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ADVICE AND MAXIMS

FOR

Young Students and Practitioners

OF

MEDICINE:

WITH

REMARKS ON THE PULSE.

By DANIEL JOHNSON.

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PREFACE.

THIS small tract (of Advice and Maxims) was written solely for the improvement of a young medical friend. A gentleman, to whose perusal it was submitted, having suggested that it might be beneficial to young students, if made public; I was therefore induced, in order to render it more acceptable, and to employ a few of the many tedious hours of a long sickness, to add Remarks on the Pulse, which, together, I hope will tend to promote the knowledge of that art which has for its

object the relief of sufferers like myself
How far I have succeeded in my attempt
I shall leave to the decision of a candid
public, to whom it is offered with unfeigned
diffidence, by

THE AUTHOR

ADVICE AND MAXIMS,

&c. &c.

1st.—IN the choice of a profession, the practice of medicine offers a young man an heterogeneous mixture of pain and pleasure; the first may predominate, for certain it is, that the greater part of his time must be spent in situations of distress, with people whose minds and bodies are in an irritable state, making them capricious and difficult to please, frequently obliging him to perform very painful operations, which he must be anxiously alive to, if possessed of only a common degree of sensibility. Such a prospect, I say, were it not, in a great

measure, counterbalanced by feelings of an opposite nature, would deter any one from entering on such a profession; but, to the honour of mankind, a sympathy exists in human nature, that gives such a heartfelt satisfaction on rescuing a parent or child from the jaws of death to a large family, or in giving ease to a painful sufferer, as fully to recompense him for much painful time spent in houses of affliction. And as I conceive that happiness in this life is more equally divided amongst mankind than is generally imagined, it is also doubtful on a balance, which profession affords the greatest share of it; some are continually exhilirating and depressing our spirits, whilst others neither cause much delight or uneasiness; and therefore which of these is the most desirable, must be entirely left to the decision and feelings of the person. For my own part, I should prefer now and then a walk and sometimes a gallop, to passing through life always in a jog trot.

I conclude that my reader has already made his choice, I shall therefore proceed, by first recommending him to study *men* and *manners*, and learn to acquire that valuable art,—the art of pleasing. He ought to make himself conversant with history, natural and moral philosophy, so as not to appear ignorant, or unable to bear a part in every general conversation. Some of his time should be set apart for this kind of study, and the remainder, when not occupied in practice, should be employed in studying medicine, and the history of diseases, chemistry, and surgery. Anatomy will be best learnt in London, where the body may be referred to. Studying it from books will be too apt to give false impressions, which are not easily removed.

2d.—It is right that he should always conduct himself towards his patients with humanity and mildness, which will not only gain their good will, but also their confi-

dence; an attainment of the first consequence.

3d.—Always prefer facts to theory.

4th.—Endeavour to discover the cause of the disease, which although not always to be obtained, should ever be attempted.

5th.—Learn to discriminate cause from effect, and first cause from second:—to elucidate this,—suppose a man to be given to voluptuous living, the general consequence is, a foul stomach from indigestion, producing violent head-ache, want of regular sleep and appetite:—high voluptuous living is here the first cause, a foul stomach the consequence, which becomes the second (or proximate) cause of the head-ache, &c. which are the effects or symptoms.

6th.—When the second cause or effect is *not* urgent, you should begin with attacking the first.

7th.--When the second cause *is* urgent, and either endangers the life of the person, or from situation or circumstances removal or alleviation becomes necessary,—it should be done: for example, a man having a cancerous tumor, from a bad habit of body, (which is the first cause,) and that tumor admitting of being extirpated without risk, it should be done immediately; and afterwards, the bad habit of body corrected, to prevent a return. The second example points out a case, in which it is necessary to alleviate before you attempt to remove the second cause; such as violent pain, or spasms in the stomach or bowels, caused by acrid putrid bile; in which case, it would be ridiculous first to attempt altering the quality of the bile; and imprudent to give any stimulant to remove it, whilst the pain remains violent, as it would in all probability increase it. In this case, the first object should be to remove or alleviate the pain, by giving some powerful antispasmo-

dic, as opium; having done this, your next object should be to expel the bile, and your last consideration should be, to remove the cause and prevent a recurrence, by altering the quality of the bile secreted in the liver, so that it may become healthy and flow regularly. The maxim, "remove the cause, and the effect will cease," though just in a general sense, does not hold good at all times; for, sometimes, the cause may have produced so much excitement as to interrupt and injure all the functions of life, and although you remove the cause, yet the effect will *not* cease: for example, a prickle in the finger may produce a locked jaw, a removal of the prickle does not always relieve the locked jaw, which continues and destroys life. Acrid and irritating substances in the stomach or bowels, may produce so much excitement and fever, as to endanger life; in this case, you should lessen the fever by blood-letting, before you attempt to remove the cause, or life may

be destroyed ere your medicines can have effect.

8th.—If we reason well and have just ideas of cause and effect, our diagnostics will be just, and the same good judgement, guided by experience, will, in all probability, render our prognostics right.

9th.—As human constitutions are various, and as life and health are in the power of a Superior Being, we should never prognosticate hastily; for the best skilled are often deceived. A medical man, if ever so clever and well experienced, may be mistaken; and in surgical cases, he will often meet with difficulties he never anticipated, as the song says,

"Death often proves the doctor an ass."

10th.—A young inexperienced man cannot appreciate too highly the above observation, he ought always to bear it in mind,

and never promise what he cannot be certain of fulfilling; he will do right to give his opinion with modest diffidence, always, or almost always, leaving a matter of doubt to be decided by a superior power. There may be cases that impress his mind with a consciousness of success, or of unattainable success; in either case, it is his duty to intimate such (but he should never promise) in a manly, mild, unaffected way, either to his patient or to his friends.

11th.—When a young man is called in to consult with one older than himself, and of more experience, he will do right to pay due respect to him, by giving his opinion with all diffidence, and not taking advantage of any false hypothesis or judgement advanced on the case, by his senior: *he* may also be mistaken, for there are few cases in which any medical man can say *I am right;* neither should he be led away, or allow his judgement to be warped, by a flowery display of technical phrases, intro-

duced merely to show ability, which tend more to confuse than illustrate the subject. A young man should never use technical terms, when he can express his meaning as well without them, but he ought to make himself acquainted with them all.

12th.—The less a medical man talks the better, and that should always be to the purpose.

13th.—I now come to the remedies to be used, which should be a young man's first study, beginning with the effect simples have on the human constitution, then compounds, and the best method of compounding them. When he is become well acquainted with them and their effects, both in their simple and compound state, he will seldom be at a loss for a proper medicine for every case.

14th.—In prescribing he should always study nature, and in most instances be

guided by her; assist her whenever deficient, and never thwart her efforts; for example, suppose a person labouring under febrile symptoms, with a quick pulse, laborious respiration, head-ache, &c. and a spontaneous purging or vomiting should come on, he would act unwisely to check either; on the reverse, he should promote them by administering a purgative or an emetic. If a perspiration breaks out, he should promote it by giving sudorifics.

15th.—It is advisable that a young man should never accustom himself to give nostrums, or remedies for particular disorders, because they are said to be specifics for them. He ought always to consider well with himself, *why* it is necessary to give any particular medicine, that he may expect some reasonable good from its effects. Thus accustoming himself to think, he will in time, in all probability, think rightly, and become skilful in his profession.

16th.—The strongest recommendation to a young medical man, is a modest and manly diffidence; a supercilious and arrogant demeanour the very reverse. Of all professions none is more difficult and precarious than the treatment of diseases, and no one has ever arrived at that *acme* of knowledge, so as to be able to say, *I know enough*.

17th. The study of a young student should be the present authors on the Materia Medica and Chemistry; but he will find the best history of diseases in the old. The practice of medicine is too much governed by fashion, and medical men are constantly quibbling and disputing about things that were disputed a century ago; their terms and method of dispute only are altered. Of late years, we have acquired very little respecting the history of diseases, although we have improved much in our method of treating them. I mean general-

ly; there are some exceptions, particularly one, on diseases and derangements of the Liver, on which subjects we have gained much information from our intercourse with hot climates, where that disorder is very prevalent, and an excellent account of it will be found in a work, entitled, "Influence of Tropical Climates on European Constitutions," by Dr. James Johnson. Old authors have written in a much plainer and intelligible style than most of the present day; the latter, abounding with high-flown words and technical phrases, tend more to perplex than enlighten the young student. When he is attending a patient in any disorder, then is the best time to read some author on the subject; at that particular time it will impress it more on his mind than at any other.

18th.—In compounding medicines, applying bandages, dressings, &c. and, in fact, in every thing a young man does, he

should study neatness, and determine to do it in the best manner possible; a slovenly method soon grows into a habit, which is not easily got rid of; and if he shows awkwardness in little things, how can he be thought clever in those of greater importance and difficulty? It is of very great consequence that he should be regular (and even particular) in keeping his medicines, and also in sending them out; every thing should be marked in as plain and intelligible a manner as possible, and he should never suffer any thing to be sent out, or delivered, without a label and directions. I have known some gentlemen keep medicines in bottles with wrong labels, from mere inattention in not changing them when the medicines were changed; such practice cannot be too much reprehended, for very serious consequences might result from it. I recommend medical gentlemen never to trust more to their recollection than they are obliged to do, for we all well know how

treacherous the best memories are in trifling things and occurrences, and any forgetfulness may endanger the life of a person; he ought, therefore, to habituate himself to enter the particulars of every medicine he gives in a book, a reference to which will be often found necessary. It should also be his practice *never* to leave a mortar, slab, or any thing else, dirty; cleanliness is not only desirable for its general principle, but particularly so for safety; for should any one compound a draught or mixture for a child in a dirty mortar, in which a deleterious drug had lately been, enough might be left to do serious injury. Succedaneums or palliatives should never be resorted to except from absolute necessity. These remarks may be deemed too trifling, being to most people well known; however, I beg it to be understood that they are intended for young men, and I conceive that *they* cannot have them too forcibly impressed on their minds.

19th.—In performing operations, and in administering relief to the sick, he should always bear in mind that the invalid is more irritable and particular than a person in health, therefore he should appear to sympathize with all his feelings, and, *at all events*, do every thing in as easy and tender a manner as possible.

20th.—A medical gentleman should always bear in his mind *this motto*, "that he is the servant of the public," and that every person alike has a claim on him for assistance, whenever required, and he ought always give it first, where life is most in danger, without respect to persons; therefore, should he be sent for at the same time to a rich and poor man, the former labouring under a chronic disorder, and the latter under an acute and dangerous one; should he visit the rich man first, his own conscience would upbraid him; and if he meet with censure there, how can he expect approbation elsewhere? It should, however,

be observed, that if he is obliged to live by his profession, he cannot be expected to give the same attendance on the poor as the rich, they not having it in their power to recompense him for so much time; but if his judgement tell him that his presence is required at any particular time with a poor patient, he ought not to absent himself, to please any wealthy individual, much less for the paltry consideration of a little gain. A grovelling mercenary disposition, in the end counteracts itself; whereas, a generous liberal conduct, often meets with a just return, and always self-approbation.

21st.—A young student will do right to keep a common-place-book, and enter into it every new idea, and whatever occurs in reading or practice, that he considers necessary to be remembered; writing it down once will impress it more on his mind than reading it a dozen times, and he will find a pleasure in recurring to it in his latter years. Whenever he meets with what he

does not comprehend, he should always apply to the gentleman with whom he is situated for an explanation; the application should be modest, and made at a time when not much engaged in business: under such circumstances, no doubt the gentleman will feel a pleasure in instructing, and encouraging the desire of his pupil to improvement, which, in the end, may redound honour to both, and tend to cement a friendship gratifying to each through life.

22d.—As our actions and knowledge are more governed by habit than physical construction of parts, or any thing else, it therefore is of the greatest importance that a young man should keep good company, which is a *sine qua non.*

" Let the best course of life your choice invite,
" For custom soon will turn it to delight."

REMARKS ON THE PULSE.

The pulsation of the arteries shows the action of the heart, arteries, and capillaries, and the state of all the blood vessels in the body; and particularly in that part where it is felt. Therefore the pulse has been, and still is, one of the principal marks by which medical gentlemen are guided; hence, it is of great importance that it should be well understood; and I hope the following remarks will not be unworthy the young medical student's or practitioner's attention.

In health, the heart and arteries contract the same number of times in a minute; and the ordinary number is about seventy-three: but some persons beat more, and a few less. Yet sometimes it happens, that, even in health, the pulse varies, being in the morn-

ing slower than towards bed-time; and quicker after eating, drinking, or using exercise. In some irritable constitutions, the heart may contract eighty or ninety times in a minute, through life; and in others not above fifty. In children, the natural number of pulsations are much greater. In a new-born child, the heart contracts about a hundred and twenty times in a minute, and upon the least stimulus being applied, it is increased to a hundred and fifty or more; but, as the child grows up, the number of contractions diminish; and at the age of puberty, they are nearly as before described.

Each pulsation or contraction of the heart of an adult in health, generally takes up the same time, so that it divides the minute into seventy-three equal parts. This, however, is not always the case; for, even in health, sometimes, the pulsations are irregular, one taking up more time than another; and now and then a pulse is lost

altogether. This is called an *Intermittent Pulse*, which may happen when there is no apparent ill-health; however, it should be considered as indicating something wrong, and is commonly met with in diseases. The strength with which the heart contracts is also measured by the pulse. When the artery rises strongly against the finger, so as to lift it up with great force, and is with difficulty prevented from so rising; then we have a *Strong Pulse*. When upon the least pressure we stop the rising of the artery; then it is a *Weak Pulse*. The strong pulse indicates, that the blood is thrown out of the heart with great force: the weak pulse, that the blood is thrown out with little force. In healthy people the force of two contractions is equal. It is frequently otherwise in diseases, that is, the force of the contractions of the heart is not equal, one contraction being strong, and another weak; this is called an *Irregular Pulse*. Generally, though not always, short con-

tractions are weaker than long ones. The pulse helps to show the quantity of blood thrown out of the heart at each pulsation. In a strong man in health it is about two ounces. If the heart dilates fully, so as to receive the ventricles full of blood, and contracts strongly, so as to throw out the whole, it fills the arteries considerably, and the pulse rises greatly under the fingers; which is called a *Full Pulse.* When the heart takes in and throws out a small quantity, we have a *Small Pulse.* Although you feel the pulsations very considerably under your fingers, yet if you lay the artery bare and look at it, you can hardly see it contract; and some medical men are of opinion that it does not contract: a doubt however exists, which I shall leave for more accurate anatomists and physiologists to dispute about, my object only being to mention a few practical observations for young men. The pulse may be small, in several different ways; the artery may con-

tinue full the whole time, and yet the pulse be small; for it is the quantity and quality of the blood, thrown out of the heart, that makes the pulse small, and not the quantity contained in the arteries. *The Oppressed Pulse* then is small, as well when the artery is full as when it is contracted. A great and small pulse depends not only upon the quantity and quality of blood thrown out of the heart, but also upon the contraction and dilatation of any particular artery. The pulse is often larger in one part of the body than in another, which is certainly not owing to the quantity of blood thrown out of the heart, but to the quantity, contraction, and dilatation of any particular artery. Cooling, and again suddenly warming your hands, evidently shows this; it is also perceivable in local inflammations, which also shows clearly that the largeness and smallness of the pulse in different parts of the body, depend in a great measure on the arteries; and the frequency of contraction,

&c. of such particular arteries, must be judged of by their pulsations. Sometimes when the blood is thrown into the arteries by the heart, they immediately contract; and as soon as the blood rises to the finger, it goes away again; and is therefore called a *Quick Pulse*. At other times the artery gradually swells under the finger, continues full for some time, and then goes away slowly, which is called a *Slow Pulse*. The force or strength of the arteries is indicated by the pulse. In health a full strong pulse shows strength of constitution; and a small, weak, thready pulse, the reverse. When the arteries contract with great firmness, there is that particular feel in the pulse, somewhat like a cord tightly strung, and if full, a kind of thrill under the finger, just at going away, which is very different from any other feel; and is called a *Hard Pulse*. This is common in inflammatory complaints, particularly when the inflammation is chiefly confined to the coats of the arteries themselves, and also

in a lesser degree in rheumatic fevers. On the other hand, when the arteries are acting weakly, the pulse has a kind of soft feel, like a piece of dough; and is called a *Soft Pulse.* When the pulse is very soft, and at the same time goes from the finger with a tremulous motion, it is called a *Tremulous Pulse.* On the other hand, when the force of the artery is very great, it redoubles, or acts as it were twice to the heart's once; this is called a *Redoubling* or *Rebounding Pulse,* (a kind of double stroke when distended.) A full pulse, and a strong pulse, have sometimes been taken for a hard pulse. Sometimes in inflammations of the intestines it is small and weak, yet hard at the same time. When the vessels arise full so as not to have room to play, and the artery continues always full under the finger, with its contractions very small; we have what is called an *Oppressed Pulse.* If the capillary vessels of any part are considerably contracted, the pulse remaining for a

long time distended, and going away with great difficulty, it is called an *Obstructed Pulse*. The blood in this case cannot pass readily through the capillaries into the veins; this is with difficulty distinguished, at first, from the hard pulse, and although very different, is often mistaken for it. The obstructed pulse takes place often in the beginning of the hot fits of intermittent fevers, when the pulse should be felt with great care, frequently. A quick, full, and strong pulse, is common in pulmonic inflammations. The hard pulse depends entirely on the strong action of the arteries. On the other hand, when the capillaries are very free from obstruction, and are not contracted, (the blood getting easily away from the arteries, which contract readily,) we have a Free Pulse. Sometimes the blood as it were hardly waits for the contraction of the arteries, but appears to run into the capillaries from the action of the heart alone, which gives it a peculiar feel, and may be

observed at the crisis of intermittents, just before the sweat breaks out, also often just before death. In almost all fevers, when a perspiration breaks out, the pulse becomes freer.

From the foregoing observations, it will appear evident, that, in all complaints, a medical practitioner should be well acquainted with the kind of pulse accompanying such complaints, as well as all the variations attending it; and also that he ought to feel them often. In visceral obstructions, or morbid diseases of the viscera, an oppressed or obstructed pulse generally prevails, which, if not well understood, would induce the medical attendant to adopt repletion instead of depletion. In all disorders, and particularly in the above-mentioned class, it should be considered that the pulse is only one symptom to judge by. A well skilled physician will take the whole appearance and symptoms, and compare them together in his mind,

and form his judgement accordingly. If some symptoms appear to contradict others, he will endeavour to account for and reconcile such contradiction.

There exists much sympathy between the lungs and heart, which are the principal springs of life and action; and if I may be allowed the expression and comparison, I would say, that the former acts to the latter as fire to a steam-engine, or as a spring which keeps in constant motion any machinery. We may consider it a general rule, that when the lungs act freely, the pulse is free; on the contrary, when there is laborious respiration, a full or hard pulse; and when much anxiety attends respiration, an obstructed or oppressed pulse. The first points out clearly what should be done, and the latter, if not minutely attended to, may deceive. For example,—suppose a person labouring under some anxiety, with a small thready pulse, an inexperienced person might think it proceeded from weakness or

nervous debility, and administer cordials, which would certainly increase all the complaints; whereas, depletion would cause the blood to flow more freely, and consequently raise the pulse. In this respect it is often wonderful to observe what an immediate effect the discharge of a fœtid bilious stool has in raising the pulse, and in removing the anxiety of the patient. This should be a warning to young practitioners, not to judge rashly, or to be guided too much by the pulse.

It is a pompous practice, too much in fashion on all occasions, to time the pulse by a fine gold watch, which, perhaps, may be thought to give consequence, like a bag wig and gold-headed cane. Its general usefulness may be very much doubted, when we consider how the pulse varies in health, and more so in sickness. By what I have said I do not mean to condemn the use of a watch altogether, for it frequently is of much service in discovering whether the

pulse increase or decrease; but I must observe, that I am of opinion that where it is used once beneficially, it is ten times the reverse. It cannot be of use when the pulse is obstructed or oppressed; and at all times the attention requisite to count the pulsations by a watch, distracts the attention from more necessary considerations, which counterbalances, in a great measure, the benefit to be derived from its use; particularly when we take into consideration, that a well-skilled medical man will always be able to judge, within a few strokes, the number of pulsations in a minute; and by not using a watch, he can attend more minutely to every alteration and circumstance during the time he is feeling them. He should always make a point of feeling them two or three different times before he leaves the room; his first appearance, alone, may cause so much irritation to his patient, as to increase the pulse five or ten strokes in a minute; and if his presence give so much

satisfaction, the very idea of his going away will sink them in proportion. We all well know, from experience, the influence our passions have on our pulse.

In conclusion, I shall recommend a young man first to study the circulation of the blood: and I believe the best author on the subject is Harvey; although there have been new and important discoveries made in it since his time, particularly that of the lymphatic system.

When he understands, tolerably well, the circulation in a healthy subject, he will soon be able to form some judgement what it is in a morbid one, where it is put out of its regular course, as when the liver or parts connected with it are diseased; this has given rise to a new kind of theory, that is, making the portal circulation a kind of distinct business; which, in health, I cannot imagine exists, although I readily admit it when that organ is diseased or deranged, (also in a fœtus;) a point which, however,

ought not to be considered by a young man when first entering on the study of the profession; for those nice points had much better be left to a future period, when his judgement will be more matured. A knowledge of the circulation will help him considerably to an acquaintance with the variations in the pulse, and therefore he will do right to study it first, or at the same time. The more he does study and contemplate the human body, its sanguiferous and nervous circulation and action, together with the secretions, excretions, &c. &c. the more lofty will his ideas be of that Supreme Being who caused it all. Wonderfully and beautifully contrived as it is, its duration is equally surprising. That some men should live for eighty or ninety years, labouring very hard during the greatest part of that time, exposed to all vicissitudes of weather, addicted to debaucheries, &c. and never suffer any serious interruption in the functions of so complicated a machine, is truly

wonderful! Other men suffer from parts of their bodies being taken off, whilst others are destroyed and rendered useless; still the main body continues to perform all the necessary actions to sustain life. And what is still more, new parts are regenerated where any have been destroyed; those separated become again united, and, in fact, many things take place, which it would be the height of presumption for us to attempt to account for; and is a subject of the sublimest nature, a never-ending subject to reflect or write upon, and which must always end in adoration.

The wisest of men may justly say,—How little do I know in comparison to what I do not know?

"From Art and Science true contentment flow,
"For 'tis a god-like attribute to know."

FINIS.

W. MARCHANT, Printer, Ingram-court, Fenchurch-street.