ORIGINAL COMMUNICATIONS.

ON SOME POINTS IN THE PATHOLOGY,
DIAGNOSIS, AND TREATMENT
OF PNEUMONIA.

By C. H. F. ROUTH, M.D., Physician to the St. Pancras Royal Dispensary, and Vice-President of the Medical Society of London.

[Read before the Medical Society of London, May 5, 1855.]

PART II.

ON THE EXPERIENCE OF VARIOUS KINDS OF TREATMENT
IN PNEUMONIA.

In a former paper on Pneumonia, I alluded to some points in its diagnosis, prognosis, and the theory which recommended, on erroneous grounds, the treatment by blood-letting. I now come to speak of the *experience* of various modes of practice: but, before I do so, allow me to recapitulate some of the points to which I alluded in my last paper.

In speaking of the pathological character of the blood, I attempted to prove that that fluid at first was unusually thin, from a deficiency of *chlorides*; secondly, that it became *hyperinised* by the increased number of the respiratory movements, and the greater activity of the function of the skin, viewing this as a *respiratory organ* also, and the intense heat of surface as evidence of this increased action. I alluded to this last as evidence of adynamic type; and also to the frequent occurrence of pneumonia from poisonous causes, as in typhus; from phlebitis, after injuries and operations; and by artificial poisoning of the blood. I then spoke of the large number of depressing among the known causes of its production. I then referred to the diagnosis between pneumonia and some other diseases, namely, simple pulmonary congestion, capillary bronchitis, and some forms of pleuritis; then to its prognosis, and the tendency of death by depression; and, lastly, I proved that the theory which recommended the blood-letting treatment was erroneous, because its moderate employment did not diminish the amount of fibrin; secondly, because, although it checked the general fever, it lengthened the convalescence; thirdly, it did not remove the local symptoms, but, in most cases of intense pneumonia, it aggravated them; fourthly, that the type of disease was generally now more adynamic, and that pneumonia proved generally fatal in proportion as this character was more marked. The last point under this head involves the question of experience, viz., the results of the treatment by blood-letting—its influence on mortality. I purposely, therefore, refrained from entering upon its discussion on the last occasion; but its consideration necessarily opens the subject of the paper, to which I venture this evening to solicit your attention.

1. *Treatment by Blood-Letting.* It is alleged that, by carrying out blood-letting freely, the mortality is diminished. But who is there amongst us who will undertake to state what is the *normal mortality* of pneumonia, affected as it is by sex, age, habits of life, seasons, seat, complication with other diseases, and treatment? Take for instance the following table:—

	Cases.	Deaths.	Per cent.
Trousseau (1831-32)	58	2	3.4
British Army (Colonies)	12271	413	3.3
Bang (Copenhagen)	54	2	3.6
Navy (Home and Colonies)	3099	136	4.3
Varentrapp (chloroform)	23	1	4.3
Cases treated by Baumgärtner, Wacherer, Helbing, & Schmidt	193	0	4.5
Husson	43	3	6.9
English and Scotch Hospitals ..	59	7	11.8
Liverpool Southern Hospital	10	1	10
Laennec (1824-5)	62	4	6.6
Varentrapp (usual treatment) ..	266	49	18.4
Dietl (Vienna)	380	53	13.1

Bouilland (Paris)	75	13	17.3
Grisolle (Paris)	391	71	18.1
General Hospital, Vienna	1134	260	12.9
Glasgow Infirmary (1844-8)	248	69	27.7
Drs. Walshe, Taylor, and Peacock	140	44	31.4
Total	18,506	1,137	6.1

I cannot here enter upon all the different causes which influence the mortality of pneumonia; such a course would involve far too lengthy a paper. I must, however, say a word about the influence of age, sex, and complication.

(a) *Age.* At the two extremes of life, the mortality is great. It is stated by Dr. Walshe to be, from 6 to 12, scarcely exceeding 2½ per cent.; from 15 to 30, 6 per cent.; from 30 to 40, suddenly rising to 14 per cent.; and increasing thenceforth steadily for each succeeding decade. The following table, from Grisolle, founded on some 900 cases, carries this ratio higher.

Ages.	Mortality per cent.
13-30	8.1
30-40	18.5
40-50	22.7
50-60	29.7
60-70	26.3
Above	12.5

In estimating, therefore, the mortality of a given number of cases, the proportion of those of extreme ages should be carefully noted. From another table, which I collected from cases occurring in the Glasgow Infirmary, in the practice of Drs. Taylor, Peacock, Walshe, Grisolle, Hughes, etc., the proportion of seizures from pneumonia occurring at different ages was as follows:—

Ages.	No. of cases.	Per ct.	Percentage proportion.
Children	11	..	..
10-15	15	1.1	..
15-20	199	14.6	..
20-30	412	39.2	48.6
30-40	256	18.8	..
40-50	219	16.0	..
Above	250	18.7	25.8

Here the numbers for ages under 10 are not considered, as the table does not afford the means of comparison. The disease, therefore, if we take the periods from 10 years to above 50, appears to be most common during the decade from 20 to 30.

(b) *Sex.* This is a very important particular to be noted. Pneumonia is much more fatal in *females*, as a rule, as compared with males; and, by diminishing the number of females in any set of cases, the total mortality may be greatly reduced. From the following table, we learn that the normal proportion of females in 100 cases of pneumonia should be about 31.4. Thus, out of 2,359 cases of pneumonia, there were 1,618 males and 741 females: viz.—

Cases occurring in practice of	Males.	Females.
Briquet, Chomel, Grisolle	444	138
General Hospital, Vienna (3 yrs.)	604	440
Drs. Taylor, Walshe, and Peacock	113	27
Glasgow Infirmary (5 years)	102	35
Dr. Hughes	208	82
Dr. Franks	57	10
	1618	741
	2359	

But the mortality among females is always greater. Thus, out of 904 cases of pneumonia occurring in males, 199 died, or 22 per cent.; out of 506 cases occurring in females, 146 died, or 28.8 per cent.

(c) *Complications.* In England and Scotland, I believe, complications are very common. Pure idiopathic pneumonia is less often met with than secondary or complicated pneumonia. Out of 140 cases which I analysed, and which occurred in the hospital practice of Drs. Walshe, Peacock, and Taylor, there were 79 cases of secondary and complicated pneumonia, i. e., a proportion of 56 per cent.; the diseases being chiefly phthisis, bronchitis, Bright's disease

and dropsy, endo- and pericarditis, meningitis, erysipelas, in the order mentioned. Of these 79 cases, 17 were secondary. Out of 101 cases examined by Dr. Hughes, of Guy's Hospital, only 52 per cent. were uncomplicated, or complicated with pleurisy alone. The relative proportion of the different forms of complication, as they occur, cannot be correctly stated, because usually more than one complication coexists; and so all attempt at classification in this respect is baffled. In Dr. Hughes's cases, 22 were complicated with bronchitis, 5 with phthisis, 4 with influenza, 3 with fever, 3 with pericarditis, 2 with renal disease; and among the fatal cases, out of 24 in all, in 5 only was there nothing but the primary disease to account for the result observed.

In 54 cases of fatal pneumonia examined after death, renal disease existed in 6, and in 3 disease of the bladder, and in 4 phthisis. I believe myself that it is generally the coexistence of Bright's disease, induced by the drinking habits of the population, which makes pneumonia so fatal in this country. A table setting forth the relative frequency of this complication is still very desirable. Grisolle does not give one, although he admits the fatality of this complication. For some of the other complications, we may, from his data, approximate to a table.

Pleuropneumonia .. 31; out of Pneumonia	247, or 12.5
Bronchitis	58; " " 240, or 24.1
Disease of circulation 12; " "	58, or 20.6
Hepatic disease 20; " "	277, or 7.2

The analysis above made will show how easy it is, even with the best intentions, by an accidental combination, in which due regard has not been paid to the age of the patients, the number of females and of complicated cases, to draw fallacious conclusions from statistics of mortality in pneumonia.

I proceed now to analyse the results of the treatment by blood-letting. This is a system of cure adopted by many eminent physicians, but amongst these we must give the palm to M. Bouillaud. His method has been called the "jugulating method", *par excellence*; and, strange to say, his tables (a splendid specimen of what statistics may, in some hands, be made to prove) confirm the efficacy of the treatment. The following is a summary of his plan. He bleeds a patient to about one pound twice in the first twenty-four hours after seizure by pneumonia, in the interval applying cupping-glasses. The second day, he repeats the venesection to the same quantity. The third day, the pneumonia usually yields; if it does not, he repeats the bleeding. On the fifth day, he asserts, a cure is commonly observed; if it has not yielded, then further venesection should be carefully and very cautiously persisted in; but, even after this number of bleedings, it may be often practised with advantage.

I have here tabulated 21 cases given by Bouillaud, in which this practice was followed, which proves to what extent depletion can be carried by some practitioners.

	Bled.	Bleedings.	Cupping.	Leeches.	Blister.	Duration.
Males....	1	.. 1	.. 1	.. 57	.. 1	.. 24 dys.
"	2	.. 2	.. —	.. 30	.. 1	.. 5
"	3	.. 1	.. —	.. 30	.. —	.. 11
"	4	.. 4	.. 2	.. 34	.. 1	.. 11
"	5	.. 4	.. 2	.. 52	.. —	.. 14
"	6	.. 6	.. 2	.. 25	.. 1	.. 11
"	7	.. 6	.. 1	.. 27	.. 1	.. —
"	8	.. 4	.. 4	.. 55	.. 1	.. 12
"	9	.. 4	.. 2	.. 61	.. 1	.. 23
"	10	.. 5	.. —	.. 87	.. —	.. —
"	11	.. 6	.. —	.. 50	.. 1	.. 18
"	12	.. 3	.. 2	.. 30	.. 1	.. 8
"	13	.. 1	.. 2	.. 6	.. —	.. 6
"	14	.. 5	.. 2	.. 50	.. —	.. 8
"	15	.. 4	.. 6	.. 20	.. 1	.. 8
"	16	.. 2	.. 4	.. —	.. —	.. 8
Females	4	.. 3	.. 4	.. 47	.. 1	.. 13
Mean ..	.. 4	.. 2	.. —	.. 40	.. 11 on 17	.. 10

Or, on an average, upwards of 120 oz. of blood.

In 21 cases so treated, only 3 died. But these cases

are not fairly selected, 2 only being females—a proportion of 9 per cent. only, instead of 31.4 per cent. Moreover, in these cases, 12 were from 18 to 29 years old. Two of the deaths are explained by Bouillaud; one being very much weakened by previous disease; the other was bled twice, but would not submit to a third venesection!

Grisolle has analysed 75 cases similarly collected and tabulated by Bouillaud. The mortality is stated by Bouillaud to have been 1 in 8½ cases, or about 12 per cent. But in 49 only of these was M. Bouillaud's formula properly carried out; in the others, antimonials were given. Out of these 49, 6 died. But even these 49 cases were not average examples; the ages were most favourable—20-30. In 16, the disease was at the first stage only; in 13, at the second; in the rest, intermediate; and there were only 8 females, or 16.3 per cent., instead of 31.4, which is, as before stated, the normal number. In all these cases, moreover, the duration of the disease is reckoned from the period of admission; no account being taken of its pre-existence before that period.

Grisolle is usually classed among the advocates for the blood-letting treatment; and he certainly is so, although not to so great a degree as is generally stated. He advocates blood-letting certainly, because he thinks it shortens the disease; but he seldom trusts to it exclusively; and the cases he gives, I think, even still less justify the conclusion. Here is an abstract of 232 cases, tabulated from his book.

50 Cases in the First Stage:

Deaths, 10; or 20 per cent.
Females, 14; or 28 per cent.
Ages, 16-72; mean, 40.
Blood-letting, from 1 to 7 times; mean, twice.
Amount of blood lost not stated; mean, 36 ounces.
Convalescence began on tenth day.
Pneumonia double in 3 cases.

182 Cases in the Second Stage:

Deaths, 32; or 17 per cent.
Females, 39; or 21 per cent.
Ages, 16-77; mean, 35.
Blood-letting, from 1 to 6 times; mean, thrice.
Amount of blood lost, 8 oz. to 8 lbs.; mean, 48 ounces.
Convalescence began—not stated.
Pneumonia double in 12 cases.

It will be remarked, that the number of females in the whole 232 cases is too small by 8 per cent., being 23 per cent. instead of 31; and the proportion of complicated cases is not stated.

In 69 of the recoveries from among the 182 cases last recorded, blood-letting was employed, together with mild laxatives only; but in the 81 remaining, antimonials were fully enjoined. The number of deaths which occurred among all those treated on the former plan, as compared with all those treated on the latter plan, is not stated; and this omission in some degree, therefore, vitiates the result as a measure of the value of treatment by blood-letting singly.

Grisolle's remarks, however, on these cases are instructive. Taking, he says, all these cases (232), 101 only were successfully treated by blood-letting. In the remaining cases it did not stop the disease; and it is, when reasoning on these cases, that he makes the admission, before quoted, on the incurability of pneumonia, of a certain intensity, by blood-letting alone. As, moreover, in the above number of cases there is not the normal complement of females, this circumstance alone would necessarily diminish the cypher of mortality.

So far, then, we have evidence of the occasional inefficiency of blood-letting as a means of cure, in the proportion of at least in 131 cases out of 232, or 56 per cent. I cannot now dwell upon this part of our subject, but I shall conclude by the addition of Dr. Dietl's cases. That physician treated also 85 cases on the blood-letting system, and he lost 17, or 20 per cent. To recapitulate, therefore,—

	Per cent.
Grisolle obtained (1st stage) a mortality of....	20
Bouillaud, 1st series selected cases	14
" 2nd ditto	12
Dietl	20
	Mean. 10.5

II. *Treatment by Blood-Letting, combined with Tartar Emetic.* This, I believe, is the ordinary treatment of most modern practitioners, and is probably the most dangerous. The great Laennec was perhaps the first physician who combined these two therapeutical agents. After bleeding a patient to sixteen ounces, he used to give tartar emetic in grain doses every two hours, sometimes, if the case were severe, increasing it to two grains, but he never exceeded thirty grains in twenty-four hours. His success was most marked. Before 1824 he says he did not keep any exact account, but he does not remember to have lost any case. In 1824, out of 28 rather severe cases so treated, he lost only 1, and that an old man of 70. In 1825, out of 34 cases, of which 5 died, but 3 of these were brought in the hospital *in articulo mortis*, and of the 2 other cases one had cardiac disease, and the other chronic pleurisy. He concludes, therefore, that out of 57 pneumonias, he lost only 2 old men of 70. These results have been objected to by Louis, as the number of venesections is not stated, and the patients were probably not all affected with pneumonia. No great reliance can, therefore, be placed in his cases for tabulation. In England, Dr. Hughes, who has published two excellent monographs of this disease in the *Guy's Hospital Reports*, gives a totality of 300 cases. Of these, however, only 101 were treated by himself. The remaining cases, in two groups, one consisting of 145 cases, and the other of 54, were only examined after death, at least it is not stated that they were treated by himself. Taking the whole 300, the following general remarks may be made.

Ages.	Cases.
Children	10
Under 20	45
20—30	78
30—40	55
40—50	40
50 and above	63
Age not mentioned	7
	133
	112

There were, besides the 10 children, 82 females, or 28 per cent. Both sides were affected in 98 cases out of 297, or 33 per cent.

Fifty-three cases only were uncomplicated, or complicated with pleurisy alone, *i.e.*, a proportion of nearly 18 per cent. The deaths among the simple only, were 12, or 22 per cent. In 3 of these cases, the disease was double. In 4, the malady was much advanced when under treatment; a very bad lot of cases, it must be admitted.

In the 101 other cases, however, which were spoken of in the first series, and which he treated—

Ages.	Cases.
Under 20	24
Under 30	38
30—40	19
40—50	8
50 and above	12
	101

There were 25 females, or 25 per cent.; 19 per cent. had double pneumonia; the mortality was 24 per cent. The simple uncomplicated cases were 52, the mortality was 22 per cent. (See above.)

The vast number of complicated cases is remarkable; viz. 51 per cent. The number of females is 6 per cent.—too small.

In the treatment pursued, the general rule was to bleed to approaching syncope, and to administer a pill containing a quarter of a grain of tartrate of antimony, and half a grain of opium, with one or two grains of calomel every three, four, or six hours, according to the severity of the symptoms. These remedies were assisted by a saline containing from twenty to thirty minims of antimonial wine.

If in a few hours, or by next day, the symptoms were not subdued, or recurred, he repeated the venesection. Triple venesections were uncommon: a fourth very rare. Cupping was preferred to from six to twelve ounces; the medicines being generally diminished in quantity and frequency as the case progressed. Blisters were used with good effect in the later stages. Dr. Hughes does not like to trust alone the tartrate of antimony. Of these 101 cases, he only used his plan in 41; mortality 6, or 14 per cent. In other 9 cases, in which no mercury was given, mortality 2, or 22 per cent. In other 37 cases, bleeding was not admissible or unnecessary; mortality 13, or 34 per cent.

These cases at first sight seem to favour the blood-letting system, since a united mortality of 16 per cent. resulted from this practice, as opposed to 34 per cent. without it; but this difference Dr. Hughes attributes to the class of cases, and their marked typhoid character.

In a series of cases which I collected, and which occurred in the practice of Drs. Walshe, Taylor, and Peacock, and which, through their kindness, I was enabled to tabulate on a former occasion, the treatment adopted generally, at least by the two former gentlemen, resembled Dr. Hughes', although perhaps not so antiphlogistic; viz. blood-letting, local and general, with tartar emetic, although more moderately employed. The abstract of these cases is as follows. I would divide them into simple or idiopathic, complicated, and secondary.

1st. Idiopathic:—

61 cases, 2 deaths, or 3.2 per cent.
14 were double, 2 cases were females.
9 were of pleuropneumonia.

2nd. Secondary:—

17 cases, 10 deaths, or 58 per cent.
3 were females.

3rd. Complicated, with diseases in order of frequency, phthisis, bronchitis, Bright's disease of kidney, and dropsy, endo- and pericarditis, meningitis, erysipelas:—

62 cases, mortality 51 per cent.
23 were females.

In this number the females are in too great minority; the proportion being 27 out of 140, or 19 per cent., instead of 31. The united mortality from all the 140 is 43 deaths, or 30 per cent. But among the complicated and secondary, it is enormous, viz., 53.1 per cent; and while I do not say that in all these active measures were employed, still it was in the majority; and, *a priori*, it is in these that we should expect the most disadvantageous effects from blood-letting. In regard to the ages, out of the 126 cases 86 were under 40, the rest above. Making all allowance for the large proportion of bad cases, it must be admitted that the mortality is high, even as compared with our continental hospitals. It should, however, in justice be added, that University College Hospital being a small hospital, it is only the worst cases which, as a rule, are taken in.

To Grisolle we are also indebted for some cases treated by blood-letting and tartar emetic. He gives us two groups of cases:—the first consists of ordinary cases, thirty in number; the second, of thirty cases in which, blood-letting having been carried to a degree, further than which it could not be carried, tartar emetic was conjoined as a last resource.

In the first group of cases 10 died out of 80, or 12 per cent. These had been bled first to from one to three pounds, the tartar emetic treatment being, however, conjoined. The recovery in these was later than that of patients treated by blood-letting alone; but then they were cases which had resisted that treatment singly.

In the second series of cases, out of 30, 18 died, or 60 per cent.; but these were examples in which, as before seen, the blood-letting had been most heroically followed out. The cases were, therefore, from this cause, as well as the intensity of the disease, most unfavourable.

Taking these two classes of cases conjointly, we have

110 cases, with a mortality of 28, i. e., about 25·4 per cent.

The following is a *resumé* of these cases:—

80 cases:

Deaths 10, or 8 per cent.
Females not stated.
Ages 16-70, mean 35½.
Double pneumonia 8.
Half lung attacked in five-sixths.
All second stage.
Blood-letting 1 to 3 lb.

30 cases:

Deaths 18, or 60 per cent.
Females not stated.
Mean age 49.
Double pneumonia not stated.
Part of lung attacked not stated.
Stage not stated.
Blood-letting carried to the utmost extent.

From these tables, it appears, important data are omitted.

To recapitulate, therefore, by blood-letting and tartar emetic conjoined, Dr. Hughes, whose practice I believe to be a fair sample of British treatment, obtained, out of 101 cases, a mortality of 24 per cent. In the simple cases, of 22 per cent. Grisolle, out of 110 cases, had a mortality of 25·4 per cent. Drs. Taylor, Walshe, and Peacock, out of 140 cases, of 30 per cent.; on the simple cases, of 3·2 per cent.; on the complicated and secondary, of 53 per cent. These results are unfavourable in regard to complicated cases, but favourable in regard to simple. These three examples of cases give a mean mortality of 26 per cent., which is by no means favourable.

III. *Treatment by Tartar Emetic.* Here I must be very brief, owing to the extent to which I have already noticed this treatment when speaking of blood-letting. The tartar emetic treatment took its rise in Italy, where it was introduced by Professor Rasori first, and subsequently by his pupils Tomasini and Areteus at Padua. It was subsequently taken up by Peschier, of Geneva, then employed and experimented on by Laennec at Paris. The former physicians gave it in fearful doses, and there is no doubt that they exceeded prudence in this respect.

Under a more prudent use of this remedy, Louis and others obtained better results. Out of twenty cases treated by tartar emetic, only three died. Grisolle's own experiments prove the efficacy of this treatment better than any other that I am acquainted with. He selected forty-four cases in which venesection was not practised at all, but tartrate of antimony alone was given. The following is a *resumé* of forty-four cases so treated:—

Deaths, 6, or 13 per cent.
Females, 8, or 18 per cent.; too small by 13 per cent.
Ages, 15-71; mean, 37.
Second stage in 35 cases.
Half lung seized in three-fourths of the cases.

All the fatal cases were above 50; and, what was interesting to note, in the cases which recovered, there did not appear to be any intermediate convalescence, the patients recovered so rapidly. Indeed, although the stethoscopic signs had not completely disappeared, they would not believe they were not quite well, and left the hospital.

Dr. Dietl, of the Wieden Hospital in Vienna, equally experimented with tartrate of antimony. Out of 106 cases treated by this remedy alone 20·7 per cent. died, that is, 22 patients; a mortality a shade higher than that which he obtained by the blood-letting treatment, as before seen, viz., 17 out of 85 cases, or 20 per cent. To recapitulate again: in those cases treated by tartrate of antimony alone, prudently given, there were—

	Cases.	Deaths.	Per Cent.
Louis	20	3	15
Grisolle	44	6	13
Dietl	106	22	20·7
Mean	170	31	18

This is a higher mortality by 1·5 per cent. than by blood-

letting alone, or 8 per cent. less than that by tartar emetic and blood-letting conjoined.

In reflecting upon these numbers, they are interesting as proving that, as a rule, when tartar emetic is conjoined with blood-letting, the mortality is usually greater than where the tartar emetic or venesection is employed singly, so far militating against the combination of these two remedies, because the more depressing. It must be confessed, however, that when cases yield to blood-letting, convalescence sets in earlier; but the recovery of health and strength is not so complete or frequent as when tartar emetic is the only remedy employed.

IV. *The Chloroform Treatment.* This treatment is comparatively new, and of German origin. A very good abstract is given in the *Medical Times* of some twenty-three cases so treated by Varentrapp. The mean period of admission was on the fourth day of seizure. Twenty-one were males, and two females. The skin became moist usually after the first inhalation, but never later than the fourth or fifth. The pain at side usually disappeared between the third and fourth day. The cough and frequency of respiration were quickly diminished. Fever disappeared about the fifth day. Good easy sleep was usually attained about the third to fourth day. The mortality was one, or 4½ per cent. We should here remark, first, that this number of cases is too small; and, secondly, too favourable, by reason of the women not being numerous enough. Moreover, as three bad cases were admitted during the period of Varentrapp's experiments with chloroform, all of which died, and which from their severity and complications were not treated by chloroform, these cases should be in fairness included. This would raise the mortality to 11½ per cent. But even this mortality is comparatively low, especially when age is taken into account: the youngest being 19, the eldest 62—mean age 32. These results, however, are confirmed, and even more favourably, by those obtained by Wacherer, Baumgärtner, and Helbing, who, out of 193 cases, lost only 9, or 4½ per cent. This result, it must be confessed, is highly favourable; and if correct, and if the cases are fairly selected, is preferable to that obtained by any of the previously mentioned methods of treatment. This, however, I cannot verify, not having been able to obtain a copy of the original papers. I know not if the chloroform, when inhaled, increases the amount of chlorides in the blood. If it does, here is one way of explaining its beneficial effect. One way which is obvious at once in which it does good, is that suggested by Dr. Richardson, and alluded to before; viz. that it arrests for a time the oxygenation of the blood during its transit through the lungs, and thus diminishes the quantity of fibrin formed.

It remains for me only to sketch the method in which the chloroform was exhibited in Varentrapp's cases.

The chloroform was not given to stupefaction, but about sixty drops were placed on a compressed piece of cotton, and the vapour allowed to enter the lungs for ten to fifteen minutes. If cough was excited, or unconsciousness seemed about to be induced, the cotton was removed for a few moments. Every two, three, or four hours, the inhalation was repeated. If the first three or four inhalations produced any effect on the head, or irritation on the lungs, this soon passed off. The average number of inhalations was seventy-four in ten and a half days, the minimum being twenty-seven days in five, the maximum a hundred and sixty-two in fifteen days. (*Medical Times*, 1851, p. 414.)

V. *The Milder Treatment.* I am compelled here to be brief, for the reason before stated. That pneumonia will get well with a milder treatment is proved in two ways. 1. By the negative evidence of quackery. 2. By the positive evidence of legitimate experiment, and this with no increase of mortality.

1. The best evidence afforded by quackery is given by those patients treated homoeopathically. And here let me guard myself, by saying that I do not admit the accuracy of the statistics given out by those of that persuasion. I have elsewhere, I think, gone far to prove that their cases are often inaccurately diagnosed and selected. But yet there can be no doubt that they do sometimes treat cases of

genuine pneumonia, and that these also sometimes get well cured, in fact, by nature, in spite of the treatment. Amongst these, **Tesier's cases** are more worthy of notice. I have elsewhere analysed them. His cases were selected because, instead of 50 per cent. complicated cases, he had only 17 per cent. His mortality was also understated, being, in fact, not three deaths out of forty-one cases, or 7 per cent.; but five deaths out of thirty-five cases, or 14 per cent. This ratio of mortality, looking to the simple nature of the cases, is high as compared with the returns of legitimate practitioners. Yet, it is the fact that we have here thirty cases getting well without active treatment; and other similar cases present themselves in hospitals devoted to this delusion. So likewise the cases of Moreau, Compagnani, and Menata, where pneumonia was cured by cold water, so far as they go, justify a similar conclusion.

2. The positive evidence of legitimate practitioners proves this likewise. Grisolle, though timid to carry out his plan further, gives eleven cases which, treated simply by emollients, recovered, although the symptoms persisted longer than in those who were treated by blood-letting. Dr. Dietl obtained the best results by this treatment. Thus, out of 380 cases, treated in the Wieden Hospital in three years—

	Cases.	Died.	Per cent.
Treated by repeated blood lettings	85	17	20
" tartar emetic	106	22	20.7
" simple dietetic means	189	14	7.4

Even in the General Hospital in Vienna, the treatment is almost simply dietetic. The medicines given are merely so many apologies for therapeutics; perhaps a quarter of a grain of bichloride of mercury, or a few grains of the extract of grass, during a whole illness. But the patients were warmly covered; and, if we except the discomfort occasioned by stethoscopists, and the noisy visits of the multitude of students, which alone retard and sometimes prevent recovery, it is simply nature which effects the cure. The mortality was in 1847-8, 260 out of 1,134 cases, or 22.9 per cent.

Dr. Todd, among ourselves, uses a very mild treatment, and discourages blood-letting, and even tartar emetic. After ample experience of this treatment, he found the most successful treatment was generally to give the liquor ammonia acetatis or citratis in large and frequently repeated doses, which does not exercise any depressing effect upon the patient. In pursuing this treatment, he gives full doses, six or eight drachms, every three or four hours; applying diligently counter-stimulants, such as mustard, or flannel soaked in warm turpentine, over a large extent of surface of the chest. With this are combined opium, with or without calomel, and occasionally a mild aperient; and the patient is supported from the first with animal broths in small quantities, and at short intervals, and sometimes a small amount of stimulus. "Under this treatment," he remarks, "deaths from pneumonia have become extremely rare among my cases. The fatal cases are those of patients who come in far advanced in the disease, or in whom the disease has rapidly invaded a large surface of one or both lungs; but even such cases often do well under this treatment, combined with support and stimulants." (*Med. Times*, 1852, p. 481.)

VI. *The Treatment recommended.* I think it follows from the above statistics, if we except the chloroform treatment, about which we cannot yet judge accurately, that the blood-letting treatment conjoined with tartar emetic is, in the present type of disease, the worst, and the dietetic the best. Still I conceive that there are certain indications of treatment at once so obvious that, if we seek to be something more than passive practitioners, we should be wrong to neglect them: and this is especially true in serious examples of pneumonia; and if these be fulfilled, they bid fair materially to assist dietetic measures. These indications appear to me to be—1. To diminish the general fever, specially the increased pulmonary and cutaneous respiration; 2. To relieve the local symptoms by removing the local mischief, and promoting expectoration; 3. To check the tendency to death by depression.

1. To diminish the general fever, especially the pulmonary and cutaneous respiration, both which last increase the hyperinosis. In pneumonia, as I have already said, apart from the peculiarity of the chest symptoms (although no doubt resulting from them), the pulse is unusually rapid, and the skin pungently hot.

(a) The quick pulse is, I fear, not sufficiently attended to in general. I believe that, as in fever, or puerperal fever, it is a very bad sign if it exceeds 140 or 160 per minute. This extraordinary frequency denotes diseased blood to a large extent; it is the evidence of a nervous shock, which may prevent nature from rallying. But, whether a pulse be rapid from nervous shock, or even inflammatory fever, its persistence is injurious, because the waste of the body and of its life, which is the blood, now undergoing the ordinary chemical changes in excess, is therefore the more rapid, and in the end will give rise to great debility. In pneumonia, therefore, to check if possible the material depressing tendency is a most important part of the treatment. The pulse must be reduced in frequency. The surest means to effect this is, I believe, *aconite*. The cutaneous temperature is equally certainly reduced by *oleaceous*unctions; and therefore it is that I seldom if ever bleed, although I would not be so dogmatical as to say I never will. Besides, as before stated, bleeding fails in 53 per cent. of pneumonia.

To those who are acquainted with Dr. Fleming's admirable work on *Aconite*, and the experiments upon which he founded his conclusions, the efficacy of this remedy in checking fever must be well known. It acts upon the heart, directly reducing the frequency of its beats, as well as the number of the respiratory movements; and, if we can judge from the few cases of poisoning in man, it rather impedes, and in excess actually prevents, the coagulation of the blood. Unfortunately, however, *aconite* is feared and avoided in England as an internal therapeutical agent, because believed to be most uncertain in its effects: and this opinion is justified if we employ the ordinary tincture of the *London Pharmacopæia*; but it is a prejudice to apply it to the tincture of the alcoholic extract of the root of the *aconitum napellus* or *ferox*, both of which are to be depended upon. With children, I have more than once been surprised at the effects produced by it in allaying fever, even in comparatively small doses. The tincture of the extract which I have been in the habit of using contains one grain of the alcoholic extract of the root to twenty drops of alcohol; and the dose for an adult varies from half a drop to three minims. I have given it up to five drops to an adult three times a day; but, in this case, poisonous symptoms supervened—a sort of tetanic rigidity of the entire voluntary muscles, and a tingling sensation all over the body. In another case, where the dose ordered was three and a half minims three times a day, the patient, wishing to get well the sooner, as he supposed, took a double dose. Complete paralysis supervened, with loss of pulse, fainting, sickness, and vomiting. The pupil became so dilated that the iris was not to be made out. A simple purgative cured the first case; the second did not recover till two or three hours by stimulants, especially ammonia. The potency of this preparation is therefore manifest. One drop of opium has been known to poison an infant; and, even for children under three or five, a quarter of a grain of Dover's powder, or one-twentieth of a grain, has often a marked effect. Four and a half grains of opium and two drachms of the tincture have been known to kill a man. There is no doubt that seven drops of the tincture of *aconite* before alluded to would have killed my man, if nature had not assisted him, and prudential measures had not been adopted. For practical purposes, I believe I may say that one drop of this tincture is at least equivalent to one grain of opium. I therefore use it with great care, especially with children, on whom I think it exercises an influence equally as strong and peculiar as opium. Thus, if one or two drops be added to eight ounces of water, although only half an ounce be the quantity given for a dose, *i. e.*, from one-thirty-second to one-sixteenth of a drop, and repeated every two hours, an effect is usually manifested on the feverish excitement in a very

few hours. With an adult I never would now begin with more than two drops, repeating one drop every two hours till the pulse falls. But even this is a large dose; and, in most cases, one drop to begin with, and a quarter to half a drop repeated every two hours till the pulse falls, will be found sufficient. In its action, it must be carefully watched; the patient must be often seen; and great care must be taken that the party to whom its administration in our absence is confided, is trustworthy; and directly the patient looks pale, and feels faint, its use should be discontinued. Here, then, is a remedy to be preferred to blood-letting, because, while it is equally powerful in its action, it has the advantage of sparing his blood for the future contingencies of the disease.

(b) The peculiar heat of skin which exists in the first stage of pneumonia is believed, as I before stated, by several eminent observers, to be pathognomonic of the disease in the first stage. If it be made to include under this term the pulmonary congestion alluded to, I must fully concur in it. I believe that it is owing to hyperoxygenation of the blood in the cutaneous capillaries even more than to the hurried respiration in the lungs, which, in an inflamed lung, must be necessarily interfered with and defective, as occasionally evidenced by the lividity of the countenance. Following out Mr. Taylor's practice, and encouraged by the experiments of Messrs. Becquerel and Breschet on the effects produced by varnishing over the skin with various substances, I have been commonly in the habit of ordering my patients, especially children, to be rubbed over the entire body with a mixture of sweet oil and mutton suet; and I can speak in the most commendatory terms of its effect in cooling the surface of the skin, and reducing the fever; and this in cases where sudorifics had failed in producing perspiration. I can give no better explanation than that already suggested for these results: but I speak practically, and after extended experience: indeed, I may say I know no surer means, and I might add, no speedier remedy; for it is generally effective within three hours in reducing heat of skin and most of the unpleasant effects of anorexia. The disadvantage is the objection usually made to oleaceous inunction by adults. Probably, in some of these, a wet sheet or hydropathic packing would effect the same result.

My experience, however, of this mode of treatment is limited to a few cases of fever, in which it was followed with good effect; and the reports of M. Hegele of Augsburg, who states that he used it successfully in forty cases of pneumonia. The experience of Moreau, Moneta, and Compagnani, before referred to, tends to the same direction.

2. The second indication is to relieve the local symptoms by removing the local mischief and promoting expectoration. I shall best explain my practice here by speaking of the plan adopted under three heads. *a.* Remedies acting generally on the system, and at a distance from the affected part, by derivation. *b.* Remedies acting locally by derivation. *c.* Medicines acting locally and generally by relieving pain and promoting expectoration.

(a) Of these, there are three which I shall notice; pediluvia, Junod's apparatus, and purgatives. It is curious how rarely pediluvia are employed in pneumonia, particularly among adults. Abroad, indeed (although the why and wherefore I have never been able to discover), there is a belief that it is dangerous practice in inflammatory diseases of the lungs; and yet M. Junod's exhaustion pump, which acts precisely on the same principle, is favourably mentioned. It is generally always practicable to bring about deliquium by stimulating pediluvia. If the patient be placed in the sitting posture, and his feet, up to his hips nearly, placed in warm water, the temperature of which is gradually raised by the addition of more and more boiling water, as the patient can bear it, he will usually faint in about twenty minutes. I have seen a strong, robust, plethoric man, with high fever and active cerebral congestion, made to faint in twenty minutes by this simple means; and the fever has given way, on his recovering his senses, to

copious perspiration. In this manner, we may often produce all the effects of a good venesection and yet spare our patient's blood. In simple pulmonary congestion, indeed, no other remedy is required.

Purgatives, since the prevalence of cholera, have not been much in vogue; yet their derivative effects are well marked in many instances, and as such they are most efficacious in the outset of pneumonia. I need not, however, dwell upon this point, as it will be readily admitted, not to speak of their beneficial effect in preparing the system for the use of other medicines, and the clearing of the *prima via*.

After all, however, of all measures applied at a distance from the affected part, to derive from it, none is so effective as Junod's exhausting apparatus (*Gazette Médicale*, 1850, pp. 115, 709). Pounds of blood may by its means be drawn from the body and collected in the extremities; and in this manner all that blood-letting can do is effected. The local congestion is removed, and comparative ease is obtained, and again the blood is saved. The quantity of blood in the system is not necessarily favourable to hyperinosis or inflammation. And if this be impeded, by retarding the rapidity of its flow through the lungs by aconite, and if the skin be rendered nugatory as a respiratory organ, by oleaceous inunction, we hold both general and local disorder under control, and may soon expect recovery. I hope that this apparatus may be, ere long, more generally employed in England. It has done good service already abroad; and we should not hesitate to adopt a good measure merely because it varies from our usual routine.

(b) Among the local derivants, cupping, leeches, and counterirritants are much employed. Of the good effects of the two former I am fully satisfied. But here, again, I dissent from their employment otherwise than as an exceptional practice. I believe this is very seldom necessary, and particularly leeching with children.

I have seen leeching chiefly used in the practice of others. It certainly has cured, and very generally does cure, the pneumonia; but it commonly kills the patient, or lengthens unnecessarily his convalescence. Among adults, its effects are more salutary; I would almost say especially so in cases treated by venesection. If M. Bouillaud's cases recover, I believe they owe it to the two average cuppings and the forty leeches. But I think either is generally unnecessary. *Dry cupping* will do all that is required. It will, if extensively applied, and herein lies the secret of its successful employment, effect all that the ordinary cupping or leeching could do, without weakening the patient. The employment of *blisters* is variously spoken of. Some say they are injurious, as giving rise to so much distress, and prefer mustard poultices. This depends of course a good deal upon the patient's feelings. But I think more depends upon the manner in which they are applied. The cantharidine mixture, or the solution of the acetum lyttæ in chloroform, vesicates the skin very speedily, and if the surface be covered with cotton wadding immediately after the application, the vesicle soon rises, and with comparatively little discomfort to the patient. And if the wadding be repeated every two or three hours, repeated vesicles will form, which may be successively cut. In this manner, the local distress will be greatly relieved. I have seen a patient with mitral disease and great pulmonary congestion, of several weeks' duration (and in whom blood-letting, either local or general, was contraindicated), lose in this manner quarts of serum, and be so far relieved thereby, as to be able to get up and resume her ordinary occupations; and, indeed, in one case, the patient, who had been unable to walk for months, found herself so far recovered as to be able to walk up to my house and back, a distance of a mile and a half each way, to visit me, apparently, as she assured me, without much inconvenience. I am aware this is strong language; but at the risk of being called an enthusiast in my advocacy of blisters, I am bound to speak from my own experience.

If blisters, however, be objected to, I think that flannel dipped in turpentine, applied to the chest, and especially as a sequence to the dry cupping, is the next best remedy.

Patients are almost always able to bear this species of counterirritation in preference to mustard poultices, and for a longer time, and the effects are certainly less painful, and as lasting. Here, also, however, the surface over which it is applied should be large. The remedy, if only partially applied, is of little value.

Among the medicines which promote expectoration, etc., I have found the most useful to be—

(c) Small doses of calomel, and tartar emetic in quarter grain doses, given at first. I give the calomel as an alterative, or occasional purgative, not with a view to touch the mouth. The tartar emetic is certain as an expectorant and sudorific. The secret of its employment, I believe, is to give it in the early periods—the first three or four days—and not to persist in its employment too long, else it weakens the patient a good deal, and depression of the system will not cure pneumonia. By the use of these remedies, the inflammation may be generally checked by the third, fourth, or fifth day, and the fever so reduced as not to require more active treatment. So soon as the fever, however, is reduced, and even before, if any irritative or hectic excitement supervenes, I conjoin cod-liver oil. I will not here give an explanation of its operation; I must be content to speak from practice, and this is highly encouraging. It possesses one advantage, my patient often looks better, fatter, and stronger at the end of his convalescence than he did previously; and this is always a favourable and agreeable result to both doctor and patient.

3. The mortality in pneumonia I have stated to be large in proportion as the tendency to death by exhaustion exists. To obviate this, from the first, I prescribe moderate quantities of beef tea. I would rarely give the patient the *diete absolue* of the French. The more prudent diet appears to be one of the nature of the middle diet of an hospital; and this even in what are called dynamic pneumonias, as opposed to the typhoid varieties, in which stimulants and nourishing aliment are from the first necessary. I have not yet tried the plan, but it appears to me as possible that admixture, in soups, of large quantities of salt, might be found useful in improving the character of the blood, dissolving the excess of fibrin, thus facilitating its removal, and generally by augmenting the quantity of chlorides in that fluid.

Such is the plan of treatment I would urge upon the notice of the Society.

Three principal objections have, in the course of the reading of this paper, been urged against my views. First, I have been blamed for travelling out of England to find statistics of treatment; and, therefore, it is believed the arguments adduced do not apply to this country. I deny this conclusion. The science of vital statistics proves that the laws of life and death in disease vary in different countries more apparently than really. But in my case I have had no option. This country is famed for its hospitals, and they are noble monuments of British generosity. But the responsibility lies heavy upon those who direct these institutions. The information they could convey is contained in closed books, and the cause of humanity derives no more good from them than from so many monasteries. Individuals profit, it is true, and so far benefit their own patients; but the public is none the wiser. I would have gladly and proudly selected English statistics in preference, if I could have done so.

Secondly. It has been said that while the paper I have written favours dietetic treatment, I have not adopted it. This may be true; but if so, it is because I have also wished to improve it by combining it with the science and practice of medicine, applied with, I trust, simplicity and common sense. At any rate, it is mild in comparison to the usual practice.

Lastly; it has been objected that I have not given any statistics of my own treatment. I admit this also; but I hope hereafter to do so, after larger experience, and in the expectation of deriving additional support from experiments made by others of my compeers. All I can say is, that since

I have relinquished blood-letting, my deaths have been but few and far between, and my recoveries more numerous. Life and death are not in the hands of man. These are overruled by a higher Power. But if a man believes a plan of practice he adopts to be successful, it is not the less his duty—in all humility, it is true, yet in all honesty—to make it known.

To recapitulate:—

1. It is impossible to state the normal mortality of pneumonia with our present data.

2. It is particularly affected by age, sex, and complication, on which, in estimating results, sufficient stress is not laid.

3. The results of different modes of practice seem to be:—

	Mort. per cent.
By blood-letting singly	14 to 20
„ tartar emetic singly	13 „ 20
„ blood-letting and tartar emetic conjoined	24 „ 30
„ chloroform	4½ „ 11
„ simple dietetic treatment	7 „ 12

4. The treatment I recommend is—

(a) Reduce the fever by aconite. (b) Relieve the local symptoms by dry cupping, Junod's apparatus, pediluvia, purgatives, blisters, avoiding as much as possible all obstruction of blood, local and general. (c) Promote expectoration by small doses of tartar emetic, chiefly at the beginning of the disease; and (d) give small alterative doses of mercury, if necessary; and, lastly, rather support your patient by mild emollient diet. In this manner you best avert the tendency to death, and diminish the mortality.

22, Montague Square, London, May 1855.

IMPERVIOUS RECTUM: SUCCESSFUL OPERATION.

By R. M. MANN, Esq.

ON reading the account of Mr. Jacobs' case of successful operation for imperforate rectum, published in our last JOURNAL, I am forcibly reminded of a similar one which came under my notice in May 1853. The mother, who had been delivered by a midwife, brought her child to me, stating that, although repeated doses of castor oil, etc., had been given, no evacuation had occurred since birth, which had taken place several days ago. There was as yet no material abdominal tension, and the general appearance of the infant was healthy. On inserting my little finger, previously oiled, up the rectum, I discovered that it would not pass further than about an inch, and at this point could be felt the membranous obstruction, tough and unyielding, though, as I imagined from the sensation communicated to the finger, not very thick as to its texture. I made up my mind to operate at once, which was effected in the following manner. I passed the sheath of a small trocar, well oiled, up the rectum; and then inserted the trocar itself, carefully pushing it through the obstruction. On withdrawing it, I was rewarded by an instantaneous and free discharge of the meconium. The after treatment consisted in administering castor oil, and passing, at first daily, and then on alternate days, a moderately sized flexible male bougie, gradually increasing the size until I could pass my forefinger. At the end of about ten days or a fortnight, the cure was complete, and the child lived until seven months, at which period it unfortunately became ill of pneumonia, and died.

I will just mention, *en passant*, three other cases of imperforate anus which have come under my own observation.

The first occurred several years since; and, from the supposed extensive obstruction, it was not considered by an eminent surgeon, called in consultation, a desirable one for an operation. This poor child survived *six weeks*, the abdomen meanwhile becoming enormously distended, and marasmus,