POSITIVE MEDICINE.

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The subject I have chosen is Positive Medicine. What is meant by that term? Is there any such thing as Positive Medicine? and if so, what is its scope? These, and many other questions, require consideration; but for the present it will only be necessary to say that Positive Medicine is that which *we are certain of, positive about, and that will stand the closest scrutiny.* It includes all the *truths* imparted during the medical curriculum, embracing the *known facts* of anatomy, physiology, surgery, obstetrics, practice, chemistry, physics, therapeutics, and hygiene, so far as they relate to the healing art. From feeble beginnings it has grown to importance, and now lies scattered through many tomes and the brains of the world. You know a little of it, and so do I, but what *it needs* is some "Gradgrind" of the profession, with patient industry, to systematize and develop it, as he incessantly searches for *nothing but facts.* In this paper I desire to emphasize some of these facts, to make the way plain for this coming man, so that out of feeble endeavors there may come forth some good. "Life is short," and as men become older they get tired of screening a mass of chaff for one kernel of truth. The medical profession is in *great need* of a *compiler* and *condenser*, *one* who will *extract* the *honey for them* in a *few well chosen words.* Writers could help him, if they would only have *their new ideas or facts printed* in a *different kind of type* from *the padding or rest of the article*, but I am afraid when they came to look over it for this purpose the majority would find so little originality, they would cease writing for very shame. It is a *great thing*, *when writing*, *to be positive*, *well provided with facts*, and *to be able to say "I know;"* but it is *greater to be able to prove these facts mathematically* for the satisfaction of others. In geometry and some other branches we have what are called *axioms*, or *self-evident truths*, things that cannot be made plainer by any demonstration. So also in medicine there are *facts* evident to all. For instance, we *know* that *people all die;* that they *do not live a thousand years;* that *all sick of a certain disease do not perish from that disease*, and that *many drugs have certain effects.* All this is a matter of *daily observation*, not of your observation or mine, but *one of universal experience*, where *all agree.* The number of such facts may be great or small, but whatever their sum they belong to *Positive Medicine.* Let us examine some of these facts in detail and see what will be the outcome and what is the *degree of certainty in medicine.* Some say medicine is an art, others a science, but we think it both, and if there are any laws of health and disease, then all must admit it. Practically we do so by the formation of boards of health, etc.; and so trusting do we become that *they* are given *very arbitrary power.* Whether this is wise or not I do not propose at present to discuss, but shall proceed to my subject by assuming all the *assertions* of *medicine as a whole* to be an *unknown quantity* $\times$, which for convenience, (since there are nine branches) we will call 9, or $\frac{9}{9}$, and by asking if there is anything *positive* or *certain in anatomy?* You look astonished and say, why the *whole* of *gross anatomy is certain;* it is the very *groundwork* of our profession. Then let us put down on the blackboard that some thousand or more *assertions* in *anatomy are all true*, that is to say the *whole* of *one branch* is *positive*, *one part* of $\times$ *ready to be found.* How about chemistry? Is there any *truth* in chemistry? Why the world would not hold together if it were not for chemistry and physics, and our bodies likewise would fall to pieces, *They* are *the most positive* of *all sciences.* We will, therefore, also put down these two branches as certain, and by *calculation*, say $\frac{2}{9}$, or 2 *more parts* of $\times$ *are ready* to be found. By this kind of exclusion and addition, $\frac{4}{9}$ or 3 parts of $\times$ are made certain. But there are other branches that are *not equal to this* $\frac{1}{9}$ *but occupy a lower position.* How will we find them? Take physiology for example! How is it with this branch? A glance shows it to be partly built upon general chemistry, and that part, of course, must be true; so also that which is founded on physics. But are we not likely to be deceived by phenomena and reactions that cannot be seen, and, therefore, but imperfectly understood? We certainly are, and on this account, after

summing up all the available facts, must make allowance, and say that ⅔ of Physiology is not proven, and, therefore, probably untrue; so for *convenience* we will put down physiology as ⅓ *true*, ⅔ *uncertain*, and *this* ⅓ *of* × *by so much wanting*. But some may ask where do you get these figures? Are they impressions. or the result of study? Both, and they may not be *absolutely true*, since "*judgment is difficult*," but are *sufficiently so* for our purpose, as they come from *adding up* the generally admitted *facts* in physiology, and comparing them with the whole number of *assertions* found in the text-books of that branch. Besides this they are likely to be changed and improved by sifting and discovery as facts accumulate and time goes by, and that is my object in presenting them for criticism.

In the practice of medicine we have to make such *calculations* as are possible but it is *hard to find out* the *whole number of assertions* in this ⅓ part of ×, and when found *it is still more difficult to sift* the *true* from the *false*. We *are sure, however*, we can *combat* many *symptoms, certain* we *can cure* an *ague, stop* a *pain, open* the *bowels, cure syphilis, conduct* some *self-limiting diseases* to their *termination; positive* we *can cure* the *itch, can over-neutralize* an *acid* or *alkali* in the stomach, *break up sarcina* in *vomit, can assist nutrition* by helping digestion, *can cure rheumatism*, or, at *least, modify it* and *stop* the *pain, cure diarrhœa, check dysentery*; but in *purely medical cases* we can do little but *ameliorate symptoms*, and *prevent bad complications*, leaving to nature the cure. Take a self-limited disease, typhoid fever for example; we may *reduce the temperature, feed the body, regulate the bowels*, and perhaps when the abdominal walls are *thin, kill or modify the germs* by the *internal* and *external application* of *heat** or antiseptics, and otherwise make the patient comfortable, but the disease generally lasts many weeks in spite of us. Some think we can cure cerebro-spinal meningitis, by bin-iodide of mercury or antipyrin, and we *know* that we *can stop spasmodic croup*, but in medicine proper the number of diseases that can be *cured* is *small—how small* must be *determined* by *statistics*. An examination of one medium-sized practice of medicine *shows* that there are 155 *common medical*, including the *self-limiting diseases*, and *for* 56 *of these* we *can do something*, either in the way of relief or cure, that is *about* ⅓. Another practice *gives us* 242, with 68 *curable, equal to* 2⅞, rather *nearer* ¼ *than* ⅓, not a very flattering exhibit to be sure, and when the largest books are considered it will probably be ⅛ or less, say 1/11, and *at this figure* we will *put it down*. A more positive result can only be reached by much labor through the ordinary numerical method, comparing cases of the same kind together, being careful about the diagnosis, prognosis and treatment, and until this is done for every disease all over the world, one of the factors will be by so much deficient.

Materia medica and therapeutics is more exact than I anticipated, for after an *examination of* 324 *remedies* described in our text-books, I *find that* 218 are *known* to frequently *do* their *work*, 116 *are untrustworthy*, and *about* ⅔ *of the whole, or* 108, *are very active*, and this is probably the correct answer to Prof. Bartholow's question of the "Degree of Certainty in Therapeutics." The *drugs* that may be considered *as acting* with *positiveness are chloroform, morphia, chloral, belladonna, bi-chloride of mercury, etc.*, and are too well known to require repetition. There are probably *more unsupported assertions* in *hygiene* than in most of the other branches, and it must ever be so until more is *known* about the *causes of disease*. One hobby that meets with almost universal acceptance is *dirt as a cause of disease*, and for the sake of appearances, as well as civilization, it is well for the people to believe so, but when we come to *absolutely prove it* there are many difficulties in the way. There are some things, however, that *we do know in hygiene*, and when they are compared with *such as are uncertain*, the proportion will be *about* 1/12 *of the whole*. Obstetrics is *very certain*, though I cannot agree with all that is *neglected and done*, and therefore will put down *its degree of probability* at 11/12. Surgery comes *nearer to perfection* than the practice of medicine, and taken all together *equals obstetrics*, which might be considered one of its

*See Sternberg's work as to the degree at which the typhoid bacillus is killed, viz. 132.8 Far.

branches. Of late years it has made gigantic strides, and even within the last month *the diagnosis and treatment of intestinal wounds has been so much improved* that we wonder, with the plumbers all around, *we did not think of it before.* Senn, of Milwaukee, has been *arousing the West* with *his work*, and already the whole world has heard of it. By injecting one or more gallons of hydrogen, under pressure varying from ½ to 2 pounds to the square inch into the rectum, he has been enabled *to light the gas* as it *escapes* from a *tube* coming out of the mouth or wound, and thus *positively proves* whether the parts be perforated or not. It is also *applicable* when *obstruction* of the *bowels* is *suspected*, to *find out if they be permeable*, since the gas can often be *heard* as it *gurgles through* the *intestines*, and if *pressure enough be used, it can be forced* out of the mouth. This, if *safe*, is an *admirable plan*, and Prof. Senn *deserves great credit* for *thinking of* and *developing* it, but it *seems to me* that it is *open to the slight objection* that *perfectly pure hydrogen* must be used if we would avoid it *being said* in *medico-legal* cases, when the patient *dies*, that we have helped to *cause death* by the *arsenic* in our *zinc*, or *sulphuric acid forming arsenide of hydrogen.* Besides this it is *troublesome* to seal a tube in a *wound* to *convey hydrogen*, and also *difficult* at times to *prevent* the *gas from being expelled from the rectum* as it is *injected*, and where *more than one wound is present*, unless the gas be escaping in very large quantity, *this also must be closed to prevent its exit at this place* while dealing with the other. *Moreover*, since *hydrogen, mingled with a certain proportion of oxygen*, or *air*, is EXPLOSIVE, *risk* will be run if we *are not very careful when* it is *lighted.* It appears to me, therefore, that it would *be less dangerous* and *more simple to dispense* entirely *with the tube* in the *wound*, and *to use a wire frame* with very *small meshes*, like Davy's safety lamp, a *short distance above the wound*, and *light* the *gas as it escapes through this*, or perhaps it *would be better* to *employ a gas*, like *carbonic acid*, with a few drops of peppermint in it, that is *more readily prepared* and *not open* to these *objections.* As is well known to chemists, this *gas*, (when *escaping* from the wound) instead of being *inflammable* would *put out a light, as I have proved* in *intestinal wounds* made upon *animals.* The *best way* of employing it is *by steady pressure* from a *four gallon bag*, as suggested by Senn for hydrogen, but where the *external wound* is *small* the gas might be *rapidly injected* by a *good constantly flowing syringe*, and in an emergency a *strong pop bottle* or *syphon* might be used, the power of the gas as it is generated creating pressure and doing the work. Where *perfectly pure hydrogen*, or the *chemicals to make it*, can be readily procured I would *prefer it, used* with the *gauze* as described above, especially where the *permeability* of the *intestines* is to be *proved* by its *escape* from the *mouth*, since the carbonic acid which has *gone through* the intestines might be *mistaken* for *that* which is *supplied* by the *breath*, but for *abdominal wounds* and *general use, carbonic acid seems* to be *more handy.* In the country where nothing better can be obtained, *atmospheric air, impregnated with mint* or *spices*, may be *forced into the rectum* from a *large bladder* or syringe, and its presence be made *manifest*, either *by the odor*, by *holding a light near the wound* to *see* if it *flares*, or *by placing the cheek* and *ear close* to the *wound*, to *both feel* it *fan* and *hear it* as it *escapes.* There is one other *fact* in this connection that *may prove* of *importance. Gas*, when *blown over a surface full of bacteria* and *excrement*, like the *interior of the rectum* and *intestines, is very* apt to *widely disseminate poison* or *germs mechanically* through the *peritoneum* and *make all the difference* between *recovery* and *death.* Whenever *gas*, therefore, is employed for the determination of *intestinal wounds*, a very *careful toilet* of the *peritoneum* will be *necessary* to *prevent septic peritonitis*, and the *use of gas* for the same reason should be for as *short a time as possible.* Before resorting to any of these gases *or more troublesome devices* in *abdominal wounds*, it would be well to *examine* the *aperture* with a *lens*, and then *turn* the *patient* with the *wound downward upon a clean white plate*, in order *that blood*, or *anything extravasated,*

may *run out* and *be caught upon this,* and then *test it* by the *microscope* or *chemical means.* Thus in *stomach wounds,* food and *starch* will *sometimes* be *found* in the *dish,* and can be *detected* by its *appearance* or the addition of a small quantity of *tincture of iodine,* causing a *blue color,* and where the stomach, when perforated, is *empty* and *vomiting absent* we can give the *patient* some *sugar of lead* or *tannic acid* in *water,* in order that *part of the solution may run out* and be *infallibly detected* by *appropriate tests,* such as *iodide of potash* for the *lead* and *iron* for the *tannic acid.* The *treatment* of *abdominal affections* has also *made* corresponding *advances,* and I think we are *safe* in putting down the *truths of surgery* at $\frac{1}{12}$. We have now examined the various branches of medical knowledge, and it is only necessary to *add up the work* to make it *complete.* Reducing the fractions to the same denominator, *we find* that the *nine branches,* instead of being equal to the *whole of* ×, or $\frac{216}{24}$, as was *supposed in the beginning,* are *only equal* to $\frac{153}{24}$, which is between $\frac{2}{3}$ and $\frac{3}{4}$ *of that number,* and according to this showing we are less than $\frac{3}{4}$ *as certain* in the *whole of medicine* as we *ought to be.* If we wish to find out the *degree of positiveness* of *diagnosis, prognosis* and *treatment* in the *three practical* branches of *medicine, surgery* and *obstetrics,* it will only be necessary to divide each of these into three parts, making 15 branches in all, and proceed as we have already done. To render *diagnosis* at the *bedside positive,* the same numerical plan may be adopted, remembering, of course, that some diseases have pathognomonic or characteristic symptoms that enable us to decide at once with certainty, while others show resemblances that only the most skillful can distinguish. Were I *writing* a *Practice of Medicine, or Surgery* I would place at the *head of each disease* the *number of symptoms,* so that when we *examine* pstients the number would readily *occur to us.* Thus, for instance, when dealing with inflammation I would say 6 *symptoms, redness, heat, pain, swelling, interference* with *nutrition* and *interference* with *function,* and at the *bedside* would *write them down,* using the number *found present* as a *numerator,* and the *number* that *ought to be there,* according to the book, as a *denominator,* and in this way would become *more* or *less positive.* If 5 out of the 6 *symptoms* of *inflammation* (provided each had the same value) *were present,* we *could be* $\frac{5}{6}$ *sure* it was before us, and so with other more obscure diseases. The *greatest degree* of *diagnostic certainty* is probably reached in *eye diseases,* because the eye is associated so closely with physics and with its lens resembles an optical instrument. "The optic is the only nerve" says Loring "that is open to inspection physiologically," you can *see its expansion, behold* its *blood vessels, notice* their *courses,* the *epithelium* that *shines through,* the *degenerations* of *nerve or bloodvessel,* the *injuries to both,* we can even *see the vessels pulsate, all this,* and *more than this, cupping* of the *disc, differences of level,* and *faults of structure* does the *ophthalmoscope show.* Even the *touch of the eye* gives *important information,* for its *tension* is almost *diagnostic* of a very serious disease. Is it *any wonder then* that so *many who regard precision,* should *love* the *eye,* and that *situated* as it is just *below the dome* of *thought, looking upward* and *forward,* but *never backward* it should become *an emblem of progress, so great,* that *when we learn to use* it *well, carefully* as the *flower of the body,* there should *bloom forth thoughts* to *fill the world.* We have been *speaking* of *facts* gathered by this organ and I cannot leave the subject without soberly asking what have we contributed. I do not mean, what rehashes have we published in Medical Journals or what facts have been found and ignored but I do mean, what original work have we done, and made known, to pile and rub against the hard facts of others, that the mountain of truth may rise and shine. That it will shine is evident from the amount of certainty already attained, and from it many will kindle their torches as they "go onward to perfection" and become great lights in the Medical World.

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