being taken, than is requisite to produce a beneficial effect ; therefore I have limited the quantity I advise to be taken at one time. I trust, it will be sufficiently evident from the foregoing pages, that I do not propose any exclusive practice, without due consideration of the nature of the disease, and condition of the patient. I have already stated, that slight cases of Intermittent Fever dependent on gastric disorder, may be cured by mild purgatives alone : and I see no cause for hesitating to avail ourselves of the efficacy of Quinine, Bark in Powder, Arsenic, or the Kut-kuleja ; in all those cases where there is any particular reason for preferring those remedies, before the

lancet is tried. Having stated the circumstances under which V. S. in Intermittents, appears to be of doubtful propriety ; I may safely say, that in general I find it a safe and effectual remedy.

CONTINUED FEVER.

The continued fever of the dry hot season in Bengal, is generally marked by the abruptness of its attack, and the violence of its symptoms. The morbid heat, increased frequency with fulness of pulse, ardent thirst, and head-ache, are among the most prominent symptoms ; there is sudden prostration of strength, and in some cases a degree of stupor ; the disease is sometimes ushered in by rigor, and occasionally the attack commences with violent and long-continued vomiting of green bile. Local inflammations are manifested very early : the organs principally affected are the brain ; the stomach ; the cellular structure around the duodenum, and at the root of the mesentery ; and the liver. The progress of the disease, if left without treatment, is usually rapid, and the termination fatal. The patient is distressed by restless nights, and after some time delirium ferox takes place ; which is followed by stupor that ends in death. In this disease, the heat is almost always uniform, and above the standard of health. The usual causes of this fe-

ver, are exposure to the sun, violent exercise in the hot season, bathing when heated, and excessive use of wine or spirits. There is a remarkable proclivity to this form of fever, in plethoric Europeans recently arrived in India.

Active medical treatment is requisite; and if adopted early, it is in most cases successful. European patients of middle stature and unimpaired stamina, suffering from a severe attack; should be bled to lb. iss., or lb. ii., as soon as possible. Twelve grains of Calomel, and as much Compound Ex. of Colocynth, should be given soon after the bleeding; and followed by infusion of Senna with salts in six hours. Tranquillity and total abstinence from food are to be enjoined; and there is no advantage in making the patient drink large quantities of fluid. A cup of tea may be allowed night and morning, and a wine-glassful of toast-water once every hour. If there be much thirst, with any degree of dryness of tongue; two grains of Tartarized Antimony are to be dissolved in a pint of water, and a table spoonful of the mixture, (half an ounce) given regularly every hour. This mixture may be cooled with Saltpetre. In four hours after the first bleeding, if Fever continue, the vein is to be opened again, and blood taken to the extent of 8, 12, or 20 ounces; for the purpose of subduing the morbid arterial action, and reducing the Fever. In eight hours more, if

the symptoms be not much abated, a third bleeding should be ordered; but if pyrexia be moderated, and still head-ache, or morbid heat of forehead continue, leeches are to be applied to the temples: and a purgative is to be repeated, if the first dose have not operated, reely. In all violent attacks of this Fever, the head ought to be shaved, at the time that the earliest treatment is commenced: in slighter cases, where there is at first reason to hope that the Fever may be easily subdued, we would omit shaving the head; but whenever the Fever continues for several days, even in a slight degree, and is attended with any heat of forehead, or any cerebral symptoms; it will be found requisite to shave the head, and repeat the leeches according to the nature of the symptoms. It is impossible to say, how often repetition of V.S. or leeches, may be requisite in particular cases; the objects are, effectually and permanently to subdue the morbid action of the heart and arteries, and to remove the fever; and until these are accomplished, we must not deviate from a decided antiphlogistic treatment. At late periods of the disease discretion is requisite, not to use such repeated depletion by V. S. and leeches as shall be injurious. Purgatives must be repeated, so as to procure not less than four free evacuations daily: and we may be sure, that there is need of persistance in moderate purgatives, until fulness and tension at

the epigastre, and morbid heat of belly are removed. As long as so much arterial action and heat of skin exist, as to render blood-letting from the arm requisite; Saline purgatives with Senna had in general better be used in the mornings, and Calomel or Blue Pill at night: because the vascular system is more effectually drained by saline purgatives, which produce copious stools. At later periods of the disease, when morbid arterial impetus is subdued, and plethora no longer exists; but the pyrexia, though moderated, seems to be kept up by local congestions, with interstitial effusions, the result of inflammation; it is desirable to change the purgative, and employ Compound Powder of Jalap with Scammony in the mornings, giving Blue Pill 10 grains, with Compound Extract of Colocynth six grains, at bed-time: a quarter of a grain of Tartar Emetic may be added to the above pills when the patient's stomach will bear it.

When the Fever has not come under treatment early, and blood-letting to a sufficient extent has been omitted; or, when from any cause the patient sinks into a state forbidding active measures of depletion, although some remaining disease is evinced by symptoms of oppression of the brain and præcordia: relief is most effectually afforded by giving twenty grains of Calomel at bed-time, and a moderate purgative of

Compound Powder of Jalap, and Compound Powder of Scammony (Ph. Ed.), in equal parts, on the following morning.

Cases sometimes occur, in which the cerebral symptoms and oppression at the præcordia, are not alleviated by the first or second bleeding, and active purgative; although the morbid heat and violence of arterial action are in a great degree subdued; and at the same time there is much lowness, and a rapid pulse; affording reason to fear extensive effusion from the minute vessels of important organs, especially in the brain; which will very soon destroy life. If the symptoms of debility have come on suddenly; after the free action of purgatives, whereby the fulness at the epigastrium has been lowered; it is sometimes justifiable to suspend the administration of active remedies for a few hours, to let the patient have a small cup of gruel, and to give a table spoonful of camphor mixture every hour; in hopes of a beneficial effect from the remedies already taken. But in general, the means most likely to succeed, are, the repetition of topical blood-letting, regulated by the strength of the patient, and the nature of the symptoms: a moderate purgative of Compound Powder of Jalap early in the morning; followed by ten grains of Calomel and one grain of Aloes, at twelve, and repeated at 3, and 6 o'clock P. M. Twenty grains

of Calomel are to be given at 10 P. M. ; and one grain of opium should be added, if the cerebral affections be not of a character to forbid it. The symptoms which prohibit the use of opium, are, heat of forehead greater than natural, and a loaded dry tongue. These large doses of Calomel must be repeated daily until salivation take place ; and then we can afford no more assistance of an active description : our best remedies have been pushed on until they can be continued no longer ; what remains to be done is merely to keep up a moderate action of the bowels, and supply the patient with tea, and as much thin gruel as is sufficient for a fever patient to live on, which is about half a pint in the twenty-four hours. At the same time, we pay great attention to the changes which take place : if the evacuations be too profuse, a little wine may be added to the gruel, twice a day, or oftener ; and perhaps six grains of Blue Pill with half a grain of opium may be requisite to moderate the purging. It is not less important, to attend to any rising of the pulse, and symptoms of local inflammation ; which even at this remote period may require to be subdued by the timely application of a few leeches : and if a complete remission take place, the tongue being moist and not much loaded, and the extremities covered with a cold perspiration ; a few small doses of Quinine may be administered.

There is another condition of Fever, in which the efficacy of a large dose of Calomel is admirable ; and that is in cases where the cure has been attempted by active and repeated purgatives, preceded by one moderate bleeding, or where the lancet has not been used even once : the patient after being purged for several days, is weak and anxious, has low febrile symptoms, and is passing nothing by stool but a brown water. A scruple of Calomel with a grain of Opium at bed-time, often entirely alters the character of such a case ; next morning we find that the patient has slept, is cheerful, and has a moderate warm perspiration, with a tranquil pulse ; and the stools are feculent : he requires very little more medicine except half an ounce of Castor Oil, or a small dose of Jalap in the morning ;—half of the above dose of Calomel and Opium at bed-time for one night more ; and observance of a proper diet, and mild aperients, for ten days.

OBS. CXXXII.—McGee, aged 21, a middle-sized and muscular man, recently landed from Europe, was admitted into Hospital at 4 P. M. on the 19th April, 1826. His illness commenced with a transient rigor two days ago, when on guard : he had a purgative in the Fort, this morning, which has operated. The usual symptoms of ardent Fever are now present, with head-ache and flushed face.

V. S. ad lb. iss.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss. statim.
Apply 12 leeches to the temples at 7 p. m.

April 20th.—The blood is buffy and cupped; he has been freely purged during the night: his face is still flushed, and tongue loaded with white mucus; head-ache continues.

Apply 20 leeches to the nucha, and let him have a tepid Bath four hours after their removal.

R. Extract. Colocynth. C.—Pil. Hydrarg. āā gr. v.
Cambogiæ gr. i. misce fiant Pil. ii. statim sumend.

Vesper.—He has had four watery stools; the head-ache and flush of face are unabated, although the leeches bled very freely; the tongue is coated with white mucus, and the febrile symptoms generally, appear to have increased since the morning; leaving room to regret that the lancet had not been again used this morning.

Repet. V. S. ad lb. iss.

R. Extract. Colocynth. Comp. gr. vi.
Calomel.—Pulv. Antimon. āā gr. iii.
Misce fiant Pil. ii. H. s. sumendæ.

April 21st.—The blood taken last evening is buffy, but not cupped; he has been purged often during the night. The pulse is now 108 and

rather full ; the face flushed, tongue brown and moist.

Apply 8 leeches to the temples.

R. Extract. Colocynth. Comp. gr. viii.

Cambogiæ gr. i. fiant Pil. ii.—to be taken at 6 A. M.

Vesper.—There is a very slight increase of fever this evening, with quick pulse, but not much morbid heat of skin.

R. Pulv. Jalap.—Magnesiæ aa ʒ ss.

April 22d.—He had many watery stools during the night, and is now free from head-ache : there is a remission of fever, but he feels very weak ; the face is still rather florid, tongue moist and slightly coated with mucus in the centre.

R. Infus. Sennæ Comp. ʒ iss.

— Gentian. C. ʒ ss.—Magnesiæ Sulphatis ʒ ii.

Tinct. Sennæ ʒ ss. misce,—to be taken at 6 A. M.

R. Quininæ Sulphatis gr. ii.—Aquæ Cinnamon. ʒ i.

Acid. Sulph. Dilut. gtt. iv. misce.

To be taken at 10 o'clock A. M.

Vesper.—The medicine purged him three times since morning. At 4 o'clock a sudden hæmorrhage from the nose took place, reported to be in quantity not less than a pint; and he is now quite cool. Medicine repeated as last evening.

April 23rd.—He is free from Fever; had two copious stools in the course of the night. Treatment repeated.

Vesper.—There has been a slight return of pyrexia for about an hour, which has now subsided. No medicine this night.

April 24th.—He slept well, and is improving; his appetite has returned; there is a little white mucus on the centre of the tongue, its edges are red. Repeat the Purgative in the morning, and Quinine at 10 o'clock, as on the 22nd.

April 25th.—He was very freely purged, and had no accession of fever last evening.—Half the dose of Purgative was ordered to be given every morning early; and the Quinine repeated daily at 10 o'clock.

April 27th.—Convalescent. Quinine omitted. Purgative repeated.

Discharged on the 29th April.

OBS. CXXXIII.—J. Splint, *Æt.* 37, a stout man, recently arrived from Europe, was attacked on the 6th June 1827, with Fever, not preceded by rigor. Admitted into General Hospital on the 8th, in the afternoon, suffering from ardent pyrexia and severe head-ache; pulse 92 and full.

He has a scar indicating the seat of severe injury of the head, which he received at a former period.

V. S. ad lb. i.

R. Calomel.—Extract. Colocynth. Comp. āā gr. xii.

June 9th.—He has been purged, but the Fever is unabated; face flushed, pulse 96, blood not buffy, the cruor is florid; he appears stupid.

Repet. V. S. ad lb. iss.

Infusion of Senna with Salts ordered to be taken immediately.

June 10th.—Blood buffy; he was purged six times, the stools of natural color and copious; pyrexia moderated, but a slight head-ache remains.

Apply 16 leeches to the nucha.

R. Calomel.—Extract. Colocynth. Comp. āā gr. v.

Vesper.—He has had four stools, of dark colour; the pyrexia has subsided.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. H. S.

June 11th.—The medicine operated twice; he rested badly, and has a slight return of pyrexia; pulse full.

Apply eight leeches to the temples.

Capiat Olei Ricini $\frac{3}{4}$ i. at 6 A. M.

June 12th.—He has been purged, and is free from pyrexia; the tongue is white.

Oleum Ricini ζ i.

June 13th.—Head-ache abated, and he is well. Ordered to take 12 grains of Compound Rhubarb Pill, daily. Milk diet allowed.

June 20th.—Continues well. Medicine omitted; but on account of having had a severe injury of the head, he is retained in Hospital for observation. Mutton and soup allowed for dinner.

June 27th.—He is found this morning cold, weak, and anxious, like a person in the incipient stage of Cholera; his tongue is cold and moist: on inquiry we found he had been purged in the night, and also had vomited. He was ordered to take ten grains of Calomel with one grain of opium in a pill, and the next day he was well.

OBS. CXXXIV.—M. Mayne, *Æt.* 26, a robust man, of light complexion, 14 years in India: was admitted into General Hospital at noon, on the 30th June, 1828, having been ill with Fever for seven days; during which he has taken no medicine except Salts. He is now suffering from slight pyrexia: he has a frequent pulse, and the tongue is loaded with white mucus; there is also pain at

the scrobiculus cordis, and general fulness of the belly, with some enlargement of the liver.

V. S. ad $\frac{3}{4}$ xx.

R. P. Jalap. Comp. 3 i.—to be taken at noon.

Cream of Tartar drink allowed.

Apply 12 leeches to the right hypochondre at 4 p. m.

July 1st.—The blood is buffy, and cupped; he has been purged six times, and is better; pulse moderated; fulness of belly diminished.

Apply 12 leeches over the region of the liver.

R. Calomel.—Extract. Colocynth. Comp. āā gr. v.

July 2nd.—He has been purged six times; the pyrexia is abated, and he is free from pain; the tension of belly is less.

Apply eight leeches over the region of the liver daily.

R. Extract. Colocynth. Comp. Θ ss.

Pil. Hydrarg. gr. v. misce fiant pil. ii.

Two pills to be taken every morning early.

July 8th.—The tension in the region of the liver is relieved; he feels well.

Former medicine omitted.

R. Pulv. Jalap. Comp. 3 ss.

July 12th.—Discharged well.

OBS. CXXXV.—I. Archibald, *Æt.* 24; of a middle size and dark complexion, 4 years in India, and following an active life, in charge of steam engines: was admitted into Hospital at 7 A. M. on the 17th May, 1830. He stated that he had been feverish, and had vomited often during the last 10 days; in which period he had eight leeches applied to the head: acknowledges that he had been drinking intemperately just before this illness commenced. His hands were cold yesterday, but there was no rigor; on which account he says that he took ten Quinine pills in the course of the day. He has now a full hard pulse, hot forehead, and bloodshot eyes; the urine is high-colored and scanty, and he suffers much from thirst: the belly is hard, and right rectus muscle more tense than the left.

V. S. ad lb. ii.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss.

To be taken in pills at 7 A. M.

Pulv. Jalap. Comp. ʒ i. at noon.

Cream of Tartar drink allowed.

Vesper.—The blood is florid, but not buffy; he has had five copious, watery, black stools; the morbid heat continues, and is most intense about the head; pulse full; his manner and expressions are hurried and anxious.

Rept. V. S. ad lb. ii.

R. Calomel. ʒ i.

Extract. Colocynth. Comp.

—— Hyoscyami āā gr. iv. to be taken in pills at bed-time.

May 18th.—Pyrexia continues; the head is still hot, and belly hard, more especially towards the right side; the stools are scanty and nearly black; the tongue is moist and little coated with white mucus.

Head shaved.—Rept. V. S. ad. lb. iss.

A purgative Enema was administered,—and ʒ i. of Compound Powder of Jalap taken at 6 A. M.

Ten leeches applied to the temples at noon, and an ounce of Castor Oil taken at the same time.

Vesper.—The medicine operated seven times freely; the evacuations are a dark-green feculence, with a few pale yellow streaks; pulse 110 and soft: he is cooler, but slight heat of head remains; the tongue is moist and clean; his speech is hurried, and appearance anxious.

Repeat the pills as last night.

Cold water and vinegar applied to the head.

Cream of Tartar drink allowed.

May 19th.—No sleep during the night; he had several scanty stools of natural color. Pulse 122 and rather hard, and his head is hot;

the belly is not tumid, but some hardness is observed towards the region of the liver; he evinces great anxiety, and frequently asks for both food and drink.

Apply ten leeches to the belly, and six to the temples.

Pulv. Jalap. Comp. 3 i. was ordered at 6 A. M.

A Purgative Enema at 10 o'clock,—and 1 ounce of Castor Oil at noon.

Vesper.—He has had four, free black watery stools; is much cooler, and less anxious; pulse 108, and unsteady.

R. Calomel. gr. xii.

Extract. Colocynth. Comp. gr. vi.

—— Hyoseyami gr. iv.

To be given in three pills, at bed-time, and repeated at midnight if he should not sleep.

May 20th.—He had one scanty stool in the night, which is partly figured; had no sleep, and is exceedingly anxious and talkative about his own illness: apt to faint when he rises to stool. Pulse 120 and rather hard; tongue moist, and little loaded with white mucus; there is still some heat of head.

V. S. ad. lb. i.

R. Pulv. Jalap. Comp. 3 i. at 6 A. M.

Apply ten leeches to the belly at noon,—and give Ol. Ricini $\frac{3}{4}$ i.

A Purgative Enema at 2 P. M.

The blood on cooling was not buffy ; but the surface of the coagulum was contracted.

Vesper.—The medicines have operated freely, and he has voided large masses of dark-green fæces: he feels much better; his head is cold, belly cooler and softer. Pulse 108.

R. Calomel ʒ i.

Extract. Colocynth. Comp.

—— Hyoscyami āā gr. iv. ℞. s.

May 21st.—No sleep; the medicine procured several loose feculent evacuations in the night, of natural color; his gums are swollen; the tongue is moist and nearly clean; pulse 108. Some morbid heat of head and belly remain, and there is strong pulsation in the abdominal aorta.

Apply six leeches to the head, and ten to the belly.

R. P. Jalap. Comp. ʒ i. at 6 A. M.

A Purgative Enema every three hours, till it operates.

Vesper.—The alvine evacuations through the day have been scanty and insufficient; pulse 126, and there is some anxiety; the heat of head is not increased.

Apply a blister to the nucha.

R. Pulv. Jalap. Comp. ʒ i.—Tinct. Jalap. ʒ ss.

P. Scammon. Comp. ʒ ss.—in Aquæ Menth. Pip. ʒ i.

May 22nd.—He has been delirious all night, and is in the same state now ; he has had one copious foetid stool in bed ; pulse 140 and unsteady. At half past 10 A. M. he became restless and quite frantic : he appeared as if in pain, but did not complain ; and if not held he would have got out of bed. He remained in this state of furious delirium until he died, at half past eleven o'clock.

On dissection, $4\frac{1}{2}$ hours after death ; the subject was not much emaciated. Effusion of blood was found in the intergyral spaces of the left hemisphere of the brain, at its upper part. 3 ii. of serum were observed in the lateral ventricles, and 3 iss. of clear serum beneath the tentorium. The liver was sound and healthy, the gall-bladder contracted to the size of the end of a finger, and covered with a false membrane : the biliary ducts were pervious. The duodenum was thickened, indurated, and of pale color, probably the result of disease of long standing : there was an effusion of about 3 iss. of serum, resembling a tremulous jelly, between the duplicature of mesocolon, at the part where it crosses over the duodenum ; the effused serum was tinged of a green color, from transudation of bile. The small intestines were transparent and thin.

The vomiting and other symptoms at the commencement of this man's illness, leave no

room to doubt that the early stage of his Fever was connected with inflammation of the cellular structure about the duodenum; the remains of which disease was observed on dissection.

OBS. CXXXVI.—C. Pounds, aged 27, a large and robust man, of dark complexion, who had resided 18 years in Bengal: was admitted into General Hospital at noon, on the 18th April, 1830. He had been afflicted for six days with severe pains in the head, which were said to arise from exposure to the sun. He had usually enjoyed good health in India, but for two years past had been subject to pains in the region of the liver. On admission, he was suffering from pyrexia, attended by a loaded tongue, and full pulse, as well as the head-ache.

V. S. ad lb. ii.

R. Calomel.—Extract. Colocynth. Comp. āā gr. viii. at noon.
Pulv. Jalap. Comp. 3 i. at 3 p. m.

Vesper.—The blood is buffy and slightly cupped; he has had no stool. There is morbid heat of head; the tongue is moist, and loaded with brown mucus. Pulse 60 and rather full.

Head shaved,—and 18 leeches applied to the nucha.

A Purgative Enema ordered.

R. Calomel.—Extract. Colocynth. Comp. āā 3 ss.
Extract. Hyoscyami gr. iv. in pills at 8 p. m.

April 19th.—Slept little, and was purged four times ; the belly is soft, flat, and not pained by pressure ; the head-ache is not alleviated, but the scalp is cooler, and there is less morbid heat of surface generally ; the pulse is 66 ; tongue as above stated, but almost dry : he has been troubled with much nausea, and a slight cough all night.

Apply 16 leeches to the temples.

R. Pulv. Jalap. Comp. ʒi. at 6 A. M.

Infusion of Senna with Salts at noon.

Vesper.—The medicines have operated very freely, and the evacuations are nearly of natural color ; there is no pyrexia at present ; pulse 74 and soft ; tongue less loaded. Any movement of the head excites pain.

Apply 12 leeches to the temples.

R. Extract. Colocynth. Comp.—Calomel.

——— Hyoscyami āā gr. iv. H. S.

April 20th.—He had little sleep, and was somewhat delirious in the night ; was purged several times ; the belly is soft ; head rather hot, and there is some morbid heat of skin. Pulse 66 and moderate ; tongue dry, rough, brownish, and very little loaded ; gums slightly sore.

V. S. ad lb. i.

R. Extract. Colocynth. Comp. ʒ ss.

——— Pil. Hydrarg. gr. v.—at 6 A. M.

Pulv. Jalap. Comp. ʒ i. at noon.

Vesper.—Blood not buffy ; he has had four stools ; head-ache much decreased, and he is cool ; pulse 75 and soft.

Apply four leeches to the temples.

R. Extract. Hyoscyami.—Pil. Hydrarg.

——— Colocynth. C. āā. gr. iv. in 2 pills at bed-time.

April 21st.—Slept little, and had several free stools ; pulse 76 and soft ; skin cool : he has hardly any head-ache : cough increased, and he expectorates a bloody mucus ; belly inelastic, but there is no pain or hardness in the region of the liver.

Apply ten leeches to scrob. cordis.

R. Pulv. Jalap. Comp. ʒ i. at 6 A. M.

Pills repeated at bed-time as last night ;—and a Blister applied to the nucha.

April 22nd.—The medicine has operated three times since yesterday morning ; he is cool, the pulse 76, and he is free from head-ache ; there is some brown mucus on the tongue. The cough has nearly ceased. Four leeches were applied to the scrob. cordis, and a purgative administered, which operated four times.

April 23rd.—Cough much increased since midnight, the sputa about 3 iiss. of bloody mucus ; the edges of the tongue are moist, its centre is dry and brown ; a severe head-ache has returned, and there is some morbid heat of scalp. Pulse 74 and moderate. He ascribes the above unfavorable symptoms to cold, as he placed his bed in the draught of air before a window during the night.

V. S. ad lb. i.—Apply eight leeches to the temples.

R. Extract. Colocynth. Comp. gr. vi.

Calomel. gr. xii.—at 6 A. M.

R. Pulv. Jalap. Comp. 3 ss.—P. Rhei. 3 i.

Aquæ Menth. Pip. 3 i.—to be taken at noon.

The body to be washed with hot water.

Vesper.—He bore the bleeding well, and above lb. i. of blood was taken, which when cool, was cupped and buffy ; but he did not appear much relieved by it. As the bowels had not been moved by 3 o'clock, half an ounce of Castor Oil was then taken ; but it had produced no effect by 8 P. M. and he felt worse, but was cooler. The pulse 76 and soft. A purgative enema was therefore ordered : and at bed-time two pills composed of

Calomel.—Extract. Colocynth. Comp.

Extract. Hyoscyami āā. gr. iv.

3 1 2

April 24th.—The medicine produced two black watery evacuations; he is apt to faint on rising to stool. The gums are slightly sore. He is free from head-ache, and the cough has ceased. Pulse 96 and soft, tongue slightly coated with white mucus. He slept little, but is now tranquil and cool; the feet are cold; but there is an appearance of exhaustion about him, which induces me to advise a slight increase of farinaceous food; synapisms to the feet, and the application of *Liquor Ammoniae Carb.* to the head. The purgatives were repeated, and operated twice, after which he was better, and in the evening quite tranquil. Blue pill, *Colocynth*, and *Hyoscyamus* were given at bed time.

April 25th.—He slept tolerably, and his bowels were freely moved in the night: symptoms all improved, except that he has a slight cough; and the urine is high colored. He is hungry, and considers himself convalescent. Purgatives were repeated, and he was allowed a small quantity of porridge and milk. On the 26th, he appeared much better; but the purgatives had no effect, therefore they were repeated: and operated once. In the evening he was restless and anxious, the feet were cold, tongue dry and slightly coated with a dry grey fur. An enema was ordered, and he took ten grains of Blue Pill, with as much Compound Extract of Colo-

cynth, and four grains of Extract. Hyoscyamus. After this he was tolerably quiet till about midnight; some morbid heat of skin, cough, and great anxiety then took place, with head-ache, followed by increased heat of the scalp. These symptoms were attended with much debility, a sharpness of the nose, and tension of the muscles of the face; he became stupid, and the stools passed involuntarily in bed. There was a slight increase of cough; the gums were swollen and livid, and he was much distressed by the soreness of the mouth. There was no very material variation in his condition, till the 30th April; when suppression of urine was added to the other symptoms: and he died at 2 P. M. on the 1st May.

On dissection, the subject was observed to be emaciated. There was some opacity of the tunica arachnoidea, and much serous effusion between that membrane and the pia mater. The substance of the brain was softer than usual; the morbid softness was very remarkable in the left hemisphere. There was a considerable effusion of blood into the central portion of the left middle lobe of the brain; and some of this blood extended into the inferior cornu of the lateral ventricle: that part of the brain in contact with the blood, was so nearly fluid, as to be at first sight mistaken for pus. The liver was

large ; base of the gall-bladder, and edge of the liver adherent to the colon. The gall-bladder small and elongated, contained some dark-green bile : and it, as well as the capsule of Glisson, was covered by a false membrane.

This case proves the intractable nature of Fever, attended with cerebral symptoms ; if the disease be left without treatment for several days. I think there is reason to regret that the V. S. had not been repeated on the morning of the 19th, and the leeches put on at noon of that day : but the most remarkable changes which took place in the progress of the disease, were, that after exposure to cold on the 23rd April, and the unfavorable state after midnight on the 26th ; at the latter date I apprehend the actual effusion of blood to have taken place. When this man first came to Hospital, his disease had existed many days, and vascular engorgement of the brain must then have been attended by some degree of general effusion that caused the slow pulse, and masked the more urgent nature of the disease. It is hardly possible to cure any patient who has labored under Fever, with important cerebral affection, for six days, without treatment, in the hot season. The ulterior changes which took place in this case, appear to have been softening of the brain : and the absence of paralytic affection during the course of the disease till a late period ; and then

only to a slight degree ; is remarkable. The state of this patient's circulation, would tend to support the opinion that slowness of the pulse is one of the symptoms by which inflammation of the substance of the brain may be distinguished from inflammation of its membranes. I believe that deep-seated cerebral affection, often masks the progress of acute disease of the most destructive description, in those Fevers of the hot season, in which symptoms of gastro-enteritis predominate ; attended with permanent morbid heat of the forehead, although the patient does not acknowledge the existence of pain.

We sometimes find continued Fever come on slowly in the hot season, after frequent but transient exposure to the sun ; the patient takes Calomel with mild saline aperients, and uses little food for two or three days ; and that food is usually soup. By these means the disease is moderated, but not cured ; a slight degree of morbid heat of head remains, the patient passes restless nights, and then vomiting takes place : on the fourth or fifth day the tongue is of a deep red color and somewhat swollen. As the disease advances, the patient feels extreme exhaustion on any attempt at exertion, and is very apt to faint when he goes to stool. If Calomel

be repeated, the gums are very soon made sore, and the tongue becomes more inflamed: but the affection of the mouth is attended with no alleviation of the Fever. So insidious is the daily progress of the disease, that a practitioner is sometimes not called till the sixth or seventh day, and then finds the patient has slight heat of forehead, frequent vomiting, and incessant restlessness; the pulse above 100, but there is no ardent heat of surface, although the skin is dry: the tongue is moist, clean, and of a deep-red color. At this time gastro-enteritis, attended with insidious cerebral affection, has arrived at a dangerous degree, and there can be no doubt of the necessity of bleeding from the arm, shaving the head; and applying leeches repeatedly to the head, and epigastre, until the disease be subdued: using no food but tea or very thin barley-water; and administering mild purgatives as soon as they can be retained. It is in general best to give Blue Pill, and Compound Extract of Colocynth, each six grains every night, and ten grains of Jalap, with as much Compound Powder of Scammony (Ph. Ed.) in the mornings; but when these are rejected, we may succeed by giving every hour a table-spoonful of Infusion of Senna with Manna, or $\frac{3}{4}$ i. of Epsom Salts in $\frac{3}{4}$ iss. of tepid water every hour, till it operates freely. In those cases which apply late for advice, the power of the constitution is apt to

fail before the disease is subdued. When the disease has made its progress for several days, in delicate subjects ; bleeding from the arm is seldom borne more than once, and leeches must be then trusted to : and if the patient be too weak to bear many leeches, a small blister to the region of the stomach will be useful ; it need not exceed three inches square ; and should acute symptoms recur, a few leeches can be applied near the edges of the blistered part. As long as any dryness of skin remains, I have almost always found benefit from ordering two grains of tartarized antimony, to be dissolved in a pint of water, a table spoonful of which is to be drank by the patient every hour. Tea, toast-water, and farinaceous food in very small quantities are admissible during the treatment of the disease.

This insidious Fever is usually a trivial disease if remedies be used early ; but after the lapse of several days without proper treatment, it is attended with the utmost danger. I have remarked these cases most frequent and most severe, in those hot seasons when variola was unusually prevalent ; but do not know that the concurrence of the two diseases in the same season was to be considered otherwise than accidental. In delicate Europeans, of light complexion, I have seen pyrexia of several days duration, attended with heat of forehead, although the patient denied having any

head-ache ; even when the forehead was so hot that I have often suspected he intended to deceive me, for the purpose of avoiding active remedies : but this condition has occurred so often in cases where I could entirely rely on the candour of my patients, that I am fully satisfied, a hot forehead may exist when there is no pain ; and I am equally satisfied, that it then is an indication of a degree of disease which is not to be very easily overcome ; it requires our utmost attention, and an active steady treatment, otherwise the patient will be destroyed ; and then we find turgescence of the vessels of the brain, and serous effusion into the ventricles. A warning of the nature of these cases, is sufficient to insure a correct treatment.

The peculiar constitution of the Natives of India renders them less obnoxious to suffer severely from the common continued Fever ; and their habits of living prevent their being influenced by many of the causes which often excite this form of fever in Europeans ; therefore the disease is less frequent and much less severe among them. From these causes, the majority of cases which do occur, recover in a few days ; by their usual custom of lying still, and taking no food of any sort. Nevertheless Natives do frequently suffer in a severe degree, from continued fever ; after fatigue and exposure to the sun : and

then the cerebral symptoms are urgent, the eyes bloodshot ; and the patient dies from want of active purgatives, and moderate blood-letting from the arm, or a few leeches at the commencement of the disease.

REMITTENT FEVERS.

The Remittent Fever of the Bengal rainy season, ranks among the most formidable diseases of India ; while it lasts, the patient can scarcely be considered free from danger, though he may not appear to suffer much, and though there may be no symptom of violent reaction. It sometimes happens, that after two or three slight paroxysms, a change for the worse suddenly takes place, without any evident cause ; and death follows within an hour. These unfavorable changes are most liable to occur towards the conclusion of a paroxysm, and they have rarely happened before mid-day.

The characters which seem especially to belong to Fever, as distinguishing it from Inflammation, are more prominently marked during the progress of the insidious cases of remittent ; than in the continued fever of the hot season : still we find symptoms of some degree of local inflammation soon become apparent in almost all cases of this disease.

The commencement of Remittent Fever, is generally marked by languor ; oppression at the præcordia ; debility ; and that peculiar combination of weariness, pain, anxiety, and weakness ; affecting the head, and back of the neck, which Dr. Curry used to describe under the name of febrile anguish. There is much diversity in the symptoms in different cases : persons of delicate constitution, who have been long suffering from fatigue, privations, and the inclemencies of the weather ; while they have been indifferently fed, and much exposed to the influence of malaria ; and in whom the disease has been preceded for several days, by debility, and indisposition not distinctly febrile ; usually have a weak and rapid pulse ; the tongue is moist and little loaded with grey mucus, occasionally it is quite pale and glazed ; and the conjunctivæ are pale ; the face sometimes assumes a lurid cadaverous color ; the gums are livid, and the head and chest, though hot at the time of exacerbation, become soon covered with a cold perspiration ; and the extremities are cold for several hours at the termination of the paroxysm. The evacuations from the bowels are scanty and watery, often of a pale grey color ; in some cases nearly black. The whole belly is doughy and inelastic, but there is generally some tension and fulness at the epigastre. In other patients, of robust habit, who have suffered less from fatigue, privations, and exposure, and in

whom the disease is developed more rapidly ; there is intense morbid heat of skin, flushed face, headache, and redness of the eyes during the exacerbation ; and although these symptoms abate much at some periods of the day, they are seldom entirely absent ; the pulse is rapid and full ; bilious vomiting often takes place ; there is pain and morbid sensibility on pressure over the epigastrium, which region as well as the hypochondria is tense ; the urine is high-colored. The evacuations from the intestines are scanty, watery, and dark colored ; and active purgatives often bring away considerable quantities of black films, like fragments of dried leaves that had been steeped in water. Before active purgatives are taken, the tongue is usually dry, and much loaded with brown or yellowish mucus. Vertigo is often a distressing symptom ; and Delirium occasionally occurs even at an early period of the disease. Intense yellowness of the whole body generally takes place in the worst cases.

The exacerbations commence most commonly at 11 A. M., and 9 P. M., but the hours of accession vary. It is necessary to remember this, for I have known a medical man attend a patient regularly morning and evening for several days, without being aware that there was a severe exacerbation half an hour after mid-day, and another half an hour after midnight. The pa-

tient was cool, when visited; and therefore very little medicine was given, and no decisive treatment was followed: but as soon as the nature of the case was ascertained, the disease was quickly cured by active purgatives, a few leeches to the epigastre, just when the exacerbation was violent; and some Quinine in the succeeding intervals. The patient is usually found weak and languid early in the morning; by $\frac{1}{2}$ past 10 A. M. anxiety and redness of the eyes are observed; the urine becomes scanty and dark colored, the tongue dry, and the skin hot; a gradual increase of morbid heat and pyrexia are progressive until about $\frac{1}{2}$ past 2 P. M. The heat then remits, the secretions become more free, and the patient seems relieved. In very severe cases, after the 2nd or 3rd paroxysm; each decline of the fever, which occurs about 4 o'clock, is followed by profuse perspiration, lowness, and coldness, attended with a torpid state; with tendency to stupor, with extreme apprehension of impending evil. At the conclusion of the 4th or 5th paroxysm, some patients continue to get colder and weaker, until they die. I have known cases where a single paroxysm has proved fatal in this way, in delicate persons, who have suffered much from fatigue and privations. In the more intense forms of this disease, there are two periods of each paroxysm fraught with danger;

one is during the increase of morbid heat, when febrile excitement and high arterial action exist, and there is then tendency to fatal congestion and effusion into the structure of the brain or other important organs. The other period of danger, is at the conclusion of the paroxysm ; when morbid excitement and high vascular action have ceased : when the capillaries appear generally relaxed, and in a state of inaction ; languor and debility prevail, in some of these cases the patient gradually sinks into a state which bears some resemblance both to the collapse which succeeds the low form of Cholera, and to syncope : and the coldness continues till the patient dies as above stated.

The closest attention to clinical observation, as well as the result of post-mortem examinations ; convince me that Remittent Fevers in Bengal are invariably connected with local congestions, which often run rapidly into inflammation, attended with much interstitial effusion. The seat of these local affections is found principally in the stomach, intestines, cellular structure about the duodenum, and at the root of the mesocolon, more especially where it passes across the spine : the principal disease is also often found in the spleen, liver, brain or lungs. There is a vast diversity in the relative degree to which the local affection extends.

Sometimes the brain and stomach seem almost exclusively affected ; in other cases the spleen, intestines, and lungs ; in others the liver. It occasionally happens that the part shewing evidence of being most seriously diseased at first, becomes afterwards less affected : the principal morbid condition appearing in some organ not originally much disordered.

That feature of the Remittent Fever, which it is most important to point out to strangers in India ; is the rapidity with which changes take place, both in the disease, and in the powers of the patient's constitution ; even in the course of one paroxysm : for the treatment, which if employed at an early stage of the accession ; say for instance at 10 or 11 o'clock A. M. would be judicious, and afford not only immediate relief, but tend greatly to moderate the violence and alter the character of succeeding paroxysms of the disease ; if employed later in the paroxysm, for example, at 3 or 4 P. M. on the same day, would be liable in many cases to destroy the patient in two hours, nay sometimes in a few minutes. I allude particularly to the use of V. S. and leeches ; which are our best remedies, when employed at proper times, as will be presently shown. It is therefore necessary, for the purpose of directing the treatment of these cases successfully,

not only to look to the existing stage of the disease ; but to be prepared with a knowledge of the changes that are likely to take place in the course of the paroxysm : and to know that repeated returns of the exacerbation, are apt to induce those changes in the constitution, which render the propriety of depletion more doubtful ; not from the subsidence of local disease, but from the lowered state of the vital power, and the proclivity to abrupt changes which then takes place.

In the treatment of the Remittent Fevers of Bengal, we depend chiefly on active remedies, at the commencement of those forms of the disease, which come on abruptly in plethoric persons ; and are attended with signs of local inflammation, and high arterial action. In most cases, it is requisite to bleed freely in the early stage of the 1st and 2nd paroxysm : after that, we must be more cautious ; but at any period, when the pyrexia and arterial action are increasing, and we have reason to believe, that there will be some time before the exacerbation reaches its acme ; it is always safe and useful to apply a few leeches to the head or epigastre, according as the predominant symptoms may indicate their necessity ; even at the exacerbation of the fifth or sixth paroxysms, or later. After the pyrexia has gone on increasing for 2 or 3 hours, and we know the exacerbation has arrived at its maxi-

mum, and will presently decline; the utmost caution is requisite in the use of the lancet or in the application of leeches: and when the pulse becomes softer, and the skin is perspiring freely, while the secretions begin to flow, and febrile action is subsiding; we must rest satisfied, that the period for depletion is over, for this paroxysm. I fear that patients have been lost from inattention to this circumstance: the effect of a fatal termination of this sort, is apt to bring discredit on V. S. and those active remedies, on the judicious employment of which, in the majority of severe cases, life depends. The error of a misapplied bleeding, inducing the greater and more frequently fatal errors dependent on want of confidence in a remedy of the first utility.

At the same time with bleeding, a repetition of active cathartics is requisite; which are to be repeated according as the urgency for general depletion may be indicated by symptoms of local inflammation, or high arterial action. Purgatives of the most active description, are called for repeatedly, in plethoric subjects recently affected with Remittent Fever. In weak and delicate persons, who are suffering from the slow and insidious form of the disease, some caution is requisite.

The benefit that may be derived in many cases, from the employment of large doses of Calomel,

seems to be proved by the opinions of the most observant and best practitioners in India. I allude to the scruple dose of Calomel given at bed-time, followed by an active cathartic on the next morning: I have not very often found it necessary to give above two doses of 20 grains, and one or two doses of 10 grains; even in very severe cases. With respect to the necessity of inducing salivation; I acknowledge that in some cases, where there was evidence of considerable effusion in the brain, I have seen a favorable change take place just before salivation appeared; and others, where the improvement followed the salivation, the benefit in each was ascribed to the mercury. At the same time it must be acknowledged, that there is a satisfaction in these very severe cases, to find the ultimate effect expected from the medicine produced; and a further satisfaction, to find the constitution susceptible of the mercurial action, which it is not in many bad cases. The benefit of salivation is however problematical. The sentiments expressed in the former part of this work, at pages 326, and 339; render it unnecessary for me in this place to urge the importance of avoiding the use of mercury, in cases where the spleen is enlarged or diseased.

In every description of Remittent Fever, we must watch the changes which take place; and when

the pyrexia abates, administer Sulphate of Quinine, for the purpose of preventing a return of the exacerbation: in most cases where the cerebral symptoms are not urgent and continued, the efficacy of this remedy is undoubted. In plethoric subjects, or where local inflammatory symptoms predominate, we have other important objects to fulfil; but even in those cases, a few small doses of Quinine given in solution during the state of apyrexia, frequently alter the character of the malady, and enable us to subdue the local disease with greater ease. When we are first called to see a bad case, in the absence of the exacerbation, and find that the patient has had several returns of the paroxysm, from which he is very low and exhausted: it is often justifiable to administer Quinine before using purgatives; for in some of these instances, to arrest a paroxysm, is to save the patient's life. Enemas must then be given, and purgatives deferred until the period when re-action usually commences. Those kinds of this Fever that are less distinctly marked, and come on slowly; require the utmost diligence of the practitioner, to employ such moderate use of the lancet, and leeches, with mild but effectual purgatives, as may be requisite. For in these slow and insidious cases, almost every function of the system becomes embarrassed; and in most instances there is at the same time both congestion and inflammation in various organs, co-exis-

tent with great prostration of strength. Then mild purgatives and Quinine are our principal remedies ; in the same degree, that in the more distinctly inflammatory shades of the disease, we trust almost solely to free and repeated depletion.

Tranquillity in the recumbent posture must be observed in all cases : and after suitable depletion, some barley-water or thin gruel should be given twice a day. A limited supply of farinaceous food, is requisite sooner in remittents, than in cases of inflammatory Fever, where an equal degree of re-action is manifest. In many protracted cases, we are obliged to give a small quantity of wine in the gruel, although we may be satisfied it will be necessary to apply more leeches on the next exacerbation. The propriety of giving some wine, is less to be doubted, where there is profuse perspiration, with coldness of extremities ; and when the action of purgative medicines is prolonged to the conclusion of the febrile paroxysm : in such cases, it is requisite to enjoin the patient to take 2 or 3 spoonful of thin arrow-root or barley-water, immediately after each stool. To conclude, I know of no disease, requiring more promptitude and decision at its commencement ; more caution in the treatment to be ordered about the period when the acme of each paroxysm has arrived, and morbid action is declining ; or in fact more discrimination and discretion in the management of all its stages.

OBS. CXXXVII. Thos. Cottisford, Æt. 21, a tall and muscular man, of dark complexion, a sailor of the ship *Euphrates*; has been 13 months from England, and recently arrived here from a coasting voyage: was once on shore, six days ago. Admitted into General Hospital on the 14th August, 1830, at 7 A. M.; ill two days, with hot skin, head-ache, nausea, flushed face, and pains in the loins and joints; his pulse is 86, tongue white and moist. He had an emetic, and a purgative yesterday, which operated freely. The disease commenced with a sense of coldness, but no rigor.

V. S. ad lb. i.

R. Calomel \mathfrak{D} i. at 7 A. M.

Pulv. Jalap. Comp. 3 i. at noon.

At 2 P. M.—The blood is not buffy; medicine operated four times, evacuations black and watery; pulse 108, face less flushed: but the forehead is still hot, and he has an oppressive aching pain across the loins, and in both hypochondria.

V. S. ad lb. i.—Head shaved.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at 3 o'clock.

Vesper.—He fainted at 2 o'clock; when only six oz. of blood had flowed; the blood is not buffy. The medicine has produced watery

evacuations of dark color; the belly is soft and elastic, but his forehead is hot, and pulse 96.

Four leeches were applied to the temples, and he afterwards took Calomel \mathfrak{z} i.—Ext. Hyoscyami gr. iv.

August 15th.—He slept, and feels better; has voided some high-colored urine. The gums are slightly sore. He has less heat of head; the eyes are somewhat red, and pain in the loins remains; pulse 92 and soft; belly rather full and inelastic, but pressure causes no pain.

Apply six leeches to the temples.

R. Ext. Colocynth. C.—Pil. Hydrarg. āā gr. v. at 6 A. M.
Ordered to be sponged with hot-water at 10 o'clock.

Noon.—He has had one scanty stool, about 4 oz. of fluid, containing films of black mucus, which resemble portions of leaves of vegetables. He is tranquil, and cooler; pulse 88 and soft; pain in loins decreased.

R. Pulv. Jalap. Comp. \mathfrak{z} i.

Vesper.—The medicine has operated several times, evacuations scanty and watery. There is slight morbid heat of head, and some pain at scrob. cordis.

Apply 10 leeches to the scrob. cordis.

R. Extract. Colocynth. C.—Pil. Hydrarg. āā gr. viii. H. s.

August 16th.—He has had little sleep; the pills operated four times; the evacuations are foetid, watery, and of dark-brown color; the abdomen is less tumid, and softer; pulse 96. Slight redness of the eyes remains. The forehead and belly are still hot and dry; but he says he has no pain.

Apply four leeches to the temples.

Ol. Ricini \bar{z} i. at 6 A. M.

R. Ext. Colocynth. C.—Pil. Hydrarg. $\bar{a}\bar{a}$ gr. viii. at noon.

He had one copious, feculent green stool, before 12 o'clock: urine high-colored. Pulse 102 and soft; gums sorer. Some heat of head and belly remained at 3 o'clock, and he was ordered

Pulv. Jalap. Comp. \bar{z} i.

Vesper.—The Jalap produced two moderate reddish-brown stools: he is cooler, but complains of thirst.

R. Calomel. gr. vi.—Extract. Colocynth. Comp.

Extract. Hyoscyami $\bar{a}\bar{a}$ gr. iv. H. S.

August 17th.—He slept at intervals, and had several scanty black feculent stools. He has a slight cough; the eyes are still blood-shot, and there is some morbid heat of head and belly.

Pulse 98, and more full than yesterday. Sago allowed.

V. S. ad $\frac{3}{4}$ viii.

Oleum Ricini $\frac{3}{4}$ i. at 6 A. M.

Pulv. Jalap. Comp. $\frac{3}{4}$ i. at noon.

Vesper.—The blood is buffy, and not cupped; he has been freely purged, and is much cooler and better.

R. Extract. Colocynth. Comp. gr. vi.

—— Hyoscyami gr. iv. H. S.

August 18th.—He slept tolerably, and had two moderate feculent stools of greenish-brown color, like putrid sponge; belly softer; tongue white, moist, and clean at the edges. Pulse 96. There is still some morbid vascularity of the eyes, and slight heat of head.

Apply two leeches to the temples.

Ordered to take Ol. Ricini $\frac{3}{4}$ i.

A small quantity of thin arrow-root, with milk, allowed.

After this, it was requisite to keep the bowels free by use of mild purgatives. On the 19th, he commenced taking the Sulphate of Quinine; of which, two grains were given once a day. He was convalescent on the 23rd, and discharged well on the 31st August, 1830.

This man's fever was of the most severe description, and the remissions indistinct: but he was seen at an early period of the disease, and saved by very active treatment. On the 17th, there was so much evidence of local congestion in the lungs, head, and abdomen, that I could not hope to relieve the determination of blood to all those parts by leeches, so easily and effectually as by the lancet: the relief that followed the abstraction of only 8 oz. of blood was very remarkable: and although the violence of pyrexia and the worst symptoms had been alleviated by the previous active treatment; the man appeared to be cured by this small bleeding. Much debility remained, and after such severe acute disease, it was deemed requisite to pursue a course of mild purgatives for several days; accompanied by Quinine. Animal food was only allowed at a remote period, when convalescence was fully established.

OBS. CXXXVIII.—On the 24th July, 1831, I was called in the afternoon, to see a man who had a fever; which had commenced the day before, in consequence of fatigue and exposure to the sun. The disease was not preceded by rigor: a dose of Senna and Salts had been taken, and operated freely, but afforded no relief. The patient was 34 years of age, of middle size, but muscular, of active and temperate habits; and had resid-

ed 8 years in Bengal : always healthy. I found him in a state of anxiety, exceedingly hot; the skin dry; pulse 116 and full: he suffered little from head-ache; but there was much tension and fulness at the epigastre and hypochondria; the tongue was moist and not much furred. He was immediately bled to 38 ounces; and ordered

Calomel. gr. xv.—Extract. Colocynth. Comp.

Extract. Hyoscyami āā. gr. iv. to be taken at bed-time, followed by infusion of senna and salts next morning.

July 25th.—The blood is buffy and cupped; his skin is dry and nearly cool; he is up, and fancies himself nearly well; but his manner is hurried; pulse 128 and weak; tongue dry and not much loaded. The medicine is producing watery stools. Quiescence in bed enjoined, and he was ordered

Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. viii.—at ten o'clock.

And Cream of Tartar in water, for drink.

Vesper.—The medicine operated several times: evacuations feculent and dark colored; urine red. The exacerbation has returned with considerable violence; he suffers from much anxiety, and sense of exhaustion; pulse 138 and small: there is extreme heat of skin, and redness of the eyes.

Twenty leeches were applied to the epigastre.

R. Calomel. \mathfrak{z} i.—Extract. Colocynth. Comp.

Extract. Hyoscyami $\bar{a}\bar{a}$ gr. iii. at bed-time.

R. Pulv. Jalap. Comp. \mathfrak{z} i. Aquæ Menth. Sativæ \mathfrak{z} i. to be taken at daylight to-morrow.

July 26th.—The medicine is operating freely, and he feels much relieved, but very weak; anxiety has ceased, and the morbid heat of skin is very much reduced: there is still a considerable fullness at the epigastre, and hypochondria; tongue much loaded with yellowish mucus.

Vesper.—Anxiety and increase of fever began at 2 o'clock; he is now very hot; pulse 112 and more full; the cheeks flushed and eyes red: there is much pain and weariness round the loins; urine very high-colored.

V. S. ad. \mathfrak{z} xx.

Apply 12 leeches to the temples.

R. Pil. Hydrarg. gr. xii.—Pulv. Jacobi,

Extract. Colocynth. Comp. $\bar{a}\bar{a}$ gr. vi.

——— Hyoscyami gr. iv.—misce fiant pil. iv.

Two pills to be taken at 9 o'clock, and two at midnight.

Compound Jalap early to-morrow morning.

July 27th.—Purgative operating freely; evacuations a very deep bronze-colored fluid. The blood taken last night is buffy, the serum very yellow. The pyrexia was only slightly mitigated by the bleeding; he had no sleep, and is now

very hot. Pulse 118 and full, but not hard. Skin and eyes of a deep yellow color; still there is too much fulness at the epigastre, and severe pain round the loins.

V. S. ad. lb. iss.

Apply eight leeches to the epigastre.

Vesper.—The blood is buffy, and serum yellow; he has less pyrexia than usual in the evening, and seems weak, but a slight flush of cheek remains; he has been freely purged.

R. Pil. Hydrarg. ʒ ss.—Calomel. gr. viii.

Extract. Colocynth. Comp.

——— Hyoscyami āā gr. iv. misce fiant pil. iv.

Two pills at 9 o'clock, and 2 at midnight.

July 28th.—He is cooler, and pale, but the fulness at epigastre is not removed; pulse 98 and not weak; no head-ache; skin and eyes still very yellow.

R. Quininæ Sulph. gr. i.—Aquæ Font. ʒ iii.

Acid. Sulph. Aromat. gr. xii.—misce.

Half to be taken at 8 A. M. and repeated at 9.

Apply 10 leeches to the epigastre at 1 P. M.

R. Magnesiae Sulph. ʒ i.—Aquæ Font. lb. i.

Succi Limon. recent. ʒ iii.—Antimon. Tart. gr. i.

Liq. Ammon. Acetat. ʒ i.—misce.

A wineglassful to be drank every hour, beginning at

1 P. M.

Vesper.—Very little pyrexia; he is perspiring; skin and eyes less yellow: he has had several watery stools, of deep bronze color; urine very red.

R. Calomel.—Pil. Hydrarg. āā gr. xii.

Extract. Colocynth. Comp. gr. vi.—misce, fiant pil. vi.

Three Pills to be taken at 8 p. m. and repeated at midnight. A purgative of Jalap and Scammony early to-morrow.

July 29th.—The purgative has acted freely; and the fulness at epigastre is much lowered, leaving a handsome slope below the edges of the ribs, where there was previously much tension and fulness. The yellowness of skin and eyes is decreasing.

Ordered Pills of Compound Extract of Colocynth,

Blue Pill, and Camboge, in the afternoon: and the purgative of Jalap with Scammony early to-morrow. Gruel or sago allowed; he has heretofore only had tea and bread.

July 30th.—Improving slowly; pressure causes pain in the region of the gall-bladder. He is free from anxiety or pyrexia, and slept well, but his skin is dry.

Apply 12 leeches over the region of the gall-bladder.

Medicine repeated as yesterday.

July 31st.—Yellowness of skin decreasing fast; the bowels are more easily affected by purgatives, and his urine is paler.

A blister was applied to the epigastre, and some mercurial ointment rubbed over the right side of the chest and belly ; for the purpose of promoting the absorption of the effusion and interstitial deposit, which are usually the result of severe congestion and inflammation. Mild purgatives were used daily, for some time longer; and a short sea voyage completed the restoration of robust health.

When jaundice takes place in those cases of Remittent Fever, in which the stage of excitement is short, and followed by extreme lowness, anxiety, profuse perspirations, and coldness of the extremities ; the skin is usually a pale, dull yellow ; and a livid color of the face is observed at the conclusion of the paroxysms, which portends much danger. We dare not then venture on such active remedies as were used in this case; and the patient's prospect of recovery is proportionally small.

OBS. CXXXIX.—Serjt. Macrea, *Æt.* 34, a tall thin man, who has been 14 years in Bengal, and suffered frequently from Fever. In 1821, he had severe Remittent Fever, and used so much mercury that nearly all his teeth were destroyed ; the tongue and inside of the cheeks then became ulcerated, and the adhesions which followed, prevent his thrusting out the tongue or

opening the mouth, except in a very slight degree; so that had the teeth not fallen out, there would have been great difficulty in putting food into his mouth. Admitted into General Hospital, on the 13th September, 1830; suffering from Fever of five days duration, which commenced with a rigor. There is now much morbid heat of skin; the belly particularly is very hot; he complains of thirst and head-ache. Pulse 108 and rather small; as much of the tongue as can be seen is moist, but hot.

V. S. ad $\frac{3}{4}$ xx.

R. Pulv. Jalap. Comp. $\frac{3}{4}$ i.

September 14th.—He was purged freely, and in consequence of the emptiness of the belly, an enlargement of the spleen is now distinctly to be felt. He slept well and all his symptoms are mitigated; but some slight heat of the head remains.

Apply 4 leeches to the temples.

R. Pulv. Jalap. Comp. $\frac{3}{4}$ i.

Vesper.—The medicine operated five times; the pulse is now soft and weak; skin perspiring, and he is suffering from some anxiety.

Ordered to take 2 grains of Sulphate of Quinine in solution.

September 15th.—The Quinine caused vomiting, and he has had a restless night; pulse 98. There is some morbid tension of the right rectus abdominis muscle, and slight fulness in the region of the liver.

Apply 12 leeches to the Epigastre.—The body to be sponged with hot-water.

R. Calomel. gr. v.—Ext. Colocynth. C. 3 ss. at 6 A. M.
Pulv. Jalap. Comp. 3 i. at 10 o'clock.

Vesper.—The medicine has operated four times. He feels easier and is cool.

R. Extract. Colocynth. Comp. gr. vi. H. s.

September 16th.—He is suffering from extreme exhaustion and debility; the countenance sunk. He ascribes these symptoms to the Calomel, the early effects of which he recognises in the lowness and debility; there is still morbid heat both of the head and belly. He had two watery stools in the night.

Apply 4 leeches to the temples.—Capiat Olei Ricini 3 i. at 6 A. M.—Pulv. Jalap. Comp. 3 i. at noon.

Vesper.—The medicine has operated freely, but he has still some tension and fulness in the belly generally, and especially in the region of the liver.

Apply four leeches to the right hypochondrium.

R. Infus. Sennæ Comp. $\frac{3}{4}$ ii.—Tinct. Sennæ $\frac{3}{4}$ i.

—— Gentian. C. $\frac{3}{4}$ i.—Magnesiæ Sulph. $\frac{3}{4}$ iii. misce.

To be taken immediately.

September 17th.—He has been freely purged; the belly is cool and lax. Pulse 74 and soft. Fever ceased. Give half the dose of medicine ordered last night.

After this date, mild aperients, spleen mixture, and small doses of Quinine were requisite; and attention to regulate the diet.

He was discharged well on the 14th October, 1830.

The lamentable effects of mercury in this man's case, many years before; as well as the existing enlargement of the spleen, prevented my giving more than one small dose of Calomel, the effects of which were by no means satisfactory. I have always found it better to treat Remittent Fevers attended with enlarged spleen, without any mercury.

OBS. CXL.—Geo. Brown, *Æt.* 13, a small and delicate boy, born in India; was attacked with fever and head-ache, on the 29th July, 1831. There was some tumefaction, and morbid sensibility on pressure over the region of the liver.

From two to four leeches were applied to the abdomen daily, and he was ordered 5 grs. of Calomel every morning, followed by Jalap or Castor Oil; but it was difficult to make his bowels act freely.

So slow and insidious was the progress of the Fever, that his illness was not considered very urgent until the 4th August: I then found him suffering from much morbid heat of skin and anxiety; the liver was enlarged, and his belly doughy and inelastic. Pulse 120. He had been purged twice on the 3rd.

V. S. ad 3viii.

Ordered to take Calomel ʒ ss. at 6 A. M.

Pulv. Jalap. Comp. ʒ ss. at noon.

Vesper.—The blood is buffy*; he has been purged several times; the fever is much abated, and he is very languid.

R. Ext. Colocynth. C.—Pil. Hydrarg. āā gr. v. H. s.

August 5th.—He has been purged twice since daylight; there is less pyrexia, and the liver is smaller; the tongue is moist, and slightly coated with grey mucus in the centre. Pulse soft.

* A bluish film, that was not very tough, covered part of the cruor in the manner of the ordinary buffy coat of inflammation.

Apply two leeches to the region of the liver.

R. Pulv. Jalap. Comp. ʒ ss. at 6 A. M.

Ol. Ricini ʒ ss. at noon.

Vesper.—He has had five watery dark-brown evacuations. There is an increase of pyrexia this afternoon, and more heat of the head than any other part; anxiety; pulse 122, and rather full: the eyes are watery; and the tongue as reported in the morning.

Apply two leeches to the temples.

R. Calomel. ʒ ss.

Extract. Colocynth. Comp.

Extract. Hyoscyami āā gr. ii. in two pills at bed-time.

August 6th.—The leeches bled freely; and he had two watery, copious, dark-brown stools in the night. The pyrexia is moderated; he is pale, and the face rather livid. There is very little morbid heat of the head; pulse 118 and soft; the tongue is moist and pale, slightly coated with grey mucus in the centre.

Apply a small Caustic Blister to the Epigastre.

R. Quininæ Sulph. gr. ii.—Aquæ Fontis ʒ iv.

Acid. Sulph. Aromat. gtt. viii.—misce.

One ounce to be taken at 7 A. M., and repeated at nine.

Calomel and Compound Extract of Colocynth, each four grains, were ordered at 11 A. M. and repeated at 1 P. M.

Vesper.—He remained cool all day. Pulse 116; the color of his face is less livid. Bowels not freely open.

A Purgative Enema was ordered, and one dose of pills repeated.

August 7th.—He had one greenish stool after the enema, and slept; there is slight fulness in the region of the liver, but the belly is soft and elastic; pulse 108, and soft; tongue as before. There is slight morbid heat of the head; the rest of the body cool and dry.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā gr. v. at 6 A. M. and repeat at noon and at 3 P. M.

A Purgative Enema was ordered at 10 o'clock, A. M.

Vesper.—Morbid heat of head, with quickened pulse, took place about noon, and continued to increase; he is now anxious and restless; the skin is dry; pulse 112, the edges of the tongue are moist, but its centre is dry.

The pills were repeated at 8 P. M. as he had not been freely purged.

August 8th.—The medicine operated three times; he slept, and is better, and cool; pulse 96; tongue moist and nearly clean; counte-

nance clearer; gums little affected by the mercury.

R. Infus. Sennæ Comp. $\frac{3}{4}$ v.—Magnesiæ Sulphatis $\frac{3}{4}$ ss.

Infus. Gentian Comp. $\frac{3}{4}$ i.

Tinct. Gentianæ C. $\frac{3}{4}$ i.—Quininæ Sulph. gr. iii.

Acid. Sulph. Aromat. $\frac{3}{4}$ ss.—misce, ordered to take $\frac{3}{4}$ i. every two hours till purged four times.

He had no subsequent return of fever : was ordered to take purgative pills every night, and the above mixture was repeated four times on the 9th August; and twice each day afterwards. He was pronounced well on the 16th.

OBS. CXLI.—A gentleman, aged 29, of delicate constitution, who had been six years in Bengal, and followed an occupation requiring considerable activity in the open air, but not exposed to the sun: found his health impaired in June, 1827, soon after the rains began, but did not employ any medical treatment. In the beginning of July, he complained of being unusually weak; but continued to attend to his business till the 12th, when he was very feverish, and took some purgative medicine, which operated freely, and in the evening he felt better: the fever ceased, and after eating some soup he thought he was nearly well. However the fever returned every day, and continued from 11 A. M. till 2 or 3 o'clock in the day,

not preceded by rigor. He was usually able to attend to business in the morning, though very languid; and when the fever came on towards mid-day, he took some purgative medicine. His residence was not two miles from the city, and on the 15th July he came to Calcutta at about 10 o'clock for medical advice; on his arrival, the fever had commenced, his face was flushed, and he had slight head-ache, with sense of soreness in the eyes; his tongue was pale, smooth, and slightly coated with white mucus; pulse 120: he was suffering from much anxiety, and the eyes were watery, but not red; pressure over the region of the stomach caused slight pain, and made him sick; the whole abdomen was doughy and inelastic, but not tumid. He was in very low spirits about his own illness, apprehensive as to its termination; and he thought the removal in a palankeen had brought on the fever rather earlier than usual. There was no desire for great quantity of drink, but he was inclined to take a mouthful of water every ten minutes.

The necessity of quiescence and care for some days was explained to him; he was advised to stay in Calcutta, and have some of his family sent for to attend on him, to which he was unwilling to assent. He remained in town a few hours, and took two Seidlitz Powders, and returned home. I was informed by his friend

that in the evening he appeared as well as for some days before, but perspired more profusely, and said he was weaker; he passed a restless and anxious night, and complained of much oppression at the chest. On the 16th July, the fever came on about the usual hour, and did not appear more severe than common; on the contrary the heat subsided earlier than on former days, but the perspiration was attended with unusual anxiety: he gradually became colder, then fell into a state of stupor, and died about 5 P. M. on the 16th July, 1827.

This person had suffered very little from disease in Bengal; he resided the greater part of 1825 and 1826, near Chittagong, and thought his health impaired while there, though his only suffering there was from slight fevers; which hardly ever confined him to the house. I have no doubt that the exertion of coming to Calcutta on the 15th, and then returning home, had some unfavorable influence on the progress of his disease.

OBS. CXLII.—Mr. Phillips, *Æt.* 36, a stout, bloated, and fat man, of dark complexion, born at Madras, had slight feverish symptoms on the 13th of July, 1830, which subsided in the evening, and he took no remedies; the fever returned on the 14th, about 2 P. M. and again subsided

in the course of the night. On the morning of the 15th, he walked above two miles to a medical man ; who ordered him a dose of Jalap, and advised his going to Hospital. As he wished to avoid leaving his own house, he had a few ounces of blood taken from the arm, six leeches were applied to the left side, and he took the Jalap. However the paroxysm on that day was much worse than either of the former. On the 16th, he walked above a mile, to transact some business which he wished to have settled ; and used no remedies : the Fever of this day was described as very violent ; and it left him much distressed with shortness of breath. He now decided on going to Hospital the next day, if not better.

The paroxysm of the 17th July, was represented as very severe, and attended with early delirium: after he became insensible, he was brought into Hospital at 5 P. M. in a state of muttering delirium : the pulse 120 ; the surface generally was hot ; but the heat of the head was most remarkable ; the extremities hot ; his hands were agitated, and constantly feeling and picking over the belly. He did not put out the tongue when bid to do so ; but swallowed any thing that was put into his mouth. He was bled to lb. i. and the head shaved. A purgative enema was then administered, synapisms were applied

to the feet, and he was made to take 20 grains of Calomel, with six grains of Compound Extract of Colocynth.

While the blood was flowing, his pulse came down to 92, and was soft; but no other change in his condition was observed till 8 o'clock P. M.; the breathing then became laborious, and he sunk and died soon after 8 o'clock.

On post-mortem examination, eleven hours after death: every part of the body was found much loaded with fat; the muscles were of a florid color; the lungs were gorged with blood, especially at depending parts. The liver was enormously large, of pale color, and its surface was marked with numerous ecchymosed patches: there was a small hydatid on its convex surface. The gall-bladder was distended with thick bile, of dark-green color: it was covered with a false membrane; and its base was attached to the colon. The cystic duct was unusually small. The intestines were greatly distended with flatus. There was much serous effusion between the tunica arachnoidea and pia mater on the upper surface of the brain; and morbid vascularity of the substance of the brain: about 3 i. of serum was found in each lateral ventricle. The arachnoid coat at the base of the cerebellum was remarkably opaque, and there was above an ounce of serum beneath the tentorium.

It is a curious fact, that both in Remittent Fevers, and in Cholera, where patients have had extreme oppression at chest, and laborious respiration, for some time before death; we usually find on post-mortem examination, considerable serous effusion beneath the tentorium, extending into the upper part of the spinal canal. It might be questioned, how far the pressure of this fluid on the upper portion of the spinal marrow, and on the origins of the pneumogastric nerve, and spinal accessory nerve of Willis, may be productive of the disordered functions of the lungs, and laborious respiration.

This patient was considered in a hopeless state when he was brought to the Hospital. When a fat and plethoric man suffers several paroxysms of Remittent Fever, without following any regular plan of treatment; especially if he walks about and uses much exertion; effusion is almost certain to take place. After effusion has gone on to such a degree as to produce stupor, on the accession of the 4th or 5th paroxysm; there is very little use in trying any remedy: but in cases where the symptoms of effusion are slighter, the morbid heat of skin being great, and uniformly above the natural standard at the extremities, and the patient plethoric; it is proper to endeavour to alleviate the violence of the disease by taking some blood from the arm.

I am very reluctant to use the lancet, when called to a patient in whom the paroxysm is nearly over; because bleeding is then useless in bad cases, where the disease threatens a fatal termination; and at that stage of the paroxysm, in slighter cases, it is liable to be injurious. I have met with several instances, where the application of leeches was from trivial causes, delayed for 3 or 4 hours after they were ordered; and then put on towards the conclusion of the paroxysm, when arterial action was subsiding, the patient being in a state of languor and anxiety, and the skin perspiring freely:—and death has been the consequence. The painful recollection of some cases which proved fatal, in consequence of my most precise instructions being neglected; makes me anxious to allude in the strongest terms to these misfortunes. The cause of delay in applying the leeches in these cases was generally the difficulty of procuring them promptly; and the friends considered it better to apply them late than altogether to omit them. I hardly deem any part of the observations I have to offer concerning the peculiar nature and treatment of the Remittent Fevers of the rainy season in Bengal, of more importance than the caution I now give, respecting the hazard of either bleeding or applying leeches at a late stage of the paroxysm; after the disease has been

returning daily above a week ; and when the patient is much exhausted. In the case of a stout young man, who had been for several days suffering severe Remittent Fever, from which he was gradually recovering ; and considered by his friends nearly convalescent ; the exacerbation usually occurred about 7 A. M. : it was my custom to see the patient at that hour, and again in the afternoon. On visiting him at 7 A. M. on the 15th July, 1826, I found the exacerbation commencing, with heat of forehead ; but the patient was walking about the room, and feeling hardly any illness. I desired him to go to bed, and apply a dozen leeches to the temples, which he promised to do ; but after my departure he took a cup of tea, and sat down to write letters ; at which occupation he continued till nearly eleven o'clock : he felt very languid, and was perspiring freely, as had been usual when the Fever subsided. He then ordered the man to apply a dozen leeches to his temples. Soon after 12, I was sent for in great haste, and ascertained what had been done : but all interference was useless, the patient was insensible on my arrival at his house, and died in ten minutes after. I have been informed on good authority, of an instance where a man with Remittent Fever, was inconsiderately bled from the arm, just as the paroxysm was subsiding ; and the result was fatal in a few minutes ; the patient being dead almost

as soon as the arm was bound up after the bleeding.

These results, from remedies we are obliged to use in almost every severe case, would excite the utmost apprehension with respect to blood-letting in Remittent Fevers; were there any doubt as to the proper time to draw blood, or to postpone that remedy. But when the indications which guide our practice, are so plain and distinct; we may boldly do all that is requisite; and need not hazard the patient's safety. I have already mentioned the frequency of death at some stages of Remittent Fevers, unconnected with any depletion; sometimes without any warning of the impending danger; and at other times with only some unusual anxiety for an hour or two, when there has been less than ordinary development of febrile heat: still I have sufficient reason to believe, that incautious V. S. or application of leeches at that period when the violence of the paroxysm is over, and pyrexia is subsiding; would very frequently destroy patients, who by a careful and exact treatment might recover. So much precision do I consider necessary in such cases, that I invariably give the most positive orders, that if leeches do not arrive by a stated time, they are not to be applied till the patient be again visited: and to avoid such delay, where leeches are likely to

be wanted, they are ordered to be ready in anticipation. In protracted cases of Remittent Fever, in debilitated subjects; or even in some recent cases where the patient has been exposed to malaria in an intense degree; there is a short period after each paroxysm has reached its acme, in which rapid arterial action continues, with extremely diminished power; though the apparent adynamia is not very remarkable. It is during this period, that an inexperienced practitioner might be induced to try active depletory measures; which he would find injurious. Those who have been 20 years in the country, are well aware of the necessity of this caution: and Medical men on first arrival, had better be warned of this matter, than left to learn it from the most painful experience.

The cases of Remittent Fever most difficult to treat, are those which are preceded by slight indisposition for a long time; and although the disease becomes at length more apparent, and more distressing, the patient only takes some purgative medicine daily, lives on rather a lower diet than usual, and tries "to shake off the sickness" by attending to his ordinary occupations. The disease continues: the paroxysms are generally uncertain in their hour of accession; the return of morbid heat being not very distinctly marked, and of short duration; often

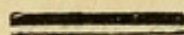
preceded by great anxiety, and followed by profuse perspiration, and cold extremities, for many hours. In these instances, the tongue is seldom dry, and not often much loaded; the exacerbation only marked by increased frequency and weakness of pulse, a slight flush of the cheek, and dull watery appearance of the eyes. Increased anxiety, attended with lurid appearance of countenance, much oppression at the chest, and want of development of febrile heat at the ordinary hour of accession; with extreme apprehension of the result of the paroxysm, in persons usually of firm mind: are to be considered very unfavourable symptoms. Patients with this description of disease, sometimes declare they feel certain that they shall not survive the approaching paroxysm; and too often their predictions are true.

The Natives of Bengal, are very liable to suffer from Remittent Fever during the rainy season. Under ordinary circumstances, the majority of cases occurring among Natives who are not in absolute poverty, are usually slight, requiring only a few mild purgatives, and the application of leeches to the temples, in the early stage of the disease; and small doses of Sulphate of Quinine in the intervals of the exacerbations.

When the disease attacks native patients suffering from the influence of fatigue, poor living, and the depressing passions, it often proves very severe and fatal. The brain and lungs seem to be the organs principally affected in the early stage of the disease; the stomach and intestinal canal at later periods. The same extent of depletion is not required as for Europeans; in fact, when the treatment is left to their own direction, leeches are very seldom used: though plethoric Asiatics suffering from severe attacks of this Fever, are much benefited by one moderate bleeding from the arm, before we have recourse to leeches. I am always averse to the administration of mercury to any great extent, in the Remittent Fevers of natives; except in combination with the purgatives that are given during the early stage of those cases which are attended with distinct inflammatory symptoms; and in those, general or local blood-letting should be premised. It is not very uncommon to see natives who have used much mercury in the cure of Fever, acquire morbid susceptibility to atmospheric vicissitudes, for a year or two: they are then very liable to suffer from the diarrhœa that is connected with a diseased state of the mesenteric glands; and are apt to become permanent valetudinarians, either from Rheumatism, or Dysentery. The frequency of tumid spleen as a concurrent disease, as well as a sequel of

Remittent Fever, is another very cogent reason for caution in the administration of mercury.

Fat and plethoric natives who are attacked with Remittent Fever, even though they have not been exposed to the circumstances usually inducing the more aggravated forms of this disease, and in whom an active treatment is not pursued, are frequently carried off by the 3rd or 4th paroxysm ; and death occurs in the course of the exacerbation, from effusion into the brain and lungs. The symptoms that precede death, are extreme morbid heat of every part of the body, bloodshot eyes, and oppressed breathing ; attended with stupor resembling apoplexy. I have often been called to such cases when they were in a hopeless state, but have not been permitted to make post-mortem inspections. The constitution of the patient, with the stage of the disease when the fatal event occurred, and the nature of the symptoms ; left little room to doubt, that extreme vascular engorgement and effusion existed in the brain and lungs.



THE INSIDIOUS CONGESTIVE FEVER OF THE COLD SEASON.

During the cold months, we frequently have occasion to treat a Fever characterised by slight and obscure symptoms at its commencement.

For many days the apparent pyrexia is so trivial, that a practitioner who is not acquainted with the nature of the disease, hardly sees an excuse for adopting active treatment. The earliest symptoms that are noticed, are usually slight lassitude and weariness in the loins, with occasional transient pains in the joints; and inaptitude to continue any intellectual pursuit with the degree of vigor and satisfaction that is natural to the individual. There is a slight shortness of breath, the urine is increased in quantity, and the sleep is unrefreshing. There is little alteration in the pulse or appetite, but food is not relished as usual; and the patient is induced by a sense of weariness, to take an increased quantity of wine. After a period which varies from four to ten days, these ailments which are hardly noticed, are followed by an obscure degree of dry heat of skin, the urine becomes scanty and high colored, appetite for food nearly ceases, there is some thirst, and much increase of languor. The patient supposes he has a cold, and has recourse to some domestic treatment; which unfortunately is in general the worst that could be devised. With the view of removing his cold and weakness, he eats some good soup, bathes his feet at bedtime, and drinks hot wine and water. Business is still attended to in the day-time; and amusements in the evening are not relinquished until

the disease has been for many days making this slow progress. It is sometimes near the end of the 2nd week, before medical advice is called for, and even then no very distressing symptom is present; the pulse is soft, frequent, and weak; the wrist tremulous; the tongue little disordered; there is anxiety, and a sense of weariness in every part of the body. There is now a constant pain in the forehead, but so trivial that probably the patient will not complain of it, unless particularly questioned. The nights are restless, and the patient is obliged to give up attending to business. Some persons have weakness of the eyes, and a sense as if the eye were bruised when we press over the the lids; the face is slightly flushed, and the hands warm but dry. Others have the extremities rather cold, and the face has a lurid or chlorotic aspect.

Up to this period of the disease, the bowels are usually costive; and when the calls to stool are frequent, the evacuations are exceedingly scanty. If the abdomen be now examined, there is some fulness and tension at the epigastre and across the hypochondria; nor is this tension least, in those rare cases where slight tendency to diarrhoea has been manifested.

If the disease be left to nature, or improperly treated; there is a slow increase of the febrile

symptoms, without anything like an ardent fever, and usually very little alarm is excited, until delirium takes place at night; and the obscure pyrexia of the day, is attended with drowsiness and an approach of stupor. The eyes become red; the tongue much loaded, brown, and dry; the urine continues high-colored; and when the patient is not in a state of torpor, he often calls for drink. Intense yellowness of the skin and eyes, with red colored urine, are occasional attendants on these cases; the bilious discoloration has most frequently appeared, when there has been much oppression at chest, and hurried respiration during the course of the disease. Sometimes a soreness of the whole body is much complained of; and if we examine particularly, we find the highest degree of this morbid sensibility is felt when we press over the glands, and along the course of the absorbent vessels. Patients in whom the glands are thus affected, suffer from rather more morbid heat; evening exacerbations are common, and there is often a very fretful state of mind: these cases are tedious, and much mercury is generally found injurious, but the patients almost always recover.

One of the most remarkable features in this disease, is the long period which patients sometimes continue to be affected by delirium; or in

a state apparently insensible to most external objects and impressions ; picking the bed-clothes, or constantly moving the hands vaguely, as if reaching for imaginary objects ; and still recovery takes place. I have several times seen children, who struggled through the disease, and were restored to perfect health, after having been delirious during two entire days and nights : and I once attended an adult, who was for four days unconscious of any surrounding object, and he recovered. In these patients the disease came on gradually, without any exposure in unhealthy situations. Most cases of this Fever, when protracted, take on a remittent form by the 8th or 9th day.

Notwithstanding the obscure and insidious progress of this malady, a practitioner who has seen the disease frequently, cannot fail to recognise an early stage in which almost all the functions of the system are disordered ; followed by a period of sub-acute inflammation in several organs and textures ; the local affections, often become more particularly concentrated on the brain and liver ; subsequent to which, we observe a stage of oppression. This last stage, is usually very abruptly developed, after a considerable period of indisposition ; during the greater part of which, as I have already said, the patient has attended to his daily business and

joined in social amusements : and this is the reason why we sometimes hear of persons having died of the cold-weather Fever, after an illness of three or four days. However, it does sometimes happen that those who have been much exposed to fatigue and malaria in unhealthy situations, suffer from a Fever, very similar in many of its essential characters ; only that it goes through the several stages in a shorter period than above stated.

We sometimes find that no symptom of indisposition is observed, for 15 or 16 days after the individual has removed from the unhealthy situation, where there is every reason to believe the disease was contracted.

Post-mortem inspection, does not discover much change of structure, different from that which is found in Remittents: the brain and liver are the parts principally affected ; and hepatic abscess is more frequently found than on the dissection of subjects who have died of any other description of Fever. There is often congestion at the root of the mesentery, and in the fat and cellular structure surrounding the duodenum, where it is bound down across the spine. In a few rare instances, where patients have died after a protracted Fever of this sort,

superficial ulcerations of the mucous membrane of the small intestines are found.

All classes of persons are liable to the congestive Fever of the cold season ; it does not spare those who live in the best houses in Calcutta, or at the different stations, and who have command of every comfort : it attacks those who observe regular hours and temperate habits ; and we find women and children suffer from this disease ; which is frequent and sometimes destructive among those persons who are little exposed to most of the ordinary causes of Fever. The most frequent causes appear to be a disordered state of the digestive organs, and obstructed perspiration from cold and humidity : the severest and most obstinate cases occurring, according to my observation, in those years when we have had rain three or four times in the course of the cold season. Mental anxiety and despondency have a remarkably bad effect in aggravating and prolonging the worst symptoms of this disease ; and influencing its termination. The gradual effects of climate and season, during the course of eight or ten months, seem to lay the foundation of some of the diseases of this country ; but prolonged influence of climate is not essential to the origin of this Fever, which I have seen in its worst forms, attack individuals who had not been three months in India. It is

exceedingly rare to meet with this protracted congestive Fever, except at the cold season: but this is by no means the exclusive febrile disease of that period of the year; for remittents, intermittents, and common inflammatory Fevers terminating in abscess of the liver, appear at the same time.

In the cure of this disease, we have the same general objects in view, as in the treatment of common continued Fever; but we see less morbid arterial action to subdue; less pyrexia to moderate; and until the disease is far advanced, little apparent local affection to indicate a particular line of practice: still there is ample evidence of the extensive and permanent impression which has been made by the causes producing the Fever. I am not aware that we can completely subdue this disease at once; even in slight cases, a prolonged treatment of several days, is requisite to restore the healthy state of the several functions. The period when the most effectual medication can be instituted, is when the slight but fixed pain in the forehead commences; one free bleeding from the arm is then advisable; and a dose of Calomel and Jalap, followed by Castor Oil:—a small bleeding is usually requisite on the next morning, and a mild purgative should be given. If the tongue be foul after this treatment, an

emetic should be ordered in the afternoon; followed by daily mild purgatives, until the disease be removed. As long as any symptoms of Fever remain, the patient should be confined to bed, and advised to take no food except tea and thin gruel, in small quantities; when the disease is subsiding, a tepid bath is often very serviceable. If we are not called to treat a patient until a late period of the disease, when the epigastre has become tumid, and symptoms of extensive congestion of the abdominal viscera are manifest; our remedies are less effectual, and the disease more protracted: we are then often obliged to repeat the bleeding from the arm, to apply leeches frequently to the region of the liver, and to pursue a system of active purging with Calomel and Jalap. In other cases, where no distinct symptom indicating an affection of the liver is present, the bowels are remarkably torpid, the belly not very tumid, but doughy and inelastic; scanty black watery evacuations are procured by the ordinary doses of Calomel, followed by Jalap, or Infusion of Senna with Salts: the Fever is slowly progressive, and slight evening exacerbations occur daily; which are frequently attended with morbid heat near the parts where most congestive disease exists. Local blood-letting may be then employed; and we generally succeed in procuring feculent evacuations by giving 12 grains of Calo-

mel with as much Pulv. Scammon. Comp. (Ph. Lond.) and P. Jalap. ʒ i. in the morning;—followed in five hours by a mixture of Castor Oil, and Ol. Terebinth. each one ounce for a dose. These medicines are in some cases requisite to be repeated for several days, and they are usually effectual in procuring copious and feculent evacuations: their efficacy is much promoted by giving at bed-time eight grains of Blue Pill, with as much Compound Extract of Colocynth, and four grains of Extract of Hyoscyamus. The obscure but permanent head-ache, is by no means to be neglected; it is best removed by shaving the head, and by due employment of general and local blood-letting.

When we are using the drastic purgatives, with Oil of Turpentine, as above mentioned; and they seem to be acting with all the success we could wish; we sometimes find suddenly, an unusual fretfulness of the patient's temper; there is anxiety, and increased avidity for drink: the stools though copious do not afford relief, and the evacuations are found to have a reddish tinge; the tongue assumes a bright-red color; there is a frequent and small pulse. The character of the disease is now changed, and we must restrict our medicines to articles of the mildest nature. Small doses of Castor Oil, or of Infusion of Senna, with Manna, are to be given

in the morning, followed in four hours by an Enema, which is to be repeated in the afternoon: and we give at bed-time, either small doses of Ipecacuanha with Hydrarg. cum Creta; or Pil. Hydrarg. Pulv. Ipecac. Extract. Gentian. and Extract. Hyoscyami, each two grains in pills. Should the above condition continue, a blister is requisite to be applied to the belly; and if there be much tenesmus, and the affection of the head has ceased; an enema of 2 oz. of cold water, with 3 ss. of Laudanum, is advisable to be given at bed-time. The food should be restricted to small quantities of tea and arrow-root.

Although high arterial action, and great increase of heat are so rare in this Fever, except at remote stages of the disease; blood-letting is a very essential part of the treatment. I do not remember ever to have seen a patient that died, who had been bled from the arm, at an early period; though the subsequent treatment may have been so unskilfully conducted as to insure a prolonged disease; in the cure of which much difficulty was experienced.

OBS. CXLIII.—Jas. Carter, *Æt.* 19, arrived in Bengal early in December, 1826; he was of dark complexion and florid face, but rather delicate constitution: he was a relation of a Captain of the ship in which he came out, and re-

sided on shore with him, to assist in the transaction of his business. His habits were regular; in fact he was remarkably careful, not only in his modes of living, but in avoiding exposure to the sun, as he had a dread of the climate. He began to feel ill on the 2nd February, 1827, and thought he had caught cold, but his ailments were so slight that no treatment was followed except diminishing his quantity of food, bathing the feet in hot-water at bed-time, and taking Seidlitz Powders in the forenoons: but he attended to business every day.

He gradually became more feverish, and had restless nights, with slight head-ache, and soreness of the eyes: for which he was bled on the 6th February, by the Surgeon of the ship; who gave him some Calomel and James's powder at bed time, followed by Castor Oil in the morning; and restricted his food to broth, tea, and bread. This treatment seemed so beneficial, that on the 8th he thought himself well: however, a slight exacerbation occurred in the evening, but he felt well again on the 9th, and took some Decoction of Bark with Acid, which was continued daily in the forenoon till the 12th; and Seidlitz Powders were used early every morning to keep the bowels free. His febrile symptoms increased, and his nights were more restless than before: but he had not much complaint except

a sense of weight in the forehead, and slight flush in the cheeks; attended with so much weariness and sense of debility, that he was obliged to remain in bed the greater part of the day. He afterwards took Calomel and Extract of Hyoscyamus at night, and small doses of salts in the mornings, which purged him; but with little apparent benefit; and his gums became very slightly affected by the mercury on the 16th. The Fever however was not removed, and there was so much languor and exhaustion, that impending typhus was apprehended. I was then requested to see the patient, and got the above account of his illness; and of the treatment that had been followed.

The state of the patient on the 16th Feb. did not present any symptom of much urgent disease, except a constant restlessness and sighing. There was very little morbid heat of skin, and that was more evident at the forehead and epigastrium than at other parts; the whole surface was remarkably dry: considerable fulness at the epigastre was observed, but pressure there gave no pain; the pulse was 96 and rather weak; the eyes dull and watery; tongue little coated with brownish mucus, and he was thirsty. The stools which were kept for inspection, were copious, watery, and of a black color, mixed with masses of grey mucus, and slight appearance of yellow.

fæces. The urine was scanty and high-colored. He was directed to take only tea, toast-water, and thin barley-water.

The head was shaved, 10 leeches were ordered to the epigastre, and four to the temples.—12 grains of Calomel with six grains of Compound Extract of Colocynth, and three grains of Extract of Hyoscyamus were given at bed-time: and Infusion of Senna with Salts and Manna, early the next morning.

February 17th.—He has had a scanty fluid black stool in the night; had no rest, and was at times delirious. The medicine has operated freely several times this morning, the evacuations are not improved, but he is now more tranquil than in the night. Pulse 96; tongue moist, but more loaded with brown mucus.

R. Antimon. Tart. gr. ii.—Aq. Fontis lb. i. misce.

A large table-spoonful to be drank every hour.

Ol. Ricini ʒ i. at noon.

No food but tea and barley-water.

Vesper.—He has had two scanty black watery stools since morning, and there is a slight increase of pyrexia. Pulse 108; tongue dry and brown; the eyes are filled with tears; the cheeks flushed, and skin dry.

Apply eight leeches to the temples.

R. Calomel. ʒ i.—Extract. Hyoscyami,
Extract. Colocynth. Comp. āā gr. iv. H. s.

February 18th.—He was restless and delirious all night, but is more composed at present; though he is occasionally somewhat incoherent, and lies with his mouth open. The tongue is dry and brown, skin dry, and pulse 106; but there is very little morbid heat. Belly tumid and inelastic, but pressure does not seem to cause much pain: he had several scanty watery stools, passed in bed.

R. Olei Ricini—Olei Terebinth. āā ii. ℥ i. misce.

To be given immediately.

Let him have Pulv. Jalap. Comp. ℥ i.—Pulv. Scammon.

Comp. ℥ i. in mint water, at 3 P. M.

The Antimonial Solution to be given every hour as yesterday.

Vesper.—The medicine has procured several copious dark-brown stools, much more feculent, and of more uniform appearance than those voided lately, but of very dark color. His belly is softer and less tumid; the cheeks are slightly flushed; extremities warm and dry; pulse 110, and stronger than in the morning. He appears to suffer much anxiety, and his answers are somewhat incoherent.

Ordered 12 leeches to the epigastre, and 4 to the temples.

R. Calomel ℥ i. H. S.

Antimonial Solution every hour during the night.

Feb. 19th—He was incoherent all night, and constantly moving his hands, as if attempting to take hold of some imaginary object: has had two more dark-colored feculent stools, passed in bed. He has not spoken during the night; and towards day-light his hands were often directed towards the pubis; there was slight fulness in the region of the bladder, and as he had not voided urine, during the night, a catheter was introduced, and above a pint of high-colored urine was drawn off. The gums are very sore. He swallows whatever is put into his mouth, and does not seem to distinguish food from medicine. There is much tremor of the head and arms, when he is raised that the medicine may be given.

R. Pulv. Scammon. Comp. (Ph. Ed.) ʒ i.

Jalap. Comp. ʒ i.—Aq. Menth. Pip. ʒ i. misce, to be given at 8 P. M.

Infusion of Senna with Salts at noon.

A wine-glassful of barley-water four times a day.

Vesper.—Four stools, passed in bed; no urine voided. Pulse 108 and weak. There is very little alteration since morning, except a slight increase of morbid heat of the forehead. The hands are tremulous, and he continues to pick the bed clothes.

Catheter introduced.—Apply two leeches to the temples, and a blister to the epigastre.

R. Extract. Colocynth. Comp. gr. vi. H. s.

Antimonial Solution omitted. A small wine-glassful of Camphor Mixture to be given every two hours, and some gruel once in the night.

Feb. 20th.—Another restless night, and the stools passed unconsciously in bed; pulse 102, and not very weak. There is very little morbid heat of skin, and no material change since yesterday, except that the sacrum is found to be very red, and somewhat excoriated. The catheter was again used early this morning.

R. Calomel gr. iv.—Pulv. Jalap.

Pulv. Scammon. Comp. (Ph. Ed.) āā ʒ ss. to be given at 7 A. M.

Ol. Ricini.—Ol. Terebinth. āā ʒ i. at noon.

Camphor Mixture continued every two hours.

A wine-glassful of thin gruel four times in the day.

Vesper.—Several copious feculent stools have been passed in bed, but not unconsciously; he has voided urine, and appeared more tranquil all day; has slept occasionally for a few minutes. Pulse 98, soft, and weak; hands less tremulous. The tongue is moist, but much coated with brown mucus in the centre, its edges cleaner.

R. Scammon. Gummi-resin.

Ext. Colocynth. Comp. āā gr. iv.

Saponis Duri.—Cambogiæ āā gr. i. misce fiant Pil. ii.

H. s. sumendæ.

Feb. 21st.—A restless night: he is much distressed by the soreness of his mouth, and ulceration of the sacrum. Pulse 106, and soft; there is no morbid heat of skin; the feet are cool, and a slight moisture has appeared at the joints.

R. Pulv. Jalap.—Magnesiæ āā ʒ i. at 7 A. M.

Ol. Ricini ʒ ss. at noon.

He was ordered to take Infusion of Bark ʒ iss. with Sulphate of Magnesia ʒ i. and ten drops of Aromatic Sulphuric Acid at 4, and repeat at 6 P. M. Food—tea, and thin sago with a spoonful of Sherry.

Vesper.—He slept at times, and is much better. Pills repeated as last night.

Feb. 22nd.—He has some disturbed sleep at intervals; several stools of lighter color; he is very faint when raised in bed; the tongue is moist and much cleaner. Castor Oil repeated at 7 A. M. and Infusion of Bark with Salts in the afternoon. Pills at bed-time as on the 20th.

Feb. 23rd.—He was rather too much purged last night, and debility is now the principal ailment. A considerable slough of the sacrum is separating. Chicken broth added to his diet.

Infusion of Bark with Salts continued twice a day.

R. Scammon. Gummi-resin.
Extract. Colocynth. Comp. āā 3 ss.
Saponis Duri,
Cambogiæ āā gr. vii.—misce et divide in Pil. xiv.
—One or 2 Pills every night to keep the bowels free.

After this date the sore on the sacrum was very troublesome, and the patient was confined to his room a month longer, on account of the ulcer and general debility. He ultimately recovered.

OBS. CXLIV.—J. Marjean, Æt. 26, sailor of the Ship *Jean Henri*, a stout man, of dark complexion; admitted into General Hospital on the 24th November, 1830. He has been ill for 12 days, with Fever and head-ache, for which he had been bled from the arm to 3 vi. and taken aperients. On admission he was labouring under considerable pyrexia, with morbid heat of forehead; the epigastre was tumid and inelastic, though the pulse was soft and nearly natural; tongue slightly coated with white mucus; thirst not very urgent.

V. S. ad lb. iss.

R. Calomel.—Extract. Colocynth. Comp. āā 9 ss. at 7 A. M.
Pulv. Jalap. Comp. 3 i. at noon.

Vesper.—Blood not buffy ; he has had only one stool, and says he is better ; but the tension at the epigastrium and heat of forehead continue. Pulse 78, and rather hard.

Apply 10 leeches to the temples.

R. Ext. Colocynth. Comp.—Pil. Hydrarg. āā gr. v. ℥. s.

November 25th.—The medicine has operated four times in the night ; evacuations copious, dark, and feculent ; he had no sleep, and there is rather more fever this morning ; the forehead is very hot, and pressure at the epigastre causes pain.

V. S. ad $\frac{3}{4}$ x.

Pulv. Jalap. Comp. $\frac{3}{4}$ i.—to be taken at 7 A. M.

Apply 10 leeches to the epigastrium at noon.

Vesper.—The leech-bites have bled profusely, and the medicine has produced free evacuations of the same sort as before. He had a slight rigor at noon, and thinks he is better ; some tension at the epigastre remains. Pulse 78, and softer. Blood drawn in the morning slightly buffy.

R. Extract. Colocynth. Comp.—Pil. Hydrarg.

—— Hyoscyami āā gr. iv. ℥. s.

Nov. 26th.—He slept tolerably, and is much better. Pulse 74.

R. Pulv. Jalap. Comp. ʒ i. at 7 A. M.

Nov. 27th.—He was purged freely yesterday, and slept till midnight; since that he has been feverish; some morbid heat of forehead exists at present, and he complains of head-ache. Pulse 76 and soft.

Apply four leeches to the temples.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss.

Vesper.—He is cooler, suffering from anxiety, and appears weaker; has had two scanty watery stools of dark-grey color. Up to this time, he has only been allowed tea, bread, and Cream of Tartar dissolved in thin barley-water;—he is directed to take some arrow-root, with a small quantity of wine this evening.

Ext. Colocynth. Comp. ʒ ss.—Pil. Hydrarg. gr. v. H. s.

Nov. 28th.—The Fever has returned, not preceded by any rigor; he is suffering from head-ache and slight thirst; the skin is dry; pulse 82, and rather hard but not full. He slept little in the early part of the night.

Apply four leeches to the temples.

R. Pulv. Jalap. Comp. ʒ i.

At 4 P. M.—He is still feverish, and the forehead is hot; pulse 92 and soft; he has been delirious occasionally since noon; the belly is hot and epigastrium tense: evacuations from the bowels scanty, watery, and of dark-grey color.

R. Calomel. ʒ ss.—Pulv. Jalap. ʒ i. statim.

At 9 P. M.—He has vomited once, and has been purged freely several times. Pulse 86 and soft; he is now cooler, and not delirious.

R. Calomel ʒ i.—Extract. Hyoscyami. gr. iv. H. s.

Nov. 29th.—He has been purged freely eight times in the course of the night; the tension and pain at the epigastre are removed, and he is free from fever. He desires to eat bread and milk, which is allowed in small quantity.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v.

Nov. 30th—Bowels free; he is convalescent, but weak.—Infusion of Senna and Gentian ordered daily. He was discharged to join his ship on the 3rd December.

OBS. CXLV.—Pierre Magnant, *Æt.* 21, a sailor of the Ship *Jean Henri*, of middle stature and firm; was attacked with Fever on the 22nd

Nov. 1830, and treated on board ship with mild aperients, low diet, and one bleeding from the arm to six oz. !! He was admitted into General Hospital on the 1st December, in the evening, with obscure febrile symptoms; the tongue was white and dry; pulse oppressed; face livid; and there was not much morbid heat of surface.

Head shaved.—V. S. ad lb. iss.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss. H. S.

Dec. 2nd.—The medicine has produced several scanty, brown, watery stools during the night: the blood has not been kept for inspection; he has suffered much since midnight from anxiety and dreadful thirst, and is now low, weak, and nearly cold: the pulse at the wrist is not perceptible, and his countenance has a lurid cadaverous aspect; in fact all the symptoms of extreme venous congestion and obstructed circulation are present. He complains of a difficulty of swallowing, but has not vomited.

R. Calomel. ʒ i.—Opii. gr. i:—fiant Pil. statim sumend. cum haust. ex Spirit. Ammoniae Aromat. ʒ i.

Aquae Tepid. ʒ i.

Habeat statim Enema Cathartic.

Ordered to apply six leeches to the Epigastrium.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss.—to be taken at 10 o'clock A. M.

Ol. Ricini ʒ i. at 2 P. M.

Vesper.—He has had several feculent stools during the day; the thirst is moderated; his pulse is now perceptible, but very weak. He was ordered some sago.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss.
Extract. Hyoscyami gr. iv. fiant pil. n. s. sumend.

Dec. 3rd.—The extreme venous congestion is decreased, and pulse improved in strength, but still soft; he has had several copious watery stools, some dark-grey powder has subsided in the bottom of the stool-pan. The belly remains very hard and tense.

Apply 16 leeches to the epigastrium, and a large hot poultice after their removal.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss. at 7 A. M.
Pulv. Jalap. Comp. ʒ i. at noon.

Vesper.—His condition is not much altered, except that he has been delirious. The medicine has produced several fluid dark stools. Some hot sago was given; and at bed-time he was made to take

Extract. Colocynth. Comp. gr. viii.
Calomel.—Extract. Hyoscyami āā gr. iv.

Dec. 4th.—He has had several scanty evacuations during the night, but the belly is still

tense. The pulse remains oppressed ; countenance livid and cadaverous ; tongue clean and moist.

Ordered 16 leeches to the belly.

R. Pulv. Jalap. \mathfrak{z} i.—Calomel \mathfrak{z} ss.—to be taken in treacle at 7 A. M. and repeated at noon.

A purgative Enema was ordered at 7 A. M. and repeated at 8.

At 4 P. M.—He has had three copious feculent dark-colored stools, and the belly is rather less tense. The leeches have bled freely. The pulse continues as in the morning ; a degree of delirium is now present, and the tongue is cold.

R. Calomel. \mathfrak{z} i.—Opii gr. i.—to be taken in pills immediately.

R. Spirit. Ammoniaë Aromat. \mathfrak{z} i.

Aquaë Cinnamon. \mathfrak{z} i.—misce, to be drank after the pills.

The above medicine was repeated in three hours.

These remedies had no effect ; he gradually became more torpid, and died at 11 P. M.

Dissection—11 hours after death :

On opening the abdomen, the liver and spleen were found enormously enlarged, rounded, and of

very dark slate-color; their texture so soft and friable as to be easily torn. The enlargement of these viscera, was sufficient to account for the fulness, tension, and hardness of the abdomen, which had been so remarkable during life. There was a deficiency of the usual quantity of blood in other parts of the subject. The gall-bladder was distended with much dark-green bile. The stomach contained a slight quantity of gas; its appearance was relaxed, and the coats were pale; its mucous membrane was lined with much pale-grey mucus.

OBS. CXLVI.—Mortimer, *Æt.* 28, a middle-sized and muscular man, of dark complexion, temperate and active habits. He has been labouring under Fever for five days, not preceded by any rigor, but he suffers an exacerbation about 1 P. M. daily, and has less Fever in the forenoon than at any other period during the day. He has taken purgatives, and applied leeches to the temples and pit of the stomach: but as the disease is unabated he desired to be sent to Hospital, and was admitted in the evening on the 5th December, 1831, suffering from Fever, with flushed face, and pulse at 102.

Apply eight leeches to the epigastrium.

R. Calomel. ʒ ss.—Extract. Colocynth. Comp.

Extract. Hyoscyami āā gr. iv. H. s.

Dec. 6th.—The medicine operated 10 times, the evacuations are scanty, black, and slimy. He is now cool; his tongue is dry and nearly clean. Pulse 108 and feeble.

R. Calomel. ʒ ss.—Extract. Colocynth. C. gr. v. at 7 A. M.
Pulv. Jalap. Comp. 3 i. at noon.

The exacerbation of Fever took place at 2 P. M. preceded by chilliness but no rigor. He soon became very hot and restless. Pulse 126, and rather small; face flushed; tongue moist, and coated with a little white mucus.

V. S. ad lb. iss. statim.

R. Extract. Colocynth. Comp. gr. viii.

——— Hyosciami.

Pil. Hydrarg. āā gr. iv. H. s.

Dec. 7th.—The blood taken yesterday is not buffy; he has had two free stools of dark color; the tongue is moist and clean; he complains of a cough, but is now quite cool.

Apply six leeches to the Epigastrium.

R. Calomel.—Extract. Colocynth. Comp. āā ʒ ss. at 7 A. M.
Ol. Ricini 3 i. at noon.

Vesper.—The medicine has operated four times; the evacuations are copious, watery, and as black as ink. He has been rather feverish

since 1 P. M. Pulse 108 and soft ; skin quite dry, but there is very little morbid heat, and his face is pale ; the tongue is moist and nearly clean : he is now suffering from some anxiety and languor. The abdomen is soft, flat, and elastic. Some sago allowed.

R. Calomel. ʒ i.—Extract. Colocynth. Comp. gr. v.
Opii gr. i. H. s.

Dec. 8th.—He has had only one stool during the night, which is copious and more feculent than those of yesterday. The anxiety has subsided, and the pulse is soft. The centre of the tongue is dry, and slightly coated with grey mucus, its edges are moist and clean. He was ordered to take Infusion of Senna with Salts.

Vesper.—The medicine has produced five copious watery stools of dark-green color ; pulse now 112 ; he is not suffering so much from anxiety as he was last night.

R. Calomel. ʒ ss.—Extract. Colocynth. Comp. gr. viii.
Extract. Hyoscyami gr. iii.—Opii gr. ss. H. s.

Dec. 9th.—He slept, and feels much better ; the medicine has produced two stools of light color. Pulse 94 and soft ; tongue moist and nearly clean. He was ordered two grains of Sulphate of Quinine at 8 o'clock ; and the dose repeated

at 10 A. M.—a drachm of Compound Powder of Jalap, at noon.

Vesper.—The medicine has operated freely, the evacuations are black and watery, with some dark-brown fæces resembling portions of putrid sponge.

R. Extract. Colocynth. Comp. gr. viii.—Calomel.
—— Hyoscyami āā gr. iv. ℞. s.

Dec. 10th.—He has had four pale-yellow evacuations during the night, and is now feverish.

R. Pulv. Jalap. Comp. ʒ i. at 7 A. M.
One grain of Sulphate of Quinine in solution at 10, 11, and 12 o'clock.

Vesper.—Bowels free, and he is much better than usual at this time of the day.

R. Extract. Colocynth. Comp.—Pil. Hydrarg.
—— Hyoscyami āā gr. iv. ℞. s.

Dec. 11th.—He has had two stools during the night; the first fluid and of light-yellow color, the second nearly black and pultaceous.

R. Ol. Ricini.—Aquæ Cinnamon. āā ʒ i. at 7 A. M. and repeated at noon, if he be not freely purged.

Dec. 12th.—The medicine operated four times during the day; the evacuations are copious, fluid,

and of light-yellow color: he had two moderate loose stools at night, of natural color. He slept well, is cool, and has no complaint except debility. Mild purgatives and Quinine were repeated; and he was able to leave Hospital on the 16th December.

OBS. CXLVII.—Henry Freeman, *Æt.* 30, a middle-sized but muscular man of dark complexion, five years resident in India, and recently employed at Altarabanka in the Sunderbunds; came under my care on the evening of the 16th January, 1832. He was then in a state of ardent pyrexia, with very hot skin and flushed face; the pulse 92, but neither remarkably full nor hard. The tongue loaded with dark-grey mucus. There was a fulness at the epigastre and hypochondria; and some morbid sensibility at the scrob. cordis, as well as below the navel. The bowels costive. He stated that he had been ill six days with Fever: there has usually been a coldness at 10 A. M., followed by extremely severe Fever, and little or no perspiration afterwards.

V. S. ad lb. ii.

R. Calomel. gr. v.—Extract. Colocynth. Comp. ʒ ss. H. s.

January 17th.—The blood is florid and not buffy; the serum is turbid. He had only one

stool during the night, it is of dark color. His face is less flushed; pulse 76 and soft; tongue as yesterday. Food ordered to be restricted to small quantities of tea and sago.

R. Extract. Colocynth. Comp.

Pil. Hydrarg. āā ʒ ss. at 7 A. M.

Pulv. Jalap. Comp. ʒ i. at noon.

Vesper.—The fulness of belly remains, without hardness: the tongue is cleaner, and there is less morbid heat of head. The medicine operated four times early in the day, but not freely. Arrangements were made to bleed this man in the cold stage; but as no rigor returned at the usual hour, six leeches were applied to the epigastre in the afternoon. Late in the afternoon a profuse purging of black water took place, which made him very weak. He was ordered some sago with a small quantity of wine; and to take

Calomel ʒ ss.—Extract. Colocynth. Comp.—Extract. Hyoscyami āā gr. iv.—Opīi gr. i. H. S.*

* I have made no memorandum of this case on the 18th, but conclude there was no material change on that day, and that on account of the previous purging no medicine was given.

Jan. 19th.—He slept, his body is now nearly cool, and there is no morbid heat of head. Pulse 96. The edges of the tongue are clean and moist, its centre coated with brown mucus, and rather dry. He had one scanty stool in the night, consisting of light-colored fæces with dark-brown water. There has been no return of coldness since he was bled.

R. Pulv. Jalap. Comp. ʒ i. at 7 A. M.

R. Extract. Colocynth. Comp.—Pil. Hydrarg. āā gr. v. at noon.

The body to be sponged with hot water.

Vesper.—He is suffering from anxiety; the fulness at the epigastre remains. Pulse 116.

Two leeches were ordered to the epigastre, and he took at bed-time

Extract. Colocynth. Comp. gr. viii.—Pil. Hydrarg.

—— Hyoscyami āā gr. iv.

Jan. 20th.—No sleep; the leech-bites are still bleeding. The pills operated twice, and his belly is much softer; he is perspiring; the centre of the tongue is coated with a brown dry crust, but its edges are moist and clean. Pulse 104 and soft. His principal complaint is of anxiety and lowness; his voice is weak.

R. Infus. Sennæ C. $\frac{3}{4}$ iss.—Quininæ Sulph. gr. ii.

——- Gentian. C. $\frac{3}{4}$ ss.—Magnesiæ Sulph. 3 ii.

Acid. Sulphuric Aromat. gtt. iv.—misce.

To be taken at 7 A. M.

Two grains of Quinine were ordered to be given at 10 A. M. and repeated every hour till 3 P. M.

At noon, he was tranquil, but appeared weak and low; the pulse was 66 and soft; his hands were quite cool; the tongue as above stated, and his bowels had been moved once. He was ordered to have a small quantity of sago and wine at 12, and repeated at 2, and 4 o'clock.

Vesper.—No improvement; the symptoms of extreme congestion with debility continue. The tongue is dry and hard; there is no morbid heat of any part; the feet are cool, and he has a slight head-ache; he suffers from great anxiety, but is quite coherent; pulse 118 and soft. He has been purged twice.

The head was shaved, a small Blister was applied to the epigastre, and synapisms to the feet. Twenty grains of Calomel were given at 6 P. M., and at nine he took ten grains of Calomel, with four of Compound Extract of Colocynth, and as much Extract of Hyoscyamus.

Jan. 21st.—He passed a restless night; and had two scanty dark stools since 6 P. M. yesterday. The pulse is 92 and very soft; the edges

of the tongue are clean, its centre is covered with a dry crust. His food to consist of tea and arrow-root.

A purgative enema was ordered.

R. Calomel. \mathfrak{z} ss.—Extract. Colocynth. C. gr. v. at 7 A. M.

R. Pil. Hydrarg.—Ext. Colocynth. C. $\bar{a}\bar{a}$ \mathfrak{z} ss. at 10 A. M.

Small doses of Infusion of Senna with Salts to be given at intervals after 12, till free stools are procured.

Vesper.—The medicine has produced six black stools; the four last evacuations are copious, and resemble jelly. His tongue is moist, but black; pulse 104 and soft.

R. Calomel \mathfrak{z} i.—Opii gr. i. H. S.

Jan. 22nd.—He had a tranquil night, with some sleep, but was once incoherent; now he is rational, and says he is better; pulse 104 and more firm than yesterday; there is no morbid heat of skin; tongue coated with a brown dry thick crust. The whole belly is elastic, tense, and full, and there is obvious hardness in the region of the liver.

R. Pulv. Jalap. Comp. 3 i. at 7 A. M.

Ol. Ricini—Ol. Terebinth. $\bar{a}\bar{a}$ 3 i. at 11 A. M.

Infusion of Senna with Salts at 1 and 3 P. M.

Vesper.—The medicine has produced dark-colored, fluid, offensive evacuations, in moderate

quantity. The pulse was 88 at 11 A. M., it is now 112 and regular; there is uniform warmth of surface, and the belly is soft. Tongue rather cleaner at its edges, but much coated with a brown dry crust in the centre. His gums are rather livid, but not swollen.

R. Extract. Colocynth. Comp. gr. viii.—Pil. Hydrarg.
—— Hyoscyami āā gr. iv. at 6 P. M.—and repeated at 10 o'clock, with one grain of Camboge.

Jan. 23rd.—He slept, and has had four free stools during the night, of nearly natural color, with a slight tinge like rhubarb. Pulse 120 and soft. There is a slight tremor of his wrists. The tongue is quite dry, and coated in the centre with a thick brown crust. Abdomen softer; some hardness of liver still perceptible. The extremities are warm.

R. Pulv. Jalap. Comp.
—— Scammon. Comp.—(Ph. Ed.) āā ʒ ss.
Tinct. Sennæ ʒ ss.
Aquæ Menth. Pip.—Aquæ Tepidæ āā ʒ ss.—misce,
to be taken at 7 A. M.

After eleven o'clock he was suddenly seized with anxiety and restlessness, without any evident cause, and died at noon.

On post-mortem inspection, the subject was not found emaciated. The brain was rather

paler than usual, and void of vascular turgescence. A very slight serous effusion was observed in the ventricles, and below the tentorium. The tunica arachnoidea at the base of the brain was more opaque, and thicker than natural. Considerable venous congestion of the lungs was observed, and infiltration of serous fluid into the cellular structure at the base of the lungs. There was slight morbid turgescence of the vessels of the omentum and mesentery. Much vascularity was evident by the side of the spine, behind the peritoneum; and an appearance of extensive ecchymosis near the pancreas, attracted particular attention. The liver was somewhat enlarged, softened, and friable; the gall-bladder smaller than in its healthy state. Spleen enlarged to about twice the healthy size, its texture soft, black, and friable. The coats of the stomach were pale, both externally and internally.

The Natives of Bengal are not exempt from the slow insidious Fever of the cold season; which seems to occur more frequently among those who are in affluent circumstances, than among the poorer orders. I have had occasion to see the disease often in the lower provinces, and find it as obstinate and as troublesome to treat, as in Europeans. The cerebral symptoms of an urgent nature, are usually slow in appear-

ing; but they are often more obstinate in Asiatics than in Europeans; while there is usually much less hepatic disorder among the natives of this country. A less active system of treatment is requisite in their cases, than in Europeans, in consequence of the peculiarities of their constitutions.

Fevers are very common among the Natives of this part of India, whatever be their occupation, or circumstances in life; but they do not suffer from such violent and prolonged arterial action as Europeans; and the tendency to visceral disorders of a fatal description, the direct result of active pyrexia; bears no proportion to the frequency of important visceral diseases which attend the Fevers of Europeans. The liver is rarely implicated to such degree as to run into abscess: but in some seasons, Jaundice is by no means a rare sequel of Remittent Fevers; and Dysenteric affections are frequently found among the remote consequences of those Fevers which are prolonged till the cold season approaches. The slow progress of Spleen Disease, and the existence of Œdema of the feet, are frequently observed among Natives, after Fevers during the rains, as well as in the cold season.

Respecting the cure of the Fevers of Natives generally, I have already alluded to the safety

with which we may trust to much more moderate degrees of active treatment, especially as regards blood-letting and leeches: and the above statement of the slighter tendency to important visceral diseases of an inflammatory character, leads to the conclusion, that mercury in considerable quantities, is rarely necessary in their Fevers; and experience fully supports this inference. In the greater number of their Fevers, when cerebral symptoms and pulmonary congestion are not urgent, Natives require a very simple treatment; and usually recover in a few days by rest and mild aperients; such as their mild purgative decoctions named *Panchun* or *Aruck-badee*: and by following their usual custom to take no food, and using drink in very small quantities, as long as any degree of active pyrexia exists. In their remittents, and almost all those febrile affections which come on after much exposure in unhealthy situations, the early use of Quinine, combined with mild aperients, is advisable: and protracted cases when convalescent are much benefited by removal for some months from the station where they have suffered from disease.

Although I know the objections which Natives frequently make to blood-letting, I must repeat my observation respecting the safety and utility of V. S. in the severer cases of their Fevers, in which

it can be employed at an early period after the appearance of cerebral affections. Much more may be said in favor of the application of leeches, in a larger proportion of their Fevers; in which the lancet is not requisite. In a few very severe cases, where the inflammatory symptoms ran high, and required both V. S. and leeches, I have ordered the Fever Powder* with Calomel; and continued its use until the mouth was slightly affected by the mercury; and I have reason to be satisfied with the treatment.

The frequent repetition of very active purgatives is rarely requisite to that extent as in Europeans. Plethoric Natives suffering from severe fever, who have had an active saline purge, derive much benefit from two or three moderate doses of Jalap with Scammony, and two grains of Calomel in each dose: but prolonged use of very active Cathartics is apt to be followed by prostration and coldness; more especially in those Fevers which have a tendency to the remittent type. We find the constitution

* *R.* Antimon. Tart. gr. ii.

Cretæ Præparat.—Pulv. Gum. Arabic.

Sachari Albi āā 3 ss.—Calomel. gr. xvi.—misce et divide in chart. xvi. One powder is given every three hours. Much care is requisite in making up this prescription: the Tartar Emetic and Chalk require to be rubbed in a mortar for an hour before the other ingredients are added.

of the Natives of Bengal soon subdued by those febrile disorders which come on after fatigue and privations, in damp unhealthy situations, where the air is contaminated by malaria, and the water is bad; under these circumstances they sink rapidly into a very low state.

The foregoing subdivisions of the Fevers of Bengal, have been adopted on account of the convenience which they afford for a particular description of the varieties that occur in the character and progress of those diseases: they also admit of pointing out with more precision, the treatment advisable to be followed; and I trust that I have not in any instance separated diseases essentially the same. Some such plan seems consistent with the nature of the subject; and it is especially required in treating of the Fevers of Bengal, on account of the great variations of temperature and humidity of the atmosphere which occur in the course of the year; and to which I believe we must ascribe in some degree the peculiarities of our Fevers. This arrangement coincides with the sentiments of Sydenham, who, in alluding to the varieties of Fevers prevalent in Britain in his day, says, "I am convinced that the same method which cures in the middle of the year, may possibly prove destructive at the conclusion of it."

Diseases of the Liver and Spleen, as well as Dysentery, having been already considered; I have not been obliged to revert to the treatment requisite when those affections supervene in the course of Fevers.

The Cold Affusion has not been mentioned among the remedies for Fever; and it has been seldom used, because it is not very often that we have patients with Fever, who are exactly in the condition requisite for the favorable employment of the Affusion; and who have not taken so much mercury as to render that remedy unadvisable. I may however state, that in the few cases in which it has been resorted to, the effects have been excellent, in abating morbid heat, and subduing febrile action. Perhaps the habit of trusting much to mercury in the early stage of Fever, and little to this remedy, will hardly be justified by future experience. There are certainly some circumstances under which the use of mercury in Fevers proves in general unavailing; namely, when profuse cold perspirations, coldness of the extremities, and prostration of strength prevail, without distinct symptoms of local inflammation: at the same time that much exhaustion, anxiety, and lowness of spirits exist. I will not assert that Calomel is invariably useless in Fevers where these symptoms prevail; but I have very often found it injurious in such cases; conducive to a pro-

longed and distressing prostration of vital power ; conducive to the continuance of watery black stools ; and of no avail, even when pushed on to produce the most free salivation. In allusion to the constant use of Calomel in Fevers, I would ask what grounds there are for the administration of Calomel in all the slight Fevers of children ; and for the general omission of an early Emetic ?

It appears to me, that Sulphate of Quinine is sometimes unreasonably employed, under the idea that it will cure the early stage of inflammatory Fevers. I am quite certain that children are often distressed by head-aches, from the use of Quinine, when they are pale, and suffering from some slight congestion, with sub-acute internal inflammation ; which would be cured by an Emetic and mild purgatives ; whereas the complaint is prolonged by Quinine. The errors committed by the improper employment of Quinine, are more liable to be injurious in febrile cases, than errors from the excessive use of Calomel ; because the latter is generally combined with a system of treatment essentially antiphlogistic ; while Quinine is apt to be combined with a treatment essentially tonic, and an invigorating diet of animal food. During the existence of Fever, and at an early period of convalescence, I hardly know

anything more dangerous than too much food ; and the very worst description that can then be used is soup, or any sort of aliment made of meat. Most patients require restraint in this respect: small quantities of wine with gruel, may occasionally be requisite, in cases where the weakest chicken broth would be injurious. With respect to food, it is often requisite to represent to patients and their friends, the wide difference there is between moderating the symptoms, and curing the disease: and also that a period must elapse after acute disease has ceased, before a patient can be deemed fit to use the food to which he is accustomed when in health. In fact, we have to point out, that in many cases, after our remedies have produced their best effects, they only put the constitution in a condition to overcome disease; for which purpose, some time and a very moderate diet, with quiescence, are requisite.

NAKRA.

THE natives of this part of India are subject to a singular febrile affection, which though transient, and seldom or never fatal, is of a very severe and distressing description: it takes place suddenly, and the patient is for a time

completely disabled. This affection is named by the Bengalees *Nakra* or *Nasa*; which literally means, the nose disease. It usually commences with a sensation of pain and distension within the nose, attended by extreme pain in the back of the neck, a hot forehead, and excessive weariness and pain in the loins, and in all the joints. In a few hours, the pains are much augmented in the frontal and superior maxillary sinuses, and in the nose; but the head-ache and pains in the back and limbs are not at that time moderated. The eyes soon become red, a strong light is irksome; and much prostration of strength takes place. The thirst is usually very distressing; and the sufferings of the patient in the majority of cases so severe, that he is soon obliged to relinquish his usual occupations, and lie down. The pulse is in general rapid, but seldom very full or hard. I have observed it as frequent as 128, in a slight-made, elderly Hindoo, within three hours after the first sensation of uneasiness had commenced in the back of the neck and interior of the nose. The respiration is hurried but not laborious, and there is much anxiety, especially when the patient stands in the erect posture: if we look within the nostrils, the schneiderian membrane will be observed much swollen and inflamed. In a few rare instances, the complaint begins with a bilious vomiting. A burning heat of all parts of the body continues

for two or three days, and seldom terminates by a critical perspiration.

The ordinary duration of this disease is from three to five days : it attacks both Hindoos and Mahommedans ; and slight-made persons do not seem more exempt from it than those of a robust habit : women suffer from the disease more rarely than men, and it is very seldom observed in children below ten years of age, or in men much above 45. Some Asiatics are never attacked during their whole lives ; while others have had this Fever severely once a fortnight for three or four months, and then were free from the disease for many years : more commonly those who have had the disease twice, are seldom exempt from its returns annually for several years ; but these attacks do not observe any regular periods. The Nakra occurs at all seasons of the year : I believe it to be more common at the latter end of the hot weather, and during the rains, than at any other time. The disease is said to be induced by irregular habits of living, such as attending to business and going about in the sun, at hours which infringe on the usual periods of bathing, and of taking food and repose : sitting up late at night in earnest conversation on subjects inducing mental anxiety, is also supposed occasionally to bring on the disease. The Nakra is said to depend on a disordered state of the bile, and

an impaired condition of the digestive organs, induced by these means ; but it often occurs without any of these exciting causes ; and the Natives have no distinct notion of its pathology : nor do I know that it has been the subject of very attentive observation by European physicians.

Medicine is very seldom employed in this disease ; the sufferers usually wait patiently for its spontaneous cessation ; for they assert that its course is not shortened, and the constitution not assisted in overcoming the disease, by any medicines that have been tried. They have a custom of drawing some blood from the nose, which is done by thrusting pieces of rough-edged sharp grass up the nostrils ; or by puncturing the schneiderian membrane with a sort of awl or needle. The quantity of blood drawn by these means seldom exceeds an ounce, and in general it is much less ; but it affords remarkable and prompt relief, and I believe it is resorted to by the majority of the poorer people when they have this disease : they have an idea, that after once obtaining relief in this way, the pain of any future attack will be much more severe if they do not employ the same means. I have never known the Nakra prove fatal ; but am informed that severe attacks are liable occasionally to be followed by the Fever denominated *Biggar* ; which is a disease remarkable for the

intensity and danger of the cerebral symptoms ; and frequently proves fatal. The Nakra never terminates in suppuration, or ulceration, or in any chronic disease resembling Ozæna.

I have never met with this disease in Europeans ; though some of its characters very closely resemble the Fever which was epidemic in Calcutta in June, July, and August, 1824, and affected almost every Native as well as European in the place : but on questioning Natives subject to Nakra, and who suffered the Epidemic of 1824, I have always been told that the diseases are very different as far as relates to the feelings of the patient, and that the suffering under an attack of Nakra is much more severe. The only mention of any similar disease, I have met with, is that given by Dr. Benjamin Rush, at the end of his work on the Yellow Fever*. From the name of the disease, indicating that it is characterised by severe pain, and from the mode of treatment employed, the complaint alluded to by Dr. Rush may be supposed to resemble the Nakra : he says, “There is a disease in North Carolina, known among the common people by the name of the *Pleurisy in the head*. It occurs in the winter after a sickly autumn, and seems to

* An Account of the Bilious Remittent Yellow Fever of 1793, in Philadelphia, 12mo. Edinburgh, 1796.

be an evanescent symptom of a bilious remitting Fever. The cure of it has been attempted by bleeding in the common way, but generally without success. It has, however, yielded to this remedy in another form, that is, to the discharge of a few ounces of blood obtained by thrusting a piece of a quill up the nose." A person unacquainted with this disease, would be liable on first seeing it, to suppose a Native in some danger; when the complaint required only a few days rest, and little or no medical treatment.

F I N I S.

ERRATA.

Page. Line.

- 14, 30, *for* "grains powdered" *read* "grains of powdered"
17, 1, — "near" *read* "nearly"
180, 8, — "ot" *read* "to"
195, 14, — "perspire" *read* "perspires"
266, 10, — "distened" *read* "distended"
267, 13, — "ecourse" *read* "recourse"
283, 16, — "zinziberis" "*read* zingiberis"
306, 4, — "movable" *read* "moveable"
391, 10, — "mucles" *read* "muscles"
419, 20, — "scorb." *read* "scrob."
463, 7, — "scorbiculus" *read* "scrobiculus"
477, 10, — "collapses" *read* "collapse"
537, 1, — "specting" *read* "respecting"
572, 19, — "handly" *read* "hardly"
590, 24, — "delireum" *read* "delirium"
592, 6, — "reely" *read* "freely"
669, 4, — "modes" *read* "mode"
673, 18, — "P. M." *read* "A. M."
698, 25, — "symptons" *read* "symptoms"

ERRATA

| Page | Line | Correction |
|------|------|--------------------------------------|
| 14 | 30 | "Grasshopper" read "Grass of powder" |
| 17 | 1 | "read" read "read" |
| 180 | — | "at" read "in" |
| 193 | 14 | "read" read "propose" |
| 200 | 10 | "advised" read "discovered" |
| 207 | 13 | "count" read "count" |
| 208 | 15 | "singled" read "singled" |
| 208 | 4 | "movable" read "movable" |
| 201 | 10 | "read" read "read" |
| 419 | 20 | "read" read "read" |
| 423 | 7 | "acrobatic" read "acrobatic" |
| 477 | 10 | "collapse" read "collapse" |
| 507 | 1 | "reading" read "reading" |
| 579 | 19 | "handy" read "handy" |
| 590 | 24 | "delivered" read "delivered" |
| 603 | 6 | "truly" read "truly" |
| 629 | 4 | "moder" read "moder" |
| 673 | 18 | "v. n." read "v. n." |
| 698 | 25 | "supplied" read "supplied" |

