

tatingly ascribed by most persons to this effusion. There was no more, however, than is often found in the bodies of persons so much reduced as this patient was. There was less blood in the brain in common with most parts of the body, and to compensate for this, I believe there was a larger amount of serous fluid.

*Duration.*—The perforation of the pleura probably occurred about the Wednesday or Thursday before her admission; if so, she lived about eleven days after that event. The abdominal disease, as far as we can judge by the symptoms, must have been of a year's duration.

In conclusion, this case is at once well adapted to inspire us with a just confidence in the physical indications of disease, and at the same time to point out the limits of their utility. It shows us the indispensable necessity, in the attempt to interpret physical signs, of calling to our aid a thorough knowledge of the endless combinations of anatomical changes produced by disease, as well as of a minute investigation into the previous history and existing symptoms of the disease before us.

#### REMARKABLE SYMPTOM OF DISEASE, AND ITS SPONTANEOUS CESSATION.

A man, forty-five years of age, of a strong constitution, and who had enjoyed good health up to his fortieth year, was attacked with a complicated disorder of the digestive apparatus, with engorgements of the liver and spleen, flatulence, acid eructations, constipation, hæmorrhoids, &c. But the symptom which gave him most annoyance was the exhalation of a fetid odour from all the surface of his body, which supervened an hour or two after each meal. The patient paid a scrupulous regard to cleanliness, and had tried various kinds of remedies without success. After many months some diminution of the evil was perceptible subsequently to an hæmorrhoidal discharge, and it wholly disappeared during the progress of a typhus fever with which the patient was afterwards attacked.—*Allg. Med. Centr. Zeitung.*

*ARSENIC—ITS EFFECTS.*—M. Chatin has drawn the following conclusions from his researches on this substance:—Arsenious acid is absorbed by the respiratory as well as the digestive and cutaneous surfaces. It has very different effects on different animals: its poisonous qualities seem to develop themselves most lightly in those whose respiratory and cerebro-spinal nervous systems are most highly developed, and in whom the poison is the most rapidly eliminated in the urine. The presence of a large quantity of fluid in the pleuræ of animals killed by arsenic is a remarkable occurrence; but M. Chatin leaves to homœopathists to determine whether arsenic becomes thereby a specific for pleurisy.—*Gazette des Hôpitaux.*

## THE DIAGNOSIS, PATHOLOGY, AND TREATMENT

### OF TYPHUS FEVER.

By GEORGE ROSS, Esq., Surgeon, Enfield.

#### No. IV.

THE concluding observations of my last paper were reprobatory of too confiding a reliance on the theoretical reveries of the older medical authorities, as such reveries were commonly very slenderly based upon facts; but when facts lie equally open to the apprehension of all men, and depend less for the attainment of a correct knowledge of their value upon experimental inquiry than upon observation, I believe that the earlier physicians are worthy of the highest credit. For this reason I shall occasionally appeal to their testimony on the symptomatology of fevers, in corroboration of the pathological grounds upon which the succeeding classification is founded. These authors admitted two principal divisions of typhoid fevers,—the putrid malignant typhus, and the slow nervous fever. To these two other forms were added,—the inflammatory and the continued types. The continued fever of those days was of a very vague and changeable nature, and sometimes embraced a disease that bore no relation to typhus. Cullen happily systematised the floating notions that had prevailed during preceding years: he essayed to prove the essential identity of continued fevers and intermittents by the fact of the diurnal exacerbations observed in the former; and certainly human ingenuity has been seldom more successfully employed in applying such meagre evidence to the confirmation of its principles. This opinion is also gaining ground, but I do not think that the evidence hitherto brought forward warrants such a position. The similitude dwelt upon by Cullen justified a suspicion, and no more; but a state of doubt is always a state of dissatisfaction.

#### *Intermission in Typhus.*

My observations have conducted me yet farther on the same track, and have proved to me, most unquestionably, that not only are there daily exacerbations in typhoid fevers, but also intermittent periods of the quartan type, defined by an augmentation of all the febrile symptoms. These intermissions are most accurately observed at the onset; but, by prompt treatment, these periods can be maintained, and the disease relieved before the series of symptoms has become obscure. I shall prove this, during the progress of this paper, by a brief detail of cases. I have already stated the opinion of Chomel and

Louis, that the petechial eruption appears on about the fourth day; and Huxham, a writer of amazing correctness and graphic power, says, "The eruption of petechiæ is uncertain, sometimes they appear the *fourth* or *fifth* day, sometimes not till the *eleventh*, or even later." These observations exactly coincide with my own. Moreover, the days on which I have usually remarked an exacerbation of the symptoms in typhus, have been the fourth, seventh, tenth, thirteenth, and thus progressively at each quartan period. Neither the common nor the petechial character of typhus causes any aberration from this law; and it will be observed that, both according to my own observations and those of the authorities quoted, the petechiæ are developed on one of these days of exacerbation. It is true that the petechiæ have been sometimes first observed on the fifth, eighth, and eleventh days; but this fact tends to prove more decidedly that the petechiæ were the effect of the exacerbation of the previous day, although not brought under the cognisance of the practitioner until the day succeeding. Errors of observation of this description are very common.

This evidence, derived from the petechiæ, allies this disease equally to the eruptive fevers and intermittents. The term continued fever, therefore, is improper, and conveys an idea of an erroneous principle. Although the intermission in typhus establishes an analogy between it and ague, yet their identity in nature and cause is by no means proved, since simple neuralgic complaints, and all diseases implicating the nervous system, are generally intermittent; therefore intermission can be considered only as a symptom common to various diseases, and its cause is yet to be investigated.

These objections are invalid respecting the identity of simple continued fever (commonly so called) and typhus, which stands upon evidence of a different kind. I need not repeat the facts and arguments from which I drew the principle of their common origin and nature, modified by various circumstances of health and idiosyncrasy to the various characters they assume. A continued fever may, therefore, oscillate between the inflammatory type and the low typhoid, and still be, generically, the same.

#### *Examination of the Doctrine of "Crises."\**

Returning to the subject of intermission, we observe that there are two semi-diurnal exacerbations; the first or morning exacerbation, commencing between eight and ten, a.m., and terminating about noon; the second, or evening exacerbation, commencing between seven and eight, p.m., and termi-

nating about midnight. These periods are, however, subject to some variety in accordance with numerous contingencies; there are also two semi-hebdomadal periods which occur with a great degree of uniformity. The doctrine of "crises" is as old as Hippocrates, and has received powerful support from some of the most eminent physicians. For a lucid and vigorous exposition of this doctrine I refer the reader to Cullen. The critical periods, though depending on the same causes, constitute, however, a different principle to that inculcated by the doctrine of intermission. The mode by which the critical days were determined had also only a very slight reference to periodicity. The proceeding was thus:—The days of the *termination*, favourably or otherwise, of cases of fever, were noted down, and in proportion to the majority of terminations of the febrile state on any particular day it was called critical, so that in each case there was only one critical day, and, of course, this crisis could not be determined until it had taken place. Cullen has said that until the eleventh day the critical periods assume the tertian type; after that period the quartan. The quartan periods fall on each day *after an exacerbation*, and these are usually the periods of a favourable termination. In other respects there does not appear to be much affinity between the two systems of succession. This confusion may, in some measure, be attributable to Cullen, who, in order to make the periods square with his notions of the commencing tertian type, has confessed to having erased the fourth and sixth days from the critical number on the ground that they must have been irregular. Thus it is that records become perverted to enable them to assimilate with a preconceived system: a mere theorist is too much like the tyrant Procrustes, who cut short the legs of his prisoners, or stretched them by pulleys, until they had acquired the dimensions that corresponded with those of his iron bed. On the whole, I do not believe that much faith is to be given to the occurrence of fixed critical days at any period of fever, more especially at its commencement.

The quartan periods that I seek to establish, as accompanying typhus, render as clear an exposition as can be expected of the doctrine of critical days. A disease may terminate on a day of exacerbation by the supervention of perspiration, or by the sudden depression of the vital powers, now become too feeble to accomplish the necessary febrile action; or it may apparently terminate on the following day when the system calmly reposes after the previous struggle. Thus, the critical days, although not arbitrary, but really founded in the laws of nature, lose much of their mystery, and much also of their factitious importance. This fact of intermission I have often observed, and now, since the principle has become

\* I refer the reader to two ingenious articles on Periodicity, by Dr. Laycock, in past numbers of THE LANCET.

firmly rooted in my mind, I find but little difficulty of tracing it in all cases. I strove long and arduously at first to ascertain and establish its real value, of which I am now confident.

#### *Classification of Typhus.*

In order that my mode of treatment may be better understood, I shall now give a brief classification of typhus. There appears to me to be three distinct species of typhus, each of which may run its course independently of the others, or each may run into the others. They are, therefore, truly, mere varieties of one disease; but it is necessary to distinguish them in order to set up certain prominent landmarks for practice.

These species are typhus communis, typhus petechialis, and typhus hecticus. The only difference existing between the two first of these species consists in the petechial character; but as this symptom constantly attends the disease during particular epidemics, and is altogether absent during others, I think that we are justified in considering it as an important species. Moreover, in a practical view, petechial typhus is more obnoxious to hæmorrhage, and to serious internal congestions, than the first or common type, and consequently demands a more watchful attention; each, however, is susceptible of four similar subdivisions. In making these subdivisions I shall make use of the phraseology of Cullen.

1. Synocha, or the inflammatory variety, in which, from the violence of the fever, organic inflammation becomes established.

2. Synochus, or the mixed variety, commencing with ardent febrile symptoms, and terminating with low typhoid.

3. Typhus mitior, in which the inflammatory stage is transient and scarcely observable, but the disease commences and ends with pure typhoid symptoms.

4. Typhus gravior, or the putrid malignant fever of the old authors, and an extreme form of the last variety.

#### *Nature of Typhus Hecticus.*

Typhus hecticus is, however, the most fatal form which this disease can assume. When it attacks the patient primarily, it may be either slight or severe; if slight, the more insidious; if severe, the less under the control of art; it is the adynamic fever of the French, and the low nervous fever of the older writers. The algide form of fever seems also to be a variety of it.

I have used the term "hectic," as it is well understood by the profession, and because it explains a state of things arising from the same cause as hectic fever in all other diseases, namely erysipelatous affection of the mucous membrane of the bowels, and because the symptoms that accompany this kind of fever are those commonly ascribed to hectic. Lest the reader should think that

my judgment may be swerved by too strong an inclination to generalise, I shall quote a minute account of the symptoms of this variety from Huxham, one of the most acute and sagacious discriminators of disease that England has ever produced. After a few preliminary observations, he says, "The pulse, during all this time, is quick, weak, and unequal, sometimes fluttering, and sometimes for a few minutes slow, nay, intermitting; and then, with a sudden flush in the face, immediately very quick, and perhaps soon after surprisingly calm and equal; and thus alternately. The heats and chills are as uncertain and unequal, sometimes a sudden colour and glow in the cheeks, while the tips of the nose and ears are cold, and the forehead at the same time in a cold dewy sweat."—"The tongue, at the beginning, is seldom or never dry or discoloured, but sometimes covered with a *thin whitish mucus*; at length, indeed, it often appears very dry, *red*, and chapped, or of the colour of pomegranate rind."—"The delirium is seldom violent, but as it were a confusion of thought and action, muttering continually to themselves, and faltering in their speech."—"Frequently *profuse sweats* pour forth all at once about the ninth, tenth, or twelfth day, commonly coldish and clammy on the extremities; oftentimes very *thin stools are discharged*; both the one and the other are colligative, and very weakening." Lastly, involuntary excretion and subsultus tendinum "are preludes to a *general convulsion* which at once snaps off the thread of life." Had it been our wish to have described hectic fever as occurring during the course of any severe disease, we could not have given a more correct account. The appellation, too, as regards typhus, is peculiarly applicable, as this variety often supervenes on the common or petechial form, and exists as a secondary affection. When it occurs under such circumstances it increases in a manifold degree the danger of the patient. Relapses after typhoid cases are generally also of this character.

#### *Diagnosis between Typhus Hecticus, and Muco-enteritis.*

We must not, however, confound this variety of typhus with idiopathic inflammation of the mucous membrane of the bowels, a complaint that occasionally prevails after an epidemic typhus, but bearing to it no pathological relation, except as regards the mucous membrane. The symptoms are very similar, but not so severe, and delirium is less frequent. Of one hundred and ten cases of this kind that have lately fallen under my notice in individuals of all ages, and attended by every variety of complications, I have observed delirium in five cases alone, and in these it evidently depended on congestion of the lungs. In typhus hecticus, delirium, or at least severe pain and weight at the back

and top of the head, is a constant symptom. This affection is frequently epidemic, and appears to me to be the disease particularised by Sydenham as the continued fever of 1673-74, 75, as there is a strict correspondence in symptoms. The same affection chiefly attacking the lungs, passes under the name of influenza. Sporadic cases, in which the intestinal mucous surface is the seat of disease, very much resemble simple continued fever. I have thought it necessary to dwell for some time on the nature and varieties of typhus to facilitate the comprehension of my treatment.

#### *Treatment.*

I am desirous that the following plan of treatment should be weighed independently of any facts and arguments declared in the foregoing papers, and tried and judged by the practitioner on its own merits alone. That the treatment is in union with the arguments, and seems almost necessarily to flow out of them, I do not deny; but I would rather that each should be considered independently of the other, and that the corroboration of one should be found in the truth proved experimentally to exist in both. If the treatment be wrong, it is no reason that the doctrines should be; and if the doctrines should be proved false, still the treatment may be found useful; and if both are right, they testify to each other.

Emetics, and calomel in large doses, not given merely as a purgative, but with a view to its specific actions, constitute the foundation of this treatment. Emetics were much employed and warmly advocated by Sydenham, who imagined that their good effect depended solely upon dislodging bilious matter accumulated in the stomach. Sounder views have now obtained respecting the action of emetics, and they are regarded as among the most powerful means we possess of removing abdominal congestions, and of determining to the external surface. There is, moreover, a sedative effect on the system by the maintenance of a state of nausea through their means. Calomel may be said to exert three different primary modes of action, namely, a stimulant, purgative, and sedative, which are dependent on the extent of the dose employed. If this drug be given in the usual dose of two grains every four hours, it acts as a stimulant of the absorbent system; if the dose be increased from five to fifteen grains we obtain its aperient effects; but if the larger quantity, varying from one to two scruples, be administered, its sedative qualities are promptly and efficiently observed. Practitioners are not in the habit of employing such doses, from an apprehension of their violent purgative action, but this dread is altogether illusory; for I have never found calomel thus given produce an unusually abundant evacuation. On the contrary, its effects on

the intestinal canal are sedative, and I have occasionally administered it in these large doses, with the view of allaying obstinate irritability of the stomach. The evacuations seldom amount to more than three, even if the calomel be combined with a scruple of jalap, and these evacuations are evidently composed of bile, being at first of a dark-green colour, and, at length, sometimes black. The last colour depends, I apprehend, in a great measure, on the protoxide of mercury,—a result of the decomposition of the calomel. It is not improbable that in the case of ulcers of the mucous membrane this preparation may effect their cure in the same manner as when externally applied. The property of calomel of allaying inflammatory action, removing congestion, and preventing effusion, is well established, and therefore requires no comment. I have now employed this remedy in these doses nearly a hundred times, and always with perfect safety to the patient. I shall adduce six cases of typhus, of the most severe character, thus treated, and in which its effects were rapid and decisive.

#### *Summary of Cases.*

M. W., ætat. 21.—Nov. 26. Pulse quick, compressible; tongue blue under the mucous membrane, red at the tip, covered with a dirty looking fur towards the centre and root; skin perspires freely at various times, especially during the nights; urine scanty, light colour, excess of urea and phosphates; bowels rather confined; pain in the head and loins; flushings and rigors, especially in the forenoon and evening; general lassitude. Was first seized with rigors yesterday, the 25th.

Rx *Powder of ipecacuanha*, twenty-five grains, to be taken at night.

Rx *Protochloride of mercury, powdered jalap*, of each twenty-five grains. Mix for a powder, to be taken on the ensuing morning.

Rx *Nitrate of potassa*, a scruple. Make a powder, to be taken every four hours.

After having taken the emetic great irritability of the stomach set in, so that she rejected everything she took; the fever, however, did not increase.

On the 28th I understood that she was worse, and ordered the aperient to be repeated; but I was unable to see her, and have made no note of her case until the seventh day.

Dec. 1. Pulse quicker; tongue loaded, face flushed, and general fever. Not so well; delirious; her neck and breast covered with petechiæ. Repeat the aperient powder.

2. Pulse firmer; tongue cleaner; skin warm, and often moist; urine becoming copious; "has not had any hot fit since yesterday."

3. Better; rather salivated.

4. Not so well; pulse quicker; skin rather dry and feverish; tongue clean; complaints of extreme weakness; appetite, however, good.

R *Powder of ipecacuanha*, a scruple, to be taken immediately.

6. Much better, sitting up.

12. So well as to be washing linen.

This woman suffered under a relapse on the 31st of December, being a quartan period. For the previous fortnight she had daily walked the distance of a mile over a hilly district for the medicines for the family, and during the week previous to her second attack had washed, each morning, the foul linen. She had also only a very scanty supply of food, and that was of the worst kind. Every circumstance, therefore, conducing to bring her to the grave. She died on the ninth day. The fever was of the hectic type, and there was evident gastritis. Calomel was not given during the relapse, which I now regret.

E. W., ætat. 14.—Nov. 20. Presented the same symptoms as appeared in the former case.

R *Powder of ipecacuanha*, fifteen grains, to be taken immediately.

R *Protochloride of mercury*, powdered *jalap*, of each fifteen grains. Mix for a powder, to be taken four hours after having vomited.

The symptoms of fever abated, and she appeared to be in ordinary health until

Nov. 23, when she was again seized with flushings and rigors, and all the usual symptoms of febrile action. Petechiæ on the neck.—Repeat the emetic at bedtime, and the aperient powder the next morning. The same intermission of the symptoms ensued, although it was not so complete as before; but on

Nov. 26, I find that she was again in high fever; tongue much loaded, although moist; pulse quick and soft; skin dry and hot, although occasionally perspiring; pain in the back, abdomen, and head; great depression, lassitude, rigors. There was every appearance of a confirmed typhus. These symptoms continued, with delirium, in almost equal intensity, until Tuesday evening, the 29th, when she took another emetic and aperient, and on the following day,

Nov. 30, every symptom abated, and she was sitting up. There was no perceptible evacuation otherwise than that produced by the medicine.

The usual medicines, it will be remarked, were not ordered on the 26th, and it is highly probable that on this account the febrile symptoms continued unremittingly during the next three days.

E. W., ætat. 25.—Dec. 6. This woman's symptoms are recorded in my first paper, but, in addition, I must observe that she was in the fourth month of gestation, and,

consequently, due consideration was required in the treatment. Assured, however, that the calomel would not violently affect the bowels, I was not deterred from prescribing it. I therefore ordered the usual emetic at bedtime, with a scruple of calomel and *jalap* the following morning.

7. Febrile symptoms abated.

9. Very much worse; tongue dotted, with a thick, white fur, dry and yellow in the centre; lips blue, sordes; skin dry, though somewhat moist at night; pulse quick, weak; bowels confined; urine scanty and cutting; great pain in back and right side, under and laterally to the mamma; febrile heat and rigors, with sense of coldness; delirium. Repeat the aperient powder at bedtime.

10. Tongue cleaner, but clammy (appearance of incipient salivation); skin still dry; bowels open several times; still considerable delirium and acute pain in the right side; petechiæ. On the 11th I have not made a note.

12. Better; tongue cleaner; pulse firmer; skin perspires at night; not so much pain in the head, and delirium. (This usually is the period of the quartan exacerbation; but I copy the notes faithfully as recorded.)

15. Tongue not so clean, rather dry; pulse quicker; face and neck highly flushed; eyes suffused; great pain in the head; increase of febrile symptoms. Repeat the emetic powder at bedtime, and the aperient powder next morning.

16. Better; could sit up if her head were not in so much pain.

17. Tongue cleaner; pulse less frequent; skin moist; fever abated. Sitting up.

These three cases were caused by contagion from the brother, who was lying ill of typhus at the same time. He was bled at the commencement, and treated with salines and the usual routine remedies, and suffered for the prolonged period of four weeks and four days before a manifest change took place. I observed, however, the same periodical changes in him as in the others, although they were much more obscure, and occasionally very doubtful.

These cases were the most unfavourable that could have been selected for the trial of a new mode of practice, on account of the extreme filth and destitution. These circumstances, however, more strongly confirm the value of the remedy, and it is under such circumstances that I solicit its future employment.

J. S., ætat. 50.—Dec. 12. Pulse quick, weak; tongue dotted, furred, but moist; skin dry, flushed; urine scanty; sense of chilliness down the back; rigors; great depression. His daughter is just recovering from typhus; another daughter is also suffering from it.

R *Powder of ipecacuanha*, twenty-five grains, to be taken immediately.

Rx *Protochloride of mercury, powdered jalap*, of each twenty-four grains. Mix for a powder, to be taken every four hours.

A decided intermission ensued upon these remedies, and he felt but little fever until Dec. 15th, when an exacerbation took place. Repeat the emetic powder at bedtime, and the aperient powder the next morning.

17. Well.

The following was a sporadic case:—

W. P., ætat. 38.—Dec. 21. Pulse frequent, full, soft; tongue red edges, moist, yellowish-white fur in the centre; skin dry, but occasionally moist; face flushed; bowels not open; urine scanty, yellowish-green colour, acid, containing a large quantity of phosphates, excess of urea and oily matter. Complains of pain in the back and limbs, stupor, but no pain in the head; lassitude. Was first seized with chills and languor on the 18th, this being, therefore, the fourth day; on the next day he was somewhat better, but continued ailing until to-day, when the symptoms became much aggravated; has been declining in health for some time.

Rx *Powder of ipecacuanha*, half a drachm, to taken immediately.

Rx *Protochloride of mercury, powdered jalap*, of each half a drachm. Mix for a powder, to be taken four hours after the emetic.

Dec. 23. Is much better, as he was also yesterday; pulse less frequent; tongue cleaner; less stupor and powerlessness. Repeat the emetic at bedtime, and the aperient powder the next morning.

24. Better; pulse natural in frequency, soft, with a thrill; tongue still red at the edges, but fur less compact; urine still continues in the same state, but higher coloured; bowels open; skin moist.

16. Much better; sitting up.

The next case was presumed to arise from infection, but the evidence was not clear enough to determine with certainty.

J. W., ætat. 35.—Nov. 27. Pulse frequent, weak; tongue dotted and loaded; skin dry and dusky; bowels not open; urine scanty; extreme depression; pain in the back, head, and limbs; pain and tension of the abdomen; complains of chilliness along the back.

Has been brought within these few days from a distance of fourteen miles, having been attacked with rigors and the usual febrile symptoms, and fearing that he was suffering under typhus, which prevailed extensively in that neighbourhood: the symptoms corroborated the suspicion.

Rx *Powder of ipecacuanha*, twenty-five grains, to be taken immediately.

Rx *Protochloride of mercury, powdered jalap*, of each twenty-five grains.

Mix for a powder, to be taken four hours after the preceding.

29. Symptoms improving; tongue moister and less furred; pulse less frequent; less stupor; less pain in the abdomen.

30. Not so well to-day; pulse quicker; face flushed; skin drier; prostration greater. Repeat the emetic immediately, and the aperient powder at bedtime.

This man had no exacerbation after this, but continued to improve. He has told me since that he was sure that the powders snatched him from the grave. In all the cases in which this treatment was adopted the relief was so decided and immediate that the patients themselves never failed to express their satisfaction; and in those families where contagion was doing its utmost in the work of death, the patients or their friends invariably asked for the powders on the appearance of an exacerbation.

#### *General Remarks on the Treatment.*

The foregoing cases are selected from among the worst that came under my notice, and demonstrate most clearly the value of this mode of practice in typhus. In each case a decided remission of the symptoms was observable on the day succeeding that of the employment of the remedies, and became on the following day even more evident. The convalescence, on every occasion, was remarkably brief, for the patient was commonly restored to his usual health in the course of a week. The disease was incontestably shortened in every case, and the dogma that typhus is a disease that must run its course despite our various resources, is no longer of any authority. Calomel, given to the amount of two or three grains every four hours, is the common routine practice of many physicians, but I believe it to be, in the majority of cases, an useless and perhaps a dangerous mode of administering the remedy. It is thus given until the mouth becomes affected, but it too often happens that the patient sinks under a violent diarrhoea, and the calomel was given in vain. These small doses, though frequently repeated, are apt to become involved in the mucus loading the bowels, or even, if absorbed into the system, they do not affect it sufficiently to control the fever, which, obtaining strength on each exacerbation, becomes at length so overpowering as to baffle all our art.

A larger quantity than one drachm, given in three doses, at intervals of two or three days, is seldom required on the plan I advocate, but on the system of administering two grains every four hours, during the space of two or three weeks, four drachms are not infrequently prescribed. I strongly believe that the accumulated effects of the drug thus administered often produces that hypercatharsis which terminates the life of the patient. Calomel, in large doses, should be given at the onset of the fever, when the powers of the system are not too greatly re-

duced; and I should as strongly reprehend the employment of half a drachm of calomel in the state of collapse, as I do the administration of a few grains every four hours, the effects of which do not take place until the patient is already dying of the disease.

The calomel restores to the lymphatics their healthy action, abates the febrile symptoms, removes the internal congestion, and, by unloading the liver, causes the diseased red particles to be eliminated at an early period of the malady. I have seen the most beneficial effects result when the drug had produced no action on the bowels, proving that its sanative powers did not depend upon its purgative qualities; but if relaxation of the bowels be not produced I should always advise the administration of an aperient, in order that bilious matter may not remain in the intestine, and cause irritation.

#### *Value of Blood-letting.*

Blood-letting is very seldom necessary in typhus, and if the foregoing practice were uniformly adopted the cases requiring it would be still fewer. In synocha blood-letting is a valuable adjunct to the other remedies; but the use of the lancet in true typhus is, according to my experience, positively injurious. The value of blood-letting, in a great number of cases, consists in ensuring a prompt action of the medicine employed, but even in this point of view it is unnecessary in typhus. Presuming that the whole system is affected by a specific action, how can you diminish that action by drawing off a small portion of the blood affected? The quantity of the fluid may be reduced indeed, but its quality remains the same. You cannot check fermentation by withdrawing a certain amount of fluid from a vessel containing a fermenting liquid. The circumstances in typhus are precisely similar. There is, moreover, seldom sufficient febrile, or rather increased action in typhus, to admit of the use of the lancet.

#### *Value of Salines.*

The next remedy of consequence in the treatment of typhus consists in the administration of salines. Before I adopted my present practice I constantly employed them, and, certainly, with benefit. They cannot diminish the duration of the disease, or, at least, not perceptibly, but they moderate its violence, and ensure a favourable termination. The nitrate of potash, in doses, averaging from ten grains to a scruple, three times a-day, is the best remedy of this class, and, owing to the large quantity of oxygen contained in its composition, it acts beneficially, in all probability, by conveying this necessary element to the blood. I have not employed it much lately, because I have not required it; but if any case promised to be intractable I should administer it with confidence. It lowers the pulse and diminishes

the heat of surface, but its more useful action seems to reside in its power of producing yellow mucous evacuations, which authorise a favourable prognosis. This effect seems to be a consequence of its action on the red particles and the liver.

#### *Use of Stimulants.*

The employment of stimulants in typhus has been a point of great consideration among physicians. I believe that a large quantity of any stimulant is seldom necessary; if it be given when it is ought a small quantity will suffice to sustain the faltering powers of nature, but if given too late the largest quantity will seldom produce any effect. Whenever the edges of the tongue begin to grow moist, even if the skin remain dry and harsh, stimulants may be administered, and, in consequence, the pulse will fill, a genial glow will warm the surface of the body, and perspiration will ensue. The amount of stimulant usually given is, however, too large, and at intervals too distant from each other. Brandy, I believe, to be the best, and a teaspoonful of this, diluted with an equal quantity of water, and given every half-hour, is the best mode of its administration. In this way a patient, taking it from four or five in the morning till six at night, may drink four ounces, a quantity sufficiently large for every beneficial purpose. Thus exhibited I have seldom witnessed any affection of the head to take place.

My space will not allow me to enter largely, as I originally intended, upon the various subsidiary means requisite for the re-establishment of healthy action. Free ventilation, a moderately dry atmosphere, cleanliness, and a frequent attention to the numerous wants of the patient, are absolutely necessary.

#### *Conclusion.*

I have now brought these papers to a termination, and shall be glad if the views expressed in them meet with the approbation of the medical public. The genius of Liebig has furnished to me a mode of determining many points that might otherwise have remained in obscurity; and, of course, much of whatever credit may attach to these papers must reflect on that illustrious physiologist. I shall be satisfied if it be considered that I have contributed, even in a small degree, to deprive a formidable disease of the mystery that formerly enveloped it; and if the treatment, which I have advocated, be found equally as successful in the hands of others as in my own, no slight benefit will have accrued to medical science.

COMPLIMENT TO THE FACULTY OF GRINDERS.  
—The "authorities" at Guy's Hospital have appointed three "tutors" to impart private instruction to the students. The three gentlemen are Dr. Thomas Williams, Dr. Gull, and Dr. Nevins.