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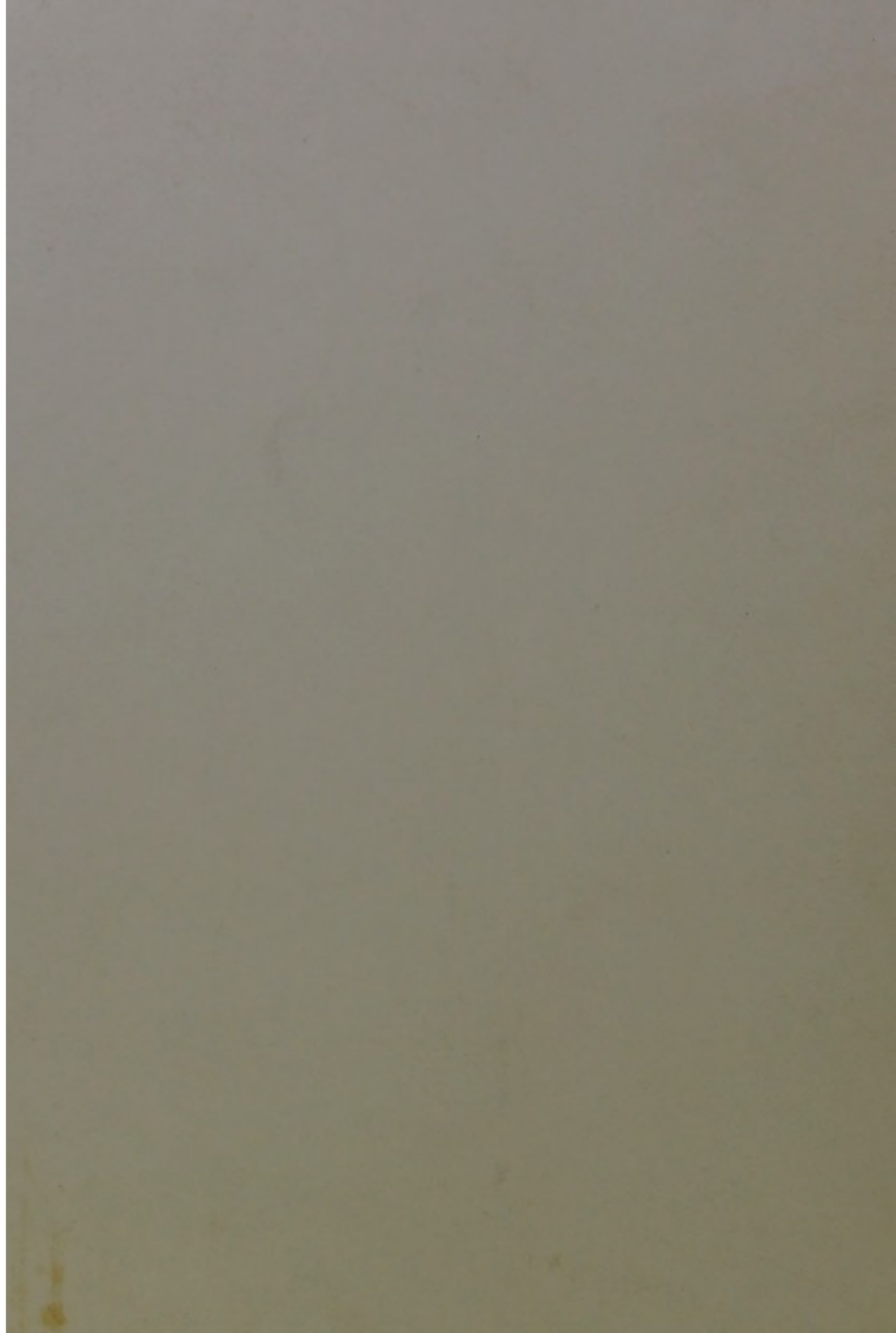
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CLINICAL OBSERVATIONS.

A CHAPTER IN CLINICAL MEDICINE. WHAT TO OBSERVE IN DIPHTHERIA.

By W. OGLE, M.A., M.D., Cantab., Physician to the Derby Infirmary.

IT is generally acknowledged that clinical records are very unsatisfactory. They are either too long or too short; too diffuse or too curt; too particular or too indefinite; too opinionative or not sufficiently attested; or, more commonly, they have all these faults in combination. They are diffuse and opinionative on some points, even egotistical, *usque ad nauseam*; and therein they are too long and too particular; at the same time, they are too general, or altogether silent on other matters, and this makes them lifeless, and practically too short. These defects are easily seen when the work is done; one's own notebook is full of them; the difficulty is to avoid them *ab initio*.

Each fault may be traced more or less directly to a common origin—the want of method. This paper therefore, is, in the main, directed to the advocacy of *Method in Clinical Medicine*. Diphtheria is chosen simply as an opportune illustration.

The first step towards the cure of a disease is to understand its nature and essence; we care not so much for its name, as for its nature; and its nature cannot be fully understood, without searching into its cause or essence. In the same way, when we wish to remedy any other evil, such as that which is before us, we begin by making a plain statement of existing defects; and, having done this, proceed at once to inquire into their origin.

The faults that have been specified may be classified into those of omission; those of repetition; and those of substitution of opinion for fact, with their opposites. Each of the three

requires separate notice; their opposites, being less common, need only be mentioned by way of qualification; for it must not be deemed an excellence to exclude every expression of opinion, to condemn repetition under all circumstances, or be thought possible that a record can be made so perfect as to give *every* important particular.

In any case of sickness, there are so many things which might be recorded, that the omission of some of them is a necessity. But as we cannot tell, *à priori*, what to omit, the difficulty can only be dealt with indirectly; and the first thing which seems worthy of note is, that the inconvenience does not arise so much from the fact that certain characteristic features of a case are omitted, as that those which are recorded are presented in no definite order, and without reference to any plan.

The rule that is for the most part followed, if rule it can be called, is for each person to note the facts, which, at the time of observation, are most striking to himself. But the same facts are not always equally pronounced in any two cases of the same disease; nor in the same case on any two occasions; nay, further, in the same case, and at the same time, the same facts will not arrest the attention of even two, different persons, if they act independently of each other. Different people omit different things, because they do not agree to record the same things; and facts, which ought to be mentioned together—almost in the same breath, are dissociated, because they do not happen, at the time of observation, to be equally striking.

It is not till we attempt to compare our records, that the inconvenience of this is perceived; but then it is too late to supply deficiencies. Prevention is the only cure; a definite plan of observation is the obvious remedy. If a plan be used, be it ever so imperfect—let it comprehend but one half of the characteristic features of the case—yet those that are recorded will be the same in all. As the same plan has been used in all cases, analysis will be easy; and each record will contribute, either by way of confirmation or of correction, to the former store of knowledge. Thus a plan has a constant tendency to reduce the number of omissions, and, meanwhile, by ensuring uniformity, it lessens the evils which arise from those that exist.

The objection to a plan that it is too troublesome to use, is not to be ignored, nor, on the other hand, is it to have more weight than its due. It is in accordance with our experience in other matters that method, in the end, saves time, and, therefore, trouble also. It is pre-eminently so in the study of medicine. With a plan, the work of to-day will further and make more complete that of yesterday; without a plan, we do and

undo with the same hand: we know not whether of the two, the more. But as a present trouble, though a minor one, has always more weight than an advantage which is wholly prospective, the objection must be kept in mind, and all that we can hope for, is, that it be not pressed until the plan itself and the mode of using it have been explained.

The second fault, that of repetition, has been already dealt with to a certain extent; this was unavoidable. Repetition is a fault very closely allied to that of omission, and the remedy is the same for both: it will however be useful to examine this fault by itself, and to trace it to its origin.

Under all circumstances, and especially in "case-taking," we should be careful always to finish one thing before we turn to another. It is obviously most difficult to avoid digressions, where every striking fact is a temptation to start aside. Unless we have some monitor continually at hand to warn us, we obey the impulse without a thought. Nothing is more common in a clinical record than to speak first of the pain (say in the head); then to start off to the condition of the tongue, pulse, etc.; and then finding, perhaps, that the pain ought to have been more fully described, we return and mention it once more. It may be, that now we discover that sickness often accompanies the pain; and this takes us back to the state of the stomach, and thence to the bowels, till we meet with some other fact that sends us once more to the nervous system. The result is, that a confused and ill-defined picture is left upon the mind, which is, to say the least of it, very unsatisfactory.

The remedy for this needless repetition is the same as that for omissions; we must have a plan of observation; all facts that are of similar import will then be grouped together, and that which is mentioned once, will be mentioned once for all. The plan must be such an one as will serve for general use; every other that special circumstances may require, must be based upon the general one. The determination, "*what* to observe" must be left, to a certain extent, an open question; otherwise we should be at fault in the investigation of every new disease, *i.e.*, under the circumstances which, of all others, most require us to proceed in a systematic manner.

But besides the natural grouping of the symptoms, there is a proper order to be observed. Thus, the condition of the tongue, of the stomach, and of the bowels, are facts, which not only naturally come together, but they arrange themselves in the order suggested by the anatomical relation of the parts. Similarly, in examining the chest of a patient, it is natural for

the observer to state first the symptoms which first present themselves, and afterwards those which are elicited upon a more close investigation. The shape of the chest; comparative expansion of the walls; condition of the muscles of respiration; are phenomena which present themselves to the mind, before those which are obtained by means of percussion and auscultation: still further, in listening, the sounds during inspiration come before those of expiration; and both, before the sounds of resonance; and of these again, cardiac resonance before vocal resonance; this, therefore, is the order which should be observed. Both the order and the association of symptoms are determined by simple considerations, which commend themselves at once, as being in accordance with nature. By taking advantage of these, one great objection to a plan—that it is burdensome to the memory—is removed. On the contrary, it is an assistance to it; whereas if the natural order is interchanged or reversed, the probability is, that some particulars will be forgotten; or, at least, an idea of incompleteness is left upon the mind.

The third fault, that of stating a conclusion, when a fact might be given instead, requires something more than the use of a plan for its removal; though it is less likely to occur with a plan than without one.

A case may be related with considerable fulness, and with all possible regularity and order, yet it may both be unsatisfactory as it stands by itself, and useless for comparison with other histories of the same disease; and all, because the observer has given the conclusion he has come to, instead of the facts on which his conclusions rest. Though the use of a plan will not of necessity remove this evil, it will have a tendency to do so; both by the way in which it will itself require facts and not opinions to be stated, and because the very act of using it implies consideration; the want of which is the principal cause of the defect.

It requires consideration to perceive that conclusions are not so serviceable as facts. Thus it is very common, and at the time seems to be of little importance, whether we say "pulse quick," or "very quick," instead of "pulse 100," or "140," as the case may be. But a moment's thought, and the wish to compare the action of the heart with that of the lungs, or the pulse of yesterday, with that of to-day, or of any other day, are sufficient to show that the opinion, "quick" and "very quick" is of comparatively little value; whereas the simple statement of the number of beats per minute is all that is wanted.

It may sometimes be more easy to draw an inference, than

to state clearly the grounds on which it is based ; but when the value of facts is fully apprehended, the extra trouble that they demand, will not be thought worth mentioning.

Besides this, there are so many things that cannot be given otherwise than as conclusions, that facts are the more valuable, being necessary to give a substance to the history. Of the pulse, the number of beats per minute, and the regularity of the impulse, are facts which we can ill afford to spare, when so many other characters, its being "full," "compressible," "thready," "bounding," &c., can only be given as matters of opinion.

Nevertheless, there are certain general conclusions which, when expressed in a natural manner, impart life and reality to the scene. Such are those which tell of the hopes and fears of the medical attendant, or the reasons for pursuing a particular line of treatment ; but it is necessary that they be introduced naturally ; they must be given with all the freshness which they have at the time that they occur to him, and not foisted in as after-thoughts, than which nothing tends so much to shake the confidence in the truthfulness of the narrative.

This faculty of giving life to the subject without being egotistical, is most difficult of attainment. It is probably very near akin to, if not the natural fruit of, that largeness of heart, which is combined with humility and singleness of aim, and which marks the true philosopher. It is, therefore, worth cultivating for its own sake, though it claims attention in this place on account of its practical value in a clinical record.

Bretonneau's cases are quite a study in this respect ; the reader is carried on with the writer by an impulse almost irresistible ; his interest is excited, and, as a natural consequence, the facts make a much more lasting impression than would otherwise be possible.

It will occur to many, that a plan is likely very much to check the expressions of opinions such as these ; it is continually urged against plans in general, that the use of any conventional method in drawing up clinical records makes them very stiff and destitute of that natural ease which is found in a picture drawn from life. Much, however, will depend upon the kind of plan that is adopted ; if it is true to nature, the fault will not be justly chargeable to the plan. Fortunately a certain degree of stiffness, and that to an extent which would be quite inadmissible in ordinary narrative, is, in clinical medicine, nothing more than terseness and vigour ; and it is to be wished for, rather than not. To hit the proper mean may be difficult ; but few will question, that stiffness and awkwardness of style

is a less fault, than that loose, indefinite, prosing which is so much more likely to occur.

Thus each fault has been traced, more or less directly, to the want of system in making our observations. I have shown, that conclusions are given instead of facts, from want of consideration, and that the use of a plan will ensure the consideration that is needful; that the absence of order, and the needless repetitions, are but the natural consequences of proceeding without a plan; and that, whilst omissions are in themselves of less importance than is the want of uniformity in the facts that are omitted, both are to be traced in great measure to the absence of system in the mind of the observer.

The defects point out the remedy so plainly, and the advantages of a plan are so obvious, that it is almost superfluous to disclaim any credit for originality in the suggestion. The originality consists in the discovery, first, that in framing a plan the qualities which are essential to efficiency are to be attained by a close attention to nature; and secondly, that the mechanical difficulties which prevent persons from using a plan may be entirely removed. If, in addition, the plan that I have adopted shall commend itself, it will of course be a source of gratification to me; but I would prefer to see others adopt my mode of forming a plan, rather than that they should tie themselves to the particular form which at the present time seems best to me. They should take my plan only so far as it is found to be true to nature. The time may come, when parts of the body which now seem to be as distinct from each other as the nerves are from the vessels, may be seen to be as clearly connected as are the arteries and veins; and organs, of which we are now accustomed to speak collectively, may be so much better understood as to make it absolutely necessary to separate their different symptoms. The plan that is sufficient to-day, may at a future time be worse than useless.

Many plans have been devised. For the most part, each man has his own; but neither is any one plan generally adopted by all, nor is it used by the same person for any length of time. One attempt that has been made, though so complete as to leave nothing apparently to be desired, may be taken as a type of all the rest. The London Society of Observation, by the united efforts of several, has elaborated a plan, which the lifetime of one man could not have produced; but the most ardent admirers of this monument of industry, must acknowledge, that it is unsuitable for general use. It is in that respect, like all others that have gone before—a failure. By this, however, I would not be understood to mean more than that, speaking from

my own experience, ordinary persons will be unable to use it. Two reasons may be given for this, without presumption. The habit which some have previously acquired of taking notes after their own plan, makes them indisposed to adopt another; and those who are deterred from using a plan, by the difficulties which attach themselves to even the shortest, are not likely to be attracted by one that has expanded into a small closely printed octavo. It is the length and the complexity of plans that is found so unmanageable. I shall, therefore, take special care that my plan shall be short and simple.

Nevertheless the thanks of the profession are due to the London Society for its praiseworthy attempt to introduce system into clinical study. The existence of the Society, and the issue of its work, mark an era in the history of medicine. The Society is an eloquent (though a comparatively silent) witness to the fact, that the sure foundation of medicine, as of every other science, is to be laid only on the careful observation of facts. So far am I from wishing to undervalue its work, that I indulge the hope that my present effort may be the means of making the volume to which I have referred, more generally used and appreciated. I also, with much pleasure, draw attention to certain records which appear from time to time in the public journals. Members of the London Society of Observation may be supposed to follow the guidance of their own work, in determining "what to observe." Be this as it may, the circumstance is note-worthy, that the reports which appear from the pen of some of the members, are remarkable for their cleverness, fulness, and precision; and they will bear analysis to an extent which can only be fully appreciated by those who have attempted to analyse the labours of other writers.

With this brief notice of that which comprehends, as it is in itself, a type of all that had been previously attempted, I proceed, as if no such attempts had been made; I lead my readers, step by step, over the ground which I have myself traversed in the construction of my plan; so that they may see that its comprehensiveness depends upon the way in which nature has been followed, and how that, under the same guidance and by removing difficulties one by one, simplicity has been attained.

It seems at first sight hopeless to expect that a plan can be devised, which shall be sufficiently comprehensive to include all the facts which ought to be observed, when it is remembered that these may be multiplied almost indefinitely, or, if this be thought possible, the variety of the facts seems to be so great, that we might well despair of making a plan sufficiently simple in its arrangement. These two characters, nevertheless, are

essential. Any plan that is to be really useful, must be so comprehensive as to serve for all cases, medical and surgical, acute and chronic, local and constitutional. At the same time, since "case taking" necessarily implies a certain amount of trouble, the plan must be so simple that the using of it must not add to the trouble materially, nor even at all, unless the immediate advantage is very obvious. Any semblance of inconvenience that may seem to belong particularly to the plan, must be immediately counterbalanced by something to commend it: the plan should offer obvious present advantage, as well as promise that the history itself will, by its use, be rendered more complete, and more practically useful. I believe that all this may be attained; and further, that by simple attention to the nature and requirements of the case, a plan may be devised, which, in principle at least, shall commend itself to every one who cares to use a plan at all.

The almost certainty of coming short of that which is ultimately to be hoped for, and which it is reasonable to expect will be accomplished, does not appall me. I am satisfied to hope that my effort may be the starting point for others, who shall be more successful. To be a finger-post on the road that leads others to success in an important work is, in itself, a sufficient stimulus to exertion, and brings its own reward.

Of the two characters, simplicity and comprehensiveness, which I have specified as essential to efficiency, simplicity is the one that it is most difficult to preserve. Every fresh case suggests additions to, and modifications of, the plan that may have already been determined on. So that unless the outline be very distinct, and unless the headings have been chosen with strict fidelity to nature, so as to be comprehensive, a hopeless confusion is the result of this accumulation of materials.

It is, however, possible to arrange the facts of every clinical record under heads which shall be both few in number and distinct from each other. There are features which are the same in every case, however common it may be, or however peculiar. The uniformity of type, so to speak, is there, though it may be hidden; simplicity will be preserved by bringing it to light. In the first place, there is a division of the facts into *past*, *present*, and *future*, which is inevitable. Every statement must be either history of the past, description of the present, or conjecture of the future. Again, the facts, under two at least of these primary divisions, naturally and of necessity group themselves under different heads, which are distinct from each other, but the same in all cases. For the record, whether of the past or present, is a statement of symptoms; the symptoms

are the conditions of the different organs, or of the systems of the body. These organs and systems are sufficiently distinct from each other to furnish a well-defined outline, and being the same in all cases, the outline is the same for all.

It is in the notes made at the first interview of the physician with his patient, that the divisions into past and present are most noticeable; but between one visit and another, a longer or shorter time has elapsed, during which events have transpired, which are more or less worthy of note; so that in the record of every visit, these natural divisions will exist. Moreover, there is a proper order to be observed. The report of the patient and of the attendants (the past history) forms the proper introduction to the personal observations of the physician (the present condition), whilst the prognosis, which is the conjecture as to the future, follows after all, as naturally as in the case of the other two, the one precedes the other.

In the like natural manner, the "previous history" and the "present condition" have six or eight subdivisions, according with the cutaneous, nervous, respiratory, and other systems of the body. This, therefore, is the natural basis for a plan, and shortness with simplicity is its first recommendation. But notwithstanding this, and that this general outline is so easily discovered in every case, and that the advantages of using a plan are so evident, it is in accordance with the experience of all, that in the use of a plan, practical inconveniences arise, which seem to be insuperable. Under special circumstances, *e. g.*, in the time of an epidemic, a plan may be used; but very soon it is found under ordinary circumstances to be too severe a tax upon the patience, and it is given up. The inconvenience is partly due to a mechanical difficulty, and in part, is the necessary consequence of the attempt to make the plan sufficiently comprehensive. I hope to remove the mechanical difficulty, and I believe that the second source of inconvenience may be materially diminished, without marring the character of the plan for comprehensiveness. If the present attempt be successful, it will appear that in order to introduce system into clinical medicine, it is sufficient to insist upon the merest outline, such as I have already sketched, for ordinary cases; and under special circumstances, as for epidemics and for cases which may be regarded as distinct, or which may naturally group themselves together, and which require more accurate investigation, special plans must be formed, keeping only the general outline the same for all. But whatever be the plan which is approved, the method by which it may be used with facility will be serviceable; so that it is the method of using a

a plan, not the plan itself, that I put prominently forward. Before any plan, even the most simple, can be used, the mechanical difficulty of having separate columns or spaces for the different headings must be dealt with.

It seems at first sight to be necessary that the paper, on which the notes are to be taken, should be divided into parallel columns, or by transverse lines, into as many spaces as there are headings in the plan; but as we cannot tell beforehand which space to make large and which small, the inconvenience of this constitutes an almost insuperable difficulty; hence, the more common practice is to postpone tabulation till the case is complete; then, however, the defects of the history are discovered, and, moreover, its continuity is destroyed. By a very simple device, this inconvenience may be obviated. I find that a method, similar in principle, is constantly in use among Conveyancers; mine will be better understood if I speak of it as a modification of theirs.

In making an Abstract of Title, the particulars are generally arranged under four distinct heads; and yet the writing must be unbroken. In order to this, margins of different widths are used; but always the same width of margin for the same subject. But, whilst "the law," in each subject, keeps the margins for the second and following lines, of the same width as for the first; I use the margin that is characteristic of any one subject (set of symptoms), for the first line only; and the second and following lines, in all subdivisions alike, are written across the whole page.

As a general rule, it is sufficient to have eight subdivisions; seven for the different systems—cutaneous, nervous, respiratory, circulatory, alimentary, urinary, and generative respectively, and one to spare for facts which cannot otherwise be classified. It is convenient to associate a particular number, the same in all cases, with each subdivision.

Number *one* is the number for general remarks, such as the posture in which the patient may be lying, the expression of countenance, the general impression as to his condition, which, though it is a conclusion, yet it is such an one as is often requisite to complete the picture.

Two belongs to the cutaneous system. Under this heading will oftentimes be found facts, which might, perhaps, more strictly speaking, be put under another head, *e. g.*, the flush upon the cheek, the venous hue as to the lips, might be arranged respectively as symptoms of the circulatory and respiratory systems; but inasmuch as this would involve the expression of an opinion as to the cause, and the cause assigned might subse-

quently be proved to be not the primary one ; it is better as a general rule to state the facts simply as the eye sees them, rather than as the mind apprehends them.

The *third* subdivision stands for the nervous system. In this also there will be found facts, which may not be, strictly speaking, affections of the nerves. But, I remark, once for all, that provided the same symptom is always classified under the same subdivision, the exact place that is assigned to it is comparatively immaterial.

Four stands for respiratory symptoms. These are generally distinct from the rest. In no subdivision is the advantage of being able to compare symptoms, *pari passu*, with each other, more plain than in the respiratory. The facility with which, by the proposed method, the respiratory symptoms may be compared with those of the nervous, cutaneous, and circulatory systems, is all that can be desired.

Five is for the circulation. Under this heading also, may be arranged, in accordance with the theory of blood diseases, certain facts which may be characterised as "constitutional."

Six includes the alimentary symptoms, by which are to be understood those that relate to the whole alimentary canal, and to such abdominal organs as are not otherwise specially provided for.

Seven and *eight* are for the urinary and generative systems, and do not need further comment.

This natural subdivision of the symptoms has stood the test of the hurry that is incident to dispensary practice ; so that it is almost superfluous to add, that it is of service in an hospital, and under circumstances where more time is at command. Yet but for the device to which I have alluded, even this simple arrangement could only have been followed in cases that were exceptional. The trouble of dividing one's paper into spaces or columns, might be incurred in studying any particular class of cases ; but, for ordinary use, this would with me, as with others, have soon been thought superfluous and even disadvantageous.

My note-book, though it measures but four and a half inches across, happens to be marked with eight water lines, which run at about half an inch apart, from the top of the page to the bottom. At the top of each page, on the eight lines, the numerals 1, 2-8 are to be* placed. They refer to the different symptoms of the body, but they may represent at will, any other subdivisions. When, therefore, the fact to be noted has refer-

* It is better to place the numbers at the head of the page only so soon as the corresponding symptoms are recorded.

ence, as it must always have, to any one system in particular, the sentence is commenced on the water line, at the head of which will stand the appropriate number. The next and following lines, if any, are carried directly across the page. Thus a cutaneous symptom begins under number 2; a nervous one under number 3, and so on; and if, as may sometimes happen, there is doubt felt under which subdivision to classify any symptom—*e.g.*, whether to mention the colour of the lips as a cutaneous, or as a respiratory symptom—the sentence may be commenced under number 2 or number 4 indifferently; but the first time that the writing passes over the other line, the number should be introduced or a star (*) which, without causing any interruption, would draw attention to the fact that this system also is concerned.

When the principle is once understood, it admits of a great variety of modifications, and becomes applicable, under all circumstances whatsoever, wherein it is desirable to make a classification, without disturbing the existing order of things.

The following case of diphtheria will serve as well as any other for an illustration.

3	4	5	6
Case.—H. A., (æ. 9,) 1, Little Welbeck-street, Aug. 16, 1859.			
The fourth of six children.		One died of morb. cord.	

One of water on the brain.

He is cheerful and remarkably intelligent; his account of himself is given with an accuracy equal to that of an adult; he says that two days ago, after smelling some cayenne, had a sensation of burning in his throat, but that on the following day, he ate his dinner as usual and not till the afternoon did he feel poorly; he then complained of sore throat and went to bed early; this therefore I consider the *first day*.

Second day— Had vertigo. He was also thirsty, and his throat was so painful that he could hardly swallow.

Fourth day—Is reported better under the application of *creasote*.

P. 120. Can swallow, with some, but not much difficulty; app. good; t. inclined to fur; thirst somewhat less; b. not o. since yesterday.

Rⁿ. 28, no cough. The velum palati, and pillars of fauces, deep red, and angry looking; swollen to a somewhat greater extent on the right side, than on the left; behind the rt. pillar is seen a dirty purulent-looking mass; it may be tonsil, but I cannot continue the inspection long enough to determine this, though the patient is submissive and makes a very good throat for me; nor can I say positively that I can see the whole of the surface; it looks more like a ⁺slough than an exudation, but from henceforth I shall call it an exudation as diphtheria is prevalent.

Fifth day.— Says he is better.

Rⁿ. 26, feeble, I can only count it by using the stethoscope; skin cool, no cough; on asking him to breathe through his nose, the right nostril moist, the left rather dry.

P. 104. Between the right st. mastoid and ramus of jaw, I can by feeling for it, find an enlarged gland, and it is rather tender; t. dirty fur over the posterior half; I obtain a better view of his throat,

+ He says his "throat burst twice" yesterday, but he could not bring anything up.

2 3 4 5 6 7
by keeping the spoon on the tongue, till he retches; tonsil as before; the back of the pharynx distinctly seen, is of a dirty green colour, smooth as leather; b. o. twice; app. good.

Sixth day.—2 p.m. At eight this morning had a distressing sense of suffocation; he pointed to the top of the sternum as being the place at fault; he is now lying on his rt. side asleep, and snoring; there is a guttural gurgling, and a dry sound with it, which seems to come either from the mouth or nares, and not from so low down as the larynx; his mouth is open; has no cough.

Rⁿ. 21. P. 112.

The lips are pink and slightly * livid; there is seen beneath the right nostril, but only on very close examination a pinkish stain (as from fluid which had spread there); there are some red spots upon the outside of the finger and thumb of the rt. hand, he is inclined to perspire; but the exposed parts of the skin are cool.

He is rather puffy-looking about the neck and face, but I do not make out any particular swelling; when I feel of his neck, he is disturbed, turns over, but he does not thoroughly awake.

Thus far the treatment has been tonic, and s'implant; cinchona, iron and a little wine; and the topical application at first of nitrate of silver and subsequently of creasote. Antimony is now given; two gr. as an emetic, and gr. $\frac{1}{4}$ every six hours with calomel.

— 8 p.m. asleep. Coughs a little, not in my hearing; breathes with his mouth shut; snoring is more musical, less moist.

Lividity, if any, not * perceptible by candle-light.

Rⁿ. 20. P. 100 very feeble.

Seventh day.—7 a.m.

Not livid. Has had difficulty of breathing, greater than now, at times during the night; dyspnoea croupal; he is constantly shifting his position.

Rⁿ. 20. P. 108. No swelling at angles of jaw, but extension of jaw gives pain; fauces as far as seen look angry red; the top of the slough on the right side, seen with difficulty.

—2 p.m. No redness under nostril, none on finger, nor sign of any; lips rather pale, and rather

* dusky, but not enough so to be noticed if the breathing were not croupal; expⁿ. is rather longer than inspⁿ. he points to top of sternum for pain.

Rⁿ. 20. P. 108. Stools green.

U. normal colour sp. gr. 1031; on addⁿ. of NO₅ and boiling, turns inky; on addⁿ. of KO, a cloud which is not dispersed on boiling, but disappears on addⁿ. of acid.

—9 p.m. Pale; cool; but he is only covered with a sheet.

Restless. Rⁿ. 18. P. 136. Fauces, angry-looking with exudation on both sides; looks like a bad ulcerated sore-throat.

Gives a short cough after every two or three inspirations.

A consultation is held, and it is decided not to perform tracheotomy, but the antimony is to be discontinued.

Eighth day.—8 a.m. Looks lively; says he is better. I now feel glad that tracheotomy was not performed; last night I would have had it done at all hazards.

Rⁿ. 20. or thereabouts; noisy enough to count: sibilant; both inspⁿ. and expⁿ. with distinct effort; cough dry, but succeeds in raising some muco-purulent clots.

P. 112. No swelling at jaw.

No lividity worth notice.

— 2 p.m. A change! Rⁿ. 32. P. 108 failing.

His face is livid and * there is livid pallor of limbs, with coldness; he sits fixedly in bed, afraid to move, with eyelids closed; or lies with his head and limbs outstretched; unwilling in either case to stir till obliged, as if reserving his little remaining strength in order to get breath; gives at intervals an ineffective cough, or suffocative screech.

The change took place two * hours ago; he then could speak, but was tossing about, and as if there were a string round his neck.

Necrosis 22h. after death.

There is redness of the trachæa, and a little membrane in the upper part; it is closely adherent to the ventricles of the larynx, and loose below; at the time that I saw it, after it had been floating a few minutes in water, it had lost its consistence, I was surprised to see so little.

There is some appearance of membrane lining the left nostril, I should not have noticed it, had I not looked carefully for it.

There was a quantity of muco-purulent secretion in the bronchi.

On comparison of the above case with the plan that is afterwards given some omissions will be discovered; had I now the opportunity these would of course be avoided. The case may, however, be taken as a sample of the way in which the general plan may be applied to any case that may present itself, and with this illustration before him, the reader will perceive the following obvious advantages of such a mode of observation.

The numerals at the head of the page, or the spaces that remain unoccupied, continually remind the observer that the record for any one day is incomplete until the organ which that number represents has been passed in review. This is at the time a great assistance, and for the future it is an assurance that any new symptom, which may arise, is not merely something that has existed before, and which was previously overlooked, but that it is, as it seems to be, a new symptom. Again, at the time of attendance the condition of each organ may be readily compared with that of the same organ previously, and thereby each observation acquires additional value; and subsequently, when the case is complete, it is all ready tabulated, without any re-arrangement of the facts, and without disturbing the proper sequence of events; so that the course of any one set of symptoms, either by itself, or *pari passu* with other symptoms, may be traced continuously through the whole. Finally, in after time, when search is made after any particular, which subsequent reading or experience has shown to be of significance; a single glance at the numbers at the head of the page, will tell whether a given case is likely to contain it; and if so, the eye is at once, and without fail, directed to the place where it may be found.

I now proceed to show how that, by taking the general plan for a basis, *special* plans may be formed. I take diphtheria as an opportune illustration of a method which I adopted at the time of the cholera in 1854, and which I have, therefore, since then had opportunity of testing. I cannot too strongly recommend this mode of study, previous to and concurrently with original clinical observation. Under the circumstances

just alluded to, it gave me a degree of confidence, which I should not otherwise have had; it enabled me from the first to turn my own experience to greater account; and it gave a definite aim to acts, which otherwise would necessarily have been more purely tentative and empirical. I venture, moreover, to promise the young student in medicine that such a course of procedure will help him to acquire a habit of accuracy; and his studies in proportion as they are less discursive, will be both more interesting and instructive.

Until we have a special plan for the particular case that we wish to study, the general one must serve. Circumstances more or less accidental, must at first guide us in the selection of the symptoms under each heading. Succeeding cases of the same disease will present some at least of the same symptoms, and, it may be, others in addition. In no long time, by collation of these symptoms we obtain what may be called a typical case, and this is the special plan that we require. We follow, but in a systematic manner, the mental process which in reality takes place in the mind of every careful student, and constitutes that which we call our experience of a given disease. Being performed designedly, the result is both more perfect in itself, and is arrived at more speedily; considerations, both of them, of practical importance sufficient to compensate for the trouble, even if it were much greater than it is. The trouble is, however, as we have shown, much diminished by using the general plan and by adopting the device which has already been explained.

I would gladly acknowledge the sources to which I am indebted for the construction of the plan which follows; but this is impossible. It is my constant practice to analyse, by writing out afresh, every clinical record that I meet with, and which bears upon the subject which I may be studying. The pages of the "Medical Times," of the "Lancet," and of the "Association Journal," with those of the different reviews of the last two years, supplied me in the first place with facts, and more than all, the monographs in the volume issued by the New Sydenham Society. The wards of St. George's Hospital and a few other cases in my own neighbourhood have given me the opportunity of digesting and assimilating these facts to a certain extent; and the form that I have adopted enables me to embody my own limited experience, without speaking dogmatically as to the nature of the disease, or as to the most successful mode of treatment.

TYPICAL CASE OF DIPHTHERIA.

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|---|---|---|---|---|---|
- A. PREVIOUS HISTORY.
- a. General*, i.e., circumstances which relate to others besides the patient.
- i. Epidemic: evidence in proof, or to the contrary; age¹ of it.
 - ii. Contagion: chances to which others² have been exposed.
 - iii. Concurrence of other diseases.
 - (1.) Among men, scarlet fever,³ sore-throat, croup,⁴ measles.⁵
 - (2.) Among other animals.⁶
 - iv. Season of the year; local hygienic influences.
 - v. Hereditary⁷ influence.
- β. Special*,⁸ i.e., Circumstances which relate to the patient only.
- i. Length of exposure to epidemic influence.
 - ii. Supposed source of contagion, date of exposure to it.
 - iii. Existence of other disease prior to present attack.
 - iv. Hygienic⁹ influences.
 - v. First symptom observed, date¹⁰ of it; all future¹¹ dates to be from this.
- B. PRESENT CONDITION.
- Aspect: general condition,¹² debility,¹³ vigilantia,¹⁴ expression of countenance, posture, previous treatment,¹⁵ the effect of it, immediate or subsequent.
- Skin: general hue,¹⁶ rash,¹⁷ desquamation, bullæ,¹⁸ diphtheretic¹⁹ affections.
- Nervous²⁰ affections, intellect,²¹ motion,²² sensation, special senses.
- Respiration: frequency,²³ character, fœtor,²⁴ snuffling²⁵ (nostril), voice²⁶ (larynx), cough,²⁷ expectoration (bronchi).²⁸
- Pulse:²⁹ frequency, force, regularity, effect of posture;³⁰ tendency of blood to coagulate.³¹ External swelling³² and tenderness, thirst, appetite,³³ deglutition,³⁴ state of bowels,³⁵ gums,³⁶ buccal membrane, tongue,³⁷ fauces,³⁸ tonsils, colour and condition of surrounding parts, and of subjacent tissue, exudation,³⁹ age⁴⁰ of it; (a.) in situ; (b.) after removal, as seen by naked eye; as seen under the microscope; the tissues involved; the mode of increase,⁴¹ of departure.⁴²
- Albumen,⁴³ casts, urea.⁴⁴
- C. CONCLUSION. Recovery or death.
- Date of recovery: from time of seizure, from time of commencing treatment, from time of relapse.
- Do. do. of death: post-mortem appearances.⁴⁵

Remarks.

1. The character of an epidemic varies so much in its progress, that it should always be stated how long it has been prevalent.
2. Members of the same family, or of the same household but not of the same parents (*e. g.*, children in a school, patients in an hospital, casual visitors), give valuable evidence bearing upon contagion.
3. The dispute whether a case is one of sc. fever, or sore throat, or diphtheria, is endless. If the facts are given, the opinion will be superfluous. The prevailing type, the rash¹⁷, the affection of the throat, the condition of the urine, are the principal points, and may be given in few words. In each case it should be stated how soon the abnormal condition was observed.

4. State whether* the fauces were examined, and when; or whether it was *tacitly assumed* that the larynx was primarily affected. On visiting a district in Lincolnshire, where I had been informed that there had been many cases of diphtheria, and but very few, if any, fatal ones. One of the most intelligent medical men of the neighbourhood kindly let me see a list that he had preserved of all the cases, both of diphtheria and of other diseases, which had come under his notice during the preceding months. He had not lost a single case of diphtheria; but his record showed three or four concurrent cases of croup, which had proved rapidly fatal. Post-mortem examinations are "never made in that country," so that, in the absence of evidence to the contrary, I could not but suspect that some at least of the cases of croup were really fatal cases of diphtheria, and, therefore, that the success of the treatment had not been so uniform as was supposed.
5. A careful examination of the expectoration† in pulmonary affections should be instituted.
6. A farm servant, of much experience, and of more than ordinary intelligence, who lived in the district to which I have just referred, as one affected with diphtheria, told me that there had been at the same time and previously great mortality among sheep, pigs, and cows; and sickness among horses, but not more deaths among them than usual. Sheep and cows had been unusually liable to fatal inflammation of the lungs with effusion. Pigs and cows had died unable to swallow; he had seen a membrane on the tongue, and regarded its extension to the throat as the immediate cause of death. In some cases the hoofs of the feet and sometimes the hair of the trunk fell off. Horses also had been affected with sore throat; this he called influenza, and said that it was generally cured by blistering.
7. Cases have been noted in the same family, not only concurrently, but in different epidemics, and under different (?) local influences.
8. In the plan the *general* and *special* circumstances are separated, because it is important to remember that many facts must be viewed "generally" before their "special" relation can be rightly estimated. But in the narrative such a separation involves a repetition which would, for the most part, be unnecessary.

* See case of croup by Dr. Barker, Trans. Path. Soc. vol. x, p. 69.

† See 27, 28.

9. The hygienic influences should be noted, at the first visit, in respect of the favourable or other condition in which the patient has been placed; and also afterwards, occasionally, with reference to the treatment. Bretonneau attributed the serious effects of his heroic doses of mercury in part at least to excessive cold.
10. It is not always possible to fix the date of commencement; but whenever it is so the day and hour should be given.
11. All future dates should be stated as second, third, fourth, &c., day; each day being twenty-four hours complete, reckoned from the time of seizure.
12. A single remark at the commencement as to the general condition, though it be matter of opinion not of fact, is admissible, and it makes the reader better able to realise what follows. The authority for the statement should be shown by the introductory expression "He seems," or "Nurse thinks him," or "He says," the words of the patient being marked by inverted commas.
13. The prostration is generally out of all proportion greater than is to be accounted for either from the length of time during which the patient has been ill, or from the other symptoms. This is more remarkable in elder than in younger patients. It is, however, even more important to bear it in mind in the case of children; for in them the fatal termination is often most sudden and unexpected.* The child is thought to be going on well; is sitting up in bed playing with its toys; or it is taken up to stool: it gives warning scarcely sufficient to attract notice, and—it is dead! This occurs, sadly enough, more particularly among those who are convalescent.†
14. The wakefulness of patients, and at times a peculiar restlessness is the one fact which forbids a favourable prognosis when all else promises well.
15. In the MSS. it will be found convenient if *the treatment* is underlined; so that at any time it may at a glance be seen, both what it is, and what changes, if any, have been made in it.

The treatment may conveniently be summed up as
 1. Nutritive, and 11. Medicinal. Nutrition in small quantities and frequently is of the first importance. Enemata should be given when from dysphagia or other cause food sufficient cannot be swallowed. Milk, or milk and water with cream, beef tea and wine, are generally taken without difficulty, and should be given at regular intervals.‡ The necessity for stimulants is so obvious, and they are for the

* See 30.

† See 31.

‡ See 33, 34.

most part taken so willingly, that there is not much danger of forgetting the wine; but there is a fear sometimes lest the nurse should think that wine alone is sufficient nourishment. General depletion is not likely to be adopted; local depletion, as when there is great swelling of the glands of the neck, is not of the same temporary advantage as in scarlet fever. Mercury has few advocates. In Bretonneau's cases the advantage seems, as he himself at times suspected that it was, due to the topical influence on the exudation. The tincture of iron with quinine is most generally approved. Senega as an emetic and as an expectorant is strongly recommended when the disease has extended to the air passages, and the cough has begun to be moist.* The presumed increased liability of the blood to coagulate suggests the exhibition of ammonia; the sesquicarbonate as an energetic and diffusible stimulant might, therefore, be conveniently added. Where fatal syncope is feared the prone position should be insisted on.

The local treatment: Blisters, not continued beyond the commencement of vesication; not even till the epidermis begins to be elevated; it is sufficient for the surface of the skin to be slightly wrinkled. *a.* Hydrochloric acid (*strong*, the object being to destroy); unless the exudation extend out of sight, when the acid must of course be diluted; the application itself will produce swelling, so that the effect, whether beneficial or otherwise, cannot be determined till twenty-four hours have elapsed. *β.* Mercury. After tracheotomy had been performed, Bretonneau applied mercury to the inside of the trachea and bronchi by insufflation, and apparently with benefit. Alum is recommended, and the injection of salt and water *per nares*.† Solid lunar caustic is the most common local application. Bretonneau used it in preference to hydrochloric acid, as being less painful and more efficacious; the only objection to it is that after a surface has been touched it is immediately whitened, and it is difficult, almost impossible, to say which is the effect of the remedy and which of the disease. This, however, is practically of little moment. The monograph of Bretonneau is particularly worthy of study on account of the impartial evidence which it contains on the question of tracheotomy. Cases of all kinds are related; the operation is most carefully described in all its stages; and though many cases were fatal, yet others recovered from a

* See 27.

† M. Roche, *Lancet*, Aug. 20, 1859.

hopeless condition, so that it seems to me impossible to justify the practice which would allow any person to die without attempting this last resource even if it should only be in our power to perform it on a patient who is *in extremis*. The most important practical point in connection with the treatment of the patient after the operation is that care should be taken to use as large a tube as possible, and to keep it free from mucus or other impediments to a free passage of air. Even a double canula is something short of that which might be devised. Some adaptation of a spring is that which naturally suggests itself as being the best mode of keeping the artificial opening free, without narrowing the diameter of the trachæa, as must occur when even one tube is introduced. The form of tube which is imperfect on two sides, which, therefore, admits of more easy introduction than an incompressible cylinder, and which, when introduced, allows some air to pass by way of the larynx, so far as that is possible, is the nearest approximation that I have seen to that which seems to be wanted. When after death, we find a surprisingly small* quantity of membrane in the trachæa, or even in the larynx, the hope, that the persevering application to the throat of a sponge (Graves) wrung out in water, as hot as the hand can bear it, would in some cases be of service, seems to be rational. I have seen great temporary relief follow, even when the impediment to the breathing was some enlarged glands at the division of the bronchi.

16. The general hue of the skin, and particularly of the lips, is a very valuable monitor of mischief in the lungs, or rather of the degree of impediment that there is to the entrance of air into them. Petechiæ† have been found in some cases throughout the body.
17. The rash may be rapidly evanescent, so that it is safer to say "no rash seen," than absolutely that there was none.
18. Diphtheritic exudation has been noticed within bullæ, before the skin was broken, also beneath a blister before the cuticle has been removed.
19. To be looked for on any abraded surface, on wounds, on the conjunctivæ also.‡
20. The mental powers are commonly in full vigour to the time of death; even children do not die in convulsion.§

* See 45.

† Pathol. Trans. x, 327.

‡ Mackenzie, Brit. Med. Journ. 1858, p. 53.

§ In a large proportion of cases convulsions in the infant answer to delirium in the adult. West, on Dis. of Child.

21. The affection of children is often unusually striking, and the intellectual faculties seem, in many cases, to be stronger than before the illness.
22. It is during convalescence that paralysis of the muscles of the palate, and of the voluntary muscles of the whole body is apt to occur.* More rarely the sight (Dixon) and hearing have been impaired. Recovery from these conditions may be confidently expected; though the improvement is usually tedious.
23. The number of respirations per minute should be carefully watched. Though all the symptoms promise well, save only that the breathing remains quick, it will be very hazardous to give a favourable prognosis. The character of the breathing is not always constant. It may be tolerably free at the time of the doctor's visit, whereas on inquiry we find that at times the patient has urgent dyspnœa.
24. Fœtor of the breath may be solely from decomposition of exudation that is in course of separation from the nostrils and fauces; and may sometimes be removed by chlorinated injection into the nostrils.
25. Bretonneau lays great stress upon this symptom, because it is so important that the disease should be recognized as soon as possible. He thinks that the disease not only spreads from the throat to the larynx, but from the nostrils to the throat;† and that if discovered in the nostril it may be stopped before the throat has become affected. He says, that the distinctive features of this affection of the nostril are that it attacks only one of them at first; and that the secretion excoriates the lip below that nostril, whereas in ordinary coryza both nostrils are affected. If the patient close his mouth and stop first one nostril then the other with his finger while he breathes, the condition of the open nostril is at once declared by the sound of the air as it passes through it. Some persons have ridiculed the remarks of Bretonneau as being too fanciful. There may be less in them than he supposes; but I am inclined to think that the subject has been dismissed too hastily by the critics, for I know how very easy it is to overlook such a condition of the nostril, so that I should place little reliance on the assertions of any who had not made a point of looking, and assuring themselves that the nostril is as free as they may think it is on a cursory examination.

* A very instructive case by Ransome, is to be found, Brit. Med. Journal 1859, p. 906.

† See 41.

26. The change in the tone of voice is one of the earliest indications that is given of the extension of the disease to the larynx. It may sometimes be perceived if the patient is instructed to speak loud, when the ordinary tone of voice reveals nothing amiss. In the same way a peculiar kind of snore may be heard during deep sleep (when the breathing is naturally louder), whereas while the patient is awake all seems as it should be. The nurse, therefore, and attendants should be closely questioned, and instructed to report any such change that they may observe.
27. It is a favourable sign when the cough having been dry, becomes moist. The expectoration though it may seem to be entirely of mucus, or of pus mixed with it, when well washed by being beaten up with water, may show pieces of separated membrane. These, if present, will settle to the bottom of the vessel.
28. When the larynx is involved, the bronchi are so liable to become affected that the danger is, perhaps, greater lest it should be assumed too hastily that they are so, than that such a condition should be overlooked. I have seen the *assumption* that there is disease of the lung turn the scale against the operation of tracheotomy, though it was the only resource that suggested itself; and after death all but the larynx was found free from exudation, and, as far as I am able to judge, there would have been a reasonable prospect of success. One such instance is to my mind an unanswerable argument in favour of tracheotomy, even if the mortality were greater than it is.
29. There may be no febrile disturbance, but only a very feeble pulse; if the pulse is frequent, it is very rarely full. When there is any fever, it does not bear any marked relation to the condition of the throat.
30. It is seldom necessary, and in some cases it is obviously undesirable,* to make the patient sit up for the purpose of observing the variation in the pulse, which is due to a change of posture. But if the patient sit up for any other purpose the effect is noteworthy as an indication of the extent of the debility that there is.
31. The similarity in the mode of death in some cases of diphtheria to that† where clots have been found in the pulmonary artery suggests a point for further investigation.
32. The enlargement of the glands at the angle of the jaw,

* See 13.

† Humphry on the Coagulation of the Blood, pp. 23-31. 1859.

sometimes with pain in the ear, and with more or less tenderness of the glands themselves, is one of the earliest symptoms, and it remains almost longer than any other. The swelling is often so considerable as to be seen by the most superficial observer; but it may be so slight as to escape observation unless the parts below the ear and under cover of the body of the jaw are handled. When one side only of the throat is affected it is generally the same side on which the glands are enlarged.

33. Even when there is no marked difficulty of swallowing, the listlessness and indifference of the patient is apt to leave an impression that there is some special disinclination to take food, whereas it is only a general reluctance to make any exertion whatsoever.
34. The throat may be extensively affected, and yet no difficulty of swallowing experienced by the patient.
35. The bowels are generally costive.
36. The condition of the gums is very liable to be overlooked, people for the most part do not show their gums when they put out their tongue. The inside of the cheek is still less likely to be seen, unless it be specially examined.

About six months ago I noted for the first time an appearance, as of flour, on the gums of a person who was at least suspected to have diphtheria. It was considered at the time to be one of the characteristic symptoms of the case. Since then, however, I have observed a similar appearance on the gums of patients who were regarded to be suffering from other diseases, so that either it is not characteristic of diphtheria, or this is a diphtheritic character which has been engrafted on other diseases. Under the microscope the powder is seen to consist of epithelial scales.

37. The tongue is generally clean.
38. In examining the throat it is often very difficult to determine whether there is ulceration or not, and also whether there is exudation or not. The mark that remains after the application of nitrate of silver is very like a patch of exudation; and on the other hand a patch of exudation in the tonsil, especially if the surrounding parts be œdematous, looks exactly like an ulcer. The illusion is perfected if, in addition, the exudation is in shreds, partly decomposed, exhaling fœtor, and if the crypts of the mucous follicles are filled with exudation which looks like pus. The condition of the parts after death, or after recovery, will in some cases with difficulty convince a man that his

eyes deceived him when he spoke of "extensive gangrenous ulceration."

39. The term exudation is convenient, whether it be an exudation or not, provided that the description is given of what is meant by the term.
40. The region from which the exudation was removed should be named, and whether it is of that which has existed some time, or which has been formed quite recently.
41. It is of great practical importance to bear in mind that of the surface affected the progress is from above downward;* and also that in severe cases it is out of all comparison more rapid in the first twenty-four hours, than afterwards.
42. By separation of the membrane—by disintegration—by attrition.
43. Albumen is not invariably found. When present it may be detected much earlier in the disease than is commonly the case in scarlet fever.
44. Dr. Sanderson found the quantity of urea increased.
45. Attention will primarily be directed to the seat of the exudation as observed during life, and to its extension into the air passages, and more seldom into the œsophagus. The condition of the lungs and of the kidneys should also receive special notice. The disproportion that may be found between the morbid alterations and the fatal result is in accordance with that which obtains in other diseases which run a rapid course (Bretonneau).





