

Letters and essays on the small-pox and inoculation, the measles, the dry belly-ache, the yellow, and remitting, and intermitting fevers of the West Indies. To which are added, thoughts on the hydrocephalus internus, and observations on hydatides in the heads of cattle / By different practioners [John Quier, Thomas Fraser, John Hume, George Monro, Ambrose Dawson, Dr. Dowdeswell. Addressed (except Hume's essay) to D. Monro and edited by him].

Contributors

Quier, John.

Fraser, Thomas.

Hume, J. 1742 or 1743-1818.

Monro, George.

Dawson, Ambrose, 1707-1794.

Dowdeswell, Dr.

Publication/Creation

London : J. Murray, 1778.

Persistent URL

<https://wellcomecollection.org/works/q4pzjyug>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

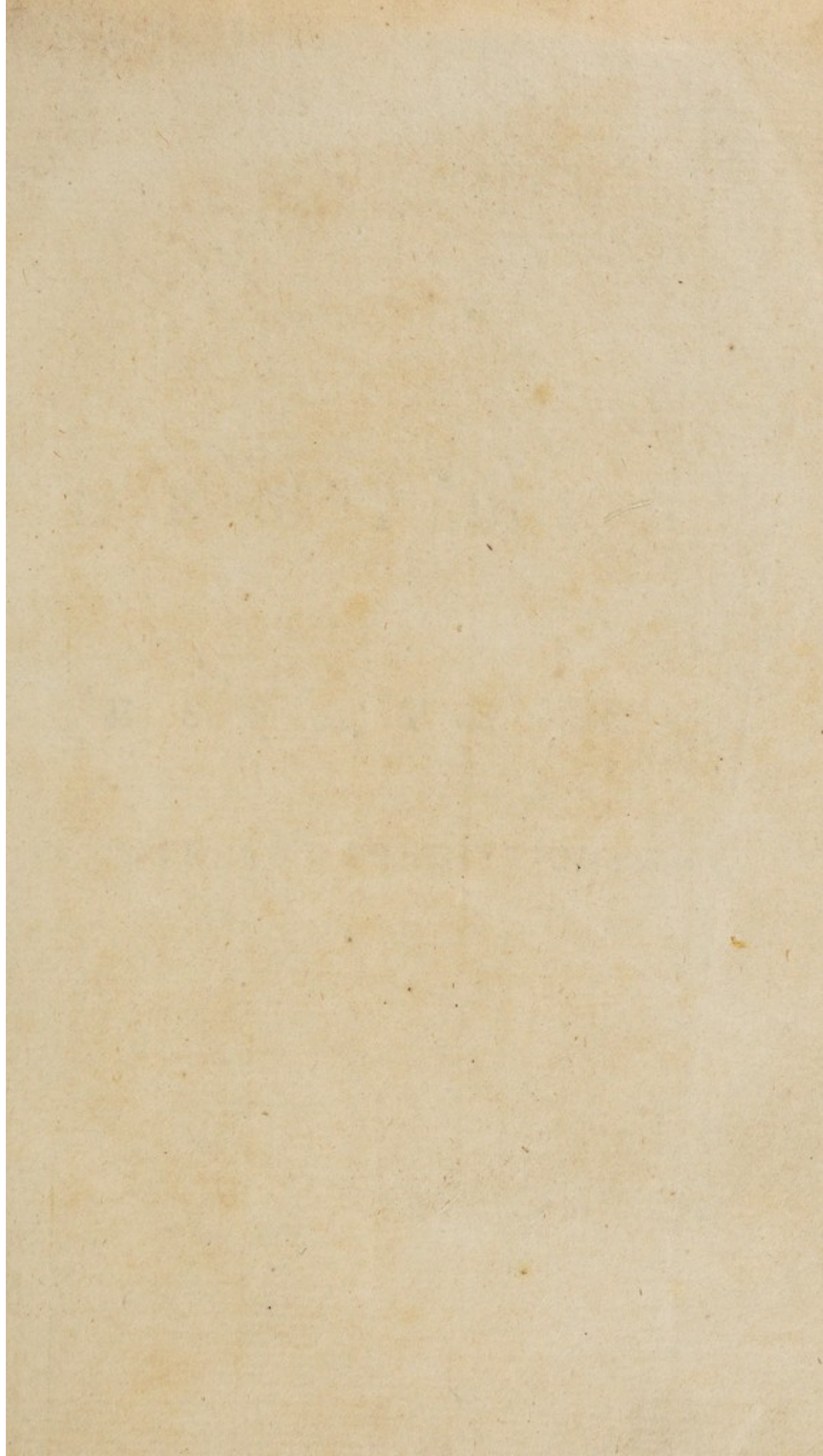
You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

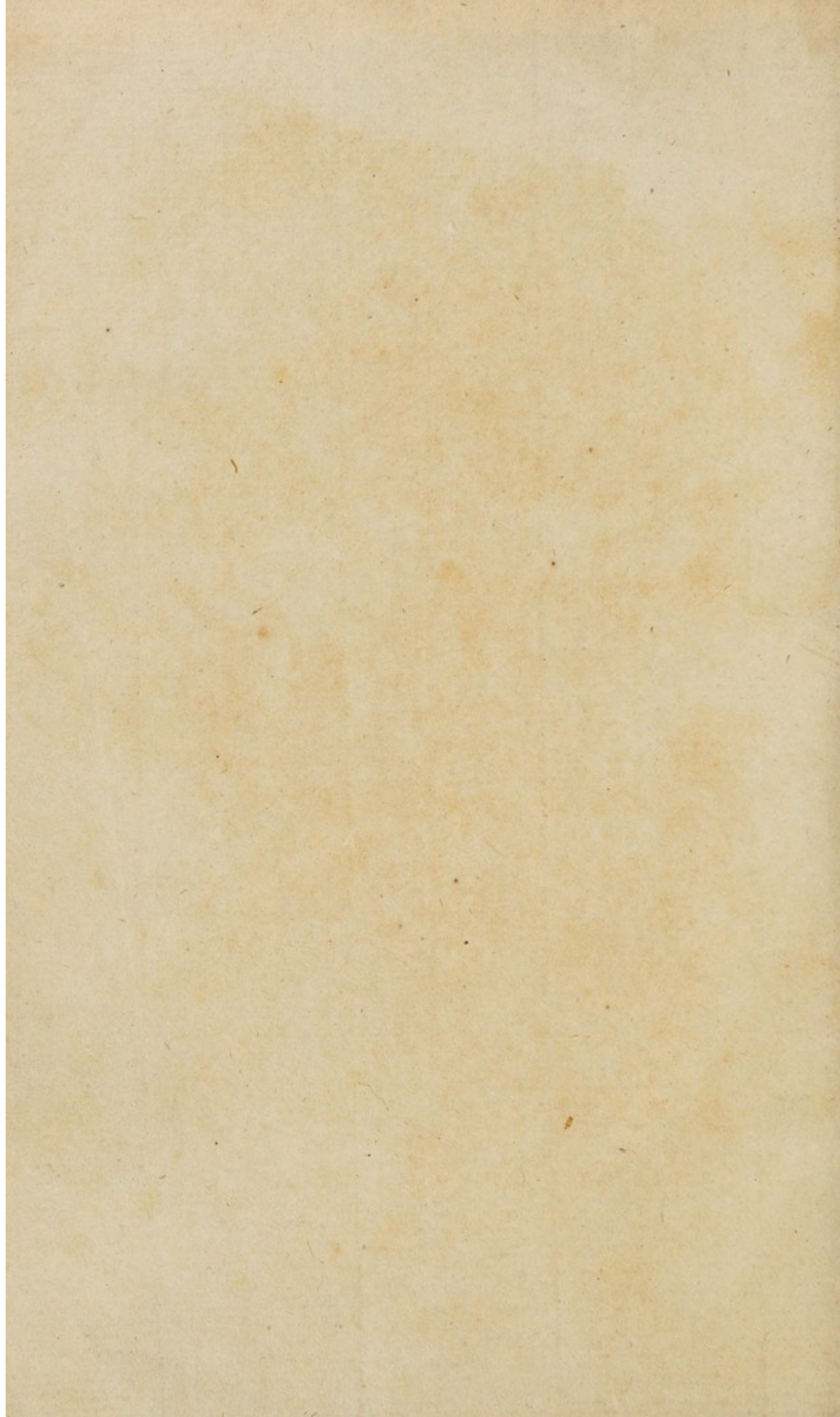


Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>



33298/B





L E T T E R S

A N D

E S S A Y S, &c.

By DIFFERENT PRACTITIONERS.

J. E. T. T. S.

and

E. S. A. T. S.

THE NEW YORK PUBLIC LIBRARY

L E T T E R S

A N D

E S S A Y S

O N

THE SMALL-POX
AND INOCULATION,
THE MEASLES,
THE DRY BELLY-ACHE,

THE YELLOW, AND
REMITTING, AND
INTERMITTING
FEVERS

O F T H E

W E S T I N D I E S.

T O W H I C H A R E A D D E D,

T H O U G H T S

O N T H E

H Y D R O C E P H A L U S I N T E R N U S,

A N D

O B S E R V A T I O N S

O N

H Y D A T I D E S I N T H E H E A D S O F C A T T L E.

B Y

D I F F E R E N T P R A C T I T I O N E R S.

L O N D O N,

Printed for J. MURRAY, No. 32, FLEET-STREET. and C.
ELLIOT, EDINBURGH.

M D C C L X X V I I I,

THE T. E. S.

388 Y 2

THE T. E. S. 388 Y 2

THE T. E. S. 388 Y 2

301487



THE T. E. S. 388 Y 2

L. O. N. D. O. N.

Printed by J. B. G. & Co., 11, Fleet Street, E.C. 4.

T H E
C O N T E N T S.

T H E Preface, containing an account of the work; a short sketch of the natural history of Jamaica; and directions for the preservation of the health of Europeans in warm climates.

I.

A letter from Mr. John Quier, practitioner of physic in the island of Jamaica, to Dr. D. Monro, Jermyn-street, London, on the Small-Pox and Inoculation.

p. 1.

P. 3. An account of the weather from July 1767, to the end of the year 1768 ; 4. An account of the natural Small-Pox during that time ; 6. Of Inoculation ; 9. The subjects most fit for it ; 20. The diet allowed to slaves ; 21. The preparative medicines and regimen used ; 26. The infusion of variolous matter ; 30. The appearances of the wound, the symptoms observed, and the remedies used till the eruption ; 40. The treatment after the eruption ; 49. Account of some morbid affections which occurred subsequent to Inoculation.

II.

Second letter from Mr. Quier on the same subject. P. 54

P. 54. Observations on the Inoculation of pregnant women ; 57. On the use of cold water in the inoculated Small-Pox ; and the bad effects of treating the natural Small-Pox in the same manner as the inoculated ; 59. On the natural Small-Pox.

III.

Third letter from Mr. Quier on the same subject. p. 63

P. 65.

P. 65. Observations on the use of the Peruvian bark; 66. Cases of patients who had been using mercurial courses before Inoculation; Observations on pregnant women who had been inoculated; 72. Matter dried on the point of a lancet, improper for Inoculation, being apt to occasion dangerous mistakes; 77. Exanthemata, which appear at the time of the eruption, commonly signs of a mild Small-Pox; 80. Treatment after the eruption; 82. Cases of two eruptions; 85. Cases of inflammations of the eye during the Small-Pox, and after they were over; 86. People inoculated who had had the Small-Pox in a slight manner from Inoculation some years before; 88. People inoculated who had had the Small-Pox in the natural way; 89. Appearances of the inoculated arms of those who had had the Small-Pox, and of those who had not had them; 98. Matter taken from the inoculated arms of people who had had the Small-Pox before, either in the natural way, or by Inoculation, capable of exciting the Small-Pox in others, though the persons themselves be incapable of having them a second time; 102. The effects of the Small-Pox in pregnant women on the foetus in utero.

IV.

An account of Inoculation for the Small-Pox in the island of Antigua, in the years 1755 and 1756, by the late Dr. Thomas Frazer, physician in that island.

p. 105

V.

Fourth letter from Mr. Quier, on the Measles in Jamaica.

p. 113

P. 113. The symptoms and appearances of the Measles in Jamaica differ much from what is observed in Europe; 114. Divided into two stages, the febrile and dysentric; 123. Curative indications, and cure of the febrile stage; 131. Cure of the dysentric stage; 145. The morbid affections consequent of the Measles.

VI.

Fifth letter from Mr. Quier, on the Bilious cholic, called the Dry Belly-ache.

p. 150

P. 151.

P. 151. Causes; not occasioned by lead, nor by the acid juices of fruit, but by corrupted bile; 160. Frequent after Intermitting Fevers, where the bilious matter in the intestines has not been well removed; 161. Cases in proof of this; 171. The cure principally to be effected by the use of mild, laxative, and aperient medicines, and of opium and antispasmodics; 179. Where inflammation threatened, bleeding requisite; 187. Less frequent now than formerly, owing to people's going warmer cloathed.

VII.

An account of the True Bilious, or Yellow Fever; and of the Remitting and Intermitting Fevers of the West Indies; by the late John Hume, M.D. and commissioner for the sick and hurt of the royal navy.

p. 195

P. 195. Short account of the author; 197. Of the Yellow Fever; its symptoms; 203. Cases and appearances observed in the bodies of some people who died of this fever; 210. The cure; 234. At what times seamen are most liable to be attacked with it; 235. Best preservatives from the fever; 236. Who

Who most subject to be attacked with it; 242. The numbers who died in the naval hospital in the years 1741 and 1742; 245. Comparative view of the mortality amongst the seamen and soldiers on the Carthagera expedition; 249. Of the Remitting and Intermitting Fevers.

VIII.

An account of the treatment of Bilious Fevers in the military hospitals at Martinico, in the year 1761, by Dr. George Monro, one of the physicians to the army on the expedition against that island.

p. 265

P. 266. Treatment in the first stage; 267. In the second stage; 271. In the third and last stage.

IX.

Thoughts on the Hydrocephalus Internus, by Ambrose Dawson, M. D. fellow of the royal college of physicians, London, and formerly one of the physicians to St. George's hospital.

P. 274.

C O N T E N T S. xi

P. 275. Account of the common methods of cure used ; 278. Cases related ; 290. New method of cure proposed.

X.

Observations on Hydatides in the heads of cattle, by the same. p. 307

XI.

Further observations on Hydatides in the heads of cattle and sheep, by the late Dr. Dodswell, physician to the hospital at Gloucester. p. 317

C O N T E N T S
p. 275. Account of the common method
of cure used; p. 278. Cases related; p. 280. New
method of cure proposed.

X.
Observations on Hydatids in the
heads of cattle, by the same. p. 307

XI.
Further observations on Hydatids
in the heads of cattle and sheep, by the
late Dr. Dobson, Physician to the
Hospital at Gloucester. p. 317

T H E
P R E F A C E.

TH E following Letters, giving an account of the *Small-Pox*, *Measles*, and *Bilious Cholic* in Jamaica, were written at different times to Dr. D. Monro, in Jermyn-street, physician to St. George's hospital; who had requested the author, when he went to the West Indies, to communicate what observations he made on the diseases incident to warm climates.

IN compliance with that request, the author noted down such observations as he made on the diseases
I. which

which occurred, and transmitted them in the form they now appear, with an intention of their being published, if they should be thought deserving.

THE first letter was read by Dr. Monro, at a meeting of the College of Physicians, London, in December 1771, and afterwards inserted in their second volume of Medical Transactions.

THE others, as well as the papers on the Hydrocephalus Internus, and on Hydatides in the heads of cattle, were intended to have been presented to the public through the same channel; but the College of Physicians, soon after the publication of their second volume, came to a resolution not to publish any more medical observations; and therefore, at the desire of the authors, they were given to the bookseller, for publication; and along with them Dr. D. Monro

D. Monro gave some letters on the subjects treated of, which he had accidentally preserved.

To these has since been added, a little essay on the *Yellow and Remitting and Intermitting Fevers* of the West Indies, written by the late ingenious and very worthy John Hume, M. D. commissioner for the sick and hurt of the royal navy, which has been preserved by a permission which he had given to a friend, some years before his death, to take a copy of it, the original having been destroyed along with some other papers; and it is now published by the consent of his relations.

As the observations on the diseases of warm climates, treated of in this volume, were mostly made in Jamaica, it may not be amiss to give a short description of the situation and climate of this island, along with Mr. Quier's account of that part of it in which

which he resides, and then to subjoin a few words concerning those means which are most likely to conduce to the preservation of the health of Europeans in warm climates.

THE island of Jamaica lies between $17^{\circ} 50''$ and $18^{\circ} 50''$ north latitude within the tropics. Its easternmost point at Port Morant is situated in 18° north latitude, and near 76° west longitude from London: the island extends from thence two and a half degrees to the westward: it is of an oval figure, computed to be about one hundred, and seventy four English miles long, and seventy broad. In the middle is a chain of lofty mountains, which runs from east to west, the whole length of the island; and there are many hills and rising grounds ventilated with a free and salubrious air in every parish.

FROM these mountains and hills, rise numerous pleasant and useful rivers ;

vers : the water in most of them is good ; though in some of the rivers, in the low lands, it is brackish. The country every where abounds with springs of fine water, and there are warm baths, and springs of cold mineral waters in different parts of the island. The warm baths, near the town of Bath, in the parish of St. Thomas, which forms the south-east corner of the island, are those in most repute, and most resorted to for the cure of diseases : their water is hot, and smells and tastes of sulphur ; and some miles westward of these baths, near Blue-mountain Valley, is a cold sulphureous spring, which deposits an inflammable sediment. At Ricket's Savannah, in Westmoreland parish, is a brisk, spirity, chalybeate water ; and there has lately been discovered a hot spring in the mountains lying between this and the parish of Hanover.

THERE have been volcanos, or mountains, which vomited fire in this country, and it is subject to frequent shocks of an earthquake, and to thunder: on the 7th of June, 1692, there was such a dreadful earthquake as threatened destruction to the whole island.

THE mountains are, in general, covered with wood, and the places on them, and the valleys between them, which are cleared, afford the finest pasturage for cattle, and most of the fruits and other vegetables of the temperate European climates: the low grounds are planted with sugar-canes, and other products of the hot countries.

THE island is plentifully stored with black cattle, sheep, swine, poultry, &c. and the rivers and sea supply plenty of fine fish and turtle: it abounds with vegetables of all kinds, and particularly with variety of the finest mild subacid and acid fruits,

fruits, such as pine-apples, oranges, alligator-pears, grapes, cocoa-nuts, chaddocks, lemons, limes, &c. and with various species of pepper, and other aromatics.

It is at present reckoned one of the most healthy islands in the West Indies, and is much more so now, particularly near the towns, than it was formerly; owing to the ground being more cleared, and to the inhabitants becoming more temperate, and having learnt from experience to accommodate better their manner of living to the climate they reside in.

THE most wholesome situations are those on the sides of hills or mountains, where the soil is dry, and clear from woods and stagnating water; and where there are no morasses within three miles. Hence many of the lands, of the middle districts, are reckoned as healthful as any part of Great Britain. In the low part of

the country, those places whose situation is dry, at a distance from marshes, and ventilated by a free air, are most healthful.

THE unhealthy places are few, in proportion to the extent of the island; they are those which are low and swampy; which are wet, and not cleared of wood; which are sometimes covered with water, that dries up in the hot season; which are frequently overflowed by the sea, or where the shore is lined with stinking ooze or mud; and likewise such as, by their situation, should seem to be healthy, but are within a mile or two of unwholesome marshes or swamps, and are exposed to the winds coming from them.

IN this island, they have regular sea and land-breezes alternately succeeding each other: the sea-breeze begins sooner or later in the morning, and is succeeded sooner or later in

in the evening by the land-breeze ; the winds from the north are often cold, and sometimes very strong, and come near to the hurricanes of the Windward Islands: they are often partial, but sometimes pretty general through the island in the winter months.

THE heat of Jamaica varies in different parts of the island, and at different seasons of the year. It is greatest in the low, sandy grounds on the south side of the island, and is least in the mountains.

THE heat at Kingston is somewhat greater than at Spanish Town; and, about ten miles west of this place, in a small vale, environed by hills, it was found, at an average, to be six or seven degrees cooler than in town.

THE hottest time of the year is just before the setting in of the autumnal rains in August and September.

THE medium heat of Spanish Town in the cooler part of the year, is about 78; and, in the hotter months, about 85 of Fahrenheit's thermometer; and the highest in the whole year has rarely exceeded 92.

THE following is a table of the degrees at which the quicksilver in Fahrenheit's thermometer stood at, for one year at Spanish Town, which was published in chap. vii. of the third volume of the History of Jamaica, printed by Mr. Lowndes, Fleet-street, London, 1774.

TABLE of the DEGREES of HEAT at
SPANISH TOWN.

	high.	low.		high.	low.
In January	83	—76	July	80	—80
February	85	—66	August	92	—81
March	84	—71	September	89	—77
April	86	—67	October	87	—73
May	87	—77	November	79	—71
June	88	—84	December	79	—70

THE

THE quicksilver in the barometer commonly stands at

	Inches.	10ths.
	29	—9
Its greatest rise is to	31	—7
And lowest fall to	28	—2

THE heat of the sun, and consequent evaporation, being so much greater in the warm than in the cold climates, requires a greater quantity of rain to keep the ground moist and proper for vegetation: hence, in Jamaica, we find, that there falls near three times the quantity of rain that there does in Great Britain; for, taking the whole island throughout, there falls, in seasonable years, from 65 to 70 inches.

IN August, September, and October, there commonly falls more rain than at any other time of the year; and hence this is called the Rainy Season.

THE rain falls with a violence rarely seen in England, especially in thunder-showers: commonly there falls frequent showers at all seasons, but sometimes there is so little rain in the low lands, that the sugar-canes are in danger of being destroyed for want of it. In the woody parts of the island there is almost a constant drizzle. With respect to the seasons for rain, they should seem to be different in the south and north sides of the island; for Dr. Trapham, in his Discourse of the State of Health in Jamaica, published in 1679, after observing that the north side of the island is cooler than the south, adds, “Neither herein only are the north and south sides differenced, but more eminently in their various seasons; for whereas the south side, summer, or most direct neighbourhood of the sun, brings in the rains; and when the sun is more remote

remote in its Capricorn progress, our dry times are generally observed; it is quite contrary in the north side; for there the more eminent seasons of rain make the winter in its proper time, and leave the summer, like that of the English, to be more dry."

ON the south side of the island, November, December, January, and February are the coldest months in the year, and most free from rain.—November is commonly the coolest.—March, April, May, and June, are very hot.—In July, August, September, and October, there is always much rain and heat.

IN general, all over the West Indies, the weather begins to cool, and the northerly winds to blow in November, and the weather continues pretty wholesome till May or June, when it commonly begins to rain: sometimes, though rarely, it rains in April.

THE

THE following short account of Jamaica, and particularly of that part of the island in which Mr. Quier, the author of several of these letters, lives, was transmitted by him in a letter to Dr. Monro, in the year 1768.

“ Sir,

THE ideas people in Great Britain entertain of Jamaica having chiefly taken their rise from the information of those who have only visited the low lands, on the sea-coast, are in general very ill founded. The internal part of the island is very high, broken land, and, in some places, the mountains rise to a prodigious height: between the hills are interspersed large, beautiful vallies, generally well cultivated, and laid out in rich farms and plantations: in this region, which ever way the eye is turned, it is regaled with an endless

less variety of pleasing prospects: below, the plain delights it with all the regularity of art: if directed upwards, it is never tired with viewing the romantic scenes which arise from so agreeable an assemblage of mountains, capped with clouds, shaggy woods crowned with perpetual verdure; steep precipices and hanging rocks. Here an European may enjoy as cool a climate as he can reasonable wish for: the hottest part of the year is from May to October, when the wind is south-easterly, with smart showers about noon, though sometimes no rain falls for some weeks: the nights are foggy, or rather the air being loaded with vapours, which the heat of the day has caused it to absorb; and as that heat abates, being unable to suspend them any longer in intimate union with itself, that moisture is thrown off in the form of clouds, which are still augmented in this woody

woody region, by the copious exhalations of the earth and vegetables, which retain warmth longer than the circumambient air; and these clouds hang about the upper part of the mountains till they are again united by the sun with the rest of the atmosphere, or are swept away by the morning breeze. At this time of the year the thermometer commonly stands, at sun-rise, at about 70° and rises by noon to some degrees above 80; but very seldom so high as 85° or 86° . In the months of May and October, it sometimes rains incessantly, and the weather is so raw and cold as frequently to render a fire necessary. In November or December, the north wind sets in, and continues till May. As long as this wind blows, the nights are clear, and the days are cool and dry, except that, now and then, a transient shower falls. Indeed, when this
wind

wind blows strongly, the cold is quite intense for this latitude, and obliges us to keep a constant fire. On the 15th of this instant (January at 7 o'clock in the morning), the mercury in my thermometer was depressed to 51° at this place ; which, though cool, is none of the coldest in the island. A prodigious quantity of rain falls in the course of a year, and the air is always so moist that metals will rust, however great the care taken of them: lixivial salts can scarcely be so closely corked in bottles, but they will dissolve ; and wearing apparel, and whatever else that is in the least liable to grow mouldy, is kept in chests ; and, where the air is confined, cannot be preserved from it but by frequently exposing them to the sun. In the low lands it rains but seldom, and when it does, it descends in torrents ; but, in the mountains, the rain falls oftener and more gradually. In
the

the summer months it thunders and lightens often, though seldom violently. Luidas, whose situation is nearly the centre of the island, is remarkably healthy, and agrees extremely well with the constitutions of those who come to reside here immediately from Europe. But those who, having lived long in the low lands, have had their blood wrought up into a putrescent state by the heat, and require a constant and copious perspiration to carry off the recrementitious part of the fluids, are generally subject to an annual attack of an intermittent fever, when the north wind first sets in. However, residence here for a considerable time, together with constant exercise, has restored the health of those whose viscera were prodigiously obstructed, and constitutions quite broken by wrong treatment, and frequent returns of intermittents. The only febrile diseases

I which

which people are commonly liable to here, are remittents and intermittents, which generally arise from some casual stoppage of perspiration, and, if properly treated, are the easiest to cure I ever met with. In six months practice, during which time, out of between six and seven hundred Negroes, together with some White people, I have seldom had less than thirty patients at a time: I have never seen one ill of any continual fever, either inflammatory, or putrid, except the Small-Pox, which have lately invaded us, and such as are merely symptomatical.

Thus, Sir, I have given you a small sketch of that part of the natural history of this island, which is more immediately connected with the causes of diseases, and may be preparatory to any observations I may at any time hereafter have it in my power to transmit to you; at least it will

will serve to shew, that Jamaica is not too hot, or so unhealthy a place as is commonly imagined. The medium heat at noon, in by far the greatest part of the island, is about the 80° of Fahrenheit's scale; and the great mortality that happens at Kingston, Spanish Town, and the rest of the low lands, is more owing to the imprudence, intemperance, and debauchery of the inhabitants, than to any real malignity of the climate.

I hope, Sir, you will look with an indulgent eye on this weak attempt to gratify your curiosity, and esteem me your most sincere,

And most obedient,

Humble servant,

Luidas, Jamaica,
Jan. 18, 1768.

J. QUIER."

THE

THE best preservatives of health for Europeans in this country are,

1. *A dry, healthy situation.*
2. *Temperance*, both with respect to eating and drinking, particularly on their first arrival.

THE diet ought to be composed of a mixture of animal and of vegetable food, but inclining most to the vegetable : fresh meat, fowl, and fish, combined with vegetables, make a wholesome diet ; and the moderate use of the mild, pleasant, subacid and acid fruits, and of the spiceries which nature has bountifully provided in this island, contributes greatly to prevent the tendency of the solids to relaxation, and of the fluids to putrefaction.

This climate requires the moderate use of wine, and the free use of cooling, subacid liquors. A few glasses of Madeira, or of any other wholesome found wine, at meals, contribute to

the preservation of health. The best drink is water mixed with a little wine, or very weak punch made with ripe fruit. Formerly the island was more covered with wood, and the inhabitants used to live more on animal food, and to indulge in the use of strong liquors; the lower class drank freely of new rum, and the better sort indulged in debaucheries, both of eating and drinking; the consequences of which were, that numbers of new-comers died soon after their arrival; and the *Yellow*, and the *Bilious Intermittent Fever*, the *Dry Belly-ach*, and *Dropsies*, were very frequent amongst all classes of people, and hurried many to their graves; whereas now that the island is more cleared of wood, and more cultivated, and the inhabitants have become more temperate, use less spirits, and more vegetable food, they enjoy better health, and live in general to a greater age.

3. *Early*

3. *Early rising.* This is particularly wholesome, and the author of the History of Jamaica, published in 1774, says, that no man ever attained to longevity here, who was not an early riser; nor are any so healthy as those who addict themselves to this practice; and that the morning air is here delightfully cool, and the most agreeable time for exercise.

4. *Moderate Exercise.* It is difficult to say what degree of exercise is requisite; this must be proportioned to the strength and constitution of the individual; but the weakest are strengthened by it, and the strongest become weak without it. Violent exercise, especially in the heat of the sun, ought to be avoided; and the best time for using exercise is before, or just about, sun-rise.

5. *Cleanliness and Bathing.* Nothing contributes more to the preservation

vation of health, in all climates, than the keeping the body clean. The author of the History of Jamaica says, that the utility of bathing is universally known in this island; and that the middle of the day is the time fittest for this purpose, in water which has been placed for some hours in the sun-shine, so as to acquire a tolerable degree of warmth: the negroes wash in the open rivers at that time, having, by experience, discovered it to be the most wholesome; and that bathing in cold water is not proper, except at a very early hour, before sun-rise; many fatal accidents having happened from people plunging into cold water in the heat of the day in this country.

6. *Change of cloaths and of linen* so soon as one comes home after being wetted with rain, or overheated with violent exercise; many having been hurried to their graves by fevers

vers and other disorders, from neglecting these precautions.

7. *Care* not to expose one's self wantonly to the damps of the night, nor to lie down to sleep on the grass, nor in moist or in woody places in day.

8. *The accommodating the dress to the circumstances of the weather*; and taking care not to expose one's self to the breeze, with no other covering but the shirt, when heated by exercise or wine, or at any time when in a profuse sweat; and in bed at nights, to be rather warmer cloathed than in the heat of the day. Most late medical writers think that a light, loose dress would be better adapted in that climate, both for keeping out the heat, and defending the body from cold winds and moisture, than the tight European dress at present used.

9. AND

9. AND lastly, *such means as serve to support the spirits*; for nothing has been observed to contribute more to the preservation of health, than a chearful disposition of mind, without any apprehension of danger; and nothing more to the production of diseases, than fear and dejection of spirits.

PEOPLE residing in low and unwholesome places, when attacked with diseases, ought to change their habitation to a place that is more dry and healthy, particularly in the sickly season.

AND if Intermitting or Remitting Fevers continue obstinate, or if the diseases consequent of them, come on, or there is room to think that they are approaching, the inhabitants often go a cruize to sea in a king's ship, or go to North America, or come to Great Britain, as the only means left for the recovery of health.

IF

IF people, on first entering into warm climates, are attacked with inflammatory disorders, they may be bled freely; but afterwards they do not easily bear copious evacuations, but require to have them made in smaller quantities, and very early and frequent, as inflammations make a rapid progress in these climates. In the West Indies, *Putrid Fevers* admit only of very moderate bleeding on the first or second days, seldom later than the third; and, in such cases, the quantity taken away must be determined by the present circumstances of the patient; and, if the patient be weak and the pulse low, it is often right to omit this evacuation altogether.

It ought to be observed, that, on the first attack of all feverish disorders in warm climates, nothing in general is of more service than to empty thoroughly the first passages,

I

which

which are commonly loaded with putrid bile, and other corrupted humors, which, if not discharged, are absorbed, and give rise to very troublesome and very dangerous symptoms. In several of the West India islands, they now, on the first attack of fever, or sickness at the stomach, give a vomit of two or three grains of tartar emetic dissolved in water, and afterwards, a dose of some mild purgative medicine; and find, that if it does not prevent the fever, that it commonly renders it mild, and soon brings about an intermission, in which the bark may be administered with advantage.

L E T-

 L E T T E R I.

An Account of the Success of Inoculation for the Small-Pox at Jamaica.

S I R,

IN my last letter I acquainted you that the small-pox had just then made their appearance in my neighbourhood. Since that time I have had great opportunities of making observations on that disease, both in its natural state, and when raised by inoculation. The following sheets were wrote about the end of the

B

year

year 1768, and the beginning of 1769, with an intention originally of being transmitted to you. As in the letter with which you have lately honoured me, you desire to know what methods I find most successful in my practice, and as I believe there have been few accounts received in Europe of the practice of inoculation in this part of the world, I have, in pursuit of my first design, revised these observations, and sent them to you, hoping, that from the peculiar circumstances under which we practise in this country, they may at least gratify your curiosity; and should they, through your means, prove of any advantage to mankind, I shall think my pains abundantly rewarded. I am, with the sincerest respect, Sir,

Your most obedient,

and most humble servant,

JAMAICA, JUNE 30,
1770.

J. QUIER.
FROM

FROM the time of my arrival in Jamaica, in the beginning of July 1767, to the end of February 1768, the weather was remarkably wet; the winter was cold, raw, and uncomfortable, the north winds constantly bringing with them thick mists, and involving us in clouds of small driving rain. About the beginning of March the weather set in extremely fair and beautiful, and continued uncommonly dry to the beginning of the ensuing October; the May rains, which used to pour down incessantly for many days together, were intirely wanting, and only a transient shower fell now and then during the whole period; the trade or easterly wind blew longer and with more force every day than usual; the night fogs were light, and towards the end of the summer almost intirely disappeared; the mercury generally stood, about two or three o'clock in the

afternoon when it rises highest, between the eightieth and eighty-fifth degree on Fahrenheit's scale; but through the smartness of the breeze the weather was very cool to sense, and extremely pleasant. However, the heat of the sun, the excessive drought, and the breeze so dried the earth, that its surface was everywhere cracked into innumerable chasms; the herbage was intirely burnt up, and the springs of water failed in many parts of the country.

THE small-pox had for some time been epidemical in the towns, but were brought into this neighbourhood by some new negroes, a little after Christmas, 1767. The disease at first was pretty mild, and only a negro here and there was seized with it; but about the end of February 1768, notwithstanding all the precautions that could be used, it spread itself apace, and grew more fatal.

At first the pox, when not favourable, were of the lymphatic sort; but as the summer advanced they were generally small and warty, suppurated very imperfectly, and the depressed apex of each had commonly a black spot in it. They were sometimes attended with petechiæ at the eruption; in one case I saw likewise a profuse hæmorrhage by the nose and uterus, at that period: indeed the tendency to putrefaction was very great in general. One instance occurred in a lady of fortune, of several gangrenes coming on in different parts of the body, very early in the disease, and some days before her death. However, the state of the atmosphere at this time shewed its effects; not unfrequently, in a kind of pustules different from those just mentioned. These were a kind of filiquose small-pox, very sessile, being undistended with any fluid, and like bits of shriveled

thriveled skin. This species of pox was often very confluent, and resembled nothing so much as large vesications, out of which the lymph had been discharged by puncture.

INOCULATION had been frequently practised with success in this country, according to the methods formerly in use; and the extraordinary accounts which continually arrived here of the great improvements which that art had lately received in England, rendered people in general very much disposed to favour a practice which had so great a chance of securing their property, now in so much danger from the small-pox being epidemical, almost throughout the island. But no person, that I know of, can so justly claim the merit of introducing the present method of inoculation into common practice, as your friend Mr. Gordon; who, being but lately returned from Europe, very obligingly

obligingly imparted to his acquaintance the particulars he had observed during the inoculation of his son in England, by Sutton. Some copies likewise of Dr. Dimsdale's treatise on this subject, were sent over by the agent for the island ; and the rules he lays down were generally followed by practitioners here. But although these rules may be very well calculated for a colder climate, and the observations are in general very just, and I shall readily acknowledge myself much obliged to that gentleman for the lights I received from his treatise, yet I must take the liberty to say, that I am very confident that his method has been too closely and too indiscriminately pursued in this part of the world, especially in the preparation for inoculation, and the treatment of the natural small-pox.

MANY particulars relating to this method of inoculation had come to

my knowledge before my departure from England ; and my own experience having long convinced me, that, unless in those weak constitutions where the fluids are in a watery state, and in those where there is previously a putrid dissolution of the blood, contagious fevers are generally treated in the first stage of the disease with too hot a regimen ; which, by keeping up too quick a circulation, and too great a degree of animal heat, both increases the activity of the putrid ferment, and renders the blood more disposed to receive its impression. I was glad to find that so successful a stand was at length made against popular prejudices, and that the precepts of Rhazes, Sydenham, and Boerhaave, when united into one practical system, proved of so much advantage to mankind.

I first began to inoculate about the middle of March 1768 ; and by the end of the summer, near seven hundred

dred negroes passed through the disease, under my care.

THE dry constitution of the atmosphere at this time was very favourable for inoculation, as the slaves constantly went through their daily labour in the field during the whole process; those only excepted who had a higher degree of fever than usual at the eruption, or had their feet and hands so beset with pustules that they could not walk, or hold the utensils of their labour, of which some instances occurred.

THE subjects best adapted for undergoing this process, seem to be those who are most hale and strong, and consequently most capable of bearing mercurial medicines, and copious evacuations by purging. I know no objections but what arise, 1. from too tender infancy; 2. from great debility from old age, want of food, and long diseases; 3. from a putrid

putrid or a watery dissolution of the blood; 4. from the presence of some acute disease; and 5. from too advanced a state of gravidity.

NOTHING can be more erroneous than the opinion, that children have the small-pox from inoculation more favourably than adults; since, besides the various accidental indispositions to which that tender age is subject during the process, the pustules are almost always more numerous in them than in grown persons, even although the latter may labour under such chronical diseases as are supposed to arise from a very depraved state of the fluids. However, children may be inoculated with a great deal of safety, at least in this country; neither is there so much danger from the diseases more particularly incident to this age, as has been sometimes apprehended. I have conducted many through this process, who were not
more

more than a month old at the beginning of the preparation. It is true a great deal of care and circumspection is requisite to prevent accidents; but the danger which might be expected from dentition, is very well guarded against, by keeping the body open; and by the mercurials given in the preparation, which generally cleanse the bowels of worms: at least I never saw more than one instance of convulsions from the latter cause, which were easily remedied; and as for dentition, I have often observed teeth making their appearance during inoculation, without any, or at most with very little, inconvenience.

PREGNANCY is no obstacle to this process during the first six or seven months of gestation*; afterwards I
 4 think

* N. B, Some gentlemen in London, who have perused this paper in manuscript, have entertained some doubts about the propriety of inoculating gravid

thing there is danger of abortion; not so much from the violence of the disease, as from the necessary method of preparation.

A caution has been given to avoid the intervention of the menstrual flux in women, during inoculation; and, I doubt not, very justly in the more delicate part of the sex. But in our

gravid women in this country, and think that it ought not to be attempted without an absolute necessity; particularly with women of fashion, and of delicate constitutions, as it may sometimes be attended with danger.

Negro women and others of hardy constitutions, who are much exposed to the open air, often bear children, and go about their daily labour in a day or two afterwards, and undergo many other things without the least inconvenience, which would be in danger of destroying those of delicate habits, who have been educated in European luxury.

However, these gentlemen think, that when all the other negroes of a West India plantation are to be inoculated, it may be sometimes proper to inoculate the pregnant women at the same time as here recommended; particularly if a natural confluent or malignant small-pox is frequent in the neighbourhood.

practice,

practice, as we were generally obliged to inoculate all the slaves on a plantation at once, and as the stupidity of negroes is so great, that it is frequently impossible to discover when a woman had that discharge last on her, or when its return might next be expected, this would have been a matter of the greatest difficulty, and is, I believe, of but little importance in this sort of subjects; as I am confident, that out of the number of females which I have inoculated, a great many must have had their menses during the disease; but one instance however of an uterine hæmorrhage came to my knowledge, which happened after long obstructions, and was easily stopped by some opiates, and a few doses of the bark and styptic tincture.

THAT theory which held infancy to be the properest age for inoculation, supposed likewise that a very
bland

bland state of the humours was absolutely requisite to the success of this process. The late innovators in this art in England, discovered by experience, that a greater latitude might be admitted of in this respect in the choice of their subjects. The peculiarity of our situation in this part of the world, rather than temerity, has enabled us perhaps to carry this point still farther. Venereal complaints, both recent and inveterate; the elephantiasis*; the yaws, both in children and adults; and all the other various kinds of cutaneous foulnesses that occur here, and which are very numerous; and inveterate ulcers were found to admit of inoculation, with as great success as those constitutions

* Not that kind of leprosy described under the name of elephantiasis, by Aretæus; but that other sort of elephantiasis, mentioned by Prosp. Alpinus, de Med. Ægypti, lib. i. cap. 14. *Vagatur et altera elephantiasis, &c.*

in which no deviation could be discovered from the most perfect state of health. Indeed I do not remember to have seen the disease more favourable at any time than in most of those patients. It is true, that at first I made them undergo a longer and stricter preparation; but experience afterwards taught me, that this in most cases was quite unnecessary; the yaws especially do not in the least require it. Is there from hence any reason to think, that the received opinion, of the properest disposition of the body for producing a mild and favourable small-pox, is ill founded; and that in these deviations from a natural state, the humours are indisposed to receive the impression of the variolous ferment? or may it be imagined, that the tendency of the morbid matter in most of those diseases towards the skin, has any influence on the nature of the subsequent

quent pox? It is certain that the natural small-pox, in those who have the yaws, are most commonly very mild; and as certain that those from inoculation in healthy sucking children, whose fluids may be presumed to be the most free from acrimony, are generally severe. This question I shall leave to be determined by future inquirers. In the mean time, however, I will venture to offer it as my opinion, that the pre-disposition of the body is a matter of but little importance, if there are no impediments, especially from want of strength, to the use of mercurials and cathartics: and I am inclined to believe, that the small portion of the effects of those medicines that is transmitted to the child with the nurse's milk, and the general and just timidity in giving them to sucking children themselves, are the sole cause of the severity of the disease in them; for

for those that are old enough to be weaned, and to take these medicines freely, have the small-pox as favourably as any other subjects.

I have inoculated many very old people of both sexes very successfully; and I think old age affords no objection to this process, if unattended by such debility as renders the patient incapable of undergoing the necessary evacuations.

IN an intermittent fever, I made use of the usual purgatives, and mercurial powder, as preparatives both for the small-pox, and the bark; which the patient took till near the eruption, and had the disease in a very slight manner, and without any inconvenience from the intermittent.

A young woman, who had laboured under a violent dyspnœa for half a year, occasioned by vomitæ in her lungs, was inoculated. The disease was very favourable, and from this

time she expectorated copiously, and breathed with freedom. She lived now with tolerable ease, and had a chance of protracting her life for some time; but about six months after the inoculation, growing impatient, she eagerly solicited leave to go to the low lands, which her master, unable to resist her entreaties, notwithstanding the consequences were fully represented to him, at length granted her. After this she found her health grow worse daily, and attempted to return home; but as she was travelling in the broiling heat of the sun, in the forenoon, expired on the road.

I shall now acquaint you with the circumstances of three cases, which proved fatal, where I was compelled to inoculate against my judgement and my will, partly through the apparent impossibility of the patient's escaping the contagion in the natural way of infection, and partly through

the pressing instances of their masters; which will likewise serve to illustrate some things that I have already advanced.

1st. The first was of a man between seventy and eighty years of age, so extremely weak and emaciated with want of food, that he had not been able to crawl out of his hut for a long time. He was supported by all possible means, but died during the eruptive fever, before any pustules appeared. The incisions were however considerably inflamed, and had suppurated before his death.

2d. A woman with child, who since her pregnancy had been salivated for the venereal disease, was brought to me, with others, to be inoculated. As is usually the case, she knew not how far her gravidity was advanced: from the size of her belly, which was but small, I guessed not farther than the seventh month.

The day after the infection, she was brought to bed of a mature child. The mother suffered not the least from child-birth, and had only a very small number of pustules. The child was inoculated on the sixth day of its age; and a very confluent kind of small-pox succeeded, of which it died.

3d. A woman was inoculated, together with her child, about five weeks after her lying-in. The mother having very little milk in her breast, and another nurse not being to be procured, I was apprehensive of the inefficacy of the preparation of the child, and ventured to give it half a grain of calomel twice. Nevertheless the small-pox were extremely confluent, and the child died. The mother had the disease very favourably.

THE food allowed to slaves, during the whole process, was generally the roots, and other vegetable substances, which at all times make up the greatest

greatest part of their nourishment; such as yams, cocos or eddas, potatoes, plantains, bananas, &c. Their drink was water, or beverage*. All possible precautions were taken to keep from them, rum, herrings, salt-fish, flesh of every kind, salt, and the aromatics, which are the natural produce of the country. If the mercury at any time fixed upon the salivary glands, or affected the gums, or if the patients were more than usually indisposed about the time of the eruption, flower or rice was given them.

WITH regard to the preparative medicines, after trying various experiments, I gave the preference to the calomel, and emetic tartar, in the proportion of eight grains of the former, to one-eighth of a grain of the latter, and joined with some tes-

* So they call here a drink made with water and sugar, or with the addition of some lime or lemon juice.

taceous powder, equal in weight to the calomel, as recommended by Baron Dimisdale. The purgative that I generally used, after the mercurial powder, was jalap mixed with an equal quantity of cream of tartar. Five or six grains of calomel is a sufficient dose for the strongest grown negroe ; and so small a quantity, but once repeated, many times brought on a copious spitting. The greatest fault committed by inoculators in this country, I apprehend, was the not proportioning the length of the time of preparation, and the number of the doses of the preparative medicines, to the constitutions of their patients. Mercury has in this climate a prodigious propensity to salivate. The greater number of negroes have likewise been frequently taking mercurials for venereal complaints: many of them have their fluids so impregnated with them, that a very small quantity

quantity more is sufficient to determine them towards the fauces, and sometimes with such force, that when a spitting is attempted to be raised, if much caution is not used, there is danger of instantaneous suffocation. Negroes likewise cannot bear frequent repetitions of strong purgatives. The consequence of such copious evacuations is almost always a tendency to a dropsy.

IF any preparation is thought necessary, two doses of the mercurial medicines, and as many purgatives, with an interval of three or four days between them, are sufficient. Near three hundred of the last slaves that I inoculated, went through the disease without any preparation, either by food or medicines, previous to the infection. Of these some took the mercurial medicine at night, and the cathartic next morning, and were immediately afterwards infected; some

were infected first, and then took these medicines on the following night and morning.

WHEN the preparation was used, the disease was so far milder, that a great number, indeed the greatest part of the patients, if they were not made to work constantly in the field, had either no pustules, or such as never came to suppuration, or a cluster only round one or both incisions. In the other method the small-pox were as favourable as any one could wish; and the appearance and regular progress of the pustules through their several stages, prevented likewise any cavils about the reality of the disease, from the uncertainty whether or not the patient had formerly had it.

WHEN a woman had a child at her breast, if both were to be inoculated, I found it best to use the preparation; and in the interval between the mother's

ther's two doses of preparative medicines, to give the child from one grain and an half to three grains of the mercurial powder, according to its age, at night, and a gentle purgative next morning. If only the child was to be inoculated, about four days after the mother had taken once of the mercurial and cathartic, such a dose of the former as I just now mentioned was given to the child, who was next morning, after taking a purge, infected; and on the evening of the third day from the infection, and on the ensuing morning, the mother's medicines were repeated.

NOTWITHSTANDING I have inoculated many sucking children, after giving the preparative medicines to the mothers only; I am convinced from experience, that it is proper to make the child likewise take once of each, before the infection; and that calomel, from half a grain to one
and

and an half, may be borne, even by that tender age, in this country, with great safety. Indeed I have commonly observed, in the course of my practice in inoculation, that mercury very seldom affects the salivary glands of those who have not yet reached, or are not much passed, the time of puberty; and that they can bear that medicine in a much greater proportion to their age, than adults.

IN preparing pregnant women, both the mercurial and cathartic should be given in very moderate quantities; especially if that state is a little advanced; and, in general, I think it more adviseable in these cases, to give three very gentle doses of each, than, by giving a smaller number, to excite too great a commotion each time.

IN inserting the variolous contagion, although I endeavoured to make the slightest scratch possible through

through the cuticle, I always took care to impregnate the incision well, by wiping the point of the lancet on it, and even by adding more matter to it, if that appeared necessary. By which means it scarce ever happened that the patient was not infected; and the trouble of repeating the inoculation, and the risk of the contagion being communicated in the natural way, were prevented.

EXCEPT in five or six cases, I always took the matter warm from a subject present at the time. Any humidity, either in the pustules of the natural disease, or of the inoculated small-pox, or in the incisions, is capable of communicating the infection. I have used the lymph as soon as it began to be collected in the incisions; the crude ichor of the natural and inoculated pox; the concocted pus of all three; and the matter almost concreted under their scabs,

scabs, in the exsiccation, with equal success.

THE quality of the small-pox, from which the matter is taken for infection, seems to have no influence on the subsequent disease, which I have known extremely favourable, when the contagion was communicated from a very confluent sort, of which the patient died; and, on the contrary, have seen the pustules pretty numerous, when the matter had been taken from a person who had been inoculated.

THERE is no danger of introducing too great a quantity of the contagion into the body; and as there seems to be no other inconvenience from the number of the incisions, than the inflammation and pain that attend them, as many may be safely used as will render the infection most certain of succeeding; I have therefore always used one on each arm, which

which I have generally found sufficient.

IF, by the fifth, sixth, or seventh day, no inflammation, or sign of the infection, appears in the incisions, the inoculation must be repeated, either in the arms or thighs; and I have been told by some people, that they have been frequently unable to communicate the contagion, till the sixth or seventh operation. This however has scarce ever happened to me; and I have commonly found, when the infection has not taken place at first, that the patient had either had the small-pox before, or had a constitution at this time insusceptible of the disease. And I am inclined to attribute the failure of the inoculation so often, to the using only one incision at a time, and the not sufficiently impregnating it with the variolous matter.

I HAVE

I HAVE sometimes observed, that no sign of the infection appeared on the fifth or sixth day, and have consequently repeated the operation; but have afterwards found, that the contagion had been at first communicated: and it is generally observable, that the former and latter incisions advance with an equal pace to maturation.

It sometimes happened that the patient had been infected in the natural way before the inoculation; but I could not find that the disease was in the least more severe, from the contagion being accumulated; as in all the instances of this sort that occurred to me, the pox were favourable, except in one sucking child, who died of a confluent kind. In this case the incisions were sometimes a little inflamed, sometimes scarce perceptibly, and sometimes the pustules were more numerous round them,

them, than in other parts of the body.

I used no dressings to the incisions, unless towards the end of the disease; when, if they were ulcerated, as frequently was the case, some soft application was necessary.

ON the evening of the third day from the incision inclusive, I found it proper, if the mercury had not affected the patient's mouth, to give a small dose of calomel and emetic tartar, in the proportion of three grains of the former to one-tenth of a grain of the latter, as directed by Baron Dimsdale; varying the dose according to the patient's age, so that the calomel never exceeded three grains for an adult: and lessening the proportion of the tartar emetic for children. But in those cases where the patient was infected, either immediately before, or immediately after taking one dose of the mercurial powder

powder and a cathartic, without any preparatory regimen being previously observed, I caused the mercurial to be repeated at this time, in its full dose, and the cathartic on the following morning.

ON the fourth day from the infection, (except in those cases which I have just mentioned, when it was deferred longer,) I commonly began the use of a purging infusion, made with senna, crystals of tartar, and sal cathartic. amar. to which, when strained, an equal quantity of melasses was added. Of this a sufficient quantity was given once or twice a day, to procure two or three stools daily, till the eruption was compleated. This infusion was likewise a very convenient cathartic for children, as well in the preparation as at any other time of the disease.

DR. Dimsdale has described the phænomena of this disease, from the infection

infition to the compleat eruption, with great accuracy ; I shall have therefore but little to say on that subject.

THE earlier and more considerable the inflammation of the incisions appears, the more favourable in general will be the subsequent disease. About the fifth day the part round the wound grows very tumid, and the itching becomes painful. About the sixth or seventh, a good deal of lymph is collected, under a scab like the eschar of a burn, or in a vesicle, and a number of small pustules commonly appear round the incisions ; sometimes no pimples arise, but the whole part becomes a large phlegmon. About this time, and sometimes earlier, the axillary glands begin to inflame.

IF the incisions continue till the seventh or eight day, with very little tumor and inflammation, I have

D

found

found it expedient to follow the advice of Baron Dimisdale, in repeating the dose of the mercurial powder given on the third evening after the inoculation. The reason of this will hereafter appear. This powder promotes the inflammation of the incisions, and accelerates the eruption.

THE eruptive symptoms commonly began about the eighth or ninth day, sometimes later; in children frequently as early as the sixth. Now and then a pain of the head and back, and a feverish heat, came on at night, periodically, as early as the fourth day from the infection. Sometimes these paroxysms were pretty smart. The bark, joined to the use of the laxative infusion, commonly gave relief. However, these symptoms, when left to themselves, never lasted longer than till the termination of the usual time of the eruption, and were certain signs of the mildness of
the

the future disease; the pustules, which succeeded them, sometimes disappearing after two or three days, without suppurating; at other times only a pimple appearing here and there, three or four days after the feverish symptoms had ceased.

THE symptoms which usually preceded the eruption, were pain in the head and back, drowsiness and ineptitude to motion, an accelerated pulse, considerable thirst, a dry tongue, and a hot skin. Nausea and vomiting I never observed among the eruptive symptoms of either the inoculated or natural small-pox, in this country.

It now and then happened, that, a day or two before the eruption, the skin of the face and breast, and sometimes of the whole trunk and extremities, was marbled with a very florid efflorescence, which a regimen or medicines, ever so little cordial or

D 2 diaphoretic,

diaphoretic, would raise into an erysipelatous rash. This phenomenon was merely the effect of the mercury and emetic tartar, which, after the appearance of this symptom, was by no means to be repeated. And so far was it from being expedient to desist from the usual antiphlogistic course, that it was now more than ever necessary; it was requisite for the patient to be constantly in the open air, in the shade, and for his body to be kept open; by which means the efflorescence generally disappeared in about three days. This phenomenon was most frequent in children affected with the yaws, and was always succeeded by an early and very mild eruption.

Not unfrequently, so little tumult was excited in the constitution of the patient by the eruption, that he followed his usual occupation in the field, as well at this time, as through every

every other part of the process*. Very often however it was necessary to give him a relaxation from his labour, during the continuance of the eruptive symptoms, which usually lasted from one to three days; through the day he was ordered

* It may not be amiss to insert here the following remarkable case, which I can aver to be fact: The eruption of the natural small-pox appeared on a mulatto boy, of about ten years of age, without his complaining of any indisposition, as he was running almost naked, in very wet dirty weather. The overseer of the estate happening to see him very much bedaubed with mud, and not suspecting that he had the small-pox, ordered him to go and wash himself, which he did, by immersing himself in a stream of running water. Soon afterwards, in the evening, he came to me, complaining of anxiety and oppression about his heart; but knew not of his being affected with any other ailment. I found the pustules of the small-pox pretty numerous all over his body, but distinct; and his pulse rather small and quick. I immediately ordered him to be put into a warm hut, and gave him some doses of the pulv. contray. comp. On the next morning I found him perfectly well, the variolous affection of his skin only excepted; and from this time he had no further occasion for the help of medicine.

to keep himself constantly in motion, in the open air, in the shade, and to drink frequent draughts of cold water. Some stools were likewise procured every day by the laxative infusion; the use of which was continued from the fourth day after the inoculation, till the eruption was compleated. If the fever and its concomitant symptoms were severer, or continued longer than usual, a repetition of the dose of calomel * and emetic tartar given on the third evening after the infusion, was found extremely conducive towards facilitating the eruption, and removing the symptoms which preceded it.

IF at this time, or earlier, before the appearance of the febrile symptoms, the patient's mouth happened to be affected with the mercurial, the further use of that medicine was thereby intirely precluded. Cold air

* Calomel, or mercurius albus dulcis 7s sublimatus.

and cold water were not however found prejudicial. The mouth was frequently gargled with some emollient decoction; the food used was of the softest kind, such as flower pap, boiled rice, &c. and the body was kept constantly lax; by which means this inconvenience was commonly removed in a few days. But if the afflux to the fauces was pretty violent, and did not easily subside, a dose of flores sulphuris, given morning and night, was found of great service. A salivation however, although troublesome to the patient, was not observed to have any bad effect on the disease.

IN sucking children I likewise found it convenient to keep the body gently lax, during the continuance of the eruptive symptoms, as thereby the convulsions, so incident to that tender age at this time, seemed to be prevented. One case only of that

fort occurred to me ; but a clyster being injected, and a few drops of laudanum, with some testaceous powder given after it, the eruption was accelerated, and the spasms easily allayed.

AFTER the eruption was compleated, there were very few working slaves, who could not follow their usual occupations, to whom liberty was given to shelter themselves on the approach of rain ; but all their care and agility could not prevent their being sometimes caught in a shower ; from whence, however, I never saw any inconvenience arise.

THE bland, temperate diet, formerly mentioned, was continued to the compleat exsiccation of the pustules ; when commonly one, or at most two doses, of some gentle cathartic, finished the process.

It sometimes happened, that, after the eruption, young children were
I troubled

troubled with gripings, and loose acid stools, which made them very cross and restless, and tended greatly to exhaust their strength. In this case I found it necessary to give them daily some doses of testaceous powder, and a few drops of tinct. thebaic. at night. If likewise it happened, as sometimes was the case in this tender age, that the pustules were pretty numerous, and the child was very sore and uneasy, a few drops of laudanum at night, or every night and morning, were very beneficial, and greatly supported him under the disease.

I HAVE now faithfully related the practical rules which I followed, and the regimen which I caused to be observed through the course of this process; from whence the extreme mildness of the disease was such, that very frequently when the preparation, previous to the insertion of the contagion,

gion, was used, either no pustules were produced, or, when an eruption appeared, no suppuration succeeded. As however the appearance of the eruption, and the regular progress of the pustules through the several stages of inflammation, maturation, and exsiccation, have usually been regarded as certain criteria of this disease, and some doubts have been entertained, from the absence of these symptoms, of the patients having been really infected with the small-pox; I have commonly of choice made use of the humour of the incisions of those patients for infecting others, and have never failed of exciting the disease, with as much certainty of success from thence, as when the contagion had been taken from the natural small-pox. To this possibly it may be objected, that the variolous ferment, being introduced into the incision, may inflame the part, and assimilate

similate the juices contained therein into its own nature, so far as to enable the pus, formed from them, to excite the disease when infused into another body, in the same manner as we see a small portion of the venereal virus, when admitted into the urethra, raises an inflammation, and brings on a discharge of matter capable of producing the venereal disease in all its various shapes, when applied to any soft, tender, irritable part of the human body; although the person from whom that matter came may continue untainted in his constitution, and recover of the local injury by means of that discharge, without the aid of medicine.

To place this point in a state of a great certainty as its nature will admit of, I made numerous repetitions of the inoculation in the same patients, with no effect in any one person, whom I had judged, from the
appear-

appearance of the first incisions, to have been truly infected. There are besides some certain phænomena which can hardly escape a careful observer, and are pretty demonstrative signs of the morbid miasma being introduced into the mass of blood. One of these, and the most obvious to our notice, is the enlargement, soreness, and tingling sensation of the axillary glands, from the acrimony of the contagion, absorbed by the lymphatics from the incisions, and carried through those glands in its passage to the sanguiferous vessels. When, from a similar absorption of the venereal virus, the inguinal glands are affected in a like manner, it is commonly agreed that the patient's habit will be more or less tainted, unless those glands are brought to suppuration; a course, which, though undoubtedly the most proper to prevent the further progress of the ferment,

is

is yet by no means entitled to an implicit confidence in it for a perfect cure. That the variolous contagion is not intercepted in its course through the axillary glands, is in some measure evident, from the pain of the head though slight, the chilliness, shiverings, and the subsequent febricula, to be observed commonly in the evening, or night, about the usual time of the eruption, and sometimes much earlier, and very soon after the infection, of which I have already taken notice. It is moreover not uncommon for a few scattered pimples to appear five or six days after the usual time of eruption, and the entire cessation of the febricula, which sometimes mature, but very frequently disappear without any supuration.

To these considerations it must likewise be added, that if these patients had not really undergone that
change

change in their constitutions, that rendered them incapable of receiving any future impression of the variolous miasma, it is impossible to conceive that such numbers would universally have escaped the infection in the natural way, from those who were inoculated, either at the same time with, or after themselves, and lived in common with them ; as also from those who had the natural disease, of whom some lay in the same huts, and to whom I have known some of these patients perform the office of nurses.

UPON the whole then, I think, we have all the evidence that a subject of this nature will admit of, till the experience of a course of years has fully established the truth, that a person who has gone through inoculation in this extremely mild way, is no further obnoxious to the contagion. This perhaps may receive some small weight, from reflecting in
2 how

how slight a manner the natural small-pox have sometimes occurred; and how surprisngly small a number of pustules have in some instances appeared. And possibly it may not be altogether absurd to suppose, that nature does not in this, more than in most other febrile diseases, absolutely and invariably addict herself to one particular critical evacuation. And hence perhaps it is that some persons, in whom no variolous eruption * had been observed in the course of any fever, have been thought, although they lived almost perpetually exposed to the infection, to have passed their whole lives unattacked by this disease; in which number were the celebrated Boerhaave, and his colleague Professor Schacht; to whom many more instances might easily be added.

* Hic nihil repugnet, morbus variolosus sæpe sine variolis fit. *Boerhaave, Aphor. § 1393.*

It being no easy matter always to discover whether a slave had or had not formerly passed through the small-pox, the variolous matter was sometimes unavoidably inserted into those who had had the disease before in the natural way. In these persons the incisions were frequently somewhat inflamed; and sometimes a little ichor was collected in them: very little attention however was requisite to distinguish this case from that exceedingly gentle state of the disease I have just mentioned; in which the incisions were most commonly remarkably inflamed and tumid, and suppurated largely: but here the inflammation always subsided, and the incisions were compleatly exsiccated, before the usual time of the eruption; the axillary glands were never affected, neither did any feverish symptoms ensue.

THERE

THERE seems likewise to occur now and then, in persons who are pretty certainly known not to have had the small-pox, such a state of the constitution as is incapable for the present time of being infected. The phænomena of the incisions are much the same as in those who have already gone through the disease; and however often the inoculation be repeated, either no inflammation succeeds, or, if it does succeed, it disappears again within a few days.

BEFORE I put an end to this letter, it may not be amiss to subjoin a few observations on those morbid affections which occurred to me subsequent to inoculation; and of which, either the disease itself, or the manner of treating it, seemed to be a remoter cause. The most frequent of these were dry ophthalmies. Inflammations of the eyes are at all times extremely common amongst negroes in

E

this

this island; but I doubt not but many of those which happened to people who had lately been inoculated, were in consequence of the small-pox; which I am the more inclined to believe, as I found them manifestly more obstinate than usual. These ophthalmies required copious bleeding, and repeated antiphlogistic purges, a cooling regimen, with plenty of nitre, and the application of emollient poultices to the eyes. But, after the evacuations by bleeding and purging, nothing was found more advantageous than blisters applied behind the ears, and to the sides of the neck, from which a discharge was constantly kept up till the inflammation ceased.

A CASE or two occurred to me of the impetigo, or ring-worm, as it is called here, succeeding the inoculated small-pox, and appeared to me to proceed from the disposition, which

the constitution had acquired from the treatment of the small-pox, to protrude whatever lurked in it noxious to health, on the external habit. The impetigo in these cases, though the most extensive I ever saw, yielded readily to sulphur, given internally, and the external application of mercurial and sulphur ointments.

IN another case, of a grown woman, who had some time before been inoculated, an eruption appeared on her body, very similar at first to the impetigo. I gave her some flor. sulphur. tempered with nitre. When I saw her again, the eruption had spread over her whole skin, which was very tumid and inflamed. I now saw plainly that this was an erysipelas, of the same kind as that which I have already mentioned, as sometimes occurring previous to the eruption of the small-pox ; I therefore took some blood from her immediately, and

gave her a gentle cathartic, and put her afterwards upon a cooling regimen; but I could not prevent matter being formed under the cuticle, almost as much as if she had had the confluent small-pox; her lower extremities especially were quite raw. But notwithstanding this, neither fever, anxiety, sickness at stomach, nor any other ill symptom, attended her at any time of the disease; from which, by the use of fomentations, and proper methods to absorb the pus, and to keep her easy, she soon recovered, and does not now retain the least mark of the calamity she suffered.

THESE were the only morbid affections that occurred in my practice, in consequence of inoculation. Very few they certainly were, if compared with what usually happen after the old method of inoculation, or the natural small-pox; which pretty plainly proves,

proves, that such parts of the humours, as had undergone the action of the variolous ferment, were thoroughly discharged by the emunctories, and that the body was not left very particularly disposed to any new disease.

THESE, Sir, are the remarks which I have thought proper to transmit to you on the method of inoculation, which I have found successful in this country ; the practical observations in which you may depend upon to be strictly matters of fact.

L E T T E R II.

Dear Sir,

JAMAICA,
March 28, 1773.

I Am much obliged to you, for the trouble you have taken with the paper on Inoculation ; and am glad to find, that it has been thought capable of being, in any wise, useful.

THE note, you have inserted concerning gravid women, claims likewise my acknowledgements ; as every one might not perhaps have recollected that the subjects, I every where speak of, were negroes ; and from
thence,

thence, if what I have wrote should be thought to merit imitation, persons might have been admitted to inoculation, to whom it never was my intention to recommend it; and I might unknowingly have occasioned mischief. But, whatever hardiness negroes may possess, I do not find, that the females enjoy that immunity from the evils of child-bearing, at least in this country, that you seem to imagine. A negro woman, after lying-in, is here carefully nursed for a fortnight; and excused from all kinds of labour, and perhaps does not come out of her house, for a month; and I believe I may safely say, that the accidents attendant on child-birth happen fully as often to these people, as to the rustic part of their sex in Europe. But be this as it may, these negro pregnant women did as well here, with the cautions I have given, as any other subjects;

and bore a very large proportion to the whole number of those I inoculated, and not a single instance of abortion happened.

SINCE I wrote that paper I have inoculated again, but met with nothing new to be observed: I am however confirmed in the opinion, that no person in a state of debility, from whatever cause it may proceed, ought to be inoculated, even with the view of his being able to be supported under the disease with food and medicines. I intended, during the last summer, to resume inoculation, if my attendance on Sir Charles Price, and the ill state of my health afterwards, had not prevented it; which I the more regret, as I purposed to inoculate again *gratis* all those who four years before had the small-pox in so extremely slight a manner; and to endeavour to determine whether those

those people are any further obnoxious to that disease.

My sentiments, with respect to the principles of inoculation, are still the same; and I am more convinced of the truth of what I said concerning the manner of the operation of cold water; which I find by experience to raise a sweat, whenever there are no impurities in the first passages, and to be safely drank during a sweat in a fever, and to keep it up plentifully. If the stomach and bowels are loaded with bilious or other noxious matter, cold water then as certainly, brings on vomiting, or purging, or both.

THE new method of treating the inoculated small-pox was found very detrimental, when applied to the natural disease, in this country; and I attribute the uncommon mortality, in the year 1768, chiefly to that cause.

cause. There was a manifest, and prodigious difference, between the effects of the mercurial and antimonial medicine, and purges, when used before, or at least at the same time with the infection, and when given not before the variolous poison had spread its influence through the whole frame, and shewed its presence by the symptoms it produced. It frequently happened, that the fever was totally suppressed by the time of the complete eruption; but the pustules seldom matured, but generally continued crude, and in many never came to exsiccation, except just in the face; whilst the extremities discharged great quantities of thin ichor, the patient grew daily weaker and weaker, and sunk at length under the disease.

An observation or two, which I made on the natural small-pox, perhaps

haps you may not be displeased with.

I. About the time of the incrustation of the pustules I observed several negroes, on whom they were numerous, to be taken very suddenly with a severe fever, restlessness, and delirium. At first I mistook these symptoms for the usual secondary fever; and the patient, in whom they occurred, died, as I believe, from thence, before I discovered their cause. From some complaints, these people uttered in their more lucid intervals, and from noticing their being remarkably affected, if any thing touched their feet, I was induced to examine them; and found the cuticle of their soles to be raised and distended with pus; for the matter formed by the suppuration of the pustules under this cuticle, which in negroes, who go barefoot, is as thick
as

as the sole of a shoe, not being able to get a vent, had separated it from the skin of the whole bottoms of the feet, and being there pent up, by irritating the extremely sensible naked papillæ of the skin, produced these symptoms; which, after the cuticle of the soles of the feet was taken off, by the use of fomentations and soft dressings, were brought to subside without any difficulty.

II. WHEN the exsiccation of the pustules was nearly compleated, it frequently happened, that large swellings of the feet and legs came on; which soon ulcerated, and discharged prodigious quantities of sharp ichor. It being a custom with the negro nurses to foment these ulcers with warm urine: as I saw no reason to object to it, I permitted them to take their own way, and used no other application but cerat. pulotic; and,
as

as I thought nature, in these cases, did her own business much better, than art could pretend to do it, I avoided the use of any medicines, till the discharge began to cease, and the sores shewed a disposition to heal; when a few doses of purging physic were given. These cases never failed to do well.

III. THE secondary fever of the small-pox, as almost all fevers are in this country, is of the remittent or intermittent kind. As soon as ever it began, if there was yet only a partial exsiccation of the pustules, I endeavoured to carry downwards the colluvies of the intestinal canal by clysters, and kept up as large a discharge as possible by means of vesicatories. When the incrustation was completed, I then had recourse to purgatives. But what I have chiefly to remark is the
ex-

extreme usefulness of Peruvian bark in these cases ; which I was induced to give, from considering how much this fever, in that epidemic, partook, both in its cause and effects, of the nature of a purulent fever.

LET-

 LETTER III.

S I R,

JAMAICA,
April 27, 1774.

SINCE I wrote to you my letter on the subject of Inoculation for the small-pox in this country, I have had further opportunity of exercising this branch of medicine; but the occurrences and successes being the same as formerly, I had no particular observation worth transmitting to you till lately. About the middle of last December, a negro ill of the small-pox happened to be brought into

into this neighbourhood; upon which I had immediate recourse to inoculation, and, by the beginning of February, one hundred and forty-six people passed through the process under my care, without the loss of a single individual. Of these people one hundred and twenty were children, fifty of which were at the breast; the rest were either new negroes, or people removed hither from other parts of the country, since the preceding inoculation. On forty-nine other slaves I also made some experiments, which I thought might tend further to enlighten this subject. The result of these experiments, and some remarks, which occurred to me in course of this inoculation, as I apprehend may correct, or illustrate what I said in my former letter, I beg leave to communicate to you.

As

As in negro practice the nature of things will hardly permit a choice of the patients to be inoculated, it must necessarily be supposed, that many of them are very ineligible subjects. The greatest difficulty arises from want of strength to bear the regimen, and the operation of the preparative medicines. As my experience by no means favours the total omission of the mercurial medicine and purgatives, I have endeavoured to use them so as their operation might weaken the patient as little as possible, who at the same time was well supported with proper food: but I have chiefly to observe, that a constant use of the Peruvian bark, except during the time of the eruptive fever, has, in these cases, succeeded greatly to my satisfaction.

A celebrated writer has described a case in which the malignant confluent small-pox succeeded the use of

F

the

the mercurial corrosive sublimate*. Two of the elder children, whom I successfully inoculated, had been taking that medicine for the yaws; but the following case comes nearer to the point. A middle-aged woman was salivated by unction, about three years since, for a venereal ulcer in her throat; of this complaint she appeared to be perfectly cured, as she enjoyed exceeding good health for more than two years afterwards; conceived, and was delivered of a child. This child happened to get the yaws, the poisonous ichor of its sores occasioned large spreading ulcerations both of the mother's breasts, and of a great part of her right-hand and arm. On this account, as external applications alone availed nothing, she was directed to take the solution of corrosive sublimate; which

* De Haen Rat. Medici. Cap. 15.

accordingly she did, for more than six months, until at length she desisted, in order to be inoculated for the small-pox; which she passed through with very little indisposition, and, I believe, the number of pustules did not exceed fifty.

WHAT I wrote relative to the inoculation of pregnant women in my former letter, I sincerely believed to be true, and I can positively affirm, that I did not know of its being attended with a single instance of abortion, in the whole course of my practice in 1768. As however I find that many doubts and objections have been raised on this head, I have taken the pains to make a strict inquiry, and will candidly acknowledge, that I am now told, that two negro women miscarried, some short time after they had returned to their usual course of life; but my assistance not being wanted, no complaint

was ever made to me on that subject. Amongst those, whom I inoculated at this time, were only two pregnant women, one in the fifth, and the other in the sixth month of gestation; who passed through the small-pox with very little indisposition, and had only an exceeding small number of pustules, and not the least symptom of a tendency towards abortion. Both those women were discharged from my care in good health, and returned to their accustomed way of life; but, about a fortnight afterwards, one of them caught a venereal infection attended with a severe strangury, and miscarried a month from the completion of the process: the other was attacked, about the same time, with a remitting fever accompanied with a dysentery and tenesmus; during which complaints she had some symptoms of an impending miscarriage, but recovered
so

so far, that I no longer apprehended any danger, when on the fortieth day after the small-pox were perfectly over, she was taken suddenly with labour-pains, and was delivered of a living child, which survived its birth about an hour. Both these patients did well without any difficulty. As for the two former cases, it is impossible, at this distance of time, to say whether or not the abortion was occasioned by the inoculation; and, with respect to the two latter, I believe no one will deny, that causes subsisted, after and intirely independent of the small-pox, fully sufficient to produce that effect. But granting that they all proceeded from inoculation, I do not conceive, that the expediency of admitting negro subjects, under that circumstance, to this process, with a proper degree of prudence, will be thereby invalidated, as the danger of abortion in

them, and that of the natural small-pox, do not appear to me, to be capable of any kind of comparison. This, however, is only mentioned as my private opinion, which I shall leave to others, and to future experience to determine.

THE usual disorders of infancy are perhaps as common, and as severe in negro children, as in those of any people whatever; but, notwithstanding this, I have inoculated them, now as well as formerly, with very great success; and have so often seen teeth, of all the several kinds, make their way through the gums, during the process, and sometimes at the very time of the eruptive symptoms, with so little inconvenience, merely through the body being kept open; and I have found any disorder of the stomach and bowels, which happened so easy to be remedied by the common method, which every practitioner is

is acquainted with, that I believe proper care and attention will seldom fail, to prevent any disagreeable accident. From hence, however, I would not be understood, to recommend these as proper subjects, when a more advanced age can with safety be waited for, as I think the contrary evident both from reason and experience. I have now likewise met with but one instance of convulsions, and that only of one very slight fit, at the time of the eruption. The child's belly was already loose, and two or three drops of tinct. thebaica were all the medicine, that I found I had occasion for.

UNLESS where particular circumstances required a particular method of treatment, I followed the same general rules of practice which I formerly described; except only that, as I have found sucking children so

much disposed to have a larger crop of pustules than others, although I met with no instance where the mother and child were both to be inoculated together, I proceeded in the same manner as I had formerly done when that was the case; or if the child was more than two years old, but not yet weaned, I made the mother take once, and the child twice of the preparative medicines, before the infection; and in general I did not begin the use of the laxative infusion so early, as I mentioned in my former letter: indeed in children I very often found such a tendency to purge, during the eruptive symptoms, that I had little or no occasion to have recourse to it at all.

THERE is a method, which is sometimes used, of communicating the disease with matter, which has been dried on the point of a lancet. This method

method I have very seldom practised, and would on no account recommend, as I think I have observed, that such dangerous mistakes may easily arise from it, as the most scrupulous attention will be necessary to avoid. It is to be observed, that the day after the inoculation, the wound, when made with a lancet, on which the matter has been dried, is most commonly as much, or more inflamed, than on the fifth, when the matter is taken fresh from a subject present. About the third day this inflammation begins to subside: after that, if the infection succeeds, the incision gradually inflames again. This suggested to me the following remark. When the fresh fluid matter is used, the clean keen lancet only divides the cuticle, no digestion of the wound follows, and the inflammation and suppuration, which ensue, are purely the effects of the virus

virus of the small-pox. But, on the contrary, when the matter has been suffered to dry on the lancet, however it may be moistened with warm water, or otherwise, the point of the lancet will nevertheless be so clogged, and blunted by the clotted pus, as to render it scarce possible to avoid using such force, in making the incision, as will continue the wound into the true skin; the consequence of which will be a speedy inflammation, and digestion of that wound, and by the discharge, I am confident, the variolous infection will sometimes be carried off. Of this, I think, I have plainly seen two instances. One was in my own practice: the first infection not having taken place, in a child about five years old, for the sake of greater conveniency, it was inoculated again: the first incisions inflamed very early, collected and discharged matter,

ter, but had very little of the usual humour and hardness round them, and that gradually decreased as the ordinary time of the eruption approached; wherefore six days afterwards I again repeated the inoculation; on the eighth day the child grew feverish, and on the tenth the eruption of the small-pox appeared. As the fever proceeded, the last incisions became more and more inflamed, whereas the preceding healed intirely. I have no doubt but this child received the infection, in the natural way, from some others, who had been inoculated a little before it, from whom I could have taken fresh liquid matter, if this had not been objected to, because they had the yaws. The disease was exceedingly mild, and terminated happily. In the other instance, I was requested to see a child, who was ill of a fever with an eruption on its skin: I found
the

the disorder to be the malignant confluent small-pox, and was told, that the child had been inoculated about a month before, in the manner above mentioned, that the incisions had been somewhat inflamed, and had discharged matter, but that no eruption had followed, and it was uncertain, whether there had been any fever.—This child died. The difference in the severity of the disease, in these two cases, I suppose, proceeded from hence : the former child was under the regimen observed in inoculation, during the whole time it was under the action of the variolous poison, whereas the latter, after taking a purge, had returned to its usual way of living, and, I presume, had been crammed with many preposterous kinds of food, before and after it had received the infection.

I have

I have always found the exanthemata, which now and then appear about the time of the eruption, however alarming they sometimes may have seemed to the inexperienced, not only to be perfectly void of danger, but even to be a certain sign of the mildness of the subsequent small-pox; indeed very commonly in these cases there is no eruption at all. These exanthemata put on very different appearances, in different people: sometimes I have seen a rash, much resembling the first eruption of the confluent small-pox, equally spread over the whole skin; at other times collected into clusters not unlike the measles; again I have known an efflorescence begin very much in the form of the effera, when the tumours dilating themselves, and running one into another, soon became large erysipelatous inflammations; and sometimes an inflammation, of this kind,

was

was extended uniformly over the whole surface of the body. I have never seen this erysipelas, or rash, continue longer than three days, or attended with anxiety or sickness at stomach; but frequently with great heat, and itching of the skin: and have always pursued the antiphlogistic method of cure. This affection of the skin I have also met with in those, who had already had the small-pox, after taking calomel and emetic tartar. The most remarkable instance, I have known, was in the same woman, whose whole cuticle was separated from her skin by suppuration, as I have related, towards the end of my former letter on this subject. When I lately began to inoculate, this woman having a child at her breast, I directed ten grains of the mercurial powder to be given to her at night, and half a drachm of the purging powder next morning:

on the third day I found her in a strong fever, with an erysipelatous rash over her whole body ; I caused her immediately to be blooded, gave her a nitrous medicine, and put her on a cooling regimen : after this the fever subsided ; but within a few days her whole cuticle, except that of the palms of her hands, and the soles of her feet, came off in the form of dry scales. Another case, very similar to the preceding, occurred about the same time, in a negro girl, who had been inoculated in 1768*. I likewise saw a rash, accompanied with sweating, on the fifth day after the infection in a negro man, who afterwards appeared to have had the small-pox before. Whatever good effect this mercurial medicine may have in inoculation, the benefit seems to have been, hitherto,

* See also Baron Dimisdale's Treatise, Case 14.

referred

referred intirely to its operation in the intestines ; but Inoculators would do well, carefully to observe the phænomena it produces on the external habit, and then to consider whether the idea, that the success of the present method proceeds solely from suppressing, and repelling the eruption, be well founded ; at least so far as this medicine is concerned.

AFTER the eruptive symptoms are over, if the patient observes the proper rules of diet, it is but seldom, that any thing further, whether it respect regimen or medicine, is of any consequence ; but when a numerous crop of pustules indicates a considerable quantity of variolous matter to have been generated, as sometimes happens in negro sucking children, through the perverseness of their mothers, whom I have several times detected in such monstrous irregularities,

regularities, as greatly alarmed me with apprehension of an unfortunate event, it does not appear to me expedient, to pursue any longer indiscriminately, the same method of treatment as before; as cold air, cold water, and purgatives, however well calculated to impede the progress of the variolous ferment, are now no longer requisite on that account, and will certainly retard the suppuration of the pustules, and the due discharge of the corrupted humours by the skin, the most natural way of evacuating them, at this time of the disease. Indeed nature, if not officiously obstructed, will seldom fail to do her own business extremely well. In these cases I always order the sick to be kept within doors, but without fire, or any extraordinary quantity of clothing; the drinks they use are warm; if the heat of the skin be unusually great, and the

inflammation of the pustules occasion any symptomatic feverishness, more or less of nitre is given; and if restlessness at night be troublesome, an opiate is administered in the evening; but at the same time I take care, that the belly be kept rather lax than costive.

ONE case occurred to me of two eruptions. A very moderate number of pustules appeared at the usual time, on a young negro woman, and the fever, which had been rather feverer than common, left her: three days afterwards I discovered on her hands and arms, what at first I took to be an erysipelas, but which soon proved to be clusters of confluent pox: these were but few and small above the elbows, but on the forearms and backs of the hands and fingers were numerous and large, and formed vesications distended with a great quantity of lymph. This wo-

man

man had been notoriously guilty of transgressing the rules of diet; but she suffered no other inconvenience from the second eruption, besides a considerable degree of pain from the inflammation of the parts affected, and a greater length of the cure, through the plentiful discharge from the vesications.

I HAVE now met with one case, and that the only one, of a pustule on the corner of the eye. The inflammation, which accompanied it, was but slight, and yielded readily to the external application of a weak solution of white vitriol and saccharum saturni; and what little opacity of the membrane remained afterwards, was easily removed by instilling twice a day, into the eye, a few drops of the juice expressed from the bark of the root of the *bocconix*; so that now the cicatrix is but just

perceivable *. It may, perhaps, be no difficult matter to prevent pustules affecting this part, by using external repellent applications, before and during the eruptive symptoms of the small-pox; and although this happens so very seldom in inoculation, yet, as it is an accident of the most disagreeable consequence, and cannot be perfectly remedied, when it once appears, it does not seem, that any pains and diligence to guard against it, however often they may be unnecessary, can be ill employed.

BE-

* The juice of the bark of the root of this plant is incomparably the best medicine that I have ever seen used, for resolving albugines of the cornea. When the inflammation is removed, a few drops may be instilled into the eye two or three times a day. If the acrimony of the juice should be greater than the eye can bear, as sometimes is the case, especially when it is first used, it may be diluted with a little new milk. Unless the structure of the cornea be intirely depraved,
in

BESIDES this instance of a pustule on the cornea, I saw five or six children affected with inflammations of the eyes, either during the small-pox, or after they were over; but these were exceedingly slight, and required nothing particular, besides the external application of a weak solution of white vitriol and sacch. saturni in the former case, and in the latter the same medicine, and one or two repetitions of the purgative, always given after the exsiccation of the pustules.

THE only morbid affections, which I met with, besides what I have just mentioned, in consequence of this inoculation, were three cases of abscess, in two of them on the thorax near the axilla, in the other on the humerus a little below the articula-

in consequence of suppuration, or the opacity be very inveterate, this medicine will commonly effect a cure.

tion with the scapula ; but neither of these was a matter of any moment.

As I had not heard that any person, who had had the small-pox by inoculation in that exceeding mild way, in which there is either no eruption, or only of such pustules as never suppurate, had ever been inoculated again after a considerable length of time, I determined to make the experiment ; as I thought, that, by this means, the question might probably be decided, whether, in this case, that change is produced in the constitution of the human body, which renders it incapable ever afterwards of receiving the variolous infection. For this purpose I selected thirteen subjects, who had had the disease in this slight manner, after being inoculated several years before, some of them by me, and others by other practitioners : in-
to

to each of these, after he had taken a dose of the mercurial medicine and a purge, I inserted the variolous contagion, at an incision in each arm; but the effects produced thereby, were in no respect different from those to be observed, in consequence of the same experiment, made in such people, as have had the small-pox before in the natural way; as I shall by and by explain more fully. To this may be added that, as it appeared to be unnecessary, from any apprehensions of the contagion spreading, to separate the inoculated patients from the other negroes, who had had the disease in the same manner before, they all lived promiscuously together; yet none of these, although many of them dwelled in the same houses with the former, and some of the women had sucking children at their breasts under inoculation, caught the

infection; so that I have not the least doubt, but that, with a due share of attention, for otherwise a deception may happen, the practitioner may always be able, to pronounce with certainty whether or not his patient be free from any future danger.

IN my former letter on this subject, I said that, in those people, who had already gone through the small-pox in the natural way, "the incisions were frequently somewhat inflamed; and sometimes a little ichor was collected in them; but that the inflammation always subsided, and the incisions were completely exsiccated, before the usual time of the eruption; the axillary glands were never affected, neither did any feverish symptoms ensue." In consequence of a large number of experiments, I now find reason, to alter my opinion considerably on this point.

point. At different times I have inoculated many people, whom the event has undoubtedly proved to have already had the small-pox in the natural way ; and I am now inclined to suspect, that some others also, whom I imagined from the sensation in the axillæ, the feverishness, and even from the appearance of the incisions, to have taken the infection, had really had the disease before.

As I had never observed any ill symptom arise from the virus of the small-pox, in bodies which had already undergone its action at my late inoculation, I communicated the contagion to many people, for the sole purpose of discovering whether they had had the disease before ; and to no inconsiderable number of others, who were certainly known to have had it in the natural way, for the sake of observing the phænomena, which

which might be produced. By these experiments I found, that sometimes, though very seldom, the incisions did not inflame in the least degree, and the virus produced no effect whatever: but most commonly more or less of inflammation did ensue, and this, very generally, with more expedition, than in those, who are capable of taking the infection; so that the part round the incision was as tumid in the former case on the third day, as in the latter on the fifth: sometimes the tumour round the incision came on slowly, and continued to increase gradually until the seventh or eighth day; very seldom longer. Not unfrequently these people complained of pain in the axillæ, and slight feverishness, very early, as on the fourth or fifth day; sometimes later; but always before the usual time in those who are susceptible of the infection: in many
however

however no pain in the arm-pits, or feverish symptom occurred. When the inflammation was very slight, it began to disappear on the third day : when it advanced with great speed, it was generally pretty considerable ; but the tumour always subsided before, or about the usual time of the eruptive symptoms : sometimes more or less matter was collected in the incisions, which however was soon exficcated. In these cases, in which the inflammation proceeded more slowly, it was seldom so considerable as in the preceding ; but commonly collected more pus, and that required a longer time to be concreted into a scab. If the incision was repeated near to the place of the first inoculation, it sometimes produced a little inflammation, but most commonly none at all ; and if it was repeated ever so often afterwards, in that part, it had no effect whatever :
but

but if it was done in some other part of the body, it then likewise had most generally no effect; sometimes however I have seen more or less inflammation raised, and some matter collected; but I never observed it succeeded by any affection of the lymphatic glands, or any feverish symptom.

As then these cases are not so clearly distinguished by the symptoms, from some which happen when the infection really takes place and the fever is very mild and succeeded by no eruption, as to preclude all possibility of a mistake, it may here be asked, by what signs are they to be known from each other? To this it may be answered, that

I. THE elevation, extent, and hardness, of the inflammatory tumour round the incisions in those who have had the small-pox before,
when

when in the highest degree, are never equal to what happens in those, who are capable of receiving the infection.

II. WHEN the axillary glands are affected, or any feverishness appears in the former, both these symptoms are much more slight, and come on much earlier, than they generally do in the latter; in whom whenever the progress of the infection is very rapid, the incisions are always remarkably inflamed, and suppurate largely.

III. WHEN the inflammation of the incisions, in the former, comes on early, and increases apace, it subsides as expeditiously, and is either entirely gone, or greatly abated, about the time when the eruptive fever commonly appears in the latter; whereas, in these, the inflammation spreads farther in one day, at that time, than during the whole interval from the inoculation till then, and con-

continues to do so until that period of the disease is over.

IV. WHEN the inflammation of the incisions advances gradually till the usual time of the eruption, the former case may here also be known by the tumour and hardness beginning to decrease, at that time, contrary to what may be seen in the latter; in which case likewise the feverish symptoms are always much more vehement; indeed where the infection succeeds, a slight degree of inflammation round the incisions seldom fails to be accompanied with a considerable fever, and by the eruption also.

THESE signs, if carefully attended to, I believe will rarely fail to enable a practitioner to discern whether his patient has had the small-pox before or not: this knowledge is however best acquired by practice and observation, as it is impossible

fible for any words to convey an idea of those appearances with that clearness and precision with which they are conceived by the sight and touch, which render it no difficult matter, for an attentive observer, to pronounce his judgement without hesitation. Moreover, it may be considered as an advantage in the case in question, that it is of no great consequence, whether the patient has the small-pox now from the inoculation, or has already had them in the natural way: the principal point to be determined is whether he be any further obnoxious to the variolous contagion. Whenever pain of the axillary glands and feverish symptoms have indicated, that the virus has been absorbed and mixed with the mass of blood, there can be but little room for doubt; if, however, any should remain, I think that this may be removed by repeating the inoculation; and the repetitions

titions should be continued until the utmost degree of certainty possible be obtained.

PERHAPS it may here be objected, that the constitutions of some people are found, at certain times, to be insusceptible of the variolous contagion; and that, although the signs I have just described should plainly shew that the present inoculation does not take effect, yet, however, many repetitions be made with the same success, these persons may nevertheless be liable to be attacked by the disease, in the natural way, at some future period of their lives. This is a point which I will not take upon me absolutely to decide; I will however beg leave to say, that, whatever may be the case with respect to the natural way of contracting the small-pox, and although the infection does not seldom fail to produce the desired effect at the first,

and perhaps several succeeding trials by inoculation, yet I now very much doubt whether there are any constitutions, which have not already undergone the action of the variolous ferment, that at any time are absolutely incapable of being infected by infection. This doubt is not founded merely on speculation: many repetitions of the inoculation having failed in 1768, in some people, who were very positive that they had not had the small-pox before. I lately subjected several of them again to the experiment; but although the symptoms clearly indicated, that the infection was absorbed and carried into the mass of blood, yet the phenomena which occurred, were no ways different from those, which appeared, in consequence of the same experiment in such as I was well assured had undergone the disease before; so that, whatever these people

H

ple

ple thought themselves, I was well satisfied, that this was equally the case with them also. But as this is a question that merits further inquiry, whenever an opportunity offers again, I shall not fail to renew the experiment.

I formerly acquainted you, that, in order to ascertain the reality of the disease, I had commonly of choice made use of the humour of the incisions of those patients, on whom either no pustules appeared, or only such as never came to suppuration, for infecting others; and had never failed of exciting the disease, with as much certainty of success from thence, as when the contagion had been taken from the natural small-pox. I now find that this alone is no proof that the variolous poison had exerted those general effects in the constitutions of those people, from whom the infection was taken,
that

that they could properly be said to have had the small-pox at that time; and that what I proposed as only a plausible objection, viz. "that the variolous ferment, being introduced into the incision, may inflame the part, and assimilate the juices contained therein into its own nature, so far as to enable the pus, formed from them, to excite the disease when infused into another body," has really a foundation in fact.

As I had often observed, that the crude ichor taken from the incisions, before the disorder had spread further, and while it was yet merely local, was as capable of exciting the small-pox as any other kind of matter; and considered, that in every case of inoculation, the variolous ferment is multiplied in the incisions, and that in them is generated the infectious humour, which is absorbed and carried into the mass of blood.

I took a resolution to make an experiment that I thought would throw some light on this subject. Among the people, who had been inoculated before, into whom I again inserted the variolous contagion, in order to discover whether they were any further obnoxious to the disease, was a young negro woman, the marks on whose arms shewed evidently, that the incisions at her former inoculation had been inflamed, and suppurated in the highest degree. The incisions, at this second inoculation, inflamed slowly, in the manner already described, and collected some matter ; but the woman never felt any unusual sensation in her axillæ, never had the least symptom of a fever, nor indeed had the slightest indisposition of any kind. On the eighth day after the application of the poison to this woman, I communicated the infection, with mat-
ter

ter taken from her arms, to three negro boys: in every one of them all the phænomena, usually to be observed in the incisions, when the contagion is taken from the natural small-pox, succeeded regularly, the fever came on at its proper time, and each of the boys had the eruption; in two of them the pustules were but few, in the third, I suppose, from a great part of his preparative medicines having, through a mistake, been given to another person, as I afterwards discovered, they were in number, I believe, at least one thousand five hundred, and proceeded regularly through the several stages of inflammation, suppuration, and exsiccation, as is usual in the natural disease. One of these boys, who had the smallest number of pustules, I afterwards inoculated again, but without any other effect

than a slight inflammation of the incisions, which disappeared in a few days; and all three of them lived for several weeks in the same house with others, who had the small-pox after them, without taking any further infection. It therefore appears now to be a certain fact, that the variolous ferment, being introduced by an incision into the skin of a person, who has already had the small-pox, and consequently is no longer capable of being infected with that disorder, may raise a local inflammation, and assimilate the juices contained in the part into its own nature, so as to enable the pus formed of them, when infused into another body, which has never yet undergone the small-pox, to excite in it that specific disease.

I will now beg leave, to offer a word or two relative to children born
of

of women, who had the small-pox while they were pregnant with them. It being disputed, whether these children are liable to be infected with this disorder, it seems to me, that both sides of the question are equally true, in different subjects. Amongst the children, whom I lately inoculated, and who undoubtedly took the infection, several were the offspring of women, who had undergone that process when with child of them. On the other hand, I was consulted, some time ago, concerning a negro girl born of a woman, who, not long before her lying-in, had the small-pox very severely: I recommended inoculation for determining whether she was liable to the disorder; but, upon trial, the effects, which succeeded, were the same, as happen in those, who have gone through

104 ACCOUNT OF THE
the disease before ; and I have no
doubt but that she also had it, at the
same time with her mother.

I am, Sir, your most obliged,
and very obedient, humble servant,

J. QUIER.

LET-

L E T T E R IV.

From Dr. Thomas Frazer, M. D. *of*
Antigua *to* Dr. D. Monro, Jer-
myn-street, London.

Dear Sir,

ANTIGUA,
May 22, 1756.

I Ought long ago to have returned
you thanks for your obliging fa-
vour; but, as the small-pox has
been epidemic among us lately, my
time has been intirely taken up in
the care of people labouring under
that distemper. These, indeed, have
been pretty numerous, for we have
been intirely free from it for many
years,

years, and we of the profession are on these occasions so much on horse-back, that for my own part, while at home, I could hardly muster up spirits to put pen to paper. This hurry is now somewhat abated, and I have leisure now and inclination to think of my friends.

THE small-pox no sooner made its appearance here, than we immediately thought of inoculation; the success of which has been so remarkable among people of all ages, blacks as well as the other inhabitants, that the most obstinate were at last prevailed on to countenance this practice. I myself communicated the small-pox to about forty white people in this manner, of whom twenty-one were soldiers belonging to Colonel Durore's regiment, of which I have the care, and consequently very irregular livers, and much addicted to drink new
3 rum;

rum; the others were of different ages, people of condition in this country, but mostly full-grown women without any dangerous accident. The slaves, who work in the plantations, and on whose life the riches of the inhabitants mostly depend, have also been very freely inoculated. Of these from two hundred and seventy, to three hundred, have been by my direction infected, with the loss of two out of the number, who had certainly the virus in them previous to the inoculation, as they sickened in two days after, and had perpetual intercourse with variolous people. Other gentlemen in practice have had the like success, and with little or no preparation, especially in the negroes; for the scanty allowance we have for the care of these will not afford any great expence of medicines, and is but a pitiful consideration for the fatigue we
undergo

undergo in their service. Reputation, however, as well as conscience, is not a little concerned in the recovery of these patients, and this was always with me a motive to avail myself of every artifice that might secure a happy event. It is indeed difficult to conceive what preparation can be preferable to sound health, or what can prove a properer nidus for the reception of the various matter, than a body whose juices are mild and balsamick, without acrimony of any kind, and such as circulate freely, without exceeding in proportion to the vessels which contain them. It follows, from this, that these previous courses ought to vary in different subjects; and that it is little less than empiricism to prescribe without distinction what is only adapted to a particular case. Too great a fulness is itself a disease, or certainly borders upon it, and

and therefore ought, by proper evacuations, to be remedied before infection. Bleeding and purging are therefore not to be dispensed with in many constitutions; but this does not infer the expediency of them in all. Weakness and innanition are not so easily remedied as their contraries; but perhaps more prejudicial in their consequences, to a patient who is to struggle with this terrible distemper: so that slight mercurial courses, especially with *Æthiops*, so universally recommended, do not seem always necessary or even proper. For, I believe it is hitherto a secret what effect the variolous poison has immediately on our fluids, or whether this be always the same. The swellings of the face, inflammations of the fauces, throat, &c. the difficult excretion of viscid saliva in these cases, and the fizy peripneumonic appearance of the blood, strongly point

point out an inflammatory lentor. On the other hand, bloody urine, gangrenous spots, petechiæ and hæmorrhages from different outlets, are strong signs of a dissolution.

I am unawares led to write a dissertation where a letter was only intended, and that on a pretty abstruse subject; but as I have already engaged, I cannot help adding, that though it is the common-received opinion that inoculation proves mortal where the virus has been received naturally before, yet experience does not confirm this doctrine; for of these who were inoculated under my care, five became sick before the fourth day, and were consequently within this rule; but of these, three had a very favourable eruption, and went through the distemper without any bad symptoms; the other two, indeed, had the confluent kind and died in the secondary fever, though
one

one of them I think for want of care. It is, however, right to avoid the small-pox, as much as may be, where inoculation is intended, and to prepare at a distance; though I think it not unreasonable to believe, that if the infection has once begun to act on the blood, so as to put the matter to be assimilated into motion, any quantity of virus superadded would be unable to increase the quantity of that matter, or in other words to produce a more profuse and consequently a more dangerous eruption. Fermentation will be raised in liquids properly disposed by a proper ferment, without regard to the quantity of that ferment; and perhaps the analogy may not be very distant. I never could observe the bark of service in the secondary fever, especially before bleeding and purging: for this distemper seems to arise from

from a cacochymic fulness, which is apt to fall on the lungs, bowels or brain ; and till this has been removed by the means above mentioned, the administration of the bark will be hurtful ; as, if I mistake not, I have seen it more than once, by people here giving it promiscuously in every stage.

AND now Sir I have endeavoured to compensate for a long silence, by a very long and tedious letter : the place of my abode affording no subject matter but of this kind.

PRAY remember me to all friends, and believe me to be at all times,

Dear Sir,

your most obedient, humble servant,

T. FRASER.

LET-

L E T T E R V.

Account of the Measles in Jamaica.

Dear Sir,

JAMAICA,
June 28, 1774.

I Hope you will not be displeased with my transmitting to you the following account of a disease, that has sometimes occasioned great mortality in this island, and been almost equally dreaded with the small-pox; as its manner of appearance in the epidemic I describe, as far as I have
I been

been able to discover, was the same it has always observed in this country, and differed much from what is generally seen in Europe.

THE measles first made their appearance within the verge of my practice, in December 1770. In January of the succeeding year they spread apace, and, during the three following months, were so epidemical, that I had seldom fewer than one hundred and fifty negroes ill of that disease at a time.

IN this epidemic the fever differed greatly in different people in the manner of its first attack. In some it began at once with considerable violence, and was accompanied, within a day or two, by the eruption; in others it was of a slow remittent or intermittent kind, with quotidian paroxysms, and preceded the eruption for five or six days. The usual symptoms of cough, inflamed eyes
and

and throat, anxiety and restlessness, were observed here in a very great degree. But the most certain diagnostic of the disease, in its beginning, and which I do not remember to have found mentioned by any author that I have met with, was, the appearance of the white aphthous specks about the gums, which were always visible several days before the eruption, and not unfrequently before the fever began. By this symptom I discovered several to be affected with the measles, before they were themselves sensible of any indisposition. As the fever increased, and the eruption approached, these specks spread themselves, together with an erysipelatous inflammation, over the whole surface of the mouth and fauces, as far down as could be seen into the pharynx. The cough was short, dry, and tickling, harassing

raising the patient incessantly ; but without any considerable difficulty of breathing, or sense of oppression at the breast in the intermissions of coughing ; and seemed to proceed from the same erysipelatous inflammation being continued along the larynx, trachea, and its branches, quite into the air vesicles of the lungs. The pimples of the eruption did not appear so much in clusters as is usually the case in Europe, but were more solitary and distinct, larger, more elevated every where above the surface of the body, and attended with more intense heat and inflammation of the skin. As the exanthemata spread farther, and grew more numerous, the fever and cough increased, and the inflammation of the skin, eyes, mouth, and throat, became more intense, and seemed to be frequently continued quite

quite through the gullet, stomach, and intestines ; the patient being now commonly attacked with most enormous gripes and purging, sometimes of blood and mucus, and often likewise with incessant vomiting.

ABOUT four days from the first eruption, the exanthemata generally disappeared ; and at the same time, if the patient had proper medical assistance, the fever likewise. But when this was not the case, and bleeding had been sparingly used, or intirely omitted, where copious bleeding had been requisite, I have seen instances in which the fever increased at this time ; the inflammation of the fauces changed from an erysipelatous to a phlegmonic nature ; the cough grew more violent ; the patient vomited incessantly, and was seized with a dysentery attended with acute and constant pain of the belly ; and

I 3

died

died soon after; either from the inflammation of the stomach and intestines, or from a gangrene supervening.

BUT however judiciously the disease might have been treated, the fever and eruption were generally succeeded, sooner or later, by a flux, in which was voided, sometimes with, and sometimes without liquid fæces, a great deal of mucus most commonly joined, but not intimately mixed, with blood. The stools were preceded by sharp gripings, and were sometimes so frequent, as to bring the patient into the most imminent danger, and in one case carried him off very suddenly. Besides the gripes, which preceded the stools, the whole abdomen was affected with constant pain and soreness; the dejection of mind and prostration of strength were

were great; the stomach frequently rejected every kind of food; a nausea and vomiting were sometimes very urgent; and, if removed, returned again after a short time. The tenesmus occasioned very commonly in children, a troublesome protrusion of the rectum through the anus; and, in pregnant women, brought on a discharge of blood from the uterus, and sometimes abortion. The rectum was sometimes most evidently ulcerated. In a boy about six years old, who had not been sufficiently blooded in the febrile stage of the disease, the anus was ulcerated; the true aphthæ, which appeared during the flux, became corroding ulcers, and spread over the whole mouth, fauces, and lips; a pimple on the margin of the upper palpebra of the right eye, and a number of faruncles,

which broke out on different parts of the body, especially where blisters had been applied, were converted into large ulcers, and mortified before his death.

THOSE who were not attacked with the flux, had boils in different parts of the body, and very commonly an itchy eruption over the whole skin: the boils and itchy eruption likewise generally succeeded the flux, and, whenever they appeared, were salutary symptoms. In one case, where the flux did not succeed the fever, the matter, which used to be discharged that way, was evidently translated to the brain, and occasioned much danger to the patient *. During the flux, a febrile

* PLATO, a stout negro man about thirty years old, had no purging after the recession of the measles. May 16, 1771, he complained yesterday

brile paroxysm of several hours, or a whole day, happened to some; and others had an intermittent fever of more or less continuance. An inflammatory diathesis of the constitution remained in most, who had had the disease severely, for several months

day of slight tremors, and rejected food; had no sleep last night; took this morning sal. cathart. amar. ʒvij. with ol. olivar. ʒss. which gave him two stools only: this was the first purge after the measles. This evening I was sent for. The symptoms were frequent convulsive tremors; great restlessness, and perpetual jactation of his body: he talked nonsense, and collected straws from the floor; but when spoke to, would recollect himself, and answer with tolerable coherence; a perpetual short dry cough; respiration short, interrupted and laborious; apparently great anxiety; perpetual sputation; eyes constantly in motion, with a very wild look; pulse low, weak, and remarkably slow, but regular; skin cold. When asked where his complaint lay, he said he felt pain in his left side and breast; if desired to shew where with his hand, applied it to the region of the heart. This day eat nothing. R. camphor. gr. v. asafætid. gr. ij. test. ostreor. pp. q. s. ut ft. pulvis. sumendus sextâ quâque horâ cum sptus.

months afterwards. Some few instances occurred of a disposition to a dropfy where the body was extremely reduced by the flux. Those on whom the epidemic exerted its greatest fury, were the most hale, strong, and valuable slaves; the worthless and lazy, and such as were emaciated through want of food,

sptus. c. c. guttis xxx. ex infuso folior. salviæ.
A blister was applied between the shoulders: for food weak broth was given often, in small quantities. 17th. He slept a little last night, but complained of pain in his head. The same symptoms as yesterday, with this difference, that he was now more sensible, and answered, when spoke to, with more coherence. No stool since yesterday before noon. Blisters were applied to his head and thighs, and a clyster injected in the evening: the medicine continued as before. 20th. All the nervous and spasmodic symptoms removed: he grew better on the 18th. The medicine ordered to be taken now only three times a day. As he complained much of the soreness occasioned by the blisters, and of want of sleep at night, fifteen drops of tinct. thebaica were directed to be given at night, as long as requisite. 23d. No other complaint but of weakness.

eating dirt, or severe usage, had scarce any indisposition.

THE symptoms, which I have related, naturally distinguished the disease into two periods, the febrile and the dysenteric; the curative indications of which being very different, I will now separately describe the method of treatment, which I found by experience to succeed best in each.

I. IN the febrile stage of the disease no one died, notwithstanding many were in the greatest danger: the safety however of the patient, in the dysenteric and most dangerous period, depended chiefly on the method of cure made use of in the former. As I constantly observed, that the most robust people, and those in whom the fever and inflammatory symptoms rose highest, were always attacked with the severest fluxes, I endeavoured to prevent

vent the generation of morbid matter to be discharged by the intestines in the second stage, by repressing the fever and inflammation by means of a cooling regimen, and as large and frequent venesections as the patient's constitution would bear. As soon, therefore, as any one complained, unless the state of his body absolutely forbid it, more or less blood was taken away, according to the age, constitution, and other circumstances of the patient. If the mouth only was yet inflamed, and the fauces not at all, or but slightly, a moderate dose of *sal. cathart. amar.* was given, either on the same day, or the next morning: but if it appeared by the state of the throat, that probably the inflammation extended to the stomach, or farther, this was omitted; as I found that the mildest purgative

tive could not be borne under that circumstance in this stage of the disease, without danger of an hypercatharsis: an emollient clyster was, however, commonly thrown up with advantage. The patient was not suffered to confine himself, but was ordered to keep constantly, by day, in the open air in the shade. Warm decoctions of emollient and pectoral herbs were used for common drink. If the stomach could bear it, small quantities of nitre were given. Oily tinctures, or spermaceti emulsions were used plentifully, to mitigate the cough; and moderate doses of tinct. thebaica were usually given at night. The mouth and throat were gargled with some warm emollient decoction sweetened with muscovado sugar; and the eyes were cooled by the frequent application of a weak solution

tion of white vitriol and sacchar. saturni.

As the fever and inflammatory symptoms increased, the bleeding was repeated, and very frequently a second time, about the state of the fever, just before the desquamation of the exanthemata began. But the most alarming of all the symptoms, and which demanded bleeding most, were the vomiting and purging, which sometimes happened in this period. As this was chiefly a spasmodic affection of the stomach and intestines, in consequence of the inflammation, and attended with excruciating pain, after bleeding, recourse was had to opium, and that in considerable quantities: two, three, or even four grains of opium were requisite to be given to adults, in the course of every twenty-four hours. Besides this, spermaceti, pulvis e tragacanth. comp. gum arabic,

bic, or the gum of the acajou tree, starch gelly, and starch clysters with tinct. thebaica, and sometimes testaceous powders, chalk or Armenian bole finely pulverized were absolutely necessary to be freely used; and, by these means, it was generally pleasing, to see with how much certainty and ease these symptoms were removed. At first I gave, in this case, a small quantity of manna and sal. cathart. amar. with a little sweet oil, and a stronger opiate at night after it, than usual; but the evacuation, which ensued, was commonly so violent, and sunk the patient so low, that I found I was mistaken in my idea of the indication, and soon desisted altogether from the use of a purgative.

IN this stage I chiefly relied on venesection, for relieving the cough: in some few cases, that were more
than

than usually importunate, I applied blisters to the thighs; but the use of these was commonly reserved for the dysenteric period.

II. WHEN the disease was treated in this manner, after the exanthemata had continued out on the skin about four days, as I have already said, they gradually disappeared, leaving the surface of the body covered with furfuraceous scales; and the fever and inflammation of the eyes, mouth, and throat, ceased about the same time: the cough generally continued longer. And now either immediately, or sometimes not till several days afterwards, the dysenteric period commenced: not unfrequently the purging, which had begun in the febrile, was continued into, and formed the dysenteric stage.

IMMEDIATELY upon the complete recession of the exanthemata, and the appearance of the bran-like scales, if the inflammation of the mouth and fauces was quite gone, it was found expedient, whether the patient had or had not yet a flux, to give a gentle dose of manna and sal. cathart. amar. with the addition of some sweet oil: but if the internal inflammation still subsisted, I thought it proper to defer the purgative for a day or two longer.

BLEEDING, if it had been duly administered in the former period, was not only unnecessary now, but hurtful; as it evidently could not much lessen the quantity of matter to be carried off by the alvine excretion; but would reduce the patient's strength, already scarcely sufficient to bear so profuse a discharge. Bleeding was without doubt indispensibly

requisite in those cases, in which I mentioned my having seen the fever and internal inflammation increase, after the disappearance of the eruption, through the want of it in the former part of the disease; but I had it not in my power to determine from my own experience, whether in cases where the morbid matter is turned in upon the stomach and bowels, while the inflammation with which they were affected in the febrile period subsists, it be most expedient to administer purgatives immediately, or to endeavour first to remove, or at least to abate, the inflammation by repeated bleeding, opiates, and demulcents; though I am inclined to believe the latter. The cases of this kind which occurred were but few, they soon proved fatal, but did not happen in my own practice.

AT

AT night, after the operation of the cathartic, an opiate was always given. But although the purge generally mitigated the severity of the flux, if already began, or rendered that subsequent to it more mild than it would otherwise have been, yet it was never able to carry off the former, nor often to prevent the latter: often indeed, the stools continued from this time to increase in number notwithstanding the opiate given at night, and the dysentery began from thence.

IF the cough remained after the purge had been administered, as was most frequently the case, blisters applied to the thighs very seldom failed to remove that symptom intirely.

LET us suppose the dysentery to be now begun, with severe gripes, and blood and mucus in the stools,

and the patient to have taken one dose of the oily purge. Here it was proper to have recourse to the same method which I proposed in the flux of the febrile period: the same mucilaginous, demulcent, and absorbent medicines were necessary to defend the stomach and guts from the acrimony of the morbid matter; and opiates were requisite, not only to prevent the evacuation from exhausting too much the strength, and throwing the patient into a delirium, but likewise, to quiet the painful spasms, to moderate the inflammatory disposition, and to impede the accession of its more direful effects. Nor was any danger to be apprehended from the acrid matter being pent up within the body, by the use of opiates, as two, three, or four grains of opium taken by an adult, in the space of twenty-four hours,

hours, were in general, at this time of the disease, but barely able to restrain the flux within such bounds as not soon to exhaust the patient*.

THE manner in which the blood appeared in the stools, together with the tenesmus, indicating a violent irritation of the rectum by the sharp humours which flowed through it, I ordered a starch clyster with the addition of some tinct. thebaica to be injected daily twice; which not only gave ease, and prevented the ulceration of that gut, but greatly diminished, and, in time, intirely

* THIS free use of opium, at this time, may appear reprehensible; but the frequent fainting fits, and sometimes even sudden death (one instance of which occurred in my own practice, and I have known of others), which happened from the prodigious discharge by stool, were no otherwise to be prevented, and the success justified the use of the medicine.

stopped, the excretion of mucus. From this circumstance it likewise appeared, that the source of the mucus was commonly no higher than the great intestines, and most frequently perhaps in the rectum and inferior part of the colon; in which opinion I was confirmed, by observing that, towards the decline of the flux, some persons had three or four stercoraceous stools in a day, of a tolerable consistence, but between them a frequent excretion of mucus, without the least admixture of fæces.

If the patient had no flux, a repetition of the purgative, about four days after the first dose, commonly finished his cure; but if he had the flux, it was still more necessary, and after it, the same medicines were to be used as before; with a further repetition of the oily purge, if feverishness,

ness, slight nausea, tension of the belly, return, or increase of the griping pains, required it.

As soon as by the use of the oily purges, opiates, and demulcent medicines, the painfulness of the abdomen and gripes were either wholly, or nearly gone, and the stools however liquid, became stercoraceous, it was then time to endeavour to divert the humours from flowing inwards, by increasing the discharge by the cutaneous emunctory; to restrain the rapidity with which the peristaltic motion precipitated the contents of the intestines towards the anus, by obliterating the impression of the morbid stimuli by means of paregorics, and introducing others of a different nature; and to restore the tone of the bowels by medicines of the warm and bracing kind. These several indications I found to

be very successfully answered by continuing the use of the opium as before; by giving half a drachm of theriac, androm or mithridate, two grains of rhubarb, and from five to ten grains of toasted nutmeg, or a drop or two of its essential oil, or one of that of cinnamon, three or four times a day; and directing a decoction of logwood, or of the bark of the guava tree with some warm aromatic, to be used for common drink. If the small quantity of rhubarb, in the medicine just described, after being taken for a few days, seemed to purge the patient, it was best to omit it for two days, and then to add it again for about three days, alternately.

ABOUT the decline of the flux it generally happened, after the stools had decreased in number, and grown of a better consistence for some time, that the belly became tense and painful, and shortly after a
I pretty

pretty severe purging succeeded for two or three days, when the frequency of the stools gradually diminished, and at length the belly became again tense and painful. This painful tension of the belly and purging continued to return alternately, for some time, and now and then proved very troublesome. As soon, and as often as this tension and painfulness appeared, it was found expedient, to give a small dose of manna, or, what I thought better, of rhubarb, which could not be used in the earlier part of the flux without occasioning most severe gripes, and increasing the discharge of blood. After the operation of the rhubarb or manna, as often as it was requisite to have recourse to them, the use of the medicines just now recommended, was to be resumed; and in this manner to be continued, until the intestines
and

and their functions were restored to their natural state *. By these means most of the sick escaped ; some recovering very soon, and without any difficulty, others only by degrees, after the flux had run on for several weeks.

Not a little care was requisite, to prevent a relapse ; which happened very easily from irregularities, or catching cold. I have likewise known a flux come on from getting wet in a shower of rain, near a month after the disappearance of the measles, when only a very trifling purging had succeeded the recession of the exanthemata.

Not unfrequently it happened pretty early in this second pe-

* The rhubarb was always left out of the medicine for a day or two after the purge had been taken ; some people were now and then affected in the manner I have just mentioned, after they had altogether ceased to take medicines.

riod of the disease, if there was but little or no purging, or, if the flux was more profuse, towards its decline, or after its total cessation, that many were affected with loss of appetite, nausea, and sometimes with puking. In this case a vomit, and after it a dose of rhubarb, were given; which always removed these symptoms for the present, but, as they were very apt to return, it was generally necessary to repeat these evacuations, after a short interval of time.

As, after those violent affections of the stomach and bowels, these viscera frequently contracted a great debility, which produced loss of appetite, indigestion, and flatulency, the use of bitter and aromatic infusions was found of great advantage.

WHEN the violence of the gripes and tenesmus brought on a discharge of blood from the uterus in pregnant

nant women, after bleeding, if the patient appeared capable of bearing that evacuation, it was of service to remove, as much as possible, the irritating cause by a gentle dose of manna and sweet oil; to calm the spasms with large and frequent doses of opium, and to defend the rectum from the sharp humours, and render it less sensible of their acrimony by starch clysters with tinct. thebaica. But, notwithstanding all my endeavours, abortion sometimes happened: this likewise sometimes came on suddenly, and without any previous hæmorrhage. If after the dysentery had ceased, a draining of blood from the pudenda continued obstinate, or after having once or oftener stopped, returned without abortion, and opiates, Peruvian bark, and elixir of vitriol, had failed, I have sometimes given with success, three or four times a day, a spoonful

a spoonful or two of a watery tincture, made with half a drachm of calcined vitriol and a handful of some astringent bark infused in a quart of cold water. This medicine I have likewise used with great advantage in other uterine floodings*.

DURING

* SINCE that time, I have used the following medicine, which I think more efficacious, indeed the most to be depended on of any that I know in hæmorrhages, in which astringents are proper. *R. Cort. Peruv. pulv. ʒi. Aquæ ʒiv. coque ad partem dimidiam, tum adjice vitrioli calcinat. ʒß. et ab igne auferatur decoctum, cumque penitus refrixerit coletur.* A spoonful of this medicine, added to four spoonfuls of a decoction of bark, or diluted with as much cold water, I have usually given three or four times a day; and, to prevent its being decomposed in the stomach and intestines, have sometimes added a few drops of elixir vitrioli acidi to each dose. A lady of a very lax habit of body, who had been married about twenty months, had miscarried twice within that time. About a fortnight after her last miscarriage, which happened when she was from home, on a visit, she rode about sixteen miles to her own house. On the next day she was seized with a violent pain and tension of the hypogastrium, and excruciating pains of her bowels.

DURING the dysenteric, contrary to what I had done in the preceding

bowels. By the help of emollient clysters and fomentations, and gentle diaphoretic and anodyne medicines, some fætid grumes of blood came away from the uterus, and a moderate discharge succeeding, she was, within a few days, to all appearances perfectly well. About five weeks afterwards she informed me, that the discharge had never intirely ceased after her late illness, and was now so much increased, that she was reduced, by the hæmorrhage, to a state of great debility. As the disease seemed to proceed from weakness and laxity, I advised her to use the decoction of bark with elixir of vitriol. The bark, when she began to take it, having a tendency to run off by stool, I substituted a few drops of tinct. thebaica in the place of the elixir of vitriol; the consequence of which was a great increase of the hæmorrhage. Other methods being taken to prevent a diarrhœa, the decoction of bark and the elixir of vitriol were continued for several days, without the least benefit. I then had recourse to the medicine before described; which being added to the decoction of bark, in the manner already mentioned, almost immediately produced a considerable alteration, and soon intirely stopped the hæmorrhage. Its use was however still continued for some time afterwards, with the addition of a few drops of elixir vitrioli acidi to each dose, and restored the patient to a state of good health she had not often experienced before.

period, I directed the body to be kept warm, especially at night, with a view of promoting the discharge of the vitiated humours by perspiration, and of preventing their being turned in so impetuously upon the intestines. The food, both in this and the febrile stage, was of the flightest and blandest kind that could be afforded, such as flour pap, boiled rice, and fresh-meat broths.

It may perhaps be a circumstance worth noticing relative to this flux, that, when a great number were sick together, it not being unusual for fifty or sixty negroes belonging to the same estate, to have the disease at the same time, it was always severest; and I have then observed the nurses, and even felt myself to be affected, in some degree, with the same disorder. As I attributed this to the effluvia of their excrements, I ordered

dered holes to be digged every morning for the sick to ease themselves into, and to be closed again next day ; but such was their perverseness, that they could not be prevailed on to make use of this convenience.

THE appearance of a single febrile paroxysm, without any other remarkable symptom, in the second stage of the disease, required no particular regard ; but if the attacks were repeated, as was not unfrequently the case, though I never observed it either in the beginning of the flux, or while as it was very severe, it was necessary, to have recourse to the bark.

IF the disease was treated in the manner I have related, notwithstanding the violence of many of its symptoms, it was far from being fatal ; the numbers of those that died,

died, according to the best calculation I could make, not amounting to more than one out of eighty.

I have already observed, that most people were particularly subject to inflammatory complaints after the measles: the other morbid affections, which occurred in consequence of them, were not many. The most remarkable were

I. A tetanus and locked jaw in a girl about eleven years old, from catching cold in a rainy day. She perfectly recovered in the space of a month, by means of opiates: the greatest quantity she took, was twenty drops of tinct. thebaica every two hours.

II. A woman about forty, and a boy about seventeen years old, after severe fluxes, grew anasarcaous: the boy had been affected with the same

L

dis-

disorder more than once before. The woman died about three months after the measles; but the boy recovered, notwithstanding the scarifications of his scrotum had mortified, and those on his legs had been kept with difficulty from being affected in the same manner. They both took the cortex Peruv. and chalybeate preparations, and were supported with the most generous food that could be afforded them.

III. A sucking child, of the age of eighteen months, had a slight dry cough after the measles; to this acceded a periodical fever with quotidian paroxysms. All my endeavours could not perfectly remove the cough, which, if at any time a little better, shortly resumed its former violence. The fever likewise, although it sometimes ceased for a week, at other times longer, yet
con-

constantly returned again. The lungs were evidently much obstructed, but did not seem to be suppurated; the fever was also more inflammatory, and had severer paroxysms than is usual in the purulent kind. The child lingered in this manner for about six months, and then died tabid. I have observed the same kind of fever and cough at other times, from obstructed and inflamed lungs, in this country*.

To

* IN this country, where hardly any fevers occur but of the intermittent kind, and those with every variety of type, and irregularity of paroxysm, and accompanied frequently with divers adventitious symptoms, and, amongst others, with affections of the lungs, it is perhaps impossible to discover immediately this hectic fever; which will therefore, most probable be treated at first, whenever it happens, as one of the intermittent kind with a cough. With respect to the necessity of bleeding no one can be mistaken, but the bark will be readily given, which always increases the cough and difficulty of breathing, and frequently changes the intermittent

To these remarks it may not be amiss to add, that, during the course

into a continual fever. The blood in this disease, in whatever quantities, and however often it be drawn, has, to the very last, more of the tenacious inflammatory size than, I think, I have seen at any other time. As far as I have observed, relief is only to be expected from frequent bleedings, the antiphlogistic neutral salts, dilution, and a low diet: the bark is certainly noxious. Herein this disorder differs from the most inflammatory pleurifies and peripneumonies in this country; which, if venesection be very liberally used at the same time, bear the bark well. Indeed the free and early use of this medicine is as necessary, in the diseases here as in the veterous fevers in Italy, and some other southern countries of Europe; for, as the fever, which attends these local inflammations, is always, unless by accident, of the intermittent kind, if the greatest remission of the symptoms, that can be wished for, be obtained at the end of a paroxysm, the next return of the fever will almost always, if the case be in the least degree severe, bring every thing back into the same, and frequently a much worse state than before. Next to the lancet, therefore, the saving life depends on making the patient swallow, in the intermission, as much bark as his stomach can bear; that if possible, a return of the fever may be prevented, or at least the severity of the next greatly mitigated.

of

of the epidemic, the weather was extremely dry and fair; but about the end of April some rain fell, and in the beginning of May the wet season set in, which so intirely put a stop to the disease, that I saw only one boy seized with it after the rains began.

L 3

LET-

 LETTER VI.

*Account of the Bilious Cholic, called
the Dry Belly-ache.*

Dear Sir,

JAMAICA,
March 23, 1773.

AS you desire me to communicate to you what observations I have made on the diseases of this island, particularly on those incident to warm climates, I shall, as far as may be in my power, embrace every opportunity of giving you such information as I think may be worth your notice.

WITH

WITH respect to the endemial disorders of warm countries, as those which arise from, or are accompanied with putrefaction, are so commonly looked upon to hold the first place amongst them, you will perhaps be surpris'd when I tell you that, in almost six years practice, in this country, I have not, to the best of my remembrance, met with a single case of what might properly be called an acute putrid disease, except the small-pox. Many, indeed, and various are the morbid effects of the febrile, delirious, and spasmodic kinds, which proceed from corrupt bile; and in those cases the stools are sometimes highly offensive; but I never discovered any degree of real putrefaction, except where it is, more or less, to be found even in health.

AMONGST the spasmodic effects of corrupt bile may most commonly be

reckoned that species of cholic, called here the dry belly-ache, and which agrees in general with the colica pictonum. In the second volume of the Medical Transactions I find a paper of the ingenious Dr. Baker, on the poison of lead, from which he endeavours to prove, that this endemial disease of the West Indies proceeds. The Doctors information concerning the quantity of lead, in the apparatus for making sugar and rum, is in general very just; but the observation, that the servants are particularly obnoxious to this disease not appearing to me to be equally so, I made inquiry on that subject amongst some of the oldest and most experienced inhabitants in this country, and found that, formerly it was commonly remarked to be the case, but was attributed to those people exposing themselves, when intoxicated, to every inclemency of the
the

the climate. I take no pleasure in controverting the doctrine of a gentleman, whose name I respect and whose researches I applaud; and I hope, I shall be allowed to plead the circumstances of my situation, and the love of truth, in my excuse, for offering a few considerations on this subject, as well as on what appears to me to be the true cause of this disease.

THE notion that the acid juices of limes and lemons give rise to this disorder, if it ever was, is not now, I believe, maintained by any person in this country; and experience seems to shew, that the poison of lead contributes as little to it: for,

I. WHATEVER might be the case many years since, it is not now true, that the inferior class of people are more subject to this disease than others. Of all the distillers (who are almost universally a drunken set
of

of people, and from the abuse of new rum appear frequently like ghosts)—of the great number of miserable vagabonds (who stroll about this island, and live in a constant state of intoxication with the same liquor)—of all the inferior white servants (of whatever denomination, who drink no other kind of rum) whom I have seen, I have never yet known more than one affected with this disease, or any of its consequences. It is likewise to be remarked, that the negroes employed in a still-house are commonly the fattest on the plantation, and that placing them there is an approved method of recruiting emaciated slaves; and also that negroes in general use great quantities of the newest and vilest rum, and filthiest sugar; yet I never saw or heard of one of those people being attacked with this disorder.

II. EXCEPT in the single person just mentioned, every case of this cholic, which I have yet met with, has occurred in people of the better sort, who were temperate, and, when they drank rum, used such as was greatly superior both in age and quality, to what is easily to be got in Europe. Moreover, the ladies, though perhaps they yield, in point of abstemiousness, to hardly any people in the world, and drink little else but water, are scarcely more exempt from the attacks of this excruciating disorder, than the other sex.

III. THE rum, which is exported to Europe, is generally but a few weeks old, and frequently is sent off just fresh from the still; hardly any, if it can be avoided, is kept at the end of the crop, but what is requisite for the consumption on the estate; of which that intended for the use of the overseer's house, is often

often made with peculiar care, and, as well as what is drank in almost all families, is reserved to a proper age; whilst it is scarcely to be doubted, that the greatest part of the inferior exported rum is consumed within no very considerable time after its arrival in Europe, not at all improved by the arts of the dealers in that commodity. To this add likewise the great consumption of Muscovado sugar in England; which can hardly fail to be as much infected with the saturnine poison as rum; since the whole mass of brick-work, in which the boilers are fixed, being covered with lead, which likewise is folded down into, and forms the upper part of those vessels, a very large surface of that metal is perpetually flowed over, and washed by the cane liquor, during the whole time of decoction. For these reasons it might justly be expected, upon the Doctor's
prin-

principles, that this species of cholic should be fully as endemial in England as in this part of the world.

IV. ANOTHER, and very different cause of this disease, so obviously presents itself to our notice, as to leave not the least doubt that it really produces it. The cause I mean is corrupt bile ; and although in people, who have had long and frequent attacks of the belly-ache, and perhaps been injudiciously treated, the bowels, like those of an hystERIC woman, may have sometimes acquired such a disposition to be spasmodically affected, that a slight cold, or a very trifling irregularity, will occasion an attack of the disorder, without any bilious symptoms, yet its first rise may invariably be deduced from the cause I have mentioned. This will fully appear from what I have further to say.

V.

V. As its exciting cause is different, so likewise is the disease itself considerably from the saturnine cholic. For, first, the dry belly-ache is frequently not a primary disease. It is a notion almost universally received amongst the inhabitants of this island, that the Peruvian bark occasions this disorder; and I find, that it frequently does appear, in consequence of the use of that medicine, often through imprudence, but sometimes in spite of the utmost caution.

FEVERS in this country are almost always attended, in white people, with more or less disorder of the first passages, especially in the latter part of the year. Many people throw up, by vomiting, enormous quantities of bile; and though others may not be affected with vomiting, nor even complain of nausea, yet the event shews them to be no less loaded
with

with that fluid. I have known, in a case of this kind, half an ounce of cathartic salt purge an adult more than thirty times in a few hours.

ALL, who have been conversant in treating bilious fevers, must have observed, that it is only under certain circumstances, that emetics will relieve the patient, by properly evacuating the offending bile. In the fevers, of which I speak, however copiously and effectually bile may have been discharged, upwards and downwards, either by natural or artificial evacuations, yet the relief will frequently be but temporary; the secretion going on with such rapidity, that the stomach and bowels will, in a very short time, be oppressed with an equal quantity as before. Sometimes, though not very often, these fevers are merely depuratory, and terminate in a cholera; but, even here, very commonly, the relief

relief is only of a somewhat longer duration; and the fever returns again, after a few weeks, attended with the same symptoms, and terminating in the same manner, as before; or perhaps a cholera, without any previous notice, comes on, and this repeatedly.

As these fevers are all, unless by accident, of the intermittent kind, the greatest part of them require the bark, and are not to be cured without it; but if that medicine be given, before the bilious affection of the first passages is well removed, the consequence will most commonly be an attack of the endemial cholic. Although, as I have already said, this most frequently happens through imprudence, yet it is not always possible to prevent it. A few weeks since an elderly gentleman was seized with a fever; his stomach was rather more affected than it had usually been

been in any former fever; but he had no vomiting. From a loss of appetite, feverish heat, and green bilious stools, which had for some time preceded this fever, I was induced to pay a particular regard to the first passages; which, as I thought, were sufficiently cleansed before he began to take the bark; with which I joined the saline mixture with the rhubarb, and by that means procured about three stools daily. The fever returned but once, and that slightly, after he began to use the bark; but within a few days was succeeded by the dry belly-ache.

THIS disease does not, however, always happen in this manner: it comes on likewise after fevers, in which the bilious colluvies has not been duly evacuated, although no bark has been given; and also after such as have had no medical treatment whatever. A young man,

M about

about twenty-four years old, was taken with a vomiting and purging, to which acceded a fever that continued for three days, and then ceased, as did likewise the vomiting and purging a few days afterwards. From this time he complained of great prostration of strength, dejection of mind, loss of appetite, and want of sleep. His tongue was foul, dry, and of a brown colour. He had constant tremors, and slight convulsive twitchings of his muscles. His pulse was good, and he had no nausea, or uneasiness in his bowels. In this state he rode about twenty miles to put himself under my care. It was three days before he was able to accomplish this journey, in the second night of which he was highly delirious. About six o'clock in the morning of the day, after he had got to the place of his destination, I was called to him. I found him insensible ;

sensible ; his eyes open and fixed, and their pupils greatly dilated ; the corner of his mouth drawn towards his right ear by the spasmus cynicus, and the muscles of his arms often convulsed, with subfultus tendinum, and twitchings of his fingers. Some liquid being attempted to be put down his throat, he threw up twice some extremely viscid atrabilious matter. About eight o'clock he was seized with violent epileptic fits. During the convulsions his head was drawn backwards, and the pupils of his eyes were dilated ; but, as soon as they remitted, the pupils contracted themselves again. The vehemence of the convulsions abated after somewhat more than an hour ; but he continued to toss himself greatly, and pressed his hands on the sides of his belly as if in pain there. His anus was violently contracted ; and his pharynx so convulsed, that

nothing could pass down his throat. About noon the rhonchus came on, from much viscid phlegm in his throat; so that great diligence was necessary to enable him to breathe. Not long after a strong fluctuation was both heard, and felt with the hand, in his stomach; and seemed to proceed from a strong convulsive motion of that viscus endeavouring to discharge its contents, whilst both its orifices were contracted by an insuperable spasm. Between four and five o'clock in the afternoon he died. Soon after his death, I suppose from the spasms being relaxed, a great quantity of atrabilious stools came away; and, during the succeeding night, a prodigious deal of the same kind of matter discharged itself from his mouth.

ALTHOUGH this case, properly speaking, was not the dry belly-ache, yet it seemed to differ from it chiefly
in

in degree, but not at all with respect to its cause; my idea of which it will serve to illustrate. I have seen several cases of fevers attended with great prostration of strength, dejection of mind, low delirium, tremors, subfultus tendinum, and other convulsive twitchings of the muscles; all which symptoms I have never hitherto failed to remove, by cautiously and prudently evacuating the noxious saburra in the first passages*.

MOST

* BUT it is to be observed, that the circumstances of these cases plainly indicated the cause of these symptoms.

BILE, even when it deviates no otherwise from a natural state, as far as can be discovered, than in its abundant quantity, produces many anomalous symptoms, through the consent of the other parts of the body with the stomach and bowels. In August 1771, as I was ill of a semitertian fever, in one of the paroxysms, I felt a very extraordinary sensation, as if I was falling into a syncope, particularly if I lay on my left side. At this time I had not the least nausea, or suspicion of

MOST of the cases of the dry belly-ache that have occurred in my practice,

bile in my stomach. As through the whole day I had taken nothing but cold water, and the juices of the fruits of the country, I imagined that this great lowness proceeded from inanition: I therefore ordered a spoonful of Madeira wine, diluted with a little barley water, to be given me. This was not drank many minutes before I vomited up about a pint of yellow bile and juices of the stomach mixed; and from this time the faintness left me. Not long after I was recovered of this fever, I felt, every now and then, a strong convulsive systole of my heart, which smote my breast with great violence, and my pulse intermitted for the time of a beat or two after it. This symptom grew by degrees more frequent, and in about three days became an almost continual palpitation of my heart; when suddenly a very severe cholera came on, and rid me, for that time, of this troublesome complaint; which however returned again twice that autumn, and was, as often succeeded by a cholera.

THE two following cases will not perhaps be impertinent to this subject.

I. A middle aged negroe man, after complaining for some days of a pain in his loins, and excessive costiveness, and taking some laxative medicines without any effect, was suddenly deprived of his speech, and external senses. When I first saw him, which was early in the morning, he was

practice, have been of this secondary kind. I have, however, seen it, when
it

was stalking about a field naked, and stumbling over every thing that lay in his way. Nothing but force could keep him still, or in one place. His eyes were fixed, and staring, and remained unmoved, whatever objects were presented to them. The man appeared insensible of every thing that was said or done to him; and pain could not extort a word from him. Upon inquiry I found that he had long had a flux, which had but lately stopped, and had been succeeded by an obstinate costiveness. Upon this I ordered for him an emetic, which having no effect, more of the same was then given, but to as little purpose as that taken before. As I now saw that nothing was to be done by moderate means, I directed thirty grains of white vitriol dissolved in water to be put down his throat. After waiting some time, and finding that even this did not excite vomiting, as I did not doubt that what had been taken would soon operate downwards, I ordered warm water and sweet oil to be given him often. After a few hours a plentiful discharge of most offensive liquid fæces came on; and the man recovered his senses that same evening, and his speech on the next day. The purging however continued from this time; under which, in spite of every endeavour to save him, he sunk gradually some weeks afterwards.

it has not been preceded by any other disease; but its cause was not the

II. A young man, but lately come from Scotland, was, soon after his arrival here, seized with a severe fever, attended with bilious symptoms, and likewise delirium, tremors, and subfultus tendinum. Of this disease he perfectly recovered. Some months afterwards, on riding to another part of the country, he was caught in a heavy rain, and, within a few days, he lost the use of his lower extremities, and, in a great measure, that of his arms and tongue. In this condition he was brought to the house of a relation of his, near where I live. At that time I being ill of a fever, he was visited by a neighbouring surgeon, whose patient he had been in his former illness, who ordered for him a nervous medicine, and directed the spine of his back, and both upper and lower extremities, to be embrocated with petroleum diluted with rum. When I saw him after my recovery, I found, upon examination, his lower extremities totally, but his arms and hands only in some degree deprived of motion; his tongue was also so far affected, that he could hardly articulate his words so as to be understood; his reason too seemed to be greatly impaired, on which account, he was mistaken by several people, at first sight, for a person in liquor. I observed likewise, that he had so voracious an appetite, that he sometimes eat till he disgorged again the contents of his stomach: he would also,

the less evidently corrupted bile. The only case of an inferior white man, that

also, unless he had before him the prospect of eating, resist with all his power, if an attempt was made to take him off his bed, where he lay sleeping almost the whole day as well as night. Upon considering the circumstances of this case, I had not the least doubt, that the same cause, which excited that preternatural sense of hunger, was likewise the occasion, by means of nervous sympathy, of the paralytic affection, ideocy, and inclination to sleep. Upon explaining my sentiments to the gentleman, under whose care the patient had been before, they were intirely assented to; and we agreed to give him an emetic, and afterwards to procure two or three stools daily, by means of the gums quickened with aloes. The vomit operated pretty smartly; by which evacuation, and the use of the opening pills, his appetite and intellects were restored to their natural state. He was then put upon a course of medicines, of the stimulating, invigorating, and corroborating kind; and a light and easily digestible diet. Frictions also, and the embrocation above mentioned, were diligently used. As by these means he obtained a little motion of his legs, and exercise, if it could any how be used, appeared highly expedient, he was supported under his arms by the shoulders of two stout negroes, and led forwards and backwards in a long piazza. In a little time he was able to move his legs,

that I have yet met with, which I before hinted at, was of this sort. This man was taken ill towards the close of the last year; which, from the month of April to near its end, was uncommonly wet.

FROM July to almost this present time, vomitings, diarrhœas and dysenteries, spasmodic pains of the stomach and bowels, spasmodic pleuritic pains by consent with the primæ viæ, and fevers accompanied by, or terminating in, vomiting and purging, were epidemical. More instances likewise of the endemial cholic occurred during this period, than I ever met with before in an equal space of time.

legs indifferently well, when supported in this manner; but could not stand alone. He was then put on horseback, with a negro sitting behind him, and another leading the horse. At length he was able to ride without any person's assistance; and, at the end of about ten weeks, was perfectly recovered of every symptom of the disorder, except a slight tremor of his hands.

CLEAN-

CLEANSING the first passages was the general cure of all these disorders, which ceased readily, as soon as the cause, evidently seated there, was removed. In this man's case, as soon as the spasms were allayed by the use of opium and antispasmodics, he began to gulp up incessantly a great deal of æruginous bile: upon which, as it could now be done with safety, I gave him small, but repeated, doses of emetic tartar; which brought up a prodigious quantity of the same kind of matter. From this time his relief was permanent, and very little opium was required to keep him easy. His stools before, and some few of them after taking the vomit, were of a deep green colour; but an oily laxative medicine soon carried off the remainder of the noxious contents of the bowels; and within a few days no symptoms of the disease remained.

SECONDLY,

SECONDLY, it does not appear to me, that the symptoms of the endemial cholic, of this part of the world, are altogether the same with those of the saturnine. I have several times treated this latter disorder with success in Europe, and know, that vomiting is common in it; but then it is merely a spasmodic symptom, solely an effect of the disease, and never affords relief, or happens when the patient is easy. The same symptom occurs likewise in our cholic, in the vehemence of the disorder, before the spasms are allayed; but it is to be observed, that, in the disease of this climate, after the patient is made easy, and the laxative medicines begin to operate, a copious discharge sometimes comes on, both upwards and downwards, in the manner of a cholera; and from this time the patient, who had before had only temporary ease, finds it

it become permanent, and the disease declines apace. The matter evacuated, as well by vomiting as by stool, is, in different cases, of different colours, from the brightest green to a greenish black; and the stools are sometimes so horribly offensive, as to render it scarce possible to stay in the sick person's room.

MOREOVER, costiveness is not an absolutely constant and necessary symptom of this species of cholic. In the two last cases which I met with, both patients were moderately lax, even when in extreme pain; neither was there any difficulty in increasing the number of their stools; and these I observed, in one of them, to give more relief by evacuating the cause of the disease, than opium or antispasmodics alone; and however useful the latter were to obtain ease, yet that ease became greater and more permanent, as the operation

tion of the laxative medicines proceeded ; and if that operation ceased but for a few hours only, it was but barely possible, by any other means, to keep the pain within moderate bounds.

IN other respects the West India cholic agrees nearly with the saturnine ; except that it seldom is so obstinate, or its symptoms so violent.

DR. H. Warren gave a short, but extremely just, and useful hint, relative to the cure of the dry belly-ache, in his *Treatise on the Yellow Fever*. What has occurred to me I will now submit to your consideration.

IN those cases which I have already mentioned as being merely convulsive, opium and antispasmodics are almost all that is requisite ; at most only a few small doses of some very lenient cathartic are necessary, after perfect ease is procured, just

to open the body. In the more usual course of the disease the sick do not escape with so little difficulty. But here likewise the first indication is, to remove the pain. This does not appear to me to be capable of being so perfectly accomplished solely by narcotics, in our cholic, as in the saturnine; for, as the former is evidently a disease cum materia, (much more so than the latter) the ease obtained can only be in proportion to the degree of insensibility of the morbid cause, which the opium produces in the stomach and bowels, and will remain no longer than the opium continues to act; it is therefore in general in vain to wait for a perfect and constant relief before stools are attempted to be procured. Opium, in many people, is sufficient of itself to quell the painful spasms; in others, it succeeds best when joined with antispasmodics;

but

but is always most effectual when given in a clyster of warm oil. According to the different circumstances of the case, I give from half a grain to two grains of opium every two hours; and a clyster of warm oil with tinct. thebaica I order to be injected once, and sometimes twice a day. Of antispasmodics, musk appears to me to be the most generally useful; but with some persons it agrees best when mixed with a little asafoetida. Chance threw it once in my way to observe, that sometimes, when other medicines fail, the warmer stimulants, such as philonium and the essential oils, may be given with safety and great advantage; perhaps by introducing a stimulus of a different kind, or more powerful nature, than that of the irritating cause in the stomach and intestines. At all times great benefit will be found from enveloping, and diluting
the

the acrid bile with oily or spermaceti emulsions, mucilaginous medicines, gelatinous broths, sago, &c. If a puking be urgent, a draught or two of warm camomile tea will give temporary relief, by bringing up some of the contents of the stomach. The warm bath, fomentations, bags of hot salt, bladders of warm water, and even hot bricks wrapped in cloths, applied to the abdomen, are all of considerable service.

As soon as the spasms are allayed, and as great a degree of ease is obtained, as appears possible (so long as the irritating cause remains within the body,) I usually endeavour to procure stools by means of some very gentle cathartic: that, which I judge to be preferable to any other, is an oily purging medicine composed of sal cathart. amar. manna and ol. amygdalar. or olivar. made with the yolk of an egg into the form of an

N

emul-

emulſion. This, given in ſmall doſes and often, ſits eaſy on the ſtomach, and will very ſeldom fail to procure ſtools without increaſing the pain. The oleum ricini does not ſeem to me to deſerve the immoderate praiſes that have been beſtowed on it. There are but few ſtomachs that can bear it; and, beſides its nauſiouſneſs, even when cold drawn, it has the diſadvantage of being a ſlow, griping purge, and occasions a tenefmus, with a ſenſation as if the whole contents of the abdomen were coming out together. It is likewise to be obſerved, that it will not keep long; and, if it be not freſh, it is a dangerous medicine; as it ſoon contracts an acrimony, which one, that has not taſted, can hardly conceive. Not long ſince a friend of mine was thrown into a ſevere vomiting and purging of blood, by taking only fix drachms of the cold-drawn

drawn oil, which he had kept a little too long, but had used several times before without any inconvenience.

WHATEVER medicine be used to obtain stools, it ought to be of the mildest, relaxing, and lubricating kind. In one case, indeed, where, from the pain being long fixed, the frequent return of the vomiting, the tension of the abdomen, and the short and imperfect relief afforded by opium, I apprehended an approaching ileus, I had recourse, after bleeding, to the more active purgatives with calomel, in the form of pills; which being administered one by one, a passage was at length opened. During the operation, the pain was excruciating; but the patient being put into the warm bath, and a clyster of warm oil with tinct. thebaica injected, perfect ease, which could never be obtained before, suc-

ceeded, and the disease yielded afterwards apace.

INTERNAL inflammation, if it accede to this disorder or any other, is, in this climate, discovered with difficulty, especially in negroes. The pulse is but little to be depended on; even the simple presence of a fever can scarcely be inferred from it alone; and I have known such irregularities in it, when there has been hardly any indisposition, as, if there had been other concurrent symptoms, would have induced me to conclude death to be at hand. Neither does the fever always attend internal inflammation: I have known not only slighter peripneumonies and pleurifies, but those which have ended fatally, to have never been accompanied with fever. This, indeed, is sometimes, but not always, the effect of oppression of the lungs; of which I have seen instances, where the sick
could

could scarce either breathe or cough, and the obstacle to the action of the heart was so great, that the pulse was hardly to be felt; the extremities were cold; and the whole body shivered and trembled to such a degree, that one, not well acquainted with the cause of these symptoms, would be apt to omit the only means of saving life, viz. bleeding very plentifully, in a recumbent posture, and that repeatedly. But to return from this digression.

THE opium and antispasmodics must be continued during the use of the purging medicine, in nearly the same manner as before; the quantity and frequency of the doses being varied, according to the circumstances of the case.

IN this cholic, as well as in the colica pictonum, cathartics bring away, sooner or later, a great number of hard globules like sheeps dung, with

great relief to the patient : but these scybala do not often come away with the first stools, which are generally liquid ; and, until they are discharged, there is sometimes a small particular part of the abdomen, about the colon, where a fixed pain is seated. This circumstance has often been a matter of speculation to me, in which I have not been able to satisfy myself, whether the cells of the colon might not be so contracted, as to retain these hardened excrements in their cavities, and, at the same time, permit a passage to liquid fæces, through the centre of the gut* ; or whether the peristaltic motion, tending downwards, might not

* THIS appears to be the opinion of Prof. De Hean, and is, perhaps, the most probable, vide Rat. Medendi, cap. 24. It is a pity, that the emollient, lubricating, diluting, and enveloping method, so much recommended by this gentleman, is not more followed in all the species of this disorder.

be continued beyond the stricture, which it could not resolve, so as to evacuate the contents of the great guts below it, especially if assisted by clysters. I have known a patient, after having had several stools, pertinaciously declare, that he still had no passage through him. After these globules are come away, a return of the spasms commonly generate more; from whence it appears, that, in this kind of cholic, this hardening of the fæces is to be considered rather as an effect, than a cause of the disorder.

IF the stools procured by the laxative medicine gradually carry downwards the cause of the disease, nothing further is to be done, but to persist in its use, and that of the opium and antispasmodics, till the cholic be intirely removed. But if, as I have already observed, about the time when the spasms are relaxed,

and stools are obtained, a gulping up, or vomiting of bilious matter should come on, then in case the copiousness of the discharge be not sufficient of itself, with the assistance of a proper wash, to empty the stomach, small but repeated doses of emetic tartar may be used with great advantage, which by evacuating the cause of the distemper, will greatly shorten its duration. I am by no means of opinion, that an emetic should be given before the stomach and bowels are easy, and a passage is opened downwards; but, after that time, I am certain, that it may not only be used with safety, but is sometimes necessary; as the morbid cause cannot otherwise be so effectually discharged.

WHEN the disease is managed in this manner, and its cause is early and effectually expelled out of the body, it happens but rarely, that
any

any obstinate costiveness remains ;
 on the contrary, I have frequently
 found it necessary to leave off the
 use of the oily purging medicine,
 from the bowels being inclined to the
 opposite state. If, however, any cos-
 tiveness, or disposition in the intes-
 tines to be spasmodically affected
 should continue, nothing, perhaps,
 will conduce more to remove these
 symptoms, than assafoetida and the
 other fetid gums taken constantly
 for some time. I am also inclined
 to believe, that, by those means,
 paralytic symptoms may most com-
 monly be prevented ; thus much I
 can certainly say, that they have
 never occurred in any person under
 my care. The only ill consequences
 of this disorder, that I have seen,
 were the piles, an hydrocele, and
 an intestinal hernia ; which all hap-
 pened in the elderly gentleman, I
 have

have formerly mentioned. The piles and hydrocele, I suppose, were occasioned by the spasms of the abdomen compressing the veins, and lymphatic vessels, returning from the parts in which these disorders were seated; the rupture, partly by the violent straining in making water, on account of a severe dysury, and partly through the relaxation proceeding from the use of the warm bath.

THIS disease, as I am informed, has abated very much, within these few years, both of its frequency and severity. Formerly there were not many people here, as I am assured by persons of veracity, who had not been, more or less, afflicted with it; and most of them retained some of its paralytic effects. The greater degree of temperance, that has of late years prevailed, and seems to be increasing, must, without doubt, have been pro-

productive of more general health ; but this change in the endemial cholic is commonly attributed by intelligent people, to the going warmer cloathed, and sleeping warmer at night, than formerly ; and I have reason to believe the observation to be just. At that time when a man went out of the house on business or diversion, he used to put on his coat ; when he came home, sweating at every pore, he threw it off, and chose the most airy, and coolest part of the piazza to sit in. The same impatience of warmth prompted him to expose himself in the same manner in the evening (after a hot day, and being, perhaps, still more heated with strong Madeira wine) to the cold land breeze, which descends from the mountains. At night the only covering used then, and by some people even now, was a thin linen sheet, after going much warmer

warmer cloathed through the heat of the day.

THE texture of the human body is so rarefied by the perpetual summer of this climate, that we are much more sensible, particularly of cold, than your dense European bodies; and a cold blast of wind seems sometimes to penetrate to the very vitals. The cloathing used at present cannot intirely prevent this effect; but it must have been much greater on one who exposed himself to the breeze, with scarcely any other covering but his shirt. But farther, notwithstanding the diversity of seasons is not so great here, as in countries more remote from the equator, yet the irregularity of this climate, with respect to the sudden changes, that happen in the same day, is extreme; though perhaps not equally so in all parts of the country. Where I live I have several times remarked
the

the difference of twenty degrees, on Fahrenheit's scale, in the temperature of the air, at six o'clock in the morning, and three o'clock in the afternoon, of the same day.

THE custom gains ground apace of accommodating the dress to the circumstances of the weather; and a stuff or cloath waistcoat, which would formerly have been looked upon as a prodigy, is now become very common. The wearing a very thin dress has been thought absolutely necessary, and been inculcated by physicians, to prevent the disorders to which the inhabitants of hot countries are more particularly obnoxious: but if it be considered, that the grand means of preventing perhaps the greater number of diseases, are that admirable disposition which nature has made in the animal œconomy, for carrying off by the excretories, whatever is noxious to,

or

or no further useful in the body, and of how great consequence the cutaneous discharge is for that purpose, it may readily be conceived, that the dress which most certainly secures that function from being perpetually interrupted, will be most likely to preserve health.

It is by no means my intention, to recommend it to any one, to load himself with cloaths, so as to increase the animal heat; neither do I decide whether or not the form of the dress now in use, is properly adapted to warm climates. I only mean to say, that a habit, which fits loose on the body, of such a thickness as will obstruct the appulse of a cold blast of wind to the skin, will be found more healthful, as well as more agreeable to the wearer, than the tight, thin cloathing more generally used in this part of the world: and I believe likewise, that
a per-

a person, standing in the sun-shine in his shirt, will readily acknowledge, that it would be no paradox, were I to say, that cloaths of the kind I mention, may sometimes be useful to keep out the heat.

WERE it requisite, it would be no difficult matter to shew, that the exposing the body to sudden cold, and the constriction of the cutaneous vessels, as well as of those more deeply seated, the urging their contents into those of the viscera, and the turning in the acrid, perspirable matter upon the internal excretories, consequent thereon, are the most common exciting causes of acute disorders in this country. Hence that variety of spasmodic affections of the external muscles, and also of the viscera; those sudden internal inflammations, anginae, peripneumonies, pleurifies, &c. and that frequency of

of fevers with vomiting and purging of bile.

To this it may be objected, that negroes, who are more exposed to the vicissitudes of the weather than white people, are but seldom troubled with bilious complaints, and never with the endemial cholic. To which it may be answered, that, although negroes are not much subject to bilious affections, yet the other disorders, which proceed from the body being exposed to cold, are much more frequent in them than in whites, particularly those of the stomach and bowels. That they are not much disposed to be affected with bilious symptoms, may proceed from the small quantity of animal food they use; which in general is barely sufficient to assist the digestion of the vegetable part of their victuals; and perhaps more particularly from their constitutions being

being more robust, on account of the labour and hardships they go through, and being likewise much more torpid and sluggish, than those of white people. Such stimulants as would throw an European into a fever, have scarce the least effect on a negro; a circumstance, which renders it almost impossible to save the latter in a low state, from which the former might be recovered with no great difficulty.

THE irritability of the fibræ motrices seems to have much more influence, in the generation of bilious disorders, than, perhaps, has been generally suspected; as the effects of a violent fit of passion in some constitutions; the symptoms, that attend many hysteric cases; the bilious vomiting occasioned in some people, by too severe agitation of the body, and by riding in this country; and the consequences of very moderate stimuli,

O

and

and even a very gentle purge in many persons, who are subject to bilious complaints towards the latter part of the year, besides many other circumstances to the same purpose, that might easily be collected, may suggest. Avicenna seems to have been sensible of this, when he said, *Cave ne inducas effervescentiam biliosorum.*

J. QUIER,

VII.

VII.

An Account of the True Bilious, or Yellow Fever; and of the Remitting and Intermitting Fevers of the West Indies. By the late John Hume, M. D. Commissioner for the Sick and Hurt of the Royal Navy.

PREVIOUS to entering on the subject of the few following sheets, it may be a satisfaction to the reader to know something of the History and Character of the Author.

HE was the son of a gentleman in the South of Scotland. Early in life he dedicated himself to the studies of physick and of surgery; and, after having had a liberal edu-

cation, he served near forty years as a surgeon in the Royal Navy; during ten years of which (from the year 1739 to the year 1749) he had the care of the Naval Hospital at Jamaica, at a time when there were large fleets in the West India Seas, on account of the war; so that he had the greatest opportunity of any man, in his time, of making observations on the diseases treated of.

As a reward for his long and faithful services, he was appointed a Commissioner for the Sick and Hurt of the Royal Navy, and the medical department falling to his share, he judged it proper to take a degree of doctor in physick.

He was a man of the strictest probity, and of a good understanding; was an agreeable companion, and endued with universal benevolence to mankind, being never more happy than when he had it in his power to serve those whom he thought

thought deserving. The few following sheets will be a lasting monument of his abilities in the way of his profession; and of his humanity, and attention to the welfare of the numerous sick who were committed to his care.

AFTER having spent a life in the constant exercise of every social virtue, he died in the seventy-first year of his age (A.D. 1777), sincerely regretted by all those who had had the pleasure of his acquaintance.

Of the Yellow Fever.

THIS fever is distinguished from all others by the following symptoms:

By a sudden and short chilliness; faintness; giddiness; throbbing pains in the head and loins; glowings and flushing in the face; redness and burning in the eyes; sickness, retchings and vomitings of bile, sometimes

green, but for the most part yellow and bitter ; forenefs and violent oppression of the præcordia ; a sensation of being hard bound round the chest with a strong cord ; a difficult, laborious and painful respiration ; anxiety ; listlessness, and despondency.

THE pulse is at first full, quick, and strong, but, in forty-eight hours after seizure, or thereabouts, it sometimes becomes calm and regular, scarce to be distinguished from the pulse of a person in health ; and it continues in this state for twenty-four or thirty hours. The blood taken away is florid, and the crassamentum of a loose texture ; the skin is sometimes dry ; when moist, it is only partially so about the pit of the stomach, neck and face ; probably occasioned by the sickness and strainings to vomit.

AFTER the patient has been ill for forty, forty-four, or forty-eight hours,

hours, the eyes change to a yellow colour, and soon after the neck and whole surface of the skin take that colour likewise.

ABOUT the end of the third, or beginning of the fourth day from the first attack, the texture of the blood comes to be so broken down and dissolved, as to be capable of entering the smallest vessels; and issues out from the nose, mouth, ears, eyes, anus, and by the skin where blisters have been recently applied. About this time the pulse sinks, flutters, and sometimes intermits; the patient becomes comatose, and, at intervals, delirious. Startings and universal tremors succeed; and what is now vomited begins to change from a yellow to a dirty colour like kennel water; small atoms are seen floating in it, like grains of dust or black sand, but they soon settle to the bottom of the vessel, like coffee grounds or foot. After this appearance,

ance, clots of black, coagulated blood are some times vomited, or rather insensibly gulped up; and sometimes grumous blood is voided by the anus, or is mixed with the urine: death quickly follows. Sometimes, a few hours before death, I have found livid spots on the breast, which soon after increased in number; and the sides and back are likewise often covered with them, in two or three hours after the patient dies.

THESE are the symptoms, and the order in which they most commonly come on, and succeed each other; the whole are incident to the disease, but not to every patient; some, for example, have no chilliness, others have not the faintness, giddiness, glowings, nor flushings in the face.

I HAVE seen a few cases, where the comatose and bleeding symptoms have succeeded to the ardent state, without the intervention of the yellow stage;

stage; many have a favourable crisis before the period when that appearance usually comes on, and some in the course of it.

THE most inseparable characteristics of the disease are,—The sickness and incessant bilious vomitings; the yellowness of the eyes and skin, notwithstanding there have been a few cases amongst many, where that symptom has not appeared; the oppression on the præcordia; the difficult, laborious and painful respiration; the florid colour of the blood; and the soft loose colour of its crassamentum; the black vomiting, and the almost general hæmorrhages, although peculiar to this disease, are not constant symptoms.

WHEN I speak of the several periods or changes of the disease, as happening at such and such particular times, I would not be understood to mean, that they always fall out at
the

the precise times I have allotted for their appearance ; as when I say, “about the close of the third, or beginning of the fourth day from the first attack of the disorder, the texture of the blood comes to be so broke down, &c.” I do not mean to assert, that this change always happens at these particular times ; for in truth it does not, but, sometimes, it comes sooner than the earliest of these periods, and, at other times, later than the last, and so of the rest ; my intention being to represent things in their ordinary or most common course.

THE bilious fever has, in some instances, been so intense and rapid, as to finish its course, together with the patient's life, in twenty-four hours ; but this seldom happens, the fever being generally protracted to the fifth, sixth, seventh, or eighth day,

day, and sometimes, though but rarely, to the ninth or tenth.

IN May 1735, I arrived at Barbadoes in a ship of war, whose complement was two hundred and fifty men. The crew had been remarkably healthy for twelve months, and, for the last four, had drank nothing but water: we had not, on our arrival at this island, a single sick man; but unfortunately each of the common sailors were paid forty shillings, in consideration of their having had short allowance of provisions. Having been long without liquor, and thus supplied with the means of coming at it, they presently fell into every kind of riot and excess; and, in about ten days after our arrival, the Bilious Fever broke out amongst us, and, before it ceased, it carried off a great number of robust, young men, for of such this ship's company was wholly made up.

THE

THE first patient I was called to was, one ——— Andrews, a plethoric, muscular man, about twenty-five years of age: he had not complained three hours when I saw him, about ten in the forenoon, yet the oppression on the præcordia, and the bilious vomitings had already seized him. His pulse was full and strong, and I took sixteen ounces of blood from his arm immediately, and ordered a laxative clyster to be injected as soon as it could be got ready, and enjoined him to drink plentifully of barley water acidulated with the juice of the limes. I called upon him at noon, and was much disappointed to find the ardent symptoms and oppression on his breast both increased: his vomitings were almost continual, and he complained much of his distress in breathing, and of the burning of his eyes. The reasons for bleeding him still continuing, I took fourteen

teen ounces of blood from the same orifice; and ordered him the same evening a scruple of ipecacuanha at six o'clock, and at ten applied a large blister between his shoulders, in hopes of relieving his chest.

HE continued to vomit, with but short intermissions, from the time he took the emetic, although he discharged a great deal of bile by stool. He had a very restless night, and continued, through the second day, vomiting, and labouring under the oppression of his breast, till about twelve at night, when he died; about forty hours from the time of his being first seized.

AT this time the practice in Barbadoes was, to use large and repeated bleeding, vomiting and blistering, as recommended by Dr. Town, which method, I, as a stranger, thought myself obliged to follow.

BEFORE Andrews died, several others were taken ill; and, except the second bleeding which was omitted, they were treated in the same way with no better success.

I HAD Andrews's body opened, and found the following morbid appearances.—There was a little ropy bile in his stomach, of the colour of what he had vomited; the gall bladder and biliary ducts were full of bile; the liver, instead of being of a dark red colour, as it naturally is, was of a pale yellow, resembling those parts of the stomach and colon in contact with the gall bladder. On the lower extremity of the stomach, towards the pylorus, there were evident marks of inflammation, and likewise on the superior part of the duodenum; the liver was very large and turgid with bile, and harder than in a natural state *. I

* Dr. Mackittrick, who had practised physic for a number of years in the West-Indies, published,

I OPENED the man who died next to Andrews: his complaints had been nearly the same, but he had

lished, at Edinburgh in the year 1766, an Inaugural Dissertation, *De Febre Indiæ occidentalis malignâ flavâ*; in which he mentions his having opened a man who died the third day of this fever. The whole body, he says, had somewhat of a livid appearance; the cavity of the abdomen seemed dry and destitute of serum; the omentum was full of black blood, and had, on its lower edge, a number of round glandular bodies, full of the same sort of black blood; the coats of the stomach, duodenum, and ileum, were remarkably inflamed; the liver was not increased in its bulk, though its texture seemed somewhat vitiated; the gall-bladder was full of black bile, and there were some round worms in the cavity of the intestines; the urinary bladder was a little inflamed the lungs were sound, and the pericardium contained a more viscid yellow serum, and in larger quantity than common; and the cellular membranes were every where filled with a tough clay-coloured mucilage.

Dr. Mackittrick observes, that, in the bodies of other patients who died of this fever, he commonly found the liver sphacelated, the gall-bladder full of black bile, and the veins turgid with black fluid blood. See *Dissert. Inaugural*, p. 7, and 8, &c.

lived

lived twenty-four hours longer. There was not so large a portion of the stomach or duodenum inflamed; his liver was preternaturally enlarged, but not to such a size as that of Andrews; the gall bladder was about half full; and no obstruction to the passage of the bile into the intestine was found in either. I imagined that the pylorus was contracted, particularly in the first man; but in this I was not certain whether it was so or not.

No marks of mortification were found on the internal or external surface of the stomachs of either of these men; but I opened two not long after, who died in a more advanced state of the disease, and found one of them, who had vomited the black matter, in a state of mortification every where, with some coagulated blood in it; the internal coat of the other was covered with
livid

livid spots of different sizes, and, externally, towards the bottom, there were large black spots of the size of a crown piece.

IN one of these last subjects I discovered some petechiæ on his breast before death ; but, two hours afterwards, the whole sides and back were covered so thick with them, especially the back, that the skin was all over livid without distinction of spots.

HAVING observed, with much regret, the bad success I had from bleeding and vomiting, and that the first man who died, evidently sunk after the first bleeding, I bled the rest but once; and, when the patients were not plethoric, I have frequently omitted the operation altogether, as I sometimes did when I had not seen them within twenty-four hours of being taken ill.

P

I HAVE

I HAVE seen some subjects opened, on whose stomachs no marks of inflammation could be discovered; yet even these had excessive vomiting.

THE state in which I found the stomachs of the two first men who died, deterred me from giving any more vomits; and I have ever found that bowel so delicate and irritable, that I have never since ventured to give any emetic whatever. There seems, however, to be a necessity to evacuate the bile by the stomach by the intestines, and by the skin when there is a tendency to sweat *.

* ALL practitioners, in the West-Indies, now agree, that the principal intentions in the cure of this fever must be, to correct the too great tendency of the blood to putrefaction, and to carry off the putrid bile as expeditiously and safely as possible. That taking seven, eight, or ten ounces of blood from strong or plethoric people, on the first or second day, is commonly of service; but that the repetition of this evacuation is in danger of sinking the patient too much; and, that after the third day, this fever will seldom bear bleeding at all.

AFTER

AFTER bleeding, I used to order a clyster to be got ready of eight ounces of common decoction, in which was dissolved one ounce of lenitive electuary, two ounces of oil, and two spoonfuls of brown sugar ; for, as the sick are generally costive at first, it is highly necessary to clear the intestines of fœces, in a disease that tends so fast to putrefaction ; and it frequently happened, that bilious stools followed the rejection of the clyster, almost constantly, if the vomiting was come on before it was given.

FOR common drink, I ordered a pleasant sherbett made of fresh, ripe limes, not too sour, to be drank milk-warm ; the patient's thirst being about this time very great : a beverage of this kind is agreeable to most palates, and, at first, they commonly prefer it to every other. It often happened, that they desired to have it cold, and rather than that they should not drink

it, I ordered them to be indulged in their request.

I FOUND this not only a pleasant drink for the sick, but looked on it as the most powerful antiseptic, and antiemetic I could give them. It is true, that, on first using, it was thrown up as fast as water when an emetic is given ; but such as had resolution to persevere in drinking it, soon found their sick fits less severe ; and, after the first three or four draughts, every succeeding one remained longer on the stomach than that before it, so that, in a few hours, the intermissions between the fits of vomiting came to be so lengthened, that I could attempt giving some mild purgative medicine *. That I commonly ordered,

* The following is the purgative medicine, recommended by Dr. Hillary, for this purpose :

R. Mannæ optæ fescunciam. vel uncias ij. tartar. vitri olat. gr. x. solve in feri lactis (præpar. cum vin Madeir. q. s.) unc vi. quibus adde

Tamarind condit. unc. i^m misce optime & co-
laturæ adde. Tinc-

dered, was two ounces of manna, and one of cream of tartar, dissolved in three pints of limonade. Of this I gave them a few spoonfuls, or a tea-cup full, at such distances of time as I found their stomachs could bear; regulating the quantity and times of giving it by that rule. The taste of this solution not being much different from their common drink, they took it with less reluctance. The manna made less sugar necessary, and cream of tartar less of the acid; it was still the same kind of beverage made more opening.

I HAVE often been surprized, that, the limonade I am speaking of, so agreeable to the generality of sick people, so easily come at, and so proper in the bilious fever, even as a medicine, has not been more recom-

Tincturæ senæ unciam dimidiam, divide in partes quatuor, & capiat æger unam omni hora donec laxetur alvus.

P 3 mended.

mended. I was always so fully satisfied of its utility, that I constantly pressed the free use of it upon the sick; nor did I ever refuse them the moderate use of the cooling subacid, antiseptic fruits of the climate, such as oranges, pine-apples, allegator pears, chaddocks, &c. They grow in the country in great abundance, and I never found them hurtful to the sick; on the contrary, I always thought them beneficial to them.

SICK men are apt to be tired of every thing; and this was often the case with the limonade, and it likewise disagreed with some stomachs; I then changed it for barley-water, thin gruel, or emulsions of the cold seeds, or of almonds. I have, sometimes found a drink, made by pouring boiling water on the cassada cake toasted, and letting it stand till almost cold, much liked by some sick men; and, when the cassada bread could

could not be had, I have directed sea-biscuit to be well toasted, then broke into small pieces, and the boiling-water poured on it, as on the cassada. Many of the men liked these for a time, and they were of use, as they made a variety.

THE liquor of the cocoa-nut could not be got near the towns in such plenty, as to supply any considerable number of men ; but it is always craved for by those who are acquainted with it ; and it is a pleasant subacid, cooling natural emulsion, or rather whey ; the nuts contain from half a pint to a quart.

IN some few cases, after the first class of symptoms had continued for some time, when the patient persevered in drinking the warm limonade, although he was indulged at intervals with a draught of it cold, a sweat would sometimes break out, and free the patient from any further

apprehension of danger; for, when the sweat was plentiful, the vomiting seldom continued long; and, when these ceased, the relief of the breast, and the laborious breathing, soon followed, sometimes before the approach of the yellow state, and sometimes in the course of it. I have, likewise, frequently seen this favourable turn in the third stage, provided the sweats broke out before the dark, or black vomiting appeared. I have heard of recoveries after that symptom; but it never happened to me to see any of them.

FROM the external bleeding by the emunctories already mentioned, I have seen many recover; for, although this is a bad case, it is not without hope. The blood, at such times, is so dissolved, that the thinner parts escape through the smaller vessels, and there is reason to fear a gangrenous diathesis of the blood, especially if
it

it ouzes from the gums, nose, or eyes; when it is mixed with the urine, or flows insensibly from the anus, there is still greater danger; but, when the fluid vomited is of a coffee-colour, or when it is black, a mortification has then actually taken place; for, in all such subjects as I have opened myself, or seen opened by others, after having had black vomiting, the stomach was always found mortified, and less or more of such blood as they had vomited was found in the cavity of it, and could easily be pressed from the vessels.

MANNA and cream of tartar was continued occasionally through the course of the disease, only sometimes it was changed for a tincture of rhubarb, drawn in weak cinnamon-water, to render it more grateful to the stomach, and this was given them occasionally, in such quantities as they could bear, in the same manner

ner as the manna, &c. the intention in giving either being to procure frequent bilious stools, and, when they failed in doing this, the clyster was injected; but the heat, frequency, and acrimony of these bilious stools, often deprived us of this resource, for the extremity of the rectum many times became so tender, as not to be able to bear the introduction of the smallest and smoothest pipe.

WHEN I observed any tendency to sweating, I always discontinued the laxative medicines, and gave six drachms, or an ounce of spiritus mindereri, and repeated the dose in five or six hours, if the sweat continued so long, encouraging the sick to drink a weak infusion of sage acidulated, if they desire to have it so*.

I HAVE

* Dr. Mackittrick, in his Inaugural Dissertation, mentions, that Dr. Dalrymple, who was physician to the army sent on the Carthagena expedition in the year 1740, had cured many whose cases

I HAVE, several times, given the diaphoretics recommended by Dr. Warren, as well as others; but I never could procure sweats by forcing it in the manner he advises; that which I mentioned is spontaneous; no attempt is made to open the skin, till there is some tendency to an evacuation that way; and afterwards nature is only gently solicited, not forced to continue it.

WHILST I remained at Barbadoes, I continued to blister the back and arms before the yellow stage came on, or during its continuance; but, on going down to Jamaica, I became acquainted with Dr. Cheney, whose practice in this fever was, to bleed plethoric people once, if he saw them before the second stage came on; if

ses seemed desperate, by wrapping them in blankets wetted with warm water, which softened and relaxed the skin, and brought out a profuse sweat, which carried off the fever. See p. 59.

not, he omitted the operation. He never gave emetics, but relied much on lenient purges; and, when the vomiting, oppression of the præcordia, with the painful laborious respiration, continued twelve or fourteen hours after the yellow or second stage had seized the patient, which it usually did, towards the end of the second, or the beginning of the third day, he constantly applied blisters to both thighs: he told me, that he had observed the vomitings to give way more readily to blisters on the thighs, than when they were applied on the superior extremities, or to the trunk of the body; and he added, that, by raising an artificial inflammation in one part, especially in a depending one, we abate the natural one in another. I had, afterwards, many opportunities of observing the truth of this. When the sick complained much of the blisters on their thighs,

thighs, the vomitings usually began to abate, and to cease entirely as the irritation and inflammation encreased.

BLISTERS on the thighs are apt to raise greater inflammations than on other parts: hence practitioners have been intimidated from applying them in this disease, because authors have said, there is danger of these intense inflammations ending in gangrenes: I never saw this happen, except when there was a tendency in the habit to a general mortification; and, when this is the case, the parts where blisters have been applied, may probably mortify first. Instead of apprehending danger from the intenseness of the inflammation, often observeable round the edges of the blisters, I was always much pleased to see it, and to hear them complain of great pain: when this was the case, I could pretty confidently tell them that their vomitings would cease, and that their
breath-

breathing would soon become easier, and that they would have some rest.

Dr. Warren was afraid of blisters increasing the acrimony of the blood; and Dr. Hillary alledges, he has seen bad effects from their use; but, in ten years practice, I never saw any bad consequences from their application, but, on the contrary, when applied as Dr. Cheney advised, have seen many snatched, as it were, from the most imminent danger. And in some cases, when the vomiting was severe, and the intervals, between the fits of vomiting, but short, I have been obliged to trust the cure entirely to blisters and clysters. I generally applied them before the blood was broken down and dissolved in its texture; so that they might produce their effects before this happened, and the dissolution shewed itself by the blood escaping from the ferous vessels.

WHEN

WHEN the first symptoms are intense, the yellow stage comes on earlier than the usual time of its appearance; when it does, the greater is the patient's danger, and, vice versa; for, if it keeps off to some time in the fifth day, there is room to hope for a favourable event; but, happening before the expiration of the second day, the blisters ought to be applied as soon as it is perceived. In the few cases where the third stage succeeded to the first, without the intervention of the second, one rule for the time of applying blisters is wanting, which I have said should be twelve or fourteen hours after the appearance of the yellowness: when that did not shew itself, ten or twelve hours before the time when the third stage usually comes on, I used to apply blisters.

THIS fever, like some others, often ends in scabby eruptions about the

the mouth and nose, and, sometimes, I have seen small boils, from the size of a common pea, to that of a horse-bean, break out on the breast, sides, shoulders, or hips, and prove critical. These little phelgmons do not come to suppuration; but, like carbuncles, mortify on the top; a slough separates like the eschar of an issue made with a caustic, and little sores afterwards digest and heal soon; these eruptions happened to some of the sick, whose fevers continued to the longest periods, as to the ninth or tenth day; the same kind of boils frequently appeared on the thighs, near the blisters; but ulcers were still more frequently formed, sometimes larger, sometimes smaller on the parts where the blisters had been applied, or round the edges; the ulcers were always salutary, and never attended with any bad consequences. It is, however, a necessary caution, not to apply blisters

ters lower than the calf of the leg ; for I have seen some few cases, where blisters were applied to the ankles, and the bones being there thinly covered, became carious, which in this climate they are apt to do very soon after being laid bare.

ON the coast of Guinea I had twelve or thirteen men under my care, in a malignant fever ; seven of these only recovered : after the fever had continued on some of them twenty, on others twenty-five or twenty-six days, on others thirty, every one of those who recovered had the crisis by biles or phlegmons, of the same kind with those above described, only a great deal larger, but the skin mortified, sloughed off, and the ulcers digested and healed in the same manner. Those who died of this malignant fever, were carried off the eight or ninth day without eruptions

Q of

of any kind, except petechiæ on the breasts of the two last.

THERE is one critical appearance, which I do not remember to have seen taken notice of by any writer on the bilious fever, and which, I believe, has been observed by few practitioners (it sometimes happens in the beginning of the third stage, and sometimes in the course of it), which is, one or more clusters of small florid eruptions, on or near the pit of the stomach, not larger than measles, and from three or four, to seven or eight in a cluster.

I ATTENDED a gentleman, who came over with governor Cunningham, and who, soon after his arrival, was seized with the bilious fever; Dr. Cheney was his physician. We left him one evening, in the yellow state of the fever, with every unpromising appearance, expecting to find him next morning in the last stage of
the

the disease; but about two in the morning he had fallen into a sound sleep, and continued in it till near eight; the vomiting and oppression on his breast had left him, and he complained only of a great soreness of his stomach externally. Blisters had been applied to his thighs the evening before; but they had raised no inflammation, and had but just ruffled the skin here and there. Dr. Cheney looked at his breast, and made me take notice of one cluster only of the above-mentioned spots, not more than four in number, assuring me, at the same time, that he had frequently seen people relieved, as this gentleman was, without any other sensible crisis whatever. Perhaps the exility, and inconsiderable number of those pustules or eruptions may be the reason of their having escaped the observation of practitioners. I often

found them afterwards, and always, as Dr. Cheney had told me, sure signs of the patient's safety.

IN whatever state of the disease the sick are relieved, whether by sweats, bilious stools, boils, eruptions, or by blisters, and it is evident from the cessation of the vomiting, from the load at the breast being removed, and from the respiration becoming easier, that the fever is giving way, we should attempt to give the bark; sooner would be to no purpose, for it would hurt the patient by exasperating the symptoms. I constantly gave it in the favourable circumstances just mentioned, and did not find it to disagree with the patients' stomachs so much as some writers have alledged. It is a great advantage to find the men willing to take it, which most of them are at this time, whilst the impression of the pain, and danger from which they

they are but just relieved, remains strong upon their minds *.

THE preparations of the bark I generally used, were either an infusion of an ounce of the gross powder, with three drachms of snake-root in a quart of Port wine, of which I ordered three or four spoonfuls to be given, once in two, three or four hours, as the stomach would bear it; or an ounce of the bark with two or three drachms of snake-root boiled in three pints of water to a quart, adding two ounces of strong mint-water, and a little spirit of lavender to the strained liquor; and this, like the vinous infusion, was given in such

* Dr. Mackittrick observes, that, as often as before the end of the third, or of the fourth day, the belly is freely opened so as to prepare the way for the bark, there are great hopes of the patient's safety; and so soon as there is a remission of the symptoms attended with an universal sweat, the bark ought to be given freely, without waiting for a full intermission. See his Inaugural Dissert. p. 66, &c.

quantities, and at such distances of time, as the sick could best bear.

THOSE men who were taken ill after the fever had continued three, four, or five weeks among a ship's company, usually had their fevers run out into a greater length, than those who were earlier; and such as sickened latest were liable to fall into intermitting or remitting fevers, the endemics of the climate, before they had recovered from the weakness in which the bilious fever had left them. The above preparations of the bark were not only the best cordials for supporting the *vis vitæ*, about the time of the crisis, and immediately after it, but they contributed to prevent the intermitting and remitting fevers from attacking the men last taken ill; and to such I found it necessary to continue the bark for a longer time than to the others.

IN

IN the first months of my practice in the West Indies, I made trial of opiates at different periods of the fever, and in several forms. I gave from five or ten to fifteen drops of liquid laudanum, in two or three spoonfuls of limonade, or weak cinnamon water; the smaller doses were given after every fit of vomiting, the larger after two or three; but I found them too weak a restraint, for so great a propensity to vomit. I have, likewise, given a grain, sometimes a grain and a half of opium in the evening, when, by washing the patient's stomach by any of the beverages before mentioned, and procuring a number of bilious stools, the intervals between the fits of vomiting were become considerably lengthened; but I never found that they gave the sick any sound or refreshing sleep; or that any other advantage was gained by opiates; on the contrary, they added

both to the hurry and to the listlessness the patient is always in, whilst the vomiting continues; and they increased the difficulty of breathing. It does not seem probable that they can be of any use in this disease, if it is considered, that the principal intention of cure, is the evacuation of the offending bile, by every outlet; and to attempt confining it by opiates is to counteract that intention.

AFTER having made frequent trials in the two first stages of the disease, with solid and with liquid opiates, and always without success, I discontinued the use of them altogether. There is no room for them in the third stage when the comatose symptoms come on; and, when the disease ends happily, there can be no occasion to use them; the sick of themselves almost falling into a natural sleep.

WHEN

WHEN this fever goes off, it leaves the men extremely weak ; great care is necessary to support them in the course of the disease, and particularly about the time of the crisis, with soft, mild, nourishing food. During the two first days that the vomiting usually continues, little can be done this way, as whatever we give is, for the most part, instantly rejected. The only thing I attempted at such times besides the drink, was a few spoonfuls of Port or Madeira wine, mixed with a little loaf sugar, and one third warm water. When the intermissions between the fits of vomiting came to be lengthened, I began to make trial of a little spoon meat ; such as panada, rice gruel, sago, falop, &c. always mixing a small portion of wine with each mess ; these or such other spoon meats, were continued for some days after the crisis ; and for the remainder

der of the convalescent state, they had broth for their dinner, made of very young beef, from one to two years old, and sometimes of mutton; veal was not to be had.

THE appearances of the bilious fever, as related above, were noted down at the bed-sides of the sick, during the first years of my residence in the West Indies; some other observations on this, and other diseases, were lost.

DURING my residence in Jamaica, I do not remember one instance of a ship, which remained four or five weeks in port, which totally escaped this fever. Those ships, which were immediately sent to sea on their arrival, escaped much better, and had not the disorder so violent abroad, as those who remained six weeks in port after their arrival; the violence of the disorder seemed to have been abated, by the constitutions being more accustomed to the climate, by going to sea,

sea, where people live more healthy than at land; and being under the eye of their officers, they have not such opportunities of running into excesses as at shore; and hence they are both less liable to catch the disorder, and, if they are attacked with it, they escape much better, and the disorder is milder.

IF there are preservatives against the attack of this fever, they must, I believe, consist in avoiding excesses of every kind; neither making too free with the bottle and good living, nor wantonly exposing one's self to the scorching vertical heat of the sun, nor dreading to go abroad when business, or other occasions require it. In the mind being perfectly at ease, and not prejudiced against the climate, nor anxious as to future events, and prepossessed that we shall enjoy health, and if it should happen otherwise, that we shall do well, as
many

many thousands have done before us, I know of no such security as this manly disposition of mind, nor do I think any one in more danger, than the timid and pusillanimous, scarcely excepting the intemperate stranger.

THEY do ill offices to their friends, setting out for the West Indies, who, by way of convincing them of the great necessity they are under of taking all possible care of their health, are often reminding them of the fatality of the climate, furnish them with drugs, and with instructions, under what circumstances they are to be used; for such often dispond, and probably misuse the medicines and remedies given them.

THIS fever generally makes its attack after hard drinking, violent exercise, dancing, or sleeping in the open air; and, to say the truth, it even often attacks those who have
con-

conducted themselves in the most proper way to preserve health.

STRONG, muscular men are most liable to it, and suffer most; those of a lax habit are least liable to it, and are most likely to recover.

CREOLE white men are rarely seized with it, except after drinking or dancing. Natives, however, going to Europe, and returning, are equally liable to it with Europeans.

I NEVER knew any Creole white woman ill of it; they are extremely temperate, seldom drinking any thing but water; and their domestic employments keep them in the shade.

EUROPEAN white women I have known die of it; but, they are not near so liable to it as the other sex.

EUROPEANS going to Europe, and returning, however often they may have had the bilious fever, are equally liable to it with strangers, who have never been in the country.

YOUTHS

YOUTHS under the age of puberty, are little subject to it; I recollect but one instance of the great number of youths I have seen in this country, who had the fever.

I HAVE never seen any negro, male, or female, native, or foreigner, attacked with the bilious fever.

I CANNOT help mentioning, the bad effects that follow from the use of free bleeding and vomits, as recommended by Dr. Town; and the impossibility of following the method, recommended by Dr. Warren, of keeping patients under blankets, and of making the stomach retain the medicines mentioned, to force out a sweat; and, likewise, that we have undoubted proofs that the disorder is neither a plague, nor contagious, as Dr. Warren has alledged. Dr. Hillary's method of cure is more just and rational in its intentions; but

but it seems doubtful, whether it can be pursued; for the men can scarce be persuaded, at first, to drink warm water, but seek after limonade; and I should be afraid to give oxymel scilliticum, considering how irritable the stomach is, and how often the sick die vomiting, without any provocative or stimulant whatever; and I never had the good fortune to see six hours rest, or respite, procured by opiates, given whilst the fever continued to rage; but, on the contrary, found the symptoms exasperated by their use, as I have already observed; nor did I find, that the sick had any refreshing sleep, till about the time of some of the critical appearances before mentioned. The third intention of cure is brought about by antiseptic purges, which, at all times, are very proper. When the heat abates, and the patient becomes comatose, and the blood dissolved on

I the

the third day, Dr. Hillary says, the bark should seem to be a good medicine; but he could never get the patient's stomach to retain it; but I often found that, at this time of the fever, blisters, applied to the thighs, procured a recess from vomiting; and that the bark sat easily on the stomach. I cannot help thinking that Dr. Hillary's succedaneum for the bark (or the infusion of snake-root) is a medicine which would produce but slow effects, given in such small quantities, and at such a distance of time from each other, as the Doctor directs *.

THIS

* The following is the receipt of the infusion of snake-root, recommended by Dr. Hillary:

R. Rad. serpentar Virginian drachm ii. Croci Anglican. drachm. dimidiam m. & infunde vase clauso in aquæ puræ bullientis, q. s. & dein.

R. Hujus infusionis colatæ unc. vi, Aq. menth. simp. unc. ii, Vini Madeiriensis, unc. iv, Syrup. croci vel e meconio, unc. i, Elix. vitrioli
acidi

THIS fever, which commits so much havock, and occasions such a mortality in his majesty's navy, happens principally in the first year after their arrival in the West Indies; often in the two or three first months; for when a ship's company has had their seasoning, as it is called, that is, after the bilious fever has been amongst them, it is well known that the men are then usually as healthy as in any part of Europe. I shall subjoin a list of the numbers of seamen and marines, who were sent sick to the king's hospitals at Jamaica, for two years, in the middle of the former

acidi guttarum, q. s. ad gratum saporem acidum m. capiat æger cochliaria ii, vel iii, omni hora vel omni 2^a hora vel sæpius pro re natâ.

This infusion, Dr. Hillary says, not only sat easy on the stomach, but it raised the pulse when too low; and its exhibition was attended with better success than he could have expected. See Dr. Hillary's Observations, &c. p. 165.

R

war;

war; viz. in the years 1741 and 1742, distinguishing the numbers who died.

Number of sick sent on shore.

1741.

	No. of Sick.	Died.
In Jan. Feb. and March	— 1727	— 358
In April, May and June	— 2194	— 409
In July, Aug. and Sept.	— 979	— 160
In Oct. Nov. and Dec.	— 1463	— 227

1742.

In Jan. Feb. and March	— 1391	— 179
In April, May and June	— 857	— 94
In July, Aug. and Sept.	— 1151	— 113
In Oct. Nov. and Dec.	— 1038	— 113
Total.	<u>11800</u>	<u>1653.</u>

HENCE we see, that the proportion of deaths were nearly one in seven, of the whole number sent to the

the hospitals. What number died aboard the ships, or what proportion there was there of deaths to the recoveries, I cannot say; but, I believe, the numbers who died in the ships were inconsiderable, if we except those who died whilst the fleet lay before Carthagena. Ships seldom become sickly at sea; on the contrary, they generally come into port healthy, and they send their men to the hospital as soon as they complain in the harbour.

THE foregoing account is an exact one, because it is taken from the hospital books, which are checked by the books of each ship to which the dead and sick men belonged.

WHAT proportion of the eleven thousand eight hundred men had the bilious fever, cannot be ascertained; but, as in the two years referred to, many ships arrived from England, and as the greatest part of them were

capital ones, with their highest complement of men, the numbers taken ill of the bilious fever, was proportionally larger than at any other time during my service in the hospital, and perhaps there were not less than seven thousand of the whole who had that disease. Of these I used to compute, that one thousand five hundred died (that is, something less than one in four), but in this I pretend not to be exact. Of the numbers of sick sent on shore, in the time specified, as well as of the numbers who died in that time, there can be no doubt.

THE mortality in this fever is always great, although it varies at different seasons, and among different ship's companies; as they are less or more exposed to the sun, less or more temperate, or according to the work they are employed in.

GREAT

GREAT as the mortality was amongst the ships, and in the naval hospital, it was still far greater among the troops, as it is always in the West Indies. This difference is probably occasioned by the soldiers, from the nature of their duty, being more exposed to the sun in their encampments on the shore, where the chillness and damps, dispersed through the air by the land-winds, are always more sensibly felt than in the ships; hence it happens, that seamen, who are sent to wood and water, in uninhabited parts of the West Indies, where the lands are not cleared, and where, for that reason, the air is moister, are often taken ill on their return to the ship; especially, if they have slept a night or more ashore, whilst not one of the greater number remaining on board have had any complaint.

THE troops, too, undergo a great change and deviation from their usual way of living; whereas the sailors sleep every night in their own beds, they eat the provisions they are used to, and it is dressed for them at regular stated hours; but to whatever causes the greater mortality amongst the troops may be ascribed, the difference was very great, as appeared by the returns made to Lord Cathcart, on the day of the embarkation at Portsmouth, compared with the returns given to General Wentworth, when the remains of that army were embarked at Jamaica, to return to England.

THERE may be other causes for the great difference between the numbers of seamen and soldiers, who die in the West-Indies; but it is probable, that those I have assigned, are some of the true and most capital, if it is considered that, when
ships

ships are careening, they are always most sickly, and, at such times, the nature of their duty is nearest to that of the troops, and, like them, the sailors have opportunities of straggling about in the sun, of sleeping in the open air, and of getting great quantities of liquor.

WHEN a ship, which has been but a little time in the country, happens to careen, the bilious fever always breaks out amongst her crew with great severity, and sweeps away great numbers; and the less time such ships have been in the country, the more men they lose. For this reason, line of battle ships should never be hosed down (that is careened) till they have been a year or more in the country, excepting in cases of great necessity; and it would be well, if the smaller ships and sloops were always cleared by other ships, or by a hulk; by which means their crews

would be kept from straggling, drinking, and sleeping in the open air in the night, and often in the sun in the day-time, when they are drunk. By such precautions, many melancholy consequences to the men would be prevented.

IT is well worth the attention of the admiralty, to send ships and troops from Great Britain, so as to arrive in the West Indies when the rains, and great heats which follow them, have ceased. In the time of war, they must often be sent, as they can be got ready, or as they are wanted; but if ships were sent in times of peace in this manner, and to cruize eight or ten weeks afterwards, in or near the latitude of their stations, there is great probability that many lives might be saved, and this dangerous fever rendered less formidable,

*Of Remitting and Intermitting Fevers
in the West Indies.*

SHIPS are always sickly when they are careening ; not of the bilious fever, if they have been long in the country, but of the intermitting and remitting fevers, the endemics of the climate ; by which, and their consequences, many men are lost ; and therefore, I shall make a few observations on the method of treating them.

ALTHOUGH the bilious fever, we already treated of, admits of bleeding, in particular circumstances only, and seldom of a repetition of that operation, these fevers do not only bear bleeding well, but when the paroxysms run high, as they commonly do,

do, especially in the intermittent, venesection becomes absolutely necessary. The fit in both begins with rigors, or chilliness, succeeded with all the usual symptoms of an ardent inflammatory fever; bilious vomitings are common, and a high delirium, for four or five hours, is a frequent symptom in the intermittent. In these circumstances, bleeding is indicated, and the blood drawn is commonly fizy, and has a buff-coloured pellicle on its surface, after standing a couple of hours; when the paroxysm is intense and long, it is likewise necessary to empty the intestines by a clyster; to encourage drinking some acidulated attenuating beverage, and sometimes to apply a blister between the shoulders. The intermissions which follow these intense paroxysms, are, for the most part, clear and perfect, but often of short duration, the fit being apt to return in five or six

six hours ; the succeeding fits are seldom so intense as the first, but they are often longer, very apt to degenerate into a continued fever, for three or four days, when the sick come to be in a considerable degree of danger ; hence it is always unsafe when the paroxysm is violent, to delay giving the bark till a second or third intermission.

As soon as the delirium is gone off, a moisture is usually felt on the skin, though there may remain a considerable degree of heat, and a quickness in the pulse : I then began to give the bark in substance, which I have always found to sit remarkably well on the stomachs of the sick, on the decline of all fevers incident to this climate, which, without the bark, would scarce be habitable by Europeans. If a patient does not take a sufficient quantity, in an interval of five or six hours, to abate the strength
of

of the succeeding fit, he is often in great danger. I usually washed down the bark with a large draught of cold limonade, which being extremely agreeable and refreshing to the sick, contributed not a little to his retaining the bark on his stomach, and prevented his being sick. I gave the bark alone, made up into an electuary with syrup; for it is of great consequence to give a considerable quantity before the return of the next fit, and I was unwilling to load the stomach with any drug, but that which I judged indispensably necessary for the safety of the sick. Given in this manner, I seldom found it rejected; but if it happened that the first dose was given too early, before the fever was sufficiently abated, and it was thrown up, I made a second attempt, in half an hour after, with better success, and continued to give it at the rate of an ounce, sometimes of
ten

ten drachms in an interval of six hours. This I have done times out of number, and have frequently taken as much myself.

WHEN the fever is got the better of by the bark, it must be repeated in a few days; notwithstanding which, the fever is very apt to return in four or five weeks, and therefore I have always found it the safest way, either to continue giving the bark twice or thrice a-day, for six weeks or two months, and sometimes longer; or to give six drachms, or an ounce, at the end of every fortnight, or three weeks, from the first attack, for three or four months, giving a stomachic purge or two occasionally.

I HAD a melancholy instance of the bad effects which often follow the neglect of giving the bark on the first intermission of a fever, in the case of Commodore Dent, who, in the year 1737, after catching cold, was seized
with

with a very severe fit of an intermittent: after it was over, I proposed to give immediately the bark in the intermission, which lasted six hours; but this being over-ruled, he was attacked with a second fit, and no intermission following, he died comatose in about twelve or thirteen hours.

FROM this, and many other such like cases, I was confirmed in the opinion, that the administering the bark, ought not to be delayed after an intermission at the end of the first fit. I never saw abdominal obstructions from the use of this drug, they generally proceeded from the frequent returns of the disorder.

THE symptoms of the remitting fevers, are never so violent as those of the intermittent; but they continue longer, and the remissions are shorter than the intermissions of the other. A delirium here is not common,

mon, though the sick are apt to forget themselves, and to ramble a little when awake, till they are spoke to, when they presently recollect themselves: their sleep is disturbed and uneasy; and they are apt to toss and tumble, and talk in their sleep. They seldom have the bilious vomitings, though they are sick at stomach, and sometimes bring up their food; the pulse is quick, small, and harder than in the bilious, or intermitting fever.

THIS remitting fever bears bleeding well, but in smaller quantities than in the intermitting; and it will better bear a repetition of the operation. After the first bleeding, I used to give twelve or fifteen grains of ipecacuanha, with two grains of tartar emetic in the evening, which commonly caused a stool or two. I ordered the patient to be put to bed soon after the operation of the vomit; and, if there was a tendency
to

to sweat, I encouraged it, by giving six drachms, or an ounce of spiritus mindereri, and making the sick drink vinegar whey, or sage tea, after it. Sometimes it happened, when the sweat was free, that a perfect intermission, instead of a remission, would ensue; but, if the latter only was the case, and the fever continued with short and imperfect remissions, then, after bleeding twice or thrice in small quantities, and giving the vomit, and a lenient purge, blisters to the neck or arms, or to both, seldom failed to procure an intermission; and sometimes I ordered blisters sooner; whether the bark is to be given in the remissions of this fever, or whether in the first intermission, or delayed till after the second or third; and how often venesection may be proper, and at what time blisters ought to be applied, must entirely depend on the judgment of the practitioner.

THE

THE symptoms of this fever are never so intense as in the first paroxysm of the intermittent, which often resembles the ardent stage of the true bilious fever. The danger is not so great, and the necessity of giving the bark is not so urgent, as it often is in the first intermission of the other fever. But, at the proper time, the bark must be given freely in the remitting fever, and repeated occasionally, as in the intermittent. In this fever, I used to add the radix serpentaria to the bark, and found the neutral salts to have their use.

BOTH these fevers are apt to return in spite of all that can be done to prevent them: the returns do not admit of bleeding like the first attacks, yet it is sometimes necessary, and blistering is now more so; because, on every fresh attack, the solids become more relaxed, and the circulation

S lation

lation more languid, and stand in more need of such a stimulus.

IN the intervals, between the returns, the cold bath will be found to be a good assistant to the bark, when there are no suspicions of unsound viscera to forbid its use. The food must be cordial and nutritive, always adding a few spoonfuls of Madeira wine to the liquid food, of which each seaman's allowance is a pint a day.

BOTH these fevers are extremely irregular, the remissions and intermissions returning sometimes once, sometimes twice a-day, at other times they take the form of tertians; but in general, the remittents had an exacerbation towards night.

WHEN the fevers continue to return for any length of time, the habit becomes relaxed and debilitated; scirrhus livers, dropfies, jaundice, dysentry, colliquative diarrhœas, hectic

hectic fevers, and consumptions, are brought on, and the patients languish under one or more of these distempers till death puts an end to their sufferings.

WHEN, by the continuance of the intermitting and remitting fevers, there is reason to fear the accession of any of the above complaints, the inhabitants usually shift the place of their abode; the towns are drier than the country; and, in Jamaica, many come to Port Royal, which stands on a sandy bay, at a distance from any woodlands, and is open to the wholesome sea breezes, and the inhabitants much less subject to intermitting and remitting fevers than those of the other sea ports; and while the hospital remained there, the sick were seldom seized with complaints of this kind. Such great effect has a dry proper situation, not exposed to land-winds.

WHEN another hospital was built on the opposite side, though only at the distance of four miles, not one man in a hundred escaped these fevers who was sent to the hospital, and remained three or four weeks in it; and even the marine guard, who were relieved once a fortnight, or three weeks, fared no better. This new hospital was built about a quarter of a mile from the sea, on a dry pleasant situation. The ground about was clear from woods; it rose from the sea by a gradual ascent, and it was a commodious and spacious building; but, unfortunately, it stood full in the draught of the land-wind, at the distance of about two miles from a large extensive marsh, on the banks of a fresh water river; on each side of these was a large tract of low, wet, swampy ground, covered with a long rushy kind of grass, called Horse-grass, from its being the usual food
of

of that animal. The moisture arising from this stagnating water, and brought to the hospital by the land wind blowing full upon it, occasioned such a cold and chilliness, that the sick waked, and thought cold water had been thrown upon them ; and often caught themselves insensibly drawing the bed-cloaths over them, when this land-wind rose in the morning ; whereas in the forepart of the night, they lay without any covering at all, nor was any such sensation, or cold felt while the hospital remained at Port Royal, where it was not exposed to this land-wind. It was this damp wind, filled with putrid exhalations, which occasioned the frequency of remitting and intermitting disorders at this place. At my request and representations, this hospital was deserted, though in all other respects it was good, and had cost near fifty thousand pounds. Ano-

ther was built at Port Royal, to which the sick were sent in the late war.

SEVERAL plantations, near to this new-deserted hospital, are unhealthy from the same cause; though a village, a mile further up the country, and other places, out of the line of the draught from the marshes, are healthy, and people soon recover when sent to them, as myself and my family have experienced. So important is the choice of situation in this country.

WHEN the intermitting and remitting fevers continue obstinate, or when the distempers which frequently follow them, are beginning to come on, or that there is room to think they are approaching, the natives and inhabitants often go to sea in the king's ships for a cruise, and sometimes to North America, and they frequently return quite recovered with

with regard to their appetite, flesh, and strength, both from that continent, and from cruising.

AND when seamen were worn down by frequent returns of these fevers, or by the dry belly-ache, by which they often loose the use of their limbs, nothing is so effectual a remedy as going to sea; and I used to take every opportunity of sending such men out, as were likely to receive benefit either in their own, or in other ships. By these means, numbers of men were recovered, who would have been lost by lingering in hospitals: if they happened to return without being cured, on application to the commander in chief, they were sent to England by the first conveyance, whether that happened to be the king's, or a merchant ship.

HUMANITY cannot be better exerted, nor a more effectual service

be rendered to the public, than by a careful attention to preserve the lives of seamen, by discharging them from the West India hospitals, whilst they are likely to receive benefit, before the frequent returns of those diseases, that make their being sent to sea necessary, have so far reduced them, as to render their recovery doubtful.

DIFFICULTIES in doing this have sometimes occurred ; but nothing is easier than the establishment of such a regulation as should constantly remove them ; and it is obvious, of what importance such a regulation would prove to every one who has served any time in the West Indies, and seen numbers of men sent to sea from the hospitals in a very declining way, who have returned afterwards healthy and well, after having been at sea for some time.

VIII.

*Account of the Treatment of Bilious
Remitting Fevers, in the Military
Hospitals at Martinico, in the Year
1761, in a Letter from Dr. George
Monro, M. D. to Dr. Monro, Jer-
myn-street, London, 1765.*

WHILE I remained with the
military hospitals at Marti-
nico, during the late war, a great
number of the soldiers were taken ill
of a bilious fever, that appeared to
be somewhat of the bilious autumnal
kind, but of a much more malig-
nant nature than any to be met with
in

in Europe: the bowels were commonly filled with a very putrid bile and other liquors; and the safety of the patient depended in a great measure on evacuating speedily and safely these corrupted humours with which the primæ viæ were loaded.

MR. William Ruffel and I found the following to be the best method of treating it at Martinico:

If any of the soldiers came to the hospital on the first attack of the fever, taking away a small quantity of blood was of service; but, if the disorder was advanced to the second stage, bleeding was rather hurtful, except under particular circumstances. It was seldom that the soldiers came to the hospital till the first symptoms were over.

WHEN this fever was attended with a burning heat, a fullness and beating at the temples, and the eyes were turgid and full, as pressed out of the head,

head, attended with an intolerable sickness, nausea and pain of the stomach, and it gave the patient excruciating torture when the hand was pressed on the stomach, the taking away seven or eight ounces of blood was of service; after which it was necessary to keep, perpetually almost, fomenting the stomach, and to give frequent repeated emollient clysters, till the body was opened; and then to give once, twice, or thrice, at the interval of some hours, a solution of one, two, or three grains of tartar emetic, and an ounce of manna in water, to puke the patient freely; and afterwards to give it in small quantities, so as to keep the body loose.

WHEN the stomach was much oppressed, without any of the violent inflammatory symptoms before mentioned, then bleeding was omitted, but the fomentations were assiduously

ly

ly applied to the stomach, and the body was opened by the help of clysters; and then, three, four, or five grains of tartar emetic, dissolved in a few ounces of any common julep, were given by way of an emetic, and repeated once, or oftener, if required. After it had operated freely, and the patient had discharged large quantities of bile, then small doses of a solution of an ounce or two of manna, and three, four, or five grains of tartar emetic were given, so as to operate freely by stool, at the same time that repeated emollient clysters, the length of four or more in the day were administered. If the sickness and nausea continued, after some hours, the emetic was repeated once or oftener.

WHEN the bowels were freely emptied, the fever either went off, or you had an intermission; at which time it was necessary to give the bark freely,

freely, the length of at least an ounce in the twenty-four hours, which effectually put a stop to the fever. Small doses of the bark had no effect; and if the bark was not given freely at this period, the fever was apt to assume again a dangerous form, and the patient to be lost before another intermission could be found for giving the bark.

THE bark was either administered in form of an electuary, made up with syrup of oranges, to which we added a small quantity of the *confectio cardiaca*, or a few drops of oil of cinnamon; or of a decoction, to which was added some of its own extract to make it stronger.

I OBSERVED, with regard to vomits in this fever, that, if they were given before the fibres of the stomach were sufficiently relaxed, by the continued use of fomentations for some hours, and if bleeding, where the symptoms

re-

required it, was omitted, the vomits did hurt by straining the patient too much, and increasing the violence of the symptoms; but, after the precautions above mentioned had been used, the patients bore vomits easily, and they were the only remedies which seemed to have a proper effect.

THE first vomit seldom discharged much bile, and the patients seemed more restless and uneasy after it, by the bile being set in motion, but not evacuated; however, if the fomentations were continued for two hours longer, and a second vomit was administered, then the sick threw up large quantities of sharp bilious matter, the length of a pint or more; frequently so acrid, as to erode the skin of the lips and cheeks round the mouth. After the vomit begun operating, draughts of about half a pint of cammomile - tea, or some other such liquor, were given from
time

time to time, which the sick commonly threw up immediately ; or if they did not, they were ordered to put a feather in the throat to excite a nausea ; and they continued the use of these drinks till they had discharged all the bile from their stomachs ; after which the stomach was again fomented as before, and, after some hours, the vomit was often repeated a third time, when the patients, after discharging some bile, commonly threw up pieces of a kind of skin, of a brown chocolate, or coffee colour ; and when this happened, they commonly got the better of the fever.

AFTER the bowels were thoroughly emptied, and there was an intermission of fever, if the stomach continued so irritable as to reject the bark, it was of use to give an opiate immediately, to procure rest, and to make the stomach bear the bark, which

was

was so necessary for the recovery of the patient : small doses of opium had no effect, it was therefore necessary to give a large one, and sometimes to repeat it before the end proposed was answered ; opiates when given before the stomach and bowels are thoroughly cleaned, always make the sick restless and uneasy, and are soon thrown up again ; yet, after the bilious, and other corrupted humours have been discharged, they have a good effect in settling the stomach, and enabling it to bear the bark, which must be given in large quantities before the bile has time to be again accumulated in the stomach and bowels.

WHEN the stomach bore the bark without the use of opiates, they were always omitted.

I OBSERVED, that this method of giving repeated vomits, generally proved successful, where it was attempted

tempted early in the disorder, before the blood was too much dissolved by an absorption of large quantities of bilious matter *.

* Some of the medical gentlemen, employed in the military hospitals at Martinico, in the year 1761, suspected that many of the fevers which they treated there, were of the true yellow kind; but Drs. Hume, Mackittrick, and Dr. Pollard of Barbadoes, who all had practised long in the West Indies, on hearing the method of cure used, seemed to think, that they were of the remitting and intermitting kind; and they observed, that strong emetics given so freely in the yellow fever, would have been in danger of bringing on an incessant vomiting, which could not have been put a stop to; though they all said, that they never had seen the precautions of fomenting the abdomen so freely as here described, and opening the belly, used previous to the administration of vomits.

IX.

Thoughts on the Hydrocephalus Internus, by Ambrose Dawson, M.D. Fellow of the Royal College of Physicians, London.

AFTER a fatal disease, which has been well described in some late ingenious essays, dissection has discovered an extraordinary quantity of a pure, limpid fluid in the ventricles of the brain; hence it is termed Hydrocephalus Internus.

PURGATIVES and diuretics seem to have been universally prescribed,
and

and depended on, as the most rational method of combating this dropſy : but with what ſucceſs ! I fear not one in an hundred has eſcaped ; and ſurely the happy recovery of the few who may have eſcaped, has ſurprized and exceeded the expectations of the phyſicians, if not allowed, or ſuggeſted by them to have happened *naturæ conſilio, potius quam arte medica.*

IF this be in a great meaſure true, it cannot be out of ſeaſon to diſſuade from perſevering in a practice, which experience does not juſtify nor approve.

THOUGH much may be ſaid in favour of the above-mentioned method ; yet it may be urged againſt it, that, as coſtivenefs, and a difficulty of procuring ſtools are attendant on this diſeaſe, mercurial, antimonial, refinous and ſaline purges, before they operate downwards, will irri-

tate the primæ viæ, and may find their way into and irritate the vascular system, and also cause such a dissolution of the fluids as will increase the disease. That diuretics, which are more uncertain in their operation, will have the same effects; and that though purgatives and diuretics in some collections of fluids, and congestions may contribute to an absorption, they can have little effect with respect to the removal of hydropic tumors in the ventricles of the brain; yet, by irritating the stomach and intestines, will excite spasms, which may be communicated to the very seat of the disease, and rather prevent an absorption, which is undoubtedly best promoted by removing the impediments to it.

BUT to have done at present with speculations and conjectures.

LET

LET every one recollect the surprising powers which nature has manifested in the cure of diseases, judged to be desperate and incurable; let us reflect on the many escapes from acute and chronical diseases, by crisis perfect or imperfect, effected by this sagacious and able physician; and either commit the affair intirely to nature, or proceed upon some new plan; for certainly the present one has not received the seal of experience, as far as I have seen or read: mournful testimony I could bear to the contrary: and who can say that nature has not cured more of these hydrocephali than art? probably not the faculty, who *might* be the best judges in this matter; for where they have come, something, I presume, has always been done; and the testimony of others will have little weight, and leave the question undecided: yet most

certainly it is an Herculean disease, and probably for the most part above the powers of unassisted nature; and although, not having sufficient authorities for it, it would be thought inexcusable, if not next to impossible, to look on innocent victims, and do nothing, yet, in the event, it may possibly be worse than doing nothing, to harass and interrupt nature with inadequate means, ineffectual attempts, contrary intentions, and opposite powers.

WHAT other course then in preference to the plan of purgatives and diuretics, and a desultory practice from beginning to end, can be recommended, by way of trial? I doubt neither reason nor experience can at present solve this question. I will briefly relate some observations.

MISS C—. ætat. seven or eight, at the boarding-school, fell and struck her
her

her head against an iron rod, which was placed to keep the young ladies from the fire : about a fortnight after she was brought to Conduit-street, complaining of a most acute pain in her head, with an almost incessant shrieking, and obscure delirium : the case seeming very urgent : she was blooded, cupped, and blistered, during my attendance, from which I withdrew the second day ; as, after an absence of a few hours, I found a physician had been called to her, who, declaring it a worm-case, had prescribed for her : it was treated as such till about the thirteenth day, when the doctor directed the trepan ; but the surgeons declined or deferred the operation, on account of her extreme weakness ; and the next day she died.

I VISITED two poor girls, ætat. twelve or thirteen, in cases pretty similar to Miss C—'s ; but not pre-

ceded by any violence; and, having directed V.S. hirud. temporib. vesicat. occipiti & brachiis, I depended chiefly on theriac. andromach. and, after shrieking a week or more, they both recovered.

HEWSTON, a poor girl, fifteen years of age, complained of a pain in her head: about the third day a kind of fatuity came on, with perpetual raving or shrieking: about this time I saw her: a blister, purging physic, &c. had been administered: her disorder increased; and, in the course of her illness, both hands were frequently applied to the forehead; and, if not prevented, she would have beat her head against the wainscot: it was impossible to count the pulse, as the least touch threw her into violent emotions; urine and stools came away involuntarily, and she lost her speech.

SHE

SHE was so very unmanageable, and such a miserable object, that it seemed lost time to attempt a minute detail, or particular investigation of the case; and I followed the most obvious indications.

As there seemed a distention and disturbance in the lower belly, I ordered several water-gruel clysters; and, for the exquisite torture which it appeared she suffered in her head, vesic. occipiti, and a mixture with confect. Damocrat, to be given freely; and afterwards with theriac. andromach. as containing more opium; and, on being informed that she had been subject to sore ears, vesic. pone utramque aurem, one to be renewed every day; and the violence of the disease not abating, I added tinct. thebaica. gutt. xv. three or four times a day, for several days. If at some times she appeared better, she soon was thought worse again: however
the

the blisters made a good discharge: that to the occiput, through a mistake, remained there eight or ten days, till a hole was worn through the leather; the opiate seemed to take more and more effect, and at length matured pustules were seen upon her arms and shoulders, &c. and about the hips there were large excoriations, and some deep ulcers: she had rest and sleep; recovered her understanding and speech; the urine could be saved, and was high coloured without sediment; the pulse could be counted, and was under one hundred and twenty; she sat up in a chair the twentieth day from the time she began to rave or shriek, and, in a reasonable time, was restored to sound health.

It is scarce to be disputed, but that, in the related cases, the seat of the disorder was in the head; yet to
say

say what particular part or parts were affected, and to assign the remote and subsequent causes, whether spasm, stricture, obstruction, acrimony, inflammation, extravasation, compression, tumor, and of what kind, &c. is a matter of the greatest difficulty: and, indeed, in many maladies of the brain, I think it would not be modest to pretend, with precision, to point out, either from experience, or by argument, which are the particular part or parts affected, together with the progression of causes, and their consequences, from first to last.

NOR do I hold out these histories as being certainly observations of the disease in question; I know them to be very defective: had I read Doctor Whytt's candid and ingenious Treatise on the Hydrocephalus Internus, when these patients fell into my hands, my notes, I doubt not, would have

have been more full and satisfactory to myself, and, on being communicated, better received than in the present imperfect recital.

HOWEVER, as far as I can collect from my own observations, both before, and since Dr. Whytt's and other ingenious pieces were given to the public, there is not yet discovered a good method of eluding the darts of this insidious destroyer! How many physicians have mourned and desponded in the course of their most assiduous care and active endeavours! nevertheless as this disease has now obtained a good description, and a name, and one manifest cause is pointed out, it would be pusillanimous to deem it insurmountable, or next to insurmountable: nature, eased or assisted, has effected wonderful cures; and though it may not yet be known from what quarter this relief is to come, yet repeated observations,

servations, reason, sagacity, or accident, may bring about the happy discovery.

IF a large collection was made of rough journals, or corrected histories respecting this case (which would be no difficult task), experienced physicians would probably sooner agree concerning remote and other causes; and, which is more to the purpose, ascertain and fix upon such pathognomonic symptoms, as would be allowed sufficient to prove, or justify the opinion of the presence of the disease in question, in its first stage. To know it in its earliest period, I conceive will be found of the utmost consequence in practice.

IN a fatal case, which I have not the least doubt was the hydrocephalus internus, I directed a seton in the neck; but my advice was not followed: in another such case I repeated this advice, and ordered

flor. cardamin. every four hours ; this prescription was complied with on the third or fourth day after the disease was completely formed, as it was pronounced to be from the following symptoms : very great pain in the head and vomiting, some heat, with a slow, then variable pulse, dilated pupils, alternate stupor and complaint, composure and delirium, costiveness and convulsion-fits. I mention this case in part to observe, that, after this prescription, there was no return of the convulsion fits, though the boy lived full fourteen days longer : he died about the twenty-fifth day from the time his indisposition was first noticed.

ON opening the head, the veins of the pia mater appeared greatly distended ; about five large spoonfuls of a clear water gushed from the lateral ventricles of the brain : I caught near four, the rest escaped :
this

this boy was tender and sickly, and about seven years and an half old.

BEFORE I visited him, leeches had been applied to his temples, and a vesicat. inter scapulas : he had taken tartar emetic and manna, and saline draughts. Afterwards he had a blister to the whole head ; and, a few days before his death, acrid cataplasms to the feet. As the length of the case afforded an opportunity, he had a variety of purging medicines and clysters, took neutral and volatile salts, camphire, saffron, foot drops, &c. and a little tinct. thebaica, which commonly contributed to relieve the pain and restlessness : some pimples appeared about the nose, and the cuticle was raised as after crystals. I fear too much was done. There were many turns and changes, seemingly for better and worse, in the course of the disease.

At some times he was calm and sensible ; at other times he cried out, "What shall I do with my head? Rock my head, oh mother ! oh mother !" and bawled or shrieked to be heard in the street.

IF physicians would give the symptoms of the hydrocephalus internus from their own observations, (as little as may be from the relation from others)

I. In cases where dissection has demonstrably proved the nature of the disease ;

II. In fatal cases, in which a concurrence of what are esteemed leading symptoms may have seemed sufficiently to have marked the disease, but where an examination was not permitted ;

III. In cases which have had a happy event, and in which all or most of these symptoms had been remarked ;

IV. In

IV. In cases of a favorable termination, where only some of the most notable symptoms seemed to fix not an ill-grounded suspicion of this disease;

AND if at length a compilation of such histories was put into the hands of physicians, together with the full detail of the method and means of cure, surely this would contribute not only to obtain an early discovery of the case, but also to form and establish a better plan of practice, in a direful disease, which hitherto has proved fatal to many innocent and promising subjects.

BUT to come to the point: if recourse has generally been had to purgatives and diuretics, together with a variety of other medicines, and the event has hitherto been almost universally unsuccessful; if reason and experience have hitherto

U

proved

proved insufficient guides, what remains but to make new attempts for better success?

Please candidly to accept the following outline of another plan for trial :

REFRAIN intirely from the use of active, irritating, and chilling purgatives and diuretics, the warm stimulating nervous medicines, acrid cataplasms, and from whatsoever may disturb, harrafs, and reduce the strength of the patient ; and, after perhaps drawing a little blood, and giving a laxative oily clyster, cover the whole head with a blister, apply blisters behind the ears, and keep them all open (I now rather object to a seton); give large and frequent doses of theriac. andromach. or tinct. thebaic. or a solution of opium in an aqueous menstruum, or of syrup e Meconio ; principiis obsta may be found as applicable to this,

as to any case whatever ; between
whiles give large doses of flor. car-
damin. and, as absorption may be
necessary to the cure, it may be
proper to caution against a free use
of diluting liquors.

GIVE me leave to observe how
little consistency soever there may
seem on the whole :

That in some diseases a certain
degree of fever is a *sine quâ non* to
the cure ;

That, though cantharides im-
press a painful sensation on the
skin, and urinary passages, never-
theless the extraordinary relief they
display in some diseases, may be
owing, for aught we can tell, to a
kind of titillation, or some un-
known operation on invisible fibrillæ,
unexplored canals, and on fluids
not yet dignified with a name : who
can ascertain or limit the variety or
extent of their powers ?

That I have seen cures succeed the exhibition of flor. cardamin. in spasmodic cases and watchfulness, and judge it to be of a demulcent sedative quality ;

That a free exhibition of opium in painful spasms, strictures and obstructions, in short, in many maladies, has afforded surprising relief, and sometimes even in the ascites; if so, in this excruciating complaint, of which a method of cure is not yet discovered, why should it not be tried to the very uttermost? Untrodden paths are to be preferred to the broad way which ends in the grave.

Who can be certain that an unusual quantity of a fluid in the ventricles of the brain is the principal agent in this tragedy? Ought not this dropsey rather to be considered merely as the effect of a spasm, stricture, obstruction, &c. which
still

still continues in full force? (will not a ligature on a vein cause an oozing of lymph? and have not preternatural tumors been found in the brain, which have neither been preceded nor accompanied by such severe torments as are expressed in this disease?) probably in their increase they may act as conjunct causes in producing the medley train of symptoms.

THIS is a pitiable case, in which the most tender feelings, the soundest judgement, and the utmost sagacity of the physician will find a call, and a task sufficient to exercise and display themselves: but, alas! I fear the physician is seldom sent for till the opportunity may be lost.

To add more is unnecessary to determine the experienced and judicious physician to adopt or reject this plan: may it solicit the faculty

to project a better: if any physician inclines to try it, he will judge of the expediency of drawing blood, the quantity, from what part, and which way; whether by leeches from the temples, with the lancet from the jugular vein, or the scarificator from the neck or occiput (I do not recollect the strangury to have been troublesome in this case); he will judge how his patient will be able to bear the opening so many exterior fluices at once (the only proper time being the earliest period of the disease); he will use that opiate his judgement prefers, and perhaps, after directing one clyster, think it proper to leave the subsequent evacuation by stool to the conduct of nature, as being consonant to this plan: yet he may see cause to direct several laxative clysters (after the manner of Sydenham in the comatous fever of 1673) in
its

its first stage, or to try, in its progress, the natural diuretic balsams with opium, or even to apply an opiate to the head: and he may, in time, discover by what crisis, if any, nature attempts the solution of this disease: he may retouch and improve this outline, and, by degrees, render this plan really profitable; or in the attempt be happy to catch, complete and communicate a new and the most finished one this difficult argument will admit of.

It is to be hoped that a premature hardness and compactness of the bones of the cranium do not lay such a foundation of this disease, as that it may proceed in a slow and gradual manner, and also may make a more precipitate appearance, in consequence of an injury done to the head, by a blow or shock, great activity, or exertion of bodily strength.

I beg leave to subjoin the following peracute case, as, from the symptoms, it seems to have an affinity with the foregoing subject, and especially if we suppose it to have arisen from a gradual extillation of blood or lymph.

JUNE the 17th, 1755, between seven and eight in the evening, a young lady of quality, six years of age, stood on a low stool, and, falling backwards, pitched upon the occiput; she seemed not much affected by the accident; walked, and was tolerably cheerful; desired to lie down, and slept upon the bed three quarters of an hour: when taken up she vomited, and her head was presently drawn backwards, and, towards the right side, she had a fixed stare; the pupils of both eyes were greatly dilated, and she became speechless and senseless.

ABOUT

ABOUT seven ounces of blood were taken from the arm ; and, soon after, near as much from the neck. The vomiting continued. A few drops of *sp. corn. Cerv.* and *tinct. fulig.* were given out of a tea-spoon ; sometimes they went down, and sometimes they dribbled out of her mouth ; her teeth at times were fixed close together ; convulsions soon came on, affecting more particularly the left side of the face, and the left arm ; the convulsions often ceased a little while, and returned again ; her throat swelled ; respiration was unequal, with a froth upon her lips.

THE occiput was shaved, and a redness manifestly appeared a little to the right, with scarce any swelling : universal convulsions attacked her, and, ceasing, the body was stretched at full length, the eyelids dropped so as to cover more than
half

half the eyes ; she was motionless, and representing the image of death : the sudden loss of so fine a young lady was lamented by most of the attendants, and I could perceive only a subsultus in the wrist instead of a pulse which had before been tolerable.

HOWEVER, signs of life soon appeared to all : she was convulsed again in a less degree ; and, in a short time, had the resemblance of one in a quiet sleep. To omit nothing that might be thought expedient in such cases, and to avoid censure, this opportunity was seized to make a crucial incision, which had been proposed, but deferred on account of the convulsions, &c. During the operation she only moved one foot once ; no fracture, fissure, nor depression could be discovered : a little blood flowed.

SHE

SHE was put to bed again, lay composed, with an easy respiration, and a good pulse: a purging clyster was given, which operated in the night: she slept well, awaked and drank barley-water; slept and awaked again; knew those about her; called for barley-water; and, the next morning, had no complaint, except the forenefs occasioned by the incision, which was made about three hours after the accident happened.

WITH those who choose to judge that here was only a concussion of the brain, I would not contend, only hope they will allow that nature was the best phyfician; and that though the evacuations might be affiftant to nature in this very acute case, and almost total insensibility, yet that repeated evacuations may not be equally so, in cases with somewhat fimilar fymptoms, but of a far less acute kind.

PER-

PERMIT me to add to this peracute affection of the brain, in as concise a manner as may be, the history of a disease of a very chronical kind, though in a different part of the body, in which the powers of nature happily prevailed.

A lady of a thin habit, about the forty-second year of her age, in the year 1749, miscarried, and, soon after perceived a small hard internal tumor above the os pubis, on the right side. In autumn 1752 she had a severe fit of the cholic, attended with a swelling at the pit of the stomach, which did not totally vanish; and another tumor could be felt on the inside of the right ilium, which by degrees extended to the navel, and gave a manifest increase and fulness to that side. She seldom suffered by a suppression, but often under an immoderate flow of the catamenia.

TOWARDS

TOWARDS the end of the year 1753, she consulted a very eminent physician in the north, and was suddenly attacked with a dropfical swelling of the legs, thighs and belly; more particularly towards the stomach; and to such a degree that she could not lie down in bed: gentle purges and squills gave some relief.

SHE left the country with the fluxus mensium upon her; and, in that condition, May the 12th, 1754, arrived in London.

ON an attentive examination by her physicians and an experienced surgeon, the whole abdomen appeared greatly swelled; the right-side, in which we perceived a large hard tumor, was more prominent than the left, and a double kind of fluctuation was observed, I mean not only above and below the hard body,

body, but also as if a fluid was contained in a cyst, a cyst probably springing from, and pendent on, the ovarium, or formed in the Fallopian tube: such at least were our conceptions of the disease, that the prognostic made was, no cure; and consequently only palliatives prescribed: she afterwards complained more than once of a good deal of pain and soreness about the large hard tumor.

THE lady had lost flesh, but had a quiet pulse, clean tongue, no thirst, a tolerable appetite, good spirits, was seldom feverish, and remarkably temperate in the use of liquids.

MEDICINES were laid aside in July; and, not being worse, in August she travelled to her house in the north; where the swelling of the abdomen increased, especially about the epigastrium,

gastrium, and she took purging medicines without benefit.

IN October she set out from the north, and, on the road, had a return of the flux. mens. immodic. attended with great pain, on which she began the use of Turlington's Balsam, taking gutt. xxx at night, and gutt. xx in the morning in half a glass of mountain wine. The 7th she arrived in London, said her stomach was now very hard, and that the left side equalled the right in size, though the swelling on the whole was somewhat less than at the beginning of this journey: she persisted in the use of the balsam; the catamenia soon ceased; urine increased a little, and the swelling rather decreased; but these advantages were so trifling that she thought fit to take the balsam only now and then.

SHE

SHE returned into the country ; and took a journey to London the following years :

IN 1756 she seemed in perfect health ; the abdominal swellings excepted : and these continuing, in 1760, I directed one ounce of guaiacum chips, six drachms of fenna, and two ounces of juniper-berries to be boiled in a quart of water to a pint, of which she took three or four ounces once a day, so as to have one or two motions.

IN the summer of 1761, having then taken this decoction about twelve months, it was observed that her body was certainly diminished ; and, in 1762, she told me she was perfectly well, and had no remains of her complaints whatever, except a small, hard swelling of the right side, which gave her no trouble ; and she suffered no more
from

from these disorders ; but improved in flesh and strength, and had a healthy countenance.

AFTERWARDS she had several attacks of the gout, on which account she repaired to Bath for some winters ; had a paralytic stroke in the abbey-church ; and, after a few days, died on the first of January 1771, full twenty years after the miscarriage.

WHAT would drastic purges and powerful diuretics have done in this dropfy ? most probably have hurried her to the grave : and, though the balsam, which is supposed to be a solution of the warm natural balsams and opium, may be allowed to compose and comfort, and though the decoction may be allowed to remove some impediments to resolution and absorption, yet, I presume, they will not, either separately or conjointly, be judged equal to so complicated and deep-rooted

a malady ; and that the unexpected termination of it ought to be ascribed chiefly, if not solely, to the secret efforts, and wonderful operations of nature.

X.

X.

*Observations on Hydatides in the
Heads of Black Cattle and Sheep,
in a Letter to Dr. Monro, Jer-
myn-street. By the same.*

Dear Sir,

I Have made a diligent inquiry in-
to a disease common amongst
sheep in these parts, and sometimes
seen in black cattle. This disease is
taken notice of in a note on the
Internal Hydrocephalus, in your use-
ful Essay on the Dropsy; and,

though you seem to doubt the truth of the histories quoted there (indeed strange things, related by strangers, do not readily gain intire credit), yet I dare say, you will be pleased to have a confirmation of the facts from one who hopes he is no stranger to you ; to which purpose I have collected, from plain intelligent countrymen, I believe, sufficient evidence.

IF this inquiry meets with your approbation, please to transmit it to the public in consort with the other medical papers.

I am,

Dear Sir,

Ever your's affectionately,

Lancliff-Hall,
Craven, Yorkshire,
Sept. 23, 1777.

AMBROSE DAWSON.

A kind

A kind of vertigo is seen amongst sheep and black cattle, and is here called the Sturdy or Turn in the Head, and said to be occasioned by a bag of water within the skull.

THE sheep turn about to the right or left, *i. e.* to the side the bag possesses: when the distemper is far advanced, they often fall down, and sometimes lie on the ground a day or two, as if unable to rise any more, and get up again and eat.

SHEEP of one or two years old are most liable to this disease; yet, I am told, that it has appeared in the fourth year; and that one of this age recovered, after an operation, and brought forth two lambs the following spring.

ON a careful examination of the head, after the disease has continued from six weeks to two or three months, a soft place is commonly found in the skull, perhaps of the

dimension of a shilling, and almost always on the back, near one of the horns: this soft part is pierced with an awl, or some such instrument, most commonly, though not always heated; the sheep is then thrown upon its back, and, by stopping its breath, and making it struggle, a quantity of water is forced through the orifice, and sometimes also a skin or bladder: the sheep is instantly relieved by the discharge of the water; and, if the bladder be entirely taken away, perhaps cured by one operation.

IN case a relapse happens after a few weeks, either water is found to be collected in the same place, or another soft part may be discovered, and is opened as before. This operation has been performed in two or three places, and the sheep have recovered; though the operation often fails, perhaps more than half are cured,

cured, though clumsily treated : few or none without an operation, except by some accident. A sheep has accidentally knocked off its horn, and a horn has been purposely struck off, when the soft part was under or close to it, and the sheep has done well.

THE bag may contain three or four spoonfuls or more of a fluid, and is said to arise from the skull ; and sometimes two or three bags or hydatides are united together, and run from the back part forwards along the side of the head.

THE very latter end of November, 1776, a sheep was attacked with this disease, and, during its progress, I saw the sheep several times ; when driven, it turned to the left, and sometimes fell down ; became very dull ; gradually lost its flesh and strength, and, in a little more than four months, died : the head had

been attentively examined from time to time, but no yielding spot could be found.

I ASSISTED a surgeon in removing the skin of the head, but could not perceive any external appearance of the disease; then the right horn, with a little of the cranium, was sawed off; and was, as expected, in a natural state, as was also what we saw of the brain: in removing the left horn in like manner, under which we concluded the cause of the disease would be found, a fluid gushed out, which we were prepared to catch; and we drew out of the skull an exceeding fine membranous bag, without force, which, being distended by a spoonful of the fluid remaining in its bottom, measured about three inches; the whole of the fluid was about five spoonfuls, and did not discover any viscosity by evaporation.

THE

THE bag possessed about a quarter of the cavity of the cranium, the brain being there obliterated; the internal surface of the cranium was not decayed; but the fore part of the brain, on which the bag rested, was dusky-coloured, crumbly, and un-found. This membranous bag was so fine, that objects could be seen through it; and to its inside adhered several clumps of the size of a sixpence or a shilling, formed of small granules, resembling seed-pearl, only whiter: when dried, they were quite hard.

A FEW days before the sheep died, and when it had not strength to stand, some blows were struck upon the left horn; but it did not seem to yield: perhaps, if a trepan had been applied earlier, near the horn, the bag might have been extracted, and the sheep preserved. I think an attempt of this kind adviseable, if no soft place

place can be discovered after the disease has continued two or three months.

A FARMER informs me, that he had a heifer, and a neighbour another, taken with the sturdy; and that, after about six weeks, a butcher performed, on the same day, the following operation on both: Having, by pressure with his thumb, found where the bone yielded, he raised up the skin, and took out a piece of bone, perhaps above an inch square, and, with something like a skewer, drew out a bag of water; put the bone in its place again, covered it with the skin, and rubbed perhaps a little butter and salt on the wound, and both the beasts recovered. He says, there was no hole through the bone; it was only rendered thin and yielding; and that the butcher, who operated on these two beasts, has frequently purchased others, when thus diseased, at a low

a low price, and attempted their cure in the same manner: when they recovered, he had a good bargain: if the recovery seemed very doubtful, he killed and sold them.

BLACK cattle are, also, at times, perceived on a sudden to be in a very critical situation: when driven in summer, they are apt to lick up the dust, and with it sometimes a red insect, of the size and shape of a sheep's tick, and swallow it: it is called here, a Twig or a Soldier, and is supposed, by its poisonous nature, to bring on an immediate and most dangerous distention of the belly: the cattle are often cured by instantly giving vent to the wind; this is done by thrusting the point of a penknife, or blade of a pair of scissors, under the left loin, into the upper part of the first stomach (or great belly), which reaches thither:

this

this is a well-known practice, and commonly successful.

A BUTCHER told me he had, in this manner, cured his own beast; and that he had killed others, after being fatted, which had undergone this operation.

BUT other causes may give rise to this distention: one of my cows was swelled in this manner, the third day after calving; and, to prevent present suffocation, the same butcher thrust a knife into the first stomach (as appeared afterwards); great quantities of wind rushed out several times, and the cow seemed relieved, but died the same day; and, on examination, we found a mortification of the roses in the bed of the calf.

To discover somewhat similar circumstances to some of the above, and attempt somewhat similar operations in the human species, I leave to the observation and judgment of others.

XI.

*Further Observations on Hydatides in
the Heads of Black Cattle and
Sheep. By the late Dr. Dodswell,
Physician, at Gloucester.*

THE late Dr. Dodswell, who was physician to the Infirmary at Gloucester, in a letter written in the year 1766 to a friend, which he desired to be sent to Dr. Monro, gave the following account of the method of extracting Hydatides from the heads of cattle, as now practised in the county of Gloucester.

THE

THE operation performed by our cow-letches, and other doctors and surgeons of the brute creation (by what denomination soever they may go), is no other than a rough method of performing the trepan. For the large sort of cattle, cows and bulls, the operator cuts three sides of a long square piece of the scalp, about the part aimed at when they knock the beast down for slaughter; then turns the piece so cut back, and scrapes off the periosteum; and, with a hammer and a strong short knife, takes out a piece of the cranium, and perforates the dura mater. The cyst then offers itself to view by the outward pressure being removed, and the brain acting from under. He next turns the head of the beast downwards, that the cyst, by its own weight, and the action of the brain, may advance in its passage through
 2 the

the cranium. It generally breaks and lets out the water, and the operator then takes hold of it with his fingers, and entirely removes it: he then covers the wound with the flap of the scalp he had before laid back on the head, puts some warm pitch upon it, and over that a layer of cloths and some pitch on them. This operation is, in the same manner, performed on sheep, for a disease called the Turn-gid, otherwise the Staggers.

MR. Chester saw it performed on a bull who had fits, and who had had one just before the operation was performed: the operator ascribed the disorder to excessive venery; the weather being then very hot, and his concubines many.

THE feat of the disease admits easily of the operation, it being between the dura and pia mater. And the practice of Gloucestershire, and I
sup-

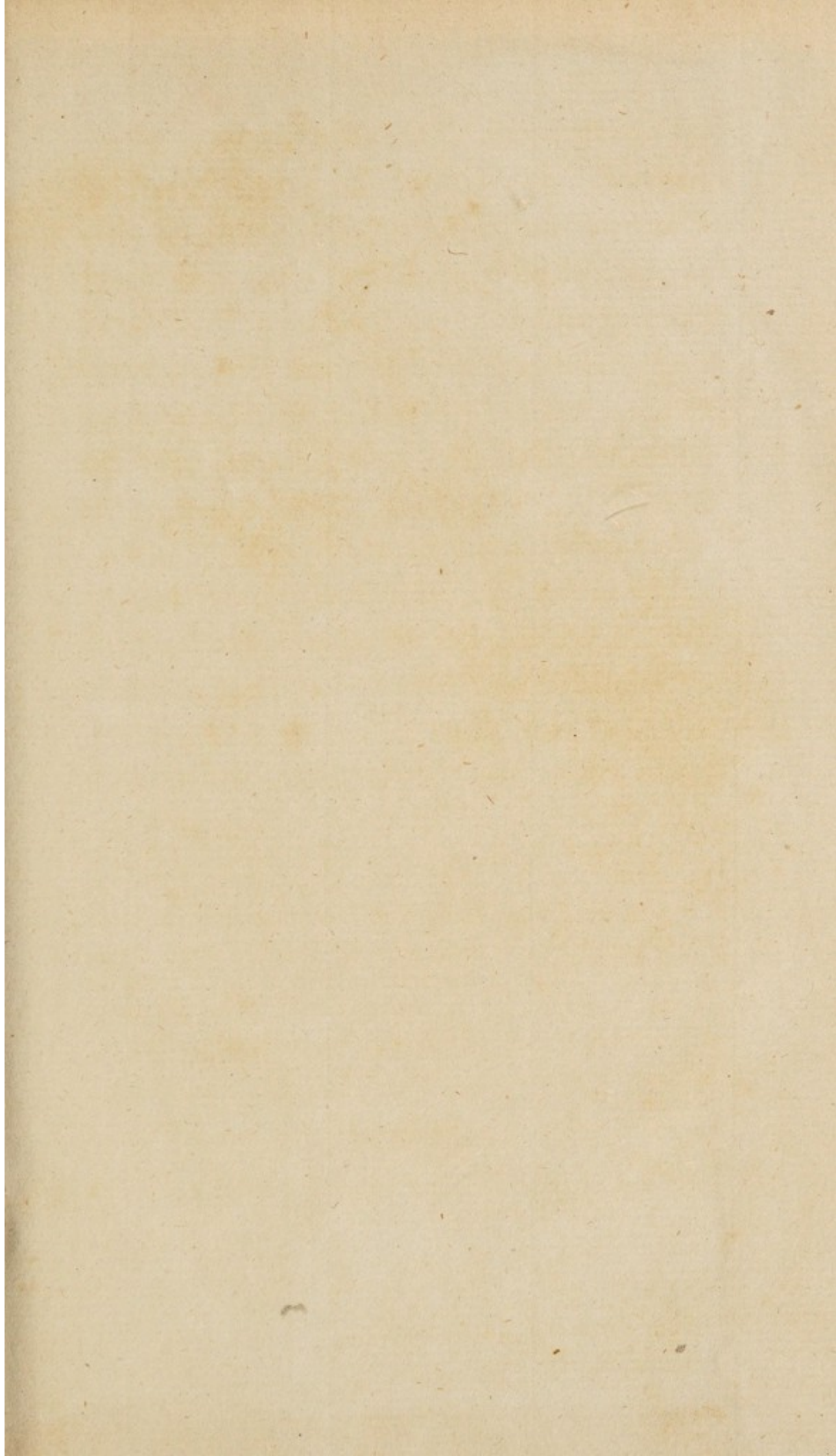
320 FURTHER OBSERVATIONS, &c.
suppose of other countries *, gives
Dr. Wepfer a degree of credit in his
account of the same disorder and
operation.

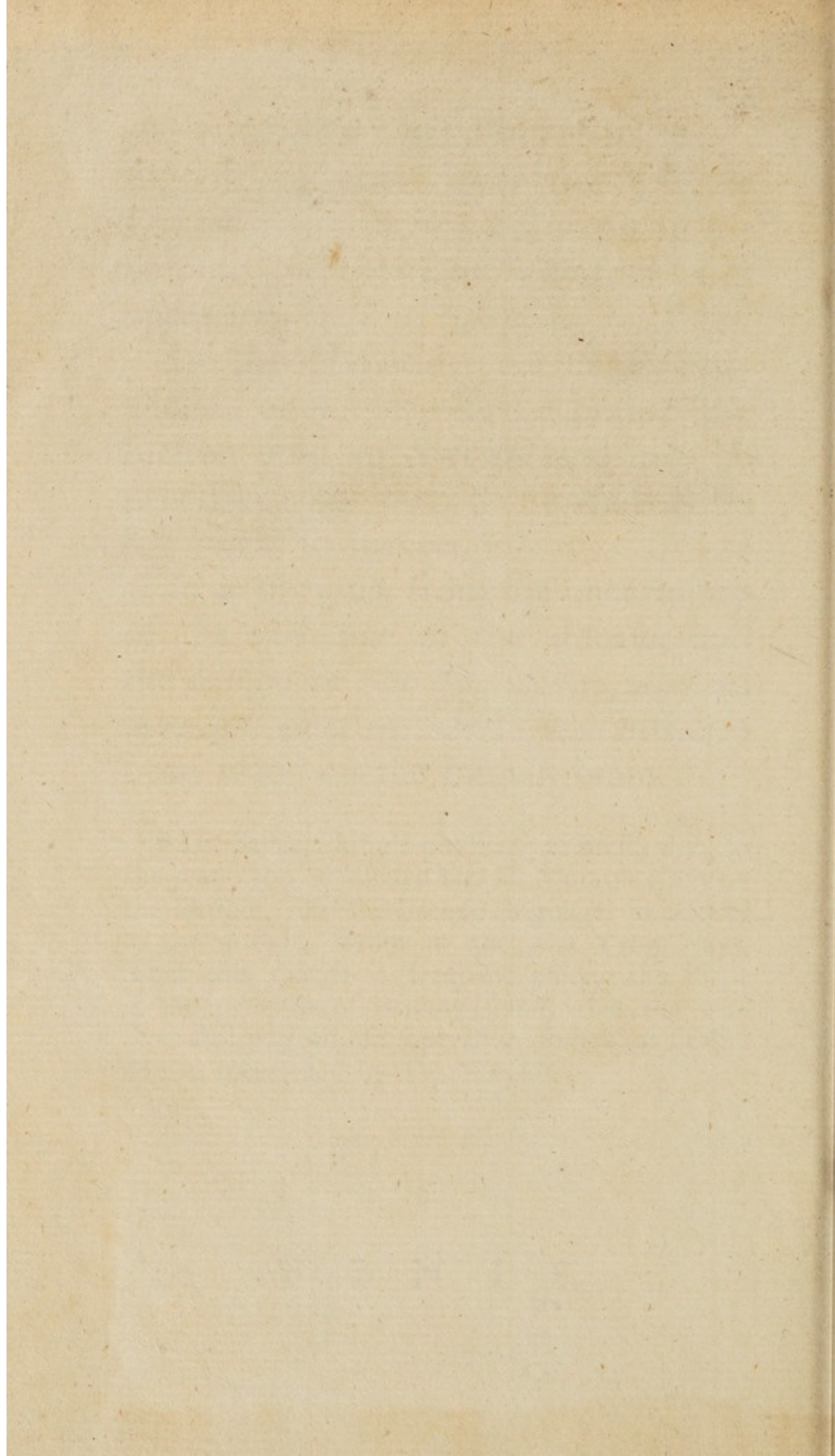
IF the Hydatides are in the ventricles, or lie deep in the brain, the suction used in Switzerland may be necessary, but then the operation is less likely to succeed.

IT is obvious, from the uncertainty of the existence of the disease, and the danger of the operation, why no attempt of this kind has hitherto been made on the human brain.

* Dr. Savary, king's physician at Brest, who, in the year 1760, translated Dr. D. Monro's Essay on the Dropsy, into the French language, in a letter to the author, wrote in the year 1765, says, That this disease is frequent among the cattle in the province of Britany; and, that the peasants still perform an operation somewhat similar to that mentioned by Dr. Wepfer.

F I N I S.





1. 100

1. 1.

Fi. bes

