

A practical treatise on the efficacy of bloodletting, in the epidemic fever of Edinburgh : illustrated by numerous cases and tables extracted from the journals of the Queensberry-House Fever Hospital / by Benjamin Welsh.

Contributors

Welsh, Benjamin.
Edinburgh. Queensberry-House Fever Hospital.
University of Leeds. Library

Publication/Creation

Edinburgh : Printed for Bell & Bradfute, 1819.

Persistent URL

<https://wellcomecollection.org/works/wxpac3rw>

Provider

Leeds University Archive

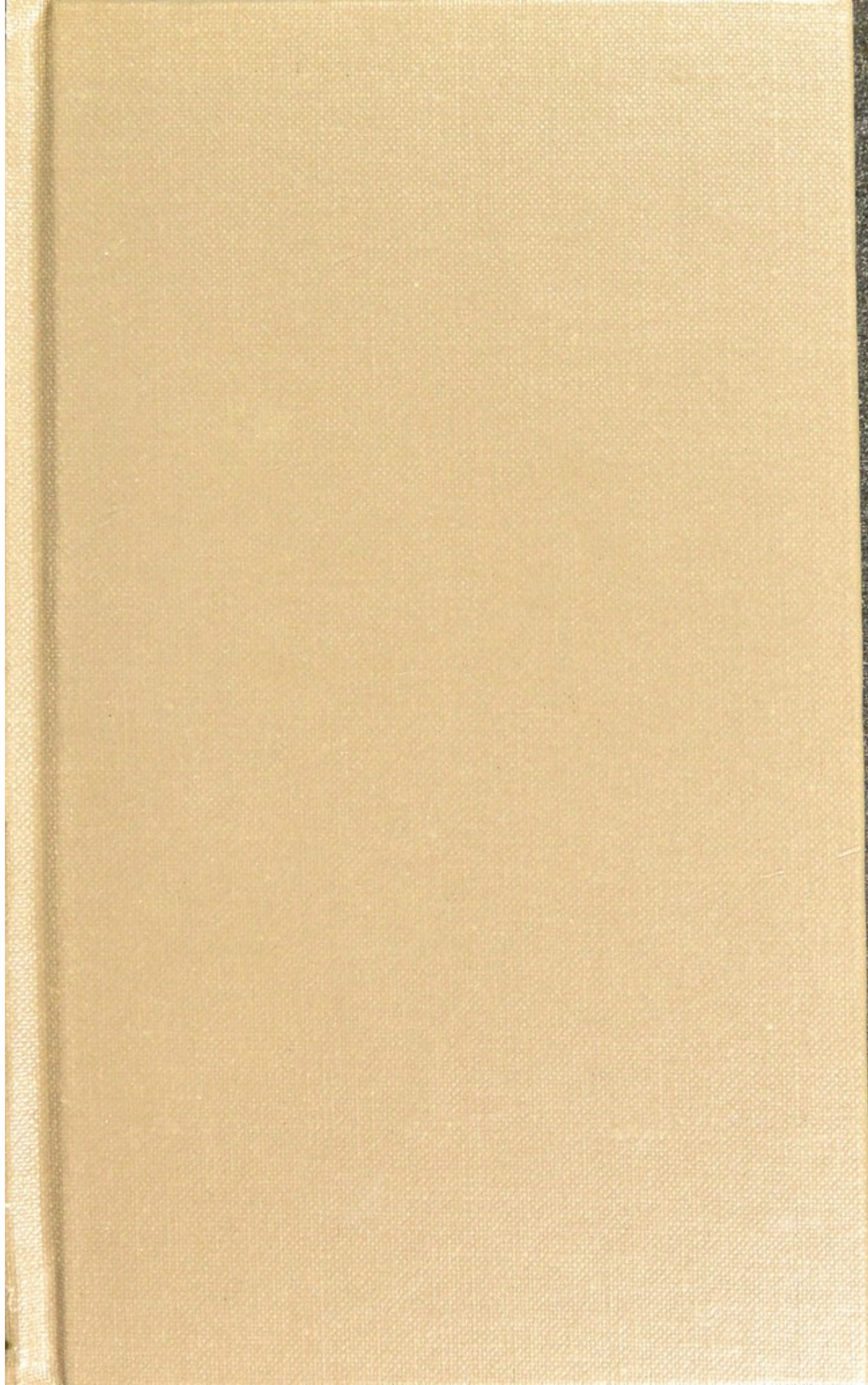
License and attribution

This material has been provided by This material has been provided by The University of Leeds Library. The original may be consulted at The University of Leeds Library. where the originals may be consulted.
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>



567
300

LEEDS INFIRMARY
MEDICAL LIBRARY.

Entered *Feb 8* 18 *22*

Allowed for reading? Weeks. Days.
the first Year } — *10*

—After the first Year *3*

Forfeiture per Day for keeping it? d.
' beyond the Time. } */*

CAGE
WEL



Digitized by the Internet Archive
in 2015

<https://archive.org/details/b21514537>

560
300



560
300

A
PRACTICAL
TREATISE
ON THE
EFFICACY OF BLOODLETTING
IN THE
EPIDEMIC FEVER OF EDINBURGH.

560
30

A
PRACTICAL
TREATISE
ON THE
EFFICACY OF BLOODLETTING
IN THE
FEBRILE FEVER OF EDINBURGH

*Abernethy & Walker, Printers,
Edinburgh.*

A
PRACTICAL
TREATISE

ON THE
EFFICACY OF BLOODLETTING,
IN THE
EPIDEMIC FEVER OF EDINBURGH.

ILLUSTRATED BY
NUMEROUS CASES AND TABLES,
EXTRACTED FROM THE JOURNALS OF THE QUEENSBERRY-HOUSE
FEVER HOSPITAL.

BY BENJAMIN WELSH, M. D.
SUPERINTENDENT OF THAT INSTITUTION, AND MEMBER OF THE ROYAL
MEDICAL SOCIETY OF EDINBURGH.

Si vires sinunt, sanguinem mittere optimum est.
CELS. lib. III.

EDINBURGH:
PRINTED FOR BELL & BRADFUTE,
AND SOLD BY LONGMAN, HURST, REES, ORME AND BROWN,
T. AND G. UNDERWOOD, AND R. STODART, LONDON ;
AND HODGES AND M^cARTHUR, DUBLIN.

1819.

THE PRACTICAL
TREATISE

ON THE
SYMPTOMS AND TREATMENT

OF THE
EPIDEMIC FEVER OF EDINBURGH.

BY
J. B. BURNETT, M.D.

EDINBURGH:

PRINTED FOR BELL & BELL.

AND SOLD BY TOWNSEND, NEWBY, BELL, GUNN AND SONS,
15, AND 17, NASSAU-STREET, LONDON;
AND HODGKINS AND SONS, 10, BROADWAY, N.Y.

601819
1819

560
30

TO
THE MANAGERS

OF THE
ROYAL INFIRMARY OF EDINBURGH,

WHOSE UNREMITTED EXERTIONS IN THE CAUSE OF HUMANITY
HAVE SO JUSTLY ENTITLED THEM TO THE GRATITUDE
AND APPLAUSE OF THEIR FELLOW-CITIZENS ;

THE AUTHOR

RESPECTFULLY INSCRIBES THIS TREATISE,
AS A MARK OF HIS HIGH RESPECT FOR THEIR PUBLIC SPIRIT,
AND OF HIS GRATITUDE FOR THE CONFIDENCE AND ATTENTION
WITH WHICH THEY HAVE HONOURED HIM.

TO
THE MANAGERS

OF THE

ROYAL INFIRMARY OF EDINBURGH,

WHOSE ENLIGHTENED SERVICES IN THE CAUSE OF HUMANITY

HAVE SO JUSTLY ENTERED THEM TO THE GRATITUDE

AND APPRAISE OF THEIR FELLOW-CITIZENS :

THE AUTHOR

RECOMMENDS THEM TO THE READER,

AS A MARK OF HIS HIGH REGARD FOR THEIR PUBLIC SPIRIT,

AND OF HIS GRATITUDE FOR THE COURTESY AND ASSISTANCE

WITH WHICH THEY HAVE HONOURED HIM.

560
30

PREFACE.

As I have had pretty extensive opportunities of observing the phenomena of fever, both in the Royal Infirmary, and in this Hospital, and of witnessing the effects of that mode of cure which forms the subject of this Essay; and as neither of the Physicians under whom I acted had any intention of publishing the results of their experience on this subject; I have been induced to give the following observations to the public. Of their many imperfections, no one can be more sensible than I am myself; for although I have extended this Treatise to a much greater length than I originally intended, I am perfectly aware, that there are many circumstances connected with the present Epidemic, which I have either not at all noticed, or handled very super-

ficially. My main object has been to establish the utility of copious venesection, and to this, the account given of other remedies has been made in a great measure subordinate.

I have not ventured to say any thing of the pathology of the disease; as the obtaining of dissections is attended with considerable difficulty,—a regulation of the hospital making it necessary that the consent of friends should first be obtained. I have therefore had but few opportunities of witnessing the appearances after death in fever patients; and those I have witnessed have generally been so very unsatisfactory, as not to warrant me in entering upon this subject.

I know that some individuals entertain a prejudice against what they term a dry detail of cases, and contend that it is much better for the physician to give the results of his experience in a more condensed form. I conceive, however, that it is more expedient to consider the naked facts themselves, than the ambiguous deductions of perhaps biassed or unskilful observers; for tho' physicians may differ much respecting the type or circum-

stances of an epidemic, a tolerable degree of harmony and unanimity of sentiment may always be found to obtain in Hospital Journals. I shall not therefore make any apology for the length of my Appendix, but earnestly request my readers to peruse, with attention, the cases there detailed, as it is from a careful perusal of them, much more than any thing I can say, that I hope to carry conviction of the excellent effects of bloodletting in fever.

I would be very deficient in gratitude did I omit this opportunity of returning my warmest acknowledgments to the two eminent physicians, Drs HAMILTON and SPENS, under whose auspices I have acted, for their very handsome and liberal conduct, in allowing me to make use of the Journals of this Hospital, in illustration of my doctrines respecting the practice I advocate. Every one who has had an opportunity of witnessing the unwearied attention and humanity of these two excellent men, in discharging the duties of their important office, must esteem and admire them as much as I do. To Dr HAMILTON, in particular, under whom I more immediately acted, I shall never cease to feel

560
30

grateful for the almost paternal kindness and attention with which he has honoured me from the time I first became his clerk, and for the many valuable practical instructions I have received from him ; and it shall be my aim, through life, as far as my abilities go, to imitate the elegantly simple, yet scientific and vigorous practice which I have seen so often, and so successfully employed by that acute and rational practitioner.

My best acknowledgments are also due to Dr HOME, Professor of Materia Medica, who has acted as one of the Physicians to this Hospital since the resignation of Dr HAMILTON.

I likewise feel much pleasure in having an opportunity of returning my sincere thanks to my friends, Messrs J. STEPHENSON, R. CHRISTISON, and E. TURNER, who have at different times acted along with me in this Hospital ; and to whose unremitting attention and accurate judgment in drawing up the cases, I am indebted for being able to form the Tabular Views given in the Appendix.

CONTENTS.

	Page
Topography and domestic arrangement of the Queens- berry-House Fever Hospital,.....	1
Monthly Meteorological Tables for 1818,	14
Account of the Present Epidemic,.....	15
Observations on the Causes of the Epidemic,.....	44
Review of the Tables,.....	53
Sketch of the History of Venesection in Fever,.....	82
Observations on the Efficacy of Bloodletting in the present Epidemic,.....	153
Conclusions,	202

APPENDIX NO. I. contains,

1st, Ten cases as examples of fever cut short at various periods of the disease by copious depletion of blood,	1
2d, Eight cases as examples of the safety and utility of repeating the evacuation of blood as often as the symptoms seem to require it,	20
3d, Six cases as examples of the safety and efficacy of bloodletting in young subjects,	47
4th, Six cases as examples of the safety and utility of bloodletting in old subjects,	67
5th, Five cases to prove the propriety of bleeding whenever the symp- toms seem to require it, without any attention to the duration of the disease,	56
6th, Seven cases as examples of the successful employment of bloodlet- ting, both general and local, under circumstances formerly rec- koned the most adverse to its use,	79
7th, Two cases to shew the utility of bloodletting in relieving the symp- toms and protracting life in those cases which terminated fa- tally,	110

	Page
APPENDIX NO. II. contains	
TABLE, NO. I. Shewing a specimen of the tabular form into which I have reduced the cases treated at the Queensberry-House Fever Hospital, from its opening on the 23d February 1818 up to the 1st January 1819, and upon which the other tables are founded,	128
TABLE, NO. II. Shewing the ages of the patients, male and female, ..	129
TABLE, NO. III. Shewing the ages of those patients who suffered a relapse, male and female,	130
TABLE, NO. IV. Shewing the ages of those patients whose cases terminated fatally, male and female,	131
TABLE, NO. V. Shewing the numbers admitted each month, male and female, and the average number of days they had previously laboured under the disease,	ib.
TABLE, NO. VI. Shewing the average day of disease on admission of the cases which terminated fatally,	132
TABLE, NO. VII. Shewing the proportions of the causes assigned by the patients for their disease, both in the primary fever and relapse cases,	ib.
TABLE, NO. VIII. Shewing the number of patients affected with particular symptoms in the primary fever,	133
TABLE NO. IX. Shewing the numbers affected with particular symptoms in the relapse cases,	14
TABLE, NO. X. Shewing the numbers affected with particular symptoms in those cases which terminated fatally,	135
TABLE, NO. XI. Shewing the proportion of patients who had crisis on critical and non-critical days in the primary fever, also the numbers that had this change on each particular day,	136
TABLE, NO. XII. Shewing the proportion of crises on critical and non-critical days in the cases of relapse, also the numbers on each particular day,	137
TABLE, NO. XIII. Shewing the number of those which terminated on critical and non-critical days in the fatal cases, with the number that died on each particular day,	ib.
TABLE, NO. XIV. Shewing the average number of days when the patients were convalescent, male and female,	138

CONTENTS.

xiii

	Page
TABLE, NO. XV. Shewing the average number of days the patients were detained in hospital,	138
TABLE, NO. XVI. Shewing general averages in various stages of the disease,	139
TABLE, NO. XVII. Shewing the numbers and proportions of the patients who suffered a relapse, male and female,	ib.
TABLE, NO. XVIII. Shewing the number of relapses happening when the primary fever ended on critical and non-critical days, also the numbers happening on critical and non-critical days, counting from the day when convalescent,	140
TABLE, NO. XIX. Shewing the numbers bled from the arm and leech-ed in the primary fever, with the quantity of blood taken, its appearance, also the number of leeches used,	141
TABLE, NO. XX. Shewing the numbers bled from the arm and leech-ed in the cases of relapse, the quantity of blood taken, its appearance, also the number of leeches used,	142
TABLE, NO. XXI. Shewing the numbers dismissed cured, and who died each month, with the proportion of deaths to recoveries,	142
TABLE, NO. XXII. Giving a tabular view of the symptoms and treat-ment of 54 cases which terminated fatally,	143
Tables of the diets used in the Queensberry-house fever hospital,	144
Recipés for the Hospital Formulæ employed in the treatment of the cases detailed in the appendix,	146

ERRATA.

Page 4 line 9 *for* cogs, *read* cogues,

— 51 — 11 — progressively *read* progressive

— 48 — 13 — son *read* person

— 49 in the running title, *for* OBSERVATIONS ON THE PRESENT EPIDEMIC *read*
ON THE CAUSES OF THE EPIDEMIC.

— 56 line 8 *for* houses, *read* house,

— 57-60 lines 3 and 17 *for* proportion *read* proportions

There are a few inaccuracies in style in the cases and minute fractional errors in the tables; but they are so very trifling, that I do not consider it necessary to introduce them into the Table of Errata.

In Table, NO. XXII. Observations 25, 26 and 27. refer to cases 26, 27 and 28,

56
30

ERRATA

- Page 4 line 9 for "and" read "or"
- 11 — "proportionally" read "proportions"
- 12 — "and" read "from"
- 13 — "in the preceding" read "in the present"
- 14 — "of the" read "of the"
- 15 — "of the" read "of the"
- 16 — "of the" read "of the"
- 17 — "of the" read "of the"

There are a few inaccuracies in this in the case of certain figures in the table; but they are so very trifling that I do not consider it necessary to introduce them into the table of errors.

In Table No. XII. Questions 22, 26 and 27 refer to cases 22, 27 and 28

TOPOGRAPHY

AND

DOMESTIC ARRANGEMENT

OF THE

HOSPITAL.

BEFORE proceeding to the subject of this treatise, it may not be amiss to give some account of the topography and domestic arrangement of the hospital.

The Hospital of Queensberry House, formerly occupied as a Barrack, is a large stone building, situated at the eastern extremity of that ridge which descends from the Castle of Edinburgh to Holyroodhouse. It is well protected from the north wind by the Caltonhill, and from the west by the Castle, the High Street, and the numerous

56
30

buildings which branch off from it. On the south it is more open, but still protected by Arthur's Seat and Salisbury Craigs, which are only a few hundred paces distant. The Abbeyhill and the adjacent buildings sufficiently screen it on the east. On the whole, though extremely well ventilated, it is never subject to any severe or partial currents of wind.

The soil on which it is built is gravelly, and about ninety feet above the level of the sea, from which it is distant rather more than a mile. The ground immediately around is damp; but the vicinity of the hospital itself is well drained. The access to it is very easy, both from the High Street and from the south back of the Canongate; and it has, in this last aspect, an excellent and ample airing ground, common to it and the Military Hospital. The building consists of a body, and two wings which project in front only. In the rear it presents nearly an uniform face. The occupied wing consists of five floors. The ground floor in front is below the level of the street, but quite open in the rear,—like many other buildings in this town situated on the side of the ridge. On this floor are the kitchen, store-rooms, apartments for the matron, one of the clerks, and the porter, with a waiting-room for the physicians. The accommodation for the patients is on the four up-

per floors, which communicate with each other by an ample staircase. On each floor there are three wards; one of 18 feet by 18; one of 21 by 18; and one of 30 by 15. The height of these wards varies. On the three upper floors they are nine feet high; on the first twelve. Besides this accommodation for the sick, there is on each floor a good room for the day-nurse; and a bed-closet for those employed at night. There are no more than fifteen beds on each floor, viz. six in each of the two largest wards, and three in the small:—thus giving 900 cubic feet to the patients in the largest sized room, 756 in the next, and 1296 in the smallest, on the first floor: and 675 in the largest, 567 in the next, and 972 in the smallest, on the upper floors. The wards have fire-places in each, and are amply supplied with windows and doors, extremely well placed for affording ventilation. The passages and staircase are also very sufficiently ventilated.

The stores for clean and foul bedding, and for the patient's clothing, are spacious, and separated from the part of the house occupied by the sick. There are also separate stores for provisions, furniture, &c. The house has a plentiful supply of excellent water, both soft and hard; and, upon the whole, may be considered as extremely well adapted to the purposes of an hospital.

56
30

The furniture consists of iron bedsteads, a paille and bolster, a hair or wool matrass and pillow, one pair of sheets, two blankets and a coverlet to each patient. Betwixt every two beds there is a small table placed, of such a height as may be easily reached by the patient. On this are placed their drinking cups, spit-boxes, and medicines. There is a sufficient supply of plates, spoons, cogs, drinking-cups, spit-boxes, &c. &c. for every patient in the house. The greatest possible attention is paid to the cleanliness of the bedding. When a patient dies or is dismissed, however short the time he may have been in the house, every article of bedding is removed:—the sheets and blankets to be washed, and the paille, bolster, matrass and pillow, to a large airy apartment in the second floor of the west wing, where they are well aired and fumigated. The straw in the pailles and bolsters is frequently changed, and the hair and wool of the matrasses and pillows taken out and cleaned, as often as may be judged requisite. The bedding of those who remain long in the house is *immediately* changed whenever it is proper, without any attention being paid to the time it has been in use. The same attention is paid to the cleanliness of every other part of the house. The stairs and passages are regularly washed every day; the wards, nurses' rooms, &c.

often daily ; at any rate every other day. Strict attention is paid to ventilation, the windows being kept constantly down from the top, and the wards are regularly fumigated every day. It is stated above, that each floor contains fifteen beds for patients. To these, three nurses are attached, viz. one day and two night nurses ; but the hours at which the night nurses go to sleep are so arranged, that one of them is always on foot during the day, to assist the day-nurse : And thus we have constantly two nurses on duty on each floor. Every one who has any experience in hospitals of this kind, will be aware how much the order and regularity of the house, and the comfort, nay, often even the lives of the patients, depend upon the attention and sobriety of the nurses ; and I am happy to state, that, in general, we have had reason to be highly satisfied with the accuracy, cleanliness, and good conduct of the persons acting in that capacity in this hospital.

The diet during the disease is various, according to the different tastes of the patients. They may have milk porridge, panada flavoured with a little white wine and sugar, milk-sops, porridge and milk or beer, bread and milk or beer, a bason of tea, arrow-root, weak beef-tea, or other articles of a similar nature, if they are particularly wished for. The food at this time is

56
31

given in such quantities, and at such intervals, as are most agreeable to the patients. This is called *fever* or *low* diet. It may be mentioned, however, that during the fever, patients in general can partake of very little food of any kind, but almost solely of drinks: And when it has abated, or in the first stage of convalescence, our attempts to please their palates by something more delicate than their usual fare, as milk porridge or panada, have very generally been unsuccessful; such articles have hardly ever been relished. When the patients wish for, and it is thought proper to allow an increased ratio of food, they get small common or *first* diet. Then, as the appetite improves, full common or *second* diet. And, lastly, either additional or full diet; the last, however, as consisting in part of animal food, is very rarely given, as we have in many instances observed the great tendency it has to bring on relapse. Besides, it is what few of that class of people which constitute the greater part of our patients are accustomed to; and as full diet is only a little meat every other day in addition to the common or second diet, they almost always prefer additional diet; which is an increased allowance of the other articles constituting the full diet, without the animal food. Tables of the diets will be given in the Appendix. Fruit, wine, porter, pudding, &c. are all occasion-

ally given, but not unless ordered in the journals of the physicians. Patients may have for drink, butter-milk, small beer, barley water, toast and water, water-gruel, or the acid drinks. Most of them are very fond of butter-milk; medicated drinks they in general soon dislike. In fact, they often go over the whole bill of fare, becoming tired of them all in succession, and end in preferring plain water to any thing else.

It is expected that all persons desirous of being admitted patients shall be reported at the hospital by one o'clock, that the physicians (this being their visiting hour) may give orders respecting the persons most proper to be admitted; and also to afford time for making the necessary arrangements for their accommodation. It is besides expected, that they shall bring along with them a recommendation from some respectable persons, binding themselves to remove the patient from the hospital when desired, or, in the case of death, to be at the expense of the funeral. The officer of an association lately instituted for the relief of persons in fever, affords us great facility with respect to the admission of fever patients. The Society for the Destitute Sick have, I believe, divided the town into sixteen districts, and to each of these districts there are visitors attached, which office I understand its benevolent members take

56
31

for a certain time in rotation, and their business, as the name of the society implies, is to visit and give assistance to the destitute and sick poor in their respective districts; and when they discover, or are informed of persons being affected with fever, they report the same to the medical gentlemen attached to the fever society, who visit the patient said to labour under the disease; and if it turn out to be the case, they immediately write an order to the officer certifying that the disease is fever, and desiring him to get the person or persons removed as soon as possible to one of the hospitals, and to get the house fumigated and white-washed. I believe also, that the society is often at the expense of washing their bed and body clothes, and supplying new bed-clothes, fresh straw, &c. Besides these societies, the functionaries of the Dispensaries are also very active in reporting fever patients. In short, a note from any medical person recommending a patient to the hospital, and certifying that the disease is fever, is attended to by the officer of the society, and he is at the expense of their removal to the hospital, and also in the name of the society becomes bound to us for the patients sent in, agreeably to the regulation of the house already mentioned*. I

* I may mention that the chairs belonging to the Royal Infirmary are always used for the conveyance of fever patients.

am sure nine out of ten of the patients admitted have been recommended by the above-mentioned officer. Although I have stated that it is wished, for the sake of regularity, that applicants for admission should be reported at the hospital by a certain hour, and that they should bring a note of recommendation along with them, nevertheless these regulations are not strictly adhered to; for knowing it to be the wish of the benevolent managers of this institution, that its officers should do every thing in their power both to afford speedy relief to those already labouring under the disease, and to facilitate the means employed for checking its progress in the town, when we have accommodation, (and it has only been in a few instances that the admission of patients has been postponed for a day or two,) our doors are never shut to proper objects, at any hour, or whether they bring recommendations or not.

Patients on admission are carried directly to the ward where they are to lie. The nurses immediately undress them, and wash their face, breast, arms, feet and legs, or, if need be, their whole body with tepid water and soap; they then, if they have brought no change of linen with them, which is very rarely the case, are supplied with a shirt or shift, and night-cap, belonging to the house, and put to bed. A list is taken of all the articles of clothing they bring with

56
3

them, to which is added, their name, date of admission, and the number of the ward they lie in; their clothes are then removed to an apartment on the ground-floor of the west wing appropriated to that purpose: their linens are thrown into cold water until taken out to be washed; their clothes are either washed or well fumigated as may be deemed requisite. The nurses are supplied with shirts, shifts and night-caps, to change the linen of patients as often as it appears necessary. They do not receive their own linens till dismissal; their clothes they receive when they are allowed to get out of bed, as we are not provided with hospital dresses.

The patients, after being put to bed, (unless their symptoms are very urgent, when they are immediately attended to,) are allowed to lie undisturbed till the evening, that they may recover from any faintness or fatigue that may have been induced by their removal to the hospital, so as to enable us to judge more accurately of the nature of their symptoms. Their cases are taken between 6 and 9 o'clock in the evening, when whatever appears necessary is ordered. Next morning, betwixt 11 and 1 o'clock, reports are taken, stating the effects of the prescription of the preceding evening, how they have passed the night, present symptoms, &c.: these with the case and prescriptions are read to the physicians at the visiting

hour, which is from 1 to 2 o'clock,—when they inquire into the accuracy of the reports, make any additions they may judge proper, and give the necessary prescriptions. In this way there is a daily report drawn up of every patient in the house during the whole course of the disease. Besides the regular daily visits of the physicians, all the patients are seen twice a-day, morning and evening, by myself and the other resident medical officers. And when any alteration of symptoms requiring immediate attention has taken place in any of the patients, prescriptions are given in conformity to the directions left by the physicians, and these are inserted in a book for their inspection at their next visit. I am also in the habit of visiting the wards at uncertain hours, to see that they are in proper order, are well ventilated, and that the nurses are attending to their duty. In this way any untoward symptoms that may occur in any of the patients cannot remain long unknown to us. The operations of bleeding, arteriotomy, cupping and leeching, unless a particular time is specified in the prescription, are in general not performed till the evening.

It having been observed, that the disease was, in many instances, caught and propagated by the friends of patients visiting the fever wards in the Royal Infirmary; it was proposed, when this hos-

56
3

pital was first opened, to exclude altogether the friends of patients from visiting them while in the hospital, or, at least, only to admit their nearest relations when the patients seemed likely to die. This regulation was for some time acted upon, but it was found impossible to continue it without great inconvenience, for there was constantly a mob around the door, exclaiming bitterly against the severity of the regulation;—some threatening to have their friends removed, and declaring they would rather have them run the hazard of dying at home, than be prevented from seeing them during their illness,—and several indeed, obstinately refused to allow their friends to be removed to this hospital on account of the above regulation. Conceiving, that if many should act upon this principle, the danger to be apprehended to the community by allowing them to remain in their crowded, dirty, ill-ventilated hovels, would far exceed that to be dreaded by the occasional visits of their friends, when in a clean well-ventilated ward in the hospital, it was thought advisable to relax a little in the strictness of our regulations in this particular. We have accordingly been in the habit of allowing of the occasional visits of friends when it would not disturb the patients much, but never before they had asked and obtained permission from one of the medical attendants; and we always cau-

tioned them to come as seldom, and to remain as short a time in the wards as possible, letting them know the danger they were in of catching the disease themselves. In spite of every caution, however, I have known repeated instances of the disease being caught and propagated by the improper visits of the friends of patients to this house. But this is not the only danger to be dreaded from such visitors; they also, in very many instances, have done material injury by their mistaken kindness of clandestinely conveying improper articles of food to the patients. I have not the least hesitation from what I have seen, and from what some of the patients have afterwards themselves confessed to me, in referring many of our relapses to this cause, which could not be otherwise accounted for. Every thing that could be thought of has been done to prevent this abuse, but it is impossible to prevent it from taking place to a greater or less extent, unless the visits of the friends were altogether prohibited, which, for the reasons above stated, cannot be easily done; or, by instituting examinations, which would be both inconvenient, and in many instances very improper; for the ingenuity that some visitors, particularly females, display in concealing the articles they are conveying into the house is surprising.

(17)

METEOROLOGICAL TABLES
 FOR THE YEAR 1871
 CALCULATED FROM THE
 OBSERVATIONS MADE AT THE
 OBSERVATORY OF THE
 UNIVERSITY OF CHICAGO

1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900

JANUARY.

	Ther.		Barometer.		Attach.	Wind.	
	M.	E.	M.	E.	Ther.		
Jan. 1	32	27	29.792	29.909	35 33	Chble.	Cloudy, frost.
2	32	33	.954	.783	35 33	S.E.	Ditto, fresh.
3	31	33	.472	.258	34 33	E.	Snow, frost.
4	36	38	.102	28.993	35 36	S.E.	Snow, sleet, rain, frost.
5	35	37	.976	29.153	35 37	S.E.	Frost morning, fresh aftern.
6	35	40	.607	.368	35 38	W.	Frost morning, mild foren.
7	42	37	.403	.216	42 40	W.	Showery, high wind.
8	36	38	.514	.761	37 39	N.W.	Frost forenoon, fresh aftern.
9	45	46	.306	.338	42 45	W.	Frost morn. fresh thro' day.
10	47	40	28.991	.005	45 42	S.W.	Showery, lightning.
11	38	35	29.126	28.992	40 40	W.	Rain morn. snow thro' day.
12	32	37	.573	29.240	36 38	S.W.	Morning frost, fresh thro' day.
13	51	38	28.751	.242	47 42	S.W.	Wind high, with rain.
14	38	37	29.314	.104	39 40	S.W.	Wind high, and rain.
15	52	38	28.640	28.804	48 41	W.	High wind, rain, thun. light.
16	34	33	29.251	.101	37 37	W.	Snow, rain, and sleet.
17	32	33	.151	29.160	35 35	W.	Stormy, snow, frost.
18	32	30	.284	.815	54 33	N.W.	Fair, frost.
19	37	39	.964	.953	35 38	W.	Fresh.
20	45	45	.683	.469	42 44	S.W.	Showers.
21	48	38	.141	.651	42 40	N.W.	High wind, showers.
22	44	36	28.994	28.849	42 41	S.W.	Stormy, and rain afternoon.
23	31	31	.958	.958	35 34	W.	Snow, drift, high wind.
24	34	32	.952	29.570	35 35	N.W.	Fresh forenoon, frost aftern.
25	31	44	29.515	29.307	31 42	W.	Frost morning, fresh aftern.
26	40	33	.214	.191	40 36	W.	High wind, fresh.
27	34	38	.254	28.783	36 39	S.W.	Ditto, very cold.
28	32	34	28.927	.883	35 36	S.W.	Snow, frost, high wind.
29	36	34	.998	.998	36 36	W.	Fresh forenoon, frost aftern.
30	36	36	.719	.719	37 37	E.	Showery.
31	34	33	.811	.768	35 34	W.	Frost.

Average fall of rain 2.49 inches.

FEBRUARY.

	Ther.		Barometer.		Attach.	Wind.	
	M.	E.	M.	E.	Ther.		
Feb. 1	33	32	28.425	28.493	35 35	Chble.	Snow morning, frost all day.
2	28	25	.570	.667	31 31	Do.	Clear frost.
3	24	27	.801	.857	29 31	Do.	Snow morning, frost all day.
4	26	25	.877	.877	32 34	Do.	Clear frost.
5	29	32	29.105	29.340	30 32	Do.	Cloudy, frosty.
6	32	36	.620	.425	32 36	W.	Ditto.
7	37	39	.639	.409	36 38	Do.	Fresh, rain afternoon.
8	38	39	.466	.631	38 39	Do.	Clear and cold.
9	37	38	.464	.670	39 40	S.W.	Clear, mild.
10	38	42	.657	.703	39 42	Do.	Cloudy.
11	37	38	.894	.850	40 40	N.W.	Frost, clear.
12	40	42	.717	.618	41 43	S.W.	Cloudy.
13	40	38	.650	.588	42 41	W.	Ditto.
14	32	33	.492	.428	37 38	Chble.	Clear frost.
15	35	36	.643	.643	38 39	S.E.	Frost morning, mild foren.
16	29	42	.506	.428	34 40	Chble.	Cloudy, frost, rain evening.
17	40	46	.599	.468	40 45	S.W.	Cloudy, mild.
18	47	48	.504	.209	47 47	Do.	Ditto, rain evening.
19	44	38	.429	.465	45 42	W.	Rain forenoon, fair aftern.
20	35	36	.519	.394	40 39	Do.	Fair, frost, snow evening.
21	41	33	28.825	28.755	40 37	S.W.	Stormy, rain, snow sleet.
22	34	32	.806	.892	40 37	Do.	Frost.
23	35	37	29.213	.907	37 39	Chble.	Stormy, frost, sleet, rain.
24	32	36	28.925	.812	35 39	N.W.	Wind high, frost.
25	43	39	.792	.995	43 42	Do.	Ditto, rain and sleet.
26	34	32	29.154	29.250	38 37	Do.	Clear frost.
27	35	37	28.853	28.894	37 38	Do.	Frost, snow, &c.
28	36	39	29.140	.541	37 40	Chble.	Frost morning, rain aftern.

Average fall of rain .8 inches.

MARCH.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
Mar. 1	35	30½	28.623	28.645	38	35	N. W.	Snow morning, frost.
2	38½	31½	.897	.980	38	38	S. W.	Clear frost.
3	35	31½	29.194	.484	36	36	Chble.	Ditto.
4	39½	31	28.703	.541	39	39	S. W.	Ditto.
5	38	31	27.952	.555	38	38	Chble.	Cloudy.
6	37½	31½	28.355	.596	37	38	Do.	Snow forenoon, clear aftern.
7	35½	29	.811	.486	36	35	Do.	Stormy.
8	38	29	.164	.430	37	37	N. W.	Clear frost.
9	36	32	.443	.682	38	35	Do.	Snow, storm.
10	38	27	.670	.740	35	37	Do.	Snow morn. hail aft. storm.
11	36	28½	.839	.932	36	36	Do.	Clear frost.
12	38½	29	.453	.458	36	36	E.	Snow forenoon.
13	38½	30	29.232	29.253	37	38	Chble.	Cloudy.
14	38½	30½	.368	.260	38	39	N. W.	Ditto.
15	36½	35	.103	28.986	40	38	Chble.	Rain.
16	44½	32	28.995	29.105	38	42	Do.	Mild foren. cold afternoon.
17	42½	32	29.140	.406	41	40	N. W.	Snow, storm.
18	48	34½	.406	.406	44	40	N.	Showery.
19	45	38½	.463	.129	45	47	Chble.	Fair foren. rain afternoon.
20	45	32½	.238	.328	44	40	N. W.	Snow.
21	43	32½	.190	.109	45	42	Chble.	Clear frost.
22	35½	30	28.869	28.952	43	39	N. W.	Snow, storm,
23	33	30	.806	29.105	41	38	Do.	Ditto.
24	41	29	29.345	.336	39	41	Chble.	Clear frost.
25	40½	29	.286	.390	38	41	N.	Ditto.
26	40	30	.284	.528	39	40	Chble.	Cloudy.
27	41	30½	.961	30.105	40	43	Do.	Clear frost.
28	44½	30½	.939	29.990	40	43	Do.	Snow morn. showers aftern.
29	47	39½	.792	.730	45	45	W.	Clear frost.
30	45½	37½	.881	30.233	43	46	Do.	Ditto.
31	49½	33	30.198	.284	44	47	Chble.	Ditto.

Average fall of rain 1.26 inches.

APRIL.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
April 1	48½	33	30.318	30.318	45	45	E	Fair.
2	45	36	.387	.462	45	43	N. E.	Frost morning, cold day.
3	42½	32½	.465	.332	42	43	Do.	Do. cloudy.
4	54½	29	.242	.105	42	49	Do.	Do. clear.
5	50	30½	29.769	.455	46	45	N. W.	Cloudy, cold.
6	35	30	.202	.405	37	37	N. E.	Stormy, snow.
7	38½	25	.430	.333	36	38	Chble.	Frost morning, clear cold.
8	35	29½	.152	28.892	36	36	E.	Snow foren. rain afternoon.
9	35	31	.782	29.138	38	36	N. E.	Sleet and rain.
10	38½	30	.378	.417	37	38	Do.	Snow morning, clear.
11	37	29½	.320	.530	36	37	Do.	Ditto ditto.
12	40	27	.695	.885	40	40	N. W.	Frost morning, clear.
13	44½	29	.630	.465	41	42	S.	Clear, cloudy.
14	47½	36	.332	.457	43	45	N. W.	Clear forenoon, hail & rain.
15	52	34	.421	.363	46	49	W.	Clear.
16	52	32	29.264	.377	47	46	E.	Clear, very cold.
17	51	34½	.390	.403	39	41	Do.	Cloudy, cold.
18	45½	27½	.489	.489	43	43	Do.	Frost morning, clear, cold.
19	50	27½	.561	.686	43	46	Do.	Clear, cold.
20	49	31	.566	.515	47	45	Do.	Ditto ditto.
21	48½	32	.446	.509	42	41	Do.	Heavy rain.
22	44½	31	.588	.521	43	43	Do.	Clear, cold.
23	39	27½	.521	.492	43	40	N. E.	Cloudy, cold, hail.
24	37	30	.340	.540	40	38	E.	Ditto ditto; wind evening.
25	39	30½	.190	.220	39	39	Do.	Cloudy, cold.
26	38	30	.427	.427	39	40	Do.	Cloudy, rain through night.
27	44	34	.266	.294	40	44	Chble.	Heavy rain, foren. & night.
28	51½	39	.409	.535	46	48	S. W.	Rain forenoon, fair aftern.
29	57	41	.640	.742	48	51	S.	Cloudy.
30	57	41	.653	.504	54	48	Chble.	Mild forenoon, cold aftern.

Average fall of rain .6 inches.

MAY.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
May 1	52	36½	29.280	29.450	49	49	Chble.	Cloudy, some showers.
2	57	38	.578	.560	52	54	Do.	Clear.
3	57	36	.565	.570	53	49	E.	Cloudy, cold.
4	52	32	.366	.516	46	46	Do.	Rain morn. showery.
5	47½	37	.253	.546	45	47	Do.	Cloudy.
6	47	35½	.136	.107	40	44	Do.	Heavy rain.
7	43	35	.121	.209	42	43	Do.	Ditto.
8	47	37	.286	.366	44	45	Do.	Showery.
9	47	35	.505	.242	45	45	Chble.	Fair morn. heavy rain.
10	48	39½	.527	.527	51	52	S. W.	Clear.
11	55	41	.438	.519	55	54	Do.	Mild rain afternoon.
12	55	42	.275	.503	54	54	W.	Mild, showery.
13	55	37	.339	.239	56	50	E.	Cloudy, rain night.
14	56	37	.205	.527	55	55	Do.	Clear, wind high.
15	55	38	.442	.484	51	49	N. E.	Mild foren. rain aftern.
16	52	38	.459	.657	48	49	E.	Rain foren. fair aftern.
17	59	37	29.736	29.761	55	55	S. E.	Clear.
18	54	37½	.880	.994	56	51	E.	Clear morn. cold forenoon.
19	67	36	.894	.853	55	61	Chble.	Clear.
20	60½	38	.985	.990	55	55	E.	Ditto.
21	59½	38½	30.137	30.199	55	55	Do.	Cloudy.
22		*	.103	.176	58	57	Chble.	Ditto.
23			.103	.102	55	57	E.	Clear, very warm.
24			.182	.157	65	68	Do.	Ditto do.
25			.165	.140	68	63	Do	Ditto do.
26			.190	.164	60	60	Do.	Ditto do.
27			.212	.104	58	56	Do.	Ditto do.
28			.102	.102	52	53	Do.	Cloudy.
29			29.994	29.984	53	56	Do.	Warm.
30			.916	.784	58	65	W.	Very warm.
31			.688	.673	64	64	Do.	Cloudy foren. clear aftern.

* These Thermometers are taken down for a short time.

Rain, per gauge, at Nelson's Monument, 1 8 inches. The one at the Observatory is taken down.

JUNE.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
June 1			29.686	29.686	64	64	W.	Clear, very warm.
2			.782	.717	66	65	Do.	Ditto, do.
3			.786	.852	67	67	Do.	Ditto, do.
4			.965	.995	69	66	Chble.	Cloudy foren. thun. aftern.
5			30.104	30.137	65	64	N. E.	Cloudy, warm.
6			.269	.206	60	56	E.	Cloudy foren. clear aftern.
7			.199	.164	60	61	Do.	Clear, very warm.
8			.204	.152	67	66	Do.	Ditto, do.
9			.152	.104	66	69	Do.	Ditto, do.
10			29.994	29.965	74	74	Do.	Ditto, do.
11			.916	.852	77	77	Chble.	Ditto, do.
12			.705	.675	77	74	S. W.	Cloudy, rain afternoon.
13			.469	.518	68	68	W.	Ditto, do.
14	65	48½	.828	.772	68	63	E.	Clear, warm.
15	64	47	.636	.458	62	63	S. W.	Showery.
16	62½	49½	.438	.556	65	63	Do.	Clear.
17	68	52	.370	.592	66	64	W.	Ditto.
18	64½	43½	.466	.442	64	62	S. W.	Clear, warm.
19	58½	46½	.385	.126	59	60	Do.	Showery.
20	50½	45½	.132	.429	61	60	Do.	Cloudy, showers.
21	62½	43½	.476	.270	58	56	Do.	Changeable.
22	60½	47½	.122	.105	61	59	Do.	Clear.
23	62	46½	.260	.490	60	60	N. W.	Changeable.
24	56½	44	.499	.678	60	58	Do.	Cloudy.
25	55½	45	.637	.395	57	58	Chble.	Showery.
26	57½	45½	.676	.676	61	58	Do.	Cloudy, rain afternoon.
27	62	50	.572	.209	65	64	W.	Clear, foren. showers aftern.
28	62½	49	.569	.684	65	63	Chble.	Clear, cold.
29	62	49	.830	.904	62	65	W.	Clear.
30	62½	50½	.762	.775	64	62	Do.	Ditto.

Average fall of rain 2 inches.

JULY.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
July 1	62	49½	29.839	29.858	62	64	Chble.	Warm, clear.
	2 62½	42	.920	.922	63	62	E.	Very warm.
	3 56	42	.932	.766	58	60	W.	Cloudy, rain forenoon.
	4 63	51½	.789	.818	62	65	N. W.	Very warm, clear.
	5 73	51½	.822	.823	66	68	N. W.	Warm, cloudy.
	6 71	49	.872	.826	62	66	W.	Warm, cloudy, shower even.
	7 59	52½	.682	.461	66	61	W.	Showery.
	8 60½	50½	.694	.815	62	62	N. W.	Showery.
	9 65½	45½	.790	.576	62	62	Do.	Warm, cloudy.
	10 60½	50½	.576	.576	62	62	Do.	Warm, clear.
	11 61½	48	.505	.505	62	61	Do.	Warm, cloudy.
	12 55	46	.579	.526	62	60	Do.	Changeable, rain evening.
	13 66	47½	.651	.830	59	63	Chble.	Warm, clear.
	14 70	54½	.972	.984	66	70	W.	Ditto, do.
	15 74	53½	.975	50.262	70	74	N. W.	Ditto, do.
	16 79	59½	29.987	29.983	72	78	Do.	Ditto, do.
	17 83	57	.962	.870	77	72	Do.	Ditto, do.
	18 68½	56½	.870	.704	71	65	Chble.	Cloudy forenoon, thun. after.
	19 62½	52½	.702	.840	65	59	E.	Rainy.
	20 65½	49	.840	.816	59	60	Do.	Clear.
	21 67	51½	.502	.534	59	62	S. W.	Cloudy.
	22 66	54½	.589	.642	61	63	N. W.	Ditto.
	23 72	55	.839	.757	67	72	Do.	Very warm, light night.
	24 72	59½	.509	.566	67	71	Chble.	Cloudy, thunder.
	25 69	48½	.470	.429	68	67	Do.	Cloudy, rain afternoon.
	26 56½	59	.557	.546	65	60	N. W.	Rain.
	27 57	51	.665	.790	59	60	Do.	Showery.
	28 67	45	.955	.955	60	63	Do.	Warm, clear.
	29 68	47	.738	.632	60	65	Do.	Showery forenoon, fair aftern.
	30 68	46	.630	.868	65	65	S. E.	Clear.
	31 58	50½	.714	.612	60	58	Do.	Rainy.

Average fall of rain 5.4 inches.

AUGUST.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
Aug. 1	60	49	29.793	29.893	57	59	S. E.	Rain morning, cloudy.
	2 65	45	.973	.888	60	59	Do.	Clear.
	3 68	50	.759	.759	59	59	S. W.	Ditto.
	4 72	54	.777	.766	63	68	Do.	Cloudy.
	5 75	57	.692	.692	68	70	W.	Warm, clear.
	6 65	50½	.830	.877	66	65	N. W.	Very changeable.
	7 63	49½	.680	.764	63	61	Do.	Ditto.
	8 64	43½	.852	.789	65	61	Chble.	Mild.
	9 66	66½	.798	.759	64	61	E.	Very warm, clear.
	10 65½	46½	.804	.938	61	60	Do.	Cloudy.
	11 63	46½	.998	.998	63	62	Do.	Warm, clear.
	12 63	46½	.999	.998	62	61	Do.	Ditto.
	13 66	44½	50.154	50.203	63	63	Do.	Ditto.
	14 65	50	29.995	29.977	64	63	Do.	Ditto.
	15 58	48	.977	.976	64	61	Do.	Ditto.
	16 58	45	.954	.954	63	60	Do.	Ditto.
	17 58	46	.887	.888	60	57	Chble.	Cloudy, showers.
	18 59	46	.867	.867	58	57	N.	Changeable.
	19 65	45	.872	.865	60	61	N. W.	Cloudy, warm.
	20 65	45	.865	.865	57	59	Do.	Ditto.
	21 59	45	.830	.830	60	59	Do.	Ditto, showers.
	22 59	44	.905	.905	59	61	Calm.	Warm, cloudy.
	23 59	49	.972	.888	60	60	W.	Cloudy.
	24 60	49½	.749	.720	58	58	Do.	Ditto.
	25 59	45	.696	.696	57	57	Do.	Ditto.
	26 60	47	.579	.529	58	59	N.	Ditto.
	27 62	49	.491	.569	59	59	W.	Clear.
	28 60	52	.136	.532	60	60	Do.	Ditto.
	29 60	50	.530	.414	58	59	Do.	Rain forenoon, clear aftern.
	30 50	45	.378	.666	59	56	N. W.	Cloudy, showers.
	31 60	45½	.595	.456	56	60	W.	Clear.

Average fall of rain .7 inches.

56
3

SEPTEMBER.

	Ther.		Barometer.		Attach. Ther.		Wind.		
	M.	E.	M.	E.	M.	E.			
Sept. 1	59	55½	29.154	29.105	59	59	W.	Clear forenoon, rain aftern.	
	2	60	.47	.255	59	57	Do.	Cloudy, warm.	
	3	62½	.45	.641	57	59	Do.	Clear forenoon, showery after.	
	4	60	53½	.462	.470	62	63	Do.	Clear.
	5	62	50	.515	.515	63	60	Do.	Ditto.
	6	59	49½	.260	.286	62	59	N. W.	Showery.
	7	60	44	.468	.584	58	56	W.	Clear forenoon, rain aftern.
	8	59	42	.576	.576	55	56	Do.	Clear forenoon, cloudy after.
	9	59	41	.537	.537	52	54	N. E.	Cloudy, showery.
	10	59	39	.537	.537	50	49	Do.	Ditto.
	11	59	39	.563	.704	49	51	Do.	Cloudy.
	12	59	45	.807	.995	52	54	Chble.	Rain forenoon, clear aftern.
	13	59	41½	.955	.882	52	56	W.	Cloudy.
	14	59	48	.547	.429	58	57	Do.	Showery.
	15	59	44	.734	.136	57	50	N. W.	Ditto.
	16	59	40	.207	.409	51	50	W.	Clear forenoon, cloudy after.
	17	50	40	.692	.781	52	53	Do.	Clear.
	18	59	44	.559	.427	56	58	S. W.	Ditto.
	19	59	45	.225	.282	59	58	Do.	Cloudy.
	20	59	47½	.358	.351	53	52	E.	Cloudy, rain afternoon.
	21	59	43½	.178	28.877	54	58	S. E.	Clear.
	22	59	47½	29.170	29.441	58	59	S.	Clear forenoon, cloudy after.
	23	59	43	.414	.228	57	58	E.	Ditto, do.
	24	59	49	.279	.279	56	58	S. E.	Clear.
	25	59	48½	.325	.305	58	56	S. W.	Rain forenoon, clear aftern.
	26	59	44	.184	.279	56	55	Do.	Rain.
	27	59	45½	.329	.329	53	53	E.	Cloudy.
	28	59	42	.440	.460	55	57	Do.	Ditto.
	29	59	48	.555	.555	55	56	Do.	Ditto.
	30	59	49	.470	.455	55	54	Do.	Ditto.

Average fall of rain 1.8 inches.

OCTOBER.

	Ther.		Barometer.		Attach. Ther.		Wind.		
	M.	E.	M.	E.	M.	E.			
Oct. 1	59	47	29.371	29.371	54	54	W.	Cloudy.	
	2	59	49	.328	.268	55	57	S. E.	Ditto foren. clear afternoon.
	3	59	50	28.995	28.999	58	58	W.	Cloudy.
	4	59	48	.975	.914	56	54	Do.	Showery.
	5	59	42	.908	.908	50	52	Do.	Cloudy.
	6	59	38	.955	29.154	50	53	N. W.	Ditto, frost morning.
	7	59	40	.261	.356	50	51	W.	Cloudy.
	8	59	40	.470	.489	49	53	N. W.	Ditto.
	9	57½	48	.554	.580	56	56	Do.	Ditto.
	10	57½	51	28.994	28.999	58	57	W.	Ditto.
	11	57½	43	29.129	29.129	53	53	Do.	Clear.
	12	57½	40	28.994	29.318	51	50	S. W.	Ditto.
	13	57½	42	.261	.461	52	54	Do.	Showery.
	14	57½	48	.565	.489	56	59	Do.	Clear.
	15	57½	51½	.458	.527	59	58	Do.	Rain.
	16	57½	50	.479	.614	58	57	Do.	Clear.
	17	57½	46	.768	.815	56	56	Do.	Ditto.
	18	57½	46	.711	.619	56	56	Do.	Ditto.
	19	57½	46	.655	.678	59	57	S. E.	Ditto.
	20	57½	48½	.678	.871	55	55	Do.	Rain forenoon, fair aftern.
	21	57½	44½	.922	.922	55	54	Do.	Cloudy.
	22	57½	48	.846	.846	54	51	Do.	Ditto.
	23	57½	43½	.909	.953	51	50	Do.	Ditto.
	24	57½	45½	.973	.952	49	48	Do.	Ditto.
	25	57½	43½	.952	.950	48	47	Do.	Rain forenoon, fair aftern.
	26	57½	45	.912	.840	59	50	Do.	Cloudy.
	27	57½	45½	.788	.840	53	52	Do.	Ditto.
	28	59	46½	.828	.767	54	55	Chble.	Ditto.
	29	59	46	.999	.999	55	55	W.	Ditto.
	30	59	39½	.898	.739	55	56	Do.	Ditto.
	31	59	50	.518	.586	55	52	Do.	Ditto.

Average full of rain 1.1 inches.

NOVEMBER.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
Nov. 1	59	43	29.565	29.469	52	54	S. W.	Cloudy.
2	57	50	.205	.203	55	54	Do.	Clear.
3	59	55 $\frac{1}{2}$	.211	.246	52	52	Do.	Ditto.
4	59	42 $\frac{1}{2}$	.135	.108	50	51	Chble.	Rain.
5	59	40 $\frac{1}{2}$	.232	.303	48	48	S. E.	Cloudy.
6	59	40 $\frac{1}{2}$	.370	.570	47	48	Do.	Cloudy, cold.
7	59	43	.570	.695	48	49	Do.	Cloudy.
8	59	43	.695	.753	49	49	Do.	Rain.
9	59	43	.790	.813	49	48	E.	Cloudy.
10	59	41 $\frac{1}{2}$	.748	.589	47	46	S. E.	Ditto.
11	59	41 $\frac{1}{2}$	.533	.533	48	48	Do.	Ditto.
12	59	41	.442	.442	48	46	S. W.	Ditto.
13	59	41	.556	.556	50	49	S.	Clear.
14	59	42	.152	.152	50	50	Do.	Ditto.
15	59	41	.156	.326	52	48	W.	Clear, mild.
16	59	40 $\frac{1}{2}$	28.987	28.946	49	49	S.	Rain forenoon and aftern.
17	57	38	29.315	29.553	48	45	W.	Cloudy.
18	57	36 $\frac{1}{2}$	.654	.570	45	49	S. W.	Frost morning, clear.
19	57	47	.586	.627	52	53	W.	Cloudy.
20	57	45	.561	.607	50	48	Do.	Ditto.
21	57	39	.551	.551	45	44	S. E.	Clear, cold.
22	57	32	.551	.126	44	45	Do.	Clear.
23	57	32	.194	.391	43	45	S.	Ditto.
24	57	39	.518	.696	47	43	Do.	Ditto, cold.
25	57	34	.690	.638	43	46	Chble.	Cloudy.
26	57	41	.761	.847	51	51	Do.	Ditto, rain afternoon.
27	57	48	.851	.930	53	51	W.	Cloudy.
28	57	48	.930	.901	52	51	Do.	Clear.
29	57	44 $\frac{1}{2}$	.777	.616	51	51	Do.	Clear forenoon.
30	57	44	.507	.507	53	52	Do.	Rain afternoon, cloudy.

Average fall of rain 2.6 inches.

DECEMBER.

	Ther.		Barometer.		Attach. Ther.		Wind.	
	M.	E.	M.	E.	M.	E.		
Dec. 1	57	44	29.453	29.720	52	47	Calm.	Rain.
2	57	34	.621	.290	42	43	W.	Clear.
3	57	34	28.992	29.142	43	42	W.	Ditto.
4	57	35 $\frac{1}{2}$	29.191	.145	41	41	Chble.	Rain.
5	57	33 $\frac{1}{2}$	.145	.142	42	42	S.	Cloudy, some rain.
6	57	33 $\frac{1}{2}$	.108	28.982	43	43	S. W.	Cloudy.
7	57	33	.975	.209	43	43	S.	Ditto.
8	57	33	.381	.168	41	41	S.	Rain forenoon, fair after.
9	57	33 $\frac{1}{2}$	.845	.845	42	40	S.	Cloudy.
10	57	52	29.947	.984	40	40	N.	Frost forenoon, cloudy.
11	57	33 $\frac{1}{2}$	.990	30.184	40	40	N. E.	Clear, mild.
12	57	29	.184	29.993	36	37	W.	Cloudy.
13	57	29	.994	.994	37	36	W.	Ditto.
14	57	26	.971	.986	36	34	Chble.	Clear, hard frost.
15	57	26 $\frac{1}{2}$	.831	.643	35	38	S.	Cloudy, mild.
16	57	33 $\frac{1}{2}$	.709	.709	38	39	W.	Clear mild.
17	57	34	29.542	.542	44	41	W.	Cloudy, mild.
18	57	37	.445	.736	42	39	W.	Clear, cold.
19	57	32	.599	.408	41	39	Chble.	Clear.
20	57	42	.332	.286	45	44	W.	Rain, snow night.
21	57	29 $\frac{1}{2}$	.812	.982	42	40	W.	Frost and snow, morn. clear.
22	57	29 $\frac{1}{2}$	30.154	.228	40	41	S. W.	Clear.
23	57	29 $\frac{1}{2}$	29.996	.854	41	41	S. W.	Ditto.
24	57	29 $\frac{1}{2}$	.779	.757	43	44	S. W.	Ditto, mild.
25	57	41	.476	.461	45	44	S. W.	Ditto.
26	57	38	.370	.526	43	44	Chble.	Ditto, cold.
27	57	36 $\frac{1}{2}$	.870	30.361	43	44	N. E.	Showery.
28	57	34 $\frac{1}{2}$	.308	.374	35	36	N. E.	Hard frost.
29	57	29 $\frac{1}{2}$	.353	.261	36	38	N. W.	Clear, cold.
30	57	29 $\frac{1}{2}$	.176	29.971	37	37	N. W.	Ditto, frost.
31	57	36	30.104	.209	40	41	N. W.	Ditto, mild.

Average fall of rain 2.5 inches.

3

An
posed
which
inform
to ente
rather
convinc
the use
some a
The
various
of near
like all

ACCOUNT
OF THE
PRESENT
EPIDEMIC FEVER.

AN account of the present Epidemic may be supposed to include a great many particulars, on which the nature of our design, and the means of information we possess, will by no means permit us to enter. Nevertheless, though it is our object rather to be useful than amusing, by affording convincing proof of the advantages derived from the use of the lancet in fever, we shall briefly state some account of its appearance and causes.

The persons brought to our hospital were of various ages, from children of three to old people of nearly eighty years of age. As this hospital, like all others of the sort, was designed chiefly

for the relief of the needy, instances of poverty and dejection were of course frequently found amongst them ; but by far the greater number, at least of males, appeared to be Irish or Highlanders, engaged in the numerous public works of this city. The rest were generally artisans, and exhibited no other characters of misery than might have been expected in poor people, whom the nature of their complaint had rendered equally incapable of earning support, and of removing that squalid appearance, which, even in better circumstances, is almost inseparable from disease.

The mode in which this fever makes its attack is very various. Frequently the persons affected continue at their usual employment for some days, with languor, lassitude, aversion to motion, and loss of appetite ; there are besides transient slight chills and flushings, upon which they are attacked with decided rigours, pain of back, and other symptoms of fever. More generally, however, the attack is sudden, the patient feeling previously no unusual sensation : — sometimes when at work ; getting out of bed, to which they had gone in perfect health the preceding evening ; or, in short, after any unusual operation, they find themselves attacked with severe rigours, headach, pain of back, nausea, and sometimes vomiting or diarrhœa. To these symptoms, in a day or two, suc-

ceed pains in different parts, as in the præcordia, limbs, abdomen or chest. The symptoms, of which they usually complained on admission, were as follow: Lassitude, with disinclination as well as inability to move the limbs, particularly after a little rest had intervened: Shiverings, with a sense of cold, described at times as resembling cold water, at other times like some cold animal creeping along the back; some of the patients felt this coldness as more rapid in its progress, and described it as shooting suddenly along the spinal canal: The sense of cold frequently alternated with flushings, and even with sweating fits, and in some cases succeeded regularly in the order of an intermittent. Headach, if not cotemporaneous, was quickly superadded to these symptoms; and this was found in every possible degree of variety. Sometimes the patient moaned much, and referred the pain to some particular part of the head, generally the forehead, whilst the whole countenance exhibited evident marks of the oppression that was going on within; at other times the headach was moderate, but was almost always present in some degree; indeed, there were many persons brought to us who seemed to have no particular complaint, except this in a slight degree, though evidently enough affected with the disease, and after some time visited with its graver symptoms.

54
—
3

But the sensation of pain is by no means confined to the head; the limbs are often affected with severe pains, and even with spasms, which continue very pertinaciously. It will be seen that irregular muscular action forms one of our columns of febrile symptoms; and if to this we add the cases affected with tremor, the proportion becomes far from inconsiderable. Singultus and subsultus tendinum often make their appearance towards the latter periods of the disease, and though commonly reckoned fatal symptoms, were only so in our tabular numbers, in the proportion of 12 out of 33. A moderate bleeding, indeed, such as practised by Dr Mills, and also by many physicians in this city, or even the use of leeches, will remove these pains for a time; but most frequently, after a small interruption, they reappear, with violence little diminished. Along with pains in the limbs, a pain in the loins and back was very frequently complained of. A very common symptom of this class, occurring sometimes in the disease, but oftener during convalescence, was rheumatic pains of the joints, which occasioned considerable annoyance to the patient, and were removed with difficulty. Severe pain of the feet, with slight oedema, was likewise observed in a few cases in the stage of convalescence.

But by far the most serious, though least re

markable train of symptoms referable to this class, is the pains of internal regions, as of the breast, praecordia and abdomen. The former generally occasion some difficulty of breathing, and accordingly seldom escape the observation either of the patient or his attendant, whilst the others, being in the way of no very active function, and always accompanied with diminished sensibility, too often pass without attention being paid to them.

Were it necessary for me to explain or reconcile the very different accounts that have been given of fever at different times, or by different individuals at the same time, I should have no scruple in referring it in a great measure to the following source: That each, with his head full of his favourite theory, has only been attentive to elicit answers from his patient that might illustrate his own views of the disease, or which at least had been suggested by them. Thus, in the same fever, some have found inflammation uniformly taking up its residence in some one or other of the internal organs, whilst others either could not perceive this action to be present at all, or at least considered it as a rare occurrence. It is proper, therefore, that the mode in which these internal pains were ascertained with us, should be distinctly explained; and accordingly it will be found detailed in a succeeding part of this division of our subject.

Heat and dryness of the skin were mostly present in our patients at the date of their admission. Sometimes, particularly in the hot weather of summer and autumn, a copious but irregular sweat bedewed the whole surface, even from the commencement of the disease.

From the great pressure of duty on myself and colleagues, no attention was paid for some time to thermometrical measurement of the heat of surface. Afterwards, however, this circumstance was attended to, and found to average the same as in other fevers, namely from 100 to 103, 104, 106° F. When a relapse took place, the heat of skin was generally increased, often so much so as to exceed considerably that exhibited by it in the original attack. Our tables shew that the relapses almost all terminated favourably; and hence it follows that great heat is a very fallible criterion of the danger of the patient. In a few instances the heat was below the usual standard of health, having been measured as low as 93° F. The heat and pulse, though often, are not necessarily connected, as exemplified in some cases; yet in general, the heat, like the respiration, increases in proportion to the impetus of the circulation. I may add, that the heat was always measured in the axilla, and is therefore generally 1° lower than is shewn by a thermometer placed under the tongue.

A yellowish husky state of the skin was not unfrequently observed, but did not appear to be distinctly referable to any particular state of the liver or other viscus, farther than the diffusion of bile among the different fluids usually indicates; for that such diffusion had actually taken place, appeared to be verified in all the cases of yellow skin in which any trials were made. In all of these the patient's urine distinctly tinged linen cloth or similar substances immersed in it. A measly looking efflorescence on the skin was also occasionally observed, as likewise a duskiness and livid mottled appearance; the former was never present in any case that terminated fatally; the latter occurred more frequently in favourable than unfavourable instances. Miliary and pustular eruptions likewise appeared on the skin, most commonly during convalescence.

In many cases, those peculiar extravasations of blood named petechiae, and in others, though much more rarely, vibices were present; but under the mode of treatment in general pursued, they brought none of those alarming prognostications with them, that have been described by other writers. Many of the patients exhibited an appearance very much resembling petechiae, which were in reality flea-marks, though very similar to the former in appearance.

54
3

Vertigo was a symptom very generally complained of, so that the patient could not but with great difficulty preserve the erect posture. A tendency to syncope, and, in some cases, actual fainting, was experienced on attempting to assume this position. This was observed both during the disease and in convalescence. The vertigo was frequently accompanied with tinnitus aurium, and heaviness of the eyes, or a sense of fulness, or weight, or even of increased bulk of the head. These were often continued after the pain of the head had been removed by bleeding. Throbbing of the temples was a frequent concomitant of these phenomena, as likewise impatience of light, and sometimes of sound.

Besides the pains above mentioned in the limbs and internal organs, there also *very* frequently prevailed, what is called a general soreness, so that the patient could not bear to be touched, in almost any part of the body, without a great sense of uneasiness.

It was not uncommon to find the muscles of the throat and neck affected, particularly behind, and frequently accompanied with some pain on deglutition. In some cases, the tonsils were in a state of inflammation, and in a few of ulceration.

Other parts of the alimentary function besides deglutition were affected: nausea, troublesome retch-

ing and vomiting were frequently present, pain of the epigastrium, great irritability of the stomach, with instant rejection of the food or medicines thrown into it,—a circumstance more frequently observed in females than males. The bowels were generally slow, though readily answering to the medicines exhibited to accelerate their action. There was diarrhœa in many, and a tendency to dysentery in some cases that came under our notice. In many, the involuntary evacuation of stools and urine took place, and that in a considerable number of the severe cases that terminated favourably, as well as in many of those which proved fatal. On inspecting the tables, I find, that of 42 in whom this symptom occurred, 18 terminated in death.

The appetite was always impaired, though often returning very rapidly after the crisis of the fever.

The thirst was always considerable, often very urgent. The tongue exhibited a great variety of appearances in different individuals; and, indeed, though the changes from the state in which it appeared during the vehemence of the fever, might bear some steady relation to the general improvement of the case, still that state itself was exceedingly various in various individuals. In some, it was white and dry, or dry with a brown streak in the centre; in others, the same colour was combi-

ned with moisture. In many, the fur adhering was of a greyish colour, and apparently viscid. Sometimes it presented a glazed appearance, or was slightly swollen, with little or no appearance of fur on its surface, but of a dark-red, brown, or yellowish appearance, and not unfrequently tremulous, and with difficulty protruded; besides these appearances there was often a bad taste in the mouth.

The pulse was in almost every instance accelerated,—from 90 to 130 or 140; occasionally as high as 150 or 160 beats in a minute, and sharp; very rarely soft in the beginning of the disease. In many, it was full and strong, and almost always rose considerably after bleeding. Towards the period of crisis in some few individuals, the pulse was irregular or even intermittent, and this not unfrequently was observed to continue for some days in the convalescence, though it had been perfectly regular during the course of the disease. In other instances, the pulse, during the first days of this period, was found remarkably slow,—in one case as low as 38 beats in a minute, in several others 40, and in many not exceeding 48 in the same time. As the patients regained strength, it rose gradually to its natural standard.

Respiration was in very many cases much affected; sometimes there was an urgent cough with or without expectoration, exciting pain in different parts of the thorax, and in many cases pro-

pensity to vomit. At other times it was excessively rapid, even after the pulse had been almost reduced to its natural velocity after an effective bleeding. The cough was frequently accompanied by hoarseness, and was often excited by the attempt to take in a full inspiration,—an attempt, indeed, which very generally produced pain or coughing : occasionally, however, hoarseness was not accompanied by cough. Some also complained of a sense of stricture across the chest.

The countenance was in general anxious and oppressed, so that whoever had combined this symptom with the general debility, and typhomania (which was by no means unfrequent as the prominent characteristic of the fever,) might easily have exaggerated it into a formidable picture of typhus gravior. The dusky and shrunken appearance of the countenance, however, had either frequently gone off before the patient reached us, or never had been present, as the face often appeared flushed, and the eyes suffused.

In some cases epistaxis took place to a considerable extent.

The moving powers were very much depressed, so that many persons could scarcely turn themselves in bed. Towards the close of the disease, floccitation or picking of the bed-clothes, tremors, and subsultus tendinum frequently took place ;

but whether these irregular motions are, strictly speaking, referable to depression of the moving powers, may be matter of question, as it is not unlikely that they depend on the disorder of functions of a very different class of organs,—the nervous system.

The mind was generally more or less affected; and though, in many, the delirium was of the species named typhomania, in others it was furious and wild. Many raved incoherently in the progress of the fever, particularly during the nighttime, who appeared very sensible at first; whilst, on the other hand, it was not unfrequent to find a person affected with high delirium on his reception into the hospital, become perfectly calm and manageable after losing a quantity of blood.

The sleep was in general bad, or entirely banished, in which latter case the sick passed the whole night in a state of agitation and restlessness, though they felt some inclination to slumber towards morning; and at this period it was observable that delirium of every species had a tendency to become milder, or disappear altogether.

Troublesome dreams were frequently complained of, and these, though not a favourable symptom, certainly never appeared to me to indicate any thing farther than the disturbed state of the sensorium existing at the time. This disturbance

was so common, that I have often seen patients roused from an apparently sound sleep deny that they had ever closed their eyes during the whole night.

The mental perturbation manifested itself in a variety of forms. Of these the simplest was perhaps that just described, of frightful dreams ; stupor, dulness, or inattention to external impressions was the next step in the series. In this state, questions were slowly and reluctantly answered ; sometimes, however, accurately enough, though hurried, and in a tone sufficiently shewing the patient's aversion to communicate. Oftener, however, the answer, coherent at first, was broken off in the middle by a relapse into the stupor above described ; and if they continued to speak, the tone passed into a mutter, and the words became perfectly incoherent and unintelligible. A higher degree of the same perturbation was, when the understanding seemed entirely lost, so that the sick did not at all comprehend what was addressed to them, or did not in the least notice it. This state was not always connected with stupor and drowsiness ; for some so affected, nevertheless muttered much to themselves. Absolute delirium, as previously mentioned, constituted the highest manifestation of the morbid condition of the sensorium.

51
3

The external senses were frequently affected. Intolerance of light was a familiar complaint ; it was more frequently indicated by a suffused and dull than by a bright and watery eye, though both states were occasionally observed. The redness and suffusion of eye were generally connected with a great determination of blood to the head. Some instances of diplopia occurred, and many other varieties of disordered vision.

The sense of hearing was seldom morbidly acute ; but deafness, on the other hand, was not unfrequent. I never could observe that it indicated any thing either good or bad respecting the progress of the disease. It commonly continued for some time during convalescence, and went off with the other symptoms when the patient was restored to health.

In the sense of smell no change was observed. That of taste, as we have already had occasion to mention, was much depraved, particularly in the first days of the fever.

With regard to touch, it must be remarked, that there seems to have prevailed among medical men some fallacy in judging of this particular. That general feeling of soreness, of which patients almost universally complain, they have erroneously referred to a morbid condition of the senso-

rium, and particularly to a depravity of the sense of touch, when in truth it is principally owing to the morbid state of the parts themselves, probably to over-activity of their blood-vessels, as I have frequently seen this feeling remarkably relieved by withdrawing a quantity of blood, often during the time it was flowing from the vein.

The progress of emaciation was very rapid, producing great extenuation of the system in every instance, the solids always assuming that lax and flabby feel which is peculiar to severe or protracted disease. This rapid absorption was sometimes counterbalanced by a contrary action, namely, inflammation, and the formation of abscesses in different parts. These were generally small, and in some individuals receded without coming to suppuration. Carbuncle was observed in several instances; but the abscesses did not shew any tendency to terminate in sphacelation.

Gangrene, indeed, was a very rare occurrence; and though now and then an instance of sloughing would appear in parts little subjected to pressure, it was, however, extremely rare in the extremities, as in the toes or fingers. We learn from Dr Graham of Glasgow, that this symptom has been not unfrequently seen in the Glasgow Infirmary, but it certainly has seldom occurred, comparatively speaking, with us in this city. When-

51
3

ever gangrene took place, if the patient survived, it very much retarded the recovery. Indeed, in four cases out of six so affected, in the tables, the disease proved mortal. The most usual form in which it appeared was that of sloughing of the back, or of those parts on which pressure from the recumbent posture was greatest. In this manner the sacrum in several instances became livid, though it did not run on to sphacelus.

With more or less of these symptoms the fever proceeds to the termination of its course, which is commonly from one to six weeks. There was no particular day, however, except the seventh and fourteenth, on which the disease seemed disposed to undergo a crisis, though, when the change did happen, it took place very generally on those days commonly accounted critical. Nay, what was more remarkable, and is a circumstance which, as far as we know, has not been observed before; when relapses took place, they, in by far the majority of cases, happened on critical days, counting from the day when the patients were marked *convalescent*. The fact may be easily ascertained by examining the tables delivered in this work, which will also be found to exhibit much the greater number of crises as occurring on critical days. Thus, of the 743 cases recorded in the tables, 467 had their crises on critical days, 95 on days which

could not be ascertained, and the remaining 181 on days that are not reputed critical. Except in those cases that were of many days standing before their admission into the hospital, the crisis was seldom long in taking place where bleeding was employed ; and hence it is that such a large proportion of crises are to be found in the tables under the fourth, fifth and sixth days of the fever, amounting to 132, or nearly one-fifth of the whole patients admitted. After bleeding, the convalescence went on at a rate rather more progressively than was observed when that evacuation had not been produced. Most frequently no evacuation marked the crisis ; but when any did make its appearance, it most generally took place by sweat, but in a few instances by diarrhoea, epistaxis, and great uterine haemorrhage. Pustular eruptions, parotids, carbuncle, were also occasional, though still rarer critical evolutions of the fever. In one solitary example suppuration of the internal ear took place, along with cynanche parotidea. In some instances a distinct febrile exacerbation was seen to mark the period of crisis ; in others an increased flow of urine ; nay, delirium on the night on which it was about to happen, palpitation and irregular arterial action were also observed to precede. Many of our patients became affected with a great degree of drowsiness about

5/10
this time, which sometimes continued for several days during convalescence. I may here mention that there were several of our patients affected with ophthalmia and iritis; but these I have not observed to be critical; they in almost every instance happened during convalescence or recovery. The average date of crisis was about three days and a half after their admission, and that of convalescence rather less than six days; whilst the total average time of continuance in the hospital did not exceed twenty days.

That no confusion may take place as to the acceptation of the terms I use, it seems proper to state, that by the term *crisis*, I understand a period of the disease, often accompanied by some remarkable event or change in the state of the patient, from the occurrence of which, if the patient survives, the violence of the fever gradually declines. The term *convalescent*, on the other hand, I use to signify the time in which the patient is free from every symptom proper to fever; and when the secretions, excretions and other natural functions, are comparatively healthy. *Convalescence*, the intermediate stage betwixt these two, and the period intervening betwixt the time when *convalescent* and dismissal from the hospital, I denominate the period of *recovery*.

Some of the excretions, as the urine, under-

went very little variation in the fever, so that, excepting the occasional biliary tinge, and a few rare examples where hæmaturia took place, in reality the morbid changes in it were generally confined to convalescence, in which period it frequently deposited a light straw-coloured sediment. These remarks, however, extend only to the quality of the urine; as symptoms of dysuria with or without pain, but always with great irritation, took place, producing accumulation of urine in the bladder, which required the assistance of the catheter to carry it off. Attention to the state of the bladder, I hold to be of the highest importance, as I have seen very unpleasant consequences result from its neglect, or from too much confidence in the report of nurses on a subject in which they are so apt to be negligent. Indeed, in every case of advanced disease, the state of this organ should be as carefully and constantly examined as the pulse itself. Some of the other excretions took on their most alarming forms in the convalescence; for it was most commonly in that period that the bloody sputa and bloody stools described in some of the cases took place, most frequently during the first two or three days after crisis: they were accordingly considered symptoms of very little consequence.

The mode in which many of the symptoms

above mentioned were ascertained, deserves particular consideration, as we have already hinted that many of the discrepancies observable in the descriptions of fever that have been delivered to the public, are referable to variations or peculiarities in this particular. To avoid any ambiguity on our part, we subjoin the respective modes in which these symptoms were observed and recorded, merely premising, that with every confidence in their accuracy, we have to lament the paucity of minute information in the reports. Although the knowledge which such information communicates, is often thought to be useless to the actual practitioner, and an over attention to minutiae has oftener misled the medical world than any other circumstance we are aware of, yet they form a curious series of pathological facts, which must always be interesting to the student of the animal economy, and are the very clue by which his steps must be guided in the labyrinth of the philosophy of causes. In this institution the principles of economy, so strenuously recommended, and vigorously carried into effect by the excellent physicians and managers, left little time for supernumerary observations; and, besides, no design to publish these cases having been formed till lately, those particulars only were noticed, which might direct the physicians in their treatment. It

is thus that all the minute and negative details which constitute the condition of convalescence and recovery are often passed over with very little notice.

Sensations of headach, vertigo, tinnitus aurium, or other symptoms within the head, were always noted on the report of the patient himself. Delirium and mental aberration of every description were ascertained in one of three ways ; by the report of the relations or other persons that introduced the patient to the house ; by report of the night-nurses, when the affection took place during the night ; or, lastly, by myself, or the other resident medical officers, as we all reside in the house constantly. By the regulations, both of this house and of the Royal Infirmary, the nurses have always orders to report any untoward symptom, or indeed any change in the symptoms that may occur ; and to obviate any possible neglect of this duty, occasional visits are made to the wards at uncertain periods ; and these desultory visits are instituted in addition to three regular visits performed daily, as I have already mentioned in the account of the regulations of the hospital, viz. one by the physicians at one o'clock, and two, one morning and evening, by myself and the other medical attendants. By such an arrangement, it is evident, that no symptom can long subsist without no-

tice,—an advantage which I consider as inestimable in the cure of fever. That maxim is not more true than ancient, “ eum medicum, si artifex est, idoneum esse, qui non multum ab aegro recedit.”—CELS. III. IV.

The indications of the countenance were almost always taken down at the time of the report, when the other changes that had taken place through the day were likewise noticed. Of course, their accuracy must, in all cases, whether of fever or other disease, depend on the *tact* of the individual observer. For though we are unwilling to believe that any thing like inspiration exists in medicine, yet we are perfectly persuaded that many appearances, quite familiar to the practical man, and highly essential in forming his prognosis, occur in the countenance, and indeed in the whole system, during the course of the disease, that no person, at least no ordinary person, can find language to express. They are, no doubt, simple and natural changes in the state of the eyes, skin, and muscles that compose the face; but at the same time so complicated and compounded of simpler expressions, of which no language affords a nomenclature, that every person of prudence finds himself constrained to announce them rather by the changes in the system which they indicate, than by terms that should express the particular changes in the

organs described. When the reader, therefore, in the annexed cases, meets with such terms, as, "look anxious," "countenance oppressed," "countenance improved," &c. &c. it is under this view that they are to be understood.

The general pains and soreness were often mentioned by the patients themselves, either in this language, or by other expressions indicating the same fact, which it would be useless here to transcribe.

The pains of internal organs were generally ascertained by pressure, such as would have been *felt* in health, but would not have produced *pain*. Sometimes, indeed, the patients themselves complained of pain in distinct region, as in the abdomen; but very frequently the tenderness of those parts would have been passed without notice, had no pressure been made by the medical attendants. It seemed really indifferent in what position the patient was placed for examination, though the recumbent posture, for obvious reasons, was generally chosen.

Full inspiration never failed to indicate some disordered condition of the organs of respiration; and, indeed, these were often manifestly in a state of disorder, particularly of oppressed or accelerated action. Such, however, was the deranged condition of the sensorium in this disease, that many

patients, whose replies were perfectly correct in every particular, nevertheless did not appear to have once experienced uneasiness in any internal organ, except the contents of the cranium; and we should think this single circumstance a sufficient answer to those who maintain the individuality of fevers, because they did not observe (which means, because the patients did not,) some particular symptom of local pain that has been noticed in other cases. Indeed, without *active* examination on the part of the practitioner, we should consider histories of fever as little else than a narrative of the morbid feelings of certain individuals, modified by a depraved sensorium, labouring at the time under every degree of derangement from torpor to delirium.

In our observations on the pulse, the terms have a constant reference to the standard of HEALTH. Much confusion, and many absurd terms have crept into medical description from inattention to this circumstance, so that it is sometimes no easy matter to ascertain the meaning of the terms employed. I have lately been favoured with the perusal of a paper on fever, bearing the marks of a sensible and steady practitioner; but in which, I was not a little staggered to meet with a pulse "soft but incompressible!" To what standard these terms of "soft" and "incompressible" refer

in this instance, I am quite at a loss to imagine; yet many other examples, quite as unintelligible, are every day to be met with. By a *sharp* pulse, the only term used in these cases respecting the pulse that seems to require explanation, we understand that pulse which gives a smart stroke to the finger, differing from the *hard* pulse only in the short duration of its impulse, and the small portion of the pulp of the finger that it seems to occupy during its impression. They are frequently combined, and very readily pass into each other, and seem perfectly characteristic of the close alliance between febrile and inflammatory action.

We have repeatedly been obliged to anticipate our opinion of the identity of this disease with former epidemic fevers in this and most other countries. The nosologist is a kind of second-hand discoverer, and not unfrequently he even considers himself entitled to all the merit of an original. This alone may furnish an easy explanation of the numerous attempts that have been made to divide fever into many varieties of species and subspecies,—each individual who added another variety insisting on some minute particular in the course of the disease, and magnifying it into a base sufficiently ample whereon to found his new division. The author just quoted remarks, that diseases are not cured by eloquence, but by reme-

dies ; yet it is to be lamented, that the former has ever had a powerful influence on the administration of the latter. Whenever a theory of fever has been founded on some plausible train of symptoms occurring in that disease, and has been dressed up in elegant and imposing language, with a due proportion of analogies, possessing an apparent share of probability, it has been in vain that all the common sense and plain observation of the day has been opposed to it ; the delusion has uniformly proceeded till opposed by some other bubble equally empty and fragile, but rendered more captivating by the additional charm of novelty. Notwithstanding all the caution and scepticism supposed to be instilled into the mind of the modern physician along with the first principles of the inductive philosophy, there can be little doubt that a theory of fever, squared to our present notions of the animal economy, and not liable to any very manifest objection, would be received with as great applause at the present moment as were in their times the theories of Boerhaave and Cullen. Human nature, as well as continued fever, is at all times the same ; and the pleasure of being able to predict, reason and explain *à priori*, will ever be found too high a temptation for its weakness. How much more powerful the fancy than the understanding ! As long as this

is the nature of man, it is vain to look for an explanation of the changes that have taken place in the descriptions of fever, in the atmosphere, introduction of certain articles of diet, or trifling and gradual improvements in cleanliness and ventilation introduced into civil society. We shall afterwards see how readily the character of the PESTIS BELLICA of the late war varied according to the views entertained in Germany of its proximate cause; and a slight inspection of the works of Sydenham will demonstrate how effectually his theory of epidemic constitutions served to conjure up varieties of epidemic fever, which were quite unobservable to any one but himself and followers. Huxham seems to have been very willing to earn the praise which Sydenham held out to any one who should farther cultivate this subject, but has left it in still greater obscurity than his illustrious predecessor. The other theories that have been advanced respecting fever, though less generally received, and indeed less fallacious than this, have each had their share in giving rise to much fancied variety in epidemics. The biliary theorists, much like the present gastrists on the Continent, saw nothing but *bile* in the skin, stomach and *fæces*; a phenomenon which we might see to-day also, if we chose to consider a trifling occurrence as the most remarkable event in the disease. The late

supporters of *debility* observed if the tongue trembled, or was not readily pushed out of the mouth; and a tremor of the hands was to Pringle a diagnostic symptom of the worst typhus gravior or jail fever. Whoever shall hunt for such puerilities will find them as abundant in the present fever as they will in any other disease, where much weakness or perturbation of the nervous energy exists. The believers in putridity find a host of indications of their favourite ideas. Fetid discharges, dark-coloured fur in the mouth and on the teeth, vibices, petechiæ, gangrene, carbuncle, and abscesses, have all been occasionally met with, though, as they never were productive of much alarm, we have not dwelt upon them particularly, nor suffered them to disturb our other indications.

After all, the dissimilarity of this fever to others, and particularly its possessing a more inflammatory character, may be matter of parental affection to some of our readers; and as it is an opinion that can hardly produce any mischief in their practice, we shall not further insist on their relinquishing it, but rather proceed to deliver our sentiments as to the identity of the epidemic of Edinburgh with that of other places.

The fever of Ireland has been admirably described by Drs Kidd and Cheyne, the former in the Edinburgh Medical and Surgical Journal, the

latter in the Dublin Medical Reports. The excellent little work of Dr Bateman likewise affords a clear and accurate delineation of the form it assumes in England. These I have read with attention, and have besides seen histories of the present epidemic from different parts of the empire,—one very ably drawn up by Dr Adam Hunter, physician to the House of Recovery, Leeds, a gentleman whose professional acquirements and correct judgment eminently qualify him for that situation. The picture which he delineates of the disease, answers trait for trait with the one we have above delineated, and forms no exception to my general conclusion from the other descriptions, that it is the same epidemic which rages every where over the empire, and that the trifling variations which may be noticed in these authors, are entirely to be attributed to local or other circumstances quite unconnected with the fever. We shall afterwards have occasion to state our reasons for considering it the same as has always prevailed, particularly during the winter months in this kingdom; and to refer, with Professor Hufeland, its supposed diversity rather to the *mental* revolutions of practitioners, than the actual revolution of disease.

but evidence was afforded every day. I was as clerk to Dr Hamilton in the Royal Infirmary, in the course of four months, my three co-

OBSERVATIONS

ON THE

CAUSES OF THE EPIDEMIC.

ALL epidemics in this climate seem to be propagated by a contagious effluvium arising from the bodies of the sick, or other matters named fomites, which they have infected in the course of the disease. These substances are generally bad conductors of caloric, and from this property are mostly such as are employed about the beds and persons of the sick, though it must be confessed that other substances, of a very different nature, seem frequently to become the medium of communication. Of the contagious nature of the disease under consideration, abundant evidence was afforded every day. When acting as clerk to Dr Hamilton in the Royal Infirmary, in the course of four months, my three co-

leagues, two of the young men in the shop, two house-maids, and thirteen or fourteen nurses caught the disease, and the matron and one of the dressers died of it. Since I left the Infirmary, three more of the gentlemen acting as clerks, one of the young men in the shop, and many more of the nurses, have caught the infection, but the number I do not know. In this hospital (Queensberry House), since it was opened on the 23d of February 1818, my friends Messrs Stephenson and Christison, the matron, two apothecaries in succession, the shop-boy, washerwoman, and thirty-eight nurses have been infected: four of the nurses have died. With the exception of two or three nurses who have been but a short time in the hospital, I am now the only person in this house who has not caught the disease, either here, or at the infirmary, within the last eight or ten months. Several students whom curiosity led too near the persons of the patients, might be adduced as additional evidence. When it begins in a family, we always expect more than one of them to be affected; I could mention instances of four, five, six and seven being sent to the hospital out of one family; eight, nine and ten, out of one room; twenty and thirty out of one stair, and thirty and forty out of one close; and this all in the course of a few months. But I believe the

statements I have already made will satisfy most inquirers on this subject. Being once affected with the disease, seems to afford little if any protection against a second or even a third attack, and that too in the space of a few months. I have seen many instances of a second attack within the last twelvemonth; but have only kept a note of the cases of my friends and colleagues at the Royal Infirmary and here, and the domestics belonging to this hospital. Messrs Stephenson, Christison, Cameron and Wood, our shop-boy, and nine nurses, have had two attacks, and three of the nurses have had the disease a third time. I believe also that several of the nurses at the Royal Infirmary have had a second attack, but of this I have no note. Out of the 743 cases which I have reduced to a tabular form, 327 of the patients were sensible of having been exposed to the contagion of fever, and attributed their ailments to this cause; 43 were cases of relapse, and the cause of the primary fever was neglected to be inquired into; a considerable number of them had their primary fever cured in this hospital, or at the Royal Infirmary, but had relapsed, either by leaving the hospital too soon, which they not unfrequently do, decidedly against the injunctions of the physicians, or by making too free with themselves after dismissal. In 68

cases, cold was assigned as the cause : this was sometimes said to have been combined with fatigue, moisture, or both. In 154 cases, the patient's report of the cause of the disease was not noticed in the journals, and 156 could assign no cause whatever ; some seemed in circumstances that almost precluded the idea of contagion, were it easy to find a condition perfectly secure from its action ; but this we are persuaded is really a matter of difficulty, as the ordinary intercourse of society, and even the act of passing along the streets, may expose the most guarded to its action, by coming in contact with persons whose clothes are imbued with contagious matter : Nay, passengers in coaches have been said to suffer from infected persons having been previously conveyed in the same machine : the same is said of chairs and similar conveniences. Who can answer for the intercourse of their servants when removed from their presence with the lowest and most impure part of the populace ; yet through *their* hands do all the necessaries of life pass to their superiors, and at times, doubtless, imbued with the most virulent contagion. Without this supposition, one can scarcely conceive how females in the upper ranks should be seized with contagious fever, though their indolent and sedentary habits seem to insulate them from every known

cause of the disease. I do not mean by this to infer, that no other cause than contagion exists; but it appears to me, that in seasons where epidemic contagious fever is prevalent, it is much more difficult to explain why so many escape being affected, than why some should not be aware of their persons having been exposed to contagion.

Another cause of fever which has been commonly assigned is cold,—a cause of the operation of which many of the patients themselves are firmly persuaded. It seems probable enough, that a person with the matter of infection latent in his system, shall, on exposure to the debilitating effects of cold, be seized with fever; and as we know by experience that relapses are often brought on by cold, it is not unlikely that this powerful agent may occasionally produce the original disease. For the reasons just given, however, I must seriously enter my protest against admitting the patients' report of the origin of the disease, for the real cause; or deducing any systematic or statistic conclusion from the account they deliver. Independent of the motives, real or imaginary, which influence them to falsify in their replies, their habits of inattention to the minute circumstances which frequently give rise to contagious fever, often after a considerable lapse of time, is always a sufficient explanation of their

being unable to refer their disorder to another cause than cold, which, with the vulgar, great and small, of this island, has ever been reported the exciting cause of almost every disease with which they are affected. Indeed, unless the patients were medical men, or the cause of contagion exceedingly obvious, one can hardly see how their recollections should so far bend out of the course which they ordinarily pursue, or how the mind should retain those feeble and evanescent impressions, which nature, for the wisest purposes, has destined it, by a law of our formation, after a time to forget. It is thus that we frequently find great difficulty in ascertaining the cause of hydrophobia, though well known in general to proceed from the bite of a rabid animal; yet the unfortunate patient has often entirely forgot this marked circumstance, provided no alarm was excited by it at the moment. In short, the cause of a disease is often one of the million of evanescent events, which every day present themselves to the sensorium to be observed and forgotten.

Cold combined with moisture; intemperance; intemperance combined with cold or moisture, and fatigue, or inanition, whether separate or combined with any or all of these, are causes often assigned by febrile patients. These are states generally connected in a greater or less degree with pre-

sent suffering, and therefore distinctly remembered; but for the reasons above stated, we are rather reluctant to admit them as frequent causes of fever. That they induce relapses we have no doubt; but a full meal, or a sharp walk for a few hundred yards frequently produces the same effect.

One general cause has been assigned, with great confidence, by some writers on the present epidemic, though others seem rather to doubt of its existence as such. I allude to famine, a circumstance which, from the most early times, has been observed in alliance with epidemics, and an oracular *exposé* to the same effect may be seen in Thucydides. That it has had some share, direct or indirect, in the production of the disease, I can hardly doubt; yet I must confess that no instances of fever which could be traced to this source ever fell under my notice. Two friends of mine did indeed meet with a case of disease in which hunger seemed to have a principal share; but whether it was typhus fever, or mere prostration of strength from inanition, they declare themselves unable to decide. In this town, the fever, as I am informed, was observed prevalent *before* the scarcity took place; and it seems curious that the inhabitants of great manufacturing towns, who must have suffered most from the late general distress, should be found to be the last to become affected with fever.

From the report of Dr Hunter of Leeds, it appears, that the disease even yet is not very general in that large town, and that when it did begin, it originated very distinctly from contagion. At Glasgow, its appearance was perhaps later than here; and at Dundee, later than at either place. Poverty, filth, and defective accommodation, must always operate powerfully in propagating the disease when it has once commenced; but as the editor of the Edinburgh Medical and Surgical Journal truly remarks, there were certainly no such miserable or revolting examples of starvation to be seen in Edinburgh, as have been described in Ireland. (See Dr Kidd's paper, Edin. Med. and Surg. Journal.) At any rate, starvation can only be considered as a predisposing cause, and can never account for the appearance of the disease amongst the higher orders.

It has been already remarked, that a great number of the febrile patients received into Queensberry House consisted of labouring Irish, who, without doubt, by their habits of filth and debauchery, have tended much to spread the disease, if not to introduce it in its present form into this city. Their migratory and mendicant habits tend much to establish the probability of the latter opinion, as the present epidemic, no doubt, first made its appearance in Ireland, and very soon after

was noticed in this town, where it still continues to prevail very much amongst that branch of the population. I say branch of the population, because, of late years, the distresses in Ireland, and the comparative ease of procuring employment in Scotland, have filled with low Irish all the little offices and employments usually occupied by the Celtic part of our own population; and this change has been so sudden and so rapid, that twelve years ago, the sight of an Irish porter or lamp-lighter was considered as matter of curiosity. This I do not state upon my own authority or recollection, but upon that of a friend who has long watched the tide of population in Edinburgh, with its multifarious variations and bearings. The exertions, however, of the Society for the Suppression of Begging; of the Magistrates; and other public-spirited individuals, have prevented the wives of Irish labourers from doing much mischief in this town, by their practice of going out to beg while their husbands are at work; but, in some of the country districts, where absolute prevention is impossible, it is suspected that the fever has been propagated by their means. It is evident, however, that this mendicity can act only by transferring the contagious matter from one house to another, and therefore is only to be classed with the other innumerable ways of propagating contagion.

REVIEW

OF THE

TABLES.

THE foregoing general account has been drawn up from observation on nearly 2000 cases of the present epidemic, which I have had an opportunity of seeing either here, or at the Royal Infirmary within the last 15 or 16 months, and to upwards of 1000 of these it has been my particular duty to attend.

But a general description of a disease, however carefully drawn up, gives but a vague and unsatisfactory idea to the reader on many points connected with it. I have therefore, to obviate this as much as possible, thrown into a tabular view, a specimen of which will be seen Table No. 1, Appendix, NO. II., the cases of 743 patients, either dismissed cured from, or who have died at this hospital, since it was opened on the 23d February 1818, up to the 1st January of the present year. These Tables I meant to have published at length; but as they would have been both expensive and volu-

minous, I have thought it better to give the most interesting of the information contained in them condensed into smaller Tables. As it seems to be the opinion of some physicians, that many circumstances connected with fever vary considerably with the season of the year, I have generally drawn up the Tables, first by months, then by quarters, giving lastly the general average. The spring and winter quarters are of course incomplete, the first comprehending only the five last days of February, and the months of March and April; and the winter quarter, as I have called it, includes only November and December. I have thought it better to make this arrangement, in order that we might get the summer and autumn quarters complete, than to count by quarters from the opening of the house,—conceiving that what is given of the spring and winter seasons will be sufficient to satisfy most of my readers, who imagine that in these seasons the disease shews any peculiarities. Knowing that tables are, in general, very little consulted by many of the profession, I shall here give the sum of the information contained in them, in a form less artificial, referring such as are more curious to the Appendix.

I have been induced to give these minute tabular views, more from a wish which several friends have expressed for such information, than from

any conviction of my own of their utility. Indeed, the modern fashion of throwing insulated facts into tables, in order to ascertain their relative frequency, ought not to be viewed without some share of distrust; for the predominance of this or that circumstance often depends on causes that have no natural or fixed relation to the points which these tables are meant to establish. The fact is, that an infinite number of causes operate in augmenting or diminishing the numbers in such tables, which do not act constantly or uniformly. Many of them indeed never act twice; and the numbers they produce, instead of being exponents of the state of the disease, are frequently nothing more than the expressions of the joint operations of causes naturally unconnected with it, on the peculiar situation of the writer or the patient. A good illustration of the truth of the above statement is, that it very often happened, that in those months in which we received the greatest number of mild cases into Queensberry House, and had fewest deaths, they had the greatest number of severe cases and most deaths in the Royal Infirmary, and *vice versa*; though the patients were carried indiscriminately to both, and the hospitals scarcely 800 yards distant from each other. Being aware of this circumstance, I have been very cautious in drawing any general conclu-

sions respecting the variations of the present epidemic, from the numbers stated in the Tables, though my readers may observe considerable differences, in different months, as to age, sex, mortality, or particular trains of symptoms. I may however state, that since it came under my observation, its type has undergone little or no variation in either houses, and certainly no change has taken place to warrant a change of practice.

Without farther preface, I shall proceed to a review of the Tables, trusting that the importance of the subject we are treating of will be an excuse for any recapitulation I may make of what has already been noticed in the general description; and I have only to assure the reader, that the greatest attention has been paid to render the Tables I have given as accurate as possible; but it may easily be conceived how difficult it is to arrive at perfect precision in such an undertaking.

Of the 743 cases mentioned, and which are now before me, 319 were males and 424 females, nearly in the proportion of 4 females to 3 males*.

Their ages were as follows: There were 62 un-

* I may state, that the fever patients admitted into the Royal Infirmary during the last year, bore nearly the same proportion as to males and females: For of 825 dismissed cured, or who died, 352 were males, and 473 females.

der 10 years of age ; 199 from 10 to 20 ; 205 from 20 to 30 ; 124 from 30 to 40 ; 91 from 40 to 50 ; 37 from 50 to 60 ; 23 from 60 to 70 ; and 2 upwards of 70. (See Table NO. 2. App. NO. II.).

The youngest patient admitted was $2\frac{1}{2}$ years old, and the oldest 76.

Of those patients who suffered a relapse, 5 were under 10 years of age ; 34 from 10 to 20 ; 45 from 20 to 30 ; 26 from 30 to 40 ; 18 from 40 to 50 ; 4 from 50 to 60 ; and 1 from 60 to 70. (See Table NO. 3. App. NO. II.).

Of those patients whose cases ended fatally, 2 were under 10 years of age ; 2 from 10 to 20 ; 7 from 20 to 30 ; 7 from 30 to 40 ; 8 from 40 to 50 ; 6 from 50 to 60 ; 1 from 60 to 70 ; and 1 upwards of 70. (See Table NO. 4. App. NO. II.).

The average duration of disease at admission of 708 patients was $7\frac{5}{8}$ days ; in 35 it could not be ascertained. (See Table NO. 5. App. NO. II.).

The average duration of the disease on admission of the fatal cases was $9\frac{7}{8}$ days. (See Table NO. 6. App. NO. II.).

The earliest date of disease at admission was the 2d day, and the latest the 32d.

The following were the proportion of the causes assigned by the patients for the disease : 327 attributed it to the contagion of fever, 63 to cold ;

this, as I have already mentioned, was sometimes said to have been combined with fatigue or moisture, or both; 43 were cases of relapse; in 154 cases the cause assigned for the disease was not noticed in the journals; and 156 of the patients could assign no cause whatever for their ailments. (See Table NO. 7. App. NO. II.).

Before I proceed to a review of the symptoms contained in the Tables NO. 8, 9, 10, App. NO. II, it is proper to state, that only such symptoms as the patients complained of on admission, or became affected with while in the house, are noticed in these Tables, no reference being had to those symptoms with which they were affected before they were sent to the hospital; and this must, of course, give rise to considerable inaccuracy in forming a correct estimate of the proportion of patients affected with any one set of symptoms; as in a considerable number the symptoms were much mitigated, and in a few instances entirely gone off before they were brought to us. This, however, is an inaccuracy which it is not easy to get rid of, as from the patients themselves we in general obtain but a very imperfect history of their previous symptoms, and such as I would not venture to reduce to tables or give to the public.

More or less of headach was almost an universal complaint, and was commonly amongst the first

symptoms with which the patients were affected. Sometimes the pain was general over the whole head, but more frequently it was referred to one or more distinct regions, generally the frontal and temporal regions, but not unfrequently to the vertex or occiput. In one case, where the patient was affected with severe periodical headach, the pain was always felt most severe in the most depending part, in whatever position the head was placed. The pain was sometimes dull and obtuse, accompanied with *gravedo capitis*, pain and stiffness of hind neck, heaviness and pain of the eyes, particularly on motion, and occasionally with some *lachrymatio*, a sense of stuffing in the nostrils, or *coryza*, as happens in ordinary *catarrh*; but more frequently the pain was acute and throbbing, darting from the part principally affected in various directions through the head. Sometimes these pains were represented as being deep seated, at other times as more superficial; in some cases, from the patient's account, almost appearing to be a rheumatic affection of the hairy scalp. All of these varieties of headach were very generally accompanied by *vertigo* and *tinnitus aurium*, more especially if the patient moved himself in bed, or attempted to assume the erect posture,—an attempt which also very constantly aggravated the pain of the head. With these

symptoms there was also, in a great proportion of cases, some flushing or fulness of the face and suffusion of eyes. From the constancy of some of these varieties of affection of the head, I have thought it unnecessary to notice them in the Tables, or have done so under the name *headach*. But when the patients, together with *severe* headach, vertigo, tinnitus aurium, flushed face, and suffused eyes, complained of intolerance of light or sound, and throbbing in the temples, with or without delirium, I classed them in the Tables as being affected with symptoms of inflammation of the head. I do not by this mean to say, that when these symptoms were present, there was always or even often acute inflammation really existing in the contents of the cranium. I have only made this arrangement to enable me to give the reader a more clear and accurate idea of the relative proportion of patients affected with each particular train of symptoms. I may state, to save repetition, that the same remark applies to several other articles in the Tables, as symptoms of inflammation of the chest, abdomen, &c.

With the above symptoms then, which I have called symptoms of inflammation of the head, 166, or 1 in $4\frac{79}{100}$ of the 743 patients were affected; of 133 relapse cases, 10, or 1 in $13\frac{3}{10}$ were similarly affected; and of the 34 cases which ter-

minated fatally, 21, or 1 in $1\frac{13}{21}$ had the same train of symptoms,—shewing how very generally there is great determination to the head in those cases which terminate fatally, and how seldom the same degree of determination takes place in relapse.

In 181 cases, or 1 in $4\frac{19}{281}$, the fauces were more or less affected. This affection in the majority of cases was exceedingly slight, being only felt on deglutition; and, upon inspection, sometimes no unusual appearance of these parts could be perceived, or they only appeared somewhat parched, or were very slightly swollen and inflamed. In other cases, however, this swelling and inflammation was very considerable, giving a good deal of uneasiness to the patient; there was also occasionally some superficial ulceration, or more properly excoriation of these parts. In a few cases the tonsils were so much inflamed and enlarged as to resemble *cynanche tonsillaris*. In two cases there was a pretty extensive venereal affection of the throat going on at the same time with the fever. Only one of the relapse cases had any affection of the fauces; and of the fatal cases, 5, or 1 in $6\frac{4}{5}$, had this symptom. On the whole, it may generally be considered as a trifling occurrence, requiring little attention, and in a majority of cases would probably not have been men-

tioned by the patients, had no inquiry been made concerning it.

In 173 cases, or 1 in $4\frac{51}{173}$, there were symptoms of inflammation of the chest, indicated by pain more or less acute in some part of the thorax, accompanied and increased by coughing, affected by position, impeding free respiration, sometimes accompanied by a sense of tightness or stricture across the chest, distressing dyspnœa, or even orthopnœa. In many instances this affection was severe, very nearly resembling an attack of pure pneumonia; but at the same time the other symptoms shewed that it was combined with continued fever. In others it resembled peripneumonia notha or catarrhus senilis. It sometimes happened that a considerable pectoral affection continued for some time after the fever had been subdued, and very much retarded the recovery, though in general the means employed very soon put a stop to its progress. One or other of the above varieties of affection of the chest were present in 24, or 1 in $5\frac{13}{24}$ of the relapse cases; in the fatal cases, in 12, or 1 in $2\frac{5}{6}$, shewing the importance and frequency of this affection under some of its modifications.

In 300 cases, or 1 in $2\frac{143}{300}$, there were symptoms of inflammation of some of the abdominal viscera. This shewed itself under a variety of

forms, most frequently resembling peritonitis, enteritis or gastritis, and sometimes hepatitis; but the symptoms of inflammation of the liver were much less frequently observed, than what we are led to believe is the case by most writers on this disease. I am not sure that I have ever seen *one decidedly well-marked case*, where from the symptoms we could have said that the liver was certainly *inflamed*. They are at least very rare. Indeed, from the seat of the pain often complained of by the patients, one would be led to believe that the spleen is as frequently affected as the liver. I have seen a few pretty distinctly marked cases of a nephritic affection; and in one or two cases of women lately delivered, hysteritis has been well marked. I do not recollect to have seen cystitis. Several patients indeed have complained of great tenderness to the touch in the region of the bladder, but this was owing to retention or difficulty of voiding urine.

I do not mean to say that these affections were always, or even often well marked, or possessed all the characteristics of the diseases to which I have compared them. Sometimes, indeed, they were so well marked, as to claim the chief attention both of the patient and physician, and to leave little doubt of the nature of the affection, but the contrary took place much oftener; and it

was only, as I have already stated, by active examination, that many of these symptoms were ascertained to be present, the patient's attention being frequently directed to more urgent, but often far less important symptoms; in the relapse cases 27, or 1 in $4\frac{26}{27}$ had one or other of the abdominal affections; in the fatal cases, 19, or 1 in $1\frac{15}{19}$,—a number that well shews the frequency and importance of attending to this train of symptoms.

Having now noticed the proportion of cases wherein some of the contents of one or other of the three great cavities were disordered *singly*, I shall next state the proportion wherein a disordered condition of the contents of one or more of them were combined.

In 47 cases, or 1 in $15\frac{38}{47}$, the cephalic affection above described was combined with the pectoral. In 81, or 1 in $9\frac{14}{81}$, the cephalic was conjoined with the abdominal. In 23, or 1 in $32\frac{7}{23}$, they were all three united in the same patient. In 64, or 1 in $11\frac{39}{64}$, the pectoral and abdominal existed together.

A sense of uneasiness, weight and oppression at the præcordia, was almost an universal symptom, and was therefore not noticed in the Tables; but in 321 cases, or 1 in $2\frac{37}{107}$ there was *pain and tenderness* in the epigastrium, or, as the patients ex-

pressed it, at the “slole of the breast” or “pit of the stomach;” this was almost always aggravated by pressure, coughing, or full inspiration, and was very often independent of any perceptibly deranged state of the abdominal viscera. This symptom has by some been supposed to be owing to increased sensibility of the peritonæum at that part; by others to an inflammatory affection of the superior abdominal muscles. It is very commonly, though improperly expressed in the cases, by “pain at præcordia,” “pain at scrobiculus cordis,” “pain under the ensiform cartilage,” &c. These expressions, though anatomically somewhat incongruous, are in the annexed cases meant to express the same thing; it was seldom that the seat of the pain was so limited, as a correct interpretation of some of them might lead one to believe, but was generally extended over a considerable part of the epigastrium, often over the whole of it, and sometimes shooting into the neighbouring regions.—This symptom, like many other of the abdominal affections, might often have escaped notice had no pressure been made; though it must be confessed that it more seldom escaped the patient’s attention, than the pains of almost any of the contents of the three cavities, if we except the cranium,—and was in many the prominent and most distressing symptom. The pain was in many in-

stances severe, and the tenderness to the touch very great, and was frequently accompanied by a feeling of fulness and tension in the epigastric region. This symptom was complained of in 21 or 1 in $6\frac{1}{3}$ of the relapse cases. In the fatal cases it was present in 13 or 1 in $2\frac{3}{13}$. In 84 cases, or 1 in $8\frac{71}{84}$ this symptom was combined with the cephalic affection. In 9, or 1 in $82\frac{5}{9}$ with the pectoral ; and in 154, or 1 in $4\frac{127}{154}$ with the abdominal.

Cough, independent of any well-marked affection of the chest, occurred in 226 of the patients, or 1 in $3\frac{65}{226}$. This, as I have already stated, was sometimes accompanied by hoarseness ; at other times there was a considerable degree of hoarseness, in a few cases almost amounting to aphonia, without any cough ; frequently the cough was short and dry, and continued after the febrile symptoms were subdued. At other times it was severe, attacking in paroxysms, often most frequent during night, and in many cases exciting a propensity to, or actual retching or vomiting. The expectoration was sometimes free and copious, but in the greater number of instances it was difficult, and the sputa viscid, causing the patients to complain of what they called " a defluxion in the throat." The matter expectorated was in general very decidedly mucaginous ; but in some in-

stances it was of a more ambiguous nature, or of rather a puriform appearance. I have, in a good many examples, seen the sputa streaked with blood, where no apparent affection of the chest existed. This I am disposed to consider a matter of little importance, as I think it was as frequently observed during convalescence, particularly the two or three first days after crisis, as during the disease. Of the relapse cases 11, or 1 in $12\frac{1}{11}$ had cough independent of any other pectoral symptoms; and 8, or 1 in $4\frac{1}{4}$ of the fatal cases had the same symptom.

Cough, though frequently unconnected with any pectoral affection, was often combined with the others, particularly the epigastric pain and tenderness; indeed, with this it seemed to have some particular connection, for in 127 cases, or 1 in $5\frac{108}{127}$ they were combined.

Nausea, unconnected with retching or vomiting, occurred in 124 of the patients, or 1 in $5\frac{123}{124}$. In 14, or 1 in $53\frac{1}{14}$ there was retching without nausea. This was sometimes very troublesome, and frequently, as I have already stated, was induced by coughing. In 17, or 1 in $43\frac{12}{17}$, there was spontaneous vomiting, unaccompanied by nausea, or any well-marked affection of the stomach or other organ. It most frequently took place during the night, and the matter rejected was very commonly bi-

lions. 43, or 1 in $17\frac{12}{43}$ were affected with nausea and retching. These were sometimes very obstinate and distressing, and not unfrequently became the prominent symptoms. Occasionally they occurred spontaneously, at other times they were induced immediately upon any thing being taken into the stomach. 177, or 1 in $4\frac{35}{177}$ were affected with nausea and vomiting. Most commonly it seemed connected with some of the abdominal affections, but frequently also with the cephalic. In others it was present without any apparent affection of any of the cavities. Of the relapse cases 16, or 1 in $8\frac{5}{16}$ had nausea; 4, or 1 in $33\frac{1}{4}$ had retching; 12, or 1 in $11\frac{1}{12}$ nausea and retching; 12, or 1 in $11\frac{1}{12}$ vomiting; and 30, or 1 in $4\frac{13}{30}$ had nausea and vomiting. 3, or 1 in $11\frac{1}{3}$ of the fatal cases had nausea; 2, or 1 in 17 retching; none had vomiting without nausea; only 1 had nausea and retching; and 9, or 1 in $3\frac{2}{3}$ had nausea and vomiting.

Diarrhœa occurred in 89, or 1 in $8\frac{31}{89}$: of this there was a great variety of forms. Sometimes the stools were only increased in frequency, but the fæces natural; but far more generally the fæces were morbid; most commonly scanty, watery, and bilious: in others clay coloured, and pretty copious. Sometimes they were scanty, slimy, and somewhat of a mucaginous appearance, and occasionally scybalous and bloody, like what

occurs in dysentery. They were very generally of a peculiarly foetid odour, and not unfrequently of a very dark brown or blackish colour. The same may be said of bloody stools, as I have already stated respecting bloody sputa, namely, that *per se* it does not appear to be a matter of much consequence, as I have seen it in very mild cases, and I think more frequently during convalescence, particularly soon after crisis, than during the disease. Bloody urine I have seen, but very rarely, and can say little of the importance of this symptom. All the forms of diarrhœa were frequently accompanied by tormina and tenesmus. In some cases diarrhœa accompanied the crisis. 32, or 1 in $23\frac{7}{32}$ had involuntary evacuations of fæces and urine. When this was the case, the fæces were very generally dark coloured, and of a very foetid odour. In 10 cases, or 1 in $74\frac{3}{10}$ diarrhœa and involuntary evacuations were combined. In the relapse cases 17, or 1 in $7\frac{14}{17}$ had diarrhœa. In 2, or 1 in $66\frac{1}{2}$ there were involuntary discharges of fæces and urine. In no case were the two combined. Of the fatal cases 5, or 1 in $6\frac{4}{5}$ had diarrhœa; 13, or 1 in $2\frac{9}{13}$ had involuntary evacuations; and in 5, or 1 in $6\frac{4}{5}$ diarrhœa and involuntary discharges were combined.

In 52, or 1 in $14\frac{15}{32}$ there was mild Delirium or Raving. This affection most commonly took place

during the night. In the relapse cases it was present in 6, or 1 in $22\frac{1}{6}$, and in the fatal cases in 2, or 1 in 17.—87, or 1 in $8\frac{47}{87}$ were affected with delirium in one or other of the forms mentioned in the general description. In the relapse cases 3, or 1 in $44\frac{1}{3}$ had this affection; and in the fatal cases 20, or 1 in $1\frac{7}{10}$.—21, or 1 in $35\frac{9}{21}$ were affected with great stupor or coma; and this last was in some instances very complete. In the fatal cases the same symptoms were present in 7, or 1 in $4\frac{6}{7}$; they were not observed in any of the relapse cases; and I may here state, that as the symptoms we are now to notice seldom or never appeared in relapses, they occupied no part of the symptoms of relapse in the Tables.

Subsultus Tendinum was distinctly marked in 20, or 1 in $37\frac{3}{20}$. In the fatal cases 8, or 1 in $4\frac{1}{4}$ had the same symptom,

Floccitatio occurred in 4, or 1 in $185\frac{3}{4}$. In the fatal cases 2, or 1 in 17.

Distinct Tremor of the extremities, generally the superior, appeared in 7, or 1 in $106\frac{1}{7}$. In the fatal cases 3, or 1 in $11\frac{1}{3}$ had the same symptom. These two last symptoms were not particularly attended to when making up the tables from the journals; and I cannot vouch for the proportions I have stated to have been affected with them being very accurate. Indeed, I am inclined to think they

were much more frequent than what I have mentioned. The same may be said of duskiness and livid mottling of the skin, which from the Tables appear to have been observed in 7 cases, or 1 in $106\frac{1}{7}$, and in the fatal cases in 3, or 1 in $11\frac{1}{3}$.

Singultus occurred in 13, or 1 in $56\frac{5}{13}$. This symptom was observed in 4, or 1 in $8\frac{1}{2}$ of the fatal cases.

Irregular Spasmodic or Convulsive action of the muscles of the face or other parts of the body, most generally the former, occurred in 12, or 1 in $61\frac{11}{12}$. The same was observed in 6, or 1 in $5\frac{2}{3}$ of the fatal cases. When this symptom is conjoined with Typhomania, which it very often is, I consider the combination as forming one of the worst symptoms that can occur in fever. I have seen very few recover from this combination of symptoms out of a considerable number so affected; and these patients seemed to be saved by copious depletion of blood, every other remedy having been tried without effect. Difficulty or inability to swallow is also a very unfavourable symptom.

In 50 cases, or 1 in $14\frac{43}{50}$ Petechiæ were observed on different parts of the body. They were present in 7, or 1 in $4\frac{6}{7}$ of the fatal cases. I have already stated that a number of the patients had what were ascertained to be flea-marks on different parts of the body, which often so nearly re-

semble some varieties of petechiæ, as not to be easily distinguished from them, at least without a closer examination than most people choose to make upon a fever patient; and very possibly some of those cases enumerated as petechiæ might be of this description, though some attention was paid to distinguish them. Petechiæ, though sometimes the concomitants of the most unfavourable symptoms, are of themselves a perfect trifle; and I would never take them into account, either in forming a prognosis, or directing the practice in fever, as I have seen them in the mildest cases*. Only one patient had Vibices; and this case terminated fatally. I have seen few examples of this appearance, but am disposed to consider it an unfavourable symptom. Since the Tables were finished, there has a patient been dismissed from this hospital who had several large vibices on both feet; and the little toe of the left

* It is now perfectly well known that the hot regimen and want of cleanliness and ventilation have been a principal source of petechiæ and cutaneous affections, both in private and hospital practice. Within these few years, since these points have been more attended to, and since free evacuations have been used, they have almost disappeared, both from surgical and medical hospitals. Consult particularly Willan on Cutaneous Diseases, Ord. III, Genus Purpura. See also Hennen's Military Surgery, p. 305.

foot was affected with dry gangrene. It was daily expected to slough off, but he left the house without its doing so; it was quite black and insensible. In a few cases a red measly looking efflorescence appeared in irregular patches over various parts of the body, generally the breast. It commonly disappeared in a day or two, and was little attended to; I cannot say whether it is connected with any particular train of symptoms or not; it did not appear in any of the fatal cases.

Decided Yellowness of the skin and eyes occurred in 24 patients, or 1 in $30\frac{23}{24}$; and in all those cases where the experiment was tried, the urine tinged linen. This symptom was observed in 4, or 1 in $8\frac{1}{2}$ of the fatal cases. It was seldom connected with any other perceptibly deranged state of the liver; and, like petechiæ, of itself appears to me a very trifling occurrence; and from only 4 dying of the 24 in which it was observed, it will easily appear that its importance is in general overrated.

Several of the patients had lividity of the sacrum, threatening to become gangrenous, but this was prevented by the means employed. 6, or 1 in $123\frac{5}{6}$ of the patients had sloughing of the sacrum or nates; this was observed in 4, or 1 in $8\frac{1}{2}$ of the fatal cases. In those patients who had this affection and recovered, the convalescence was ex-

tremely tedious ; and in one of the fatal cases I believe it was the principal cause of death.

Having gone over all the symptoms contained in the Tables, I shall next attend to the periods of Crisis, Convalescence, &c. &c.

Of the 743 cases Crisis was observable in 648, and in 95 it could not be ascertained. Of the 648 cases in which it was observed, 467 had that change on days commonly accounted critical, and 181 on days not reputed critical. The following are the numbers terminating on each particular day, critical and non-critical. Of the 467 terminating on critical days, 6 had crisis on the 3d day, 80 on the 5th, 129 on the 7th, 80 on the 9th, 69 on the 11th, 63 on the 14th, 34 on the 17th, 5 on the 21st, and 1 on the 34th. Of the 181 terminating on non-critical days, 18 had crisis on the 4th day, 34 on the 6th, 26 on the 8th, 17 on the 10th, 15 on the 12th, 15 on the 13th, 10 on the 15th, 11 on the 16th, 2 on the 18th, 4 on the 19th, 10 on the 20th, 3 on the 22d, 5 on the 24th, 2 on the 25th, 3 on the 28th, 1 on the 29th, 2 on the 30th, 1 on the 33d, and 2 on the 36th. (See Table NO. 11. Appendix, NO. II.).

I am aware that several objections may be advanced against admitting the above statement as perfectly accurate ; first, the difficulty of ascertaining the day when the disease commenced ;

second, the difficulty of ascertaining the *day* on which the crisis takes place, even when it is well marked; and, thirdly, the difficulty of judging from the symptoms when this change actually does take place.

With regard to the first I may observe, that *particular* attention was paid to ascertain the precise day of attack; and when this could not be done with tolerable accuracy, it was so mentioned in the journals; and I believe the statements respecting the duration of the disease at admission, may be relied on with considerable confidence. We always dated its commencement from the time that the patient was attacked with the first *distinct* rigour. This I conceive is the surest criterion we can judge by, as it is in almost every case the first symptom with which the patients are affected.

With respect to the second objection there is certainly some difficulty; for although the patient's symptoms might continue unabated at the evening visit, still crisis might have taken place the same night before 12 o'clock, and thus give rise to some inaccuracy as to the day in which it happened. I should here mention that the date of crisis is generally taken from the account given of the patients in the forenoon reports; though when this change was observed to have

taken place at the evening visit, it was always noted either in a report for that evening, or in the one taken next morning. This objection, however, applies with equal force either for, or against the *doctrine of critical days*, which we wish to establish. For if we allow that some of the crises stated as having taken place on *critical days*, really happened on *non-critical days*, we must also allow that some of those stated to have taken place on *non-critical days* might in like manner have happened on *critical days*, so that this will not much affect the accuracy of the statements given.

The last is certainly the most serious objection; for the decline of the symptoms is often so gradual, that it is sometimes extremely difficult to fix upon the exact time when the favourable change begins to take place. Were we to judge of this from the patient's own account of his amendment, we should often be very much misled; as I am convinced that the common saying, that "it is a good sign when the patient begins to feel his pains," is in many instances a true one; and I have often been led to form a favourable prognosis from patients becoming very querulous, who had before made little complaint, though it was evident that they laboured under a severe disease. In this case the best criteria to judge by are the

pulse, tongue, skin, and, above all, the expression of the countenance.

But even making considerable allowances for any inaccuracy that may have arisen from the above causes, still the great proportion of crises on *critical days*, compared to those happening on *non-critical days*, must be something more than *accidental*.

I have paid considerable attention to this subject, and my observation has led me to become a firm believer in the doctrine of critical days. And what strengthens me in the belief is, that in the relapse cases, the proportion of crises on *critical days*, to those happening on *non-critical days*, is still greater than in the primary fever. Of 131 cases of relapse, in which a crisis was observed, it took place in 108 on *critical days*, and only 23 had this change on *non-critical days*. As I allude only to those cases of relapse which happened in the house under our eye, the objections to the statements made respecting the primary fever will not apply here ; for we had it in our power to observe and note the very first symptom of relapse, and the difficulty of ascertaining the period when crisis takes place seldom exists in relapse, as this favourable change in the symptoms was, in by far the majority, decided and well marked. With respect to the second objection I stated, the same

observations will apply here as in the primary fever. These facts I consider as very strong arguments in favour of the doctrine we advocate, as it is not easy to conceive how relapses should, in such a great proportion of cases, observe critical days, and the same not occur in the primary fever.

The following are the numbers of the relapse cases terminating on particular days, critical and non-critical. Of the 108 cases in which crisis happened on critical days, 38 had this change on the 3d day, 56 on the 5th, 10 on the 7th, 2 on the 9th, and 2 on the 11th. Of those ending on non-critical days, 6 had crisis on the 2d day, 13 on the 4th, and 4 on the 6th. In two cases the day of crisis could not be ascertained. (See Table, NO. 12. Appendix, NO. II.)

It is curious, and rather in confirmation of the general statement, to observe, that in the fatal cases the matter is reversed; for out of 34 patients whose cases terminated fatally, 22 died on *non-critical days*, and only 10 on *critical days*. In the remaining 2 the day of the disease could not be ascertained.

Of the 22 which terminated fatally on *non-critical days*, 2 died on the 10th day, 2 on the 12th, 4 on the 13th, 1 on the 15th, 1 on the 16th, 2 on the 19th, 3 on the 20th, 1 on the 22d, 1 on the

23d, 2 on the 24th, 1 on the 29th, and 2 on the 36th day. Of the 10 ending on critical days, 1 died on the 7th day, 2 on the 9th, 1 on the 11th, 1 on the 14th, 2 on the 17th, 1 on the 21st, 1 on the 31st, and 1 on the 34th day. (See Table NO. 13. Appendix, NO. II.)

I have, in the general description of the fever, noticed all the evacuations or evolutions which I have observed to accompany crisis; but I regret that I have not kept minutely accurate notes of their relative frequency. Sweat I mentioned to be by far the most frequent concomitant of crisis; and if we say that this evacuation accompanied it in about one-third of the cases of primary fever, and four-fifths of the relapse cases, I believe we will come pretty near the truth.

I am inclined to believe that the *proportion* of crises accompanied by sweat is pretty nearly alike, whether they happen on *critical* or *non-critical days*; and of all the *non-critical days*, the 6th is the one in which sweat most commonly accompanies crisis in the primary fever, and the 4th day in the relapse cases. I have not observed that sweat accompanies the crisis more constantly on one critical day than another, previous to the 11th, but certainly it is more frequently attended by this evacuation on this day, or the critical days previous to it, than afterwards.

Of 709 patients Discharged Cured, 12 were *convalescent* on admission ; in 64, the time when this took place could not be ascertained, the day of the disease being unknown. The average time when *convalescent* of the remaining 633 was $12\frac{322}{633}$ days from the commencement of the fever. (See Table, NO. 14. Appendix, NO. II.)

As we shall afterwards have occasion to speak of Relapses, we shall here merely state the proportions. Of the 743 patients, 133, or 1 in $5\frac{7}{133}$ suffered a relapse : a few had even a second relapse. The males relapsed in the proportions of 1 in $6\frac{7}{52}$, and the females in that of 1 in $5\frac{17}{81}$. (See Table, NO. 17. Appendix, NO. II.)

The chance of a relapse seems equally great, whether the primary fever terminates on a *critical* or *non-critical day*; for of the 467 patients who had crisis on critical days, 90 or 1 in $5\frac{17}{90}$ suffered a relapse, and of the 181 ending on *non-critical days*, 36, or 1 in $5\frac{1}{36}$ relapsed.

I stated in the general description of the fever, that these tables seem to establish a fact respecting the disease, which, as far as we know, has not been noticed by any other person ; namely, that when relapses happen, they, in a great majority of cases, happen on critical days, counting from the day when *convalescent* : thus it will be seen by Table, NO. 18. Appendix, NO. II., that of the 133

relapses, 86 happened on *critical days*, and only 46 on non-critical days, reckoning from the period when marked *convalescent* in the journals; in one the fact could not be ascertained.

I shall now conclude the review of the Tables by stating a few general averages respecting various stages of the disease. The average duration of disease at admission was $7\frac{5}{118}$ days; the average time when crisis took place was $10\frac{25}{162}$ days from the commencement of the fever; when *convalescent* $12\frac{322}{633}$ days, counting from the same period. Thus, on an average, the patients had crisis in $3\frac{58}{108}$ days after admission; and were *convalescent*, or free from every symptom proper to fever in $5\frac{131}{158}$ days, after being received into the hospital. The average time intervening betwixt these two, or the period of *convalescence*, was $2\frac{563}{614}$ days. The average duration of the period of *recovery* was $13\frac{5}{79}$ days. The average date of fever at dismissal was $27\frac{64}{707}$ days; and the average time in hospital was $19\frac{647}{743}$ days. (See Table, NO. 16. Appendix, NO. II.).

TABLES. 88 happened on critical days, and only 10 on non-critical days, reckoning from the period when marked commotion in the journals; in one the fact could not be ascertained.

I shall now conclude the Tables by stating a few general averages respecting various stages of the disease. The average duration of disease at admission was 7 days; the average time when critical days were 10 days from the commencement of the disease; the average duration of critical days, counting from the same period, was 12 days; the average duration of critical days after admission; and were forwarded or

SKETCH

OF THE

HISTORY OF VENESECTION IN FEVER.

THAT a free use of venesection, freer indeed than has hitherto come into general practice, is attended with great advantage in the treatment of the epidemic which at present prevails in many parts of the British Empire, is a truth that we shall endeavour to establish in this treatise.

Some time since, when the panic from the doctrine of debility had subsided, it was observed that moderate bleedings were often useful. When the headach, vertigo, flushing, or pain of the back and limbs, had been so violent as to demand a bleeding, at the admission of a patient into an hospital, it always appeared that these symptoms were for the time at least much relieved, even

when they returned again, as very frequently happens after small bleedings. The repetition of the evacuation very certainly suspended them for another indefinite period. Comparing this with the other modes of practice in use, it appeared to a few judicious persons to be possessed of considerable advantages; and the quantity taken was gradually augmented to the free venesection of either India. In this city, however, the practice, as might have been expected, made but slow progress; and as for large bleedings, as they are called, that is, from z xx to z xl, they are still viewed with rooted aversion by the greater part of private practitioners.

During the time I acted as clerk to Dr Hamilton in the Royal Infirmary, the practice of venesection was pushed to a considerable extent; and always with manifest advantage. The nature of the patients' complaints generally indicated liberal evacuation, and the signal relief experienced by them after its use appeared sufficient to warrant its future employment. Accordingly, from the time that the new fever hospital was opened at Queensberry House, under the care of the above-mentioned gentleman and Dr Spens, the lancet has been steadily and freely employed, as will be seen from the cases hereafter to be detailed.

The hospital, from its first opening, has been under the immediate superintendance of the Author, who, so far from finding any thing to lessen his confidence in the expediency of the practice, is emboldened by its success to lay the more interesting details before the public. This he does with the greater willingness, that the practice he recommends, though certainly not novel in books, has still a large majority of the most eminent medical practitioners decidedly opposed to it; and a vast number of others, who, following no particular medical chief, look to experience, and a kind of universal consent of the profession, as the signal for submitting to trial a practice which they consider as hazardous. In such circumstances, it seems every man's duty to bear testimony to the results of his own experience. The Author is also under an impression, that the benefit thence accruing to mankind will not merely terminate in the decision of a difficult and agitated question in medical practice, but it may probably lessen the mortality in fever: at least we are warranted so to conclude, from the low ratio by which it is expressed in these tables, in comparison to most others that it has been our fortune to see, or even to the practice of the same able physicians Drs Hamilton and Spens, in the same fever, when directed on different principles. But

before proceeding to state the results of our own observation, it may be curious to inquire, when, and by whom the practice of bloodletting in fever was first introduced into physic ; what good effects were derived from it in former times ; and to what circumstances we are to attribute its gradual decline, and indeed almost total disappearance in later years. Having dedicated some time to the solution of these questions, we have thrown the results of our investigation into the following pages.

The Father of Physic, Hippocrates, does not seem to have used venesection in fever, and indeed regards the natural hæmorrhages from the nose and other parts, as unfavourable indications. (Coacis prænotionibus, p. 532, 186.) Galen, however, (ad Erasistratum,) seems to think the practice familiar to him. A passage is quoted by White, (Aph. 23. 1.), but it does not seem to relate more to bleeding than other evacuants. Hoffman refers to another place in his book, *de Victu Acutorum*, sec. 36., where, after describing the inflammatory effects of congestion, he adds, “ nam “ venæsectio in talibus principalis est,” with a good deal more to the same purpose ; but so many of the books of Hippocrates are now lost, that it is difficult to decide on the extent to which he carried venesection.

Celsus let blood in quotidian, and esteemed it the chief remedy in epidemic fevers, superseding abstinence and purgatives, which he employed principally in the intermittent kinds. Nevertheless, he sometimes employed it in intermittents, where the previous accession had been very severe, and in violent fevers, where the surface was florid and the pulse full, and, finally, in all acute diseases arising from plethora, rather than debility. We may remark, that the fear of debility from bleeding in fever is first to be met with in this author.

Next after Celsus, Cælius Aurelianus is said to have used the same practice within the three first days (Allen's Synopsis, p. 24, 55.), but to have forbid it at an after period: I am not, however, in possession of the passage, and have been obliged to conclude a long search without finding it.

Aretæus, who is generally supposed to have preceded Galen, recommends large bleeding in fever, (*κρίσις*), and the orifice to be made LARGE, that the blood might run with force and plentifully.

But the great advocate for bloodletting in fever was Galen, whose views on that subject were as decided, and nearly as distinct as those of the latest writers, even on the fevers of warm cli-

mates. Erasistratus, an early author, and only second to Hippocrates in authority or antiquity, was probably the first who maintained the identity of fever and inflammation *. But notwithstanding his theory, he contrived to interdict bleeding, both in fever, and in almost all other diseases.—The followers of this man, who indeed were considerable in the time of Celsus, though then powerfully opposed by the sect of Asclepiades, had considerable influence on medical opinion in the age of Galen. The latter addressed an epistle directly to those of the sect then residing in Rome, on the subject of bleeding, particularly in fever. He also composed two other treatises on the same subject. In his book de Methodo, (lib. 9. cap. 4.), we find two excellent cases which well illustrate both his opinions and practice. The one was an inflammatory synochus, the other a putrid synochus, or as we would call it typhus fever; in both of them he bled to *deliquium animi*, and with the happiest effects. A child, or an old man, he considered as improper subjects for this operation; but he particularly declares, that we must not wait for the symptoms of plethora, but bleed

* It is curious that Dr Clutterbuck should have omitted to mention this philosopher and Dr Gilchrist, (Essay on Nervous Fever,) as referring the cause of the disease to inflammation.

wherever debility, from the above-mentioned circumstances, does not contraindicate its use.

Oribasius, a writer of the 4th century, (*De Crurum Scarificatione*, cap. 28.), bled freely in a pestilential epidemic then raging in Asia. His method of bleeding from the legs still continues among the French.

Alexander Tralles also made free use of the lancet in febrile diseases ; and it would be almost superfluous to add, that such strict Galenists as we know the Arabians to have been, imitated their master in this most important particular. Hence it is that we learn from Prosper Alpinus that the Ægyptians let blood in all putrid diseases.

The reputation of Galen, much more than the success of the practice, served to preserve it in the dark and barbarous ages which soon succeeded. And accordingly in Constantinus Africanus, the greatest physician of his day, and a prodigy for that period, we find bloodletting in synochus prescribed, not at all from its real or supposed effects on the fever, but from some fanciful doctrines that Galen had advanced about the mixture of blood and choler or bile. We may remark by the bye, that the synochus of Galen seems very nearly represented by the bilious fever of Grant and Pringle. It would be endless to trace the practice through all the great practitioners, who,

after the revival of letters, trode in the path of Galen, with all his theories in their heads, but with a very slender share of his common sense to modify their extravagance *.

Dr Thomas Sydenham was the first person of celebrity amongst us who thought boldly for himself in matters of medical practice ; yet the reason given by him for bloodletting is not much different from that of Galen in his rationale of that practice in fever, *i. e.* to preserve the blood in such a state as to its motion, as nature in these circumstances seems to aim at, *viz.* “ to prevent
 “ a too great impetuosity of the circulation, from
 “ whence dangerous symptoms arise, or, if need
 “ be, to excite a brisker motion, if it moves
 “ too sluggishly, that nature might not be frus-
 “ trated in her design of introducing the fever.”
 Sydenham likewise relates the story of an army surgeon in the civil war, who by bleeding largely in the onset of the plague entirely subdued it. The narrative is interesting, and it may not be amiss to deliver it in this place.

“ Amongst the other calamities of the civil war

* The satire of Sangrado, in the novel of Gil Blas, must no doubt have been founded on the abuse of bleeding by the Galenists ; and as Le Sage was not himself a physician, the ridicule thrown on the practice must have had its support in the public opinions of the physicians of that day in France.

“ that severely afflicted this nation, the plague al-
“ so raged in several places, and was brought by
“ accident from another place to Dunstar Castle
“ in Somersetshire, where some of the soldiers
“ dying suddenly with an eruption of spots, it
“ likewise seized several others. It happened at
“ this time that a surgeon who had travelled much
“ in foreign parts was in the service there, and
“ applied to the governor for leave to assist his fel-
“ low-soldiers who were afflicted with this dreadful
“ disease in the best manner he was able ; which
“ being granted, he took away so large a quantity
“ of blood from every one at the beginning of the
“ disease, and before any swelling was perceived,
“ that they were ready to faint and drop down ;
“ for he bled them all standing, and in the open
“ air, and had no vessels to measure the blood,
“ which, falling on the ground, the quantity each
“ person lost could not of course be known. The
“ operation being over, he ordered them to lie in
“ their tents ; and though he gave no kind of re-
“ medy after bleeding, yet of the numbers that
“ were thus treated, not a single person died,
“ which is surprising. I had this relation from
“ Colonel Francis Wyndham, a gentleman of great
“ honour and veracity, and at that time governor
“ of the castle.” (Sydenham, p. 37, Swan’s trans-
lation.)

But long previous to this the plague had occasioned repeated ravages in different districts of Europe. And the debility so remarkable in that malady, as observed by Diemerbroeck and others, seems to have rendered the physicians of the time very averse from bleeding, even in fever, because that disease closely resembled certain states of the plague. Indeed, both Sydenham and Diemerbroeck speak of the *malignant fever* accompanying the plague.

Perhaps the most amusing part of history is that which makes us acquainted with the revolutions which take place in public *opinion*. The present instance is not a solitary one in medicine, there being few branches of human knowledge subject to such rapid and frequent revolutions; but the changes which have taken place respecting blood-letting in fever, even in a few years, are highly interesting.

We are told by Allen, (56.) that “the Italians, French and Spaniards bleed not by ounces but by pounds. In Germany they take not away above five or six ounces. Among these we English rather embrace the middle way.” But mark how things are altered; the English bleed by pounds, and to *deliquium animi*, and laugh at the French and Italians for their horror of blood not less than Galen did at the *ἄμοφοροι* physicians of

his own day, who sought shelter for their feeble practice under the lofty name and specious reasoning of Erasistratus.

Our great Pitcairn, who wrote a book expressly on the cure of fevers by evacuation, gave his sanction likewise to this practice, as it diminished the stimulus carried to the heart by the blood, in which he seems to have supposed the essence of fever to consist. (Div. of Distemp. 267.).

Donckers, who treated the epidemic of Cologne in 1673, bled, and sometimes repeated the bleeding, for which he is called in question by Allen, (87.), as being rash in malignant fevers.

The famous Willis, whose doctrines have always had considerable influence on the British practitioner, was decidedly in favour of bloodletting in fever, still excepting, according to the doctrines of the day, the cases where a feeble body, weak pulse, and slow remitting fever prevailed. His rules respecting the quantity and propriety of the evacuation are, however, excellent, as may be seen in Pharm. Rational. p. 250, De Phlebot.

The *Monita et Praecepta Medica* of Dr Mead, though only published in 1750, contain no doubt the results of the experience of a long life, and fifty-five years' extensive practice, modified by the opinions of a much earlier date. He tells us that bloodletting is a most excellent remedy in the

beginning of *all* fevers, and that any intolerable local pain, a difficulty of breathing or delirium, warrant bloodletting even in the height of fever, and *à fortiori* in the beginning of it; and is very explicit in his recommendation of leeches as an effectual remedy in delirium. (III. 14.).

The illustrious Boerhaave, in his Aphorisms, (anno 1708, Vide Aph. 728 to 745.), divides continued fevers into ephemeral, putrid and non-putrid; to the putrid he applied no general treatment, but merely watches and opposes individual symptoms; the latter, he says, is cured by large bleedings and refrigerants. It is clear, however, that this great man was only describing *one* fever in those three varieties; for he says the ephemera continued for many days, becomes a continued fever not putrid; and the symptoms by which he describes the putrid are such as every day happen in the fever which he has just denominated the "Non-Putrid." It is clear, then, that this division of Boerhaave was after all Galenical, and that his restriction of bleeding in the latter genus was a remnant of the same school.

None of all the great men who have enlightened or extended the province of medicine are more explicit, or more satisfactory on this subject than Frederick Hoffman, a man who added to immense

experience all the learning and philosophy of his age. In his Treatise on Venesection, he delivers five theorems with their scholia, which perhaps contain all that has ever been discovered with regard to bloodletting in fever. Nothing indeed can illustrate more effectually the influence of theory and prejudice on the best practitioners, than the neglect with which this passage of a most eminent author on a most important subject has been passed over. The only way of accounting for it is the horror which the sight of large folio volumes on medical subjects written in the Latin language is wont to inspire. The theorems are short, and I shall here translate them verbatim.

THEOREM III.

“ After venesection, often salutary discharges
“ of blood, nay even of the belly, sweat, urine, suc-
“ ceed better and more freely than before it.”

THEOREM IV.

“ Venesection is very often most useful to old
“ men, nay contributes to long life.”

THEOREM V.

“ Venesection in continued, and especially
“ acute fevers, is both necessary and highly use-
“ ful.”

THEOREM VI.

“ Moreover in exanthematic, petechial, scarlet,
 “ variolous and rubeolous fevers, nay even the
 “ plague itself, bloodletting is not at all unsafe,
 “ but, when prudently applied, often a great auxi-
 “ liary.”

THEOREM VII.

“ In fevers where the eruption already appears
 “ on the skin, bloodletting is not injurious, but
 “ sometimes highly advantageous.”

The scholia annexed to the fifth theorem shew us what value he attached to bleeding as a preventive of local congestion, as a means of removing the spasm on the small vessels and general system, and of diminishing the heat and plethora which it produces.

In the scholia to the sixth he mentions, that in most of the fevers described there, bloodletting is advantageous, “ except where a deficiency of
 “ the juices, debility *from the very beginning*, a
 “ pulse weak, hard and small, the vessels full but
 “ contracted, or even the strength impaired by
 “ mental affection ; in a word, wherever maligni-
 “ ty of the humours, as the schoolmen say, is pre-
 “ sent, bloodletting is an attempt which tends
 “ more to the destruction than the recovery of
 “ the patient.” For this opinion, which we have

transcribed at length, he gives a very odd reason, viz. that all the strength of the heart is needed to expel the morbid matter through the resisting extreme vessels.

The scholia of the seventh theorem contains some valuable remarks, particularly that most of the more violent and fatal symptoms of the exanthemata, as spasms, the recess of the eruption, anxiety, restlessness, fainting, and delirium, arise not from the contagious virus, but from the determination towards, and congestion of blood in the heart and cerebrum, and gives some examples in which he himself, by the employment of venesection alone, had obtained a solution of the more urgent symptoms. The third and fourth theorems are equally valuable, as they establish facts not so universally known as they ought to be, and which are of peculiar value in the treatment of fever. The contrary of the fourth theorem, that venesection was injurious to the aged, a doctrine which we have already seen was enforced by Galen and all his followers, must have done incalculable mischief in the diseases of the aged. Indeed, the best argument of its absurdity we can offer, is afforded by the cases given in the Appendix.

But earlier than Hoffman, some authors of less note may be mentioned. Botallus, whom Hoffman calls the great patron of venesection, employed

it in pestilential buboes (de Venæsectione, p. 150, et seq.) and various exanthemata; as also did Muraltus (Dec. II. An. VII. Observ. 115.) in epidemic fever, with papulæ on the surface. Holle-rius likewise (Comm. ad Hipp. Aph. 3. sec. 1.) bears testimony to the efficacy of bloodletting. Ballonius (Epid. I. et passim) and Septalius (Labyrinth. Med. Extr.) likewise declare in its favour. The famous Baglivi, like Mead, began the cure of all fevers by bleeding, and has added many useful remarks, which we have already noticed under other authors.

The practice of bloodletting in fever met with a singular but staunch advocate, at the commencement of last century, in the person of Dr J. White, a gentleman who had practised for ten years, as he informs us, in the British Navy, and afterwards about six years at Lisbon in Portugal, where the practice of bloodletting in fever was then in full perfection. This book, which affords me all the information I can procure of its author, and is of itself become a rarity *, is entitled, "De

* I had it from Mr Hennen, Inspector of Hospitals, a gentleman to whom I am under many obligations for his handsome behaviour, both in procuring for me several very valuable and rare books, and giving me every information in his power, on the subject we are treating of.

“ Recta Sanguinis Missione, or, New and Ex-
“ act Observations of Fevers, in which letting of
“ blood is shewed to be the true and solid basis
“ of their cure, as well as of almost all other a-
“ cute diseases, proved by histories of cases,
“ and demonstrated from the general history of
“ physic, ancient and modern, and a new canon
“ is produced, for determining, with much great-
“ er certainty, the just and exact quantities of
“ blood which ought to be taken in these distem-
“ pers from every particular person.”—London,
1712, p. p. 188.

The object of this acute and original writer is to shew, that the common objections to bloodletting from putridity or malignity are groundless, and that the cause of those appearances usually ascribed to them are to be sought for in the accumulation of blood in the parts affected, which accumulation, according to the Boerhaavian doctrine then prevalent, is by Dr White ascribed to the lentor of the blood (p. 47.). On these principles, and on the faith of his own extensive experience, Dr White contends, that bloodletting is not only the most effectual mode of saving the life of the patient, but often CUTS SHORT the fever. In a word, he states that bleeding may, in almost all cases of fever, be employed with advantage to an extent of five pounds on an average. He has taken

that quantity repeatedly, and seen it done to a still larger extent, by his medical friends in Spain and Portugal. The quantity to be taken away is always to be regulated by the *weight* of the person, neglecting temperament and many other circumstances commonly much attended to by medical men. The physician is to learn to judge of the weight of his patient by the eye, just as graziers do of cattle, and this the Doctor assures us is a tact soon to be acquired. lb. 100, lb. 150, and lb. 200, are the *CARDINAL* sizes; and though Dr White has occasionally met with examples of sizes as high as lb. 250 or lb. 300, yet these are very rare. In ordinary cases, he found the different sizes to bear with impunity the following evacuations, which, to render more distinct, we have thrown into a tabular form.

Table of Bleedings in Fever, regulated by Individual Weight.

lb 100 bore $\frac{z}{3}$ 40 ordinarily, $\frac{z}{3}$ 50 extraordinarily.

lb 150 $\frac{z}{3}$ 50 $\frac{z}{3}$ 60

lb 200 $\frac{z}{3}$ 60 $\frac{z}{3}$ 70

lb 250 $\frac{z}{3}$ 70 $\frac{z}{3}$ 80

and so on to the largest size.

But as all men do not exactly weigh one or other of the quinquagesimal numbers set down in the table, it was necessary to remark, that the bleeding in those cases that deviate must be proportioned accordingly. Thus, suppose a man's

weight to be lb. 120, then we may say, by the rule of three : As the cardinal size lb. 100 : to the proportionate bleeding \approx 40 : : the present size lb. 120 : the present bleeding necessary = $\frac{40 \times 120}{100} = 48$, and so on.

In justice, however, to Dr White, we must add, that he does not think it necessary to resort to calculation, for a smaller difference of size than lb. 8 or lb. 10, having found a more minute difference insignificant.

White did not confine his favourite practice of venesection to fever alone ; he employed it in many other affections, as hepatitis, &c., but more especially in dysentery, and nearly to the same extent as in fever. Dr White likewise coincides with Hoffman in the opinion, that age is no proper criterion of the propriety of bleeding. He accuses the English of timidity in respect of bloodletting, and certainly discusses some very ridiculous arguments, that had been urged in defence of this variation of English practice from that of the southern states of Europe. One of these, it may perhaps be worth while to record, as the time is not far gone when it would have formed an excellent rallying point for the philosophers who referred all variety of national characters to constitutional and geographic circumstances. This was no less than that English-

men, from the nature of their food and drink, had their veins filled with a watery, crude, and feeble fluid, which therefore could ill bear to be impoverished by large evacuations ; but the natives of southern Europe, the Spanish and Portuguese, derive from their flesh meat, which is much more *spiritous* and *nutritious* than ours, and from their *wines*, an abundance of thick, juicy, and compact cruor, which must, of absolute necessity, be freely evacuated in fever, in order to preserve the life of the persons affected. Zacutus, a Portuguese writer not unknown, Gibbons, and some others of less eminence, maintained this idea. Dr Rush, in later times, considers this aversion to bloodletting as the offspring of national hostility to every thing French,—an idea fanciful enough, but his other remarks on the subject are highly interesting *.

* The prejudices and errors of our countrymen, (the Americans,) in respect of bloodletting, are of British origin ; they have been inculcated in British universities, and in British books. I have frequently been surprised in visiting English patients, to hear them say, when I have prescribed bleeding, that their physicians in England had charged them NEVER TO BE BLED. This advice excluded all regard to the changes which climate, diet, new employments, and age might induce upon the system. I am disposed to believe, that many lives are lost, and numerous chronic diseases created in Great Britain, by the neglect of bloodletting in fever. My former pu-

Dr White is on the whole a man of ability, and, indeed, gives us no bad specimen of his acuteness in noticing the analogy between turpentine and camphor so long before their chemical relation had been discovered.

Dr Dover, who had been a buccaneer in his younger days, relates the following circumstance, which indeed speaks volumes, in his *Ancient Physician's Legacy*. “ When I took by
 “ storm the two cities of Guaiquil under the line,
 “ in the South Sea, it happened that not long be-
 “ fore the plague had raged among them. * * * * *

“ In a very few days after we got on board, one
 “ of the surgeons came to me, to acquaint me
 “ that several of my men were taken, after a vio-
 “ lent manner, with that languor of spirits that
 “ they were not able to move. *** In less than 48
 “ hours, we had in our ships 180 men in this mi-
 “ serable condition.

pil, Dr Fisher, in a letter from the University of Edinburgh, dated in the winter of 1795, assured me, that he had cured several of his fellow students of fever, (contrary to general prejudice,) by early bleeding, in as easy and summary a way as he had been accustomed to see them cured in Philadelphia, by the use of the same remedy. Dr Gordon of Scotland, (he means of Aberdeen,) has lately revived the lancet, and applied it with great judgment and success to the cure of fevers.—
 (Vide Rush on Bloodletting.)

“ I ordered the surgeons to bleed them in both
“ arms, and to go round them all, with command
“ to *leave* them bleeding till all were blooded,
“ and then come and tie them up in their turns :
“ Thus they lay bleeding and fainting so long,
“ that I could not conceive they could lose less
“ than 100 ounces each man. * * * *

“ We had on board oil and spirit of vitriol suf-
“ ficient, which I caused to be mixed with water
“ to the acidity of a lemon, and made them drink
“ very freely of it, so that out of 180 down of this
“ very fatal distemper, we lost no more than 7 or
“ 8 ; and even these owed their deaths to the
“ strong liquors which their messmates procured
“ for them.

“ They had all spots, which in the great plague
“ they call tokens : few or none of the Spaniards
“ escaped death that had them, but my people
“ had them and buboes too.”

Huxham, a great practical authority, particu-
larly informs us, that the weakness and depression
observable in malignant and pestilential fevers is
not to be attended to, nor allowed to contra-
indicate bleeding. These fevers, he observes, “ at
“ their onset, greatly sink the spirits, and cause
“ surprising and sudden weakness, especially when
“ from contagion; yet bleeding, to some degree, is
“ most commonly requisite, nay necessary in the

“strong and plethoric.”—“This, then, when necessary, should be done as early as possible: a quick, tense pulse, sharp heat, great difficulty of breathing, and violent pain in the head or back evidently demand it.” (Vide *Essay on Fevers*, 8vo, 105.) The following remark of the same author on the state of blood in fever, p. 288, is valuable, though by no means original. “I have very frequently met with a buffy or sizzly appearance of the blood in the beginning of malignant fevers; and yet the blood drawn two or three days after, from the very same person, hath been quite loose, dissolved and sanious as it were.” (Vide also Manning, *New Practice of Physic*, vol. i. 32.)

Van Swieten, ad Aph. 54, says, that bloodletting not only diminishes the vitality in acute diseases, but often cuts short fevers; and quotes the case to this effect, which Galen has recorded.

Sir John Pringle likewise bears weighty testimony in favour of bleeding in the bilious and camp fevers of 1757. He also employed it more or less in the bad typhus, which he names jail fever, but with unfavourable effect, as he fancied, if the bleeding was large or often repeated. We cannot help remarking, however, the large share which an unfounded apprehension of extreme and even fatal debility appears to have had on the observations of this justly celebrated physician.

Dr Grant was a diligent practitioner, and good writer on the subject of fever, and he nearly coincides with Sir John in every particular respecting the practice most efficacious.

About the same time Tissot in France described the fatal epidemic of Lausaune, in which he bled repeatedly and freely.

The person who perhaps of all others in this country has contributed most to the disuse of bloodletting in fever, nevertheless recommends it to be employed, and even repeated in some cases; and this in the very paper which has been so effectual in preventing the practice. I allude to Dr Ebenezer Gilchrist of Dumfries, a gentleman who superadded to the highest skill in his profession, all that force of eloquence, which in the sober sciences passes for neatness and argument. His paper was published in the Edinburgh Medical Essays and Observations for 1736, and was designated, "An Essay on Nervous Fevers." Of its contents we shall soon have occasion to speak, but shall give here the passage which shews the spirit in which he prescribed the detraction of blood. Having described the *low* fever, he adds, "In
" *others* the seizure and symptoms the first days
" were more violent; they had vomiting or nausea,
" headach, full, strong, or hard pulse, heat and
" thirst; redness of the eyes. The case then ha-

“ving a good deal of inflammation in it, it was necessary to bleed once and again, and the symptoms were considerably lessened by it. This did not always happen; but by the time that a delirium came on, the signs of inflammation were much abated, the pulse was low and contracted, the heat moderate, and they were altogether as those who in the seizure had but small signs of inflammation, were not bled, nor indeed would bear it.”

To the authors who have supported the use of the lancet in fever, we may add Dr Cleghorn, who in his treatment of the Remittent of Minorca, which, as Dr Arnott well observes, he has uniformly denominated a Tertian, says, he used always to take away blood, and even repeat the operation, unless there were some strong contraindications. “By which seasonable evacuation,” says he, “the vehemency of the paroxysm is somewhat diminished; the apyrexies become more complete; the operation of emetics and cathartics is rendered safer and more successful, and the terrible symptoms, such as raving, sopor, difficulty of breathing, inflammations of the abdominal viscera, &c. are either prevented or mitigated.” There can be little scruple in adducing this declaration of Dr Cleghorn in *remittent fever* as favourable to the doctrine we incul-

cate in those of the continued type. The symptoms observed by that learned author as indicating the various relations of the Minorca fever to Tertian intermittents, later practitioners in that island have been unable to observe; and the most recent and ablest writings on the subject shew a much stronger affinity to the fevers of colder latitudes than the names bestowed on them would permit us to imagine.

We come now to Dr Cullen, whom perhaps we have been too long without mentioning, as his practice and opinions respecting the nature of fever had probably considerable influence on public opinion before the period at which we have now arrived. His expression of the efficacy of bloodletting in diminishing the violence of reaction in fevers, (139.), might be quoted, as strong evidence in its favour; yet it must be added, that this great man evidently contemplated the practice with no favourable eye, and that the confession of "blood-letting being the principal remedy, (140.), when "the violence of reaction and its constant attendant, a phlogistic diathesis, are sufficiently manifest," was rather extorted from him by the evidence of what he had *seen*, than a consequence of his doctrines respecting the nature of fever; for he immediately subjoins, in order, (as it would seem), to qualify the passage: "When these

“ constitute the *principal* part of the disease, and “ may be expected to continue *throughout the whole of it* ;” a prognostication, I believe, which it never was in the power of the most skilful physician to make, at least in time to be acted upon. The passage is, however, on the whole, a document favourable to the practice we endeavour to recommend.

With Cullen the evidence of the older practical authors in behalf of bloodletting in fever may be said to close ; for the writers who since his day have supported it with so much ability, are fairly entitled to the merit of its resuscitation. It may be curious to inquire then, how, in spite of the authority and example of almost all that is great or venerable in physic, this practice has gradually sunk into desuetude and neglect, and in many cases undergone the decided reprobation of medical men. The investigation will not be a long one, and the result may afford a lesson of considerable interest to the candid and liberal cultivators of the healing art.

From Celsus downwards, but particularly in the works of Galen, we may remark, amidst the most decided recommendation of bleeding and evacuants in febrile diseases, some cases specified, where these measures were improper. Debility and putrescency are the circumstances that seem

mainly to constitute the exception. Of the former, some appear to have judged by the pulse; and some, as Galen, by the dejection of the moving powers. They all seem to have trusted chiefly to the ungrateful odour emitted by the patient in vehement fevers, as proof of the presence of putrescency, and not at all to Aristotle's maxim, "omnia quae putrescunt calidiora sunt." There were likewise other sources of debility which Galen took into consideration, as age, sex, &c., and which must have considerably diminished the number of subjects from whom he could order the detraction of blood. This division of putrid fevers was not neglected by his followers; and we accordingly find them still louder and more urgent than their leader in asserting the claims of such fevers to exemption from the usual evacuations. The phenomena of the plague which raged over Europe at the period of the revival of letters, and which usually subsided into a violent epidemic fever, contributed not a little to support the same idea, and also to superadd another attribute, namely, *malignity*, (Vide Etmuller's Works, Donckers and others,) which had no less influence than the former on our early British practitioners. Nevertheless, many of the most sensible practitioners, as Willis, Sydenham, and even Gilchrist, ridiculed the idea of a malignant fever, and used to silence

their antagonists by simply asking them to say what it was ; a question which never failed to call forth a volley of *verbiage* about poison, ferment and debility, but nothing distinct or intelligible. Huxham, indeed, has endeavoured to give a clear idea of the term, but with no better success than his predecessors ; for what he says is rather an apology for the misapplication of it than a well-grounded defence of its use *. In short, *putrid* and *malignant* fevers were the kinds in which they dreaded to employ the lancet ; but whether they understood them as distinct genera, or merely as aggravated examples of the common epidemic, does not always appear. Indeed, confusion in this respect has been one great source of the mischievous consequences that followed such distinctions.

It would no doubt be agreeable to the reader to present him with the original passages of these older authors on the point under consideration, but since we have above had occasion to extend to some length our extracts from their precepts respecting bloodletting, we must now content ourselves with referring him to the places there cited, in which he will almost always meet the doctrines we mention, annexed by way of cau-

* Huxham on Fever, p. 99.

tion to the practice of phlebotomy. (Vide Sydenham's Schedul. Monit.).

We have stated that the English nation was naturally averse to bloodletting, on the authority of White; but he and the friends he quotes are not the only writers who maintain this opinion, as both Willis and Sydenham advance the same proposition. (Vide Pharm. Rational. et Schedul. Monitor.). A national prejudice of this kind, co-operating with the doctrine of malignity and putrescency, was no bad ground on which to build the superstructure of a *nervous fever*; a term which, says Cullen, originated with Willis himself, and was immediately afterwards adopted by the British, but not till very lately admitted into use by other Europeans.

Wintringham in 1721, and Manningham (on the Febricula) in 1736, had likewise made use of the term Nervous Fever; but none of them seem to consider it as a distinct genus of the disease, arising from and communicated by those similarly affected*.

Sydenham's fancy of a perpetual change in the constitution of the air, and of an indefinite variety of fevers thence arising, though derived from Hippocrates, had never attracted much at-

* Vide Synopsis Nosol. Method. notam ad Typhi Mitioris Synon.

attention, till recommended to the world by the writings of this diligent observer and active practitioner. The opinion gained ground * ; and under its impression, in unison with the causes already assigned, it is plain that the division of fevers into nervous was likely to be hailed as an improvement of no inconsiderable value.

The first work of reputation in which a description of this fever was attempted, was the *Essay on Nervous Fever* by Dr Gilchrist above quoted, in the year 1736. The neatness and elegance of its composition, would have been sufficient to have given currency to this paper, even if the author's professional reputation had been but low, or the periodical work in which it was published had not been the most popular of its kind, and considered

* “ At nova inquires morborum genera et epidemica quotannis oriuntur : Illa autem annua proles, ut opinor, cerebri vacui imaginatio et mera figmenta sunt. Veteribus attendant velim, ubi ea mala multo accuratius depicta, et in species diducta habebunt : ut eorum vana et supervacua diligentia sit. Atque haec satis dicta, de vaga et instabili quorundam medicinae theoria.”

Martini Lister Exer. Med. p. 2.

This was the opinion which a cotemporary of Sydenham expressed of his annual epidemics ; and many others of the same tone might be quoted ; but the idea afforded so ready an explanation of casual anomalies in fever, that their voices were never listened to by the “ servile pecus imitatorum,” who followed the imposing language and bold assertion of Sydenham.

the best in Europe. But the Edinburgh Medical Essays had another advantage, which tended not less to the dissemination of Dr Gilchrist's opinions respecting fever. It was the *only* one then existing in Britain; and from the masterly papers it constantly contained, considered by the learned in the profession as a kind of luminary, from which all instruction and improvement were to emanate. No wonder, then, if we find sentiments, and descriptions, and remarks, and modes of treatment peculiar to this author, pervade the works of Huxham, Pringle, Grant, and Cullen, and of many others too manifestly copyists, to deserve to be distinguished from each other by individual names*. The disease described by Dr Gilchrist is, in reality, no other than the common typhus fever, such as we see to-day epidemic; but on the debility of which, and on the bad consequences from bleeding, and other sedative remedies, he has contrived to dwell with so much effect, that to a reader of his description, a derangement of the nervous system of a peculiar kind appears to constitute its essence. The Doctor's scheme of febrile causes is curious; and indeed seems exceedingly probable, if compared with the pathology of those

* Vide Bancroft on Yellow Fever.

times, and not at all hostile to some recent experiments on the subject of inflammation. He himself, indeed, was afraid lest it should be taken "for a *putrid* fever of the *rheumatic* kind." But he denies that putrid is a definite term, and says farther, that there was a considerable difference in many things from that fever, as we have it described; but what the differences are he does not state. (Ed. Med. Ess. iv.). It was probably the same epidemic (1735,) that Huxham described under nervous fever; and we have already shewn how well he comprehended the nature of that change induced in the blood by the progress of disease, which, from a want of this knowledge, served as a foundation to the theories of Dr Gilchrist.

Soon after we find Pringle delineating his hospital or jail fever, which is only an aggravated detail of the disease treated by the fore-named authors. The symptoms described are such as occur every day in severe fever, whether of the remittent or continued type. But the idea of a disease originating from a peculiar debility was the reigning taste; and in an age of observation, varieties of this nature could hardly fail to occur to a person so versant in gregarious disease, as professional occupation rendered Sir John Pringle. To evince to the reader how far preconceived opinions

were concerned, it is only necessary to bring forward the diagnostic marks of "jail fever," as given by Pringle himself. "The disease," says he, "in the beginning, is not easily to be distinguished from any common fever; one of the most usual symptoms is a tremor of the hands; but in order to form our diagnostics we must take other circumstances into consideration. We are to inquire whether the person has been exposed to the *ordinary causes* of fevers, or to *foul air* and *infection*; likewise if he has been bled, and whether he has received any benefit from the evacuation; because, in inflammatory fevers, bleeding generally moderates all the symptoms, but in this it seldom has that effect." Now it is quite clear that all this is a *distinction* without a *difference*, as they say in logic, and that the author has strained hard for a diagnostic, yet failed of reaching his object *. Pringle's † good sense, however, prevented him from even here perceiving the doleful effects of bloodletting, as detailed by Etmuller, Gilchrist, Huxham, and others of

* See the same remark from Dr Cullen, First Lines, S. 70, 81, prope finem; also Synop. Nosol. Method. Prolog.

† It was acutely remarked by Dr Strother, that not a greater mischief happens in physical treatises, than "THE GRAPICAL DESCRIPTION OF DISEASES."

that class, even by Willis : For he says, “ it is “ little affected by bleeding once, if a moderate “ quantity of blood be taken away.”

The publication of Dr Fothergill on the putrid sore throat, and his subsequent reputation as a physician, tended not a little to fix on the public mind the doctrines of debility previously received.

Dr Fordyce, it would appear, owed his reputation, as a teacher, to great elegance of expression. Accordingly, we find him very eloquent on the subject of debility, and much averse to venesection, which, even in inflammatory fever, he was unwilling to push beyond 8 or 16 ounces.

However splendid the names and imposing the opinions of the above-mentioned authors may appear, none of them had opportunities of occupying the medical world with sentiments, to which in Britain it had ever been favourable, equal to the illustrious Cullen :—with doctrines squared to a clearer view of the animal economy than was common to his age, and evidently, as we shall see, prepossessed in favour of the notion of primary debility in fever, and, moreover, armed with a theory at that time unrivalled in beauty and simplicity, it was an easy task for him, from the professorial chair, to imbue the minds of the docile youth that surrounded him, with his peculiar

views of the nature and cure of fever. Drs Beddoes, Brown, and others, who have railed against education under professors, shut their eyes on the advantages to be derived from this mode of education, and seem to have been little aware of the means that such teachers have of communicating and enforcing their opinions, far superior to any thing that can possibly be effected by writing; and the undivided attention, which a favourite professor always commands, together with the familiar illustrations he is at liberty to employ, insure to the pupil an acquaintance with details, which the most fascinating composition would fail to effect. It need not appear strange then, that Cullen succeeded so well in establishing his theory of fever, and, hence, perhaps unknown to himself, in nearly interdicting the use of blood-letting in that disease; for it must be confessed, that his precepts on that subject are so hedged in with provisos, that one can hardly suppose he seriously meant it to be employed.

His theory was nothing but an arrangement, in the order of cause and effect, of many of the concomitant symptoms of fever, each of which had been by some one or other, long before his time, adduced separately as its proximate cause or essence. Thus the debility, as we see, had long been considered a prominent symptom, and

the increased action, (he called it reaction of the vascular system,) was by Boerhaave, and many others of that day, considered as the essence of fever. The spasm had been insisted on by Frederic Hoffman (de Febre,) and Dr Gilchrist, long before his time, both of whom employed his explanation of its relaxation to account for the free excretions that mark its departure. His theory was shortly as here follows, in his own words: “ Upon the whole, our doctrine of fever is explicitly this: The remote causes are *certain sedative powers* applied to the nervous system, which diminishing the energy of the brain, thereby produce a *debility* in the whole of the functions, and particularly in the action of the extreme vessels. Such, however, is at the same time the nature of the animal economy, that this debility proves an indirect stimulus to the sanguiferous system; whence, by the intervention of the cold stage and spasm connected with it, the action of the heart and larger arteries is increased, and continues so, till it has had the effect of restoring the energy of the brain, of extending this energy to the extreme vessels, of restoring therefore their action, and thereby especially overcoming the spasm affecting them; upon the removing of which, the excretion of sweat and other marks of the relaxation of the excretories takes place.” § 46.

All this is plain enough, being manifestly a number of events that take place in fever, but void of any thing like direct proof as to the order of causation. The morbid cause was thus assumed to act like a narcotic (or poison as Dr Currie called it,) and operate by simply abstracting energy or power. This had no proof. Then came the reaction of nature against one effect of the debility induced thereby, namely, spasm : this also was gratuitous ; and last of all came increased excretion, to celebrate the victory of reaction over spasm.

This was the most probable of the three assumptions, but still rested on no good foundation.

We see then that primary debility in fever was a necessary part of Cullen's doctrine, and the debility might be so great as entirely to exhaust the powers of life, that is, to produce death ; or, though it did not proceed quite so far, might readily be carried to that extremity, by the exhaustion produced by any additional sedative applied ; and hence it became a dangerous matter to prescribe sedative means that might co-operate too far or too effectively with the remote cause of the disease. Another, and the chief fallacy was, in changing the name of febrile excitement into *reaction*,—a change which, by presupposing a debilitating power to which it was opposed, neces-

sarily implied a danger of uncertain extent to be dreaded, and which must of course be augmented by the only means capable of removing the bad effects of reaction, that is, by the more powerful evacuants. In consequence, we find this great Professor manifestly averse to bloodletting, nearly interdicting purgatives (146, 147, 148.), and exceedingly shy even of his favourite remedy emetics, (178, 179,) in continued fever.

To crown all, followed Brown's theory, which by generalizing the principles above laid down respecting debility, still farther rivetted the opinions with regard to fever which had just been introduced by his illustrious antagonist. His theory is well known. Comparing the animal *actions* with the *powers* that enable the animal to perform them, he found that the *susceptibility* of action became the less, the greater the *force* of action was, and the *longer* its continuance. This was the fundamental theorem. The susceptibility he chose to call **EXCITABILITY**, the action itself **EXCITEMENT**. The **EXCITABILITY** was uniformly diffused all over the body, and according to the powers employed to call it into action, and the nature of the substances employed, the body was in the condition of **HEALTH** OR **DISEASE**, OR in some intermediate state.

Too great excitability he denominated **DIRECT**

DEBILITY, a defect of it INDIRECT DEBILITY; and these two debilities he considered as the causes of all diseases. These were consequently divided into a sthenic and asthenic class, and, of course, according to the notions of the time, synochus and typhus fever were enrolled among the latter, and demanded an increased supply of stimulus to raise the excitability to its true pitch. (Elements of Medicine, 279. T.).

We need not mention the high animosities and heart-burnings to which this theory gave rise. In this country they have long been laid to rest in the grave of their authors.

Hi motus animorum atque haec certamina tanta
Pulveris exigui jactu compressa quiescant.—VIRG.

A few agitators, indeed, who in the medical world, like the fabled giants of antiquity, every now and then vainly endeavoured to throw aside the *Ætna* of obscurity that oppresses them, seem willing to renew the conflagration, but, like their earth-born brethren, their utmost efforts only produce bellowing and smoke.

This doctrine still pervades the Continent as a fashion next in cut to the Cullenian taste. It has accordingly induced a considerable revolution in their practice; and till the year 1812, two ounce bleedings passed for a mighty effort of courage in

countries where, not half a century ago, their fathers, to use Allen's expression, "let blood by POUNDS *."

* In 1811 A. F. Marcus, (Ephemeriden der Heilkunde,) published his Theory of the Identity of Inflammation of the Brain with Typhus, which, however, he asserted he had conceived and established in 1806. There is little doubt, however, of his having stolen it, as many of his German brethren gravely practise, from the ingenious work of Dr Clutterbuck, which was published in 1807. However this may be, he was opposed by Horn, Dorn, Weintz, Roschlaub, Schneeman, Frederick, Weinbold, and a host of others equally obscure. A violent controversy ensued, and all the obscure and mystical nonsense of the transcendental philosophy, with the not less fallacious subtleties of the Brunonian school, were called into the aid of the contending parties. We have given a pretty reasonable catalogue of German controversialists; but to descend to a more minute list of small doctors, whose names will possibly never be heard beyond the range of this controversy, which, luckily for the rest of Europe, was conducted chiefly in their own Teutonic, would be far from our purpose. We refer the reader curious in such matters to "A Critical Review of the State of Medicine for the last ten years," in the 48th, 49th and 50th numbers, vols xii and xiii of Dr Duncan's Journal.

Hildenbrand, indeed, an author of much higher celebrity than those just mentioned, had spoken of venesection in *some cases* of fever, in which he conceived inflammation to be present, as early as 1810. He divided typhus into eight stages, one of which he named Inflammatory; and it was in this stage only, when the inflammatory action should *be so violent as to demand it*, that bloodletting might be useful. It is manifest that this precept can be of no practical utility, unless the individual characters, whereby we judge of the violence of in-

We have dwelt longer on this investigation than our first promise ; but it was curious to see how

flammation, were discriminated, which is not the case. If it were so there still would be no difference betwixt it, and what has been AT ALL TIMES taught and practised.

The head of a German is perpetually filled with divisions and subdivisions ; and the typhus that followed the immense multitudes of military that have for the last twenty years plundered and oppressed their country, afforded a fine opportunity of displaying their dexterity in nosology. They named it the *Pestis Bellica*, contending stoutly whether it should be placed among the *Fievres Adynamiques* or *Fievres Ataxiques* of Pinel ; and it is curious to remark how variously they describe the disease, or the effects of bloodletting in it, according to the state of their opinions respecting its nature. One philosopher, the celebrated Hufeland, seems to have escaped the delusions of theory that bewildered his countrymen, only to fall into others, if possible, more uncertain, yet, after all, to have received a bias towards that scepticism, which we shall afterwards mention, as proceeding from the pen of Dr William Brown of this city.

He conceives that the continued fever, under whatever name it pass, has always existed, but sometimes with the anti-phlogistic, sometimes the phlogistic type ; hence remedies of the one or other description have been in vogue at different times. The war fever was asthenic till the year 1811, when a comet, unusual heat and drought, certain solar and electrical phenomena, converted it into the sthenic form. So much for disease. But there is, he gravely maintains, a character epidemicus of physicians as well as of patients ; for diversity of observation and system, and often mechanical habit, determine the account of them which is given by physicians. Nay, the treatment of diseases modifies their appearance considerably,

a practical caution, directed to extreme cases of fever, had gradually glided into the importance of a general principle, and from that to establish new doctrines, that at length terminate in abrogating the original practice, of which it formed only a part.

We will not farther trespass on our reader's patience, nor insult his understanding, by telling him that there is no fever, nor other great injury of the system, unaccompanied by debility, and therefore no species of fever existing to which it is peculiar * ; that the symptoms given by Cullen and others as marking it, are common to idiopathic and symptomatic fever, with many other affections ; that there is no such thing as putridity in the vessels of a living man ; that in the language of systematic writers malignity means nothing more (when it means any thing at all, which indeed is not always the case,)

according to this author. Thus, the diaphoretic system produced miliary eruptions and sweatings ; the gastric method produced a gastric constitution, and lastly, the stimulant, an increased frequency of nervous diseases.

* There are no facts known respecting the moving powers, that enable us to explain the exhaustion they suffer in various diseases ; and, consequently, till such are discovered, we must remain ignorant of the causes by which they are so much diminished, in particular instances of disease, as *individual* cases of fever.

than violence or intensity. All this every body knows. It seems nearly as certain that there is nothing peculiar, nor very much to be apprehended in the debility that attends fevers; that the cases of bad success from bloodletting are nowhere to be met with detailed by authors, nor at any rate so numerous as to countenance the important consequences deduced from them; that a most disproportionate and almost superstitious attention has been paid to it by the scholars of Cullen, who have thereby done serious mischief to humanity. "As putting debility in the place of putrescence, they rendered it almost the universal watch-word of medicine, and annihilated for a time a great part of the benefit of experience." (Researches on Fever, Beddoes, p. 165.).

It next becomes part of our task to demonstrate how decidedly averse to this remedy the best modern authors, whose works are in most general use, have declared themselves. "Bloodletting," says Cullen, (139.), "is one of the most powerful means of diminishing the activity of the whole body, especially of the sanguiferous system; and it must therefore be the most effectual means of moderating the violence of *reaction* in fevers. Taking this as a fact, I omit inquiring into its mode of operation, and shall only con-

“sider in what circumstances of fevers it may
“most properly be employed *.”—“When the
“violence of reaction,” he proceeds, “and its
“constant attendant, a phlogistic diathesis, are
“sufficiently manifest; when these constitute the
“principal part of the disease, and may be ex-
“pected to continue throughout *the whole of it,*
“*as in the cases of synocha,* then bloodletting is
“the principal remedy, and may be employed
“as far as the symptoms of the disease may seem
“to require, and the constitution of the patient
“will bear. It is however to be attended to,
“that a greater evacuation than is necessary may
“occasion a slower recovery, may render the
“person more liable to a relapse, or may bring on
“other diseases.” The practical utility to be
derived from this precept may be sufficiently
judged of by considering that synocha is an affec-
tion which is scarcely ever seen as an idiopathic
disease, and which therefore can scarcely ever be
supposed to call for the use of the lancet.

In proof of this assumption we may quote the
following short note, taken at Dr Gregory’s Lec-
tures, April 18. 1815.

* Bloodletting, according to this, only counteracts the *vio-
lence of reaction*, but has no *general* independent effect upon
the system; a doctrine which the Doctor first assumes, and
then compliments himself for not asking the reason of it.

“ For 23 years, in which Dr Gregory gave clinical lectures, always three months, and often six months in the year, he never saw ONE EXAMPLE of PURE SYNOCHA.” Dr Bateman, alluding to the same thing, says, “ My own subsequent experience entirely coincides with that assertion.”

Dr Cullen continues, “ In the case of *synocha*, therefore, there is little doubt about the propriety of bloodletting. But there are other species of fever, as the *synochus*, in which a violent reaction and phlogistic diathesis appear, and prevail during *some part* of the course of the disease, while at the same time these circumstances do not constitute the principal part of the disease, nor are to be expected to *continue* during the whole course of it; and it is well known, that in *many* cases the state of violent reaction is to be succeeded, sooner or later, by a state of debility, from the excess of which the danger of the disease is chiefly to arise. It is therefore necessary, that in many cases bloodletting should be avoided; and even although during the inflammatory state of the disease it *may* be proper, it will be necessary to take care that the evacuation be not so large as to increase the state of debility *which is to follow.*”

We must again pause to consider this passage;

the words printed in Italics sufficiently shew, that he did not even wish venesection to be employed in synochus. For as to the expression, that in *many* cases debility succeeds the violent reaction, every body that has read Cullen's own definition, knows that this *always* takes place; and hence the "*many*" cases in which it should necessarily be avoided," will include every possible example of the disease. The precept of accommodating the quantity of the evacuation to the state of the debility *which is to follow*, is equally cogent, and can only be of use in those happy instances where medical practitioners, like their patron Deity, are gifted with a knowledge of futurity. He concludes as follows: "From all this, it must appear, that the employing of bloodletting in certain fevers requires much discernment and skill, and is to be governed by the consideration of the following circumstances:

- " 1st, The nature of the prevailing epidemic.
- " 2d, The nature of the remote cause.
- " 3d, The season and climate in which the disease occurs.
- " 4th, The degree of phlogistic diathesis present.
- " 5th, The period of the disease.
- " 6th, The age, vigour, and plethoric state of the patient.

“ 7th, The patient’s former diseases and habits
“ of bloodletting.

“ 8th, The appearance of the blood drawn out.

“ 9th, The effects of the bloodletting that may
“ have been already practised.”

These circumstances may, no doubt, occasionally be so prominent as to require consideration ; but we much suspect, that what Dr Johnson has remarked of marriage, *mutatis mutandis* may be well applied here : *That if all the difficulties connected with bleeding were to be fully considered before inserting the lancet, no man would ever bleed.*

Dr Fordyce declares himself hostile to bloodletting in fevers. The following are his opinions on the subject.

“ If the disease which the author has endeavoured to define as fever be only meant, the taking of blood from any large vein, in any part of the body indiscriminately, never diminished, shortened, nor carried off a fever in any case he has seen, *nor has he found any on record* in which it had this effect. Taking away blood from the arm or from any large vein neither increases nor diminishes a fever, nor alters its course as far as he has seen.”

“ The further debility arising from emptying the vessels by taking away a quantity of blood is often such as to destroy the patient in the remain-

“ ing part of the disease. Patients in consequence
“ have been very often cut off where blood has
“ been taken indiscriminately from any large vein
“ at the beginning of the disease, as the author
“ has seen in a great many cases.” Fordyce on
Fever, Diss. III. pp. 2, 5. 12.

Cullen and Fordyce are the two standard authors on fever, whose influence has perhaps operated most powerfully, from their respectively leading the great medical schools of Edinburgh and London.

We can hardly take a better method of discovering the public opinion, than by examining one of those systematic collections on the practice of medicine, which, by forming a kind of bibliothéque to the practitioner and student, have always been gratefully received by them, without any respect to the opportunities of observation, or individual authority of their compilers.

Dr Thomas's *Modern Practice of Physic* is a very respectable specimen of this description, and we shall therefore examine what are his sentiments, *On blood taken from a large vein*, as Dr Fordyce pleased to say, in cases of fever. P. 39. edit. 3. (Lond. 1810.) NERVOUS FEVER.—“ Bleed-
“ ing is a remedy not to be resorted to in this
“ fever. In temperate and cold latitudes, and in

“ the winter season of the year, it is by no means
“ an uncommon occurrence to meet with typhus
“ complicated with more or less of topical inflam-
“ mation of the thoracic viscera. In such cases I
“ have known venesection to have been employ-
“ ed ; but even in these it has appeared to me to
“ be detrimental, and in two instances which fell
“ lately under my observation *seemed indeed to*
“ *have destroyed the patients.*” This is truly cha-
racteristic. “ Instead, therefore, of having re-
“ course to the lancet, where topical inflammation
“ of the viscera of the thorax attends on typhus,
“ I would recommend drawing blood from the
“ chest, either by means of 8 or 10 leeches, or by
“ the application of a scarificator and cupping
“ glass, and repeating them as the occasion may
“ require.” We turn to p. 49., where he is treating
of putrid fever. “ It is no *uncommon* occurrence
“ for the symptoms to run very high at the com-
“ mencement of this fever, so as to give it rather
“ an inflammatory appearance, which has induced
“ practitioners at times to draw off blood by open-
“ ing a vein, but sad experience has fully evinced
“ the impropriety of so doing. Contagion certain-
“ ly weakens the FORCE OF THE SOLIDS ; for which
“ reason, *whenever we suspect a fever to have arisen*
“ *from this cause,* we should proceed with the
“ greatest caution in drawing blood, even al-

“ though the symptoms may run pretty high at
 “ the beginning, and may seem actually to de-
 “ mand the taking away of a considerable quan-
 “ tity.

“ Instead, therefore, of bleeding or using any
 “ other evacuation than keeping the body open
 “ with mild laxative medicines, we should sup-
 “ port the patient by allowing him a liberal use
 “ of wine ;” and then he goes on to cocker him
 still farther with panada and orange juice.

Even in inflammatory fever, or the almost
 imaginary synocha of Cullen, where every one
 talks of bleeding with great freedom, and even
 Dr George Fordyce ventures to take eight ounces
 twice or thrice, we can see the operation of the
 same timidity on Dr Thomas. P. 34. “Evacuation
 “ by bleeding is the chief mean we can confide
 “ in :” — “ if the symptoms run HIGH, therefore,
 “ and the person is *young* and *plethoric*, twelve or
 “ fourteen ounces may be drawn off at ONCE from
 “ a large orifice ! When the fever has been of
 “ several days’ standing, and the head is much af-
 “ fected, either with severe pain or delirium, to-
 “ pical bleeding, by the application of *three* or *four*
 “ leeches to each temple, may be preferable to us-
 “ ing the lancet a *second* time, or even once !”

I fear there are still too many physicians who
 would think three leeches preferable to a good

bleeding ; but none, I hope, *that ever let blood in fever* who would think twelve ounces of blood a sufficient evacuation from a young and plethoric patient in an ardent fever, whose symptoms “run high,” as the Doctor generally expresses it.

We shall content ourselves with quoting one other passage from this book, which has been in every student's hands for twelve years, and which aims, with the most sedulous industry, and often at the expense of consistency, to give a full and faithful copy of the public opinion, in all its various and contending shades.

“ In the simple continued fever, it will seldom
“ be necessary to have recourse to the lancet,
“ particularly in warm climates ; but should the
“ disease have arisen in a young person of a ple-
“ thoric habit, and the attack of fever have been
“ severe, with considerable flushing of the face,
“ redness of the eyes, delirium, and a full, hard
“ and obstructed pulse, we may then advise the
“ taking away eight or ten ounces of blood. This
“ quantity should be drawn off at once from a
“ large orifice, and not by repeated bleedings ; as
“ by the former mode there will be greater tempo-
“ rary, but less permanent weakness induced by the
“ evacuation. Under no circumstances will it be
“ advisable to resort to this operation, as we might
“ thereby occasion a slower recovery, by inducing

“ a state of extreme debility,” (*Vide* p. 26. SIMPLE CONTINUED FEVER). He adds, “ By bleeding unnecessarily at the commencement of this disease, such a degree of weakness may be induced, as, added to the depression of strength which arises in its progress, might produce symptoms of putrefaction in the second or third week of the disease, so as to prove fatal.”

Dr Lind of Haslar, whose Essay on the diseases of Europeans in warm climates has not had less influence on our practice abroad, than the authors just cited on the treatment of fevers in Britain, says: “ It is to be considered how far the violence of the fever in its first attack will admit of bleeding: a few ounces of blood taken from the foot have sometimes been found to relieve the pain of the head, but bleeding is in general to be used with great caution, and the repetition of it with still greater in these climates,” (*Vide* p. 266. ; *etiam*, Appendix to Essay on Preserving of Seamen.)

As the inaugural dissertations published from year to year at Edinburgh may be understood to express the doctrines of the day, we may give some extracts from one of them, taken at random, as land marks of the progress of public opinion.

1815, De Typho Mitiore, by A. Ewing, A. M. pp. 58.—“ Accidental causes, the nature of the

“ epidemic, the habit of the patient, and the de-
“ gree of inflammatory diathesis present, ought to
“ regulate our judgment respecting the detraction
“ of blood. This indeed is almost totally re-
“ jected in typhus, even though the symptoms at
“ the beginning appear to indicate its use; viz.
“ inflammatory symptoms, with a strong full
“ pulse, and increased heat of skin; for in reality,
“ these go off in a few days, and great marks of
“ debility supervene,” page 37.—“ I would not
“ deny that bloodletting may be useful in some
“ few cases, but then it is to be done very spa-
“ ringly. We ought not to take away more than
“ a few ounces, and then carefully to observe the
“ effect, that this may direct us what is to be
“ done,” p. 38, 39.

To this extract many others to the same pur-
pose might be added; but as they would merely
be the echo of what is every day heard from the
lips of practitioners, we forbear. Indeed, we have
rather given the above citations to form a distinct
chain from antiquity down to the present mo-
ment, and to shew how constantly error increases
by repetition, than from an intention of proving
by books the existing state of medical opinion.

But it is now time to return to those authors,
who, by restoring the practice of former times,
have again established the character of venesection.

tion in fever. We have above allowed them all the merit of resuscitation ; and have now only to consider briefly the share that each has contributed to the general improvement.

The greatest of these, and I believe the first in point of time, is Benjamin Rush. He appears to have commenced the practice very early, (certainly before 1792,) and his "Defence of Blood-letting" is still the best discourse on that subject in any language.

Next to him in the order of publication comes Dr Jackson, a gentleman who may almost be said to constitute the link between the older practitioners, who had never given up the practice of bleeding in fever from a theoretical dread of debility, and the moderns, who have been so fortunate as to escape from its trammels, or who, guided by experience alone, have again resorted to the lancet.

From the fragment quoted by him in his treatise on the Use of the Cold Bath in Fever, it appears that he had employed it previously to 1782 in the fevers of the West Indies, a country wherein, he remarks, the practice of bloodletting in fever prevailed till about thirty years before, was still in use among the French, and was superseded among the English, first by evacuants, and afterwards by stimulants, from the theory

of debility. (Vide Jackson on Fever, Edin. 1808, pp. 263, 279.). The great controversy in America on this subject makes a conspicuous part of the writings of Rush, Mitchell, and others, for several years after Rush's first publication on the subject, or Jackson's 'Treatise on Jamaica Fevers in 1791; but their arguments presented nothing novel, or made no deeper impression on the minds of medical men, than these had already produced.

Dr Thomas Sutton, physician to the forces, published an account of a contagious fever, which he calls remittent, and which raged among the troops in this climate in the year 1806. He was probably led to call it remittent to distinguish it from typhus, a disease which, according to the doctrines then received, must have been dreadfully aggravated by the free venesection he employed, and with immense advantage in this fever. (See "Practical Account of a Remittent Fever," Canterbury, 1806.). He had practised bloodletting in this fever so early as 1794, and every succeeding year from that to the date of his publication.

In 1807, Dr Henry Clutterbuck brought forward his inquiry into the seat and nature of fever, in which he has attempted to demonstrate the inflammatory character of that affection, and to es-

tablish the principal seat of this inflammation, and of course of the fever, in the brain. In short, his object was to demonstrate the identity of fever with phrenitis.

In a science like physic, wherein new phenomena on which theories possessed of the charm of novelty are easily constructed, so seldom occur, it is rare that a writer has even the felicity of being original; and accordingly we find Clutterbuck anticipated in some one or other of his favourite doctrines, by Erasistratus, by Gilchrist, by Ploucquet, or by Rush. He has completely failed in establishing his second and principal proposition that the brain is the seat of the disease; but has nevertheless demonstrated, beyond all possibility of contradiction, that this organ is almost always, in the course of the disease, and often early in it, affected with topical congestion, or an accumulation of blood in the vessels proper to itself. He has likewise, in endeavouring to identify fever with inflammation, collected a mass of evidence, which must ever operate on the minds of rational physicians, and remain a lasting monument of the genius, industry, and patience of its author. The tendency of every fever to inflammation, he has clearly and distinctly established, and suggested many valuable considerations on the general treatment.

It is confessedly to this work that we owe the first modern attempt, on a large scale, to employ the lancet in typhus fever. I allude to an Essay on the utility of bloodletting in fevers, illustrated by numerous cases, with some inquiry into the seat and nature of this disease, by Thomas Mills, M. D. &c. &c. Dublin 1813.

Dr Mills, in a formal dedication, acknowledges his obligations to Dr Clutterbuck, for the revolution in his ideas and practice. He considers fever as one genus, but comprehending a great many subspecies, according as the inflammatory action shall be determined to different organs.— Thus Dr Mills has a cephalic fever, a pulmonic fever, a hepatic fever, a gastric fever, a cardiac fever, and an enteritic fever,—a division in which we have lately seen him followed by Dr Duncan, in his Clinical Reports. He bleeds in general at first to viii or xii ounces, and repeats this as the symptoms seem to require. The other parts of his practice or views do not materially differ from what has long been in general use.

As Dr Mills had charge of an extensive fever institution, in a town where it is affirmed that typhus is of a more debilitating character than in other great cities, (*Vide Stoker on Fever, 1815*), it might have been expected that the advantage or mischief accruing from his practice would have

been very marked. But this was not the case; for the proportion of recoveries to deaths has scarcely augmented to a perceptible degree in his hands; though after much controversy, it appears that it was not *lessened*, (*Vide* Edin. Med. and Surg. Journal, vol. x.). Some small improvement seemed to have been made in the diminution of TIME in which patients are detained in the state of convalescence; but this might have been purely accidental. In short, Dr Mills, with ideas of the disease less confined than those of Clutterbuck, and a practice far more consonant to nature, as we conceive, than any thing these islands had acknowledged for many years, does not appear by his book to have established more than one single useful fact, which is, that bloodletting may be *safely*, and not *disadvantageously* practised in typhus, to a considerable extent, and without much discrimination in the cases admitting of it, —the very truth that Frederick Hoffman had laid down in the form of a theorem more than one hundred years before, but which the growing doctrines of debility had at length obliterated from the memory of every one.

It would be unfair, however, to infer, from the order in which the authors of the new practice are arranged, that there were no others intervening to these, or from them to the present period.

Many gentleman, principally serving as surgeons in the army and navy, have in the interim borne testimony in favour of venesection, either in their official communications, or in the various medical journals, and other periodical publications of the day; and not a few of them in their inaugural dissertations published at Edinburgh and other universities. It may not be amiss to observe, that the reduction of our vast military and naval establishments, at the conclusion of the war, has not been without its use in promoting the doctrine which we attempt to advocate. For medical men, retiring from these services, have settled in almost every corner of the empire, and generally carrying along with them the practice which they have hitherto found so beneficial, remove from their fellow practitioners their prejudicial apprehensions of debility from venesection, by the strongest of all arguments,—ocular demonstrations of its safety.

But nothing has tended so much to turn the public attention this way, as the excellent “Illustrations of Typhus Fever” by Dr J. Armstrong, published in 1816, of which a second edition has lately come out.

The novelty of his division and nomenclature; the adaptation of his pathology to the doctrines of equilibrium and topical congestion, (which

though well understood, and appreciated by Hoffman, *De Venæsect. Schol. Theor. I.*) had been neglected, till the writings and experiments of Parry and other physiologists restored them to their original importance ; the prevalence of fever at the time as an epidemic ; the coincidence of his theory with the views which many had just begun to entertain, added to the promptitude and decision of his practice, conspired to render his book one of the most popular that has ever been published on the subject of fever. It must however be confessed, that his views are not void of hypothesis, and to an ordinary reader appear manifestly to consist in substituting a derangement of the natural state of the blood's motion, or what he calls a disturbance of the equilibrium of the circulation, for the empoisoned debility and spasm of the followers of Cullen and Brown. As the symptoms of congestion are infinitely more urgent as well as more evident than those of debility, or its consequent spasm, so we are a great deal more willing to embrace a practice which aims at subduing or limiting its effects ; and have only made this remark, because we think writers should forego all theory when treating a subject like the present, where after so many ages of observation, on which rational theo-

ry can alone be supported, so few data have been established.

Dr A. divides typhus fever into simple typhus, inflammatory typhus, and congestive typhus, each of which he considers as arising from the same set of causes, but differing radically in the different states of the sanguiferous system. It will be best, however, to let him give his own diagnosis :
“ The congestive, therefore, differs from the simple typhus ; *firstly*, because the viscera are far more engorged in the first stage ; and, *secondly*, because through the continuance of the engorgement, that stage is followed by a general collapse, without the intermediate one, of regular and universal excitement, which not only partly characterises the simple typhus, but which produces the occasional and partial congestions of its last stage.” — “ If then the congestive so obviously differs from the simple, it may be inquired, in what does it differ from the inflammatory typhus ? *Universal augmentations* of heat and excitement attend the inflammatory, which are not the concomitants of the true congestive typhus, and which may be considered as the principal *external* distinctions.”
“ But further, there is in the inflammatory a general excitement of the arterial system, with an increased activity and fulness in the capillaries

“ of the diseased part ; whereas, in the congestive,
“ the force of the arterial system is not only di-
“ minished generally, but the whole venous circu-
“ lation oppressed and particularly obstructed
“ where the congestion exists. Agreeably to this
“ view, we find that the blood in the inflamma-
“ tory is almost invariably covered with a buffy
“ coat ; but such an appearance is never ob-
“ served in the strictly congestive, which seems
“ to denote *that the size* found on the crassa-
“ mentum of venous blood proceeds from the
“ influence of a local or general change of action
“ originally occurring in the arteries. Moreover,
“ the morbid appearances after death are com-
“ monly different ; the large veins in the vis-
“ cera being greatly engorged with black gru-
“ mous blood in the cases of the congestive ;
“ whereas, in those of the inflammatory, the ca-
“ pillary arteries of the membranes which invest
“ the viscera are in general found principally af-
“ fected, and the redness is diffused and of a
“ brighter colour,” (p. 70. edit. 2.)

Dr Armstrong likewise divides inflammation in a manner little familiar to most of his readers, before he came before them as an author ; namely, into acute, subacute, and chronic inflammation, (p. 166.) Of these, the two first he conceives to be always present in inflammatory typhus, and to modify its character according to their own nature.

The parts which they are most apt to attack are the brain, or its meninges, the lungs, pleura, mucous membrane of the trachea, stomach, liver, peritonæum, small and large intestines, (p. 25. edit. 2.)

His treatment of the inflammatory and congestive typhus is quite consonant to his theory.

It consists in bloodletting, purging, blistering, and calomel in large doses, the cold affusion being only applicable in certain cases. Calomel he employs to assist in restoring the equilibrium of the circulation, a function to which it is by no means adequate, by all we have hitherto been able to learn, since it is always used in combination with other most active remedies, and is always found to manifest its action most readily in the most favourable cases, and not in these till they have undergone a change for the better, (*Vide* Jackson, Bancroft, Rush on Fever.) We are never able to decide whether the amelioration of the case is to be referred to the calomel, (though the presumption is against it,) or to other remedies. Some facts given us by Jackson (On Fever, 294,) seem decisive to the contrary; and even if it were otherwise, a proof that calomel is useful, *by equalizing* the circulation, would still be wanting. Dr Armstrong's practice in simple typhus is somewhat different. He enjoins rest, antimonial eme-

tics, purges, first by a large enema, then cathartics to produce three or four stools a-day, warm bath, barley-water diet, in an apartment not to be cooled under 56° or 60° F. in the first stage. In the stage of excitement he employs the cold bath, under the restrictions of Currie, to the third day, but seldom after. This with purgatives and tonics, in some circumstances of the third stage, constitute nearly the whole of his general remedies. He adds, “ Perhaps it may be asked, why I have not
“ mentioned venesection as a remedy for the
“ strictly simple typhus? but I may appeal to
“ every practitioner of experience and candour
“ to support me in the assertion, that it may be
“ safely dispensed with in the majority of cases.”

“ When typhus appears from the first under its
“ least complicated form, the early adoption of
“ the plan laid down will in general not only
“ ward off inflammatory symptoms, but those putrid ones which are apt to arise out of them; and
“ thus it is calculated to prevent the necessity
“ of bloodletting in the second stage, and the
“ free administration of stimulants in the last. At
“ the same time, whenever, in defiance of the
“ means already recommended, there is an early
“ threatening of some visceral inflammation, the
“ immediate employment of general or topical
“ bloodletting, promptly followed up by the ap-

“ plication of blisters, will generally be found necessary. It may indeed be regarded as an axiom, that bleeding, if it should not do good, will hardly ever do harm in the *commencement* of febrile diseases,” (p. 123.)

From this practice we dissent, for the following reasons :

1st, Because all contagious fevers, however simple when they commence, very often pass (124.) into the inflammatory type, and have made considerable progress before the next visit of the physician.

2d, Because the definitions and diagnostics given (pp. 9. 70.) can not be always sufficiently distinct for the purpose of the practitioner, who may thus be treating a congestive or inflammatory disease as if it were a simple typhus.

3d, Because the experience of Drs Mills, Stoker, of this hospital, and an infinite number of prior and posterior authorities, confirms the axiom here delivered by Dr Armstrong himself, that bleeding, if it should not do good, will hardly ever do harm, and therefore that there is no sound reason why we should run the hazard of making the mistake above mentioned.

4th, Because topical bleeding, which Dr Armstrong esteems more debilitating than phlebotomy from a large vein, is often practised with ad-

vantage; and active purgatives likewise, which have great debilitating power, are always exhibited with the best effects.

5th, Because it seems a caution derived from those very false principles concerning debility, which Dr Armstrong in other places so successfully combats.

On the whole, Dr Armstrong has done great service to the medical practice of his country, by placing in a clearer light the advantages to be derived from the free use of evacuants, and the great obscurity and uncertainty in which the doctrine of debility is necessarily involved. Nevertheless, I cannot help thinking, that besides those from which we have already had occasion to express our dissent, there are still some parts of his opinions chargeable to the old exploded doctrines. See p. 112. 113., where he speaks of the great danger from the action of a brisk purgative, or the abstraction of the smallest quantity of blood in the last stage of fever. All the supporters of the doctrines we oppose resort to this stage, as affording examples of the danger of venesection; never recollecting, that to suppose no one in these extreme cases should die after venesection, is to assume that the disease never of itself becomes fatal, or runs its course in spite of all remedies.

If we look into Sydenham, and almost all the older authors, we shall find the same statements applied to pneumonia. See also 131. 148. 149. for more indications of the same caution. Indeed, with regard to the last, (149.) one is sorry to be obliged to correct it, by the sensible and decisive testimony of Rush. “ *Dissolved blood.*—
“ It occurs in the malignant states of fever: I
“ have seen it several times in the pleurisy, and
“ have once heard of it in a case of gout. I have
“ ascribed this decomposition of the blood to
“ such a violent degree of action in the blood-
“ vessels, as to dispose them to a paralytic state.
“ It is generally considered as a signal to lay aside
“ the lancet. If it occur in the *first stage* of a fe-
“ ver, it indicates a very opposite practice. By re-
“ peated bleeding, the vessels recover their natural
“ action, and the blood becomes *reduced* to its ori-
“ ginal texture: of this I have had frequent ex-
“ perience since the year 1793. If this dissolved
“ blood appear towards the close of a malignant
“ fever, no other benefit than the protraction of
“ life for a day or two, or an easy death, can be
“ expected from repeating the bleeding, even
“ though it be indicated by a tense pulse.” (Rush’s
Works, vol. iv. p. 326.)

Since the appearance of this work of Dr Armstrong, publications on the subject of the present

epidemic have become pretty numerous ; and though their authors, as might have been expected, differ exceedingly as to the mode of treatment, or even to the causes from which it derives its origin, their descriptions are, however, tolerably uniform. This is the more remarkable, as it is commonly found that authors, according to the different theories they may entertain of the nature of the disease, furnish descriptions that are very various, so that there is often a difficulty of identifying the disease of which they write.

The names of the respective authors, and a review of their works, may be seen in the *Edinburgh Medical and Surgical Journal*, vol. xiv. ; and indeed, from the general interest excited by this fever, are probably familiar to most of those who shall honour this treatise with their perusal.

The late Dr William Brown of Edinburgh is perhaps the one most peculiarly calling for notice amongst these authors, as his opinions, if adopted, must supersede all necessity of either writing books or prescribing remedies in febrile diseases. According to him, we have as yet acquired no power over fever, either in respect of prophylaxis, interruption, or cure. He thinks all modes of practice or prevention arrive at nearly the same thing ; so that, under every curative process, a certain number, and that a pretty constant ratio,

is always recovered, and the remainder as uniformly die. I believe, however, that Dr Brown has made very few converts among medical men; and others who have little opportunity to compare his reasonings with observation, can only admit them from general credulity. To me there appears to have been a good deal of misapprehension on the part of Dr Brown himself, without which, considering the talents of the author, his pamphlet could scarcely have made its appearance.

Of the other authors or their treatises little need be said, as their practice is pretty much of the kind we have been recommending, though administered rather with a sparing hand. We refrain, therefore, from making any individual remarks, which might appear invidious, it being our object to direct our reader to collateral information, and not to assume the ungracious office of reviewers.

Dr Yule of Edinburgh has given some excellent directions for fumigation, and the use of the cold bath, which cannot be too much attended to, as I am well persuaded that the learned Doctor has not at all overrated the mischief arising from its mismanagement. Dr Yule, moreover, recommends the use of mercury in this fever.

Dr Graham of Glasgow, in a highly classical production, has given us a neat monograph of the disease.

To mention the names of Bateman and Cheyne is almost a sufficient voucher for the excellence of their productions, which indeed are in the hands of every one.

In the Clinical Reports of Dr Duncan also, much curious information on the subject of fever is introduced, and the treatment is such as to corroborate the general principles we support.

Dr Millar of Glasgow has written with great spirit and eloquence on that part of the treatment of fever connected with medical police, but of his practice we as yet know nothing.

Mr Bonnár of Auchtermuchty has likewise published a small treatise on the subject, in which he recommends free venesection.

Besides these, as authors of distinct treatises, the names of Stevenson, Burnet, Dickson, Muir, Grattan, Pritchard, and many others, are entitled to our gratitude, for the promptitude with which they testified their conviction of the superior efficacy of bloodletting in the public journals of medicine.

The greater number of the writers, however, whose names are above delivered, did not appear before the public till a period posterior to the

time in which the practice described in this volume was carried into execution, so that it would be quite foreign to our purpose to proceed farther in the investigation of their works, and we shall now proceed to state the results of our own observation

ON THE

EFFICACY OF BLOODLETTING,

IN THE

PRESENT EPIDEMIC.

AFTER what has been said above on the advantages of venesection, it would be quite superfluous to state simply our conviction of the excellence of that remedy in fever: Nor is this the object of what follows. He who advances any proposition in medicine or science, ought naturally to consider himself bound to explain all its parts to the satisfaction of others,—to be ready with his reasons and motives for bringing it forward, and as communicative as may be desirable with respect to its collateral bearings and con-

sequences. Without this state of preparation, his authority must be high indeed in the world, if he meet with general belief, or even pass unchallenged; and indeed his confidence in himself must be very considerable if he can expect so credulously favourable a reception. It was for these reasons that the following sketch of the author's views and observations respecting bloodletting in fever were brought together.

Most of the remedies employed in medicine are of the evacuant tribe, and this within the last few years has been particularly the case in fever. The operation of such auxiliaries is for the most part directed primarily to the stomach and intestines; and it is only by the sympathies or connections existing between these organs and the different emunctories that they become efficient. The same thing may be said of purgatives and emetics themselves, which, though they are received into the principal instruments of the intended operation, do not effect the act of purging and vomiting, till many other parts are called into sympathy. It is thus that the general action of medicines may be defined,—The operation of a foreign substance on some particular organ, through the medium of the skin, or its con-similar mucous membrane in the stomach and intestines. Surgery, as it in general produces its effects by acting immediately on

the offending part or organ, is naturally therefore, and properly, opposed to the indirect action of medicines; and no where more remarkably than when the object to be attained is some change in the powers or circumstances concerned in the circulation of the blood, or the activity of its vessels. Thus, the physician who attempts to remove a plethora by means of a purgative or diaphoretic, does indeed set on foot a process that will in time effect his purpose, through the medium of the organs and actions just alluded to; but if there is any great or immediate effect to be produced by the SUDDEN reduction of plethora, it is manifest that he can scarcely expect to procure this advantage. Had he prescribed bloodletting in its place, he would evidently have produced all the other wished-for consequences of lessened plethora, with this additional one expected from celerity; and would have, besides, avoided any bad consequences,—all the tear and wear as it were of the intermediate organs, which the other mode of practice compels him to employ. Bloodletting is, in reality, the surgery of the physician, who, while he procures by medicines a diminution of the circulating fluids, and thus, of the actions of which they are the stimulus and origin, acts through a number of agents that may not always be in a condition to obey him; but when he makes

use of phlebotomy, he boldly, and at once, enters the great reservoir from which all our sluices are derived, and at once draws off the quantity necessary to produce the change required. Hence it is, that in all ages, whether disease was conceived to arise from corrupted humours, from plethora, or the over-action of bloodvessels, down to the time when, unfortunately for the human race, debility was created its proximate cause; this remedy has been more or less employed for this purpose. For its action is so manifest and immediate, the relief of urgent symptoms so palpable, that little argument could be required to persuade mankind of its utility.

The most obvious effect of bloodletting is, to diminish the quantity of circulating blood, venous and arterial; and from such a diminution, various and important consequences ensue: For in certain habits and constitutions, there may, and often does exist a superabundance of fluid in the arteries and veins, from which all the varieties of plethora, over-action of the vessels, and their sequelæ ensue; and if this be the case in health, how much more injurious will that train of symptoms be, which ensue from it in disease, especially in fever, where all the indications of increased irritability are so prominent? From the reduction of the quantity of the general mass, the resistance

to its progress along the vessels will be diminished, and, along with it, the degree of stimulus given to the vascular system, whence, as a necessary consequence, flow slower and softer contraction and pulsation. The living tubes, before distended farther than their elasticity enabled them to overcome, are now more than a match for the distending power, and again exercise their proper contractility. Hence the pulse is often firmer and fuller than before, or is said to *rise* after a bleeding. Now, as this increase of contractility in the vessels is extended to the finest capillaries, and if, as often happens in disease or morbid congestion, the irregular operation in the trunks had induced a stricture, torpor, or obstruction of these, it follows that the natural action of those parts being restored, their secretions will be increased. It is thus that bloodletting is always considered as a very powerful antispasmodic, and deobstruent,—faculties which it seems to possess solely from the change it effects on the action of the small vessels. Another effect of bloodletting is to promote circulation, secretion, and excretion, which it can only be supposed to do in the way above described. Bloodletting also is a refrigerant, cooling the body or surface of the individual to whom it is applied in a remarkable manner. It is revulsive, or has a power, when lo-

cally applied, to lessen action in a particular, though not sympathising part, as is seen in cupping for phenomena and the like. Lastly, it is an excellent alterant remedy, producing often wonderful and unexpected changes in diseases, of whose rationale we know very little; so much indeed, that medical men have been apt to refer many of its best effects to this inexplicable power, which are better explained by the properties above delivered.

Such are the general effects of this invaluable remedy, when applied in health, or in those slight diseases which are unaccompanied by any great or systematic derangement. For in those of a contrary description, it operates often in a very different manner. It is divided into general and topical, according as it abstracts blood from a single large, or from many small vessels. The large vessels laid open are commonly the large veins of the arm or neck, or the temporal artery. When blood is taken from many small vessels wounded together, as in cupping or scarifying, the part immediately subject to the operation evidently yields more of the blood drawn than the general system; and hence the name of topical or local bloodletting. It is rare, however, that this process is employed either in fever or general disease with the intention of relieving the

part immediately acted on, but rather for the purpose of relieving some parts within, opposite or corresponding to it. It is also, particularly in the form of leeches, exhibited as a substitute for venesection, where great debility or some obvious cause seems to forbid the use of the latter.

The immediate effects of this remedy on patients labouring under fever come now to be considered; and in these we shall find, that, after all, the operation of bloodletting seems quite reconcilable to one or other of the general effects above delivered.

The event from venesection most naturally to be expected in fever is a reduction of the pulse; and accordingly this, from being hard and frequent, often becomes slow and soft. Of a circumstance so common, examples will be found every where in the cases delivered in the Appendix, and particularly in the first two, NO. I. and II, as also in several of the children mentioned in the Appendix, whose pulse fell most rapidly to the standard of health after its exhibition. Besides the examples referred to, the following may be given, to show the effect that bloodletting has in reducing the frequency of the pulse. Alexander Cameron, æt. 36, was bled to $\frac{3}{4}$ xxxiv on the 4th day of the disease: Pulse before bleeding, 112, full and

sharp ; immediately after the operation, pulse 64, full and soft ; next day, pulse 84, soft. Henry Dastie, æt. 30, was bled to ξ xxviii on the 9th day of fever ; before bleeding, pulse 128, full and sharp ; immediately after, pulse 90, full and soft ; next day, pulse 78, soft. Alexander Brown, æt. 25, bled on the 7th day of fever to ξ xxx ; before the operation, pulse 106, sharp ; immediately after, pulse 78, soft ; next day, pulse 78. Margaret Skinner, æt. 18, bled on the 5th day of fever to ξ xvi : Pulse before bleeding, 110, sharp ; next day, pulse 86, soft. Robert Ross, æt. 30, bled to ξ xxiv on the 6th day of fever : Pulse before the operation, 120, sharp and full ; immediately after it, pulse 110, soft : next day, pulse 86, of good strength. James Docharty, æt. 36, bled on the 8th day of fever to ξ xxxii : Pulse before bleeding, 112, sharp ; two minutes after, pulse 100 : next day, pulse 78. The reduction of the pulse, however, was not a constant effect of bloodletting ; for in other cases it seemed to gather strength and velocity from the operation.

When the pulse, either from the nature or the progress of the complaint, was small, it gradually expanded after the detraction of blood ; when slow, it quickened ; when strong and hard, it became soft from the same operation. However irregular or varied in its frequency or force pre-

viously, it generally soon became regular, soft, and calm, after this operation, and this favourable change may be considered as a good index of the other revolutions about to take place through its means in the febrile action.

The sudden removal of delirium, and coma, is none of the least of its immediate good effects, of which a curious example is recorded in the Appendix to this volume in the case of Kenneth Mackenzie, NO. 41. This lad had been admitted on the 7th day of fever, and on the 12th he became delirious, being quite incoherent in the morning, and towards evening comatose, with muttering, subsultus tendinum, and tremors of the hands: twenty ounces of blood were drawn; *and before it had ceased to flow*, he became quite sensible, and answered questions accurately! The mention of a case like this shows better under what head those symptoms of debility named typhoid ought to be placed, than many dense written pages of description. Several examples to the same effect might be quoted.

The abstraction of blood, as we have noticed in general, relieves pain, and was found remarkably efficacious in this respect in the fever of which we at present treat. Many examples of this kind will be found in the cases annexed; and the only exceptions to this very general effect, are those

cases, wherein coma or delirium prevented the patient from feeling the changes that were going on in different parts ; so that in such, its effects seemed to be entirely of a contrary description, and rather to increase or create pain where it was scarcely felt before ; but this took place merely from its salutary influence in removing the above-named causes of diminished nervous power, and thus enabling circumstances (whatever they are) to operate on that system, which would otherwise have permitted them to run on to disorganization, and perhaps to the destruction of life without warning. As an instance of this particular, we may refer to the case of John Maclean, NO. 42., in which the patient, on the 11th day of fever, reported himself free from pain, being affected with stupor and delirium, when after a very free evacuation by 14 leeches, these signs of oppression went off, and the pains, of which he had become insensible, returned. The same thing was observable in many other cases, and indeed is a natural consequence of the relief given to the sensorium in this way, by removing the cause of its oppression.

The temperature of the surface is almost always morbidly increased in fever ; and though the ardent duty, always unavoidable in a recent establishment at the beginning, prevented our

being able for some time to attend to its thermometrical measurement, it was, however, almost uniformly observed above natural, and in many cases intense; bloodletting rarely failed to lessen the severity of this symptom, and to produce more or less of the general effects of a refrigerant; the skin also became soft and moist, as might have been expected; and these two circumstances occurred very frequently, even while the blood was yet flowing, leaving little doubt on my mind of the mode in which these changes took place. Of the effects of venesection in this particular, I have seen many very striking examples; I have repeatedly seen instances where the skin was dry, harsh, and pungently hot before bleeding, and before the operation was finished the patient was bathed in a profuse sweat; and though it had not always the effect of immediately producing *sweat*, yet, as I have stated, it rarely failed to render the skin softer than before, and to produce a gentle breathing perspiration. I shall here mention a few cases to shew the effect of bloodletting in reducing the temperature of the skin; and I shall take the cases of the patients already quoted (159.) to prove the sinking of the pulse after venesection, as they will at the same time illustrate the connexion that generally exists between the heat and pulse in febrile patients: In the case of the first patient,

A. C. heat, before bleeding, 100° F. ; five minutes after the operation, heat 99 ; next day, heat 97° .—In the 2d case, H. D. heat before bleeding, 104° ; next day, heat 97° .—In the 3d case, A. B. heat before the operation, 102° ; five minutes after it, heat 101° ; next day, heat 97° .—In the 4th case, M. S. the heat was not measured.—In the 5th case, R. R. heat 105° , before bleeding ; immediately after the operation, heat the same as before ; next day, heat 96° .—In the 6th case, J. D. heat before bleeding, 102° ; five minutes after the operation, heat 100° ; next day, heat 98° .—The sinking of the heat, however, like the sinking of the pulse, was not a constant effect of phlebotomy, even when the patients felt much relieved by the operation ; for in some instances it was little affected by it, and in a few, even rose after the bleeding.

Since the circulation is rarely accelerated without a proportionate increase of the respiration, it may be conceived that bloodletting lessens the frequency of the latter along with the former, and, accordingly, we often find it particularly efficacious in reducing hurried respiration. Flushings of the face and eyes, which are commonly signs of the above affections, likewise disappear under its use. The eye, from being suffused, haggard and vacant, becomes clear, calm, and intelligent ;

and its whole expression, as well as that of the countenance, becomes much improved. This may be seen to have taken place in almost every case given in the appendix. That of John Maclaren, NO. 3. may be taken as a fair example, as occurring on the 3d day of the fever; it is impossible that any share of the improvement there noted can be referable to *reaction*.

Bloodletting relieves that feeling of heat, and dryness of the mouth and fauces, so often complained of by febrile patients, and consequently diminishes thirst. I have seen the tongue, from being furred, parched and tremulous, become steady, moist and clean, very soon after an effective bleeding. It also often checks nausea, retching and vomiting, and improves the digestive organs. Patients who have taken nothing but liquids for several days, sometimes take food with considerable appetite, after losing a quantity of blood; the case of John Campbell, NO. 8. Appendix, may be cited as an example of this.

One advantage by no means insignificant, derived from this practice, is the convenient relaxation of the bowels which it usually superinduces. In two or three cases, the demand for stool has become so urgent, as to oblige me to tie up the patient's arm before the proper quantity of blood had been obtained, even though before the

operation not the slightest inclination to it had been felt, nor any alvine evacuation taken place for a considerable time (in one case 48 hours) before it. From the same property it assists the operation of purgatives; and perhaps the little tendency to obstinate constipation, observed in our patients, (23), and the ready operation of opening medicines, are solely attributable to this cause.

On the other hand, in some cases of diarrhœa, particularly that form of it which sometimes supervenes in protracted cases, and occasionally during convalescence, and which seems to depend upon an inflamed state of the mucous membrane of the intestines, bloodletting was found to afford the best means to restrain it, though often employed for a different purpose.

Ischuria was by no means an unfrequent symptom; and the great relief to those affected with it, by a free employment of the lancet, would form in itself a sufficient indication of its use. The case of John Campbell, NO. 8. affords a good specimen of this effect, which was no doubt owing to the general relaxation always induced by this potent remedy. Spasm, subsultus tendinum, and the like, when present, receive no less relief from it than they are accustomed to do in other morbid combinations. In the case of David Hagarth, NO. 37.

for instance, a young man brought in on the 14th day of fever, with the most marked indications of what is usually termed typhus gravior, subsultus was a prominent symptom. Free leeching being applied, the subsultus was found considerably diminished on the day following; and by pursuing the same practice, it went off entirely, and never returned. Wm. Brown, NO. 38. on the 11th day of fever was affected with tremors of the arms and spasmodic action of the muscles of the face: on applying to his forehead 16 leeches, which procured a good discharge, these symptoms, by many esteemed the harbingers of death in typhoid fever, were quickly banished, and did not again return. Many other examples to the same purpose might easily have been selected.

The last immediate effect produced by the abstraction of blood, which it is my intention in this part to notice, is its power of conciliating sleep. Though this refreshment, so necessary to the body, either in health or disease, may sometimes in fever be procured by other means; yet by these, the unfortunate patient only awakes to be harassed by the train of morbid symptoms, from which he had just been snatched by a grateful sleep; but in that procured by the detraction of blood, he awakes to feel himself relieved from almost every disagreeable symptom, except some

pains which the restoration of sensibility and intellect may now enable him to feel. To this circumstance particular reference or proof is not at all necessary; as out of the many cases delivered at the end of this volume, scarcely any will be found that do not establish this position.

Such, then, are the immediate and manifest effects of bloodletting in the present epidemic fever of Edinburgh, and, as I seriously believe, in most others of that class. They are so remarkable, that often strangers, in passing through the wards of Queensberry Hospital, have remarked to me, that they never had beheld fever patients, in the same circumstances of the disease, exhibit so few morbid symptoms. And I cannot pass on to the consideration of the general effects produced on fever by this evacuation, without remarking, that these seem, in a great measure, to depend on the individual effects above stated, though in many examples the permanent benefits were too distant to be distinctly referable to this source.

Bloodletting is one of the few remedies, which seem to cut short the fever. Of this fact the most satisfactory proof has been afforded to me, both in the Royal Infirmary and Queensberry House. From a great number of others, have been selected ten cases, which stand foremost in

the Appendix, as fair examples of this, at various periods of the disease; but instances of the fact might have been multiplied to an immense extent, almost to half the number of patients received into Queensberry House. By comparing in our tables, the distance of the period of convalescence, from the date of admission, with its length under other treatment, it will easily appear, that the number of cases cut short has not been overrated.

But to abate the violence of the symptoms, however desirable this object may be in all diseases of reaction, is not the highest praise of bloodletting: it *augments the chance of recovery*, and of course *diminishes the mortality* of fever. This is the great object for which it is to be valued above all other remedies which have yet been proposed; and it is from this, that it has been made the principal subject of the present dissertation.

That bloodletting lessens the mortality of fever, I conceive to be established beyond all possibility of doubt, not only by comparing the mortality in our hospitals, since the adoption of this practice with that of other hospitals, but by comparing the mortality in the same hospital, under the same physicians, and in the same fever, previous to, and after *free* venesection was employed. From the registers of the Royal Infirmary, it appears, that from January 1812 to January 1817, 506 fever

patients were dismissed cured, or died. Of these, 457 were discharged cured, and 49 died; or the proportion of deaths to recoveries was as one in $10\frac{16}{49}$. From the 1st of January 1817 to the 1st of January 1818, there were 478 fever patients dismissed cured, and 33 died: thus the deaths to recoveries were as one in $15\frac{16}{33}$. From the 1st January 1818 to the 1st January 1819, there were 784 fever patients discharged cured, and 41 died, or the deaths were to the recoveries as one in $20\frac{2}{41}$; but if we include the two first months of the present year, we shall find the mortality still farther diminished. Counting, then, from the 1st January 1818 to the 1st March 1819, the number discharged cured was 935, the number that died 46: thus the deaths were as one in $21\frac{15}{46}$. Now it must be remarked, that it was towards the end of the year 1817, that the practice of FREE venesection began to be employed in the Royal Infirmary, but did not come into general use in the house (at least to any extent) till the spring of 1818, and since that time the mortality has been steadily diminishing.

In this hospital, since it was opened on the 23d of February 1818 to the 23d February 1819, 924 * patients have been admitted. Of these 833

* This number includes only those admitted who were affected with fever; but, besides these, we had repeatedly pa-

have been discharged cured, and 39 have died : thus, our mortality, as will be seen by Table, NO. XXI, Appendix, NO. II, is 1 in $22\frac{14}{39}$. The number of males discharged cured amounted to 344, and the number that died was 20. The females dismissed cured amounted to 489, and 19 died. Thus, the males died in the proportion of 1 in $18\frac{1}{5}$, and the females in the proportion of 1 in $26\frac{14}{19}$. But low as this mortality is, I do not make the least scruple in predicting, from the spirit with which the practice is now carried on in both hospitals, that the return of mortality for the present year, will be even much more favourable than that for the past *; and I am now, from farther observation and experience, inclined to believe, that several of the patients who have died at this hospital might have been saved had the lancet been more freely employed ; but the circumstances were at *that time* thought adverse to its

tients sent in to us, that were not febrile patients, but affected with other diseases; the number of these, in the course of the year, amounted to twenty-six. Several of them were so ill on admission, that we were obliged to keep them till they died. Others, who could be moved without much danger, were immediately sent to the Royal Infirmary ; and some of them, affected with such diseases as small pox, measles, scarlatina, &c. were retained till cured.

* The mortality in both hospitals during the first three months of the present year, has only been as 1 in $31\frac{1}{3}$, 421 having been discharged cured, and only 14 having died,

use. But in estimating our mortality, it is proper to pay some attention to the circumstances of those cases which terminated fatally. Table, NO. XXII, Appendix, NO. II, contains the 34 cases which terminated fatally, from the opening of the hospital up to the 1st January of the present year. From this table it will be seen, that nearly one-third of our fatal cases entered the house moribund. Several others, from various causes, admitted of no active treatment. So that nearly one-half of the patients, whose cases terminated fatally, after being allowed to swelter in the filth and impure air of the hovels from which they were dragged, where nature had to struggle, as it were, against a severe disease kept in perpetual and aggravated action, by the unremitting application of its causes, were brought to us only to breathe the fresh air for a few days, and then expire, without our being able to do more for them than to prolong their life for a day or two, or make death as easy as possible. When these things are considered, it will appear, that our mortality is exceedingly small indeed, where there was any room for active practice.

But even in those desperate cases where all hope seems groundless, detraction of blood often protracts life, and affords, if not a cure, at least the best possible demonstration of the radical efficacy of the practice, and gives nature an oppor-

tunity, as it were, to recover her expiring powers. Two cases of this kind, form the last section of Appendix, NO. II., and, unless we are much deceived, constitute the most decisive evidence of the good effects of the treatment recommended, that can well be conceived. They are such as we would particularly request those, who may still have some doubts respecting its propriety, to peruse with attention. They will there meet with the most unfavourable circumstances, combined with symptoms urgently demanding relief. They will find the lancet to have been employed as the means, and these urgent symptoms to have given way before it. They will find, after a time, these symptoms again return, and again disappear before its influence. But the most instructive thing for them to remark, will be the little change, (certainly none for the worse,) which those untoward circumstances that seemed to proscribe the lancet, are found to undergo.

Lest, however, we should be thought to have taken blood merely because the symptoms were unfavourable, or because the disease was named fever, we subjoin the principles on which we judge that the practice ought to be conducted, —always warning the reader, that here, as in every new practice, it is not an easy task to point out the contra-indications; for it is manifest, that these must entirely depend on the

success or failure of the practice in question applied to particular cases, and of course must vary with the experience of the writer. It is thus that the author forbears entering into particulars respecting contra-indications; being thoroughly convinced, from the revolutions that have taken place in his own opinions, that he could commit nothing to writing, that a farther acquaintance with the circumstances which call for the lancet might not make him willing to retract in a twelvemonth hence; just as he would now retract many of the contra-indications which, not more than a year ago, he would have considered insurmountable.

In fever, blood should be drawn whenever there is local pain, as of the head, chest, epigastrium, abdomen, or where there is pain of the back and limbs; which, though common to almost every fever, is as constantly relieved by the free evacuation of blood. Heat of surface is another indication which calls for the same remedy; so also is delirium or coma.

But the pulse is the great standard by which all these lesser indications are to be estimated. For as the great and primary operation of venesection is to lessen the action of the heart and arteries, we can only judge of the extent to which this effect is necessary, by carefully ascertaining their present strength and condition. Notwithstanding, it must not be forgotten, that the pulse,

considered alone, and without reference to the other symptoms, cannot fail to lead us to the most erroneous conclusions with respect to venesection in fever; since, often the very causes that call for its copious application, only manifest themselves in the pulse by a small and oppressed motion, which could never of itself lead the practitioner to employ evacuations. The example of enteritis, which is in every one's mouth, affords a strong enough proof of this position; but the supposed debility of continued fever is in reality a much more frequent instance; and whether referable to congestion, as it is now termed, or to plethora, topical or general, is certainly, in almost every circumstance, removed by the diminution of the circulating mass, and especially by bloodletting. Wherever, then, one or more of the symptoms previously mentioned are present, combined with a hard, sharp, or full pulse, or, by their urgency, demonstrate that its smallness and oppression are owing to congestion; in such a case, there is not the least doubt of the propriety of copious venesection, regulated by the usual circumstances of age, sex, strength, temperament, and so on, by which we are guided in its exhibition in other diseases. Nay, in particular cases, as where there are affections of the abdominal viscera, and no other very evident marks of congestion, we ought

to bleed, even though the pulse feel weak ; for those abdominal affections often run on most rapidly to a fatal termination. Whenever the patient does not complain, though the other symptoms, as the pulse, tongue, skin, and heat, indicate a sharp febrile action, and especially if he has the slightest tendency to raving, bleeding should be employed, and will be found useful.

With respect to the manner of taking blood, it must be remarked, in the first instance, that, as its beneficial effects are almost always in direct proportion to the quantity taken, this ought always to be as free as the indications whilst it flows will permit. Hence the common practice of bleeding in the erect posture is carefully to be avoided ; for syncope, as far as I have been able to observe, is not of the least service in checking the febrile symptoms ; and as it is by the QUANTITY of blood subtracted, much more than the manner in which it is drawn, that the patient is to be relieved, it is manifestly injurious, by preventing a proper quantity of blood from being taken, and thereby a due impression from being made upon the system, and the morbid concatenation under which it is then labouring. I know from experience, that a copious bleeding at the very first onset of the disease will sometimes prevent its formation ; yet I believe this will seldom happen.

Bleeding, however, at this period, will generally ensure both a short and mild disease. But I am of opinion that the fever is most certainly checked when the bleeding is not performed till the third or fourth day of the disease. In this particular, however, the practitioner must be guided by the suddenness of the attack, and the severity of the symptoms, when it is most proper to resort to the lancet; as there is great diversity in different cases as to the time when the symptoms supervene, which call most urgently for its use. I have seen furious delirium early on the third day of the fever. The best time for taking blood is in the evening, during the febrile exacerbation, as the patients then bear it better, and the relief next day is always observed to be more effectual and permanent. Relief is in general found to be most decisive when the blood is sily; and it is, besides, a pretty sure indication that a second bleeding will be serviceable, provided the success of the first should not be complete. It is of importance, therefore, to attend to the appearance of the blood drawn.

In fever, *venesection* has always been performed, till lately, when, from some peculiar views respecting the cause or seat of the disease, *arteriotomy* was much recommended. I have had an opportunity of witnessing and comparing the ef-

ficacy of both ; and the result of my experience has been, that arteriotomy possesses no advantages whatever over the more simple and practicable operation of phlebotomy,—is often not so well adapted to the circumstances of the case,—and, on the whole, uncertain, painful, and frequently very troublesome, from secondary haemorrhage. Leeches are a most invaluable remedy in fever ; and there are many admirable examples of their efficacy recorded in our journals ; and the cases detailed in the Appendix will shew that they have been very liberally employed.

The quantity of blood to be taken, will be best learned by studying the cases, as it is manifest that nothing but general directions can be given in this particular. The true rule in fever, and most other acute diseases, ought to imply the emission of blood, till the morbid symptoms are removed or relieved, or till some indications of injury from the operation become manifest. The common symptom of the permanent sinking of the pulse is no bad index of bleeding having been carried to a sufficient length ; but as in fever the relief does not always take place immediately, it must be studiously kept in mind, that by too rigid an adherence to this cardinal rule, a greater quantity of blood may sometimes be taken than the disease requires. As long indeed as the pulse

remains good, an excess of this kind can do little harm ; but as it is more like an artist to produce the effect wanted, with as few other adventitious ones as possible, it may be well to attend to the quantities that have already been found effectual. I should indeed be much disappointed were any of my readers to consider this caution as meant to deter them from copious venesection. On the contrary, I consider that as of more value than all the other remedies that have ever been used in fever put together ; and am perfectly convinced, that the bad or dubious success of bloodletting in fever has been entirely owing to the too sparing quantities in which it has hitherto been taken in that disease. Such quantities may, as we have formerly remarked, lessen some of the more urgent symptoms ; but they seldom produce any permanent impression on the morbid association set up by the fever. In an adult, I consider all bleedings under sixteen or twenty ounces as coming under this head, unless there exist some very marked indication to the contrary ; and it is far from improbable that the trite measure of a pound of blood, has lost more patients in acute diseases than any other species of inert practice which fashion or authority, to the great detriment of mankind, have from time to time introduced into physic. For in other cases the symptoms are so little

relieved by the supposed panacea, that the conscientious physician, often in direct opposition to his creed, resorts to something else which is possessed of real efficacy, and in this way generally succeeds in saving his patient. It is thus that amidst all the farragos of the 17th and first part of the 18th century, one is always sure to find one or more efficacious remedies to which the supposed success of the rest may be attributed ; but in those scanty bleedings the physician often persuades himself that he has made a *ne plus ultra* effort to save his patient, and that, of course, as no benefit is to be derived from it, still less is to be gained by other remedies, which he imagines are so much less powerful. They are in reality, however, of very little permanent efficacy. There are no half truths in medicine, says Dr Rush. “ This half-way practice of moderate bleeding has kept up the mortality of pestilential fevers in all ages and in all countries. I have combated this practice elsewhere, and have asserted, upon the authority of Dr Sydenham, that it is much better not to bleed at all than to draw blood disproportionate in quantity to the violence of the fever. If the state of the pulse be our guide, the continuance of its inflammatory action, after the loss of even 100 ounces of blood, indicates the necessity of more bleeding as much as it did the first

“ time a vein was opened. In the use of this re-
“ medy it may truly be said, as in many of the en-
“ terprises of life, that nothing is done while any
“ thing remains to be done. Bleeding should be
“ repeated while the symptoms which first indi-
“ cated it continue, should it be until four-fifths
“ of the blood contained in the body are drawn
“ away. In this manner we act in the use of
“ other remedies. Who ever leaves off giving
“ purges in a colic attended with costiveness be-
“ fore the bowels are opened ? or who lays aside
“ mercury as a useless medicine, because a few
“ doses of it do not cure the venereal disease * ?”

It is thus that the fervid spirit of Rush eluci-
dates the futility and insignificance of small bleed-
ings ; and to every article of his doctrine we most
heartily subscribe. Nay, we have even gone be-
yond Dr Rush in respect of these ; for we find him
(page 336.) saying, that “ in cases where the pulse
“ acts with force and freedom, from ten to twenty
“ ounces may be taken at once ; but in cases where
“ the pulse is much depressed, it will be better
“ to take away but a few ounces at a time, and
“ to repeat it three or four times a-day.”—
Now, it is evident from this that Dr Rush’s gene-
ral bleedings were, at a medium, fifteen ounces,—

* Rush’s Medical Inquiries, p. 334, Phil. edition, 1805.

a quantity which we have just set down as insignificant ; and as for the method of abstracting blood three or four times a-day in minute quantities, we look on it as pragmatic and trifling in the extreme degree. The idea, however, on which he practised this method was ingenious, and may merit consideration.

To conclude what has been said respecting the quantity of blood to be taken at the same bleeding, I may remark, that the largest quantity of blood I have ever seen taken at one bleeding from a patient in fever was 41 ounces. This I drew with my own hand from a patient of the name of Thomas Dougald, æt. 24, on the 9th day of his disease. The medical gentleman who attended him before admission informed me, that he had bled him to 20 ounces the day previous ; he was bled again to 18 ounces on the 14th day of the fever. After the bleeding on the 9th day every urgent symptom was greatly relieved, but the fever ran on to the 17th day. 20, 22, 24, 26 and 28 ounces were very common quantities for the patients to lose at one time, particularly if it was their first bleeding ; and many lost 30, 32, 34, 36, and some 38 ounces at one bleeding. Unless the quantity wished for could not be obtained on account of syncope or some other cause, it was seldom under 16 ounces at one time, and very rarely

below 12 ounces. I shall here give a statement, in a tabular form, of the quantities of blood taken from a few of the patients, at different bleedings, during their treatment in this hospital. Most of these, as will be seen from the table, were also bled locally by means of leeches.

	æ.	lost	oz.	at	bleedings.	
Cecil Smith,	25	136	at	7,	besides	10 leeches.
Cone Grove,	24	110	—	6,	—	34
* Joseph Burket,	28	108	—	6,	—	12
William Marshall,	18	104	—	5,	—	—
Janet Neilson,	18	102	—	6,	—	20
James Innes,	24	90	—	4,	—	20
Samuel Proven,	22	88	—	3,	—	20
Emily Leed,	40	87	—	5,	—	12
* Tho: Darling,	27	86	—	4,	—	8
Margaret Preston,	24	82	—	3,	—	32
David Paterson,	43	78	—	4,	—	8
William Cameron,	25	68	—	2,	—	24
* Hugh Nugent,	21	64	—	3,	—	30
* Eliz. Purdie,	30	60	—	2,	—	8
Ang Macdonald,	20	52	—	2,	—	—
* William Beattie,	27	52	—	2,	—	10

Helen Porteous, a girl of 13 years of age, had 90 leeches applied to the head at six different applications *.

To give the reader some idea of the degree of frequency with which the mode of treatment just detailed has been put in practice in Queensberry

* The cases of those patients marked with asterisks will be seen Cases NO. xi, xiv, xviii, xxxii, xxxix, Appendix NO. I.

House, and of the steadiness and extent to which it has been carried, we shall here take a review of tables NO. XIX. and XX., Appendix NO. II., on inspecting which it will be seen, that general bloodletting was employed in the primary fever in 364 of the 743 cases detailed in the tables, viz. in 166, or 1 in $1\frac{153}{166}$ of the males, and in 208, or 1 in $2\frac{1}{53}$ of the females. Of the 364 bled from the arm *, 140 were also bled locally by means of leeches. 189 of the 743 patients were bled by means of leeches only, and 190 were neither bled nor leeched. Thus, of the 743 patients, 224, or 1 in $3\frac{71}{224}$ were bled from the arm only; 140, or 1 in $5\frac{143}{140}$ were both bled from the arm and leeched; 189, or 1 in $3\frac{176}{189}$ were bled by means of leeches only; and 190, or 1 in $3\frac{173}{190}$ were neither bled generally nor locally. See Table, NO. XIX, Appendix, NO. II.

Of the 133 cases of relapse 62 were bled from the arm, viz. 30, or $1\frac{11}{15}$ of the males who relapsed, and 32, or 1 in $2\frac{17}{32}$ of the females. Of the 62 who were bled from the arm, 20 were also bled by means of leeches; 22 of the 133 were bled by

* Some of the patients included among those bled from the arm were bled from the temporal artery; but the number is exceedingly small,—this mode of abstracting blood having, as I have already stated, been found to possess no advantage over venesection.

means of leeches only, and 49 were neither bled from the arm nor leeched. Thus, of the 133 patients who suffered a relapse, 42, or 1 in $3\frac{1}{3}$ were bled from the arm only; 20, or 1 in $6\frac{13}{20}$ were both bled and leeched; 22, or 1 in $6\frac{1}{22}$ were bled by means of leeches only, and 49, or 1 in $2\frac{25}{49}$ were neither bled generally nor locally. See Table XX, Appendix NO. 11.

The total number of ounces of blood taken from the 364 patients who were bled in the primary fever, amounted to 8762, or in the proportion of $24\frac{1}{14}$ ounces from every patient who was bled. The number of leeches used in the cases of primary fever amounted to 3900, and the number of patients leeched was 329, viz. 140, who were both bled from the arm and leeched, and 189 who were bled by means of leeches only. Thus the average number of leeches applied to each patient amounted to $11\frac{281}{329}$. See Table NO. XIX, Appendix.

The total number of ounces of blood taken from the 62 patients who were bled in the relapse cases amounted to 1404. Thus, on an average, every patient who was bled lost $22\frac{20}{31}$ ounces of blood. The number of leeches used in the relapse cases amounted to 464; the number of patients leeched was 42, viz. 20 who were both bled from the arm and leeched, and 22 who were bled by means of

leeches only. The average number of leeches applied to each patient amounted, therefore, to $11\frac{1}{4}$. See Table NO. XX, Appendix NO. II.

The total number of ounces of blood drawn during the treatment of the cases both of primary fever and relapse amounted to 10,166, and the total number of leeches applied amounted to 4364.

This calculation, however, only embraces the number of ounces of blood drawn, and the number of leeches applied during the treatment of the patients in the Hospital, but does not give a correct estimate of the blood lost by them, or of the numbers who were bled during their illness, as many of them had been bled pretty freely before they were sent to us; some of them had been bled twice, and a few even thrice before their admission. Indeed, I have been much pleased to observe the gradual progress of venesection in fever in the town, as manifested by the answers to my inquiries into the treatment of the patients before they were sent to hospital. When I first began to act as Physician's Clerk in the Royal Infirmary, we almost never heard fever patients say that they had been bled before they were admitted. When any remedies had been employed, they were "a dose of physic," "a vomit," or "sweating powers," or sometimes a combination of these. If they had been bled, the quantity of blood report-

ed to have been lost never exceeded one or two small tea-cupsful. In progress of time, however, after *free* venesection had for some time been successfully practised in the Infirmary, the number of those who lost blood before admission gradually increased, and the quantity of blood taken also increased to 3, 4, and 5 cupsful. Now they are sometimes bled twice or thrice before admission; and it is nothing uncommon for them to tell us that the doctor who attended them at home took "a bowlful," or "a large broth plateful" of blood from them.

Nature of the blood. Of the 364 cases bled in the primary fever, the blood shewed the buffy coat in 227 instances, viz. in 111, or 1 in $1\frac{55}{111}$ of the males who were bled, and 116, or 1 in $1\frac{23}{29}$ of the females. In 89 cases, or 1 in $4\frac{8}{89}$ the blood was not buffy; and in 48, or 1 in $7\frac{7}{12}$, its appearance was not noticed in the journals. See Table NO. XIX, Appendix NO. II.

Of the 62 cases where bloodletting was employed in relapse, the blood shewed the buffy coat in 44 instances, viz. in 21, or 1 in $1\frac{1}{7}$ of the males, and in 23, or 1 in $1\frac{2}{23}$ of the females. In 6 cases, or 1 in $10\frac{1}{7}$, the blood was not buffy; and in 12, or 1 in $5\frac{1}{5}$, its appearance was neglected to be noted. See Table NO. XX, Appendix NO. II.

Of the buff on the blood, there was every degree of variety, from a blue sizy pellicle, to a thick

tenacious coat of more than an inch in thickness. Sometimes the first cup of a bleeding, and sometimes the last, would have shewn a buffy coat, while there was not the least appearance of it in the others. The same thing happened at different bleedings: the first bleeding was sometimes buffy, and none of the succeeding ones; on the other hand, I have seen the blood buffy at a fourth bleeding, when none of the previous ones had shewn the slightest tendency to it. It is by no means easy to say *a priori* from the symptoms, whether the blood will be sily or not; as I have often seen, where, from the symptoms, one would be led to expect strongly buffed blood, yet when drawn, it did not shew the least disposition to size, and *vice versa*; and it is worth remarking, that in the relapse cases, where there are comparatively so few symptoms of local determination or congestion, that the blood was more regularly buffed than in the primary fever. The crassamentum was generally florid and firm, adhering to the sides of the vessels. The serum was sometimes of a yellow tinge, and sometimes of an unusually green colour. One thing was observed very generally in febrile blood, the tardy and imperfect separation of the serum and crassamentum: this was observed in almost every instance; and the cases of dissolved blood, which offered themselves, were late in the disease.

We turn now to consider the objections, real or imaginary, which have been made to this practice. As long as experience, brow-beaten by hypothesis and authority, seemed to offer but doubtful evidence of the efficacy of plentiful bleeding in continued fever, the great argument against its use was the direct debility which ensued. The writings of the excellent authors, whom we have cited as the restorers of venesection, have, by the most positive evidence, gone far to do away this prejudice, so that we seldom meet with it now directly under this form; and if any one amongst the readers of this volume still retains it, he must be possessed of no ordinary share of scepticism, if enabled to withstand the evidence in that particular. Of seven different sections into which we have divided the cases recorded in the Appendix, six are precisely of the description that would have manifested this direct debility, had it been so easily produced. A perusal of the cases will shew, that the evacuations were not sparing, yet not one of them but shews that, in the language of Brown, venesection, so far from being asthenic, produced the most unequivocally sthenic effects. Tacitly giving up this point, the opposers of venesection have resorted to sequelæ, which they imagine ensue from the use of the lancet. These are, slow recovery, dropsy, phthisis, bilia

ry irregularities, relapse. That the first of these, Slow Recovery, is a charge entirely without foundation, will be seen by examining Table, NO. XV. Appendix, NO. II., giving the average time the patients were detained in the hospital. The truth is just the reverse; and $19\frac{647}{743}$ days, low as it is, would have been much lower had not the general alarm respecting the fever rendered it a very difficult matter for many of our patients to procure lodgings, and particularly so, as they wanted the means of paying for them, and thus made it a matter of necessity with us, to keep them for some time longer than would have been expedient, had this obstacle to their dismissal not existed. I have, in a former part of this work, specified the general description of these inmates, and therefore need not here enlarge on the bad consequences that might have ensued from turning such poor friendless creatures to the streets.

DROPSY, whether in the form of hydrothorax or ascites, is certainly an occasional consequence of excessive bloodletting,—that is to say, *of bloodletting disproportioned to the disease*; but as the method we are delivering, if properly acted on, can scarcely ever come under this predicament, dropsy must be proportionally rare. I have seen several cases where dropsy succeeded fever, but none of these patients had been bled, with the ex-

ception of one ; and in this instance, the disease (hydrothorax) could not by any means be chargeable to excessive bleeding ; but I doubt not that bloodletting may be so ill managed, as to occasion its occurrence. It is, however, a very rare cause of dropsy, and can no more form an argument against the use of the lancet in fever than in pneumonia. “ Ask the poor patients who come
“ panting to the door of our hospital, with swelled
“ legs and hard bellies, every fall, whether they
“ have been too copiously bled, and they will all tell
“ you that no lancet has come near their arms. Ask
“ the parents who still mourn the loss of children
“ who have died, in our city, of the internal dropsy of the brain, whether they were destroyed
“ by excessive bloodletting ? If the remembrance
“ of the acute sufferings which accompanied their
“ sickness and death will permit those parents
“ to speak, they will tell you, that every medicine, except bleeding, had been tried to no purpose in their children’s diseases. Go to those
“ families in which I have practised for many
“ years, and inquire, whether there is a living or a
“ dead instance of dropsy having followed, in any
“ one of them, the use of my lancet ? Let the undertakers and grave-diggers bear witness against me, if I have ever, in the course of my
“ practice, conveyed the body of a single dropsi-

“ cal patient into their hands, by excessive blood-
 “ letting? No. Dropsies, like abscesses and gan-
 “ grenous eruptions upon the skin, arise, in most
 “ cases, from the WANT of sufficient bleeding in
 “ inflammatory diseases. Debility, whether in-
 “ duced by action or abstraction, seldom dis-
 “ poses to effusion. Who ever heard of dropsy
 “ succeeding famine? and how rarely do we see it
 “ accompany the extreme debility of old age*?”

PHTHISIS is a consequence of bloodletting so very improbable, that I shall not waste any time in its discussion: ingenuity itself must be puzzled to discover the bond of connexion. For my own part, I have never seen any such sequela induced by bleeding; and indeed would never have looked for it, had I not heard it suggested by others. I suspect one may, with great truth, say of this supposed consequence of venesection in fever, what Botallus remarks of fever itself: That
 “ one hundred thousand men perish from the
 “ want of bloodletting, or from its being used out
 “ of time, to one who perishes from too much
 “ bleeding prescribed by a physician †.”

BILIARY IRREGULARITIES are the fourth head of objections brought against plentiful venesection.

* Rush's Medical Inquiries, p. 304.

† Bot. cap. xxxvi. § 4.

It is evident, that these affections could not form a sufficient ground of objection to any species of practice, when only occurring by themselves; and they are therefore commonly urged as a make-weight, along with something that seems possessed of more solidity. Were it of any force, it might be a difficult matter to decide, whether such irregularities were in reality the consequence of bloodletting or not: all fevers have such a tendency to affect the hepatic system, that one should never be able to ascertain what was due to the course of the fever, and what to the relaxing operation of venesection. There is certainly nothing impossible or incongruous in the idea; but I also am certain, that I have never seen these irregularities distinctly referable to this source, and that I could have hardly missed to remark them, had they ever arisen from it.

RELAPSE is a frequent occurrence, and has been urged more loudly than any other objection against the copious use of venesection which we advocate. Candide observed, that Dr Pangloss always spoke very long and loud on the subjects with which he was least acquainted, and I rather suspect, that the public clamour against bloodletting, on account of relapse, partakes not a little of the failing of that learned personage. The old idea of the relapse being worse than the primary

complaint, which is doubtlessly true of some diseases, fails most completely here ; the relapses, as we have soon to shew, being extremely slight, and almost perfectly devoid of danger when compared to the original fever. Yet I have no doubt, that it is the want of a due consideration of this circumstance, that has lent to their occurrence so much weight with many individuals, otherwise most candid and unprejudiced. A few remarks, however, if properly considered, will demonstrate how much they have been overrated.

Till within a very few years, physicians were content with publishing their observations by way of remark, without any reference to the individual facts from which such observations were drawn. It followed as a matter of course that great variety must exist in these observations, which would naturally depend on the talent for generalization and accurate recollection which individuals possessed ; and not a little on their previous information and acquaintance with disease. Hence it can hardly be expected, that in these times relapses would be noted with much exactness, except those which occurred after the febrile patients were left as cured, and soon enough to prevent their being considered as occasioned by the original cause. Of late, however, things have taken a different turn ; medical con-

clusions are deduced, not from individual observation, but from many cases of the same kind compared together. This is as it should be, and in the manner of the exact sciences ; and accordingly, facts and observations are recorded, and their relative frequency subjected to comparison, which, but a very few years before, would only have been noticed as curiosities, or perhaps not noticed at all. It is in this way, I conjecture, that relapses have been more attended to of late than formerly ; and the proof of this conjecture is, that we do not find relapses to have been urged against Galen by the Erasistratians, or against his followers ; such as Botallus, Baglivi and others, by their antagonists ; which must have taken place, if these, many of them eminent men, had paid the same attention to them as we do now. The same remark applies to Rush and his opponents, men nothing behind that illustrious individual in observation and experience, however bigotedly addicted to the opinions they had brought from the schools ; and we may be assured, that had the same observation of relapses existed then as now, that they would have been urged triumphantly against his doctrines. In this point of view, then, it appears very doubtful, whether relapses are increased by the use of the lancet at all ; it seeming much more likely, that

in this case we are only observing minutely what before we did not observe at all.

In the Appendix will be seen several examples of what are generally denominated relapses, and which in reality are so, but yet would scarcely have been noticed as such at no great distance from the present day. These relapses are almost uniformly mild and short. By inspecting Table NO. XII, it will be seen, that of 133 cases of this kind, 6 terminated on the 2d day, 38 on the 3d, 13 on the 4th, 56 on the 5th, 4 on the 6th, 10 on the 7th, 2 on the 9th, and 2 on the 11th: in two cases, the day of crisis was not noticed, so that 113 of our relapses terminated on, or before the 5th day, and only 4 exceeded the 7th day; so that, on the whole, the disease, relapse, and all, is abridged by the practice of venesection, besides the sufferings saved to the unfortunate patients by having a mild relapse, instead of labouring under the alarming and harassing symptoms of an advanced period of fever. But the true weight of the objection is luckily capable of being compared by numbers, and is there found to be very light indeed; for if the fatality of the disease, as we trust is abundantly shewn above, is greatly diminished by the practice of plentiful venesection, then certainly relapses can never be urged against its employment, since only 1 out of 133 proved fatal,

and that very doubtfully *. Indeed I shall never once apprehend the least danger from a relapse, whilst I know of the lancet as a remedy ; and were I certain that every one of my patients were to suffer a relapse, it would not deter me from its use, as I consider him the best physician who can bring the greatest number of patients the length of a relapse.

Whatever may be said of the debility produced by bleeding, I am persuaded that two-thirds of the relapses arise from some irregularity on the part of the patient. After the exhaustion, the abstinence, and weakness of a fever, when the patient begins to indulge in ordinary diet, for which he has commonly a large appetite, it would be strange indeed if the deposition of new parts, and the excess of nutrition suddenly thrown into the system, did not produce in it some agitation. The irritability is accumulated as it were to the highest point, and there is never a sufficiency of exercise or evacuation to discharge it, till, in circumstances favourable to its development, it manifest itself by fever. So great is the irritability at this time, that I have known a patient suffer a relapse by walking once or twice across the apartment ; and numerous examples from in-

* See Case, NO. 18. Table, NO. XXII, Appendix, NO. II.

dulgence in stimulating food or drink. But even granting that venesection were the cause of more frequent relapse than would occur in a fever left to nature, still the same objection would hold against any other mode of cutting it short that has ever been employed, and of course there remains no reason why relapses should be urged against it more than against emetics, purgatives, or the cold affusion.

The coma, convulsions or delirium sometimes observed after bloodletting, have likewise been considered as its sequelæ. But it should not be forgotten, that these symptoms occur in fevers, whether bloodletting has been employed or not; and that in reality they are merely the indications and natural course of a severe disease; and the best evidence that can be given of their not arising from the quantity of blood previously lost, is, that farther depletion is by much the best, indeed almost the only way of removing them.

Our readers by this time will be able to guess, that we do not lay much stress on the other remedies which have been employed in fever. Emetics we never have seen of much service, and of course they have been but seldom employed. This was not so much from apprehension of increasing the determination, as it is called, to the head; but from their scarcely ever having appeared to alleviate the disease.

Purgatives have always had the best effects; and if there were any mode of cure that could, with justice, be substituted for venesection, it would be purgatives. As to the cold bath, it may be remarked, that very seldom indeed has it appeared to be of any service, and of course it was little employed.

Cleanliness, fresh air, cool potations, and attention to symptoms, were found to constitute the best collateral treatment, and accordingly formed the chief accompaniment to the sanguine evacuations.

Sudorifics have been little tried at Queensberry House, and still less salivation: of these, therefore, it cannot be expected that I should give any account. Indeed, the simplicity of the practice of the two eminent individuals under whose auspices I acted, did not allow me an opportunity of putting to the test many methods of treatment, both novel and ancient, which the curiosity of my readers may require. In fact, the fever is of too serious a cast to admit of much leisure, even if there were inclination for experiment.

Fumigation was regularly instituted to prevent infection, but none of its good effects were ever very apparent. Indeed, it is manifest, that this auxiliary may be of the most essential service, without any possibility of appreciating its merits;

since we only observe the infected persons, and not those who escape : and the arduous duty of a fever hospital, sooner or later, brings its inmates into closer contact with the diseased, than any fumigation can be supposed to counteract.

If we compare the above methods of treatment with venesection, we shall find them deficient in the following particulars :

1st, Emetics are dangerous in their operation, as in cases of apoplectic tendency, in hernia, in pregnancy : they have been known to destroy life by spasm, hæmorrhage, or inflammation of the stomach. These last, however, are very remote dangers. Their operation is very uncertain from the torpid or irritable state of the stomach ; and, lastly, they have little effect in violent fever, and frequently occasion those who depend on them to lose time in the mildest.

2d, Purgatives are likewise uncertain in their operation, both from a similar cause, and from the impacted state in which scybala are often lodged in the colon of persons labouring under fever. They require some time also for their full operation ; and it will be seen by many of the cases given in the Appendix, that the patient was often in a state of convalescence from the use of the lancet, even before a proper system of purgation could have been brought to act on the bowels.

As to the danger said to arise from their exhibition, I look upon that as next to nothing, and would recommend any member of the old school, who may still feel inclined to doubt on this subject, to peruse the arguments and details given in Dr Hamilton's invaluable work on the utility of purgative medicines.

3d, The objections against diaphoretics have been stated so strongly by Sydenham and Cullen, that it appears useless to insist farther on them here. They are uncertain, slow, and disagreeable, even where they succeed; they are unmanageable, and often disappoint the wishes of the practitioner; and, above all, can always most certainly be compensated for by the use of the lancet, which is by far the safest diaphoretic.

4th, Every one of the good effects supposed to be derived from the use of the cold bath in fever, can be procured with much more facility, certainty and safety, by a free use of the lancet.

5th, With regard to mercury, I doubt extremely whether it has any effect at all in diminishing fever; but as nobody believes that it cuts it short, and the evidence in its favour is so eminently ambiguous, I hope I shall be excused if I pass it over without farther discussion. In short, the activity of the remedy we treat of, compared to the others, is so preponderant, that I should not have en-

croached on the reader's patience by this comparison, short as it is, did it not seem proper that prejudice should have an opportunity of viewing itself in various directions ; for it is only by these different modes of comparison that a change of opinion can be expected to take place. For the use of the reader, the following short summary has been drawn up, as conclusions from what is contained in the preceding pages ; it being found that such propositions often assist the eye, and fix the attention more effectually, in a tabular view, than in the more complicated form in which they are necessarily delivered in the text.

CONCLUSIONS.

- I. Copious bloodletting lessens the mortality in fever.
- II. It cuts short epidemic fever.
- III. Even where it does not save, it protracts life.
- IV. It mitigates all the uneasy sensations.
- V. It relieves irregular muscular action or spasm, subsultus, and singultus.
- VI. It removes coma or delirium.

- vii. It removes ischuria, constipation and cuticular constriction.
- viii. It removes oppression and morbid congestion.
- ix. It reduces the temperature and pulse.
- x. It calms the respiration.
- xi. It diminishes thirst, and improves the appetite.
- xii. It often checks nausea, retching and vomiting.
- xiii. It assists the operation of purgatives, and sometimes restrains diarrhoea.
- xiv. It conciliates sleep to the patient.
- xv. It may be employed to five times the quantity believed, till very lately, not only with impunity, but great advantage.
- xvi. Youth is no valid objection to its use.
- xvii. Old age is no impediment to its application.
- xviii. It is often of the greatest benefit in the most hopeless cases.
- xix. It is scarcely of less utility in long continued, than in recent disease.
- xx. It alters the type of the fever to one more favourable.
- xxi. Where it does not cut short, it lessens the average duration, both of fever and convalescence.
- xxii. The utility of bloodletting in fever depends almost solely on its being copiously

drawn ; and it is on the merits of this principle alone, and more particularly its extension to a period of the disease, and under circumstances hitherto esteemed the most unfavourable for its use, that we rest our claims of originality or distinction from the other authors who have recommended the application of the lancet in continued fever.

XXIII. The practice of copious venesection is probably yet capable of great improvement.

To the conclusions above delivered, and deduced from such obvious premises, the only objection that can be made is one that we have repeatedly refuted in the course of the work, viz. The different nature of epidemics at different times : in the words of Rush, “ to multiply those
 “ proofs farther, would be an act of homage to
 “ the weakness of human reason, and an ac-
 “ knowledgment of the infant state of our know-
 “ ledge in medicine. As well might we suppose
 “ nature to be an artist, and that diseases were
 “ shaped by her like a piece of statuary, or a
 “ suit of clothes by means of a chissel or pair
 “ of scissars, as admit every different form and
 “ grade of morbid action in the system to be a
 “ distinct disease,” Bil. Yell. Fev. 1797, p. 27.
 Willing to make every inquiry into the supposed

variation of the epidemic, I examined the records of the Edinburgh Infirmary back to a very distant period,—to the days when the immortal Cullen prescribed in its chambers, yet without discovering the least grounds for the opinion. In these records, just as I had previously found in books, no greater diversity, nor so great, was to be discovered between the two fevers, than we every day meet with between two individual cases of the disease itself. In this town indeed, there was not the least mention made of such a diversity, till the practitioners, who had laid it down as a principle, that fever cannot be treated by bloodletting without a necessary aggravation of all the symptoms, saw themselves obliged to resort to this explanation: and so many people had forgotten, that bloodletting had once been the general practice over all the civilized world, even in its days of greatest refinement, that the explanation it afforded of this strange anomaly was readily embraced, and is still retained by many. To a person at leisure, it would be easy to find all the old forms of fever, ever described by authors, within a very few cases of the present epidemic, taken without selection; the very last case which we have given in our Appendix, Macdonald, was what he might call a synochus, or perhaps, by a little stretch of terms, synocha; while the wife of the same person,

affected with contagion at the same time, and from the same source, died of a fever manifestly of a description which he must denominate the typhoid type, or what is usually called typhus gravior, being treated (in her own house) by wine and stimulants. But the persons who maintain this diversity of the epidemic from every other, seem to argue erroneously, even on their own principles. They contend, that the fever is different from the epidemic of other years, because arising from other causes; and particularly from poverty, cold and depressing passions. Now such a fever as this ought manifestly, instead of being inflammatory, to have assumed the most typhoid form imaginable, being excited by the strongest possible causes of debility. Yet they, I know not by what process of logic, have drawn a conclusion directly opposite. There would be more truth in asserting, that the mode of treatment has in some degree changed the type of the fever. This would have been truth, and have explained the different appearance of the patients in the wards of an hospital, to what it was formerly, and even of those presented for admission who had previously undergone venesection. But instead of this they fly to a very odd and palpable *petitio principii*. The fever, say they, is relieved by bloodletting, and therefore is of a different type from the former

epidemics, which were not relieved by bleeding. We have shewn at length that former epidemics *were* relieved by bleeding, and would have been still more so, had not the groundless apprehension of debility under which practitioners laboured, prevented them from reaping the full benefits of copious venesection; and, that, whenever there was found a Galen, a Botallus, a White, or a Rush, to break through the trammels of authority, timidity and prejudice, the results were so decisively beneficial as to astonish, not only the practitioner himself, but also indifferent spectators. *O homo jugulasti febrem!* is not a compliment that we read of being paid to an exhibition of cold water, vomits or diaphoretics. Let us now invert the syllogism, and we will find it stand thus: Fevers were formerly relieved by venesection; but the present epidemic is likewise relieved by it: It follows then that the present epidemic and former fevers are similar. Neither the one nor the other conclusion is logical; for similarity of remedies can never prove similarity of diseases, nor the contrary; but it seemed proper to shew, that even with this falsity in the conclusion, was coupled another, certainly not very *learned* error, in the premises. Simple observation, I believe, and the ordinary powers of comparison which nature has withheld from few of her children, are alone

sufficient for the discovery of truth ; but the finest acumen, and the highest cultivation of our reasoning powers, are often quite inadequate to protect it from the sophistry and delusion in which it is so frequently involved, by gratuitous assumption, and inaccurate argumentation.

APP.

APPENDIX, No. 1

CASES

APPENDIX.

The following cases are given as examples of local and general eruptions of the disease by contact with the virus of smallpox. They are selected out of a great many others detailed in the journals, equally well illustrating the same fact.

Case, No. 1.

Alexander Johnson, age 47, Farmer, about middle height, robust constitution, usually enjoys good health. In April 14, 1814, visited by smallpox. The eruption of smallpox commenced with a general eruption of vesicles, which were attended with itching and burning of the face, and a general swelling of the face, neck, and throat. The eruption was greatly aggravated by pressure, coughing, or any exertion, also of pain of back, general weakness, and loss of strength; but a vigorous treatment with heat, and

APPENDIX

APPENDIX, No. I.

CASES

EXTRACTED FROM THE JOURNALS OF THE QUEENSBERRY
HOUSE FEVER HOSPITAL.

THE following ten cases are given as examples of fever cut short at various periods of the disease by copious depletion of blood. These are selected out of a great many others detailed in the journals, equally well illustrating the same fact.

Case, No. 1.

ALEXANDER JOHNSTON, æt. 47, Porter, stout robust habit, melancholic temperament; usually enjoys good health,

August 14. 2d day of fever,

Complains of severe headach, vertigo, tinnitus aurium, throbbing of temples, pain and stiffness of hind neck, pain under the cartilago ensiformis, and over the whole abdomen, greatly aggravated by pressure, coughing, or full inspiration; also of pain of back, general soreness, and loss of strength; has rigours alternating with heat, œ-

casional cough, and frequent inclination to vomit; look much oppressed, face not flushed, eyes are suffused; respiration little affected.

Pulse 100, full; tongue white and dry; bowels loose, with gripes; appetite bad; thirst urgent; sleeps ill.

Complaints began with sickness at stomach, rigours, and loss of strength. Can assign no cause for ailments. Has used no remedies.

Emittantur e brachio sanguinis ℥ xxx,
Capiat sulphatis magnesiæ ℥ i ex aqua,
Decoctum avenæ pro potu.

15th, 3d day of fever.—An indifferent night; pain at scrobiculus cordis and of abdomen continue, but his countenance is improved, and all his other symptoms are much abated. Pulse 78, full; tongue pretty clean and moist; skin moist. Several stools, fæces natural; blood not sisy.

Capiat potionis carbonatis calcis ℥ ij subinde;
Continuetur decoctum avenæ.

16th, 4th day of fever.—No complaint but weakness. Pulse natural; tongue clean and moist; bowels regular.

Omittantur medicamenta.

19th.—Common diet.

21st.—Additional diet.

25th.—Dismissed cured.

Case, NO. 2.

JEAN DOUGLAS, æt. 30, Nurse,

April 26. 2d day of fever,

Complains of headach, vertigo, pain of back, lassitude, loss of strength and general soreness; is affected with frequent nausea, rigours alternating with heat; face is flushed; eyes suffused.

Pulse 100, full and firm; tongue foul; bowels regular; no appetite, much thirst, is disposed to be drowsy. Catamenia non adfuerunt pro mensibus sex.

Emittantur e brachio sanguinis ζ xxij.

Cras mane habeat sulphatis magnesiæ ζ vi ex aqua,

Decoctum avenæ ad libitum.

27th, 3d day.—Has passed a very good night; countenance much improved; headach, vertigo, pain of back and general soreness much abated; no return of nausea or rigour. Pulse 80, still full, but softer; tongue clean and moist; three alvine evacuations; blood sizy.

Continuetur decoctum avenæ.

28th, 4th day.—Has no complaint. Pulse calm; tongue clean and moist; bowels regular; appetite improved. Convalescent.

May 1.—Dismissed cured.

Case, NO. 3,

JOHN MACLAREN, æt. 37, Labourer,

May 6. 3d day of fever,

Complains of severe headach, vertigo on attempting to

assume the erect posture, pain of internal fauces, pain at præcordia, and over the whole abdomen, much aggravated by pressure, coughing, or full inspiration; of pain of small of back, with lassitude, debility, and general soreness; has occasional rigours succeeded by heat, and very frequent severe cough, exciting propensity to vomit, and accompanied with free mucaginous expectoration; look anxious, breathing hurried and oppressed; slight flushing of face, and suffusion of eyes.

Pulse 132, small and firm; tongue white, but moist; surface hot and dry; bowels reported regular; no appetite; much thirst; sleeps ill.

Has been exposed to the contagion of fever: Has used no remedies.

Emittantur e brachio sanguinis ℥ xxx.
 Habeat misturæ mucilaginosæ ℥ i urgente tussi,
 Misturæ salinæ ammoniatæ ℥ i subinde,
 Decoctum avenæ pro potu.
 Cras mane capiat sulphatis magnesiæ ℥ vi ex aqua.

7th, 4th day.—Expression of countenance improved; headach, pain of throat, epigastrium, and abdomen relieved; vertigo, pain of loins and cough exciting retching continue; skin and eyes of an unusually yellow colour. Pulse 88, full and soft; tongue whitish but moist; one stool; fæces reported to be of a yellow colour; blood sizy.

Repetatur sulphas magnesiæ.
 Continuentur alia.

8th, 5th day.—Continues to improve. Pulse natural; tongue clean and moist; two stools; fæces natural; yellow tinge of skin and eyes gone.

Omittantur medicamenta.

12th.—Has been completely convalescent since last report; appetite good; other functions natural.

Common diet.

16th, 2d day of relapse.—Had an attack of rigour last evening, and he now complains of headach, occasional vertigo, pain and a feeling of heat of epigastrium; much thirst, and frequent severe cough, exciting pain of breast. Pulse 152, small and sharp; tongue foul; bowels slow.

Emittantur e brachio sanguinis ℥ xx
 q. p. Capiat pulveris jalapæ comp. ℥ i,
 Ex infusi sennæ ℥ ij,
 Et deglut. misturæ mucilaginosæ ℥ i urgente tussi,
 Decoctum avenæ pro potu.

17th, 3d day of relapse.—Headach and vertigo nearly gone, pain of epigastrium relieved; cough less frequent, and does not now excite pain of breast; had another attack of rigour last evening. Pulse 96, soft; tongue whitish but moist; one plentiful stool; blood very sizzly.

Repetatur pulvis jalapæ comp. ut heri.
 Continuentur alia.

18th, 4th day of relapse.—Cough easier, but it excites retching, and he complains of præcordial oppression. No other complaint. Pulse calm; tongue still rather foul; as yet no stool.

Continuentur medicamenta.

19th, 5th day of relapse.—Cough and oppression at præcordia relieved. Functions natural.

Continuentur medicamenta.

20th, 6th day of relapse.—Complains more of cough exciting pain of chest; pulse calm; tongue clean; bowels regular.

Imponatur vesicatorium pectori,
Continuetur mistura mucilaginoso,
Omittantur alia.

23d.—Blister rose well, and pectoral symptoms are gone.

Omittantur medicamenta.

26th.—Full diet.

June 1.—Dismissed cured.

Case, NO. 4.

JOHN GROUNDWATER, æt. 23, Shoemaker, plethoric habit, sanguine temperament, previously healthy,

September 21. 3d day of fever,

Complains of severe general pains, particularly affecting the joints of the extremities; of pain at the scrobiculus cordis, and over the whole abdomen, much aggravated by pressure or full inspiration; of pain along the whole course of the spinal column; headach referred to the frontal region, with vertigo and intolerance of light; has nausea, rigours, and warm flushings; look and respiration oppressed; face flushed, and eyes suffused.

Pulse 100, full and strong; tongue white and dry, with bad taste of mouth; surface hot but soft; urine free; bowels slow; appetite impaired; thirst urgent; sleeps ill.

Can assign no cause for ailments. Has used no remedies.

Disease began with rigours, followed by headach, pain of back, loss of strength, &c.

Emittantur e brachio sanguinis \mathfrak{z} xxxij,
 Habeat sulphatis magnesiæ \mathfrak{z} i ex aqua,
 Et capiat mist. diaph. salin. \mathfrak{z} i. secunda vel tertia
 quaque hora.
 Decoctum avenæ ad libitum.

22d, 4th day.—Slept well, and perspired some, during night; countenance greatly improved; headach, pain at præcordia, flushing of face, and suffusion of eyes gone; pain of back, and of abdomen abated; nausea not so frequent; respiration natural. Pulse 90, full and soft; tongue pretty clean, but dry; several stools, urine free, with copious pale deposit. Took some breakfast, the first food taken since the commencement of his illness; is still thirsty. Blood florid, of firm coagulum, and is buffy in the two cups first drawn.

Continuentur medicamenta.

Evening.—Complains much of pain of abdomen, greatly increased by pressure; countenance more oppressed; cheeks flushed; skin very hot and dry. Pulse 110, small but sharp.

Emittantur e brachio sanguinis \mathfrak{z} xx.

23d, 5th day.—Countenance much improved; pain of abdomen was immediately relieved by the bleeding, and is now little felt: he complains chiefly of sickness at stomach. Pulse 100, full; tongue white and dry; one stool; appetite improved; thirst abated. Blood in the first drawn cup is buffy.

Continuentur medicamenta.

24th, 6th day.—A good night ; at present under a pretty profuse sweat. No complaint but a little pain of loins. Pulse 80, soft ; tongue still dry but cleaner ; two stools ; appetite better ; thirst decreasing.

Continuentur medicamenta.

25th, 7th day.—Completely convalescent.

Omittantur medicamenta.

Common diet.

October 1.—Dismissed cured.

Case, No. 5.

ROBERT MACLELLAN, æt. 24, Bell-hanger,

July 28. 4th day of fever,

Complains of severe headach, vertigo, throbbing of temples, pain and oppression at præcordia ; severe general pains, particularly affecting the joints of the inferior extremities ; occasional nausea and rigours ; countenance and respiration oppressed, face flushed, and eyes are suffused. Pulse 108, small and sharp ; tongue white ; bowels reported regular ; skin hot ; appetite bad ; thirst urgent ; sleeps ill.

Has been exposed to the contagion of fever. Has used no remedies.

Emittantur e brachio sanguinis ℥ xxiv.
 Habeat sulphatis magnesiæ ℥ i ex aqua,
 Mist. salin. ammon. ℥ i subinde,
 Decoctum avenæ pro potu.

29th, 5th day.—A very restless night, with delirium and inclination to leave his bed ; still incoherent ; countenance is oppressed, eye dull, and of unmeaning expression. Reports headach and general pains to continue severe ; pain at præcordia to be gone. Pulse 104, sharp ; tongue white but moist ; three stools, fæces are scanty, watery, and of dark colour ; blood sizy.

Emittantur e brachio sanguinis ℥ xij.
 Repetatur sulphas magnesiæ.
 Continuentur alia.

Evening.—Is delirious ; complains much of headach ; face is flushed ; eyes wild and suffused. Pulse 100, full and strong ; tongue white.

Vice ℥ xij, emittantur e brachio sanguinis ℥ xx,
 Et sera nocte, si adhuc perstant delirium et capitis
 dolor,
 Abradatur capillitium, et
 Applicentur hirudines xij fronti.

30th, 6th day.—Having become sensible, and headach being much abated after the bleeding, the head was not shaved, nor the leeches applied ; he has passed a good night, with profuse perspiration, which continues ; expression of countenance greatly improved ; flushing of face and suffusion of eyes gone ; he is now free of ailment, and takes his food.

Pulse 68, full and soft ; tongue white but moist ; three natural stools ; blood sizy.

Continuentur medicamenta.

31st, 7th day.—Convalescent.

Omittantur medicamenta.

August 2.—Common diet.

7th.—Dismissed cured.

Case, No. 6.

ANN PARKINSON, æt. 40, married and has had 6 children,

June 12. 6th day of fever,

Complains of headach, vertigo, tinnitus aurium, occasional throbbing of temples; of pain of abdomen aggravated by pressure, coughing, or full inspiration; pain of small of back, lassitude, loss of strength, and general soreness; has frequent sickness at stomach, and retching. Countenance is oppressed, face flushed, and eyes are suffused.

Pulse 135, small and sharp; tongue pretty clean and moist; surface hot but soft; bowels costive; appetite bad; much thirst; sleeps ill.

Ascribes ailments to contagion. Has had one purgative powder,

Emittantur e brachio sanguinis ζ xx.

℞. Submuriatis hydrargyri gr. x,
Pulveris antimonialis gr. v. M.

Fiat bolus, q. p. sumendus,

Habeat mistur. salin. ammon. ζ i subinde,

Decoctum avenæ pro potu.

13th, 7th day.—Has passed a good night; countenance very much improved; headach, throbbing of temples, flushing of face, and suffusion of eyes gone; pain of back, sickness at stomach, and retching much abated. Pulse 115, small; tongue foul; two stools; the first dark co-

loured, but the last was of natural appearance; blood very sily.

Continuentur medicamenta.

14th, 8th day.—Except occasional pain of abdomen, she is free of ailment. Pulse 86, soft; tongue clean; two stools; appetite improved.

15th, 9th day.—She is convalescent.

Omittantur medicamenta.

18th.—Common diet.

19th.—Dismissed cured.

Case, NO. 7.

MARY CAMERON, æt. 24, married, and has 3 children,

Nov. 11. 6th day of fever,

She has severe headach, referred to the forehead and occiput, with throbbing, especially on any motion: is observed to rove, and though at times she converses consistently, yet she seems deficient in memory, or, more correctly, seems unwilling to make the effort at recollection. She occasionally starts as if from pain, with a maniacal expression of countenance; face is flushed and full, eyes suffused and light unpleasant. Abdomen is full but soft; dislikes pressure. Has pain of back and limbs.

Pulse 148, sharp and resisting, varying in a short time as to frequency: Respiration 50: Heat 104: Skin feels hot and dry; tongue loaded with a grey fur, and moist;

thirst urgent; bowels rather confined; no sleep obtained.

The disease commenced with rigours. She specifies no cause, and has used no remedies.

Fiat venæsectio.

§ xxvi taken with considerable relief, and some approach to syncope. Pulse 122, weak.

Abradatur capillitium.

Et applicentur lintea aqua gelida madefacta;

Lavetur cutis aqua tepida,

Postea foveantur crura.

Capiat bolum jalapæ compositum.

Decoctum avenæ pro potu.

12th, 7th day of fever.—Sweated pretty profusely during night, and slept calmly; not observed to rove since the bleeding. She has now very slight pain of head, complaining more of vertigo; face rather flushed; suffusion of eyes gone, but their expression is not quite natural: Fulness and tenderness of abdomen continue. Medicine by mistake not given till this morning: has not as yet operated. Pulse 92, moderately full and firm: Respiration 42: Heat 95; tongue loaded; less thirst; urine in good quantity and natural; blood buffy, not cupped; coagulum firm.

Injiciatur enema commune nisi bene fluerit alvus.

Continuentur alia.

13th, 8th day.—She did not sleep well, but is quite free from pain; expression of eyes improved, and flushing is gone. She complains of some sounding in her ears, and dizziness; three alvine evacuations, the first copi-

ous. Pulse 94, soft : respiration 40 : heat 96, skin is natural ; tongue less loaded and moist. Wishes for milk.

Let her have milk.
Continuentur alia.

14th, 9th day.—She slept well with gentle perspiration. She feels quite comfortable, and expression of eyes is natural. Pulse 80, soft ; heat 97 ; tongue cleaning ; urine natural ; no stool.

Capiat statim bolum jalapæ comp.
Continuentur alia.

15th, 10th day.—Slept well, and she improves : six fluid stools from the bolus. Pulse 82, of moderate strength ; tongue clean and moist ; heat 96 ; appetite returns.

Continuentur medicamenta.

16th, 11th day.—Completely convalescent.

Omittantur medicamenta.

17th.—Common diet.

23d.—Dismissed cured.

Case, NO. 8.

JOHN CAMPBELL, æt. 36, Shoemaker, spare habit, previously enjoyed good health,

August 26. 7th day of fever,
Complains of severe throbbing, pain of forehead, pain of eyes, intolerance of light, and occasional lachrymatio; pain of throat on deglutition; pain under the ensiform cartilage on pressure or coughing; pain of loins, lassitude, debility, and general pains, particularly affecting the joints of the inferior extremities. Has frequent cough, increasing the general uneasiness; rigours succeeded by warm flushings, and sweating fits; look oppressed; eyes dull and somewhat suffused.

Pulse 108, full and firm; tongue furred and dry, with bad taste of mouth, and urgent thirst; no appetite; bowels open from medicine; surface hot but moist; urine voided frequently in small quantity, and with some pain; sleep disturbed.

Complaints came on with rigours, succeeded by loss of strength, and general pains. Has had three doses of salts, which operated well. Can assign no cause for ailments.

Emittantur e brachio sanguinis ℥ xxviiij.
Habeat decoctum avenæ pro potu.

27th, 8th day.—A good night; look lightened; no complaint but cough, and slight pain of loins. Pulse 96, full and soft; tongue moist and nearly clean; two stools; surface cool and moist; thirst abated; took breakfast well,—the first food taken for five days. Urine voided freely; blood of firm coagulum.

Capiat misturæ mucilaginosæ ℥ i urgente tussi.
Continuetur decoctum avenæ.

Evening.—Has had some returns of headach since morning.

Applicentur hirudines xij fronti.

28th, 9th day.—Leeches procured a good discharge; headach gone; cough much abated; expectoration free. Pulse natural; tongue clean and moist; bowels regular; urine free; appetite good. Convalescent.

Omittantur medicamenta.

Sept. 1.—Common diet.

10th.—Dismissed cured.

Case, NO. 9.

JOHN MACLEOD, æt. 46,

August 5. 8th day of fever,

Is affected with severe general pains, lassitude, loss of strength; headach referred to the frontal region; vertigo, tinnitus aurium, some impatience of light; pain of abdomen on pressure; pain of small of back, occasional nausea, rigours succeeded by heat; look and breathing oppressed, face flushed, and eyes suffused.

Pulse 102, full and firm; tongue white and moist; bowels reported regular; skin hot but soft; appetite bad; thirst urgent; sleeps ill; urine free.

Can assign no cause for ailments. Has used no remedies.

Emittantur e brachio sanguinis ℥ xxx.
Capiat sulphatis magnesiæ ℥ i ex aqua,
Decoctum avenæ pro potu.

6th, 9th day.—A good night; countenance improved; vertigo, tinnitus, nausea, pain of abdomen, flushing of

face, suffusion of eyes, gone: Headach and general pains greatly easier: Rigours less frequent: Respiration natural. Pulse 78, full and soft: tongue moist, but loaded with a white fur. No effect from the salts; skin at present perfectly cool; blood sizy.

q. p. Capiat infusi sennæ ℥ iij,
Continuetur decoctum avenæ.

Evening.—Still no passage of bowels.

q. p. Injiciatur enema domesticum; et postea
Capiat pilulas aloeticas vj.

7th, 10th day.—Three alvine evacuations; free of ailment; slept well; appetite improved. Pulse natural; tongue still white but moist; skin cool.

Repetantur pilulæ aloeticæ iv.

8th, 11th day.—One full alvine evacuation of soft but rather dark-coloured fæces; tongue still a little foul; other functions natural.

Repetantur pilulæ aloeticæ iv, et
Cras mane capiat infusi sennæ ℥ iij.

9th, 12th day.—Three stools: recovering rapidly.

11th.—Dismissed cured.

Case, NO. 10.

MAY NOTSTANE, æt. 19, unmarried,

August 25. 8th day of fever,

Complains of severe headach, referred to the forehead, vertigo, tinnitus aurium, throbbing of temples, intolerance of light; of pain of internal fauces, of hind neck, abdomen on pressure, and of small of back, with general uneasiness and soreness; feels much lassitude, and loss of strength; has frequent cough, with copious sputa, which she reports to be occasionally mixed with blood, frequent nausea, vomiting, and rigours, with flushes of heat: Look rather anxious and oppressed; face flushed, and eyes suffused. Respiration 45. Pulse 128, small and firm; tongue moist and pretty clean; surface hot and dry; belly rather costive; urine free; appetite bad; much thirst; sleeps ill.

Can assign no cause for ailments. Has used no remedies.

Complaints commenced with rigours, followed by headach, pain of back, &c.

Emittantur e brachio sanguinis $\frac{z}{3}$ xxvi.
Habeat sulphatis magnesiæ $\frac{z}{3}$ vi ex aqua,
Decoctum avenæ pro potu.

26th, 9th day.—Has passed a good night. Countenance is very much improved; respiration natural; headach, vertigo, tinnitus aurium, throbbing of temples, intolerance of light, pain of hind neck, nausea and cough are much abated; pain of abdomen not felt even on pressure. She complains chiefly of pain of small of back.

Pulse 78, full and soft; tongue clean and moist; full alvine evacuation from the salts; surface cool; thirst much abated; took some breakfast, the first food taken for some days; blood very sizzly.

Continuetur decoctum avenæ.

27th, 10th day.—Had epistaxis this morning, reported to amount to nearly $\frac{3}{4}$ viij. She is now completely free of ailments.

28th.—Convalescent.

Omittantur medicamenta.

Common diet.

31st.—Dismissed cured.

THE following eight cases are given as examples of the safety and utility of repeating the evacuation of blood, as often as the symptoms seem to require it.

Case, NO. 11.

JOSEPH BURKET, æt. 28, Flaxdresser, spare habit, melancholic temperament,

July 21. 4th day of a second attack of fever,

Complains of headach, vertigo, tinnitus aurium, and throbbing of temples; of pain of breast, and small of back, with much general soreness and prostration of strength; has nausea, occasional rigours alternating with heat, and frequent cough, with copious mucaginous sputa; face is flushed, and eyes suffused.

Pulse 120, pretty full and firm; tongue white and

moist; bowels reported regular. Surface hot and dry; appetite bad; thirst urgent; sleeps ill.

Has used no remedies.

Emittantur e brachio sanguinis ℥ xx.
Habeat misturam mucilaginosam pro tussi,
Decoctum avenæ pro potu.
Cras mane capiat sulphatis magnesiæ ℥ vi ex aqua.

22d, 5th day.—A bad night; flushing of face is gone; but symptoms are not relieved. Pulse 120, sharp; tongue white but moist; two stools; blood in one cup approaching to sizy.

Applicentur hirudines xij fronti.
Continuentur alia.

23d, 6th day.—Leeches bled well, headach a little relieved; but he has passed a bad night; looks oppressed, is restless, breathing is hurried, with frequent cough, exciting pain of breast. Pulse 142, sharp; tongue white; skin hot and dry; four stools.

Emittantur e brachio sanguinis ℥ xx prout ferat,
Et cras mane repetatur sulphas magnesiæ.

24th, 7th day.—℥ xxiv of blood drawn, which is sizy. He has passed a bad night, with frequent sickness at stomach, and vomiting; cough exciting pain of breast continues, but headach is relieved. Pulse 120, still sharp; tongue foul; four scanty watery stools.

Emittantur porro e brachio sanguinis ℥ xij, et postea
Imponatur vesicatorium pectori qua dolet.
Capiat pilulas aloeticas vi.
Continuentur alia.

25th, 8th day.—An indifferent night, with raving, but he has enjoyed several hours' quiet sleep since morning; his look is greatly improved, and he feels altogether much easier; headach nearly gone; pain of breast much relieved, but cough is still rather frequent: blister rose well; blood not sizy. Pulse 96, of good strength; tongue white but moist; two stools, scanty, watery, and of dark colour.

Repetantur pilulæ aloeticæ, et
Cras mane habeat infusi sennæ ℥ ii.
Continuentur alia.

26th, 9th day.—Countenance farther improved; complains of some pain of loins, and has occasional cough; other complaints are gone; pulse soft; tongue clean; bowels regular; appetite returning.

Continuentur medicamenta.

27th, 10th day.—Convalescent.

Omittantur medicamenta.

August 2.—Common diet.

5th, 2d day of relapse.—Has complained since yesterday of headach, heat of surface, thirst, and restlessness; and this morning he had several attacks of vomiting; has occasional cough. Pulse 120, full and sharp; tongue loaded: bowels slow.

Emittantur e brachio sanguinis ℥ xvij prout ferat.
Cras mane habeat sulphatis magnesiæ ℥ vi ex aqua,
Decoctum avenæ pro potu.

Low diet.

6th, 3d day of relapse.—℥ xx of blood drawn, which is

sizy: he passed an indifferent night, but his look is improved; says he has no complaint but sickness at stomach, and vomiting of ingesta. Pulse 120, full and firm; tongue white; two stools; surface cooler.

Continuetur decoctum avenæ.

Evening.—Is very restless, with raving: much moaning and very anxious expression of countenance; complains of pain of left side of chest, increased by coughing, and in some degree impeding respiration; has frequent short teasing cough: Sickness at stomach and vomiting of ingesta continue. Pulse 136, full and pretty strong; tongue white; bad taste of mouth; urgent thirst.

Emittantur e brachio sanguinis ξ xvij.
Capiat aquæ menthæ piperitæ ξ i, vel alteram, nausea urgente.

7th, 4th day of relapse.—A restless night, but without raving: Expression of countenance less anxious; pain of chest gone: sickness at stomach and vomiting of ingesta continue. Pulse 132, very full and strong; tongue foul; three stools; thin and scanty; blood sizy.

Emittantur e brachio sanguinis ξ xii.
Habeat pilulas aloeticas xij; sumat iij omni bihorio.

8th, 5th day of relapse.— ξ xiv of blood drawn, not sizy: has passed a good night, with a good deal of sweating: look greatly improved; sickness and vomiting gone; took breakfast well, and is now completely free of ailment. Pulse 88, full and soft; tongue moist, but still rather foul; two natural stools; surface of moderate warmth.

Continuentur medicamenta.

9th, 6th day of relapse.—Has occasional cough; otherwise he is completely convalescent.

Utatur mistura mucilaginoso pro tussi.
Omittantur alia.

22d.—Common diet.

26th.—Habeat jusculi bovini lb. ij. indies.

31st.—Dismissed cured.

Case, NO. 12.

JAMES MACDONALD, æt. 17,

August 11. 3d day of fever,

Complains of headach, vertigo, tinnitus aurium and throbbing of temples, of pain at præcordia, of abdomen, and loins, with much generalsoreness and loss of strength: look and respiration oppressed; face flushed, and eyes are suffused.

Pulse 105, sharp; tongue white and moist; bowels reported regular; appetite bad; much thirst; sleeps pretty well.

Has been exposed to the contagion of fever. Has used no remedies.

Emittantur e brachio sanguinis ℥ xx.
Capiat sulphatis magnesiæ ℥ vi ex aqua,
Decoctum avenæ pro potu.

12th, 4th day.—A restless night, with much delirium; look oppressed, face flushed; says headach, vertigo, tinnitus, throbbing of temples, pain at præcordia, and of

abdomen are easier ; pain of loins and general pains are still severe. Pulse 100, full and firm ; tongue white and dry ; one stool.

Emittantur iterum e brachio sanguinis ℥ xvij.
Repetatur sulphas magnesiae.

13th, 5th day.—A good night without delirium ; look improved ; flushing of face gone, feels a good deal easier, but does not say distinctly in what respect. Pulse 120, full, easily compressed ; tongue white, but moist ; three stools ; some food taken ; blood not sisy.

Continuetur decoctum avenae.

14th, 6th day.—Look and breathing oppressed ; flushing of face ; complains of headach, general soreness, and pain of abdomen, when pressed. Pulse 120, full and firm ; tongue white and parched ; bowels regular ; little or no food taken ; still very thirsty.

Applicentur hirudines x fronti.
Continuetur decoctum avenae.

15th, 7th day.—Slept pretty well ; leeches discharged freely ; headach is relieved ; general pains continue ; complains of sickness at stomach. Pulse 116, sharp ; tongue much loaded and dry ; no stool ; look and breathing still oppressed.

Emittantur e brachio sanguinis ℥ xvi prout ferat.
Capiat sulphatis magnesiae ℥ vi ex aqua.
Continuetur decoctum avenae.

16th, 8th day.—Only ℥ xiv of blood drawn, which is sisy ; had a good night ; looks better, and says he feels a

good deal easier. Pulse 112, soft, rather feeble; tongue foul and parched; one watery dark-coloured stool.

Capiat phosphatis sodæ ℥ ij ex aqua omni bihorio ad quartam vicem.

17th, 9th day.—At present sleeping quietly; is reported to make no complaint, but is very restless and obstinate; three stools, one of which was passed in bed.

Continuetur decoctum avenæ.

18th, 10th day.—Countenance oppressed; complains much of headach; has a good deal of stupor; raves frequently, and gives indistinct answers. Pulse 130, sharp, tongue parched; no stool.

Emittantur e brachio sanguinis ℥ xvi.
Abradatur capillitium, et
Imponatur vesicatorium toti capiti.

9th, 11th day.—A better night; he looks better; answers questions distinctly; complains of headach, pain of breast, and frequent cough; he is still disposed to drowsiness, and eyes are drumly. Pulse 120, of moderate strength; tongue chopt and parched; lips covered with a brownish crust; no stool; some breakfast taken; blister answered well; blood not sily.

Habeat pulveris jalapæ compositi ℥ i,
Ex infusi sennæ ℥ ij.
Continuetur decoctum avenæ.

20th, 12th day.—A good night; look farther improved; headach and pain of breast much abated; is less disposed to drowsiness, and eyes are more lively; cough trouble-

some. Pulse 100, rather sharp; tongue clean, but dry; three stools.

Continuetur decoctum avenæ.

21st, 13th day.—Has a good deal of deafness, and appears still oppressed; but he reports himself considerably better; he sleeps quietly, and takes some food; is still very thirsty. Pulse 110, full and firm; tongue parched; three stools.

Continuetur decoctum avenæ.

22d, 14th day.—Slept well during night, and is much disposed to drowsiness; complains of headach. Pulse 100, of moderate strength; tongue parched, surface cool; takes some food; is not so thirsty.

Applicentur hirudines xij fronti.

Habeat sulphatis magnesiæ ʒ vi ex aqua.

Continuetur decoctum avenæ.

23d, 15th day.—A good night; leeches bled well; headach gone: no complaint but weakness. Pulse 94, of good strength; tongue moister, but still furred; four stools from the salts; appetite improved.

Omittantur medicamenta.

24th.—Convalescent.

28th.—Common diet.

Sept. 5.—Additional diet.

28th.—Dismissed cured.

Case, NO. 13.

JANET BLACKWOOD, æt. 36, married, and has had five children,

April 21. 7th day of fever,

Complains of headach, pain of throat, severe pain at præcordia and of right hypochondrium, aggravated by coughing, and impeding respiration. Cough is frequent and severe, exciting retching, and accompanied with very hurried and laborious breathing, and difficult expectoration of a viscid mucus, slightly tinged with blood: Is also affected with pain of loins and hypogastrium, with much lassitude, debility, and general uneasiness and soreness; has occasional rigours, alternating with warm flushings. Expression of countenance anxious and oppressed.

Pulse 150, small but sharp; tongue pretty clean; bowels regular from medicine; skin hot and dry; thirst urgent; no appetite or sleep.

Ascribes ailments to the contagion of fever. Has used some laxative medicines.

Emittantur e brachio sanguinis ℥ xxviij.
 Habeat misturæ diaph. salinæ ℥ i secunda
 vel tertia quaque hora,
 Misturæ mucilaginosæ ℥ i urgente tussi,
 Decoctum avenæ pro potu.
 Cras mane capiat sulphatis magnesiæ ℥ vi ex aqua.

22d, 8th day.—A bad night, but headach, sore throat, pain at præcordia, of right hypochondrium, retching and cough, are abated; and expectoration is much easier: Sputa are, however, still tinged with blood: hurried and difficult breathing, and anxious look continue. Pulse 134, soft, and occasionally intermitting; tongue pretty

clean and moist; four alvine evacuations from the salts; skin soft; thirst still urgent; blood sizy.

Applicetur vesicatorium medio sterno.
Continuentur alia.

Evening.—Is very restless, with much moaning and raving. Respiration is very hurried and laborious, with circumscribed flushing, considerable lividity, and very anxious expression of countenance. Pulse 140, sharp; skin hot and dry.

Emittantur e brachio sanguinis ℥ xvij,
Et postea capiat haustum anodynum antimoniale cum
Tincturæ opii gtt. xxx.

23d, 9th day.—A pretty good night: countenance improved; she is perfectly sensible, and says she feels a great deal easier; cough is much abated, and expectoration is easy; no flushing, but still considerable lividity of countenance: Breathing, though considerably easier, is still hurried and oppressed. Pulse 136, soft; tongue pretty clean and moist; two alvine evacuations; skin soft; thirst less urgent, and she took some breakfast; blood very sizy; blister discharged well.

Continuentur medicamenta.

24th, 10th day.—Look very greatly improved; respiration, cough, and expectoration easy; has no complaint but weakness and soreness. Pulse 116, soft; tongue a little foul but moist; surface soft; seven stools, rather scanty; thirst much abated, and some food is taken.

Continuentur medicamenta.

25th, 11th day.—Passed a tolerable night, but she raved some in the fore part of it; look and breathing rather more oppressed, but she makes no particular complaint. Pulse 116, soft; rather feeble; tongue foul; several stools; takes some food, and thirst abates.

Continuentur medicamenta.

Evening.—Is more restless; respiration is more difficult; countenance is anxious, with considerable flushing. Pulse 120.

Emittantur e brachio sanguinis ℥ xij, vel prout ferat, ℥ xvj.

26th, 12th day.—℥ xvj of blood drawn, which is very sizzly; she states herself to be pregnant. Has passed a quiet night; feels much easier; cough is less frequent, and breathing less difficult; expression of eye is improved, but lividity of countenance continues. Pulse 124, small but somewhat sharp; tongue pretty clean and moist; three stools; expectoration much easier. She took her full allowance to breakfast this morning.

Continuentur medicamenta.

27th, 13th day.—Slept well and perspired some during night; surface now cool; countenance is very much improved: pectoral symptoms continue to decline. Pulse 112, soft, rather feeble; tongue clean and moist; five stools reported natural; appetite improves.

Continuentur medicamenta.

28th, 14th day.—Has passed a good night, and con-

tinues to improve. Pulse 112, soft; bowels regular; tongue clean and moist; takes food well.

Continuentur medicamenta.

30th, 16th day.—Has passed a bad night, having been affected with severe bearing-down pains in hypogastrium, and copious flooding: she is now, however, quite easy, and makes no complaint. Pulse 110, sharp; tongue clean and moist; bowels regular.

Continuentur medicamenta.

May 1. 17th day.—Miscarried last night of a foetus of the fourth month; after which an anodyne was given; she has passed a good night, and now only complains of weakness. Pulse 100, soft; tongue clean and moist; bowels slow.

Habeat haustum ex oleo ricini, cum ol. $\frac{z}{3}$ i,
Vespere repetatur haustus anodynus.
Omittantur alia.

2d.—Draught operated well; gradual convalescence goes on.

Omittantur medicamenta.

3d.—Common diet.

12th.—Additional diet.

18th.—Dismissed cured.

Case, NO. 14.

THOMAS DARLING, æt. 27, Labourer, stout,
July 27. 3d day of fever,

Complains of slight headach, some pain of breast, abdomen and loins, loss of strength, general soreness and occasional cough. Pulse 90, full; tongue white, surface hot and moist; bowels reported regular; appetite bad; is thirsty; sleeps tolerably well.

Ascribes ailments to exposure to cold. Has used no remedies.

Applicentur hirudines viij fronti.
 Habeat pulveris jalapæ compositi ℥i,
 Ex infusi sennæ ℥ij,
 Decoctum avenæ pro potu.

28th, 4th day.—A restless night; looks more oppressed; complaints not relieved; face is flushed; physic operated freely; leeching succeeded ill. Pulse 120, sharp; tongue white; surface hot.

Emittantur e brachio sanguinis ℥xx prout ferat.
 Habeat misturæ salinæ ammoniatæ ℥i subinde.
 Continuetur decoctum avenæ.

29th, 5th day.—℥xxx of blood drawn, which is sily; look improved; no complaint but uneasiness and soreness. Pulse 130, full and firm; tongue clean and moist; skin hot but moist; bowels free.

Habeat sulphatis magnesiæ ℥vi ex aqua.
 Continuentur alia.

30th, 6th day.—A restless night with raving; appears oppressed, and complains of headach, pain of abdomen,

and general pains. Pulse 120, full and strong; tongue pretty clean and moist; five stools from the salts.

Emittantur e brachio sanguinis ξ xx.
Continuentur alia.

31st, 7th day.—Look lightened; a good night; had an attack of singultus this morning, which lasted about two hours; has now no complaint but weakness and pain of loins. Pulse 88, full; tongue pretty clean and moist; no stool; skin moist; blood sizzly.

Continuentur medicamenta.

Aug. 1. 8th day.—No complaint but slight general soreness. Pulse 78; tongue pretty clean and moist; no stool.

Habeat pilulas aloeticas vi.
Continuentur alia.

2d, 9th day.—Three stools; convalescence goes on.

Omittantur medicamenta.

4th.—Common diet.

10th, 1st day of relapse.—Owing to fatigue and imprudent exposure of himself to cold, complains of headach; face is flushed and skin is hot. Pulse 108, full and firm; tongue pretty clean and moist; bowels reported regular.

Emittantur e brachio sanguinis ξ xvij.
Habeat sulphatis magnesiæ ξ i ex aqua,
Decoctum avenæ pro potu.

Low diet.

11th, 2d day of relapse.—Four stools from the salts; headach gone; no complaint but slight soreness of extremities. Pulse 120, full and strong; tongue foul but moist; skin very hot; much thirst.

Continuetur decoctum avenæ.

12th, 3d day of relapse.—Complains of pain of loins, of hind neck, and severe general pains. Pulse 128, full and strong; tongue foul but moist; skin very hot; bowels regular; a bad night.

Emittantur e brachio sanguinis $\frac{z}{3}$ xvij.
Continuetur decoctum avenæ.

13th, 4th day of relapse.—Without complaint. Pulse 112, full and firm, occasionally intermitting; tongue moist and becoming cleaner: three stools; blood sizy.

Continuetur decoctum avenæ.

14th, 5th day.—Pulse still quick, but tongue is clean; bowels regular, and he is without complaint.

Continuetur decoctum avenæ.

18th.—Gradual convalescence has gone on since last report; functions natural.

26th.—Common diet.

31st.—Dismissed cured.

Case, NO. 15.

LAWRENCE ANDERSON, æt. 21, Hatter,

August 15. 6th day of fever,

Complains of headach, vertigo, pain of eyes, pain of throat on deglutition or coughing, pain of loins and a feeling of debility and general soreness: has pretty frequent cough, and rigours alternating with heat. Pulse 92, of good strength; tongue white but moist; bowels regular from medicine; appetite impaired; is very thirsty; sleeps ill.

Ascribes ailments to contagion. No remedies but one dose of salts.

Complaints came on with listlessness, headach, &c.

Applicentur hirudines xij fronti.
Capiat pulveris jalapæ compositi ʒ i,
Ex infusi sennæ ʒ ij.
Habeat misturam mucilaginosam, urgente tussi,
Decoctum avenæ pro potu.

16th, 7th day.—Powder operated freely, but only five leeches fastened; headach is little relieved, but he feels better in other respects; has passed a good night and took some breakfast. Pulse 88, sharp; tongue a little foul, but moist.

Applicentur hirudines xij fronti,
Et repetatur pulvis ut heri.
Continuentur alia.

17th, 8th day.—Leeches procured a good discharge, but headach is not relieved; he has passed a restless

night; has frequent cough. Pulse 88, sharp; tongue pretty clean and moist; five stools.

Emittantur e brachio sanguinis ℥ xxij.

18th, 9th day.—A restless night, but he has slept several hours since morning; headach a little easier; has had two or three attacks of spontaneous vomiting. Pulse 100, small but sharp; tongue moist, a little foul; five stools; cough still troublesome; blood not sizy.

Applicentur hirudines xij fronti.
Imponatur vesicatorium pectori.
Continuentur alia.

19th, 10th day.—Leeches bled well; a good night; free of complaint. Pulse 96, full and firm; tongue a little white; but moist; belly regular.

Continuentur medicamenta.

21st, 12th day.—Complains of gravedo capitis, with vertigo on attempting to rise; looks oppressed. Pulse 104, sharp; skin hot; tongue foul; bowels regular.

Emittantur e brachio sanguinis ℥ xij prout ferat.
Continuentur alia.

22d, 13th day.—℥ xvi of blood drawn, which is sizy; has passed a good night; takes some food, and has no complaint but a little dizziness. Pulse 96, of good strength; tongue moist, but foul; two stools.

Continuentur medicamenta.

23d, 14th day.—Completely convalescent.

Omittantur medicamenta.

29th.—Common diet.

31st.—Dismissed cured.

Case, No. 16.

ISABELLA ROBISON, æt. 26, married, and reports herself to be in the sixth month of pregnancy,

August 16. 4th day,

Complains of severe headach, referred principally to the forehead, vertigo, intolerance of light; pain of hind neck and of loins, with lassitude, prostration of strength and general soreness; has frequent cough, increasing headach, and accompanied with scanty mucous sputa; has rigours alternating with heat; look oppressed; face flushed; eyes suffused; respiration little affected.

Pulse 115, full and firm; tongue pretty clean and moist; belly regular; skin hot but soft; appetite bad; thirst urgent; sleeps ill.

Ascribes ailments to contagion. Has had an emetic and a dose of salts.

Complaints commenced suddenly, with shivering; followed by headach, pain of back, &c.

Emittantur e brachio sanguinis ℥ xx.
Habeat haustum ex oleo ricini,
Misturam mucilaginosam pro tussi,
Decoctum avenæ pro potu.

17th, 5th day.—Has passed an indifferent night; countenance a little improved; headach, vertigo, intolerance of light, pain of hind neck and cough continue, but pain of loins and general soreness are abated. Pulse 115,

sharp ; tongue white and dry ; only one stool ; blood slightly buffed.

Continuentur medicamenta.

Evening.—Complains of pretty acute pain under the ensiform cartilage, increased by pressure. Pulse 120, full.

Emittantur iterum e brachio sanguinis ℥ xviii.

18th, 6th day.—Has passed an indifferent night, but pain under the ensiform cartilage is gone ; headach greatly abated ; countenance much improved ; she complains much of pain of abdomen. Pulse 120, sharp ; tongue clean but dry ; two stools.

Habeat haustum ex oleo ricini.

Foveatur abdomen.

Continuentur alia.

19th, 7th day.—A better night ; pain of abdomen abated ; complains much of general uneasiness and soreness. Pulse 110, soft and pretty full ; tongue dry ; two stools ; fæces natural.

Continuentur medicamenta.

Evening.—Complains of constant obtuse pain under the sternum, somewhat impeding respiration ; also of nausea, and she has had two or three attacks of spontaneous vomiting. Pulse 128, sharp and tolerably full.

Emittantur e brachio sanguinis ℥ xvi.

Habeat haustum salinum effervescentem, nausea vel vomitu urgente.

20th, 8th day.—A bad night, with frequent cough ;

pain under the sternum much abated; pain of abdomen gone; still complains much of nausea, but vomiting has not recurred. Pulse 120, still sharp; tongue parched; two stools; blood not sisy.

Continuentur medicamenta.

Evening.—Cough continues severe, exciting pain under the sternum; look still oppressed; skin hot; she still complains much of general soreness. Pulse 140, full and firm.

Emittantur e brachio sanguinis ℥ xvi.

21st, 9th day.—Passed another bad night, but her countenance is a good deal improved; cough is abated, and does not now excite pain under the sternum; pain of abdomen was again severe during night, but is now gone; still complains of general soreness; nausea is less troublesome. Pulse 120, still sharp; tongue parched and foul; two stools; fæces scanty and watery.

Habeat tartratis potassæ et sodæ ℥ vi ex aqua.

Foveantur crura vespere.

Continuentur alia.

22d, 10th day.—Slept some during night; countenance much improved; cough still very frequent, but without causing pain. Pulse 120, sharp; tongue more moist and clean; full alvine evacuations from the salts.

Lavetur cutis aqua tepida.

Foveantur crura vespere.

Continuentur alia.

23d, 11th day.—Has had severe diarrhœa during night,

accompanied with gripes; in other respects as yesterday. Pulse 120, sharp; tongue parched and foul.

Habeat pilulam Thebaicam, et repetatur vespere.
Capiat misturæ cretaceæ \bar{z} ij subinde,
Decoctum hordei ad libitum.

24th, 12th day.—Diarrhœa nearly gone; gripes entirely so; cough still very troublesome, but she has no other complaint; a tolerable night.

Pulse 115, still sharp; tongue moist and cleaning; appetite improves.

Continuetur mistura cretacea.
Omittantur alia.

25th, 13th day.—Continues as yesterday. Pulse 100, softer; three stools.

Continuentur medicamenta.
Habeat haustum anodynum antimoniale vespere.

26th, 14th day.—No complaint but cough and general soreness. Pulse 96, soft; bowels still rather loose.

Continuentur medicamenta.

27th, 15th day.—Cough much abated; she is now completely free of ailment; functions natural. Convalescent.

Omittantur medicamenta.

September 2.—Dismissed cured.

Case, NO. 17.

JOHN HINCHIE, æt. 21, Glass-blower.

August 24. 5th day of fever,

Complains of severe pain of loins; much general soreness, particularly of inferior extremities; pain and tenderness to the touch over the whole abdomen, pain of hind neck, lassitude; great prostration of strength; occasional headach; vertigo on attempting to assume the erect posture; frequent nausea; occasional vomiting; rigours alternating with heat; look anxious; eyes a little suffused.

Pulse 96, rather sharp; tongue white and dry; surface hot but moist; bowels regular from medicine; appetite bad; much thirst; sleeps ill.

Ascribes his complaints to exposure to cold. Has used some cathartics.

Complaints commenced suddenly with headach; rigour, pain of back, &c. Headach however became much abated after the operation of the first cathartic.

Emittantur e brachio sanguinis ℥ xvij.
Habeat misturæ salinæ ammoniatæ ℥ i subinde,
Et cras mane sulphatis magnesiæ ℥ vi ex aqua,
Decoctum avenæ pro potu.

25th, 6th day.—Took some breakfast; look lively; no complaint but pain of loins. Pulse 100, full and sharp; tongue white but moist; bowels free.

Emittantur iterum e brachio sanguinis ℥ xvij.
Continuentur alia.

26th, 7th day.—Pain of loins gone; no complaint but weakness; look and respiration are however oppressed.

Pulse 100, sharp and pretty full; tongue white and dry; skin hot and dry; two stools; an indifferent night; blood not sizy.

Habeat sulphatis magnesiae ℥ i ex aqua.
Continuentur alia.

27th, 8th day.—A restless night with raving; though he now appears collected, he talks in a very hurried manner, and expression of eye is unmeaning; says he has no complaint; has had two or three attacks of epistaxis to a considerable extent. Pulse 112, full and sharp; tongue moist, and pretty clean; salts operated well; took a little breakfast.

Emittantur e brachio sanguinis ℥ xvij.
Continuentur alia.

28th, 9th day.—A good night with less raving; now perfectly sensible, but still talks hurriedly; makes no complaint, and he took breakfast well. Pulse 120, sharp, but not so full; tongue pretty clean and moist; two stools; blood florid, but not sizy.

Continuentur medicamenta.

29th, 10th day.—A good night; countenance improved; no complaint but weakness and soreness. Pulse 108, sharp; tongue dry, and somewhat foul; surface still hot; thirst abated; appetite improved.

Continuentur medicamenta.

30th, 11th day.—A bad night with delirium; at present sleeping quietly. Pulse about 100, of moderate strength; two stools.

Emittantur e brachio sanguinis ℥ xvi.
Continuentur medicamenta.

31st, 12th day.—A good night; no delirium, is perfectly sensible; countenance greatly improved; no complaint; still thirsty; but appetite is improved.

Pulse 103, firm; tongue parched, but clean; two stools; blood not sisy; has a copious separation of green coloured serum.

Continuentur medicamenta.

September 1. 13th day.—A good night; countenance farther improved; some deafness; no complaint; thirst abated; appetite improves; pulse 120, of moderate strength; tongue dry; bowels regular.

Continuentur medicamenta.

2d, 4th day.—Slept well; look lively; no complaint but of a little soreness of internal mouth. Pulse 120, full and firm; tongue parched; three stools; urine free; surface hot and dry; drinks a good deal, but takes food well.

Continuentur medicamenta.

3d, 15th day.—Slept well; little thirst; appetite good; continues without ailment. Pulse 96, full and firm; tongue pretty clean and moist; two stools; urine free.

Omittantur medicamenta.

Common diet.

16th.—Dismissed cured.

Case, NO. 18.

ELIZABETH PURDIE, æt. 30, Nurse, widow, has four children, plethoric habit, sanguine temperament,

September 4. 3d day of fever,

Complains of lassitude, debility, severe headach, vertigo, tinnitus aurium, throbbing of temples, some impatience of light, pain of hind neck, slight pain of throat on deglutition, acute pain under the upper part of the sternum on coughing or motion, and impeding respiration; pain of abdomen on pressure, pain of loins and general soreness: has frequent nausea and vomiting, occasional cough with free expectoration; frequent rigours, succeeded by warm flushings and sweating fits: countenance and respiration much oppressed.

Pulse 120, sharp; tongue white but moist; taste vitiated; thirst urgent; bowels constipated; urine free; skin hot but soft: no appetite; sleep disturbed.

Complaints came on suddenly with rigours, sickness at stomach, vomiting, headach, &c.

Has used no remedies.

Emittatur e brachio sanguis prout ferat.

q. p. injiciatur enema commune,

Et cras primo mane habeat pulveris jalapæ compositi

ʒ i,

Ex infusi sennæ ʒ ij,

Decoctum avenæ pro potu.

5th, 4th day.--ʒ xxxiv of blood taken; it is of firm coagulum and buffy in the two cups first drawn; passed a restless night, with frequent attacks of nausea and vomiting; headach; pain of hind neck, pain under the sternum continue; pain of loins, of abdomen, general soreness and

cough are aggravated, but tinnitus, vertigo, throbbing of temples, and impatience of light are gone: expression of countenance and breathing, (though still considerably oppressed,) are a good deal improved. Pulse 112, small but firm; tongue moist and covered with yellowish fur; bad taste of mouth and thirst continue; one plentiful alvine evacuation, reported of a dark reddish colour and foetid odour; urine voided freely, and in sufficient quantity; perspired gently during night, and surface is at present cool and moist; appetite not improved; rejected the cathartic by vomiting.

Habeat infusum sennæ ad plenam alvi solutionem.
 Vespere, ni levantur symptomata,
 Repetatur venæsectio prout ferat.
 Utatur potu acido vegetabili pro potu; et si redieret
 vomitus,
 Capiat haustum salinum effervescentem vomitu urgente.

6th, 5th day.— ξ xxvi of blood taken; crassamentum in large proportion to serum; it is florid, firm, and buffy in the two cups drawn first; has passed a good night; expression of countenance much improved; respiration natural; pain under the sternum gone; headach, pain of hind neck, of abdomen, of loins, and general soreness much relieved: cough less frequent; but she has had several attacks of nausea, vomiting and rigours during night, with gentle perspiration. Pulse 112, of moderate strength; tongue furred, but moist; two scanty watery stools; urine high coloured, without cloud or sediment; surface of good warmth; still very thirsty; appetite not improved.

Continuentur haustus salini effervescentes et potus acidus vegetabilis.

Injiciatur enema domesticum vespere.

Cras mane habeat sulphatis magnesiæ ℥ i.

Ex infusi rosæ ℥ vi, solut. part. vicib. sumend.

7th, 6th day.—A bad night, with frequent attacks of vomiting; headach aggravated; general soreness, and tenderness on pressure of abdomen, continue; rigours have recurred. Pulse 120, small but firm; tongue much loaded, but moist; skin cool and soft; enema operated well, but she rejected the salts by vomiting, and has had no stools since; urine scanty and high coloured, without cloud or sediment; still thirsty; and no food is taken.

Applicentur hirudines viij fronti, et

Capiat statim infusum sennæ ad alvi plenissime solutionem.

Continuentur alia.

8th, 7th day.—Hair was cut before the application of the leeches; they bled freely: countenance greatly improved; passed a good night; thirst abated: respiration natural; surface cool; appetite better; urine free, except slight vertigo; she is entirely free of ailment. Pulse 88, of good strength; tongue moist and nearly clean; plentiful alvine evacuation.

Continuentur medicamenta.

9th, 8th day.—Slept pretty well; expression of countenance good, thirst abates, and appetite improves: complains of pain of shoulders and back. Pulse 88, soft; tongue clean and moist; one dark-coloured stool; urine free.

Capiat pilulas aloeticas vj, et
 Repetantur cras mane si opus sit.
 Habeat jusculi bovini lb. ij. indies.

10th, 9th day.—Two full alvine evacuations; fæces dark coloured: passed a good night; pain of shoulders and back relieved. Pulse 92, of good strength; tongue clean and moist; skin moist and of good warmth; little thirst; appetite better.

Repetatur jusculum bovinum.

11th.—Completely convalescent.

Omittantur medicamenta.

Common diet.

13th.—Dismissed cured.

THE following six cases are given as examples of the safety and efficacy of bloodletting in young subjects.

Case, NO. 19.

GILBERT BRADY, æt. 10.

April 22. 3d day of fever,

Complains of headach, vertigo, throbbing of temples, occasional tinnitus aurium, pain of right hypochondrium, aggravated by pressure, coughing or full inspiration,

much sickness at stomach, occasional short dry cough, rigours, and warm flushings, pain of loins, lassitude, debility, countenance oppressed, cheeks flushed. Pulse 134, firm and small; tongue clean and moist; bowels reported regular; skin hot and dry; no appetite; thirst urgent; sleeps ill.

Can assign no cause for ailments. Has used no remedies.

Emittantur e brachio sanguinis $\frac{z}{3}$ xvi.
 Habeat misturæ mucilaginosæ $\frac{z}{3}$ i urgente tussi,
 Sulphatis magnesiæ ʒ v ex aqua,
 Decoctum avenæ pro potu.

23d, 4th day.—A pretty good night, with gentle perspiration; look much improved; headach relieved; vertigo, tinnitus aurium, throbbing of temples, flushing of face, and rigours gone; respiration natural, pain of side and cough continue. Pulse 116, sharp; tongue clean and moist; three natural stools; skin cooler; thirst abated; has taken breakfast.

Continuentur mistura mucilaginosa et
 Decoctum avenæ.

24th, 5th day.—A tolerable night; countenance farther improved; headach abated; pain of side and cough continue; four leeches applied to the forehead last night by mistake. Pulse 116, small but sharp; tongue clean and moist; three stools.

Continuentur medicamenta.

25th, 6th day.—A good night, headach gone, pain of side much relieved; cough less frequent. Pulse 72, soft;

tongue clean and moist; three stools; appetite improves, and thirst abates.

Continuentur medicamenta ut antea.

26th, 7th day.—Headach has returned; pain of side is rather aggravated, and cough is more frequent. Pulse 100, sharp; tongue clean and moist; bowels regular; an indifferent night.

Imponatur vesicatorium lateri qua dolet.
Continuentur alia.

27th, 8th day.—Blister rose well; pain of side is relieved; cough still frequent; headach severe, and countenance is oppressed. Pulse 112, full and sharp; tongue clean and moist; bowels regular.

Emittantur e brachio sanguinis ξ x prout ferat.
Continuentur mistura mucilaginoso et
Decoctum avenæ.

28th, 9th day.— ξ xij of blood drawn, which is sily; countenance greatly improved; free of ailment. Pulse natural; tongue clean and moist; bowels regular; appetite improved.

Continuentur medicamenta.

29th, 10th day.—Convalescent.

Omittantur medicamenta.

May 1.—Common diet.

3d.—Dismissed cured.

Case, NO. 20.

THOMAS FERRIER, æt. 11,

July 26. 4th day,

Complains of debility, general soreness, headach referred to the frontal region, vertigo, tinnitus aurium, pain of internal fauces under the ensiform cartilage, of abdomen and loins: has frequent nausea and vomiting; rigours and warm flushings, and dry cough; face is flushed; eyes suffused; respiration and countenance oppressed. Pulse 118, sharp; tongue white but moist; skin hot and dry; bowels open from medicine; appetite bad; much thirst; sleeps ill.

Has been exposed to the contagion of fever. Had a cathartic last night.

Emittatur e brachio sanguinis ℥ xvi.

R. Calomelanos gr. v,

Pulveris antimonialis gr. iij. M. Fiat bolus, q. p. sumendus; et cras mane capiat

Infusi sennæ ℥ iij.

Habeat haustum salinum effervescentem nausea vel vomitu urgente,

Decoctum avenæ pro potu.

27th, 5th day.—A good night; no return of vomiting, countenance improved; pain of throat, præcordia, abdomen and loins abated, headach, vertigo, and tinnitus aurium continue. Pulse 115, sharpish; tongue clean and moist; two stools.

Applicentur hirudines viij fronti.

Continuentur alia.

28th, 6th day.—Leeches bled well; completely free of ailment. Pulse calm; tongue clean; bowels regular.

August 3.—Dismissed cured.

Case, NO. 21.

JAMES PARKINSON, æt. 14,

August 15. 5th day of fever,

Complains of severe general pains, of headach referred to the coronal and frontal regions, vertigo, tinnitus aurium, and throbbing of temples; of pain over the whole of the epigastrium, aggravated by motion or pressure; of pain of loins, with lassitude and prostration of strength; look and respiration oppressed; face somewhat flushed:

Pulse 102, somewhat sharp; tongue white and rather dry; surface hot; bowels reported regular; appetite bad; much thirst; sleeps ill.

Has been exposed to contagion. Has used no remedies.

Complaints commenced suddenly with rigours, followed by headach, pain of back, &c.

Emittantur e brachio sanguinis ℥ xvij.
Habeat sulphatis magnesiae ℥ vi ex aqua,
Decoctum avenæ pro potu.

16th, 6th day.—Completely free of ailment. Pulse natural; tongue clean and moist; salts have not yet operated; blood disposed to be sizy.

Habeat infusi sennæ ℥ iij q. p.
Continuetur decoctum avenæ.

17th.—Two alvine evacuations: convalescence goes on.

Continuetur decoctum avenæ.

21st.—Common diet.

25th.—Has had diarrhœa since last evening, occasionally accompanied with gripes.

Habeat pilulam thebaicam, et post horam
Sulphatis magnesiæ ʒ v ex aqua.

26th.—Diarrhœa nearly gone; no gripes.

27th.—Countenance is oppressed; breathing is hurried; he complains of headach and general soreness. Pulse 120, sharp; skin hot and dry; appetite impaired; is thirsty; bowels open.

Emittantur e brachio sanguinis ʒ xij prout ferat.
Lavetur corpus aqua tepida.
Butter milk for drink.

28th, 2d day of relapse.—ʒ xvi of blood taken which is sily; looks lively; breathing natural; headach gone, is without ailment. Pulse 72, of moderate strength; tongue clean and moist; three stools; skin cool; took breakfast well, and thirst is abated; had an attack of epistaxis this morning.

29th.—Convalescent.

31st.—Dismissed cured.

Case, NO. 22.

THOMAS DEMPSTER, æt. 15,

August 11.

Complains of much lassitude, prostration of strength and

general soreness; of headach, vertigo, tinnitus aurium; pain at præcordia aggravated by pressure, motion or full inspiration; has frequent nausea and cough with copious mucaginous sputa; look anxious; breathing difficult; face flushed; eyes suffused.

Pulse 120, full and sharp; tongue white but moist; bowels costive; appetite bad; much thirst; sleeps ill; urine free.

Complaints of about three weeks standing; has been bled twice from the arm, and used some other remedies of the nature of which he is ignorant.

Emittantur e brachio sanguinis $\frac{z}{3}$ xx.
Capiat sulphatis magnesiæ $\frac{z}{3}$ vi ex aqua,
Misturæ mucilaginosæ $\frac{z}{3}$ i urgente tussi,
Decoctum avenæ pro potu.

12th.—Has sweated freely since morning; headach abated; cough not frequent; two stools; blood very sizzly.

Continuentur medicamenta.

13th.—Nearly free of ailment. Pulse natural; one stool.

Continuentur medicamenta.

14th.—Completely convalescent.

Common diet.

Omittantur medicamenta.

22d.—Dismissed cured.

Case, No. 23.

ANGUS COWAN, æt. 9, healthy boy,

December 27. 3d day of fever,

Complains of headach, vertigo, tinnitus aurium, pain of chest, with frequent cough; pain of epigastrium, and over the whole of the abdomen, with frequent stools; severe pain of loins; much prostration of strength; general pains; occasional nausea; rigours and flushings. Look anxious; breathing hurried.

Pulse 144, firm and sharp; tongue white and moist; skin hot and dry; thirst urgent; sleeps ill.

Has been exposed to the contagion of fever. Has used no remedies.

Emittatur sanguis e brachio prout ferat.

*Capiat potionis carbonatis calcis ℥ ℥ ss post singulas sellas,
Decoctum avenæ pro potu.*

28th, 4th day.—℥ xij of blood drawn, which is sizy; look very greatly improved; respiration calm: he is entirely free from ailment, with the exception of a little uneasiness of abdomen. Pulse 92, full and firm; tongue white but moist; surface soft; stools still frequent.

Habeat sulphatis magnesiæ ℥ iv.

29th, 5th day.—Convalescent.

Omittantur medicamenta.

31st.—Dismissed cured.

Case, NO. 24.

JOHN M'CONNAL, æt. 9.

July 3. 7th day of fever,

Complains of headach, vertigo, intolerance of light; pain at præcordia, and over the whole abdomen, aggravated by full inspiration, pressure or coughing; feels weak; much general soreness; nausea, occasional vomiting and rigours; countenance anxious; breathing oppressed; some flushing of face.

Pulse 124, sharp; tongue white and dry; bowels rather costive; appetite bad; thirst urgent; sleeps ill: assigns no cause for ailments.

Has used no remedies.

Emittantur e brachio sanguinis ℥ xij:
Habeat sulphatis magnesiæ ℥ v ex aqua,
Misturæ salinæ ammoniatæ ℥ i subinde,
Decoctum avenæ pro potu.

4th, 8th day.—A good night; countenance much improved; feels great relief to all his symptoms. Pulse about 120, somewhat sharp; tongue pretty clean, and moist; four stools; blood not sizy.

Continuentur medicamenta.

5th, 9th day.—Pulse is still quick, but tongue is clean and moist; has had three stools, and he has no complaint but some uneasiness of abdomen.

Continuentur medicamenta.

6th, 10th day.—Pain of abdomen gone; completely convalescent.

15th.—Dismissed cured.

THE following six cases are given as examples of the safety and utility of bloodletting in old subjects.

Case, NO. 25.

JAMES BROUGH, æt. 53,

May 1. 3d day of fever,

Was seized suddenly on the 29th ult. with violent shivering, headach, vomiting, and pain of left hypochondrium; the other symptoms are now much abated; but pain of hypochondrium continues acute, and is much aggravated by pressure, coughing, and full inspiration; vomiting is frequent, and nausea distressing. Is also affected with occasional short dry cough, pain of loins, much loss of strength, lassitude, and general soreness: countenance and respiration oppressed; eyes slightly suffused.

Pulse 108, full and firm; tongue white but moist; skin hot and dry; bowels reported regular from medicine; appetite bad; thirst urgent; sleeps ill.

Had a dose of physic yesterday. Has used no other remedies.

Emittantur e brachio sanguinis ℥ xxiv.
 Habeat haustum salinum effervescentem, nausea
 vel vomitu urgente,
 Decoctum avenæ pro potu,
 Cras mane sulphatis magnesiæ ℥ vi ex aqua.

2d, 4th day.—A pretty good night; countenance im-

proved ; no complaint, but of pain of left hypochondrium ; which though considerably relieved, still gives a good deal of uneasiness. Pulse 100, soft ; tongue white, but moist ; four or five stools ; blood very sizy.

Emittantur porro sanguinis ζ xvij,
Et vespere, prout urgeat lateris dolor,
Imponatur vesicatorium qua dolet.
Continuentur decoctum avenæ et
Hausti salini effervescentes.

3d, 5th day.—Pain of side much relieved, but not gone ; has occasional short dry cough ; no other complaint. Pulse 80, soft ; tongue a little white, but moist ; five or six stools ; blister not applied ; blood sizy.

Imponatur vesicatorium lateri qua dolet.

4th, 6th day.—Blister discharged well ; pain of side further relieved, but cough is rather aggravated. Pulse 92, of good strength ; tongue moist, but a little foul ; bowels regular.

Continuentur medicamenta.

5th, 7th day.—No complaint ; functions natural.

Omittantur medicamenta.

9th.—Common diet.

15th.—Dismissed cured.

Case, NO. 26.

WILLIAM JACKSON, æt. 60, Coachman, spare, emaciated habit,

April 15.

Is incoherent, and can give no distinct account of ailments. Complains only of much prostration of strength; pain of loins and of lower abdomen; face flushed; eyes much suffused.

Pulse 115, pretty full; tongue parched; surface hot but moist; bowels costive; no appetite, urgent thirst; sleeps ill.

His present complaints are reported to be of a fortnight's standing, but he has been in an indifferent state of health for six months past.

Emittantur e brachio sanguinis ℥ xvij; et,

Capillitio abraso, applicentur panna lintea aqua gelida madefacta.

q. p. Injiciatur enema commune.

Habeat decoctum avenæ pro potu.

Cras mane capiat sulphatis magnesiæ ℥ vi ex aqua.

16th.—An indifferent night; breathing is hurried; no particular complaint; is more sensible. Pulse 100, soft; tongue dry; one stool from the injection; thirst continues; but he took some breakfast.

Continuetur decoctum avenæ.

17th.—Passed a pretty good night; breathing still hurried, but he makes no complaint; countenance greatly improved; thirst gone, and he takes his food. Pulse 100, soft; tongue foul; bowels regular.

Continuetur decoctum avenæ.

18th.—A good night, free of ailment. Pulse 96, soft; urine reported to be in large quantity; bowels regular; tongue cleaning.

Continuetur decoctum avenæ.

19th.—A bad night with raving, but he makes no complaint. Pulse 100, pretty full; tongue parched; urine still in large quantity, but of natural colour; no stool.

Habeat haustum ex oleo ricini.
 Applicentur capiti panna lintea aqua gelida madida.
 Continuetur decoctum avenæ.

20th.—A good night, and he is without ailment. Pulse 95, soft; tongue clean and moist; alvine evacuation from the draught.

Omittantur medicamenta.

25th.—Passes good nights; appetite improves; complains only of soreness of tongue, which is swollen and chopt.

Utatur gargarismate communi.

26th.—Common diet.

29th.—Habeat cerevisiæ (porter) lb ij ndies.

May 1.—Full diet.

5th.—Continues to recover, but there is an eruption of a pustular nature over the hands and feet.

Laventur manus et pedes solutione acetatis plumbi subinde.

16th.—Pustular eruption gone.

25th.—Dismissed cured.

Case, NO. 27.

JOHN CAMPBELL, æt. 53, Labourer, spare habit, previously healthy,

September 17. 6th day,

Complains of headach referred to the frontal region, vertigo in the erect posture, pain and a feeling of stricture across the chest, much increased by a full inspiration; of a feeling of pain and tenderness to the touch over the whole of the abdomen, with much lassitude, debility and general soreness; has frequent cough, exciting retching, and accompanied with free mucaginous expectoration; has frequent warm flushings; face is flushed; eyes suffused; respiration oppressed.

Pulse 100, full; tongue covered with a white fur; bowels slow; surface hot; urine free; appetite bad; much thirst; sleeps ill.

Can assign no cause for ailments. Was bled from the arm on the 15th current, to the extent of $\text{ʒ} \text{ x}$ with very little relief. Has also taken some cathartics.

Complaints commenced suddenly, with warm flushings, succeeded by headach, general soreness, loss of strength, &c.

Emittantur e brachio sanguinis $\text{ʒ} \text{ xx}$.

Habeat pilulas aloeticas viij.

Utatur mistura mucilaginosæ pro tussi,

Decocto avenæ pro potu.

Cras mane capiat infusi sennæ $\text{ʒ} \text{ iij}$.

18th, 7th day.—A tolerable night; countenance improved; headach, vertigo, pain and sense of stricture across the chest, much relieved; flushing gone; respiration natural, and cough is little noticed, but abdomen is still tender to the touch. Pulse 78, of moderate strength; tongue clean and moist on the edges, but foul in the centre; four stools; fæces scanty, but of natural colour; blood very sizzly.

Continuentur medicamenta.

19th, 8th day.—No complaint but weakness. Pulse natural; tongue clean and moist; two stools; appetite improved; thirst greatly abated.

Continuentur medicamenta.

20th, 9th day.—Cough has been very troublesome, exciting pain of left side of chest. Pulse natural; tongue parched; bowels regular.

Continuentur mistura mucilaginosâ et decoctum avenæ.

21st, 10th day.—Cough exciting pain of breast continues. Pulse calm; tongue clean; bowels regular; takes his food; very little thirst.

Imponatur vesicatorium lateri sinistro.

Continuentur alia.

22d, 11th day.—Blister succeeded well; cough much abated; does not now excite pain of breast; functions natural.

Continuentur medicamenta.

23d, 12th day.—Convalescence goes on.

Omittantur medicamenta.

Common diet.

30th.—Dismissed cured.

Case, NO. 28.

DAVID ALLAN, æt. 58, Baker,

November 25. 6th day of fever,

Was seized with shivering, followed by much vertigo, headach, pain of epigastrium, &c.: had been exposed to contagion: was bled from the arm three days ago, with relief: has also used some laxative medicine.

He now complains of headach, vertigo, tenderness of epigastrium, and over the whole of the abdomen, which feel full and tense: feels very weak, and much general soreness: expression of countenance anxious, but there is no flushing of face nor suffusion of eyes.

Pulse 120, sharp and pretty full; tongue moist and clean at edges, covered with white fur in centre; bad taste of mouth, with much thirst, and no appetite; bowels regular from medicine, but before they were very costive: heat 100; surface dry; sleeps ill; urine free.

Emittantur e brachio sanguinis ℥ xvi.
Capiat sulphatis magnesiæ ℥ i ex aqua,
Misturæ salinæ ammoniatæ ℥ i subinde,
Decoctum avenæ ad libitum.

26th, 7th day.—Felt much relief from the bleeding;

expression of countenance is considerably improved; headach gone; pain, fulness and tension of abdomen continue: complains of sickness at stomach. Pulse 120, still sharp; tongue dry and chopt; heat 101; three stools; urine free and limpid; thirst still urgent; takes no food; blood very sizy.

℞. Aquæ menthæ ℥ vi,
Magnesiæ ℥ ij. M.
Sumat ℥ i subinde.
Continuentur alia.

27th, 8th day.—Fulness and tension of abdomen continue, but he feels no pain even on pressure; countenance is very much improved, and he reports himself completely free of ailment. Pulse 100, rather feeble; heat 98; tongue moist and becoming clean; three stools; fæces natural; urine in sufficient quantity; slept well; thirst is abated, and food has been taken.

Continuentur medicamenta.

29th, 10th day.—Convalescent.

Omittantur medicamenta.

Common diet.

December 25.—Dismissed cured.

Case, NO. 29.

AGNES MARTIN, æt. 58,

July 1. 6th day,

Complains of headach, vertigo, tinnitus aurium, pain of

throat, epigastrium, abdomen and loins, much debility, and a feeling of general soreness: has occasional nausea, frequent cough with copious sputa; countenance and respiration oppressed; face flushed; eyes suffused.

Pulse 102, pretty full; tongue white but moist; bowels open from medicine; appetite bad; is thirsty, and sleeps ill.

Has been exposed to the contagion of fever; has had a dose of physic which operates well.

Emittantur e brachio sanguinis ℥ xvi.
 Habeat misturam mucilaginosam et
 Decoctum avenæ M. S.
 Cras mane sulphatis magnesiæ ℥ xvi ex aqua.

2d, 7th day.—Headach, vertigo, sore throat, pain of epigastrium, abdomen, and loins relieved; cough is easier, and nausea less frequent: countenance is improved; she passed a tolerable night, and took some breakfast. Pulse about 90, of good strength, but occasionally intermitting; tongue still loaded but moist; salts have operated freely; blood not sizy.

Continuentur medicamenta.

3d, 8th day.—Has had several stools: countenance is farther improved; she takes her food, and is almost free of ailment. Pulse natural; tongue becoming clean.

Continuentur medicamenta.

5th, 10th day.—Completely convalescent.

Omittantur medicamenta.

Common diet.

10th.—Dismissed cured.

Case, NO. 30.

JANET DONALD, æt. 60,

May 2. 5th day,

Complains of headach, vertigo, tinnitus aurium, throbbing of temples, pain of internal fauces, of left hypochondrium, much increased by pressure, coughing or full inspiration; pain of small of back, great loss of strength and general pains, particularly in the extremities; frequent cough, with scanty sputa, nausea and vomiting; rigours alternating with heat; look and respiration oppressed; eyes suffused.

Pulse 112, full and firm; tongue pretty clean and moist; bowels open from medicine; skin hot and dry; appetite bad; much thirst; sleeps ill; urine free.

Can assign no cause for her ailments. Was bled yesterday, and had a dose of salts.

Emittantur e brachio sanguinis ℥ xii.

Habeat haustum salinum effervescentem nausea urgente.

Decoctum avenæ pro potu.

3d, 6th day.—Headach continues severe; pain of hypochondrium, of back, and general pains unabated; cough little noticed, and she has had no return of nausea or vomiting: countenance little improved; respiration still much oppressed. Pulse 110, pretty full and strong; tongue rather foul; bowels open; blood florid and of firm coagulum, but not sizy.

Abradatur capillitium.

Applicentur capiti panna lintea aqua gelida madida.

Foveantur crura.

Continuentur alia.

4th, 7th day.—Has passed a bad night, and symptoms are nearly as before; has had frequent nausea and vomiting. Pulse 140, feeble; tongue pretty clean and moist; two stools; very little food taken; much thirst.

Habeat jusculi bovini ℥ ij hodie, et indies,
 Haustum anodynum antimoniale hora somni.
 Applicetur vesicatorium nuchæ.
 Capiat aquæ menthæ piperitæ ℥ i pro re nata.
 Omittantur alia.

5th, 8th day.—Has passed a good night; countenance a good deal improved: she feels herself much easier, but nausea and vomiting continue frequent. Pulse 92, firmer but intermitting; tongue clean; one stool; blister has not answered well.

Continuentur medicamenta.

6th, 9th day.—Countenance is rather more oppressed, and headach is rather aggravated: she complains more of general soreness. Pulse 108, full and perfectly regular; tongue clean and moist; one stool; takes some food.

Continuentur medicamenta.

7th, 10th day.—She has passed a good night; countenance improved; general pains abated; headach also much relieved. Pulse 80, full; tongue pretty clean and moist; appetite improves.

Lavetur cutis aqua tepida.
 Continuentur alia.

8th, 11th day.—Headach gone; she only complains of general soreness; functions natural.

Continuentur medicamenta.

12th.—Completely convalescent.

Omittantur medicamenta.

Common diet.

18th.—Dismissed cured.

THE following five cases are given to prove the propriety of bleeding, whenever the symptoms seem to require it, without any attention being paid to the duration of the disease.

Case, NO. 31.

JAMES PENMAN, æt. 28,

April 27. 19th day of fever,

Countenance is much oppressed: complains of much lassitude and prostration of strength, of headach, vertigo, tinnitus aurium, some deafness, pain of abdomen increased by pressure or coughing, pain of loins, general soreness, sickness at stomach, frequent severe cough, exciting pain of breast, and accompanied with copious viscid mucaginous sputa; eyes a little suffused.

Pulse 120, full; tongue white but moist; bowels reported regular; skin hot and dry; appetite bad; much thirst; sleeps ill.

Ascribes his complaints to exposure to cold. Has taken some cathartics.

Emittantur e brachio sanguinis ζ xxij.
Habeat misturæ diaphoreticæ salinæ ζ i alternis horis.
Decoctum avenæ pro potu.

28th, 20th day.—Still coughs occasionally, but makes no other complaint. Pulse 112, soft; tongue clean but dry; no stool; surface still hot; thirst urgent, but appetite is improved.

Habeat sulphatis magnesiæ ζ v ex aqua,
Misturam mucilaginosam pro tussi.
Continuentur alia ut heri.

29th, 21st day.—An indifferent night, but makes no complaint. Pulse 112, soft, rather full; tongue clean but dry; two stools.

Continuentur medicamenta ut heri.

30th, 22d day.—Another indifferent night, with some raving; still makes no complaint. Pulse 100, pretty full; tongue clean; two alvine evacuations;

Habeat haustum anodynum vespere.
Continuentur alia ut antea.

May 1. 23d day.—Passed a better night, but still with some raving; he at present talks confusedly; makes no complaint. Pulse 100, soft, and of good strength; tongue clean but dry; bowels regular; countenance oppressed.

Intermittatur haustus anodynus.
Continuentur alia.

2d, 24th day.—A good night without raving; countenance improved; is perfectly distinct, and makes no complaint.

Continuentur medicamenta.

3d, 25th day.—Completely convalescent.

Omittantur medicamenta.

10th.—Common diet.

13th.—R. Vini rubri,
 Aquæ fontanæ ā ā ℥ vi.
 M. Sumat ℥ i subinde.

18th.—Dismissed cured.

Case, NO. 32.

WILLIAM BEATTIE, æt. 27, Labourer,
 July 28. 10th day of fever,

Complains of great loss of strength, and general soreness; headach, tinnitus aurium, throbbing of temples, pain of hind neck, and of loins; has occasional cough; face flushed; eyes suffused; respiration and expression of countenance oppressed.

Pulse 112, sharp; tongue white; skin hot and dry; bowels reported regular; appetite bad; is very thirsty; sleeps pretty well.

Ascribes his complaints to exposure to cold. Has used no remedies.

Emittantur e brachio sanguinis ℥ xxxiv.
 Habeat sulphatis magnesiæ ℥ i ex aqua,
 Misturæ diaphoreticæ salinæ ℥ i secunda quaque hora,
 Decoctum avenæ pro potu.

29th, 11th day.—Passed a bad night ; flushing of face and suffusion of eyes continue ; but expression of countenance is improved, and respiration is easier ; headach, throbbing of temples, and pain of hind neck continue.

Pulse 120, somewhat sharp ; tongue foul ; salts have operated well ; blood very sizy.

Applicentur birudines x fronti, et, ni remiserit dolor,
 Imponatur vesicatorium nuchæ.
 Continuentur alia.

30th, 12th day.—A bad night ; countenance is oppressed ; breathing is hurried ; leeches bled well, but blister succeeded ill : he complains of pain of epigastrium, much aggravated by pressure ; other symptoms unabated : had an attack of epistaxis this morning. Pulse 118, sharp ; tongue foul ; no stool.

Habeat infusi sennæ ℥ iv.
 Continuentur alia.

Evening.—Epigastrium continues very painful and tender to the touch ; no abatement of other symptoms ; eyes are suffused, and dull ; oppressed look and hurried breathing continue. Pulse 103, sharp ; skin hot ; two very scanty dark-coloured and foetid stools.

Emittantur e brachio sanguinis ℥ xvij,
 q. p. Injiciatur enema commune, et
 Cras mane repetatur infusum sennæ ad ℥ ij.

31st, 13th day.—A bad night, but countenance is im-

proved; pain of epigastrium is abated; breathing is easier, and headach nearly gone. Pulse 110, soft; tongue white, but moist; skin moist; several scanty stools; and he reports tenesmus; had again slight epistaxis this morning: blood very sizzly, and of an unusual yellow appearance; skin also tinged of yellow colour.

Habeat haustum ex oleo ricini.

Continuentur alia.

August 1. 14th day.—A good night; countenance improved; feels greatly better in every respect; has some sore throat. Pulse 100, of good strength; tongue white but moist; full alvine evacuation from the draught; skin cool; takes some food.

Habeat pilulas aloeticas iv vespere.

Continuentur alia.

2d, 15th day.—Sore throat abated; continues to improve. Pulse 96; tongue moist and cleaner; two very scanty stools; one P. M. plentiful alvine evacuation.

Omittantur medicamenta.

4th, 17th day.—Completely convalescent.

6th.—Common diet.

8th.—Additional diet.

14th.—Dismissed cured.

Case, NO. 33.

ANN MORTON, æt. 25, unmarried,

June 6. 17th day of fever,

Complains of headach, vertigo, pain at præcordia, of abdomen, and of small of back, with prostration of strength, and general soreness; has frequent cough, exciting retching and increasing pain of præcordia and abdomen; has frequent nausea, rigours, and sweating fits.

Pulse 100, small, but sharp; tongue clean and moist; bowels open from medicine; appetite bad; much thirst; is disposed to sleep much.

Ascribes ailments to the contagion of fever; has had some laxatives without benefit.

Complaints began with the usual symptoms of fever.

Emittantur e brachio sanguinis ℥ xvij.
Habeat misturæ mucilaginosæ ℥ i urgente tussi,
Decoctum avenæ pro potu.

7th, 18th day.—Slept well; headach, vertigo, tinnitus aurium, pain at præcordia, and cough are abated; no return of nausea or vomiting; pain of abdomen still complained of; countenance much improved.

Pulse 98; tongue clean and moist; no stool; blood approaching to sizy.

Habeat haustum ex oleo ricini.
Continuentur alia.

8th, 19th day.—Two alvine evacuations from the draught; pain of abdomen gone; except general soreness, she is free of ailment. Pulse 98, soft; tongue clean and moist.

Continuentur medicamenta.

9th, 20th day.—Completely convalescent.

Omittantur medicamenta.

Common diet.

11th.—Dismissed cured.

Case, NO. 34.

ADAM CAMERON, æt. 20,

June 4. 9th day of fever,

Complains of headach, vertigo, tinnitus aurium, and throbbing of temples; pain of abdomen, and small of back, with lassitude, debility and general soreness; has occasional cough, with mucous sputa, frequent nausea, and rigours; countenance and respiration are oppressed; eyes suffused.

Pulse 115, full and soft; tongue white and dry; bowels regular; appetite bad; much thirst; sleeps ill.

Can assign no cause for ailments; has been bled from the arm, and has had a dose of salts.

Applicentur hirudines x fronti.

Habeat pilulas aloeticas viij,

Misturæ salinæ ammoniatæ ℥ i subinde,

Decoctum avenæ pro potu,

Cras mane infusi sennæ ℥ iij.

5th, 10th day.—An indifferent night, but headach, throbbing of temples and pain of abdomen are abated;

cough is less frequent; countenance is much improved; pain of back and general pains severe. Pulse 100, full and sharp; tongue foul; several stools.

Habeat cerevisiam tenuem pro potu.
Continuentur alia.

6th, 11th day.—A bad night, being disturbed by a neighbouring patient: he reports himself to be nearly in the same state as yesterday; perspired some during night, and has vomited a good deal this morning. Pulse 115, full; tongue parched; two stools.

Continuentur medicamenta.

7th, 12th day.—Another bad night; countenance is not improved; complains chiefly of pain of back. Pulse 120, full and firm; tongue still parched; three stools.

Continuentur medicamenta.

8th, 13th day.—A bad night, but has slept some since morning: countenance is improved; makes no particular complaint. Pulse 120, full and soft; tongue parched; two stools.

Continuentur medicamenta.

9th, 14th day.—A tolerable night, but complains much of headach, and countenance is more oppressed. Pulse 120, sharp; tongue parched; bowels regular.

Applicentur hirudines x fronti.
Continuentur alia.

10th, 15th day.—Has passed a restless night; counte-

nance not improved; complains of pain with great tenderness of abdomen; feels considerable pain in voiding urine, and there is some tension in the hypogastrium; leeches bled well, and headach is abated. Pulse 106, pretty full; tongue covered with a yellowish crust; three stools.

Emittantur e brachio sanguinis ℥ xvi.
Habeat potus acidi nitrici vinosi ℔ ij pro potu.
Continuentur alia.

11th, 16th day.—A tolerable night; countenance improved; pain of abdomen much abated; urine now voided easily. Pulse 100, sharpish; tongue covered with a brown crust; three stools; blood disposed to be sisy.

Habeat jusculi bovini ℔ ij. hodie et indies.
Continuentur alia.

12th, 17th day.—Countenance much improved; pain of abdomen gone. Pulse 90; bowels open; tongue parched.

Continuentur medicamenta.

13th, 18th day.—Continues to improve. Pulse 80, tongue moist and cleaning; bowels regular.

15th, 20th day.—Pulse natural; bowels rather loose; appetite good.

Omittantur medicamenta.
Habeat misturæ cretaceæ ℥ ij subinde.

17th.—Bowels now regular; convalescence goes on.

Common diet.

Omittatur mistura cretacea.

22d.—Full diet.

26th.—Dismissed cured.

Case, NO. 35.

MARY MACMILLAN, æt. 16,

October 30. 14th day of fever,

Is very restless, with anxious expression of countenance; complains of lassitude, prostration of strength, pain and oppression at præcordia, increased by pressure or full inspiration; pain and tenderness to the touch over the whole abdomen, which feels unusually full; has nausea and frequent vomiting, particularly on any thing being taken into the stomach, occasional cough and rigours alternating with heat, general soreness more especially in the extremities: Respiration hurried and difficult.

Pulse 134, firm and pretty full; tongue moist but white; taste much vitiated; bowels loose; skin hot and dry; thirst very urgent; little or no food taken; sleeps ill; urine free; catamenia appeared about the commencement of her illness for the first time.

Complaints were ushered in by the usual primary symptoms of fever. Had an emetic when first taken ill, and has since had several doses of purgatives. Can assign no cause for ailments.

Secentur capilli, et

Emittatur e brachio sanguis prout ferat.

Habeat potionis carbonatis calcis ℥fs post singulas
sellas,
Decoctum avenæ pro potu.

31st, 15th day.—℥ xxv of blood drawn with immediate relief; it is buffy: had a good night, and is greatly improved; complains only of a little soreness at the epigastrium on pressure. Pulse 110, soft; skin warm; tongue with thick whitish fur; urine turbid; three alvine evacuations.

Continuentur medicamenta.

Nov. 1. 16th day.—Did not sleep well, but is free of complaint. Pulse 80, soft; skin natural; tongue rather cleaner; two alvine evacuations; urine with pink deposit.

Intermittatur potio carbonatis calcis.

2d, 17th day.—Slept well; she is now completely convalescent.

5th.—Common diet.

11th, 2d day of relapse, no apparent cause.—Has been complaining since yesterday of a little headach; skin is warm. Pulse 104, rather sharp; tongue clean; no stool yesterday.

Capiat infusi sennæ ℥ iij.

Low diet.

12th, 3d day of relapse.—Medicine has produced four or

five solid stools; she slept little; has no headach, but complains of oppression at præcordia, with tenderness of epigastrium on pressure. Pulse 92, firm; skin warm; tongue clean; considerable thirst.

Capiat infusi sennæ ℥ iij cras mane.

13th, 4th day of relapse.—Three bilious, rather solid stools since the visit; none since taking the senna; slept well, and oppression at præcordia is less. Pulse 110, rather sharp; tongue clean and moist, with declining thirst.

Capiat bolum jalapæ compositum cras mane.

14th, 5th day of relapse.—Two fluid evacuations last evening, and one since the bolus; medicine has occasioned nausea; otherwise she is free of complaint. Pulse 88, moderate strength; heat 97; tongue clean and moist.

Intermittantur medicamenta.

15th, 6th day.—Slept well, and has no ailment. Pulse 84, tongue clean; bowels regular; skin natural.

Common diet.

21st.—Dismissed cured.

THE following seven cases are given as examples of the successful employment of bloodletting, both generally and locally, under circumstances formerly reckoned the most forbidding its use.

Case, NO. 36.

HUGH MACPHERSON, æt. 28, Chairman,

April 20. 13th day of fever,

Appears incoherent; complains of headach, vertigo, tinnitus aurium, pain at præcordia, aggravated by coughing or full inspiration; has frequent nausea and vomiting, rigours alternating with heat, troublesome cough, with pretty copious mucaginous expectoration; look and respiration oppressed; face flushed; eyes suffused.

Pulse 120, full; tongue pretty clean and moist; bowels costive; appetite bad; much thirst; sleeps ill.

Ascribes ailments to exposure to cold, but he was in the habit of coming to this hospital lately to see a friend of his who was ill of fever. Has been bled from the arm, and has used some cathartics.

Emittantur e brachio sanguinis ℥ xx.

Habeat misturæ salinæ ammoniatæ ℥ i subinde,

Sulphatis magnesiæ ℥ vi ex aqua,

Decoctum avenæ pro potu.

21st, 14th day.—Has passed a bad night; countenance and respiration are still oppressed; headach, pain at præ-

cordia, general pains and cough continue; flushing of face and suffusion of eyes gone; vertigo and tinnitus abated; vomiting has not recurred. Pulse 110, soft; tongue white but moist; salts have operated freely.

Continuentur medicamenta.

22d, 15th day.—Has passed a bad night, with much delirium and inclination to leave his bed; he is now however quite collected: complains of sore throat; headach, pain at præcordia, cough and general pains continue severe. Pulse 120, soft; tongue white but moist; two stools.

One o'clock P. M.—Is at present quite incoherent; face is flushed; and eyes suffused.

Capillitio abraso, applicentur capiti panna lintea aqua gelida madida.

Imponatur vesicatorium nuchæ.

Habeat misturam mucilaginosam pro tussi.

Continuentur alia.

23d, 16th day.—Another bad night, with delirium, which continues; he is incapable of giving a correct answer to questions; takes some food. Pulse 115, soft; one stool; blister rose well:

Emittatur e brachio sanguis prout ferat.

Habeat bolum jalapæ compositum.

Continuentur alia.

24th, 17th day.—Another bad night, with delirium and much muttering: he is at present incoherent, and appears to have urgent thirst, but his countenance is much improved since the bleeding; is reported to take his allowance of food, and he complains only of weakness.

Pulse 108, soft ; tongue parched ; three stools from the bolus ; ξ xvij of blood drawn, which is florid, of firm coagulum, and disposed to be sizy.

Continuentur medicamenta.

25th, 18th day.—Another bad night, with delirium and inclination to leave his bed : is at present incoherent, and eyes are of wild expression ; fæces and urine are voided without notice. Pulse 112, pretty full ; tongue still parched.

Applicetur vesicatorium nuchæ.

Continuentur alia.

Evening.—Appears to be in a comatose state, with laborious breathing ; face flushed ; eyes suffused and dull ; has subsultus tendinum ; and he continues to void fæces and urine without notice.

Emittantur e brachio sanguinis ξ xx.

26th, 19th day.—Countenance much improved ; is more collected ; is now sensible to the stimuli of fæces and urine ; subsultus less marked ; still much thirst ; but takes some food. Pulse 96, strong ; tongue moister ; two stools ; blood not sizy.

Continuentur medicamenta.

27th, 20th day.—A good night ; countenance farther improved ; is perfectly collected ; still very thirsty, but continues to take food. Pulse 90, strong ; tongue foul ; three stools.

Continuentur medicamenta.

f

28th, 21st day.—Looks more oppressed, and has passed an indifferent night, but continues quite sensible; thirst less urgent; appetite improves. Pulse 92, full; tongue cleaner; two stools.

Continuentur medicamenta.

29th, 22d day.—A good night; countenance much improved; thirst continues to abate. Pulse 82, of good strength; tongue pretty clean and moist; one stool.

Continuentur medicamenta.

30th, 23d day.—Has passed rather a restless night, but his countenance is farther improved; has no complaint but weakness. Pulse natural; tongue clean and moist; bowels rather slow.

Habeat bolum jalapæ compositum,
Continuentur alia ut antea.

31st, 24th day.—A good night; continues to improve; plentiful evacuation from the bolus.

Omittantur medicamenta.

May 3.—Common diet.

6th.—Additional diet.

12th.—Continues convalescent; but he complains of pretty severe pain of feet.

Habeat jusculi bovini ℥ ij.
Cerevisiæ (porter) ℥ ij hodie et indies,
Haustum anodynum vespere.

20th.—Pain of feet gone.

June 1.—Dismissed cured.

Case, NO. 37.

DAVID HAGARTH, æt. 17,

February 24. 14th day of fever,

Appears feeble and exhausted ; raves and moans much, and can give no account of ailments ; coughs occasionally ; appears to have urgent thirst : there is some flushing of face and suffusion of eyes ; has subsultus tendinum ; and there are petechiæ on different parts of the body.

Pulse 112, small ; tongue and teeth covered with a dry black crust ; no stool since admission ; skin hot and dry.

Applicentur hirudines x fronti vel temporibus.
Habeat sulphatis magnesiæ ʒ vi ex aqua,
Misturæ diaphoreticæ salinæ ʒ i secunda quaque hora,
Decoctum avenæ.

25th, 15th day.—Flushing of countenance continues ; eyes less suffused ; appears more sensible ; tongue still parched. Pulse towards 120, somewhat sharp ; several stools of black colour, and fœtid, passed without notice ; cough continues ; subsultus less marked ; leeches procured a good discharge.

Applicentur hirudines viij fronti,
Continuentur mistura diaphoretica salina et
Decoctum avenæ.

Evening.—Cough troublesome, with some dyspnœa.

Imponatur vesicatorium pectori.

26th, 16th day.—Countenance of more natural expression, and without flushing; cough abated; subsultus gone, or nearly so. Pulse 120, full; tongue still parched; skin softer; bowels open, and is now sensible to the stimulus of fæces; leeches and blister succeeded well.

Bibat affatim infusum lini vel decoctum avenæ.
Continuetur mistura diaphoretica salina.

27th, 17th day.—Countenance much improved; makes no complaint. Pulse 86, full; tongue moist, but still a little foul; bowels regular; asks for food.

Let him have panada.
Continuentur alia ut antea.

March 2.—Gradual convalescence has gone on since last report.

Omittantur medicamenta.

Common diet.

21st, 2d day of relapse.—Looks languid and oppressed; and has since yesterday complained of general pains, a feeling of heat in the chest, with occasional short dry cough, and slight headach. Pulse 120, small but sharp; tongue foul; skin hot; bowels regular; is very thirsty, and appetite is impaired. Low diet.

Emittantur e brachio sanguinis $\frac{z}{3}$ xij.
 Habeat misturæ diaphoreticæ salinæ $\frac{z}{3}$ i secunda
 quaque hora,
 Decoctum avenæ pro potu.

22d, 2d day of relapse.—General pains and uneasiness
 of chest gone; cough less frequent. Pulse calm; tongue
 pretty clean and moist; blood not sizy.

Continuentur mistura diaphoretica salina et
 Decoctum avenæ.

23d, 3d day of relapse.—Free of ailment. Pulse natu-
 ral; tongue clean and moist; bowels slow.

Habeat sulphatis magnesiæ $\frac{z}{3}$ iv.

Common diet.

24th, 4th day of relapse.—Completely convalescent; pas-
 sage of bowels from the salts.

Omittantur medicamenta.

31st.—Additional diet.

April 10.—Dismissed cured.

Case, No. 38.

WILLIAM BROWN, æt. 43, Coachman,
 August 26. 8th day of fever,

Is very restless, talks much, and at times incoherently;
 face is much flushed; respiration is hurried; eyes lively,
 and wander very rapidly from one object to another. He
 complains of headach, referred to the forehead, vertigo,
 and occasional tinnitus aurium, of pain of hind neck, and

of internal fauces; also of a feeling of soreness over the whole body, with much loss of strength.

Pulse 118, full and strong; tongue pretty clean and moist; bowels reported regular; surface of moderate warmth; is very thirsty, but says he takes food and sleeps pretty well.

Ascribes ailments to the contagion of fever. Has used no remedies.

Disease began with shivering, succeeded by headach, loss of strength, &c.

Emittantur e brachio sanguinis ℥ xxxvi.
Habeat decoctum avenae pro potu.

27th, 9th day.—Syncope having approached, only ℥ xxxij of blood could be procured, which is of firm coagulum, and in the two first drawn cups it is sisy; has slept well during night, is perfectly sensible, and countenance is much improved; has perspired profusely; headach, vertigo and pain of hind neck are abated; flushing gone; pain of internal fauces continues.

Pulse 86, soft; tongue clean and moist; four stools; fæces natural; urine natural.

Continuetur decoctum avenæ.

Evening.—Appears confused, face is much flushed, and eyes suffused.

Applicentur hirudines xij fronti.

28th, 10th day.—Leeches bled profusely; had a good night; flushing of face and suffusion of eyes are gone; makes no complaint, but still seems rather confused, and is disposed to sleep much; had an attack of syncope last

evening when getting up to stool. Pulse 100, full and soft; tongue clean but dry; two stools; fæces natural; surface cool.

Continuetur decoctum avenæ.

29th, 11th day.—A bad night, with raving: he moans much; appears a good deal exhausted; breathing is laborious; is quite incoherent; has tremor of both arms, but he makes no complaint. Pulse 118, small; tongue moist and pretty clean; two natural stools; urine natural.

Continuetur decoctum avenæ.

Evening.—Delirium continues; eye dull and unmeaning; breathing still laborious: has occasionally irregular spasmodic action of the muscles of the face. Pulse 112, soft and full; tongue is moist; one scanty stool; fæces of dark colour and fœtid.

Abradatur capillitium, et

Applicentur hirudines xvi fronti.

Postea imponatur vesicatorium pectori, necnon toti capiti.

Habeat bolum jalapæ compositum cum calomel. gr. viij.

30th, 12th day.—Leeches procured a good discharge, but blisters succeeded ill; several stools from the bolus; fæces at first of dark colour, but the last motion was natural: he slept pretty well during night; breathing easier; irregular action of the muscles of the face has not returned; thirst is farther abated, and he takes his allowance of food; says he has no complaint, but talks still rather incoherently: moans a good deal; eye is dull, and he has slightly marked subsultus tendinum; had a severe attack of rigours

this morning. Pulse 103, rather feeble; tongue moist and pretty clean.

R. Vini rubri ℥ viij,
 Aquæ fontanae ℥ vi. M.
 Sumat ℥ i subinde,
 Continuentur alia.

31st, 13th day.—Continues to rave a good deal; moans much, and respiration is rather laborious, but countenance is a little improved: has had no return of rigour, and subsultus is gone. Pulse 106, firmer; tongue parched; one stool; has occasionally voided urine without notice: has very little thirst; takes food with appetite, and relishes his wine.

Continuetur vinum ad ℥ x, pari quantitate aquae admista.

September 1. 14th day.—A pretty good night, with less raving; countenance farther improved; is now nearly sensible; has no complaint; breathing is much easier, but he is very hoarse, and has some difficulty in swallowing: continues to relish his wine, and takes all his food; he now gives notice when about to void urine. Pulse 110, easily compressible; tongue moister, and nearly clean; no stool.

Habeat pilulas aloeticas iij vespere.
 Continuentur alia.

2d, 15th day.—A good night, without raving; is now perfectly sensible; has no complaint but hoarseness; deglutition is now easily performed. Pulse 100, sharp; tongue clean and moist; three stools, first dark coloured, the last natural; respiration natural.

Continuentur medicamenta.

3d, 16th day.—Hoarseness nearly gone; countenance improved, and he improves in every respect. Pulse 100, full and firm; tongue clean and moist; four natural stools.

Continuentur medicamenta.

4th, 17th day.—Completely convalescent.

Omittantur medicamenta.

Common diet.

6th.—Habeat tantum vini rubri ξ viii.

7th.—Continuetur vinum ad ξ iv tantum.

10th.—Additional diet.

16th.—Dismissed cured.

Case, No. 39.

HUGH NUGENT, æt. 21, spare habit,

October 13, 5th day of fever,

Complains of severe headach, referred to the temporal regions, vertigo, tinnitus aurium, pain of eyes, with impatience of light, great tenderness to the touch; of epigastrium; pain of small of back, general pains, and loss of strength; rigours and warm flushings; countenance oppressed; face flushed; eyes suffused.

Pulse 110, full; tongue pretty clean, surface hot and dry; bowels regular; appetite much impaired; thirst urgent; sleeps ill; urine free.

Has been exposed to the contagion of fever. Has taken only one dose of salts.

Was suddenly seized with shivering, followed by head-ach, pain of back, &c. &c.

Emittantur e brachio sanguinis ℥ xxvi.

Habeat decoctum avenæ pro potu.

Cras mane capiat sulphatis magnesiæ ℥ vi ex aqua.

14th, 6th day.—Felt much relief from the bleeding. Pulse in 10 minutes fell to 80, and became soft: countenance is much improved; slept some during night, for the first time since he took ill; headach is much abated; tenderness of epigastrium gone, and he feels himself much better in every respect. Pulse 100, soft; tongue still dry, but clean; two stools; took some breakfast; thirst still urgent; blood florid, of firm coagulum and sizy.

Continuetur decoctum avenæ.

Evening.—Complains of acute pain under the cartilago ensiformis, impeding respiration, and much increased by pressure or motion; face is flushed; skin very hot and dry. Pulse 120, firm.

Emittantur iterum e brachio sanguinis ℥ xx.

15th, 7th day.—Felt immediate relief from the bleeding, and pain of breast is now gone: he complains of nausea, and vomiting has been frequent; he however reports himself to be entirely free of pain. Pulse 100, soft; tongue clean but dry; five or six fluid bilious stools, with gripes; took breakfast; thirst abated.

Habeat haustum ex aquæ menthæ piperitæ ℥ i.

Pulveris rhei gr. xv.

Magnesiæ ℥ i.

M. q. p. sumendum.
Continuetur decoctum avenæ.

Evening.—Became quite delirious about four o'clock, and continues so with much muttering; eye is wild, and face is much flushed.

Abradatur capillitium, et capiti applicentur panna lintea
aqua gelida madida.

16th, 8th day.—Has passed a bad night, with much delirium, and inclination to leave the bed: is still very delirious, and is incapable of giving direct answers to questions; face is flushed, eyes suffused, and very wild; respiration easy. Pulse 120, firm; tongue dry and covered with a brownish fur; no stool since yesterday's visit; takes some food; little thirst.

Habeat pulveris jalapæ gr. xxv.
Calomel gr. vi. M.
Sit bolus, q. p. sumendus.
Continuetur decoctum avenæ.

Evening.—Delirium continues, with great inclination to leave bed; he occasionally however gives pretty correct answers, and says he is completely free of pain; face is flushed; eyes suffused. Pulse 120, full and firm; as yet no stool.

Emittatur e brachio sanguis prout ferat.
Imponatur vesicatorium nuchæ.
Habeat infusi sennæ ℥ iij.

17th, 9th day.—Became perfectly sensible very soon after the bleeding: in about ten minutes he fell into a profound sleep, which lasted four or five hours; he lies at

present in the supine posture, with difficult breathing, and tendency to coma, but is still capable of being roused: has subsultus tendinum, and irregular action of the muscles of the face; is very thirsty, but deglutition is performed without difficulty; several stools, which as well as urine are passed in bed. Pulse 120, easily compressible; tongue covered with a yellowish-brown fur; no food taken; ζ xvij of blood taken, which is of loose coagulum, not sisy.

Applicetur vesicatorium toti capiti.

Evening.—He lies in a comatose state, incapable of being roused; face is flushed. Pulse 120, easily compressible.

Applicentur hirudines xiv fronti.

18th, 10th day.—Leeches bled well, but blister has succeeded ill; appears to be more sensible, and is comparatively easily roused; he now answers questions, and says that he has no pain in any particular part; involuntary discharge of fæces and urine continues; the former are rather dark coloured; deglutition still easily performed; subsultus not now observed, but irregular action of the muscles of the face still present. Pulse 115, pretty firm, tongue parched and foul, but not tremulous.

Imponatur iterum vesicatorium toti capiti.
Continuetur decoctum avenæ.

19th, 11th day.—Blister has not risen, but countenance is farther improved; he still however has much tendency to coma, and is unwilling to answer questions: irregular spasmodic action of the muscles of the face still consider-

able, and it is also observed in various other muscles of the body; deglutition continues to be performed easily; thirst still very urgent. Pulse 120, not weak; tongue moist and clean at edges, covered with brown fur in centre; two stools; fæces voided in bed; takes no food.

Vespere imponatur vesicatorium nuchae.
Continuetur decoctum avenæ.

20th, 12th day.—Blister has discharged well; countenance rather improved, but is still unwilling or unable to articulate; respiration rather hurried; deglutition still performed easily, and he has taken some bread and milk to breakfast; thirst still very urgent; irregular spasmodic action of the muscles not now observed; since yesterday a sphacelated spot upon the sacrum has been observed. Pulse 120, still pretty full and firm; tongue clean and moist at edges, but foul in centre; no stool; urine continues to be voided without notice.

Vespere injiciatur enema commune.
Continuetur decoctum avenæ.

Evening.—Injection has not answered; he lies apparently in a state of coma; face is flushed. Pulse 120, still pretty full and firm.

Applicentur hirudines xvi fronti vel temporibus,
Habeat bolum jalapae compositum,
Et cras mane infusi sennae ℥ iij.

21st, 13th day.—Leeches bled very freely, and countenance since last evening is much improved: he still has tendency to coma, but is capable of being roused; answers questions pretty correctly; bolus produced three stools;

fæces watery, of dark colour, and very foetid odour, still passed in bed. Pulse 120, still full, but less firm; tongue moist and cleaning; took some porridge and milk to breakfast, thirst continues very urgent: is now able to turn himself in bed, and lies at present on his side.

Continuetur decoctum avenæ.

Evening.—Countenance very much improved, and he has taken some food. Pulse 115, full; tongue nearly clean, and quite moist.

22d, 14th day.—Countenance farther improved; eye is intelligent, and he answers questions correctly; says that he feels an uneasy sensation at stomach; appetite improves; thirst abated. Pulse 100, of good strength; tongue clean and moist; no stool since yesterday morning; he is now sensible to the stimulus of urine.

One o'clock P. M.—Has had one stool passed in bed; fæces are dark coloured and foetid.

Habeat calomelanos gr. x.
Pulveris antimonalis gr. iv. M.
Fiat bolus, q. p. sumendus.

23d, 15th day.—Has had plentiful evacuation of pretty natural fæces; bolus was not given: he now gives notice when about to pass fæces and urine; answers questions perfectly correctly, and only complains of weakness. Pulse 100, soft; tongue clean; takes food; thirst abated; spot on sacrum looks ill.

Applicetur sacro cataplasma emolliens.
Continuetur decoctum avenæ.

24th, 16th day.—Slept well during night ; countenance farther improved. Pulse 100, of good strength ; tongue clean and moist ; five or six stools ; fæces natural.

Continuentur medicamenta.

25th, 17th day.—Continues to improve, but he is still very weak. Pulse 80, soft ; tongue clean and moist ; bowels rather loose.

Habeat vini rubri $\frac{3}{4}$ v,
 Aquæ fontanæ $\frac{3}{4}$ v,
 M. Sumat $\frac{3}{4}$ i subinde.
 Utatur mistura cretacea more solito.

26th, 18th day.—Convalescence goes on, but bowels are still rather open.

Continuentur medicamenta.

27th, 19th day.—Continues to improve ; bowels are now regular.

Continuentur medicamenta.

28th, 20th day.—Pulse is rather quick ; surface hot and dry.

Omittatur vinum.

29th, 21st day.—Pulse 80, of good strength ; tongue dry ; not foul ; spot on sacrum does not look well.

Continuetur cataplasma emolliens.
 Habeat jusculi bovini lb ij hodie et indies.

Nov. 1.—Spot on sacrum looks better, and he wishes for more food.

Common diet.

5th.—Let him have additional diet.

15th.—Convalescence goes on slowly.

Habeat cerevisiae (porter) ℥ ij indies.

24th.—Dismissed cured of fever and remitted to the Royal Infirmary for the sore in sacrum.

Case, NO. 40.

DAVID RITCHIE, æt. 36. Printer, pretty stout and healthy,
December 17. 10th day of fever,

Was seized with shivering, followed by headach, pain of back, general pains, &c.

Has been exposed to the contagion of fever; was bled this day to the extent of ℥ xxvi, with relief; had a cathartic this morning, which is operating. No other remedies.

Complains of headach, vertigo, tenderness of epigastrium on pressure, pain of loins and general pains, loss of strength, occasional cough and frequent nausea, countenance oppressed; respiration calm.

Pulse 110, full, and rather sharp; heat 100; tongue white but moist; bowels opened this day from a cathartic; urine free; appetite much impaired; thirst urgent; sleeps ill.

Applicentur hirudines x fronti.

Habeat misturæ mucilaginosæ ℥ i urgente tussi,

Misturæ salinæ ammoniatae ℥ i subinde,

Decoctum avenæ pro potu.

18th, 11th day.—Leeches procured a good discharge; countenance is improved; headach abated; cough not frequent; nausea less troublesome; tenderness of epigastrium continues; has slept ill. Pulse 106, soft; tongue moist and clean at edges, foul in centre; two or three stools; very little food taken; much thirst.

Continuentur medicamenta.

Habeat cerevisiae tenuis lb ij pro potu.

19th, 12th day.—Has passed a pretty good night, but raved some; countenance is farther improved; headach greatly abated; little or no tenderness of epigastrium; complains chiefly of general pains. Pulse 118, full, but compressible; heat 100; tongue moist and nearly clean; no alvine evacuation; no food taken; much thirst.

Habeat pilulas aloeticas iv.

Continuentur alia.

20th, 13th day.—Passed a restless night, with delirium and inclination to leave bed; complains only of headach; eye is dull and of unmeaning expression, but he is now perfectly sensible. Pulse 118, small, but pretty firm; tongue parched, and rather tremulous; bowels regular; much thirst; little or no appetite.

Applicentur capiti panna lintea aqua gelida madida,
Et vespere hirudines xvi fronti.

21st, 14th day.—Leeches bled freely, but he has passed a bad night with delirium, leaving his bed and attempting to get down stairs; countenance, though rather improved, is still vacant; talks incoherently and specifies

no particular complaint. Pulse 120, small and easily compressible; tongue parched, but pretty clean; skin very hot; two stools; is very thirsty; takes little food.

Continuentur medicamenta.

Evening.—Incoherency continues, with vacant expression, and some suffusion of eyes; complains of slight headach, and says he feels confused. Pulse 118, small but firm.

Emittatur sanguis prout ferat.

22d, 15th day.— ξ xx of blood drawn, which is of firm coagulum, not sizy; he has passed a quiet night, with little or no delirium, and gentle perspiration; countenance is improved, and he appears at present correct, but is reported still to rave occasionally; says pain and confusion of head are gone, and he has no particular complaint. Pulse 128, small and compressible; tongue still parched in the centre, but clean and moist at edges; several stools.

Continuentur medicamenta.

23d, 16th day.—A bad night, with delirium; look is wild and vacant; he occasionally, however, talks sensibly, but soon relapses into the same state of incoherency; has a little difficulty in swallowing. Pulse 130, pretty firm; tongue parched, swollen and tremulous; bowels regular.

Applicentur hirudines xij fronti.

Continuentur alia.

24th, 17th day.—Leeches bled freely; seems disposed to drowsiness, and is nearly in the same state as yesterday, but countenance is improved. Pulse 124, small but firm; tongue parched in centre, but clean and moist on edges; one stool; takes food pretty well.

Habeat bolum jalapæ compositum.

Evening.—Abradatur capillitium, et
Imponatur vesicatorium toti capiti.
Continuentur alia.

25th, 18th day.—Blister rose well, and bolus procured four stools; has passed a quiet night, without delirium; countenance rather more intelligent; talks sensibly, and only complains of weakness and general soreness. Pulse 112, easily compressible; tongue moist and clean at edges, but still parched in centre; continues to take food pretty well; is still very thirsty.

Continuentur medicamenta.

26th, 19th day.—Lies in the supine posture, with his eyes shut as if sleeping, but he is easily roused; he, however, immediately falls into the same state when left to himself; has passed a worse night with much raving; passes fæces and urine in bed; countenance is more vacant: for two or three days past he has had occasionally irregular spasmodic action of the muscles of the face: at present he answers questions distinctly, and says he has no particular complaint. Pulse 88, of good strength; tongue as yesterday; bowels regular.

Continuentur medicamenta.

27th, 20th day.—Countenance very much improved,

slept well ; is now sensible to the stimuli of fæces and urine ; has had no return of convulsive action of the muscles of the face ; is perfectly correct, and makes no complaint but of weakness ; thirst much abated, and appetite improves. Pulse 96, of good strength ; tongue wholly moist, but a little foul in the centre ; skin cool ; three or four stools.

Continuentur medicamenta.

28th, 21st day.—Continues to improve.

Continuentur medicamenta.

29th, 22d day.—Looks more oppressed ; complains of giddiness and some confusion of head ; but specifies no other complaint. Pulse 100, full and firm ; tongue pretty clean but dry ; bowels regular.

Habeat bolum jalapae compositum.

Continuentur alia.

30th, 23d day.—Bolus operated freely ; countenance improved ; says he feels himself much better. Pulse 96, of good strength ; tongue moist ; takes food ; still thirsty.

Continuentur medicamenta.

January 1. 1819, 25th day.—No complaint but weakness. Pulse natural ; tongue clean and moist ; bowels regular.

Omittantur medicamenta.

Common diet.

5th.—Continues to improve.

15th.—Dismissed cured.

Case, NO. 41.

KENNETH MACKENZIE, æt. 15, stout and healthy,

January 29. 7th day of fever,

Was seized with shivering, followed by headach, vertigo, general pains, &c.

Is not conscious of having been exposed to contagion, and assigns cold as the cause. Has used no remedies.

Complains of acute pain of left hypochondrium, stretching into epigastrium, much aggravated by pressure, motion, or when lying upon right side, and preventing a full inspiration; has considerable tenderness over the whole of the abdomen; complains also of headach, vertigo, pain of back, general pains, loss of strength, and frequent inclination to cough, but dare not from pain of side; has rigours and warm flushings; there is a numerous petechial-like eruption over the whole body: countenance anxious; eyes suffused; face rather flushed; respiration quick.

Pulse 120, small, sharp, and resisting; heat 103; tongue white and dry; bowels regular; appetite bad; much thirst; sleeps ill; urine free.

Fiat venæsectio.

Habeat misturam mucilaginosam urgente tussi,

Decoctum avenæ pro potu.

Cras mane capiat sulphatis magnesiæ ʒ vi ex aqua.

30th, 8th day.—Only ʒ x of blood could be procured,

but it gave immediate relief to pain of side, which continues much easier; countenance however is still oppressed and anxious; headach still complained of; pain of back and general pains unabated; petechiæ keep out; passed an indifferent night. Pulse 120, still sharp; heat 104; tongue white and dry; three stools; very little food taken; much thirst.

Lavetur cutis aqua tepida.

Foveantur crura.

Continuentur alia.

31st, 9th day.—Passed a very restless night, with much raving; countenance very anxious; face full and flushed; eyes watery, dull and suffused; is rather incoherent; says he has no pain, but much confusion of head; pressure on epigastrium or abdomen much disliked; has very frequent cough, with copious expectoration. Pulse 124, sharp; heat 102; petechiæ keep out; skin feels hot and dry; tongue covered with thick yellowish fur; two stools; fæces scanty, but of natural colour; very little food taken; much thirst.

Applicentur hirudines viij fronti.

Continuentur alia.

February 1. 10th day.—Slept ill during night, but has enjoyed several hours' quiet sleep since morning; leeches bled well, and countenance is now much improved; is perfectly distinct to-day, and only complains of general pains; flushing of face and diffusion of eyes gone. Pulse 120, still sharp; heat 103; tongue moist and pretty clean; two plentiful alvine evacuations; appetite not improved, but thirst is abated.

Continuentur medicamenta.

2d, 11th day.—Passed another bad night, with much moaning; countenance much oppressed; face flushed; eyes suffused and heavy; has some pain, and great tenderness of abdomen; pain of back and general pains severe, but he has no headach. Pulse 120, sharp; heat 102; tongue clean, and moist at edges, fowl in centre; two scanty alvine evacuations; very little food taken; much thirst.

Continuentur medicamenta.

3d, 12th day.—Passed a bad night, with delirium; is at present quite incoherent; eyes are dull and suffused; face full and flushed; respiration much oppressed; pressure on abdomen seems to cause pain; has frequent cough, and much hoarseness. Pulse 130, sharp; heat 104; skin feels hot and dry; tongue covered with a brownish fur; four stools; fæces scanty and watery; no food taken; much thirst.

Fiat venæsectio.

Habeat pilulas aloeticas vi.

Continuentur alia.

Evening.—Has been very restless during the afternoon, with much muttering; lies at present in the supine posture, and has much tendency to coma; can give no answer to questions; has subsultus tendinum, and much tremor of hands; respiration laborious. Pulse 134, sharp, resisting and irregular; heat 106; skin feels very hot and dry.

Fiat venæsectio ut supra præscriptum ad ℥ xvij vel xx.

℥ xx of blood drawn: before the blood had ceased to flow, he became perfectly sensible and answered questions accurately; says he has considerable headach, but makes no other complaint; countenance very much improved. Pulse 120, soft and perfectly regular; heat 105; skin moist.

4th, 13th day.—Passed a good night without delirium; countenance farther improved; subsultus and tremor gone; says he is free of pain, but has still frequent cough, with very considerable hoarseness. Pulse 130, sharp; heat 103; tongue moist, and nearly clean; three stools; fæces scanty.

Habeat pilulas aloeticas iv; post horas sex
Capiat infusi sennæ ℥ iij.
Continuentur alia.

5th, 14th day.—An indifferent night, with raving: appears confused; face is full and flushed; eyes watery, but not suffused; pressure on abdomen, particularly in umbilical region, much disliked; says headach is very slight. Pulse 120, sharp; heat 100; tongue clean, and moist at edges, covered with brownish fur in centre; five stools; fæces natural; took very little breakfast; thirst still urgent.

Fiat venæsectio.
Continuentur alia.

Evening.—Lies at present in a comatose state, with flushed face and laborious breathing; has much tremor of hands, and subsultus tendinum. Pulse 130, sharpish.

Fiat venæsectio ut supra prescriptum, postea
Abradatur capillitium, et
Applicetur vesicatorium nuchæ.

6th, 15th day.—Only $\frac{3}{4}$ x of blood could be procured ; became a little more sensible after it, but was still incapable of answering questions ; passed a very indifferent night with much muttering ; lies at present in a drowsy state, and is roused with difficulty ; when roused, he seems unwilling to articulate, and is very confused ; face still full and flushed ; respiration easier ; tremor continues, but subsultus is gone. Pulse 125, sharp and firm ; heat 101 ; tongue and teeth covered with dark brown crust ; one stool ; blister has risen well.

Applicentur hirudines x fronti.

Habeat haustum cum olei ricini $\frac{3}{4}$ fs.

Continuentur alia.

7th, 16th day.—Leeches bled well ; has muttered none since, and is at present sleeping calmly ; flushing of face gone ; reported to be now quite sensible ; plentiful alvine evacuation ; took some breakfast ; thirst abated.

Continuentur medicamenta.

8th, 17th day.—Has slept much since yesterday ; countenance very much improved : continues perfectly sensible, has no particular complaint. Pulse 128, still sharp ; heat 99 ; tongue moist and nearly clean ; two stools ; takes some food ; thirst now inconsiderable.

Continuentur medicamenta.

9th, 18th day.—Continues to sleep much ; countenance still farther improved ; complains much of general pains, but has no other complaint ; respiration natural. Pulse 112, still sharp ; heat 98 ; tongue clean and moist ; two stools ; appetite improves ; thirst inconsiderable.

Habeat pilulas aloeticas iv.
 Continuentur medicamenta.

10th, 19th day.—Continues to improve, but is still disposed to sleep much. Pulse 108, still rather sharp; heat 96; tongue clean and moist; appetite improves; considerable thirst; one stool; fæces scanty.

Habeat infusi sennæ ℥ iij.
 Continuentur alia.

11th, 20th day.—Less disposition to drowsiness; complains of severe pain of feet and limbs, with inability to move. Pulse 112, still sharp; heat 98; tongue clean and moist; one stool; takes food; thirst abates.

Foveantur crura.
 Continuentur alia.

12th, 21st day.—Pain of limbs and feet much abated. Pulse 86, soft; heat 96; tongue clean and moist; bowels regular; convalescent.

Omittantur medicamenta.

14th.—Common diet.

28th.—Dismissed cured.

Case, NO. 42.

JOHN MACLEAN, æt. 20, spare habit,

January 18. 10th day of fever,

Was seized with shivering, soon followed by headach, sore throat, &c. There is fever in the neighbourhood, but

says he has never seen any person affected with the disease, and assigns no cause for ailments.

Has been bled twice from the arm, viz. last night and the night before that, to the extent of about ℥ xij each time, with very little benefit.

Complains now of severe headach, referred to the frontal and temporal regions, vertigo, throbbing of temples, pain of eyes, impatience of light, with deafness, pain of internal fauces; tonsils are enlarged and much inflamed; pain and great tenderness of epigastrium, which feels tense; pain of small of back, general pains, loss of strength, frequent cough aggravating headach, and accompanied with copious sputa; a red coloured efflorescence over the whole body observed yesterday for the first time; has slight tremor of hands and irregular action of the muscles of the face; countenance very much oppressed; eyes suffused; face rather flushed.

Pulse 118, sharp and firm; heat 103; skin feels hot and dry; tongue red, moist, not loaded; bowels well opened this day from a cathartic; urine free; appetite bad; much thirst; sleeps ill.

Emittantur e brachio sanguinis ℥ xvi prout ferat.
 Habeat misturam mucilaginosam urgente tussi.
 Utatur gargarismate communi,
 Decocto avenæ pro potu.

19th, 11th day.—Only ℥ viij of blood could be procured, which is of loose coagulum, plentiful separation of serum; passed a very restless night, with delirium and inclination to leave his bed; lies now in a state of stupor, and is roused with considerable difficulty; is unwilling to articulate, but reports that he is free of pain;

respiration is hurried; eyes dull and suffused; still much tremor of arms and irregular spasmodic action of the muscles of the face; he has subsultus tendinum; mutters much, and has difficulty in swallowing. Pulse 108, small, but firm; heat 102; skin soft; tongue moist, not foul but tremulous; two stools; no food taken; much thirst.

Abradatur capillitium.

Imponatur vesicatorium nuchæ.

Applicentur capiti panna lintea aqua frigida madefacta.

Evening.—Continues delirious; face at present is flushed; eyes wild and suffused. Pulse 110, firm but small; heat 102.

Applicentur hirudines xiv fronti.

20th, 12th day.—Leeches bled very freely, and countenance since last evening is a good deal improved; has passed another bad night with delirium and much muttering; he is now however quite coherent; answers questions distinctly; eyes are intelligent; says he feels some headach and much general soreness, but reports pain of throat to be much abated; flushing of face is gone, and irregular action of the muscles of the face is not now observed; tremor of arms and subsultus tendinum continue. Pulse 106, full and firm; tongue dry but clean; heat 103; two stools; fæces natural; took a little breakfast; thirst somewhat abated; blister rose well.

Continuentur medicamenta.

Evening.—Has raved much during the afternoon, and he is at present quite incoherent, and can give no answer to questions; eye wild and much suffused; face flushed;

irregular spasmodic action of the muscles of the face has returned. Pulse 120, full and firm; heat 102.

Applicentur iterum hirudines xij fronti.

21st, 13th day.—Before the leeches had ceased to bleed, he became quite sensible and slept calmly for several hours; countenance now much improved; flushing of face and suffusion of eyes gone; he now answers perfectly distinctly, but makes no particular complaint; tremor, subsultus and irregular action of muscles not now observed. Pulse 102, full and rather sharp; heat 101; skin dry; tongue clean but dry; two plentiful alvine evacuations; took some breakfast; thirst not very urgent.

Continuentur medicamenta.

22d, 14th day.—Has passed a good night; countenance farther improved; continues perfectly sensible and complains a little of headach, weakness and general soreness; eye is intelligent without suffusion, and face is not flushed; respiration calm. Pulse 90, of moderate strength; heat 100; tongue clean and moist; two stools; takes food; thirst inconsiderable.

Continuentur medicamenta.

23d, 15th day.—Has passed a bad night, with some raving at present; he is sleeping calmly.

Continuentur medicamenta.

24th, 16th day.—Slept calmly during night; is now completely convalescent.

Omittantur medicamenta.

Common diet.

Feb. 2.--Additional diet.

13th.--Dismissed cured.

THE two following cases are given to shew the utility of bloodletting in relieving the symptoms, and protracting life, in those cases which terminated fatally.

Case, No. 43.

ALEXANDER DOUGLAS, æt. 25, Blacksmith,
August 10. 16th day of fever, 2 o'clock P. M.

Is quite insensible, with tendency to a comatose state; no account of his ailments can be procured; his eyes are suffused, and their expression unmeaning; deglutition cannot be performed; has floccitatio; abdomen feels full and tense. Pulse 100, pretty full, but fluttering and very irregular; tongue and teeth covered with a dry brown crust; surface covered with a cold clammy sweat.

q. p. Abradatur capillitium, et
Applicentur hirudines xvi fronti.

5 o'clock *P. M.*—Leeches bled well, but his look is not improved, and he is nearly in the same state as at two o'clock, only his skin is of more natural feel.

Emittantur e brachio sanguinis ζ xxiv.

Only ζ xviii of blood obtained ; during the time it was flowing, deglutition was performed with tolerable ease, but immediately after, the difficulty returned, but not to such a degree as before.

Applicentur iterum hirudines xvi fronti.

8 o'clock *P. M.*—Leeches bled freely ; look is improved, and he is more sensible ; abdomen is still full and tense, and pressure seems to give pain ; has frequent husky cough, with considerable dyspnœa. Pulse 106, more regular, but not so full ; no stool since admission ; surface of an unusually sallow colour.

℞. Submuriatis hydrargyri gr. xv.
Pulveris antimonialis, gr. v. M.
Fiat bolus, q. p. sumendus,
Imponatur vesicatorium toti capiti,
Necnon vesicatorium haud ita parvum pectori.

11th, 17th day, 8 o'clock *A. M.*—Was restless, with muttering and raving in the fore part of the night ; but since morning he has enjoyed several hours of quiet sleep ; his look is improved ; he is more sensible, and complains of pain of throat and abdomen ; has had several stools, which, as well as urine, have been voided without notice ; fæces are of a very dark greenish colour and foetid odour. The inferior extremities have two or three times, since admission, felt very cold, when warm fomentations were applied with advantage ; deglutition still performed with dif-

ficulty: after the bleeding last evening having, unobserved by the nurses, removed the bandage from his arm, he lost a very considerable quantity of blood; the blisters succeeded very ill. Pulse 116, perfectly regular, and of middling strength; tongue still covered with a brown fur, but more moist.

Repetantur hirudines xvi fronti vel temporibus.

1 o'clock *P. M.*—Leeches bled well; he is more collected, and complains now of headach; deglutition still performed with difficulty; has had one alvine evacuation of natural appearance, and not passed in bed; but has occasionally voided urine without notice.

5 o'clock *P. M.*—Is at present perfectly sensible, and is able to turn himself in bed; deglutition performed with less difficulty, and at times without any difficulty at all; his feet became very cold about 4 o'clock, and warm flannel was applied to them: they are now of proper warmth, and the whole surface is of natural feel and heat. Pulse 103, regular and soft; tongue moist, and becoming more clean on the edges.

8 o'clock *P. M.*—Since the above report was taken, he has muttered a good deal, and has irregular spasmodic actions of various muscles of the body. Pulse 120, sharp; tongue dry; one stool not passed in bed, and he gives notice when about to void urine.

Applicentur hirudines xvi fronti vel temporibus.
Imponatur iterum vesicatorium capiti, necnon pectori.
Repetatur bolus ut heri.

12th, 18th day, 11 o'clock *A. M.*—Leeches bled freely; blister on the head did not succeed, and that on the breast

discharged indifferently; bolus procured three stools, fæces reported of natural appearance, and to their stimulus as well as of urine he is now sensible: has passed a good night, having slept quietly during the greater part of it; has had no return of muttering, or convulsive action of muscles; appears at present perfectly collected, and complains of pain of throat, abdomen, and slight headach; deglutition still performed with difficulty, and he is still troubled with cough, and has a good deal of hoarseness; is reported to have had an attack of rigour of about ten minutes' duration, which went off upon heat being applied to the feet; skin is at present of good warmth. Pulse 144, sharp, and rather irregular; tongue moist, and clean on the edges.

1 o'clock *P. M.*—Breathing laborious. Pulse 130, occasionally intermitting; has taken nothing but butter-milk, of which he has drunk about two pounds since last night.

Continuetur lac e butyro.

7 o'clock *P. M.*—Had an attack of rigour about five o'clock, which lasted nearly fifteen minutes, at which time he became delirious; but whenever it ceased, he again became quite collected: he has appeared to sleep most part of the afternoon, and seems disposed to drowsiness; look is not improved, and breathing continues laborious; pupil is sensible to the stimulus of light. Pulse 140, regular and sharp; one stool, not passed in bed.

Emittantur e brachio sanguinis $\frac{z}{3}$ xviiij.

13th, 19th day, 11 o'clock *A. M.*—Had two attacks of

h

rigour during night, but has slept quietly most part of it; expression of countenance improved; breathing considerably easier; deglutition performed with much less difficulty; and although perfectly sensible, he makes no particular complaint. Pulse 130, regular and still sharp; tongue clean on the edges, and pretty moist; two stools; the first was passed in bed; fæces of dark colour and fœtid odour; blood not sisy.

1 o'clock P. M.—Breathing rather laborious; tongue moist, but rather loaded; drinks freely, and has drunk plentifully of butter-milk, and sweet milk and water.

10 o'clock P. M.—Complains of pain of abdomen on pressure, but there is no fulness or tension, and urine is voided in sufficient quantity; breathing still laborious, and there is some flushing, with more anxious expression of countenance; has continued to drink freely of butter-milk, and he took a little bread and one cup of tea in the afternoon. Pulse 140, at present rather sharp, but it varies much in strength at different times; tongue moist and clean on the edges, but still loaded in the centre; no stool since morning; surface moist and of moderate warmth; has slightly marked subsultus tendinum.

Applicentur hirudines xii fronti vel temporibus.

Adhibeantur fots abdomini.

q. p. Injiciatur enema domesticum.

Cras mane capiat infusi sennæ ℥ iij.

14th, 20th day, 10 o'clock A. M.—Leeches discharged freely, and he slept well during night, but this morning betwixt 8 and 9 o'clock he had a severe attack of rigour of about 20 minutes' duration; his eye is intelligent, and he continues perfectly sensible, but breathing is still laborious, and face is slightly flushed; reports pain of abdomen

to be gone, but complains of severe headach referred to the forehead; throat still gives some uneasiness, but he drinks freely, and with little or no difficulty. Pulse 140, sharp; tongue less loaded and moist; skin of good warmth; three stools, two of which were passed in bed, fæces of dark colour and very fœtid; urine voided freely; took a cup of tea and a small bit of bread this morning to breakfast.

1 o'clock P. M.—Breathing easier; still drinks much and freely.

7 o'clock P. M.—Breathing is very hurried and laborious; look more anxious and oppressed; does not communicate any account of ailments; fæces and urine are voided without notice, the former are still very dark coloured and fœtid; surface of good heat; tongue moist and more clean; he has continued to drink very freely of butter-milk, but deglutition is not so easily performed; cough is still frequent, and expectoration very difficult; he appears exhausted, but pulse is 164, full and strong.

Emittantur e brachio sanguinis ℥ xvij.
Inhalantur vapores aquæ fervidæ subinde, et
Foveantur diligenter pedes et crura.

15th, 21st day, 10 o'clock A. M.—Only ℥ xvi of blood drawn last night, there being some tendency to syncope; immediately after the bleeding expression of countenance changed for the better, and breathing was very considerably relieved; deglutition, however, continued still rather difficult: has slept none during night, but had about 20 minutes' quiet sleep this morning; he is at present affected with a pretty severe fit of rigour; countenance is improved; respiration less difficult; cough less bound. Pulse 136, small and rather feeble; tongue

still foul but moist; teeth covered with black crust; two stools, still dark coloured, foetid, and passed in bed; involuntary discharge of urine and slightly marked subsultus continue; surface of tolerable warmth; deglutition now performed easily; he has drunk about ℥ ij of buttermilk during night; blood in one cup disposed to be sizy.

Continuentur vapores aquæ fervidæ, et
Fotus calidi pro re nata.

1 *P. M.*—Pulse nearly 140, feeble.

Habeat emulsionis camphoratæ ℥ i, tertia quaque hora.

3 *P. M.*—He appears more exhausted, and breathing is very laborious. Pulse very feeble and quick; deglutition performed with difficulty.

R. Vini rubri, ℥ iv,
Aquæ fontanæ ℥ iv. M.
Sumat ℥ i subinde.

4 *P. M.*—He appears moribund. Pulse scarcely to be felt.

5 *P. M.*—Died a few minutes ago.

Report from his Brother with regard to the history of his case.

Reports, that about 16 days previous to his being admitted into Queensberry House, he was attacked with rigours, headach, and pain of loins, which gradually increased for eight days, during which time he followed his usual trade, which was that of a blacksmith; but these becoming much aggravated he was obliged to take to bed; and he became so ill, that for three days previous to being ad-

mitted into this hospital he was quite delirious; he was at times incoherent for a day or two, even before that time; rigours were from the very beginning frequent, and were succeeded by warm flushings, but he never perspired; for about five days before admission he was attended by a medical gentleman, who gave him an emetic, some cathartics, and applied a blister to the nape of his neck.

DISSECTION.

The integuments forming the scalp, from nearly the situation of the coronal suture backwards, beyond the occipital protuberance, and downwards for some space of the neck, were affected with a puffy swelling, receiving the impression of the finger, of a livid red colour, and more remarkable at some parts than at others. When the usual incisions for removing the scalp were made, a great quantity of dark bloody-coloured serum came away from between the pericranium and fronto-occipital fascia, and the cellular substance between the fronto-occipital muscle and the cutis of the scalp.

Though much of these appearances may probably be attributed to the supine position of the head, yet as they do not occur in every case, some particular state of the parts seems necessary to produce them to the extent observed in this case.

The dura mater presented nothing unusual; the first aspect of the pia mater through the transparent arachnoid coat exhibited certainly a very great degree of vascularity, and the veins of the pia mater were much distended. Between these and the arachnoid membrane there was effused in very small quantity a transparent serous fluid, elevating the arachnoid coat from the pia mater, and giving it the appearance of a gelatinous stratum diffused over the

latter. The ventricles being laid open in the usual way, about four drachms of serous fluid, tinged with the blood of divided vessels, came away; the cavities and their different communications were themselves sound. The base of the brain presented, in a less degree, the same appearance of effusion as the superior surface, and a considerable quantity of watery fluid mixed with blood issued from the cavity of the theca medullæ spinalis, at the division of the medulla oblongata. The substance of the brain was very firm all over, but particularly that forming the annular protuberance, and the different eminences of the medulla oblongata.

Permission to examine the other cavities could not be obtained.

Case, NO. 44.

JOHN M'DONALD, æt. 28, Saddletree-maker, a tall, very stout plethoric man, with rather a short neck,

October 6. 16th day of fever,

Was brought into the house in a state of delirium, accompanied by four men, as if he had been unmanageable; but though he is now delirious, yet he makes no effort to get out of bed, it being confined chiefly to low muttering. When left to himself, he is disposed to be as if asleep, and is then constantly talking: he is easily roused, and seems in part to understand questions, as he gives correct answers occasionally, but again quickly shews delirium. His face was reported to be livid on admission; it is now rather pale; eyes look wild; are rather suffused, and pupils contracted; he frequently closes his eye-lids

strongly, as from intolerance of light, which however he denies: his nose, from the sound of his voice, seems stuffed, which he complains of, and makes efforts with the muscles of his face and of inspiration to overcome it: took snuff when desired, the action of which he was conscious of, as he was also when his arm was pinched. He has very considerable subsultus tendinum; says he feels pain at scrobiculus cordis and in the chest, pressure at which parts seems to be unpleasant: he has very slight cough; reports severe pain of forehead.

Pulse 108, rather contracted, pretty easily compressible; heat 98; parts of skin covered with stigmata, and parts have a less defined redness, occasioning a mottled surface; tongue and teeth are covered with a thick black tenacious fur; tongue projected far and steadily out of the mouth; not aware of state of bowels.

By his account this is the 16th day of his disease; his head has been shaved, and cold applications used, and he reports to have taken medicines.

He is unable to assign a cause.

Fiat venæsectio,

There being no vein in either arm sufficiently large for bleeding, the temporal artery was opened, and about ζ xxx obtained; after operation his manner and countenance rather improved; talks less, and if any thing subsultus lessened. Pulse 104, pretty firm.

Applicetur vesicatorium nuchæ.
Capiat statim pilulas aloeticas vi, et
Cras primo mane infusi sennæ ζ iij.

7th, 17th day.—Was quiet, and appeared to be asleep

during night, with less muttering, and he thinks he slept countenance and eyes improved, and is more correct, asking for fluids and taking it himself; subsultus less. Pulse 96, much firmer; heat 98; mottling of skin much less; tongue nearly as before, but cleaner at edges; urine high coloured, with white flaky deposit; two fluid stools, dark brown; urine and stools passed properly; food taken by desire; blood florid, of loose texture; little serum separated; blister has given a good discharge.

Continuetur infusum sennæ.

Repetatur arteriotomia vel hirudines xij capiti.

Vespere.—Symptoms as before. Pulse 102, rather more full and moderately firm; heat 99, skin warm and dry. The temporal artery cut, and $\frac{3}{4}$ xx obtained. Pulse firm.

8th, 18th day.—Pulse 104, firm; slept well; $\frac{3}{4}$ xx of blood taken; tongue covered with a black crust in centre, clean at edges; slight subsultus; much delirium, but easily roused.

Applicetur iterum vesicatorium nuchæ et hirudines
x fronti,

Repetatur catharticum cras mane.

9th, 19th day.—Pulse 108, full and soft; slept well less delirium and subsultus; more tendency to sleep; eight stools rather dark; countenance more natural.

Repetatur infusum sennæ cras mane.

10th, 20th day.—Is at present sleeping quietly. Pulse 100, full and pretty firm; respiration easy; is report-

ed to have passed a bad night, with much muttering; subsultus was again strongly marked this morning, but is not now observed; skin of natural heat and feel; tongue dry; nine stools of more natural colour.

Continuentur medicamenta.

11th, 21st day.—Had a calm night with sleep, in which he did not mutter, and his manner seems much more correct; he has confessed that he does not remember when he came here, and complained of a little mental confusion. He complains of weakness only, with bad taste of mouth; very slight subsultus now observed.

Pulse 90, firm; tongue still with dark fur in the middle; two fluid brown stools.

Applicetur lavatio frigida capiti.
Capiat pilulas aloeticas iv hora somni.

12th, 22d day.—Had a calm sleep with no muttering, dreamed occasionally by his report; is quite conscious that he slept, as he is of its refreshing influence; is perfectly correct, with good appearance of face and eyes; no subsultus; very slight uneasiness of head; complains much of weakness. Pulse 96, of moderate strength; skin rather warm; tongue still with fur in centre, which is chapped with soreness; thirst continues; some food taken; urine free; bowels well relaxed, and stools are bilious.

Continuetur lavatio frigida capitis et corporis.

13th, 23d day.—Slept well, and is quite free of complaint except weakness. Pulse however is 96, firm; skin warm; tongue less brown; its whole surface moist but

very sore; urine very turbid; five fluid stools since the visit; some food taken.

Continuentur lavationes.

14th, 24th day.—Slept well, and has no complaint but weakness. Pulse 96, firm; heat 98; tongue moist with fur in the middle; still less brown; considerable thirst; food taken; three fluid stools.

15th, 25th day.—No complaint. Pulse 100, rather weak; tongue still with fur, less sore; bowels slow.

Capiat bolum jalapæ compositum.

16th, 26th day.—Two scanty evacuations, and he has been troubled with gripes since last evening; no pain on pressure. Pulse 112, rather full; tongue still furred, but more moist.

Capiat sulphatis magnesiae ℥ vi ex infusi sennae et aquae ℥ iij duabus vicibus.

17th, 27th day.—Frequent alvine evacuations with relief to gripes; complains of some cough and pain about the side, stopping a full inspiration. Pulse 100, of moderate strength, tongue as before.

Applicetur vesicatorium parti affectæ.

18th, 28th day.—Blister has risen; some pain felt upon a full inspiration. Pulse 120, rather sharp; skin cool; tongue still furred; little thirst; food taken; belly open.

Fiat venæsectio.

Evening.—Pulse 124, sharp ; cough very troublesome, with pain of side ; skin warm. ζ xvi of blood were drawn, which gave instant relief. Pulse 112, pretty sharp and of good strength ; it is said that he has been talking rather wildly to day, which was not suspected, till he shewed some mental confusion, by speaking of some leeches which he imagined to have been applied to him to-day.

R. Pulveris antimonialis gr. iij.
Submuriatis hydrargyri gr. ij.
Fiat pulvis, quaque quarta hora repetendus, ad quartam vicem.

19th, 29th day.—Slept well, and seems correct to-day ; did not sweat ; very slight pain of left side, and cough is diminished ; little expectoration. Pulse 130, sharp ; skin cool ; tongue cleaner ; no evacuation since last night ; blood buffy, very much contracted, and coagulum tenacious.

Capiat infusi sennæ ζ iv, et
Vespere repetendas ad alvi solutionem.

Evening.—Full inspiration cannot be performed with ease, and cough is troublesome. Pulse 124, full and sharp ; bowels not opened.

ζ xix taken with perfect relief. Pulse 124, weaker and less sharp.

R. Tincturæ opii ζ i.
Misturæ mucilaginosæ ζ vi. M.
Fiat mistura pro tussi,
Imponatur vesicatorium lateri qua dolet.
Capiat bolum jalapæ compositum.

20th, 30th day.—Slept well, and blister succeeded completely : he feels quite comfortable, and takes a full inspira-

tion with perfect facility and almost no cough; very slight incorrectness observed. Pulse 120, compressible, but still a little sharp; skin cool; tongue still furred, but food is taken better; four fluid alvine evacuations; blood buffy; cupped, and extremely contracted and firm; much serum.

Continuetur mistura mucilaginosā.

21st, 31st day.—Had a good night, and is quite easy, taking a full inspiration with ease, and cough diminishing. Pulse still 120, rather sharp; three alvine evacuations; food is well taken.

Habeat misturæ diaphoreticæ salinæ ℥ i tertia quaque hora.

Continuetur mistura mucilaginosā.

22d, 32d day.—Had a very calm night, and was talking correctly till about 7 o'clock A. M., when he was seized with a rigour and acute pain of the forehead, flushed face and very hot skin; he is now comatose, and cannot be roused so as to understand, but moves his head when the eye-lids are touched; face is now rather flushed. Pulse 98, rather full and sharp; respiration hurried and audible; pupils of moderate size, moveable; three stools.

Visit.—State now changed; a state of much anxiety and wild expression of eyes exists; little efforts at speech, but does not seem to understand.

Applicentur hirudines xvi capiti statim,
Et postea imponatur vesicatorium toti capiti.
Injiciatur enema purgans.

23d, 33d day.—Leeches bled well and injection answered, but no relief was obtained; in the evening he was

comatose and pulse as before, when a vein was opened, but only four or five ounces could be procured, with no effect; sinapisms were then ordered to the feet, which roused him for a time, but coma again succeeded: at 10 P. M. the sinapisms were again applied; he soon after roused, and became delirious through the night: he is now sensible, with improved countenance; has no pain in the head nor in the breast, and very slight cough, abdomen rather full, soft, and tender to pressure; he is not conscious of what was done to him yesterday. Pulse 108, smaller, weaker, intermitting every fourth beat, but occasionally irregular; respiration audible and hurried; skin cool; two alvine evacuations; urine and stools passed properly; blister on the head has risen well; has had some bilious vomiting this morning.

Applicetur cataplasma sinapeos abdomini.

R. Pulveris jalapæ gr. x,
Submuriatis hydrargyri gr. v. M.
Sit pulvis, q. p. sumendus.

24th, 34th day.—Had considerable delirium in the night, which has abated, but he shows much absence of memory; complains of some pain in the head, less of abdomen; sinapism rose a little; no cough; breathing easier. Pulse 118, compressible but sharp; more regular and not intermitting; skin cool; tongue more dry, rather brown; two fluid scanty yellow stools.

Capiat infusi sennæ ℥ ij omni hora ad alvi plenam solutionem.

25th, 35th day.—Has been quiet all night, and has not spoken, though his attention is occasionally attracted by being touched, yet he seems to understand nothing; refuses to

drink, and examination of the eyes seemed to be troublesome; eyes dull; pupils moderately dilated; breathing very hurried and audible; hypogastrium distended, and he has passed no urine. Pulse 116, full and very sharp; skin warm; tongue not seen; two stools; about one quart of urine drawn off by the catheter; no alteration of symptoms; subsultus observed.

Capiat vini rubri ℥ ss omni hora, nisi nimium excitatur ægrotus.

Evening.—About ℥ ij of wine have been swallowed; he is now quite insensible; appears moribund, with pallid countenance and closed eyes; pupils small. Pulse 152, very sharp; carotids throb strongly; respiration hurried and stertorous; is unable to swallow now; ℥ x of blood taken from the arm, produced no change. Pulse 160 as before.

Applicetur cataplasma sinapeos pedibus.

26th, 36th day.—Died at 10 o'clock last night.

Permission to examine the body could not be obtained.

APPENDIX, No. II.

APPENDIX, NO. II.

TABLE, NO. II.

Shewing Ages of Patients male and female.

	MALES.								FEMALES.								Total.		
	Under 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 & up.	Total.	Under 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.		70 & up.	Total.
February.	2	4	5	3	2				16		7	4	3	2	1	1		18	34
March.	1	9	5	5	2	3			25	2	11	15	9	5		1		43	68
April.	2	11	8	6	6	1	1		35	3	8	9	9	1				30	65
1st quarter.	5	24	18	14	10	4	1		76	5	26	28	21	8	1	2		91	167
May.	1	10	3	7	2	2	2		27	1	10	8	6	5	1	2		33	60
June.	2	4	12	3	2		1		24	3	18	8	11	5	1	1		47	71
July.	5	15	12	3	3	2			40	7	10	13	4	6	1	1		42	82
2d quarter.	8	29	27	13	7	4	3		91	11	38	29	21	16	3	3	1	122	213
August.	1	13	7	3	7	2			33	2	8	16	3	5	2			36	69
September.	3	7	6	3	7	2	1		29	2	6	11	7	6	6	2	1	41	70
October.	5	10	12	8	4	1			40	8	10	19	10	9	3	2		61	101
3d quarter.	9	30	25	14	18	5	1		102	12	24	46	20	20	11	4	1	138	240
November.	2	10	6	4	5	3	2		32	3	10	15	9	2	2	5		46	78
December.	4	3	5	3	1	1	1		18	3	5	6	5	4	3	1		27	45
4th quarter.	6	13	11	7	6	4	3		50	6	15	21	14	6	5	6		73	123
Total.	28	96	81	48	41	17	8		319	34	103	124	76	50	20	15	2	424	743
Grand total.	62	199	205	124	91	37	23	2	743										

TABLE, NO. IV.

Shewing Ages of those Patients whose cases terminated fatally, male and female.

MALES.								FEMALES.								TOTAL.										
Under 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 & up.	Total.	Under 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 & up.	Total.	Under 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 & up.	Total.
1	1	6	3	5	3	1		20	1	1	1	4	3	3		1	14	2	2	7	7	8	6	1	1	34

TABLE, NO. V.

Shewing the Numbers admitted each month, male and female, and the average number of days they had previously laboured under the disease.

	MALES.				FEMALES.				TOTAL.			
	Total.	Unknown	Average		Total.	Unknown	Average		Average		Unknown	Total.
			of	is			of	is	of	is		
February.	16		16	10 $\frac{3}{4}$	18		18	11 $\frac{4}{5}$	34	11 $\frac{2}{5}$		34
March.	25	1	24	6 $\frac{1}{2}$	43	4	39	9 $\frac{1}{5}$	63	8 $\frac{1}{5}$	5	68
April.	35	2	33	8 $\frac{1}{3}$	30	1	29	8 $\frac{1}{5}$	62	8 $\frac{1}{5}$	3	65
1st quarter.	76	3	73	8 $\frac{2}{3}$	91	5	86	9 $\frac{4}{6}$	159	9 $\frac{4}{5}$	8	167
May.	27	4	23	7 $\frac{3}{5}$	33	2	31	6 $\frac{8}{5}$	54	6 $\frac{3}{4}$	6	60
June.	24	3	21	7 $\frac{3}{7}$	47	4	43	7 $\frac{4}{3}$	64	7 $\frac{5}{2}$	7	71
July.	40	3	37	6 $\frac{1}{4}$	42	2	40	5 $\frac{3}{8}$	77	6 $\frac{1}{7}$	5	82
2d quarter.	91	10	81	6 $\frac{2}{3}$	122	8	114	6 $\frac{1}{8}$	195	6 $\frac{8}{3}$	18	213
August.	33	1	32	6 $\frac{3}{8}$	36	1	35	6	67	6 $\frac{1}{2}$	2	69
September.	29	1	28	5 $\frac{2}{7}$	41	1	40	5 $\frac{3}{4}$	68	6 $\frac{1}{8}$	2	70
October.	40	2	38	5 $\frac{1}{5}$	61	2	59	6 $\frac{1}{5}$	97	6 $\frac{3}{4}$	4	101
3d quarter.	102	4	98	5 $\frac{4}{5}$	138	4	134	6 $\frac{6}{7}$	232	6 $\frac{3}{4}$	8	240
November.	32		32	6 $\frac{2}{3}$	46	1	45	7 $\frac{3}{4}$	77	7 $\frac{4}{7}$	1	78
December.	18		18	7 $\frac{2}{5}$	27		27	5 $\frac{2}{3}$	45	6 $\frac{2}{5}$		45
4th quarter.	50		50	6 $\frac{3}{5}$	73	1	72	7 $\frac{1}{3}$	122	6 $\frac{1}{2}$	1	123
Total.	319	17	302	6 $\frac{1}{3}$	424	18	406	7 $\frac{2}{3}$	708	7 $\frac{5}{8}$	35	743

TABLE, NO. VI.

Shewing the average day of disease on admission of the cases which terminated fatally.

MALES.				FEMALES.				TOTAL.			
Total.	Unknown	Average.		Total.	Unknown	Average.		Average.		Unknown	Total.
		of	is			of	is	of	is		
20	2	18	$9\frac{5}{8}$	14		14	$9\frac{3}{4}$	32	$9\frac{7}{8}$	2	34

TABLE, NO. VII.

Shewing Proportions of the Causes assigned by the Patients for their Disease both in the Primary Fever and Relapse Cases.

	PRIMARY FEVER.						RELAPSES.						
	Contagion.	Cold.	Relapse.	Not noticed.	Unknown.	Total.	Diet.	Cold.	Over exertion.	Mental distress.	Constipation.	Unknown.	Total.
February.			2	32		34	1	1				5	7
March.	26	6	1	24	11	68	2					8	10
April.	18	13		18	16	65	4					4	8
1st quarter.	44	19	3	74	27	167	7	1				17	25
May.	32	7	1	5	15	60	1					3	4
June.	25	6	3	11	26	71	4					3	7
July.	24	5	8	39	6	82	2	2	3	1		6	14
2d quarter.	81	18	12	55	47	213	7	2	3	1		12	25
August.	31	5	5	14	14	69	3		2			8	13
September.	44	4	6	1	15	70	8		2	2	2	10	24
October.	52	9	9	8	23	101	9		2	1	3	12	27
3d quarter.	127	18	20	23	52	240	20		6	3	5	30	64
November.	46	6	4		22	78	2		2		1	10	15
December.	29	2	4	2	8	45	3					1	4
4th quarter.	75	8	8	2	30	123	5		2		1	11	19
Total.	327	63	43	154	156	743	39	3	11	4	6	70	153

No.	Name	Sex	Age	Prof. of	Cause of	Time in	Place	No. of	Date	
									Year	Month
1	C. B.	m.	15	...	...	...	...	...	...	...
2	L. A.	f.	12	...	...	...	...	...	...	...
3	D. C.	m.	18	...	...	...	...	...	...	...
4	J. M.	m.	12	...	...	...	...	...	...	...
5	E. M.	m.	18	...	...	...	...	...	...	...
6	D. C.	m.	12	...	...	...	...	...	...	...
7	J. W.	m.	12	...	...	...	...	...	...	...
8	J. M.	m.	12	...	...	...	...	...	...	...
9	F. M.	m.	12	...	...	...	...	...	...	...
10	J. M.	m.	12	...	...	...	...	...	...	...
11	G. G.	m.	12	...	...	...	...	...	...	...
12	F. T.	m.	12	...	...	...	...	...	...	...
13	W. F.	m.	12	...	...	...	...	...	...	...
14	J. M.	m.	12	...	...	...	...	...	...	...
15	J. R.	m.	12	...	...	...	...	...	...	...
16	J. D.	m.	12	...	...	...	...	...	...	...
17	J. L.	m.	12	...	...	...	...	...	...	...
18	J. K.	m.	12	...	...	...	...	...	...	...
19	W. F.	m.	12	...	...	...	...	...	...	...
20	M. T.	m.	12	...	...	...	...	...	...	...
21	M. G.	m.	12	...	...	...	...	...	...	...
22	J. M.	m.	12	...	...	...	...	...	...	...
23	J. M.	m.	12	...	...	...	...	...	...	...
24	C. C.	m.	12	...	...	...	...	...	...	...
25	M. D.	m.	12	...	...	...	...	...	...	...
26	J. G.	m.	12	...	...	...	...	...	...	...
27	E. W.	m.	12	...	...	...	...	...	...	...
28	M. S.	m.	12	...	...	...	...	...	...	...
29	E. H.	m.	12	...	...	...	...	...	...	...
30	J. T.	m.	12	...	...	...	...	...	...	...
31	M. M.	m.	12	...	...	...	...	...	...	...
32	H. M.	m.	12	...	...	...	...	...	...	...
33	J. B.	m.	12	...	...	...	...	...	...	...
34	W. W.	m.	12	...	...	...	...	...	...	...

TABLE, No. IX.

Shewing the Numbers affected with particular Symptoms in the Relapse Cases.

	Symptoms of inflammation in				Epigastric pain & tenderness.	Cough.	Nausea.	Retching.	Vomiting.	Nausea and retching.	Nausea and vomiting.	Diarrhoea.	Raving.	Delirium.	Involuntary evacuations.
	Head.	Fauces.	Chest.	Abdomen.											
February.			3	2		1	2		2			1			
March.			3	3	1	2	1		1	2	4	2			
April.		1	3	2			1		3	1	3				
1st quarter.		1	9	7	1	3	4		6	3	7	3			
May.			1	1	1			1		1	1	1			
June.			1						3	2	1	1			
July.	3		2	2	2		1		1		5	3	2	2	
2d quarter.	3		4	3	3		1	1	4	3	7	5	2	2	
August.	3		5	4			3	1		2	2	2			
September.	2		2	5	5	3	2		1	2	5	3			1
October.	1		2	5	6	5	4	1	1	2	5		3		
3d quarter.	6		9	14	11	8	9	2	2	6	12	5	3		1
November.	1		1	3	5		2				3	3	1	1	1
December.			1		1			1			1	1			
4th quarter.	1		2	3	6		2	1			4	4	1	1	1
Total.	10	1	24	27	21	11	16	4	12	12	30	17	6	3	2
Average.	13 $\frac{3}{10}$	133	5 $\frac{1}{4}$ $\frac{3}{8}$	4 $\frac{2}{3}$ $\frac{5}{8}$	6 $\frac{1}{3}$	12 $\frac{1}{11}$	8 $\frac{5}{18}$	33 $\frac{1}{4}$	11 $\frac{1}{18}$	11 $\frac{1}{18}$	4 $\frac{1}{30}$	7 $\frac{1}{11}$	22 $\frac{1}{3}$	44 $\frac{1}{2}$	66 $\frac{1}{6}$

TABLE, NO. X.

Shewing the Numbers affected with Particular Symptoms in those cases which terminated fatally.

	Symptoms of inflammation in				Epigastric Pain and Tenderness.	Cough.	Nausea.	Retching.	Vomiting.	Nausea and Retching.	Nausea and Vomiting.	Diarrhea.	Involuntary Evacuations.	Mild Delir. or Raving.	Delirium.	Stupor or coma.	Subsultus.	Flocitatio.	Tremor.	Irreg. Muscular Action.	Singultus.	Efflores.	Skin		Liv. Sacrum.	Sloughing of Back.			
	Head.	Raues.	Chest.	Abdo.																			Mottled.	Yellow.					
February.	1	1	1	1	1								2		1	1	1			1									
March.	1	3	2	2	2	1						2	1		2		2			2	1				1				
April.	1	1	3	3	3							2	1		3		1			3	1				1				
1st quarter.	2	5	5	5	5	1						2	3		7		4			5	2				1				
May.	2	1	2	2	1							1	1		2					1	1				1				
June.	3	1	2	2	1	1	1					1	1		2				1	1	1				1				
July.	1												1		1				1	1					1				
2d quarter.	6	1	4	4	2	1	1					1	3		5				1	1					1				
August.	2	2	2	2		1					1	1	1		1		1	1		1									
September.	2	3	2	2	1	2	2				2	1	1		1		2	1		1				1	1				
October.	3	2	3	3	2	1					2	2	2		2		1	1	2	1				1	1				
3d quarter.	7	3	6	7	3	4	2				5	2	4		4		3	2	2	1				2	2				
November.	2		2	2	2	1					1		3		1		3	1		1									
December.	4		1	1	3	1					2		3		3		3	1		1				1	1				
4th quarter.	6			3	5	2					3		3		4		5	1		1				3	4				
Total.	21	5	12	19	13	8	3	2	1	1	9	5	15	2	20	7	8	2	3	6	4			3	4	7	1	2	4
Average.	1 $\frac{3}{4}$	1 $\frac{1}{3}$	1 $\frac{2}{3}$	1 $\frac{1}{3}$	2 $\frac{1}{3}$	4 $\frac{1}{3}$	1 $\frac{1}{3}$	1 $\frac{1}{3}$	1 $\frac{1}{3}$	1 $\frac{1}{3}$	3 $\frac{1}{3}$	6 $\frac{1}{3}$	2 $\frac{1}{3}$	6 $\frac{1}{3}$	1 $\frac{2}{3}$	4 $\frac{2}{3}$	4 $\frac{1}{3}$	1 $\frac{1}{3}$	1 $\frac{1}{3}$	5 $\frac{2}{3}$	8 $\frac{1}{3}$			11 $\frac{1}{3}$	8 $\frac{1}{3}$	4 $\frac{2}{3}$	17	8 $\frac{1}{2}$	

TABLE, NO. XI.

Shewing the Proportion of Cases which had Crisis on Critical and Non-critical Days in the Primary Fever, and also the Numbers that had this change on each particular day.

	No. of Patients.	Terminating on days		Critical Days.										Non-critical Days.																		
		Critical	Non-crit.	Unknown	3	5	7	9	11	14	17	21	34	4	6	8	10	12	13	15	16	18	19	20	22	24	25	28	29	30	33	36
February.	34	15	5	14	1	1	1	2	4	5	3			1		1	1	1														
March.	68	42	10	16	9	5	8	8	6	1	1	1	1	1	1	2															1	
April.	65	44	12	9	2	8	10	3	12	7	1	1	1	1	3	1																
1st quarter.	167	101	27	39	3	12	14	17	15	23	16	1		2	5	1	2	5	2	3											1	
May.	60	54	14	12	4	8	5	11	5	1																						
June.	71	42	20	9	7	7	11	6	5	5	1	2	1	5	2	2	3	1	2	1	1	2										
July.	82	55	23	6	13	14	9	7	6	4	2	2	6	4	3	1	2	1													1	
2d quarter.	213	129	57	27	24	29	25	24	16	10	1		5	9	7	6	7	5	3	4	1	1	5	1	1	1	1	2			1	
August.	69	49	17	3	2	7	13	9	9	9																						
September.	70	44	21	5	8	20	8	4	1	2	1																					
October.	101	67	26	8	1	14	29	6	8	7	2	1	1	8	3	2	1	2	3	1	1	1	1	1							1	
5d quarter.	240	160	64	16	3	29	62	23	21	17	2	2	1	7	21	10	5	2	5	4	1	1	1	2	1						1	
November.	78	52	22	4	8	15	14	7	2	5	1																					1
December.	45	25	11	9	7	9	1	2	5	1																						
4th quarter.	123	77	33	13	15	24	15	9	7	6	1	6	2	6	5	4	2	1	5													1
Total.	743	467	181	95	6	80	129	80	69	63	34	5	1	118	34	26	17	15	15	10	11	2	4	10	5	5	2	3	1	2	1	2

TABLE, NO. XII.

Shewing the proportion of Crises on Critical and Non-critical Days in the Cases of Relapse, also the Numbers on each particular day.

	Number.	Critical.			Non-crit.	Unknown	Critical Days.					Non-critical Days.		
		3	5	7			9	11	2	4	6			
February.	7	7					3	2			2			
March.	10	8	2				2	5	1			1	1	
April.	8	5	2	1			2	2	1			1	1	
1st quarter.	25	20	4	1			7	9	2		2	2	2	
May.	4	2	2				1		1			2		
June.	7	5	1	1			3	2					1	
July.	14	11	3				3	7	1			1	2	
2d quarter.	25	18	6	1			7	9	2			3	3	
August.	13	11	2				5	5		1		1	1	
September.	24	18	6				5	10	3				5	1
October.	27	26	1				10	14	2				1	
3d quarter.	64	55	9				20	29	5	1		1	7	1
November.	15	12	3				4	6	1	1			1	2
December.	4	3	1					3						1
4th quarter.	19	15	4				4	9	1	1			1	3
Total.	133	108	23	2	38	56	10	2	2			6	13	4

TABLE, NO. XIII.

Shewing the number of those which terminated on Critical and Non-critical Days in the Fatal Cases, with the numbers that died on each particular day.

Total.	Critical.	Non-crit.	Unknown	Critical Days.										Non-critical Days.											
				7	9	11	14	17	21	31	34	10	12	13	15	16	19	20	22	23	24	29	36		
34	10	22	2	1	2	1	1	2	1	1	1			2	2	4	1	1	2	3	1	1	2	1	2

TABLE, NO. XIV.

Shows the average Number of Days when the Patients were Convalescent, male and female.

	MALES.				FEMALES.				TOTAL.				
	Total.	At admis.	Unknown	Average	Total.	At admis.	Unknown	Average	of	is	Unknown	At admis.	Total.
				of				is						of	is
February.	15	2	1	12 15 $\frac{1}{8}$	17	2		14 7 $\frac{1}{8}$	27	14 $\frac{7}{8}$	1	4	32
March.	22	1	1	20 12 $\frac{1}{10}$	43	2	11	15 $\frac{3}{10}$	50	14 $\frac{1}{10}$	12	3	65
April.	31	2	2	29 14 $\frac{2}{25}$	30	3	1	14 $\frac{8}{25}$	55	14 $\frac{8}{25}$	3	3	61
1st quarter.	68	5	4	61 14 $\frac{1}{4}$	90	7	12	14 $\frac{3}{4}$	132	14 $\frac{1}{4}$	16	10	158
May.	25	1	6	18 14 $\frac{1}{8}$	53		4	12 $\frac{5}{8}$	47	13 $\frac{5}{7}$	10	1	58
June.	22	2	2	20 14 $\frac{3}{8}$	46		5	13 $\frac{3}{8}$	61	13 $\frac{3}{8}$	7		68
July.	39	4	4	35 11 $\frac{1}{4}$	42		6	12 $\frac{1}{4}$	71	12 $\frac{1}{4}$	10		81
2d quarter.	86	1	12	73 15 $\frac{2}{3}$	121		15	12 $\frac{2}{3}$	179	12 $\frac{1}{3}$	27	1	207
August.	31			31 15 $\frac{5}{11}$	36		2	12 $\frac{9}{11}$	65	12 $\frac{5}{11}$	2		67
September.	28		1	27 9 $\frac{1}{2}$	38		1	11 $\frac{1}{2}$	64	10 $\frac{1}{4}$	2		66
October.	39		2	37 9 $\frac{2}{3}$	58		6	12	89	11 $\frac{1}{3}$	8		97
3d quarter.	98		3	95 10 $\frac{2}{3}$	132		9	11 $\frac{1}{3}$	218	11 $\frac{5}{6}$	12		230
November.	30		2	28 10 $\frac{3}{8}$	44		2	12 $\frac{1}{8}$	70	12 $\frac{6}{8}$	4		74
December.	17		3	14 10 $\frac{5}{14}$	23	1	2	9 $\frac{1}{2}$	34	10 $\frac{3}{4}$	5	1	40
4th quarter.	47		5	42 10 $\frac{1}{2}$	67	1	4	11 $\frac{2}{3}$	104	11 $\frac{2}{3}$	9	1	114
Total.	299	4	24	271 12 $\frac{2}{3}$	410	8	40	12 $\frac{1}{3}$	633	12 $\frac{2}{3}$	64	12	709

TABLE, No. XV.

Shows the average Number of Days the Patients were detained in the Hospital.

	MALES.		FEMALES.		TOTAL.	
	Average		Average		Average	
	of	is	of	is	of	is
February.	16	31 $\frac{3}{4}$	18	19 $\frac{4}{9}$	34	25 $\frac{4}{7}$
March.	25	22 $\frac{2}{5}$	43	23 $\frac{4}{3}$	68	23 $\frac{1}{10}$
April.	35	21 $\frac{8}{3}$	30	20 $\frac{1}{5}$	65	20 $\frac{4}{10}$
1st quarter.	76	23 $\frac{5}{9}$	91	21 $\frac{7}{11}$	167	22 $\frac{1}{10}$
May.	27	21 $\frac{1}{10}$	33	19 $\frac{1}{10}$	60	20 $\frac{3}{10}$
June.	24	19 $\frac{7}{10}$	47	19 $\frac{3}{10}$	71	19 $\frac{5}{10}$
July.	40	19 $\frac{3}{10}$	42	20 $\frac{1}{10}$	82	20 $\frac{1}{10}$
2d quarter.	91	20 $\frac{4}{11}$	122	19 $\frac{5}{11}$	213	20 $\frac{3}{11}$
August.	33	21 $\frac{2}{10}$	36	21 $\frac{1}{10}$	69	21 $\frac{3}{10}$
September.	29	15 $\frac{3}{10}$	41	22 $\frac{9}{11}$	70	18 $\frac{3}{10}$
October.	40	18 $\frac{7}{10}$	61	19	101	18 $\frac{2}{10}$
3d quarter.	102	18 $\frac{2}{11}$	138	20 $\frac{1}{12}$	240	19 $\frac{3}{12}$
November.	32	17 $\frac{3}{10}$	46	18 $\frac{10}{10}$	78	18 $\frac{3}{10}$
December.	18	10 $\frac{5}{10}$	27	13 $\frac{3}{10}$	45	11 $\frac{4}{10}$
4th quarter.	50	15 $\frac{4}{10}$	73	16 $\frac{4}{10}$	123	16 $\frac{1}{10}$
Total.	319	19 $\frac{2}{10}$	424	19 $\frac{4}{10}$	743	19 $\frac{6}{10}$

TABLE, No. XVI.

Shewing General Averages in various stages of the disease.

	DAYS AT				DAYS BETWIXT				In hospital.
	Admission.	Crisis.	When convales.	Dismissal.	Admission & crisis.	Crisis & Convales.	Admiss. & Convales.	Convales. & dismiss.	
1st quarter.	9 $\frac{4}{10}$	11 $\frac{1}{10}$	14 $\frac{1}{10}$	32 $\frac{5}{10}$	3 $\frac{7}{10}$	2 $\frac{3}{10}$	5 $\frac{5}{10}$	19 $\frac{1}{10}$	22 $\frac{1}{10}$
2d quarter.	6 $\frac{9}{10}$	10 $\frac{8}{10}$	12 $\frac{7}{10}$	27 $\frac{1}{10}$	3 $\frac{1}{10}$	3 $\frac{1}{10}$	6 $\frac{8}{10}$	13 $\frac{7}{10}$	20 $\frac{2}{10}$
3d quarter.	6 $\frac{1}{10}$	9 $\frac{2}{10}$	11 $\frac{5}{10}$	25 $\frac{6}{10}$	3 $\frac{4}{10}$	2 $\frac{1}{10}$	5 $\frac{1}{10}$	9 $\frac{1}{10}$	19 $\frac{1}{10}$
4th quarter.	6 $\frac{1}{10}$	9 $\frac{8}{10}$	11 $\frac{4}{10}$	23 $\frac{1}{10}$	3 $\frac{4}{10}$	2 $\frac{4}{10}$	5 $\frac{1}{10}$	12 $\frac{1}{10}$	16 $\frac{1}{10}$
Total average.	7 $\frac{5}{10}$	10 $\frac{2}{10}$	12 $\frac{3}{10}$	27 $\frac{6}{10}$	3 $\frac{5}{10}$	2 $\frac{5}{10}$	5 $\frac{1}{10}$	13 $\frac{5}{10}$	19 $\frac{4}{10}$

TABLE, NO. XVII.

*Shewing the Numbers and Proportions of Patients who suffered a Relapse,
Male and Female.*

	Admissions.			Relapses.			Proportion 1 in		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
February	34	16	18	7	3	4	$4\frac{1}{6}$	$5\frac{1}{3}$	$4\frac{1}{2}$
March.	68	25	43	10	3	7	$6\frac{1}{4}$	8	$6\frac{1}{2}$
April.	65	35	30	8	4	4	$8\frac{1}{2}$	$8\frac{1}{4}$	$7\frac{1}{2}$
1st quarter.	167	76	91	25	10	15	$6\frac{1}{2}$	$7\frac{1}{2}$	$6\frac{1}{3}$
May.	60	27	33	4	2	2	15	$13\frac{1}{2}$	$16\frac{1}{2}$
June.	71	24	47	7	4	3	$10\frac{1}{2}$	6	$15\frac{2}{3}$
July.	82	40	42	14	6	8	$5\frac{6}{7}$	$6\frac{2}{3}$	$5\frac{1}{4}$
2d quarter.	213	91	122	25	12	13	$8\frac{1}{2}$	$7\frac{7}{8}$	$9\frac{5}{8}$
August.	69	33	36	13	4	9	$5\frac{4}{5}$	$8\frac{1}{4}$	4
September.	70	29	41	24	5	19	$2\frac{1}{2}$	$5\frac{1}{2}$	$2\frac{3}{5}$
October.	101	40	61	27	16	11	$3\frac{1}{2}$	$2\frac{1}{2}$	$5\frac{6}{7}$
3d quarter.	240	102	138	64	25	39	$3\frac{1}{2}$	$4\frac{2}{3}$	$3\frac{7}{8}$
November.	78	32	46	15	5	10	$5\frac{1}{2}$	$6\frac{2}{3}$	$4\frac{3}{5}$
December.	45	18	27	4		4	$11\frac{1}{2}$		$6\frac{3}{4}$
4th quarter.	123	50	73	19	5	14	$6\frac{7}{8}$	10	$5\frac{3}{4}$
Total.	743	319	424	133	52	81	$5\frac{7}{8}$	$6\frac{7}{8}$	$5\frac{1}{2}$

TABLE NO. XVIII.

Shews the Number of Relapses happening when the Primary Fever ended on Critical and Non-critical Days; also the Numbers happening on Critical and Non-critical Days, counting from the day when convalescent.

	Primary Fever ending on days			Relapses happening from day when convalescent, on days		
	Critical.	Non-crit.	Unknown	Critical.	Non-crit.	Unknown
February.	3	1	3	3	3	1
March.	7	2	1	7	3	
April.	7	1		3	5	
1st quarter.	17	4	4	13	11	1
May.	4			2	2	
June.	7			4	3	
July.	10	4		9	5	
2d quarter.	21	4		15	10	
August.	3	6	1	10	3	
September.	14	10		14	10	
October.	19	7	1	20	7	
3d quarter.	39	23	2	44	20	
November.	9	5	1	12	3	
December.	4			2	2	
4th quarter.	15	5	1	14	5	
Total.	90	56	7	86	46	1
Average.	$5\frac{1}{9}$	$5\frac{1}{3}$		$1\frac{2}{3}$	$2\frac{2}{3}$	

TABLE, No. XIX.

is the Numbers Bled from the Arm, and Leeched in the Primary Fever, with the Quantity of Blood taken, and its appearance, also the Number of Leeches used.

	Bled.			Nature of Blood.					Ounces drawn.	Bled and Leech- ed.	Leeched.		Leeches used.	Neither bled nor leeched.
	Males.	Female	Total.	Buffy.			Not buffy.	Not noticed.			Only.	Total.		
				Males.	Females.	Total.								
January.	3	5	8	2	2	4	1	3	118	3	16	19	203	10
February.	11	19	30	7	7	14	9	7	546	11	16	27	238	25
March.	23	17	40	12	8	20	15	5	1020	9	12	21	205	12
Quarter.	37	41	78	21	17	38	25	15	1684	23	44	67	646	47
	14	19	33	7	10	17	11	5	738	10	20	30	296	7
	14	17	31	11	10	21	7	3	515	15	27	42	452	13
	23	17	40	16	10	26	12	2	974	21	29	50	531	12
Quarter.	51	53	104	34	30	64	30	10	2227	46	76	122	1279	32
August.	25	25	50	18	19	37	8	5	1673	17	16	33	551	3
September.	13	22	35	9	14	23	7	5	936	12	14	26	322	21
October.	23	27	50	14	19	33	9	8	1459	18	11	29	430	38
Quarter.	61	74	135	41	52	93	24	18	4068	47	41	88	1303	62
November.	14	19	33	14	11	25	4	4	776	16	22	38	476	24
December.	3	11	14	1	6	7	6	1	307	8	6	14	196	25
Quarter.	17	30	47	15	17	32	10	5	783	24	28	52	672	49
	166	208	364	111	116	227	89	48	8762	140	189	329	3900	190
Average.	11 ⁵³ / ₁₆₀	21 ³ / ₃₃	23 ⁵ / ₃₄	11 ⁵⁵ / ₁₁₁	13 ³ / ₃₃	11 ³⁷ / ₂₂₇	4 ⁸ / ₈₃	7 ⁷ / ₁₂	24 ¹ / ₁₂	5 ⁴³ / ₁₄₆	31 ⁷⁶ / ₁₈₉	28 ⁵ / ₃₂₈	11 ³⁸ / ₃₂₉	31 ⁷ / ₃₂₂

TABLE, No. XX.

Shews the Numbers bled from the Arm, and leeched in the Cases of Relapse; the Quantity of Blood taken; its appearance, and also the Number of Leeches applied.

	Bled.			Nature of blood.						Leeched					
				Buffy.			Not buffy.	Not noticed.	Ounces drawn.	Bled and leeched.	Only.	Total.	Leeches used.	Neither bled	
	Males.	Females.	Total.	Males.	Females.	Total.									
February.		1	1		1	1				16		3	3	34	
March.	2	1	3	1	1	2	1			54	2	5	7	52	
April.	2	3	5	2	1	3	1	1		94	2	1	3	24	
1st quarter.	4	5	9	3	3	6	2	1		164	4	9	13	110	1
May.	2		2	2		2				34		1	1	8	
June.		1	1						1	12					
July.	6	4	10	5	3	8			2	242	5	2	7	58	
2d quarter.	8	5	13	7	3	10			3	288	5	3	8	66	1
August.	2	5	7	2	3	5	1	1		160	3	2	5	58	
September.	2	7	9	1	7	8	1			252	2	3	5	66	
October.	13	6	19	8	5	13	1	5		448	4	2	6	76	
3d quarter.	17	18	35	11	15	26	3	6		860	9	7	16	200	
November.	1	3	4		1	1	1	2		62	2	2	4	80	
December.		1	1		1	1				30		1	1	8	
4th quarter.		4	5		2	2	1	2		92	2	3	5	88	
Total.	30	32	62	21	23	44	6	12		1404	20	22	42	464	
Average.	$1\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$10\frac{1}{3}$	$5\frac{1}{6}$		$22\frac{20}{31}$	$6\frac{1}{20}$	$6\frac{1}{22}$	$3\frac{1}{3}$	$11\frac{1}{21}$	

TABLE, NO. XXI.

*Shews the numbers dismissed cured, and who died each month,
with the proportions of deaths to recoveries.*

	Cured.	Died.	Total.	Proportion one in
February.				
March.	42	4	46	$11\frac{1}{2}$
April.	71	4	75	$18\frac{3}{4}$
May.	61	2	63	$31\frac{1}{2}$
June.	72	3	75	25
July.	66	2	68	39
August.	85	2	85	$42\frac{1}{2}$
September.	56	3	59	$19\frac{2}{3}$
October.	90	5	95	19
November.	84	2	86	43
December.	84	7	91	13
January.	67	2	69	$34\frac{1}{2}$
February.	57	3	60	20
Total.	833	39	872	$22\frac{4}{3}$

TABLE, No. XX.

Given the number of animals culled, and also the number
with the proportion of deaths to survivors.

Month.	Cull.	Deaf.	Total	Proportion deaf to total
February.	57	2	59	0.966
January.	67	2	69	0.971
December.	64	7	71	0.901
November.	64	2	66	0.970
October.	60	2	62	0.968
September.	58	2	60	0.967
August.	58	2	60	0.967
July.	58	2	60	0.967
June.	72	2	74	0.973
May.	61	2	63	0.968
April.	71	1	72	0.972
March.	52	1	53	0.981
February.	111	1	112	0.982
Total.	672	20	692	0.973

TABLE OF DIETS.

GENERAL ALLOWANCE FOR 24 HOURS.

FEVER OR LOW DIET.

A pint of milk gruel or thin milk porridge ; a pint of thin flummery made of boiled ground rice and milk ; a small quantity of oatmeal porridge, and milk or beer ; six or eight ounces of bread for panada or toast and water ; a little arrow root, or weak beef-tea : these articles are given at such intervals, and in such quantities at a time, as are most agreeable to the patients.

SMALL COMMON OR FIRST DIET.

BREAKFAST.—Three gills of oatmeal porridge, or $4\frac{1}{4}$ ounces of finest bread, and 2 gills of milk, or 3 gills butter-milk or beer.

DINNER.—A pint of broth, and $4\frac{1}{4}$ ounces bread.

SUPPER.—The same as breakfast.

FULL COMMON OR SECOND DIET.

BREAKFAST.—A pint of porridge, or $5\frac{1}{4}$ ounces of bread, 3 gills of milk, or a pint of butter-milk or beer.

DINNER.—A quart of broth and $5\frac{1}{4}$ ounces of bread.

SUPPER.—The same as breakfast.

ADDITIONAL DIET

Means one-third more at every meal of the same articles as in the full common or second diet.

FULL DIET.

The same as the full common or second diet, with the addition of half a pound of boiled beef or beef steak, three days in the week, viz. Monday, Thursday and Saturday.

All the articles of diet are of the very best quality, and the physicians have full power to increase the quantities of ordinary food for individual patients, and likewise to order whatever other articles they may deem necessary for particular cases.

RECIPÉS

FOR THE

HOSPITAL FORMULÆ EMPLOYED IN THE TREATMENT OF
THE CASES DETAILED IN THE APPENDIX.

BOLUS JALAPÆ COMPOSITUS.

℞. Pulveris radice convolvuli jalapæ ℥ i,
Calomelanos gr. v,
Conservæ rosæ Gallicæ q. s. Misce.

CATAPLASMA EMOLLIENS VEL COMMUNE.

℞. Farinæ hordei distichi q. v. Coque ex aqua fontana ad
aptam spissitatem, et illinetur superficies oleo napi
silvestris priusquam applicetur.

ENEMA DOMESTICUM VEL COMMUNE.

℞. Muriatis sodæ ℥ fs.
Olei napi silvestris ℥ i,
Aquæ tepidæ lb i. Misce.

ENEMA PURGANS.

℞. Foliorum cassiæ sennæ ℥ iij,
Sulphatis sodæ ℥ i,
Aquæ ferventis lb i. Infunde et cola.

GARGARISMA COMMUNE.

℞. Aquæ fontanæ ℥ vi,
Aceti ℥ fs,
Syrupi simplicis ℥ i. Misce.

HAUSTUS ANODYNUS.

- ℞. Tincturæ opii gtt. xxv,
 Aquæ fontanæ ℥ i,
 Syrupi simplicis ℥ ij. Misce.

HAUSTUS ANODYNUS ANTIMONIALIS.

- ℞. Haustum anodynum,
 Vini tartratis antimonii gtt. xxx. Misce.

HAUSTUS EX OLEO RICINI.

- ℞. Olei ricini ℥ fs
 Aquæ distillatæ ℥ i,
 Spiritus myrtæ pimentæ ℥ i,
 Aquæ potassæ gtt. xx. Misce.

HAUSTUS SALINUS EFFERVESCENS.

- ℞. Subcarbonatis potassæ purissimi ℥ iv,
 Aquæ fontanæ ℥ iv,
 Solve, et cum subsederint fæces, cola.
 ℞. Succu citri medicæ recentis ℥ ij,
 Syrupi simplicis,
 Aquæ fontanæ, utriusque ℥ i. Misce.

Utriusque uncia detur pro dosi. Solutione carbonatis potassæ prius sumpta, mistura e succo citri medicæ illico porrigenda est.

INFUSUM SENNÆ.

- ℞. Foliorum cassiæ sennæ ℥ i fs,
 Seminum coriandri sativi contusorum ℥ fs.
 Supertartratis potassæ ℥ ij,
 Aquæ fontanæ lb i.
 Supertartratem potassæ in aqua coquendo solve; deinde liquorem, adhuc ferventem, sennæ et seminibus affunde: macera per horam in vase operto, et frige-
 factum cola.

MISTURA MUCILAGINOSA.

℞. Decocti althææ officinalis ℥ vi,
Syrupi simplicis ℥ fs.
Misce.

MISTURA SALINA AMMONIATA.

℞. Succu citri medicæ ℥ ifs,
Subcarbonatis ammoniæ præparati ℥ fs, vel q. s. ad
acidum saturandum,
Aquæ fontanæ ℥ iijfs,
Syrupi simplicis ℥ i. Misce.

MISTURA DIAPHORETICA SALINA.

℞. Aquæ acetatis ammoniæ,
Aquæ fontanæ, utriusque, ℥ iij,
Subcarbonatis ammoniæ gr. x,
Syrupi simplicis ℥ vi. Misce.

POTUS ACIDUS VEGETABILIS.

℞. Decocti furfuris ℥ xxx,
Supertartratis potassæ ℥ iv,
Syrupi simplicis ℥ ij. Misce.

POTUS ACIDI NITRI VINOSI.

℞. Spiritus ætheris nitrosi ℥ ij,
Aquæ fontanæ ℥ xxx,
Syrupi simplicis ℥ ij. Misce.

FINIS.

