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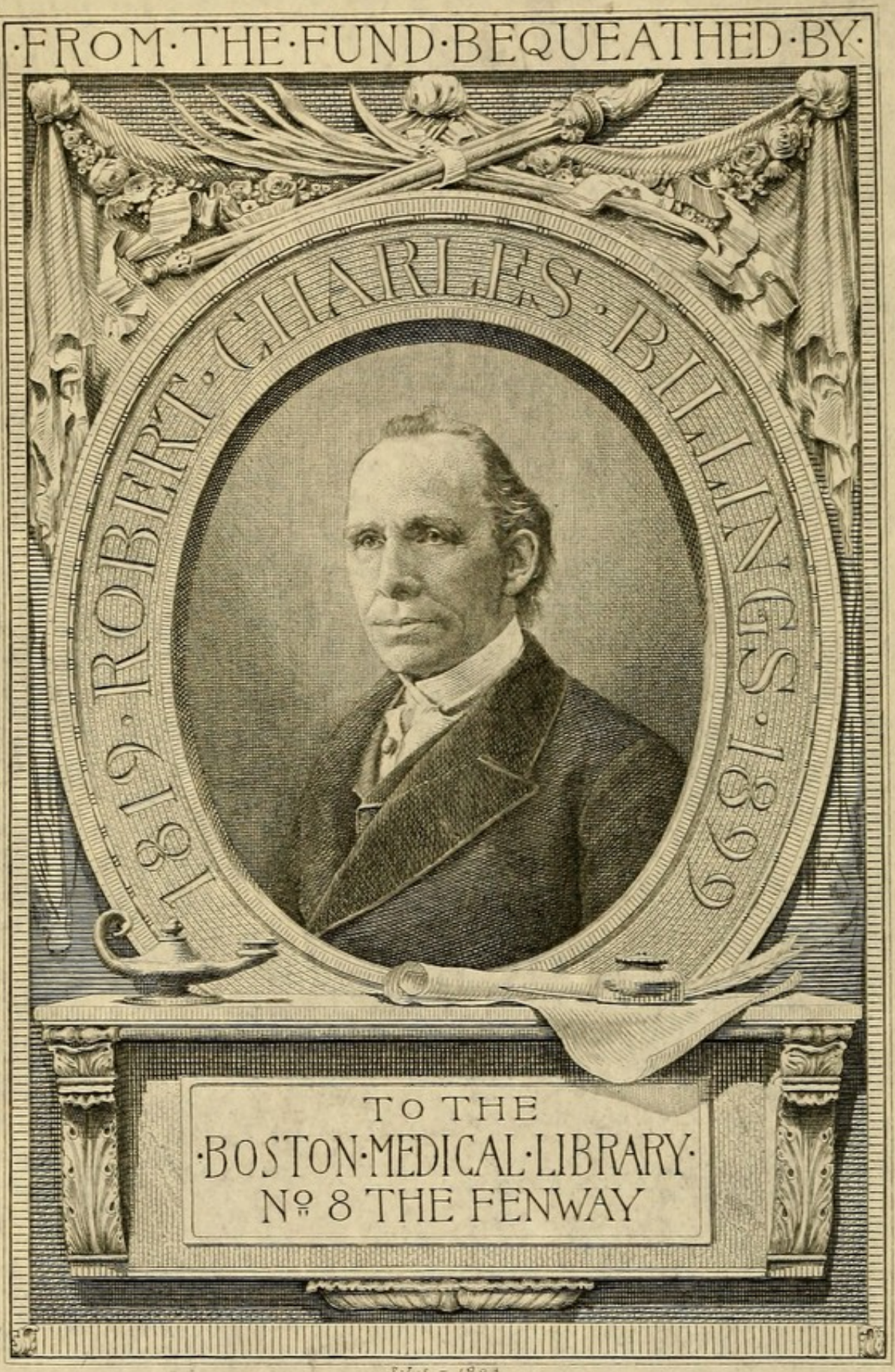
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OUTLINES OF

A New System of Philosophy,

BEING

A VIEW OF THE SYSTEM OF

SCIENTIAL MEDICINE,

OR,

MEDICINE, (AND ALL HUMAN KNOWLEDGE,) AS PROVEABLE AS GEOMETRY.

By THOMAS EDEN,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS.

"This is not the philosophy of one science, but the one philosophy of every science: one, as the human mind is one."—Brown.

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Bolt-court, Fleet-street.

TO,

OR, TO THE MEMORY OF,

NIELS WYER AALL,

By Birth of the Kingdom of Norway,

And formerly Private Pupil in Worcester Silver-street Academy,

THIS BOOK,

BEING THE FIRST I HAVE WRITTEN,

IS,

In willing fulfilment of a School-boy's Promise, and with Grateful Remembrance of his Fostering Friendship,

VERY RESPECTFULLY DEDICATED.

TO THE READER.

THE cardinal doctrines of this new system of philosophy were, last winter, propounded in a prefatory Lecture; which lecture, amended and enlarged, is the contents of this book; and the manner of lecture is here observed, because the other, common, bookly manner of address includes and covers a spurious doctrine, and because the colloquial is best suited for explanation, best fits an outline, and is most manageable by the author; and because this publication, addressed to the scientific in general, is also intended as a lecture to the medical profession — and

because of other occasions, which do not concern the reader: and discussions, lectures, &c. are here spoken of, conveniently to exhibit the application and rapid development which the system admits of.

N.B. It is not literary composition, but the truth and the method of irrefutable demonstration which are pretended to.

London, November, 1834.

OUTLINES,

ETC.

GENTLEMEN,

1. That Omnipotence which at the beginning created permanent existences, and combined with them the operative principles of future change wrought under the direction of that Omniscience, which, before the beginning, saw the working-together, the continuance, and the end of all things; *He* who created substance gave, at the same time, to that substance its nature; *He* who destined succession decreed its order;—the maturity and perfection which *He* has permitted, spring from only their ordained sources; and growth and decay never commence but to run their appointed careers. All things are under law. *He* who now (by laws which were from the beginning) moves, regulates the velocity, and, with more than mathematical accuracy, guides, in its precipitate and devious course, every atom of the dust which is mingled with the blast of the whirlwind: *He* now (by the alike fiats of creation) fixes the change, orders the succession, and

guides the career of every particle of that dust which he has mingled with the breath of life.*

2. He who gave to substance life, gave to man the mind; and as the living substance has, so has the thinking mind, its source, and growth, and means, and time of growth appointed. *He* who has decreed that the eagle, which soars above the winds, and the while with penetrating eye surveys through clouds the objects of its extended and still extending prospect: *He* who has destined the swiftest and mightiest inhabitant of air to spring, by slow incubation, from the motionless and inert shell, and in its maturity of power to owe its strength and fleetness, and the extended prospects of its highest soarings, to the growth (by measured means and times) appointed to that feeble nursling which had its feebleness protected and its horizon bounded by the narrow confines of a parent's nest: *He*—the God of all—has alike decreed that the intellect of man—sudden to appreciate, and strong to comprehend—shall spring from a like feeble and embryo beginning: and that the mighty mind, which soars beyond all mundane elements, and through the mists of sense and error, sees clearly the objects of its extended and still extending prospect, shall (in its maturity of power) owe its extended views and highest soarings to the growth (by measured means and times) appointed to that weak intellect whose widest views and highest soarings were bounded by the narrow con-

* "And breathed into his nostrils the breath of life, and man became a living soul."—Gen. ii. 7.

fines of a cradle. The growth of the intellect, as the growth of the living body, has its times measured and its means appointed.

3. Hence, however strenuously mal-tuition may endeavour suddenly to elevate the uninstructed mind to the higher departments of science, by omitting to inculcate first a thorough knowledge of elementary things, and by committing, to yet babes in science, the management of truths, which require a manhood of intellect to master, however strenuously such tuition may commence its teachings, and however dexterously it may, in proceeding, substitute for a real knowledge of real things, their verbal descriptions, definitions cleverly worded, and words with their wordy meanings—however laboriously such tuition may heap line upon line, and precept upon precept, vain are its "grinding" monitions, vain is all its labour; it gives none but a superficial knowledge of the empty verbiage of science—for the order of the means is appointed.

4. And however well the philosophic teacher may select and arrange the materials of knowledge, may proceed, little by little, from inference to inference, through the more and more expanded, and compound to the most complicated parts of science, and ultimately to a view of the whole system: still as the objects of science expand, the mind to comprehend must expand also, the intellect must grow in vigour, and the time of its growth is appointed.

5. Hence, it is only by time and by succession of means that the uninitiated mind can perceive the meaning of the word "science," or of the word

"demonstration." For to know what, in nature and extent, those things are which these words refer to, requires a previous acquaintance with many of the simple objects and simple truths of science; repeated views of diversities and similarities; reiterated contemplations of the connected many as the isolated one, and of the isolated one as the connected many; repeated meditations of data and inference; much practice in selecting, inferring, and summing up various accumulations of evidence (the diverse grounds of assent); and that much practice in close thinking, which gives to the growing mind accurate discrimination, clear abstraction, and ready classification, and gives an ability to follow unperplexed through complicated trains of intricate reasoning; but above all, educates to that art and established habit of adopting close inference which (and which only) to the power of *seeing* adds the power of *feeling* the truth; enabling the mind (with a very rare ability) unbiassed to embrace it.* Fully to understand then what "science"

* "He is a sincere searcher after the truth." A straw for his searching! Every person who is tolerated by society who is not a professed bigot is "a searcher after the truth." There is no merit in sincerely and earnestly searching after the truth. Any person can, and every person does *search*. But of the many searchers-after, how few, when the truth is before them, are able to embrace it! Because they search for something of a pre-determined fancied form—something that will by nicely fitting add to the harmony, supply the deficiencies, and connect and increase the extent of their present notions: they search for something which is enriching. But truth comes in an unexpected shape, and instead of offering harmony, tenders discord and confusion;

is, or what "demonstration" is—common as these words are in the mouth—requires an amount of knowledge attainable only through a long train of tuition; knowledge which, in the present state of medical education, few of you professors of medicine, you babes of science, have attained: and knowledge, the road to which the worn and hackneyed in the ways of error cannot approach but by the loss of many previous attainments, and to pursue which requires more travel of thought, more effort of investigation, and more time for meditation, than the elder professors of medicine, in their decrepitude of age, and increasing feebleness of intellect, can ever give again to any subject—knowledge; which (low as it may appear) is so high in the order of intellect and truth, that of the present generation of medical professors, few of those in the yellow leaf, few of science's gray-headed tyros, ever will attain it.

6. Of the time and of the means necessary to enable the mind to comprehend fully what "science" is, take especial notice, and in considering sciential medicine by the short description I give, bear in

truth, instead of connecting and adding to, can often be only obtained by expelling legions of, present notions. So the acquisition of truth, instead of enriching as expected, makes numerically poorer, and men meditate on the number of their notions; and when truth presents itself with "Give up all and follow me," instead of admitting and embracing, men continue through life sincere and pitiful, "earnest and imbecile searchers after the truth:" or at best "men mostly do with truths as untrained whelps do with reptiles—pursue at random many till they get at one, then mangle it and leave it."

your continued remembrance, that the decrees of nature are against your suddenly understanding it; and as feelings of dissatisfaction and strong objections, one after another, arise in your minds as I proceed, take care not to flatter yourselves with the supposition that the flickerings of imagination, which will be excited in and whiffled through your infantile and imaginative minds by the mere thoughtless audition of my words, is any reality of knowledge. Do not delude yourselves by assuming that you understand what is told you; for remember that educated as you have been—in your present state of general and medical ignorance—it is not possible by a few short phrases to communicate that knowledge which it is the work of time and meditation, and the object of full tuition, to give. And remember that your present ignorance would make any attempt to give you concisely a speedy understanding of sciential medicine, or of any other science, almost absurd; for you have yet no discriminating acquaintance with even the verbal signs by which knowledge is communicated, and addressing you—telling you what I undertake to teach—in the language of science, would be (and so far as I do it will be) only wording the contract in an unknown tongue. And while I am laying before you some valuable truths, for the purpose of pacifying you petulant brats of science to the labour of further thought and investigation, remember that I am only attempting with pearls what I know would be better effected by baubles, and that, at the risk of my giving, and with the certainty of your somehow obtain-

ing, of knowledge the little which puzzles—the fractional scraps which blind.

7. And it is because of, and as the only means of holding any distinct communication with, your present ignorance—as the only means of communicating any definite ideas to you habitually vague thinkers—and as the only means of ultimately infusing correct perceptions into minds apt to misunderstand—that I refer to geometry, or to the pure sciences, as the especial objects for your attention. And to avoid also the necessity of deciding at the commencement of the investigation (or previously) what proof and demonstration are in the abstract (questions, a right decision of which requires the knowledge and intellect which are of ultimate acquisition), to avoid this great obstacle at the outset, I, in stating my part of the contract in verbal representation, narrow the undertaking I meditate. I do not, mark you, undertake to show how the truths of medicine can be demonstrated—I do not undertake to apply proof to medicine; but in my title and detailed explanations, I only undertake to show how the truths of medicine can be demonstrated, as well as the truths of geometry, or of the pure sciences, are demonstrated—how medicine can be proved as well as geometry or arithmetic is proved; that is, how to apply to medicine (and all other sciences) as much as is now applied to geometry or arithmetic, that which is demonstration, positive proof, certainly as much as any thing in human knowledge is. And as, in stating the extent of my undertaking, so in describing

what sciential medicine is, I constantly refer to the pure sciences, the only things which in describing by comparison (as is here necessary) sciential medicine can be referred to. And though I shall hereafter point out what proof in the abstract is, and describe what, under every diversity of argument, constitutes demonstration, I shall do so, not that sciential medicine may be referred to or tested by any description of mine, but merely for explanation—always remembering, that notwithstanding any description I may give, or any thing I may assert, of the pure sciences, and notwithstanding any elision of language I may use, it is always the pure sciences themselves which I refer and appeal to. They, as references, will assist in forming or correcting any perceptions which the few persons who can apply to them may have at the commencement of the investigation, and by referring any diversity of judgment which may (and I anticipate that much will) arise during the future prosecution of the investigation, to the pure sciences as umpires, sciential medicine will be able, under their instructions and dictations, to decide as correctly, as positively, and as unanswerably, as the pure sciences themselves decide.

8. But no reference to the pure sciences, however pointed and constant; no declaration of such reference, however explicit and often repeated; nothing which I can say will prevent you, of medical intellects, constantly adverting for guidance to the fantastical creatures of your ever-creative and ever-influential imaginations. In thus referring

the members of the medical profession to geometry and arithmetic, I am aware that instead of thereby giving them any definite idea—instead of thereby raising before their perceptions any specific point to be arrived at, I am (as in giving patients data to think upon*) only adding to their materials, widening their field, of delusion. For the medical profession, liberally educated in the learned languages, well acquainted with the signs of ideas, much practised in remembering, and little used to thinking—remembering every thing and deciding nothing—have so little acquaintance with things signified; are so much abroad in the regions of thought, and so suddenly bewildered when they enter, or attempt to travel in, the departments of pure reason, that their notions of the pure sciences are such as I can never observe nor attempt to describe without strong feelings of derision.

9. There are some of the profession, and many of mankind, unconscious (for they never had the

* Give to the commonality of patients materials to think upon, or let them procure their materials themselves; and in one hour, and from one fact, they will obtain, and to their full satisfaction establish, their doctrines of medicine; and they will set up their crude notions in opposition to the researches of ages and the dictates of the whole of creation: and by their incipient wisdom, or by their feelings, they will either prescribe what is good for themselves, or they will fetter your endeavours, or modify your treatment, by the meddling inferences of their common-sense intellects. And verily they have their reward—for of all patients none are so difficult to cure as those who can cure themselves, and none so rarely recover. It is in medicine as it is in law—"He who is a doctor to himself has a fool for a patient."

feeling) that reason has any thing to do with arithmetic: with them that science is but the arranging of figures in separate rows, according to rules —rules suggested by chance, and established by schoolmasters, and the well working of which always gives (no one knows why) "the answer."

10. And there are some of the profession (and this "some" is many) who admit—cordially believe—that there is reason in arithmetic; that the whole of the science is founded on it; and yet to their perceptions the signs of arithmetic and the things signified, are as inseparable, and as much one thing, as witchcraft is; and they either cannot point out an individual inference in the whole science; or to them the reason in arithmetic is a *sui generis* something; which possesses nothing in common with any "other reason," but a something which (like the things signified) is so intimately blended with the signs made use of, that by no disassociating process (or abstraction) of mind can they separate either from the other; and they cannot conceive how any proofs like the proofs of arithmetic, can be attained by any other means than the working together of the nine units of arithmetic. Yet such men, in books and conversation, smatter learnedly about the nature of units, the integrity of numbers, accurate operations, trains of minute calculations, uniformity of result, "arithmetical reason," and "reasoning arithmetically;" "mathematical investigation of cause and effect," "mathematical minds," and "arithmetical proof." They decide positively what the science can and

what it cannot do—and talk peremptorily, as if arithmetic reasoned by their permission: the approbations and condemnations they scatter being in symphony with their exhibited appearance of learning: and if, when their wary circumspection is asleep, you examine what their vetos and condemnations rest upon, you find that in their youth the bastinado drove them through (or through the signs of) vulgar fractions, almost to trigonometry; and since their youth, to keep their learning up, they have regularly exercised their intellects in the climacteric arithmetic of pounds, shillings, and pence.

11. And there are some of the profession (and those, more numerous than occasions for them, are few) whose therapeutical attention is especially directed to the strengthening of intellects more erring than their own—who, in studying the mysteries of the "mind diseased," contrive to mix, without blending, metaphysics and medicine together. These tell you of the influence of body on mind, and mind on body, they (each by his own standard) measure the powers of reason, the capacity of mind; and they (having read that others were) are delighted with the reasonings of arithmetic. "How accurate! How clear! What excellent tests of the mental powers! What valuable diagnostics of insanity the reasonings of arithmetic afford!" they exclaim one minute, and the very next moment examine and decide on the insanity of a patient, by plying him with questions on some part of arithmetic which has no reasoning in it.

12. Such are some of the pitiful and in effect la-

mentable notions which you professors of scientific medicine in general have of one of the sciences which sciential medicine appeals to. Of the other science especially appealed to—geometry—the notions of the profession are still more erratic; their misunderstandings still broader.

13. Place geometry before a physician; induce him to apply his intellects to it: he observes that the lines and their parts are not numbered as the lines on the face of his watch are, nor have they, like the lines of geography, their names written on them—they are not labelled as they ought to be; and then he reads the demonstration, and reading sees in it a number of large letters, which spelling no word, and following one another without any small letters between them, are to his literary intellects but the blind huddling together of instruments only fit to begin proper names with, or to start with after full stops. And having discovered these, to him, manifest imperfections, he finds courage to guess for himself a little, and the scribe in a dead language valiantly accuses geometry (the plainest of all reasoners) of intentional obscurity: and throwing aside the book, he derides all who puzzle and mystify their minds by studying such an unintelligible science, "well enough fitted for carpenters; but useless and intolerable to any gentleman who has an elegant taste for polite literature."

14. Some other of the profession there are (and akin to these are some minor geometers), who being ignorant of the history of geometry, unacquainted with the dark and intricate bewilderments

and keen controversies which in its infancy surrounded and assailed it, or the new truths which age after age have been added to it; or being influenced by their notions of science in general; misled by geometry's apparently fixed state of perfection, and impressed with the force of its reasonings; instead of regarding the present science of geometry as a growth from little beginnings—a product of much labour—an accumulation of many centuries; they look upon it as a wonderful something, which without birth came, and without growth was matured: they think it was given, like a flash of lightning, suddenly to the world, or, that like some goddess of wisdom and arms, it sprung at once in full maturity, and fully armed, from the brains of some Jupiter, going forth subduing all opposition of opinion, taking all men's intellects captive, conquering and to conquer. Such a marvellous and wonder-working thing is geometry to them.

15. From others of the profession select a physician; place before him a book of geometry—point out the lines and angles, and read the demonstration to him; show him how one inference is drawn from another, and another drawn from that; notice the workings of his inward feelings—mark what emotions creep over him more and more, as "into the porches of his ears you pour the marvellous distilment," and you will find that the physician receives from geometry, while listening to its demonstrations, much such sensations as the rustic nursery girl receives from astrology, while having her nativity cast in the closet of some Jew conjurer. She

has heard of uncommon and mysterious means of knowledge, of hidden agencies, of men possessed by powers which common men can form no notions of; by which things that cannot be seen, nor searched into, nor found out by any common means, are unerringly foretold; she thinks of what she has heard, and full of wonder watches the astrologer draw his lines and angles, hears him talk to squares, and wonders by what supernatural means dumb figures can communicate the future: she stares and thinks, and thinks and stares, till her awe-struck ignorance throws whiteness and wonder into her face, then seeing the conjuror read his Hebrew "backwards," her mind staggers, her feelings are overcome, she swoons, and thinks no longer. So the physician has heard of peculiar reasonings, of the mysterious agency of symbols, of means of inference inscrutable to common sense, of men possessed of superior powers, gifts of genius, that common minds can form no notion of; by which they reason unlike other men, by which things invisible are seen, and the occult laid open. Prepossessed by these notions, his mind meditates on them while listening to the demonstration of geometry, and full of wonder he looks at the angles and letters; and his expectant understanding, puzzled, gropes for (while fearing to obtain) some glimmering of that revelation which would show wonderful and endless powers to be resident in what is, to common eyes, a simple circle; and his common-sense soul marvels what that superrational power can be which proves a line which

himself sees, "long as a needle, and broader than the edge of a lancet," to be length without breadth, and proving silences all opposition of opinion; he stares at the lines and thinks, and thinks and stares again—till a subdued sense of the littleness and inability of his intellect convinces him that the genius of geometry gives to her favourite sons, the mystic power of forming oval and angular perceptions, with the power of arriving at conclusions by some secret art of thinking backwards; despair comes over his intellect, vacuity visits his face—he looks unutterable things—and his powers of mind fainting, he ends the demonstration.

16. Such are the impressions, such are the fantastical notions, which you of the profession generally entertain of the pure sciences; and when you Daniels condescend to give a verdict on sciential medicine and myself, such are the materials which you bring to judgment. And when I say that medicine can be proved as well as geometry is proved, persons whose minds are not capacious enough to comprehend the reasonings in "The Rule of Three;" persons who never did read, and with the understanding never could read, a single proposition in geometry; and persons who do not know their own meaning of the word "impossible," set themselves up for judges, arrogantly put their empty opinions in opposition to demonstration, and declare "It is impossible!" deciding on things they know nothing about as positively as a pinafored school girl decides on the sublime mysteries of theology; and, for departing from their methods of

thinking, condemn me with as much sincerity as the pretty pouting one casts her anathemas at all who do not embrace the metaphysics of her Christianity.

17. "But while the pure sciences are the approved means by which the art and the habit of right reasoning are so generally inculcated; and while geometry and arithmetic are so constantly appealed to in all systems of science, is it," you and the scientific will ask, "is it true that the members of the medical profession, who appear so incontrovertibly learned, are in reality so ignorant of right reasoning as the entertaining such notions of pure science would imply—is it true?" From appearance I appeal to fact. Look at that medical man, of *scientific* attainments—the learned professor in a learned profession. Hear him expatiate on the wide range of knowledge, on the nature and extent of science, the excellency of experimental philosophy, the march of intellect, the magnitude of recent discoveries. Mark with what facility of criticism he adverts to the doctrines of antiquity and the delusions of dark ages; how glowingly he feels the superior beauties of modern medicine—how he attributes them to, and rejoices in, the diffusion of knowledge, and exults under the mighty workings of liberal education. Hearken to his words: hark with what penetration he looks into every science, and with what a comprehensive grasp of intellect he perceives all the sciences working together—each aiding each—to the effecting of a high and mighty lifting-up of human nature (to him a tasted

consummation sure). Listen while he (who has, doubt not, well weighed) admits, in words of warmest gratitude, the weighty obligations medicine is under, the heavy debt she owes, to her sister sciences: "they educated her!" Hark, how familiar he is with her history; he knows who converted her, and tells who taught her how to think; he dilates on, he improves her in, her art of reasoning; and how beautifully, by dilating on, he *expands* the accuracy of her moral proof! Hear him compare it to the proofs of other sciences, and listen while he who touches all things, and weighs all he touches, tells you what certainty in the abstract is; he knows, he says, what "positive proof" is, and doubtless 'tis the full appreciation of his mind which makes his tongue so strangely struggle for utterance; for mark his interjections—mark with what notes of admiration he gives vent to the acute delight he feels in contemplating accurate discrimination; mark how he luxuriates on reason's first principles, and, banquetting, drinks deeply the concentrated essence of undeniable intuitive truth; till, to the seeming, his mind running riot, wallows in the riches of incontrovertible inference, and his ungovernable feelings, brimful of ecstasy, wanton in the purity and perfections of the pure sciences. His teaching ceases—and hark! loud plaudits pour upon him (the volume-speaking tell-tale offerings of the prompt to feel); and notice what humble indications indicate his humble thanks, while he, with visible delight, acutely tastes the sweetness of the recompense; and, while he so obtains the rich reward of

honest labour—man's best gift to man—self-approbation. Rare is wisdom, and great is the privilege of being taught by the wise; and glows not the heart with high-directed gratitude for the privilege of being taught by him whose teaching seems to travel the remotest confines, and to fathom the deepest truths of science; for the privilege of sitting at the feet of a medical Gamaliel, whose comprehensive words pour forth in seeming floods of truth: the humblest man by learning made the proudest specimen of human nature—who knows so much of medicine that "'tis safety to be near him sure." Get near him then, and ask him, who seems to know all truths, what individual truth he knows; and watch his humble nature change: mark with what blustering condemnation he will scorn the silly littleness that asks for atoms; then admit the mighty magnitude of the much he knows, and ask him what part of medicine he knows best; and (if he tells you) ask him *how* he knows it—and then mark with what noisy pettishness, and sneering censure, he will scoff at you of no authority, for daring to inquire into the pretensions of himself and brothers of great names. But fear not his noisiness; press him to tell you what is the evidence, what is the reasoning by which he knows one atom of the much he has pretended to; and when he shuffles from your sifting, as shuffle soon he will, tell him that broad assertions and fine appearances will cover much of emptiness. And if that telling should make him more boisterous still, faint not at his noisiness; bid him bid his much perturbed

spirit rest, and tell him that he is a "great authority," that his writings are abroad; and if that intimation gives no quiet to his tongue, and if you are acquainted with sciential medicine, tell him it is pity which prevents philosophy ungarbing the pretensions which are fit for only the loud laugh of derision, or the firmly fixed finger of scorn. And do you through life beware of that high and ample wisdom which neither rests on, nor includes, any thing that is underling; beware of that great knowledge which has no little knowledge in it; of that great learning which is not made of parts; of those comprehensive truths which are not composed of little truths; of those great truths which are not made of atoms: that is, be not deluded by those dignified appearances of much learning, which often cover much real emptiness of intellect.

18. It is with doctrines as it is with trees, they must be first planted, then watered and trained, before fruit can be gathered of them. And if you wish to amuse yourselves with idly unriddling motives which are beyond the sway of your influence, take especial notice, that the right method of planting new doctrines is not the right method of causing their daily growth; and, remember that in the destined order of things, the planting and the growing both precede the gathering of fruit; and the planting is first to be done. Looking at the first reception which the new doctrines of men have ever hitherto had, leads common consideration (would lead a gardener) into the question whether the method of planting was right: and the little success—

the great failings—which have always attended the methods hitherto practised, and human nature, plainly require, and urgently advise, that the doctrines of sciential medicine be propounded by a new method of planting.

19. It is the blind, fantastical, ignorant and idiotic cant of the age, that diffidence and modesty are the inseparable attendants on, the characteristics of, true wisdom ; that "a little learning is a dangerous thing ;" that "shallow draughts" of truth "intoxicate the brain ;" "drink deep or taste not," are the first precepts of teachers, the great lesson of the moralists, the measured tattle of the poets, and the revered doctrines of all those who never "tasted" a "shallow draught" of real learning—who do not know what wisdom is, who never drank the living waters of the well of truth. * The inculcation of such doctrines, together with the precept that "it is your duty to bow respectfully to all those who have obtained the respect of others," is the curse which every father throws upon his children—the well-adapted contrivance by which every pupil is kept a bigger fool than his teacher ; it

* Moral philosophers (Dr. Watts for instance) inculcate diffidence as the characteristic of the soundly learned, and decry confidence, and yet (almost in the same page) give directions how to prevent the mind receiving any tincture of that confidence and positiveness which they say study of the pure sciences is apt to give ; thereby out of their own mouths showing, that that knowledge which is of all knowledge the soundest is the least likely to give, and best suited to take away, that feeling of diffidence which is misnamed modesty.

teaches diffidence—takes away all manly dependence on self—deprives, at once, the whole human race of all individuality, making every man a drivelling non-entity; the evasive "we" I so constantly meet with, leaving to mankind no one advancer; not a single defender of the truth; but making every child of Adam a time-serving worshipper of any many-headed fool that looks frightful. And the ten thousand times ten thousand forms in which such doctrines are presented—the skill with which they are cunningly matted together—their universal influence on mankind—the never-failing power which they have to turn the eyes of all men from the truth to looking at one another, and the craftiness with which they are applied to humanity's best feelings, and mingled with the truths of heaven, present a matter of amazement which nothing but revelation can unravel;—it is because he comes and he works as an angel of light. The concoction and the diffusion of these doctrines are the crafty doings of the devil—the master-work of Satan, by which he, under the semblance of the amiable, cozens man to abandon reason—to forsake the guide which his Creator gave him when he withdrew himself.

20. Such are the established doctrines of the age—such is their source, and such are their effects. But (when the controlling feelings are quiescent) action is a thing for self, but doctrines are dealt out to others; thus I am bid, "be modest," "state your doctrines with becoming diffidence," "pay respect to your seniors," "be humble;" and I, by

human nature's actions, have been able to interpret such advice. I find that such precepts literally translated are, "Stoop truth and you, that error and I may trample on you both;" I find that while such precept-dealers preach humility to others, each sets himself up as a standard for all men to measure by, and measures all men by the standard he has set up—he knowing, and being positive of, every thing.

Tell a man who never proved one truth, that you suspect all human knowledge can be demonstrated, and he well knows, he is positive; it is impossible, and yet he will tell you too how long it will require to put the demonstrations into words, and to construct the system of all human knowledge; and if in the month he has allowed you the work is not accomplished, he will wonder what you are about, and scoff at your inability: then show him how to do what he avers "impossible," and he forthwith will show you how to do it better, and violently censure what you have done. Each man virulently judges and suddenly condemns every thing which does not harmonize with his adopted notions; fools appeal to fools; and, united, would visit with destruction, if they could, every truth which does not tally with the creed they hold. Petulant, turbulent, and intolerant is human nature.

21. Ill thinkers who look not to truth have ever thus referred new doctrines to their preconceived notions, and have tolerated or condemned, by their mere pre-judgings—such a decider has human nature ever been, most censuring that which least accords with error, and most condemning—that truth

which is the most corrective. And soon as the name of sciential medicine had been uttered, before one doctrine had been whispered, sudden condemnation was cast upon the science and myself: from every person to whom the name had gone sudden censure was received; condemning epithets soon poured thickly in; "stuff;" "all moonshine;" "silly notions;" "mistaken notions altogether;" "nonsense;" "arrant nonsense no doubt;" "doctrines founded, no doubt, on some fundamental error;" "great folly;" "doctrines which he dare not openly advance;" "which he dare not give a glimmering explanation of;" "quackery;" "silly doctrines which I will undertake to refute and expose in a moment." "A silly man;" "led astray by some error;" "whose head is full of mistaken notions;" "a well-meaning young man that I am sorry for;" "that I pity;" "a person who ought to be put under the care of his friends;" "a poor fellow who has no friends to take care of him;" "a junior practitioner led astray by the ardour of his feelings;" "an enthusiast;" "a violent enthusiast;" "a visionary;" "a great visionary;" "a fool;" "a prating fool;" "a contemptible fool;" these are some, of the many, epithets which I have heard of;* and there is no scoffing epithet of common contempt,

* It would be but fair (and the temptation is great) to give the names of the twaddling authors of these epithets; but, as some of the profession have candidly stated their opinions, and openly and liberally opposed the doctrines, of sciential medicine, I shall allow the whisperers that enjoyment of privacy which is the privilege of common slanderers.

nor any sneering epithet of derision however high, which "my dearly beloved brethren" of the profession have not, by their whisperings and mutterings, already thrown upon sciential medicine and myself. Thus you see sciential medicine has already on its head many of those leaves without a crown of which no corrective truth ever went triumphantly forth: the science is already under the invigorating auspices of that same patronizing power which has ushered into the world and attended the infancy of the greatest discoveries which philosophy ever gave birth to.* Such are the epithets which have been poured upon me and the doctrines I undertake to teach, by the members of the medical profession, who think that truth is by nature accordant to the notions which they by education have: and against sciential medicine, now, before one doctrine is propounded, there are arranged medical professors with names so sounding in the public ear that underling professors use them to to conjure and to cozen with; names so sounding, that my tongue trembles to tell you them; authorities so great, that my fingers tingle to write them down for publication;† from the highest authority in medicine (by self-estimation the weightiest, and

* To be first refuted and then abused are the characteristics of error; to be first abused and then not refuted, are the characteristics of corrective truth.

† If any professor who wishes his authority to be put against sciential medicine, will send his name to me, I will be answerable that the public have the benefit of it; but, N.B. he must pay the postage, for there is no man in medicine whose mere authority is worth twopence.

by idolizing become bloated with the pomp and importance of self) down to the six months apprentice, new in his knowledge of some of the properties of calomel and palsy, and hot in the greenness of his puppyhood, from the highest to the lowest in the ill-thinking profession, sciential medicine has already received huge condemnation; all (and each with equal efficacy) putting empty authority against it. Thus have my professional brethren, (good-natured souls !) abundantly offered the only commendations they had it in their power to give; simultaneously certificating that the doctrines I teach will not at all harmonize with the notions they have; and that sciential medicine is not their science of medicine; thus bearing ample attestation to that discord, that great diversity, which is sciential medicine's proudest property. There is no emulation in constructing or in teaching (however loudly lauded) the knowledge of the horn-book, however useful and undisputed; but there is something stirring in hostility; and the universal censure, the general and energetic condemnation, which rise in opposition to sciential medicine, together with its great and universal usefulness, holds out a prize high as ambition ever panted for: and (more than the extent of the undertaking) it is the now generally given condemnation that sweetens labour, that lightens heavy sacrifice.

22. It is in such opposing minds that sciential medicine is to be planted. But, impress it on your feelings; the science is not presented as a beggar's petition, craving your eleemosynary assent. Two

and two are not four by your permission, sciential medicine is not true by your assent, it has, or not having, pretends to have, irrefutability; and the mere pretension sweeps at once away the application of the universally-assumed doctrine, that assent is necessary to validity. Such pretensions dictate and justify a tone which, graceless as it may appear in your eyes, is very much above that of the whining and pestering importunity by which you obtain an ephemeral existence for your empty short-lived theories. Go, inwardly cavil at geometry, if you will; but hold your peace till you can refute it: listen, and inwardly cavil at sciential medicine if you will; but hold your peace till you can refute it. Reason is the great dictator, the commander of the world, and truth is stubborn as fact, and domineering as a doge, and sciential medicine is right reasoning and truth, and such is its tone; a tone of propounding, a manner of planting; expressly advised by him (Bacon), of all philosophers, best able to give, in such cases, the best advice. And sciential medicine is, as truth ever is, a condemner of error; and the doctrines of medicine and medical minds are, and ever have been, full of the grossest errors; and such ingrained rottenness of core cannot be rooted out; the lumbering rubbish of ages is not removeable by the sleek and delicate finger of gentility: correction cannot be given by, the rigid truth cannot be expressed in, the mealy-mouthed silken-tongued *s'il-vous-plait* phraseology of sycophant politeness. Sciential medicine is not a polite beggar.

23. Yet there is one point on which *I* am a beggar to you all. When you hear the men you bow to, throw condemnations on sciential medicine, I beg you circulate their condemnations with their authorities attached; circulate their censures with their names. For sciential medicine is within the cognition of every right thinker, and is already bowed to by intellect enough to weigh down the whole of the medical profession; and my object, even now at the planting, is to keep the science from the perverting interpretations of those who cannot understand, from the polluting embraces of fools. Give, then, every man full liberty to talk; that he may declare his opposition to the truth, and may put a mark on himself; and do you circulate his declarings, that he may be kept out of the science, be kept from perverting the truth.

24. Sciential medicine then solicits the assent of no man; its credentials and its commandings are its irrefutability; and such commandings combined with ample opportunities for full investigation, include all the essentials of tuition (and tuition without them is without its essentials); and ample opportunities to investigate, to detect fallacies, and to refute, will in full teaching be given by the institutions of discussions after each lecture.

25. In directing your especial attention to the lack of intellect and the gross ignorance which exist in the medical profession, I can only point out the separate parts of that mass which the public has long suspected, and lately clearly seen the existence of. The profession is now *notoriously* ill-educated. Common newspapers "blush" aloud for your ig-

norance; and it is well that we have yet met with blushes only. I heard of the cholera while it was yet abroad, and I greatly feared it: it came, and I trembled; I was afraid, and I trembled lest the coming of a public calamity should direct the scrutinizing attention of the scientific to the pitifully concocted doctrines of our medicine, and to the imbecile intellects of the profession, lest the scientific should investigate and expose the gross absurdities of all medical reasonings, and lest they should first point out and first scoffingly teach us the right methods of inferring, and lest correction, derision, and retribution, should visit us as a scourge from without. But it is fortunate;—time for correcting ourselves has been allowed us; and now the scientific and the prating public need nothing but to learn in silence of sciential medicine. Every absurdity there is in medicine I shall endeavour to expose; for which endeavour I shall doubtless be condemned by all medical men except—every individual.*

26. But notwithstanding any condemnation I may receive, I shall try on all occasions to state the plainest truths in the plainest uncompromising terms. Pretty words are fancy articles; and though modern teachers deal out their pretty words to dis-

* It is worthy of observation, it is a great vice of public opinion, that fourteen persons shall all collectively strongly condemn what all individually highly approve of: each person, when condemning, deciding by the intellects of the other thirteen, and no individual voting for himself. Many men are like many chemicals; they strangely lose their properties when put in combination. The public is not composed of individuals.

seminate the truth, as modern ladies vend their fancy articles to spread the gospel, yet honesty and truth require no compromising phrases, and the nick-nackery of language is not at my command.

27. The erroneous notions of science entertained by the members of the medical profession generally, and the blind confoundings and the broad delusions which lie at the root and pervade the whole of the established and idolized philosophy of the day, together with the ridiculous and fantastical notions which the best of our philosophers have ever had of proof, or the certainty of knowledge, make it at this time especially necessary for you (imbued with the fallacies of the age) to consider well what a science is,—what things belong to a science, and what do not; the manner of forming the sciences; the diversity between "the pure" and "the mixed," and those properties which the pure sciences, when formed, in reality have or evidently have not. It will be easy by a cursory enumeration (assisted by repetitions, tautologies, and other latitudes of verbiage) to place before you, of these things, knowledge which many ages have had but no man has applied,—knowledge universally admitted, but universally lost sight of; but it is only by continued meditations and repeated trials that you can appreciate the influence which this (at first seeming valueless as it is common) knowledge has on every train of thought, but more especially on such objections as are, by an age educated in error, commonly brought against proof; one little portion of this seeming childish knowledge being, when rightly applied to objection, mighty to the scattering of hosts.

28. Concerning science. There are in the universe of matter and mind many individual things. ["A thing" is that, the verbal sign of which is in grammar a noun.*] These things mixed together in space, not classed by nature, are mentally separable into different departments. Thus, we mentally separate from all other things, and contemplate by themselves, all angles, circles, squares, &c. in one department; and we mentally separate from all other things, and contemplate by themselves, the heavenly bodies, their motions, laws, &c. in another department; and we mentally separate from all other things, and contemplate by themselves, human bodies, their structure, the influence of mind on them, their growth, decay, succession, laws, &c. in another department.

29. Thus, all the known of things in the universe are mentally separable into different departments. But the things in any one department are not—themselves do not constitute—the science appertaining to that department; they are the mere objects of that science. Angles, circles, squares, &c., their positive and comparative sizes, properties, &c., however numerous and well known, do not constitute—themselves are not—the science of geometry. The sun, moon, stars, &c., are not astronomy. Human bodies, their changes, their different states, &c., do not constitute—themselves are not—the science of medicine.

* The junior professor will observe, that under the word "thing," I am treating of every cause, symptom, disease, means of cure, or of every *thing* in medicine or in human knowledge.

30. Of each of the things in the aforesaid separate departments of the universe, the Creator of them has a sort of knowledge—(omniscience). The Creator has omniscience of all things and omniscience of every individual thing.* He has omniscience of angles, circles, squares, &c. and is acquainted with properties of them which "eye hath not seen, nor ear heard, neither hath it entered into the heart of man to conceive." But omniscience of angles, circles, squares, &c. does not constitute—that sort of knowledge is not—the science of geometry. The Creator has omniscience of human bodies, their nature, their laws, &c., but omniscience of human bodies, their nature, laws, &c. does not constitute—that sort of knowledge is not—the science of medicine.†

31. Science is not the knowledge at present possessed, or hereafter to be obtained, by any beings which have other than man's means of obtaining knowledge, or that are superior in knowledge to man.

32. The inquiring mind of man makes every thing

* Though they accept of the wide definition, "Omniscience is a sort of knowledge," yet amongst the learned professors of medicine, there are many whose literary eyes are so full of etymology, that they cannot see how any being can have omniscience of an individual thing, nor can they, by the utmost efforts of their unpractised intellects, comprehend it. In their eyes (notwithstanding the definition) "omniscience of all things" is an unpardonable grammatical iniquity, and "omniscience of one thing" a gross, incompatible absurdity. They are my judges.

† Hence, the certainty of demonstration can be obtained without obtaining omniscience. Yet tell any man that all human knowledge is proveable, and the first thing he asks you for, is omniscience in detail.

an object of concernment to him, and appertaining to the things in every department of the universe, man has some of ideas, suppositions, knowledge, surmises, perceptions, persuasions, guesses, &c. (mental affections). But it is not all these various mental affections appertaining to the things in any one department of the universe which, collected together and arranged, constitute the science of that department. The separate individuals of mankind have some of ideas, suppositions, knowledge, surmises, perceptions, persuasions, guesses, &c. appertaining to angles, circles, squares, &c., but all these mental affections, collected together and arranged, do not constitute—they are not—the science of geometry. So the separate individuals of mankind have some of ideas, suppositions (knowledge?), surmises (perceptions?), persuasions, guesses, &c., appertaining to human bodies, the operation of agents on them, the laws they are under, &c.; but all these mental affections, collected together and arranged, do not constitute—they are not—the science of medicine.

33. The individuals of mankind, as already asserted, have various mental affections appertaining to the things in the several departments of the universe; and to make a science, whether pure or mixed, the mental affections appertaining to the things in one department are not collected together and then divided, but they are divided by selecting (electing) from the scattered all of them, some which are gathered together and arranged, and to which record and the name "science" is given.

34. To repeat then. The mental affections which man has concerning the things in a department of the universe, are themselves divided into two departments, the elect of them are put into one department, and they are "the science" of that department, and the non-elect are left in another department, and they are the refuse of that science, to which hitherto neither record nor name has been given.

35. Every science, then, is made by selecting mental affections, by choosing some of them, and choosing by some guide of choice. Every science is made by electing in obedience to some law of election. And it is the using of one guiding law in selecting the mental materials for one science, and the using of a different guiding law in selecting mental materials for the formation of another science, which occasions the diversity in the sciences, some being "pure," others "mixed."

36. Every pure science (as geometry and arithmetic) is made by selecting from all the mental affections which mankind has appertained to the things in the akin department of the universe, such only as are approved of by reason; such only as are (call things by what names you please) rational; or (not to use the pitiful wriggling of language common on such occasions) such mental affections only as have one particular property—the property of being demonstrable.

37. Reasoning expressed in words is argument, and when nothing but reasoning is introduced, and the whole of the reasoning is expressed, the argument is say demonstration. Demonstration actually

applied shows (by one method of showing) that demonstration can be applied to a mental affection—shows that the mental affection has the property of being demonstrable—so that demonstration is the test by which mental affections are selected to form a pure science; and every mental affection which abides the test, is selected to form a part of, and is admitted into, the pure science; and every mental affection which will not abide this searching and accurate test, is not admitted into, but left amongst the refuse of, the science. In selecting materials then for the building up of any pure science, demonstration is the only guide.

38. Concerning demonstration. The external things of the universe exist, and from them we obtain (through the senses) mental affections. Gold and the sun exist, and the mind receives the sensation, or mental affection, of the particular colour from the one, and of the light from the other. It is by feeling (by being conscious of) these mental affections that we know of the existence of the external things of creation. When either of these mental affections which the mind receives through the senses, exists in an individual mind, its existence there is necessarily accompanied with a feeling of its presence—a knowledge of its existence. The individual mind has (as it has of toothach) a positive consciousness of the existence of any one of such mental affections, and the individual mind is able, with some amount of ability, to distinguish (without or after more or less examining by known means) the one from another of these mental affec-

tions. And as the mind is conscious when it possesses any one of these mental affections, it is conscious, equally positive, when it has not that one. Thus it is with the mental affections, however complex, obtained from external things through the senses (and therefore thus of the external things); and it is even so with the mental affections, however compound, which are obtained by reflection. The idea of golden-coloured grass (the colour of gold combined with the form and other properties of grass), and the idea of green gold (the colour of grass combined with the specific gravity, and other properties of gold), are received from reflection; and those mental affections, which any assertion in language, whether true or not, is the verbal sign of, are also mental affections received from reflection, and the mind knows as well when it does or does not feel any one of these mental affections, as it knows when it does, or when it does not, see the colour of gold or the light of the sun—and, with or without more or less examination by known means, the mind is as able to distinguish one mental affection obtained by reflection, from another mental affection obtained by reflection, as it is able to distinguish sunshine from the colour of gold. Or, as several mental affections obtained by the senses, combined together, form (our ideas of) the external things of the universe; and as these things have properties by a more or less simple examination of which we are able to distinguish one from another, so mental affections received from reflection have properties by a more or less simple examination of

which, we are equally able to distinguish one from another of them—a truth from a fallacy; and the method of examination is alike in both cases.*

39. Concerning the method of examining. The changes which take place in the external material world—those complicated myriads of every moment which bewildered ignorance regards as distinct and independent acts of nature, philosophy sees produced by the operation of a few simple principles, (as attraction of gravity and affinity). The discerning eye of philosophy when examining, sees one material thing—the rarest to science and research—produced or exist, by the same operative principle upon which depends the production or existence of the million of other things—those common to daily observation. Philosophy sees that one principle of production or existence is common to the one rare, and to the million things, and perceives that denying the principle, to the one rare thing under scientific examination, would be denying the principle of production or existence, to the million of common things under daily observation, and so far stagnating some of nature's commonest operations. It is thus in the material world.

40. So in the mental word, all the changes which take place, or the things which exist in mind; all those rapidly succeeding and evanescent affections which working no abiding change, as shadows come and go; all those slowly acquired and stable im-

* It is only by feeling and by distinguishing mental affections that external things are distinguished from one another, or known to exist.

pressions, the weightiest products of science and research; all meditations, firmest feelings; all those strong convictions of important truths, which change the properties and the powers of mind, and revolutionize the man; all those mental affections which ignorance, who has a god for every wind, regards as the separate products of independent and distinct agencies and interventions, are seen by the eye of philosophy to be, what *He*, who is himself "The Truth," has made them to be—the myriad products of a few simple operative principles. Philosophy, in examining one rare mental affection received from reflection, sees that it was produced or exists by the same operation—by the same operative principle of reason on which the production or existence of millions of other mental affections, common in science, or familiar to common life, depend;* and sees that denying the principle of reason to the one rare mental affection under examination (that is, saying that the principle in the instance, as a principle of reason is not) would be taking the principle away from—denying it to—the million of like mental affections, involving the same principle; and so far stagnating the operations of reason, so far taking from mind the power of reasoning.

41. As, then, we know when an external thing does or does not exist in a near point of space, and as we distinguish one external thing from another, so we can know (and with an equal amount of ability)

* When one principle of reason, by operating, produces, as here represented, two mental affections, they are produced by what is commonly called "a parity of reasoning."

when a mental affection exists or does not within us, and can equally easily distinguish one mental affection from another; and as we perceive one thing (one principle of production or existence) involved in, or essentially appertaining to, many external things, so we can with equal ability perceive one thing (one principle of reason by which a mental affection is produced or exists) involved in, essentially appertaining to, many mental affections. And ability to feel when a mental affection does or does not exist on your mind, and ability to distinguish when felt, one mental affection from another, is almost the whole of man's mighty power to reason.*

42. In this manner some mental affections (those which, to use numbers, are second truths) are seen dependent on, and are therefore referable to, one principle of reason;† and by such reference are perceived to be truths, as assuredly as the million manifest truths, depending on the same principle of

* And would (discrimination knowing when things are like and when unlike) be quite the whole if mental affections were in production and existence simple; but many of them are complex, and to be reasoned about require dividing. And when they are sufficiently divided, the separate parts of them are simple mental affections, and reasoning concerning them is then reduced to merely non-existences, existences and discrimination. Hence it is that so much ease in reasoning, and progress in science, is produced by that great instrument of philosophy, analysis, which those who can neither analyze nor discriminate, call "splitting of hairs."

† The principle of reason, by acting, produces these mental affections.

reason, are truths, or as clearly as the existence of reason itself is seen.

43. According to this method of examination a million (many) of mental affections have first been examined—the mental principle by which they were produced or exist has been seen; the one mental affection, the object of question, is then examined, the mental principle by which it was produced or exists is seen, and (by comparing) the mental principle by which each of the million was produced or exists, is seen to be the same mental principle by which the one object of question was produced or exists. Thus the one rare mental affection whose nature is the object of question, is seen to be in production, essence, or nature, the same as the million of mental affections which are manifest truths (and found to be a second truth). But the principle of the million, its existence and nature when expressed in words is a truth of science (a first truth), and that comparing by which the one, now ascertained to be a second, truth is founded on the first truth; that comparing is itself an operation of a principle of reason—an act of mind. Thus a second truth is by an act of the mind founded on a first truth, and the second as well substantiated as the first; the first being as well substantiated as the truth of the million, or the existence of reason is: and in like manner a third truth is referred to, is "founded on" a second, a fourth on a third, and so on to (for broad distinction say) a thousandth truth; and further, if future science require. It is the property of every truth (a mental affection) that it admits of

being thus referred, by separate acts of the mind, immediately, or through truth after truth to some first truth, and that by a train of reasoning which admits of expression in words: in which train the first truth, and every separate act of the mind, involves a principle of reason without which the mind could not as now reason, nor reason guide, nor science exist; in which train no error, and to which train no counter-train from other data, has been discovered. This property every truth in the pure sciences possesses, and no fallacy does; and in examining mental affections by this property, truths can be distinguished from fallacies, as external things are distinguished from external things.

44. When a person, so high in science that he has attained the knowledge of a thousandth truth, receives (no matter how) a new mental affection, and examines whether it is a truth or a fallacy, he in writing, and in the manner stated, refers the new mental affection, if a truth, to (perhaps his highest attained truth) the thousandth, and no lower—for the thousandth, having been previously examined, is to him as well substantiated as the first truth. This is examining by, or demonstrating to, himself. When the same person communicates, as in teaching, a perception of the same truth to others (men of science) so high in knowledge that they have attained a perception of only a hundredth truth; he, through a written train of truths, in the manner stated, refers the new truth to, perhaps their highest, the one hundredth: and that is demonstrating to men of science. And when the

same person communicates the same truth to others so low in knowledge that they have attained to the knowledge of only a first, a second, or a third truth, he in writing, and in the manner stated, refers the new truth to a first, second, or third truth—and that is demonstrating to the public. And when the same person, in communicating the same truth to others, instead of referring it, in the manner mentioned, to a second or third truth, found in the manner stated, refers it to some generally admitted assertion (true or not true, by education or by accident) that, demonstrating is biassing the minds of others to receive the truth. Which biassing of the mind is all that geometry can justly pretend to. This referring may be from the thousandth to the first, as is common, or from the first to the thousandth.*

45. And here it is worthy of notice that a truth is known to be a truth, by being referred to other truths. Knowledge is known to be knowledge by being referred to knowledge,† and not by being re-

* The account which is here given of demonstration is intended (as much as correct representation will) to accord with the scientific accounts which have been given of demonstration. But sciential medicine, doctrines are, that every demonstration is an exhibition, to self or others, that one thing exists in each of two things: which one thing, existing continuously combined with other things (as particular form, vitality, &c.) constitutes identity—with two things is demonstration—and with many things forms a class.

† Which it is especially necessary to remember when considering what "begging the question" is.

ferred to, connected with, or founded on, any thing external to knowledge. And knowledge is a net; and a net is a net, though you have no especial finger to hold it up by, nor any especial peg to hang it on; so a science is a science, though you have no especial postulate to teach it by, nor especial axiom to found it on. And, though I have used the word "founded," a science is no more founded on one truth of it than a net spread evenly on the water rests on one mesh of it. But as, in examining or pointing out the meshes of a net, you must begin at some one mesh, so in examining or pointing out the truths of a science it is necessary that you begin at some one truth; but, except for convenience, it matters not which that one truth is.

46. Demonstration has two uses: it is an instrument by which to examine a mental affection, and it is an instrument by which to procure the conviction or the assent of a person. To convince persons is the common use of demonstration; and commentators on the pure sciences, some accurate discriminators, and hosts of vague thinkers, have fallen into the supposition that the common is the only use of it, and have imagined that when demonstration fails in its aim to convince, it fails to be demonstration. This great error will perhaps be corrected by a little consideration of one property which all truths possess.

47. Concerning assent. The "external things" of the universe exist, and are what they are, whether you know of their existence, or nature, or not; and all mental affections which other persons have,

are to you external things of the universe, which, like blocks of marble, exist, and are what they are, whether you are conscious of their existence, or nature, or not. A truth in the mind of another is a mental affection, and, like a block of marble, it exists, and is what it is, whether you perceive its existence, or nature, or not. Your inability to see does not blind other men. Your individual ignorance no more does away with the knowledge of others, than the wisdom of others does away with your ignorance. Your opposition, however strong, and your dissent, however vehement, change not at all the nature of truth. Your having and holding a feebleness of perception, or weakness of intellect, though they have peradventure a relation to both, can never affect the existence of either the truth or the moon. By refusing to receive as part of your creed, or by any non-admission, you can no more do away with one atom of truth than you can by obtaining a perfect vacuity of mind, annihilate all the things of creation.

48. Every truth is independent; and demonstration is but a series of truths; and every truth of it, existing in the mind of some one person, is independent of the perception or assent of any other person. What to men of a thousandth truth, or to persons in general, is full demonstration, is so, and they see the truth by it, though idiots, not perceiving its force, or dissenting, retain their vacuity of intellect. Where demonstration, used only as an instrument to examine mental affections by, fails, as an instrument of tuition to men, to produce con-

viction, the failure shows (and testing the intellect by other means would show too) that the truth is not suited to the minds it was applied to—fallacies would, in such cases, be better decoys. Truth is truth, though it does not circulate.

49. Strong dissent is often placed against truth, and strong assent is often given to error. A remote mental affection, being founded on something, and what it is founded on, being demonstration, that and that only, gives to the mental affection the prerogatives which belong to a truth; and the only method by which these prerogatives can be taken away is (not to dissent or assent, for the one is as efficacious as the other, but) to prove by demonstration the existence of some error in what the mental affection is founded on, or to establish against it with the same or other data some counter demonstration; in short, to refute it. Till this is done the mental affection has a right to its prerogatives. *The irrefutability of the demonstration is the test of the truth.* Conviction depends on prior education. Assent and dissent are the bastards which mind bears to previous associations, but irrefutability is the inseparable associate of truth.*

50. Demonstration is then a means of deciding whether any one mental affection be a truth or a

* It is very necessary that you consider and understand well what a truth is—therefore, to explain in words more concordant to your tone of thinking—that an assertion is founded on a demonstration, and is irrefutable, gives to that assertion *(whether the assertion be true or not)* all the properties and prerogatives which belong to a truth; that is, makes the assertion to be a truth.

fallacy. And (again adverting to what I have already pressed upon your attention) it is by this full demonstration, and not by omniscience, nor by the knowledge of beings superior in knowledge to man, that from the ideas, suppositions, knowledge, surmises, perceptions, persuasions, guesses, &c., (from all of the mental affections which mankind have appertaining to the things in one department of the universe,) some are selected to be admitted into, to form, the pure science of that department.

51. When in a science every mental affection, or assertion, or decision, or portion of knowledge, is demonstrated or demonstrable; or (which is the same thing) when nothing is admitted into a science but what is proveable; or, when of the things in any one department of the universe, of however few of them, mankind has some, however little, knowledge, and that knowledge is on demonstration (and arranged in the form of a science); the science of that department is a *pure* science; the positive or demonstrable nature of the mental affections, *i. e.* of the portions of knowledge which compose the science, constituting the purity or the certainty of the science. To know some things well, it is not necessary to know all things. *

52. If of all things, laws, properties, &c., in any

* There is a general persuasion in the medical profession that geometers know every thing appertaining to the things in their department; whereas, put a geometer into an irregular many-sided figure, and he is as much abroad as is a physician in a cholera hospital.

one department of the universe, mankind had knowledge, so full that no future discovery nor addition of knowledge could increase it, and so perfect, that neither future investigation, nor the progress of science, nor the instructions of omniscience, to man as he is, could correct it; the science of that department would be a *perfect* science.

53. That knowledge of angles, circles, squares, &c. which man at present has not, but by his present means of obtaining knowledge, his present powers of discovery, may hereafter, in centuries, years, minutes, a moment hence possess, is no part of the science of geometry. That real knowledge of human bodies, their laws, &c., which man at present has not, but hereafter, in centuries, years, minutes, the moment after next, may obtain, is no part of the science of medicine. Science is not man's future knowledge.

54. Neither does science teach us how to obtain man's future knowledge, or to increase our present. Geometry is not the science for, nor the art of, investigating what unknown properties are possessed by angles, circles, &c., and medicine is not the science for, nor the art of, investigating, what properties, now unknown, are possessed by living bodies, diseases, drugs, &c.

55. Science is knowledge founded on demonstration; that is, knowledge which has been, and now is seen to be, now so founded. Science consists of decisions; of decisions already decided; of such decisions as have been made, and why made, now

seen. Science consists solely of knowledge—present knowledge — known knowledge — knowledge now possessed.

56. Geometry proves, and geometers assent to, what some persons not, or little, acquainted with the science, do not believe, and in opinion oppose; for the existence of science does not prevent men imagining, supposing, or dreaming, as they may, about angles, circles, &c. So sciential medicine will not prevent physicians supposing or dreaming. Though sciential medicine be the truth, men may, if they please, be supposing or dreaming fools still.

57. And as the existence of a pure science does not prevent any man from having pleasant dreams, or forming positive opinions, it does not prevent one person forming an opinion contrary to the opinion of another person, or contrary to demonstration.

58. In giving my description of the pure sciences, I have, up to this moment, been obedient to the false assumptions of the age we live in. The learned, with what is at this time traceable in all their writings—a desire to know all things, without desiring to know any one individual thing, a desire to possess the whole of knowledge, without desiring the possession of any part of it—with this superlatively foolish desire, the learned have heretofore described science to be "the knowledge of man, *i. e.* of all men, collected and arranged," or, with more modesty of definition, but with as much real absurdity; they have defined any one science to be "the

knowledge of many collected and arranged." According to their best descriptions, that one thing, the science of geometry, is the knowledge of this, or it is the knowledge of that, or it is the knowledge of the other "many"; and hitherto I have been obedient to this manner of talking; and in selecting absurdities to suit the prejudices of those I am addressing, I, like a good caterer, have chosen the greatest, and have described the science of geometry to be, the knowledge of all mankind, of every individual, philosopher and Hottentot, collected and arranged in one focus. But there never was such a collection of knowledge; and the truth is, there is in the world no such thing as "the science of geometry." There never was, there is not, and there never will be, any such thing, as "the science of medicine." Amongst all the collections of arranged knowledge, there is no one arrangement, there is no science, which is pre-eminently "THE." There is "The Science of Geometry according to Euler," and there is, a different thing, "The Science of Geometry according to Simpson," so there is "The Science of Medicine according to this man," and "The Science of Medicine according to that man;" but as long as science is arranged knowledge, and there is more than one arrangement of one quantity of knowledge, there can be no one "the science."

59. The one arrangement, of that one quantity of knowledge, which is possessed by the multitude, is (if there be any such thing, and you please) "the science of the multitude." The one arrangement of

the one quantity of knowledge possessed by the many is "the science of the many." The one, and the different arrangement of the one, and different quantity of knowledge possessed by the few, is "the science of the few;" and, notice this, the one arrangement of the one quantity of knowledge possessed by the individual, is "the science of the individual." So, under such a distribution of names there are many "sciences of geometry," and there are many "sciences of medicine."

60. One collection of expressed knowledge, or rather of expressions of knowledge, can be added to another collection, and another to that, as a treatise on affections of the head, can be added to a treatise on affections of the heart, and to these can be added a treatise on affections of the stomach, so that all the expressions of knowledge shall follow one after another, and that, without any one individual being in possession of the knowledge so, in expression, accumulated. But such accumulation refers to expressions of knowledge; but that which we understand by the word "arranged," when we speak of science as arranged knowledge, is not the mere "put-together" which is produced by any such heaping of treatise on treatise as this; "arranged," implies so much and such arbitrary classification, so much putting of every atom in its right place, where too right and wrong are made by individual caprice; that before knowledge, for a science, is "arranged" by, it is always possessed by, an individual. And though imagination may say, that a person in England may compose one demonstration

at one moment, and a person in India may compose the same demonstration at the same moment, yet, fancy aside, as demonstrations are actually presented to us, every one of them is at first the product of some individual mind. You may walk backwards to an object if you please, and you may think if you will, that science is the knowledge of many, collected by one; but if you keep your face to the light as you travel towards it, you must bear in constant remembrance that demonstration is, and science is, by self discovery and collection, "the knowledge of one individual arranged." Whether that knowledge, when arranged, and a science, is or is not communicated to any other individual, is an accident of a science. It is then the science of the individual, more or less communicated, and, perhaps, added to, which makes by the caprice of christening, 'the science' "of the few" "of the many," or "of the multitude."

61. An individual then, composes a demonstration in medicine, considers it well, and, having his mind in the right tone, he, (though there are few individuals who, by their own unaided intellects, either dare or can,) by himself, assents fully to the demonstration, and, consequently, it and the truth founded on it are admitted into, and become part of, "the science of that individual." And the knowledge founded on this demonstration, and now in the individual's science of medicine, is as much positive, certain knowledge, truth, as is any such truth in "an individual's science of geometry." *

* Why a demonstration which has been examined and

The able-minded individual has a dependence and confidence in this knowledge; but notwithstanding the full pondering himself has given to the demonstration, he has the power of testing the demonstration still further, and will have, as long as he lives, though he should live to within five minutes of the end of the world; and, for the purpose of further testing, he, not caring to disseminate, communicates the demonstration to another individual, a lunatic, for the purpose of learning whether a mind differently toned, having different habits of thinking, to his own mind, will perceive any error in the demonstration. The lunatic refutes the demonstration, the composer of it sees that it is refuted, and the instant the refutation is seen to be applied, (that is, without any abiding diversity of judgment,) the demonstration and the knowledge founded on it are out of "the science of that individual." Or, if instead of submitting the demonstration to the consideration of the lunatic, the composer communicates it to a few persons, and these assent to it, it becomes part of "the science of the few," and when the few communicate it to the many, and the many understand, and cannot refute it; their duty (ill able as they may be to perform it) is to assent to the demonstration, and when they have done their duty, the knowledge and the demonstration it is founded on are part of "the science of the many."

assented to by "many" is less liable to sudden correction than a demonstration which has been examined and assented to by only an individual, sciential medicine's doctrines of coincident show.

When the many communicate the demonstration to the multitude, and the multitude embrace it, it becomes part of their science; and as new multitudes arise, and it is communicated to them, and they embrace it, it continues part of "the science of the multitude," century after century, till some one of the multitude applies a refutation to it, and that refutation (as disseminated) takes the demonstration and the knowledge founded on it out of all science. So, because a portion of knowledge is founded on a demonstration, both are admitted into a science, because no refutation is applied to the demonstration; it, and the knowledge founded on it, are continued in the science, and, because a refutation is applied to the demonstration, it, and the knowledge founded on it, are taken out of the science. It is so with geometry and arithmetic.

62. To be put in, retained in, and taken out of a science, are what all human knowledge is subject to. Truths which are manifest to all mankind, and to all mankind manifestly the most evident, have ever been and still are subject to such vicissitudes. That the sun moved was as manifest to all mankind as that the firmest mountain stood still. "The sun moves," was a truth as manifest as all the evidence of all the senses, demonstration, and explicit revelation, have made or can make any truth: it was a truth in every man's mixed science: and in the eyes of all the world he was mad, or impiously worse than mad, who even questioned it. Yet by the progress of knowledge that truth is annihilated: and thousands and thousands of truths in geometry (remem-

bering how many geometries there are) have been by the progress of knowledge annihilated. But we are fonder of looking behind us, to the past, to see the ignorance of the ancients, than we are of looking to the future before us, to see our own ignorance. Look forward now, keep your eyes to where the light is, look to the future, and see what a fool you are. You have no knowledge but what future discovery may, and omniscience certainly will, annihilate. And that man has short-sighted views of the future, and fantastical notions of human knowledge and science, who does not see that notwithstanding the strong seemings and good demonstrations against, still perpetual motion and the seed of David may yet be discovered. And notwithstanding millions of facts now stubborn against it, present knowledge may yet be reversed, and the future may show that, after all our positive knowledge and confidence, it is the sun which moves and the earth which stands still. And right tones of mind and correct views are, that the demonstrations now in geometry are, of the numerous all, only those few productions of individual minds which, disseminated through the few and the many, none of the multitude has yet refuted; that the demonstrations of geometry are retained in science merely because no refutation has yet been applied to them; that they are still subjects for investigation, and still under scrutiny; that as demonstrations they are still right merely because they are not yet showed to be wrong, but that no seal of Heaven is yet placed upon them, and that Omniscience has

not yet pronounced them "very good." All the demonstrations of geometry are still liable, by the future progress of knowledge, to be taken out of the science, either twenty centuries, twenty years, or twenty minutes hence.

63. Hence you may perceive, for meditation may teach you what requires but little consideration to learn, that the existence of geometry in the world does not give any individual, however circumspect he be in demonstrating, immunity from correction. One person may compose an erroneous demonstration, and communicate it to another person, and another after another may, till many do, embrace it. Wherefore, showing how all human knowledge can be demonstrated, will not prevent men erring, or forming correctable demonstration. Sciential medicine will not make its disciples infallible in the composition of demonstrations.

64. "What then," objectors will exclaim, "is it behind this 'taking out of science' that sciential medicine and you build up your pretensions and shelter your boastings? 'All geometry is refutable' you say, indeed! and does your demonstration of all human knowledge when exposed evaporate to that? I thought so! I knew it would—as I was confident it would soon—it is now found to be—all nothing." Nay, Mr. Objector, do not ask me questions, do not use exclamations, do not hurry to deceive yourself, it is argument against, and counter demonstration, which will be anon required of you; and remember, I have already told you once, that my description of geometry is nothing: you have

the pure sciences, discover what properties you can in them, and make the most you can of them against me.

65. But to prevent you cackling on a stumbling-block, and to give you a broader opportunity of understanding what by vague thinking seems to you a failing, or an equivocation, it is expedient to divide the province of a word. Using then the word "knowledge," with a little common license, there are two things:

1st. A portion of knowledge which, it is *now* known, can *now* be refuted, by means which are *now* known to be *now* in the possession of some individual mind: that is, knowledge, or a demonstration, which it is *now* known some individual can *now* apply a refutation to.

2nd. A portion of knowledge which can *at some future time* be refuted, by means which are now *not* known to be in the possession of (i. e. *not* possessed by) any individual mind; that is, knowledge which it is now known some individual *will be* in this world or the next (but *at this moment* is *not*) able to apply a refutation to.

These two are very different things, and though a full discrimination between them is indispensable to a right understanding of what pure science is, or of what human knowledge is, yet hitherto they have both been huddled together under the one word "refutable."* But (still using the word "refutable," and applying to knowledge another

* Science cannot proceed without such a division of many other such words.

word which designates merely a property which it possesses in common with other things) I shall call the first of these two things "refutable" knowledge, and the second "mundane" or "human" knowledge, or rather "mortal" knowledge. Under these definitions then, every demonstration, every truth, in a pure science, of the individual or of the many, is "irrefutable;" but every truth either in or out of a science is "mundane;" all human knowledge is "mortal." When Adam sinned, and men with all their progeny were given into the hands of death, human truths and all their progeny were given into the hands of reason, were consigned to the mercy of progressive knowledge, and the progress of science has been dealing havoc amongst them [from Adam till now: and now there is no change, there is no angel come to stay the slaughter: science and death are progressing still, both are still slaying their strongest victims. And as a vivid remembrance of this is in every application of science essential, take pains to impress on your mind that portions of knowledge firmly based and built on demonstration, that even the strongest (excellently well named) "*living*" truths, are things which inhabit this globe, and that "the cloud-capt towers, the gorgeous palaces, the solemn temples, the great globe itself, and all which it inhabit shall, like the baseless fabric of a vision," at some future time "dissolve;" and remember that the most substantial human truths are seen by the omniscience of Him who formed the mind and them, to be created of such stuff as dreams are made of, and

that by Omniscience they certainly will, and by that almost almighty thing the progress of science, they certainly may become annihilated. Nothing but omniscience is immortal truth.*

66. All human knowledge is mortal; that is, all knowledge which now exists (in or out of science), by a property (fallibility) which it now has, *now is*, in the future correctable; so that an individual, the few, many, or multitude, may now have one conviction, and an hour hence the opposite conviction, and yet both those convictions be according to their respective pure sciences, according to the present knowledge of them respectively, and each of these convictions being, at the time of its entertainment, founded on irrefutable mortal demonstration is a truth.†

67. So that with respect to diversity of judgment, (judgment being not opinion, but a thing of right reason,) the existence and observance of pure sci-

* That an assertion is founded on a demonstration gives to the assertion the property of truth; but what other properties the assertion obtains in consequence of being so founded, or what properties a truth has, is another consideration. But all philosophers have unthinkingly assumed that because an assertion is founded on a demonstration, therefore it is for ever unalterable, uncorrectable, infallible; thus attributing to human knowledge a property which nothing but omniscience possesses.

† That a decision at one time, from one quantity of data, should be the reverse of a decision at another time, from another quantity of data, and yet each decision be a right decision, is the explicitly declared doctrine of both our Chancery Courts.—See "Lord Lorton *versus* Hamlet," in the High Court, to which reversed judgment both Chancellors agreed: such cases are common.

ence does not prevent but (as it aids the progress of every science) permits and promotes opposition of judgment between a man's past self, his present self, and his future self; each of which three persons is on every relative discovery, on every corrective progression of science, opposed to his ancestor.

68. And that a portion of knowledge has admission into, retention in, and subsequent rejection from, the science of an individual; the few, the many, or the multitude, implies, alone considered, a diversity of judgment amongst pluralities of present men. And though absurd definitions of science have hitherto hid it, there always was, there is, and there ever will be, such diversity of judgment concerning the things of the pure sciences. The mere existence of geometry (always remembering that every individual has his own science of geometry, which by increase, or the decrease produced by the mortality of truth, is continually varying), the mere existence of geometry does not prevent amongst men in general, diversity of judgment's decisions concerning the objects of geometry. The mere existence of science is the quiescent undisseminated existence of diverse specific quantities of arranged truths in different individual minds. One mind having a truth which another mind has not obtained, and one mind retaining a mortal truth which another mind has found dead and has rejected, necessarily implies a diversity of judgment amongst pluralities of men.

69. Unanimity of judgment then, concerning the

objects of geometry, is not produced amongst geometers by the mere existence of their several geometries, for to produce unanimity of decision in any science, two things are always necessary,—existence of that science and diffusion of it. A science is a science to only those who are acquainted with it: and as a science cannot be diffused without existing, it is alone the diffusion of the materials of one science of geometry (a commonwealth of data and inference) which produces an unanimity of judgment amongst the few, the many, or the multitude. Or (to give another representation), if the time necessary for communication between one person and other persons be regarded as of no duration, as in conversation it constantly tacitly is; that is, if following the old fashion, we by postulating admit "present time" to bear the same relation to duration in general, as a geometrical point bears to space in general, then "present time is of no duration," and, under that postulate, amongst any number of persons who have communicated with one another, there exists, concerning the things of a pure science, (notwithstanding the asserted "retaining in and taking out" of science,) no diversity of judgment; for while persons are under communication (and things are according to the representation I have given of the vicissitudes which truths are subject to), a demonstration is now in the science of the many; their judgments are unanimous; when one, the first person of the many, in his own mind, silently applies a refutation to the demonstration, which application takes the demon-

stration and the truth founded on it out of his (the first person's) individual science, yet while he (the first) remains silent and quiescent, he is not in communication with any other person, and so far there exists no diversity of judgment between persons in communication. When, in pointing out to others the refutation which he (the first person) has discovered, he (the first person) begins his communication to another (the second) person; the present time, the "now," of conversation commences, and continues during the communication, though the communication be of a day's duration: but every portion of the day is (according to the postulate) of no duration, and, consequently, in the day during the communication, there exists no diversity of judgment, for there is no time for it to exist in. The communication between these two persons is continued till the first presents irrefutability of refutation to the second, and (as every able thinker assents to what he cannot refute, and as every person who has, of the pure sciences, knowledge sufficient to know that geometry's demonstrations of circles are more valid than his opinions concerning them, holds his tongue when he cannot refute) when irrefutability is presented, assent or silence is obtained, and the communication ended, there is then no existing diversity of judgment between persons in communication. Thus, under the postulate stated, a demonstration can be refuted by one person, and by his refutation taken out of the science of another person, without any (right reason being always the same) diversity of judgment ex-

isting under a community of data and inference: so of any number of persons.

70. To overstep, then, rather than fall short of, a full representation. Under the circumstance mentioned, in geometry there exists and there can exist no diversity of judgment; and under the same circumstance, in sciential medicine, there exists and there can exist no diversity of judgment.

71. In explaining the relation which pure science has to unanimity of judgment, I have laboured the more, because it is very commonly forgotten that general diffusion of both data and inference is necessary to general assent—a great mental oversight, which error of which vision it is important to rectify, because the power which pure science communicated has to produce unanimity of judgment; being the most superficial is to men generally the most prominent and notable property of pure science, and a property, the production and extent of which need to be well understood, for there is something so sweet to the feelings in unanimity, that it is more sought after than the intrinsic truth is, by all those multitudes who love manna better than the true faith.

72. Such are some of the properties of demonstration; and such are some of the consequences of making demonstration the guide when electing mental materials for the building up of a science: and it is by this guide, by this demonstration, that the materials of arithmetic, geometry, sciential medicine, &c. have been and still are to be

elected, and the "pure" sciences have been made "pure."

73. The "mixed" sciences are—the "mixed" science of your medicine is made by electing mental affections by guiding laws, which are no guide, which (one or other of them) will allow of any ridiculous and iniquitous practice in choosing—laws which will admit and protect almost any absurdity. Hence, your science of medicine is made of (with other things) seemings, guesses, suppositions, hypotheses, theories,* and doctrines, by any person said to be, dictated by any common sense,† of any doctrines which are taught, asserted by an oracle, or established, (i. e. fashionable,) of any non-

* A hypothesis is a conclusion founded upon an argument, which argument is strong enough to find some persons weak enough to believe it: and a theory is a hypothesis of "larger growth."

† Common sense:—there are two sorts of it. 1st. That which at first glance perceives the truth, and that it is the truth:—that sense which knows, without knowing how it knows, that "it is true," without knowing why it is;—which can discriminate without being able to point out a difference; which feels when data amounts to the quantity of proof, without any technical measuring:—a sort of instinct. This common sense is very rare; and as it cannot explain itself, nor tell what its reasons are, nor be distinguished from any other sort of sense, it is of no use in science or scientific communications:—it is only fit for house-wives and emperors.

2nd. That common sense which every person possesses—the mother of all absurdities:—that meretricious darling which the public and medical men have fallen so deeply in love with of late—any sense that is common.

sense: into your science of medicine is admitted any mental affection which is not an absurdity too great to be thrust into the head of any person who can walk in an hospital or go through a hall.

74. I have now pressed on your attention of the positive and negative properties of science, those which the erroneous philosophy of the present age, and persons educated in scientific medicine will, in considering sciential medicine, find to be of chief importance. And (to state proportions and to utter numbers at random) I have already given you what are replies to ninety-nine in every hundred of those objections which you will (if uninfluenced by this notification) advance against the doctrines I teach. And remember, that to obtain of the generally-admitted truths I have stated, that availing knowledge which can on every occasion be readily applied, will require not only repeated considerations, but repeated trials and long-continued meditations; for, in the application of knowledge, between fact and evidence of fact,—between the objects of science and science itself,—between the science of the individual and the science of the multitude,—the refutability of knowledge and the mortality of knowledge,—procuring assent and giving proof,—past, present, and future truths,—inference from one quantity of data, and inference from another quantity of data,—counter supposition, counter assertion, and counter demonstration,—the purity or certainty of science, and the perfection of science,—human knowledge and omni-

science,—between these (and other) very different thing (incredible as the assertion unexamined may appear) there exists, at this moment, in all the speculations and doctrines of medicine, in the heads of all mankind, and in all the best philosophy of the age; one universal, "great, grand, and glorious" confusion. And though the truths I, in describing the pure sciences, have stated (or most of them) are what many ages have been doctrinally acquainted with, yet they are the keys of the mysteries which have puzzled all philosophers, they are now within your reach, and you have only to take and apply them; for "the great secret" of sciential medicine, and the demonstration of all human knowledge, is but a manifest application of those broad and universally-admitted truisms.

75. To teach you how every truth concerning human bodies, their laws, &c. can be proved, to show you how to surmount every obstacle which may present itself to any individual mind, to supply guiding directions for every little dilemma, to apply a clue to every little corner in the labyrinth of thought, is the object of a full course of tuition. But in the outline I am now giving, I shall not direct especial attention to the many little difficulties which the uninstructed will feel and the instructed know how to surmount, nor to any of that knowledge which any of you may, by searching for, easily find collected together, or scattered in the writings of the learned. In the future part of this prefatory lecture, I shall direct especial

attention to only the greater obstacles—those which the best philosophy of the day holds to be insurmountable. These obstacles are,

76. I. To prove universal truths from individual truths.

By a splendid specimen of philosophy's oversights, it is thought to be, (and I will say it is,) by examining an individual thing which is within reach and subject to full investigation, easy to prove some one assertion concerning that thing, and by examining another individual and like thing it may be proved that the same assertion is true with relation to it (the second individual and like thing), and so on by examining each, it can be proved that one assertion is true with respect to "some," "many," or a "specific number," of individual and like things. To prove an universal from individual truths is, then, according to common supposition, to prove that because one such assertion is true with relation to, "some," "many," or a "specific number," of individual and like things, which have been examined; therefore the assertion is true with respect to other individual and like things which have not been examined; or, in the widest meaning, therefore the assertion is true with relation to every individual like thing: or, in other phraseology, therefore the assertion with respect to like things is "universally true."

77. This proof philosophy asserts cannot be given: and it is because some method of this proof, or some method of proving other truths without it, has not yet been propounded, that the whole of logic

is now founded on "universal" assumptions called major premises,* and the whole of geometry rests on generally assented-to universal suppositions, dignified with the name of "axioms." And it is because logic and geometry deduce individual assertions concerning one thing, from universal assumptions concerning all like things, and because the proof of some universal truth, though not of any one generally used in demonstrations, is necessary to the proof of every individual truth, and because proof of any universal truth has not yet been given, it is because of these things that now, at this moment, previous to the propounding of sciential

* Logic, the art of arriving at (right?) conclusions without the use of reason. Any person whose intellects are able to see through the sound of a word, can perceive the absurdity of an inference from a minor included in a major, and a major assumed: "All birds fly. A goose is a bird; therefore a goose flies:" paraphrased is, "Every crow, every pigeon, every goose, every duck, &c. flies. A goose is one of these, therefore a goose flies," which paraphrased is, "A crow, a pigeon, a goose, a duck, &c. flies. A goose is one of these, therefore a goose flies," which shortened is, "A goose (&c.) flies. A goose is a goose, therefore a goose flies;" which argument is confessedly the whole of logic; and this absurd trifling is, as a method of proving, all that logic in its pride amounts to. It is manifest that no person can know that every bird flies without previously knowing that every goose flies. Logic can prove nothing. From before the days of Aristotle till now logic never proved one assertion; never drew one well-founded inference. It only serves to convince in detail those who foolishly assume wholesale.

This objection has been again and again urged against logic, and again and again replied to, to the full satisfaction of all those logicians who can see no difference between proving a truth and convincing a man.

medicine, there is not one legitimate proof in the world.

78. II. To prove the future from the past.

"It was so, therefore it will be so," is mere assertion, which applied to the individual objects of medicine in every instance assumes some "universal truth," and in almost every instance assumes that the laws of nature never vary. But assuming is not proving. To prove the future from the past, then, under this double difficulty is another of the alleged impossibilities.

79. III. To prove the relation or connexion between cause and effect.

That is, taking one of two things, to prove that it ('the first thing') produced, or will produce, the other ('the second'); or taking the other, to prove that it (the second) was produced, or will be produced, by the other (the first).

80. Philosophers have yet had but very confused notions of cause; and all of them who have explicitly adverted to the subject expressly affirm that though the relation between cause and effect can in many cases be known, and in many more cases be guessed, yet in no one case can it be proved.

81. IV. To prove truths which are founded on the evidence of the senses.

That is, to found demonstration on the evidence afforded by sense, or to introduce the evidence of the senses into an argument in such a manner that the argument shall be good demonstration.

82. V. To prove truths founded on human testimony.

That is, to found demonstration on human testimony, or to introduce men's "mere assertions" into an argument in such a manner that the argument shall be good demonstration.

83. The evidence of the senses, of senses ever liable to deceptions, and human testimony, involving free-will, seem to be in their very nature so incongruous to the very essence of demonstration, that philosophers ever did, and those persons I am now addressing do, regard an attempt to found irrefutable demonstration on the evidence of sense, or on human testimony, much like an attempt to nourish the body with air, or to feed it on shadows. "So much of human knowledge," philosophers exclaim, "is obtained through the senses, and so much of to-day's knowledge is obtained through human testimony, that no science, founded on sense and testimony (as medicine necessarily is), ever can be demonstrated; it is impossible—the supposition is absurd—I am positive—and all the learned world is positive too, that it is impossible." Thus say the learned; and when to any of them I intimate "it is not impossible," my intimation never fails to procure for me the soft words and the expressive looks of pity; or the more energetic indications of contempt. All this strong feeling of impossibility—all this positiveness—all this pity—and all this pitiful contempt, now standing prominently forth to teach the one grand lesson—to teach by how small a thing the progress of science can prove philosophy a fool.

84. VI. To prove a truth by circumstantial evidence.

That is, to show, not by oral or written evidence (which is human testimony) concerning facts, but to decide how and what combinations of circumstances, or concurrences of facts, indicate truth, and to demonstrate the truth they indicate; or, to deduce a positive proof from a combination of facts, which facts, singly considered, would not afford the proof, or (to explain by example) to demonstrate those truths which are indicated by that evidence which is so common in our courts of criminal law.

85. VII. To prove every part of a now mixed science, without assuming (that is, without postulating) any thing which ought to be proved :—

We are told that, though it were possible to surmount such difficulties as the attempted application of proof to cause and effect presents, still such a science as medicine could not be made "pure" without the introduction of postulates in such numbers as would make the new science hardly any thing but a voluminous arrangement of assumptions.

86. These seven, are difficulties which philosophers have, more or less explicitly, declared to be insurmountable, and proving through these, are alleged impossibilities. Against any and every attempt to found the science of medicine on the certainty of demonstration, hosts of objections may of course be readily advanced; but these are the major objections—the seven Goliaths, on which all the hosts of the minor objections depend. And these difficulties have a like relation to medicine, and to knowledge in general, and if removed, philosophy is, though ignorance is not, ready to admit

the practicability of demonstrating not only medicine, but all human knowledge. So universal is the influence of these seven obstacles, so effectually do they prevent any accurate knowledge or demonstration, that there is not now in the whole science of medicine any right method of reasoning, any right means of deciding, nor any one mere medical truth at all proved: and when searching for a difference more audible than between "sciential" and "scientific," the total inability of your science to reason, to decide, or to prove, offers me, and justifies my taking, the word "acephalous."* That science of medicine, then, which is now resident in the heads of the heads of the profession, I (in contra-distinction to "sciential") call "acephalous medicine," for it has no reason, it has no brains in it.

87. Before proceeding to show you the method of demonstration, for the purpose of giving you a tone of mind somewhat fitted to receive it (and that I give to your thoughts no false bias is your care), I will present you one point for meditation. And that you may be annoyed by the multiplicity of those things, many of which your confounding vague notions have hitherto regarded as one; and as the great advantage of having distinct ideas will always compensate for the trouble of obtaining them; take a piece of paper, draw upon it twenty circles, put into—1, all the individual things of the universe; 2, all the individual things in the sun; 3, all the individual things in the earth; 4, Omni-

* When born without brains, a child is "acephalous."

science of all the individual things in the universe; 5, Omniscience of all the individual things in the sun; 6, Omniscience of all the individual things in the earth; 7, all the future knowledge which all mankind will, ten thousand years, or ten minutes, hence, have of all the individual things in the universe; 8, all the future knowledge which all mankind will, ten thousand years, or ten minutes, hence, have of all the things in the earth; 9, all the past knowledge which all mankind had one thousand years, or one year, ago of all the things in the universe; 10, all the past knowledge which all mankind had one thousand years, or one year, ago of all the things in the earth; 11, all the present knowledge which all mankind have of all the things in the universe; 12, all the present knowledge which all mankind have of all the things in the earth; 13, all the present knowledge which the few philosophers of the earth now have of the things in the universe; 14, all the present knowledge which the few learned have of the things in the earth; 15, all the future knowledge which yourself will, ten thousand years, or ten minutes, hence, have of all the things in the earth; 16, all the past knowledge which yourself had ten years, or ten minutes, ago of all the things in the earth; 17, the present knowledge which yourself has; 18, all the knowledge of things which is in that book; 19, all the individual things which are in this nutshell; 20, all the knowledge of things recorded in that one line of that book. Having these circles thus filled, in reality or imagination, now before you, I

put a little double question for you to think a month upon; "Is there any metal of ten times the specific gravity of platinum, and is there any space included by two straight lines?" Before you attempt to decide that question, try to understand fully what the meaning of it is. "Is there"—*where* does the question mean? Where—in which of the circles—will you look for the metal, or the enclosed space; for, if they exist, each of them must be in one of the circles. Will you, for the purpose of deciding the question, attempt to examine every individual thing, and every portion of space in the universe? It requires Omniscience to know that the metal or the space is not in the universe. Will you attempt to examine separately every individual thing, every atom and portion of space, in the world? It requires superhuman knowledge to know that the metal or space is not in the world.* Will you decide by what men or yourself *did* formerly know, or will you attempt an examination of, a decision by, the future knowledge which yourself or mankind will, ten thousand years, or ten minutes,

* Some geometers will say they "know" that there is in reality no such portion of space. But observing that signification of the word "know" (by positive action of power to know), I defy any geometer to give of knowledge a definition so characteristic of the thing defined, that by the definition any one person can perceive whether the mental affection which another person has, and fully explains, is or is not knowledge, and then to show that himself has "reality," knowledge of the non-existence of such a portion of space or surface in the world. Geometers can assert they know, because geometers are men, and men can assert any thing.

hence, have? Look at the circles again! what is the meaning of the question? in which of the circles will you search? So far as result is concerned, it matters not what the putter of the question meant, nor in which circle you search; for whether you attempt to decide whether the metal and the space do or do not exist in the earth, in mankind's future knowledge, in mankind's present knowledge, in your own future knowledge, in the knowledge of philosophers, in one book of the learned, or in one line of the book, it is only by your own present knowledge that you can decide that the metal or the space does not exist, or that it does exist. Whether you look amongst the things in the universe, or amongst the things in a nutshell, you can only decide by what you feel, that is, by your own present mental affections. "What then!" you will exclaim, as I, like an idiot, many times have, "Does the existence of a thing depend upon my knowledge of its existence? Is there no universe but the universe in my mind?" The existence of a thing, to other persons (remember how many sciences there are), does not depend upon your knowledge of its existence, to other persons there is an universe besides the universe in your mind. But leaving other past and present persons and their sciences out of the consideration (which is best done by mentally annihilating them), your science is your knowledge arranged, your knowledge is decisions—and have you no method of obtaining these, of deciding whether an individual thing exists, or does not exist, in the universe, but by the mental affections which you at the time of

deciding have? When you decide that an individual thing does, or that it does not, exist in the universe, does the nature of your decision (that is, does the yea or nay of the assertion in your science, concerning the actual existence of a thing) depend upon your mere mental affections? All other persons annihilated, does the existence of an individual specific thing depend upon your mere knowledge of its existence? And is there no universe but the universe in your mind? And as it is with you, and your science, is it with others (geometers and all) and their sciences? I do not answer these questions I put, for they involve the chief consideration point in the double question I wish you to meditate a month upon. Looking to the wilderness of circles again, then, "Is there any metal of ten times the specific gravity of platinum, or any space enclosed by two straight lines?" A steady and able meditation of that question (and of the ramifying trains of thought which meditation on it will immediately lead to) will, with other appliances to boot, teach you in a few weeks, knowledge which I have been years in obtaining.

88. If you consult the writings of those (the best of our philosophers) who have attempted to show the right method of reasoning, you, from their language, will find that each, before he began his teaching, has in his own imagination mixed the sensibilities, the ideas, the mental functions, the reasoning powers, the perceptions, the minds, that is, the brains, of all mankind into one mass, and has then, with a thorough vagueness of intention,

endeavoured to teach this quagmire how to think—how to reason rightly. Every philosopher has spoken to all men together.

89. This addressing pluralities, together with the yearning there still is in science after wide generalities and universal truths, shows that philosophy is still embracing (or embracing the shadow of) the old idiocy of supposing that all things are included in one substantial universal; or that individual things, past and future, are but accidental emanations from some permanent species; and shows, too, that the proud age we live in, which plumes itself so much on the march of its intellect, is even now under a delusion great as any that ever darkened antiquity; for, addressing, as all philosophers hitherto have addressed, many minds at once, is confounding the quantity of data possessed by one mind with the other, and very different quantity possessed by another mind, and is attempting by right reason to show, that all separate quantities of data (however different they are) are, when summed up, of the same amount; thus throwing at the outset, and at once, confusion and rottenness into all knowledge.

90. Addressing a plurality of minds, confounding different amounts of data, is the "established method"—defend it then—of "great authorities"—worship it then—for you ever have defended what is "established;" and with more than the body have you ever worshipped what is "of great authority;" be consistent in your attachments and adorations, hold fast and worship that absurdity—it is

the wisdom of ages, the practice of all the great and the good.

91. Instead of following this practice, I, by my manner of addressing you, isolate one individual (A); I tell him how he, with his amount of data, is to reason—how he is compelled to infer; I give him a rule for himself, which, being a rule general with respect to data and inference, is alike applicable to B, to C, to D, and thus individually to the whole alphabet of mankind.

92. The decisions which a science consists of, are each of them decided by an individual, in consequence of some motive sufficient to produce a decision. The necessity of acting is the great, and a desire to know, is a less urgent, of the common motives for decision. To those persons who have no occasion, no sufficient motive to decide a question, which is by myself or otherwise presented to them, I have nothing to say; knowledge is ever progressive, and when no motive calls for decision, it is wisdom not to decide: it is sometimes wise in man to wait a hundred years. But every science consists of already-decided decisions, and I submit the outlines of sciential medicine to the decisions of only those who dare and will decide. And, for the purpose of keeping one property of every science (that it consists of decisions already decided) continually in your especial remembrance; and because I will not submit sciential medicine to the drivelling non-decisions of cowardly, ignorant, and impotent doubters; but more especially to pre-

vent an everlasting waiting for further data; and for the purpose of thwarting the workings of error by setting up a broad distinction between the decisions of present knowledge, and the decisions of future knowledge: for these and other purposes, I, in addressing the individual, speak to him only when he is under a sufficient motive for decision, that is, after the formation of the sufficient motive, and prior to the mental act of decision. Consider, then, when an individual is under a sufficient motive to decide, he must decide (or the motive is not efficient), and though we commonly associate the idea of physical force with the word "compelled," still the mind, which is under a sufficient motive to decide, is compelled to decide; and "you are compelled to decide" is a phrase I for these reasons use.

93. A constantly-applied remembrance that only the individual is addressed, is indispensable to a right understanding of sciential medicine, and to all right thinking: there can be no definite knowledge without it—for things, and a knowledge of things, existences, and a knowledge of existences, are very nearly related—and, that knowledge is always the knowledge of some individual, is a portion of knowledge in the root of every science. And to discriminate between the knowledge of (and the data possessed by) one person at one time, and the knowledge of (and the data possessed by) another person, or the same person at another time, is as necessary in science as any discrimination between any two objects of science is. Every individual is

of course permitted to obtain knowledge from as many persons and sources as he can (but when he has obtained knowledge, it is then his own knowledge). Addressing the individual only, when he is under an efficient motive for decision, is as to time a manner of address not essential to sciential medicine; but "you are compelled to decide," saves repetition of argument and circumlocution, and turns to profit and edification the leading power which mere words notoriously have over the mind, and by which they so frequently lead it astray from the truth.*

94. You now understand that it is only the individual I address, and him only while under an efficient motive to decide. Proceeding, then, first, in the fashion of geometry, to found sciential medicine on, or to reduce it to, some universally admitted position, or to some assertion, the truth of which is admitted between us, I remind you that my undertaking is to show you how medicine can be proved as well as the pure sciences are proved; or to show you how you can know medicine as well as geometry is known: the practicability of which undertaking (if accepted, but especially if denied) implies an admission between us, that the pure sciences are, or that geometry is, known; or that some part of the pure sciences, or some part of geometry, is.

* A question for investigation is one thing, a question for decision is another thing; and addressing the individual only when he is under an efficient motive to decide, only when compelled to decide, preserves the very necessary discrimination between these two very diverse things.

An axiom in geometry is part of both, and that "an axiom in geometry is known to be true," is a position, the truth of which is by necessity as universally admitted as the truth of an axiom itself is admitted. Wherefore (keeping up the confounding which has ever been made between the science of the individual, of the few, the many, or the multitude) "man knows geometry, therefore man has a power to know," or (avoiding that confounding, and not to be unnecessarily minute) "you, Mr. Individual, know something in the pure sciences—you know that a circle is not a square, or that two is not twenty, therefore you have a power to know;" or without the "therefore," commencing with an assertion, "you have a power to know;" for if you have not, you cannot know nor decide on any thing, wherefore you are not of the persons I am addressing; and if you have not a power to know, you cannot know that the doctrines of sciential medicine are erroneous, wherefore being irrefutable to you (assent being nugatory) they are at once the truth so far as you are concerned. I assume, then, that "you, Mr. Individual, know something," and, under a definition, infer that "therefore you have a power to know."

95. Giving a system in permanent detail, or following closely the manner of geometry, would have required, before now, a definition of "your individual power to know;" but I am now giving a mere outline, and following, what I shall presently abandon—geometry's foolish method of argument; and, under these circumstances, it is not necessary to

puzzle you with (though implicated in this argument) what is to many very difficult to comprehend, the meaning of the word "power." For which reasons, and for the further and more efficient reason, that "description" is better than "definition," and referring to the thing itself better than both; and for the still better reason that in spite of any definition or description of mine, "your individual power to know" is what it is, and you have it, the thing itself is in your possession, and you may make what you can of it; * for these reasons, I give you no definition of "your individual power to know." That you, Mr. Individual, have a power to know," and that it is by that power, that you know every individual truth you do know: the admission of these assertions (and by these words I am only acknowledging the names of universally known things) is sufficient to the future part of my present temporary argument, so far as argument and its irrefutability are concerned. But to facilitate your attainment of a fuller understanding of what I, after this argument, shall advance; to give you a more intimate acquaintance with a principle of reason that is deeply involved in, though of course forming no part of, sciential medicine, I, catering somewhat for some men's assent, fishing a little for straws, will direct your attention to a few simple considerations, with respect to your individual power to know.

* This is the language of demonstration in its office of proving, not in its office of procuring assent.

96. In obtaining every portion of that knowledge, which expressed and arranged forms a science, there are two mental functions concerned. There is obtaining those mental affections, which are obtained by the organs of sense, and there is obtaining those mental affections, which are obtained by reasoning; by reasoning from those mental affections, which have been previously obtained by the organs of sense. To each of these two things I shall direct your attention, and first to the first mentioned.

97. Many mental affections are received through the organs of sense; and for the purpose of separating the intimate connexion there is in your medical mind, between an object of sense and the mental affection appertaining to it, or the impression which it produces on an organ of sense (without which separating you cannot really know that, this "two" and that "two" together make "four"), you may read the accepted doctrines of metaphysicians (of Locke and Brown especially), or consider for a moment a few facts that are well established. A thing not presented to an organ of sense, produces no impressions on it, or a small thing (and a sound is a thing) when it is presented, produces no impression: but above all remember, for the fact is very enlightening, that the leaf of a plant presented to one man's organ of vision, produces the mental affection of "green," but presented to another man's organ of vision it, the same leaf, produces the mental affection of "red;" or which (names being nothing) is the same thing: put some vermilion upon a green leaf, and there

are persons, who, by their organs of vision (in other respects perfect and minute), can see no diversity between the colour of the vermilion and the colour of the leaf, different organs of vision receiving or communicating different mental affections from the same object of vision; or one organ of vision receiving the same affection from two very diverse objects of vision. The same temperature which, to one organ at one time is "warm," to the same organ at another time is "cold." The steam of warm water presented to an organ of smell will now produce on the organ the same impression, which, five minutes ago, was produced by oil of turpentine. * This morning bread tastes as onion sauce last night did. These diversities between the objects of sense, and the sensations produced by them, on an organ of sense or in the mind, these two diversities, viz., the diversity between the object of sense, and the *first* impression it produces on the organ (seeing green as red, or red as green) and the diversity between the first impression and any subsequent impression (bread as onions), these two diversities, and consequently the nature of your individual power to know, admit of fuller illustration, by the use (with a different application, and by disposing of "mind") of a simile common amongst metaphysicians. An organ of sense may be compared to a portion of soft wax, and an object of sense, an external thing, to a seal; under this simile, [remember I speak of only

* Hence the fallacy of the reasoning from some still celebrated physiological experiments.

those of mental affections (or only of that part of "power to know") which the simile is applicable to, viz.; those mental affections, or "simple sensations," which are received through sense—a truth being the product of reflection,] the seal, then, is an external thing; the soft wax is an organ of sense, the impression on the wax is (making the mind to exist in the organ) a mental affection, and the power which the wax has to obtain, or to have an impression, is the organ's power to obtain mental affections, the organ's power to obtain knowledge, or the organ's power to know. Now, attributing to the seal and to the wax, what is observed with respect to objects and organs of sense, and, for convenience of explanation, occasionally substituting one term for another, there are two things which require especial notice. First: a seal not applied to the wax (an object not presented to an organ) produces no impression. By the power which the wax has to obtain impressions (by the organ's power to know) the wax (the organ) obtains while the seal (the object of sense) is absent, no impression, no mental affection, no knowledge; and further, a seal too small, or too lightly applied, produces no impression. The first of the two things deserving your especial notice, is then, that under either of the two stated circumstances, there is no impression, no mental affection, no knowledge. To repeat; let the objects of science or external things exist as they may; there are circumstances, under which an organ, or the mind, or individual power to

know, obtains no mental affection, no knowledge.* The second point deserving your especial consideration is concerning those mental affections through sense, which actually are obtained, concerning the dissimilarity there is between them, and their respective objects of sense. Representing the impression on the wax (existing on the wax, by the wax's power to know, by its power to obtain impressions) to bear the same relation to the seal which produced it, as the mental affection on an organ (existing on the organ, by the organ's power to know) bears to its respective object of sense. Physiology teaches that (still supposing the mind in the organ) by the presentation of a seal, which on it has crossing lines, forming triangles, the wax, by its power to know, obtains (not the impression of triangles) but an impressed "green colour;" from the presentation of a seal which on it has lines in squares, the wax, by its power to know, obtains the impression of a "purple colour;" by the presentation of the same seal (with squares on it) another portion of wax (another organ) by its power to know, obtains the mental feeling of "nausea," and, from a seal with undulating lines on it, one portion of wax, by

* And here in a parenthesis in thought, remember that science is mental affections; a science is knowledge, and therefore, appertaining to external things, relative to which we have no mental affections; concerning which we have no knowledge; appertaining to those things, there is no science, and it is a science I am showing you how to prove! I am not showing you how to get possession of omniscience by teaching you how to obtain all the knowledge you ask for.

its power to know, obtains the mental affection which we call "the sound of a trumpet," and from the same seal another portion of wax, by its power to know, obtains that mental affection "the smell of a rose." And further, an organ, which, by its power to know, at one time obtains the mental affection of "green" from a seal with triangles on it, at another time, by its power to know, it (the same organ) obtains from the same seal the mental affection of "purple" and (what is, though in like cases little thought to be, an inevitable consequence) the one mental affection of "purple," which the organ by its power to know, at one time obtains from a seal with triangles on it, is by the organ's power to know, at another time obtained from a seal with squares on it.* Such is the diversity, which, according to my representations, exists between the seal and the impression on the wax; that is, such are the diversities which exist between the mental impressions and the objects of sense, which (by the organ's power to know) produces them. A little consideration of what these facts teach, to every able thinker, (and metaphysics and phrenology do give, and physiology ought to give, more of the same tuition,) will convince you that between one object of sense, and the mental affection it produces, there is no more similarity than there is between a root and a sickness, or a knife and a pain.

* It will often help the mind out of a puzzle, when, considering cause and effect, to remember (there being five seals and five respective impressions) that if *one* seal produces *two impressions*, then *one* impression is produced by two seals.

And remember, that mental affections received through sense are effects, and that all the chief of the common-place assertions you are so well acquainted with why the relation of effects to causes cannot be proved, are all, rightly interpreted, so many assertions, that mental affections (effects) are unlike their objects of sense (the causes), and from that, your own teaching, remember that there is no more resemblance between an object of sense and a mental affection obtained by the organ's power to know, than there is between a gallon of brandy and a pain in the foot, or any effect and its cause, and (notwithstanding that deluding picture in the ball of the eye, and its position is the reverse of its object) mental affections are no more pictures of their objects, than a black powder is the picture of a prostrate citadel. And further, till the nature of similarity is reversed, till external things are made of mind, or mental impressions are composed of substance, or till rail-roads are made, and bridges are built of the mind's affections, or till mental affections fill a bushel, and are ponderous, there can be no similarity between an object of sense, and a mental affection obtained by an organ's power to know.*

98. That power to know, that power to obtain, mental affections, which an organ of sense has, is (as before stated) one part of your individual power to know, of your individual power to decide, and another, the second part, of your individual power

* Is then right decision, decision according to fact, or decision according to the mental affections of sense?

to know, is that power, which your mind has (by reasoning from the mental affections which it has previously, through the organs of sense obtained) to obtain other mental affections (viz., those which assertion is a sign of, those which compose a science). This power of your mind, this second part of your power to know, is the second, and next subject for your especial consideration.

99. To continue my assertions. It is only through the organs of sense, that their respective mental affections can be obtained; and these mental affections, when obtained, are the only original materials reason has to act upon. (The organs of sense are the only obtainers of pure data.) The tower you see is not in the ball of your eye, nor is that picture of the tower which is in your eye, at all in the mind. So far as a simple sensation of sense (and therefore so far as minute evidence) is concerned, it is not "I see a tower" or "I feel a fire," but in each instance it is, "I feel a mental affection;" but whether that mental affection you feel, but whether the presence of that mental affection, which you, by your organ's power to know, have obtained, indicates the proximity of a tower or a fire, requires some reasoning (some of the mind's cogitative power to know) to determine.* And your mind's

* Hence the correct narration of a case is not "I saw that the limb was inflamed" but "I saw that it was red, I heard the patient (or his mother) say "it is painful," and I inferred that it was inflamed." Every auditor of a case has a right to the data, that himself may judge whether the inferences, the reasonings, are correct. But every professor

power to know (by reasoning) the second part of your individual power to know, is the mere power which your mind has to compose a demonstration. And as there are external things, which an organ, by its power to know, has no power to obtain any mental affection of sense from; so there are mental affections of sense from which the mind is not able to demonstrate, that is, from which the mind, by its second part of power to know (by demonstrating or reasoning), is not able to obtain any mental affection of reflection, that is, any truth, or any portion of an individual science. And as a mental affection of sense obtained by an organ's power to know, is unlike the object of sense from which it was obtained; so a mental affection of reflection (that is, a truth), obtained by the mind's power to know, is unlike the mental affections of sense from which it was obtained.

100. To repeat: In considering, then, that full power to know, by which you, Mr. Individual, obtain those mental affections which arranged form your individual science; remember that it includes (amongst other) two things, first, the power of ob-

of medicine, knowing his brothers well, thinks them fools enough to swallow the bungling inferences of any fool. Again, correct narration is not "she had two fits yesterday," but her mistress told me at four o'clock p. m. "she has had another fit this morning;" and her nurse told me at six o'clock p. m. "she has had another fit this afternoon," and I infer that one fit in the mistress's morning and one fit in the nurse's afternoon, must be two fits," which inference is false. There is no professor in medicine can be trusted to count "two" much less to infer.

taining (and of knowing whether you have obtained) mental affections by means of an organ of sense, that is, by means of an organ's power to know. And your full power to know includes, secondly, the power which your mind has to reason from your mental affections of sense, and by reasoning to obtain mental affections of reflection, which are the truths of your individual science. That is, your organ's powers to know, and your mind's power to know, are two things in your individual power to know. And in considering how a truth is obtained, remember, that there are facts (external things) from which an organ of sense obtains no mental affection of sense, and that a mental affection of sense, when obtained, has no similarity to the object of sense it was obtained from; and remember also, that (as if for the purpose of removing truth still farther from fact) a truth—that mental affection—is obtained not from fact, but obtained by the mind's power to know, from other mental affections (of sense). And remember, there are mental affections of sense, from which the mind, by its power to know, can obtain no mental affection of reflection, no truth of "that science;" and when a mental affection of reflection, or a truth, is obtained, remember that it has no similarity to the mental affection of sense it was obtained from. *

101. I have now told you, Mr. Individual, that it is only yourself I am addressing, while you are un-

* And here, in a parenthesis, I ask again "What is a truth?" Say you still that a truth is an assertion according

der an efficient motive to decide. And you know that two is not twenty, and therefore (by admission, definition, or the nature of things) you have an "individual power to know:" and, as every individual portion of your knowledge is obtained by some "thing," and as the name "individual power to know" is applied to (that is, comprehends) "that thing" be it whatsoever it may; it is by your "individual power to know" (by "that thing") and by it only, that every portion of your knowledge is obtained. Or, (as knowledge is decisions, and power to know is power to decide) it is your power to decide that (when compelled) you must (having no other "thing") decide by.

102. For the purpose of aiding your efforts to understand, it is expedient, and for fair and explicit argument it is necessary, to exhibit the meaning of "by," (a word I have already technically used,) and the meaning of its companion phrase, "according to." I have given you no definition of the pure sciences, nor have I decided what they are, by any description of them, because the things themselves are with you, they are in your possession. And because putting men in possession, always gives to the able in taking, a mastery of further appeal, and a knowledge of things far more powerful than any offered description can communicate; and because I have a great and growing detestation of all those

to fact? Away with such nonsense! Of all visionaries none are so thoroughly deluded as those who suppose they are able to decide (or that they have knowledge) "according to" fact.

meagre scantlings of false knowledge, which under the name of definitions, teachers in general, exultingly hiccup forth, and unthinkingly think themselves giving the essence of learning; and because I cordially hate in science every thing which is superficial, perverting, begging, and beggarly, I cordially and quadruply hate all definitions in science; and because the necessity for definitions or description is always superseded by reference to the things themselves, it is to things themselves I refer you. And the mental affections, which "by" and "according to" are the signs of, may be found in connexion and full operation amongst those mental affections which the words of the following colloquy refer to, "Weigh that gold 'by' troy weight." "I have weighed it 'by' 'troy' weight, and 'according to' troy weight it is more than three pounds and a half," or "it is exactly three pounds and a half," or "it is not three pounds and a half." "Now weigh the same gold 'by' avoirdupois weight." "I have done so, and 'according to' avoirdupois weight it is more than two pounds," or "it is exactly two pounds," or "it is not two pounds." By remembering that weighing decides what weight a thing has not, and what weight it has, and by ably considering the meaning of the words in those sentences, you may obtain the mental affections themselves on your mind. Those mental affections then, those things, which the technical words in that colloquy refer to, are what I mean by the words "by" and "according to." And here notice (and having the things themselves for your

guidance you may detect any misrepresentation I make), here notice, that weighing is deciding the weight; that is, is deciding, and that deciding is acting. There are, you know, several sorts of actings, and the words "an acting" refers to any acting. But in the instances stated, and so far as my argument is concerned, "by" connects an acting to its mean (a weighing to the scales and weights used in weighing), specifies an acting by pointing out the mean by which it obtains its object, its attainment (the ponderosity of the gold); and "according to" connects an obtainment (the ponderosity) to the means (scales and weights) by which it was obtained. Or, to give another familiar representation, there are several sorts of actings (as weighing, measuring, &c.), and appertaining to each there are three things; the acting (the weighing), the mean (the scales and weights used), and the obtainment (the ponderosity of the thing weighed); and when I name an acting (or one sort as weighing), you hearing the name ("weighing") and knowing the nature of things; that is, knowing the necessary connexion there is between an acting ("weighing") and its attainment ("weight" or ponderosity found), immediately know what the obtainment or product of that acting is (you know it is weight, not length), though you do not know what the mean of that obtainment is (whether troy or avoirdupois scales and weights). For the purpose then of pointing out what the mean of a named acting is, the word "by" is placed between the name of the acting and the name of the means

("weighing" "by" "troy") and for the purpose of pointing out the mean of the named obtainment, the words "according to" are placed between the name of the obtainment and the name of the mean ("three pounds and a half" ponderosity "according to" "troy"). So that, to repeat: Concerning the "three things, an acting being named, (or using the word of geometers, being "given,") the obtainment of that acting is known, and when the mean of that acting is, by the word "by" pointed out, the three things are known, and an obtainment being "given," the acting of that obtainment is known, and when the mean of that obtainment is, by the words "according to," pointed out, the three things are known. The words "according to" always referring an obtainment to its mean, and the word "by" always referring an acting to its mean, and in every individual case, the mean of the acting and the mean of the obtainment being one and the same thing; an acting which is "by" a mean, produces necessarily what is "according to" the same mean: and an obtainment which is "according to" a mean, is necessarily produced "by" the same mean. The meaning of the words "by" and "according to," then, is such that, —no: as you have possession of the things themselves, perhaps you will be better pleased with another phrase,—The nature of things is such, that whatever is "by" is necessarily "according to," and whatever is "according to" is necessarily "by;" therefore,

103. Whatever is "by" your individual power to

know, is necessarily "according to" your individual power to know.

104. I have already casually spoken of "deciding" and "to decide," but as we proceed, the words "decide," "decision," &c., will become technical, and for correct understanding it will be necessary that you notice accurately the application of them. If one thing were produced by two other things (by them conjointly, and only so), geometry would perhaps call the two things "the one producer," or "the producer;" but common language, and (to the disgrace of the professors of acephalous medicine) medical language affixes, under such circumstances, the name "producer" sometimes to one of the things, sometimes to the other, and sometimes to the two. Consider, then, when the weight of gold is decided by means of scales and weights, what is "the decider." Is the man "the decider?" or is the apparatus "the decider?" or are the two "the decider?" For the purpose of combating error by the use of a simile which will isolate things which are commonly confounded, but which ought always to be considered separately, and that names may fit this simile, I (for my temporary argument, and without considering the permanent application) call the scales &c. the machine, "the decider," and the man the appreciator of the decision.* And it is only you I speak to, and your decisions I speak of.

* I have told the significations of the words "by" and "according to" and "decider," but am not able to express my meanings without the use of these words with

105. I have now told you, Mr. Individual, what "by" and "according to" mean, and after the fashion of geometry, with much additional explanation, I have proved that every decision is by "your power to know," and that therefore every decision is a decision according to your power to know.*

106. But the first principle of geometry is wrong; the first principle of all philosophy is wrong; all the best and worst wisdom of the day in its very essence is false; for all knowledge is now founded on men's opinions, instead of resting as it ought on the fully developed irrefutable truth; and the consequence is, that you Mr. Individual have (as assuredly as you think you have knowledge of any thing) now a rottenness of mind which nothing but long and ramified meditation can cure you of; and it is in consequence of such a state of mind that geo-

different significations. In consequence, too, of being "compelled" to speak of external things in the language of those who, not knowing the difference between blocks of marble and some mental affections, do not know what an external thing is: and in consequence of being compelled to speak of decision according to one thing, and decision according to another thing, in language only suited to represent all decision as flowing from one source, and only applicable to one of the many right decisions and individual sciences, there is, in consequence of these and other like things, great confusion of meaning in the words of this first temporary argument. But the use of new words, or of old words with new meanings, would require a small declaratory dictionary, and though more accurate, would be less easily understood; and my present object is to observe no more accuracy than is necessary to convey meaning.

* A truth is a decision by power to know; therefore a truth is a decision according to power to know, not according to fact.

meters think they do, philosophers have ever attempted to, and I shall be required to prove what nothing but omniscience can know. And in consequence of the false foundation which all knowledge rests upon, made doubly false by the general assumption that right decision is decision according to fact, and in consequence of the intricate complication of these and other fallacies, and in consequence of all words and their meanings being made for, and fitted to, these and other great and pervading errors of the age, I, in speaking of what the decisions of power to know are, and of what knowledge is, find, as I have before found, much difficulty in expressing,* and you will find much difficulty in understanding, and still more in embracing, the truth. But by the use of a simile, by a few instances, and by remembering that assent and dissent are nothing, a little able meditation may teach you what decision according to your power to know, and knowledge and truth are.

107. There are large heavy scales for weighing avoirdupois tons; and there are small scales for the purpose of weighing troy grains. Each of these machines has two scales (one for the weights, and another for the substance to be weighed), but there is another common weighing machine, and from its suitable construction I introduce it also into this simile, which has only one scale, which scale is

* Correct expressions when speaking of power to know, and decision according to truth, and decision according to fact, assume the semblance of mental reservation or equivocation.

attached to a spring, and descends more or less in proportion to the weight of the substance placed in it, and by descending moves a wheel to which an index is attached, which index revolving, like the hand of a clock, in a circle, moves to, and points to, the figure which indicates the weight of the substance in the scale. Each of these machines gives three decisions: 1st, by preserving its equipoise, by no part of it moving, it decides there is no ponderosity in the scale; 2ndly, by motion, it decides there is ponderosity in the scale; and 3rdly, by the extent of its motion it (or that with the index) decides the amount of the ponderosity. Leaving this latter decision (of the amount) out of the consideration, I direct your especial attention to only the decisions "there is" and "there is not" ponderosity in the scale. You remember the twenty circles I bewildered you with, and from that remembrance you are aware there are many means of deciding: you are aware that decision according to one man's power to know is one thing, decision according to another man's power to know is another thing, decision according to your future power to know is another thing, decision according to your present power to know is another thing, and decision according to fact is (say) another thing. The three machines (three means of deciding) are before you. The avoirdupois machine is one man's power to know, or to decide; the troy machine is another man's power to know; and the machine with the index is your individual power to know. Presenting then (or applying) a small portion of metal to the troy

machine, it moves, it decides there is ponderosity in the scale—according to that man's power to know, there is ponderosity presented. Presenting, or applying, the same portion of metal to the heavy avoirdupois machine, it does not move, it decides there is not ponderosity in the scale—according to that man's heavy power to know, there is no ponderosity presented. Presenting, or applying, the same portion of metal to the index machine (rusty for the want of use, ill put together, and out of order perhaps), the index does not move, from the figure 0, the machine decides there is no ponderosity in the scale—according to your power to know, there is no ponderosity presented. But (relinquishing the simile, and understanding "*you*" to be your power to know, your mind; and your body conjoined), objectors will say, "These three weighing or deciding machines are only suited to decide whether that thing, ponderosity, exists *in the scale*, and therefore my individual power to know, under the similitude of the machine with the index, is only suited to decide whether a thing exists in its scale; that is, within a small portion of space; or presented, or applied: my individual power to know, that is, my machine does not enable me to decide whether a thing exists out of the scale, whether a thing exists near to the scale, or at a remote part of the universe." In considering this objection with the new meaning, which you in stating it have given to the word "decide,"* remember, that neither does

* The deciding and decision I speak of, is mere deciding and mere decision, without any other consideration. In

your power to know, your machine, enable you to "decide" whether any thing exists or does not exist *in* the scale. When another person knows that a thing does exist in your scale, all that you can do is to make your power to know (your scale) decide; but whether it will give a decision in harmony with the other person's knowledge; or the same decision which the other person's power to know has given; depends upon the relative accuracy or perfection of your machine. And remember again that your individual power to know, includes not only your power to know concerning things which are in your hand, or under your eye; or things which you have sought after, discovered, considered, investigated; it includes not only your power to demonstrate from attained data, but it includes also your power to attain data, to obtain possession of things, to seek, to discover, to consider, to investigate. Beyond your individual power to know, there is nothing; it (by the affixing of the name) includes every thing, all active and passive, mental and bodily, things concerned in obtaining your knowledge. And it is all these which the index machine in the simile represented; the machine included all things: beyond it, there was (by the simile) nothing, no loadstones, ropes, or rakes,

stating the objection, the new meaning given to the word "decide" is *right* decision; but you do not yet know what right decision is. It is by your power to know that you must decide, but whether a decision, that is according to your power to know, is therefore right decision, or a truth, is another consideration.

to draw things into the scale; no legs to run after them, nor eyes to see them with, nor magnifying glasses; the machine alone was all — the simile was right,—resuming it then: When a large portion of metal is put into the scale with the index, the index moves, the machine decides there is ponderosity, and that decision is a decision according to the machine (your power to know). When a small portion of metal is put into the scale of the same machine, the index does not move, the machine decides there is no ponderosity, and that decision is a decision according to the machine (your power to know). When a portion of metal, or the ghost of a quadruped, is near, but not in the scale of the same machine, the index does not move, the machine (your power to know) decides there is no ponderosity nor ghost; and that decision, concerning near things, is a decision according to the machine (your power to know). When a large portion of indivisible metal is buried under, or green women with blue beards are walking on, a mountain, far distant from the scale of the same machine, the index does not move, the machine decides there is no indivisible metal, nor green woman, and that decision concerning far distant things, is a decision according to the machine (your power to know). And when a man, a piece of incombustible wood, or a miriad of suns, exists inside the earth, or within a thousand miles of the scale of the same machine, the index does not move, the machine decides there is no miriad of suns, nor incombustible wood, nor

man; and that decision concerning these things is a decision according to the machine (your power to know*).

108. I have now pointed out to you one "yea" decision, and one "nay" decision, which your power to know (the machine) gives; and have showed you how "yea" decisions and some "nay" decisions are obtained. You remember it is you individually I am addressing, and I am speaking of only the decisions of "you;" and I am now showing how you can demonstrate every truth in medicine, or rather how you are to compose a pure science of medicine. And without attempting in this outline more minuteness of phrascology than is necessary to give to patient meditation the means of understanding, I remind you again that, by the arbitrary affixing of names to things, "your individual power to know" includes all your means of obtaining knowledge: or as you can know only by "some means"† of knowing, and as that "some means" is "your individual power to know," you can know only by "your individual power to know." And as you can know only by your individual power to know, you can know whether an assertion is a right assertion only by your individual power to know. A science is an elected collection of arranged assertions, which are known to be right (assertions) by and according to some (singular or plural) power

* Is there any metal of ten times the specific gravity of platinum, or any portion of space included by two straight lines?

† "Some of means."

to know: and as you, being under a sufficient motive, are compelled to form a science; you, Mr. Individual, are now compelled to elect, to arrange, and to form a collection of, assertions which are right according to some (singular or plural) power to know. But (such is the nature of the electing, of the arranging, and your power to know) as you can only elect, arrange, and form a collection of only such right assertions, as are right according to your individual power to know, you are compelled to elect, to arrange, and to form a collection (*i. e.* to make a science) of such assertions as are right according to your individual power to know.

109. And as you can elect, arrange, and form a collection of only such right assertions as are right according to your individual power to know, you are compelled not to elect, not to arrange, not to form a collection (*i. e.* not to make a science) of any right assertions except such as are right according to your individual power to know.

110. And further, in a science which is made of these assertions, or decisions, which are according to your individual power to know, every decision is by demonstration (there being no power to know except by demonstration), and what is by demonstration is a truth; therefore in a science which is made of those decisions which are according to your individual power to know, every decision is a truth.

111. Or rather (speaking as demonstration does in its office of proving): In a science made of those decisions which are according to your individual

power to know, the decisions are what they are; and the decisions in the pure sciences are what they are, and truths are what they are; therefore, in a science made of decisions which are according to your individual power to know, the decisions are as much truths as the decisions of the pure sciences are truths.

112. "But," geometers will exclaim, "you have given us no definition of a 'truth.'" I repeat again, I have given no definition of "the pure sciences:" you have the things themselves. And I have given no definition of a "truth," for you have the truths of geometry. The truth itself, you say, is with you, lay hold of it then; see what stuff it is made of; and with the truth show if you can, that a decision according to your individual power to know, is not the truth. I have given you no definition nor description of a truth, for the reasoning of sciential medicine is not verbal; the arguments of sciential medicine are composed of the things themselves.

113. According to (and I am now, as before, using the phrase in two meanings), according to the conclusion of the argument you are compelled to make a science of decisions, which are according to your individual power to know: and that science being made, you perceive that a decision, an assertion in it, is (words being every thing) one thing, and a decision according to your individual power to know is another thing, and (words being nothing) these two things are the same, for science is knowledge, and knowledge is truth; so that what is according

to your individual power to know is according to science :* therefore what individual thing, according to your individual power to know, does exist, does exist according to science, knowledge, truth,† and what individual thing, according to your individual power to know, does not exist, does not exist according to science, knowledge, truth.

114. Or, as one of my main objects is to shock the prejudices of the medical mind (for every shock, from truth, shakes out some rottenness of mind, and breaks some trumpery notions) ; and as verbal accuracy is not one of my objects, that you may understand the full extent of that doctrine which represents science and truth to be according to your individual power to know, I remind you that myself denies the existence of any decision or knowledge that is "according to fact;" but you often use the phrase "that is a fact," or that is knowledge "according to fact;" and I (with much mental reservation) will admit that you know what you mean by your words. With that understanding, then, my meaning is, that whatever individual thing, according to your individual power to know, does exist, does exist according to fact; and whatever individual thing, according to your individual power to know, does not exist, does not exist according to fact.

115. Such is the legitimate conclusion, such the

* What is "asserted in" science, being "according to" science.

† A science, or a portion of knowledge, or a truth, of the individual, or of the few, or of the many, or of the multitude, is of, or belonging to, science, knowledge, truth.

inevitable consequence, of the arguments and doctrines advanced. This conclusion will be the first truth of sciential medicine. Against the construction of the argument I have founded the conclusion on, you may (such is the wording) advance very many arguments and objections, but I need give attention to none of them, for the argument itself, being, like geometry, founded on assumption, is, as geometry is, folly. And you may (from other data) advance many more arguments and objections against only the conclusion of the argument; and when that conclusion is admitted into, when I have stated it as part of, sciential medicine, I will reply to the strongest of the objections and arguments against it.

116. Retracting then the arguments I have made use of, retaining only their conclusion, as an isolated individual assertion, the first great truth of sciential medicine is,

*Whatever individual thing does, according to your individual power to know, exist, does exist according to truth; and whatever individual thing does not, according to your individual power to know, exist, does not exist according to truth.**

117. That is the first great truth of sciential medicine; the one principle of production and existence of the million. That truth is the essential of all human knowledge. By observing that doctrine, no man can ever arrive at a wrong conclusion; without observing it, no man can ever arrive at a right conclusion. Without admitting the truth of that as-

* In a system, good arrangement requires that the first position be only the second part of the position here taken.

sertion, there can be no science; denying that it is a truth, annihilates all human knowledge.

118. A question, which is a question whether an individual thing has an existence, exists in truth (or in the universe) without any reference to time, place, &c. I call (names are nothings) a question concerning the "universality" existence of a thing: and when it is proved that a thing did exist, without any reference to time, place, &c., it is then proved that the thing had an "universality" existence. A question, which is one whether an individual thing exists at that time, in that place, &c., is a question concerning the "particularity" existence of a thing; and a thing which does so exist has a "particularity" existence. The first position of sciential medicine has relation to only universality existences.*

119. It is easy to understand what sciential medicine's first position is; it is easy to understand the meaning of sciential medicine's first assertion; and it is easy, by metaphysical considerations, to infer the truth of it. It is a truth which all parts of metaphysics, all correct considerations † of the

* In questions concerning the existence of some things (as arterial action, nervous fluid, &c.), if the thing be considered as a self-existent thing, the question is one concerning an "universality" existence; but if the thing be considered (this language is absurd) as the property of another thing, the question is one concerning "a particularity existence." The meaning of the question decides which of the two is inquired concerning.

† Sciential medicine's first position has (by considering all mankind as one individual) long been the established philosophy.

human mind, are continually gliding into. But still it is a truth very difficult fully to assent to; for as soon as the mind turns to the contemplation of it, objections and arguments (all founded on confused and fantastical notions of science, truth, and proof) arise in multitudes against it; and to the weak and deluded, truth soon becomes untenable. And when sciential medicine's first position (its first truth) is stated to different men, every crude and crooked mind sends forth its appropriate and peculiarly crooked emanations, and blind foolishness in every variety of deformity is arranged against it. The mind that is full of acephalous medicine is haunted with nonsensical notions, and sends them crowdingly forth in the form of objections; and though every one is often withdrawn, still (responsibility apart) they all, in other shapes, perseveringly appear, like unquiet ghosts, again and again, till the very heart is nauseated by the number and the folly of them.

120. To state, then, only the strongest objections, and them in the convenient colloquial form they are commonly presented in; and to give to each only a short reply:—

121. *Contra.* Sciential medicine's first assertion is manifestly great nonsense; it is ridiculous. Sciential medicine's first great truth is contemptible folly.

Pro. That any doctrine in sciential medicine appears, at its first stating, contemptible folly and nonsense to you (though not the doctrine's greatest) is assuredly its most ready and palpable commendation. It is at the outstart an excellent omen.

Much instruction from others, and no thinking for self, have perverted your mind; your intellect is bewildered in error, and encumbered with such an amount of contortion, that you are unable, by the best use you can make of it, to attain to the knowledge of one single truth. You do not really know one thing, either in or out of science; you can prove nothing. Such is the state of that medical mind, with the notions of which sciential medicine will not tally. Heaven forefend that it should, for no truth ever can. If the doctrines of sciential medicine, and the present well-established notions of acephalous science, would harmonize together, I would assuredly abandon sciential medicine; but they never will. That repugnance of feeling which is the preserver of truth, will ever protect sciential medicine from the commendation of minds like yours. Prove the folly.

122. *Con.* Your arguments have not convinced me. I do not assent to the doctrines of sciential medicine.

Pro. Saying that you do not assent is only stating a fact; stating a fact is not giving an argument: what is the inference you imply from the fact that you do not assent?

Con. The inference is—the inference is—the inference from that fact is—no—I made an assertion —and the inference I mean is, that—that—I did not mean any inference in particular; the inference is—that I do not assent.

Pro. The inference which you implied, but which you have too much cunning or too little honesty to

utter, if stated with the fact, would stand thus;—"I do not assent to that doctrine, and because no doctrine is true which I do not assent to, that doctrine is not true." Sciential medicine holds such method of argument in contempt, and your assent in derision. Irrefutability is the characteristic of truth.

123. *Con.* When I do not know of the existence of a thing, that individual thing, you say, does not exist; such is the doctrine of sciential medicine.

Pro. Such is one doctrine of sciential medicine, but remember sciential medicine is, as all knowledge is, a net.

Con. I will prove that doctrine false in a moment; any child could; because I do not know of the existence of the pineal gland in the brain, I am, according to sciential medicine, compelled to infer that the gland does not exist; was there ever such nonsense!

Pro. You are compelled; but you have stated that fact, and have concluded the assertion with an exclamation instead of an inference; now utter the inference.

124. *Con.* The inference from that fact is "Therefore sciential medicine in its first truth is false."

Pro. That is not an inference; you have merely stated two assertions with the word "therefore" between them. No man can draw an inference from one fact. You have omitted two or three things essential to the argument. But, as you have uttered what you are confident is the truth, now

please to develop the truth a little; put what you mean in the form of an argument.

125. *Con.* Because, according to sciential medicine, I (deciding by my power to know) am compelled to infer that the gland does not exist, when I know, that—when every one knows, that—I—when I know that the gland does exist; therefore, sciential medicine is false.

Pro. That is only half an argument, and you had much difficulty in stammering through that; because, by only attempting to utter and develop the argument, "which every child could see," you caught yourself saying "I do not know of its existence," and "I do know of its existence." Your first statement then was a moral untruth; and, advancing moral untruths is contrary to sciential medicine's laws of argument.

126. *Con.* But suppose I did not know of that gland's existence?

Pro. Supposition is observation gone mad. Sciential medicine has nothing to do with suppositions. Sciential medicine appertains to only the mind as it is, and to things as they are.

127. *Con.* I know of the existence of some things, which another person does not know the existence of; I know the pineal gland exists; but that boy sweeping the street does not know of its existence; and if his science asserted its non-existence, his science (though according to sciential medicine) would be erroneous.

Pro. It is, Mr. Individual, you only I am ad-

dressing; I am telling you individually how yourself are to reason, how you are compelled to infer. I am giving you instructions which are applicable to the boy in the street; I am speaking to you both individually; but so far as controversy is concerned, one at a time. I will listen to the boy's refutation after hearing yours. Sciential medicine allows of no mingling of minds.

128. *Con.* Other persons know what I do not know. You will admit that my teacher knows of the existence of some one thing, the existence of which I am ignorant of; and were I under the direction of sciential medicine to write in my science, "that one thing does not exist," my teacher would know my science to be erroneous.

Pro. If your teacher (in the correct signification of the word known) knows any thing, I will admit that he knows more than you do. But the same remark which I applied to the boy in the street, is applicable to your teacher. You are not permitted to join the positive part of his mind to the negative part of yours, and then require sciential medicine to teach such a mermaid mind. I tell you again, sciential medicine is applied to only the individual mind as it is.

129. *Con.* But, addressing only the individual, as sciential medicine does in teaching, is very unfair in controversy. You must, by a little consideration yourself, see it is unfair; for, observe what a dilemma you put me in, by not allowing me to appeal to other persons. You allow me to state nothing, but what I happen to know myself, and that

is unfair, because, observe; if I do not know of the existence of a thing, (that is, if according to my individual power to know, the thing has no existence,) and if I, on that account, (in obedience to your teaching) assert "that individual thing does not exist," when I have made that assertion (not being permitted to appeal to others), I, for the purpose of showing that the assertion is false, must (there is no other way) show that the thing does actually exist; and when I show that, you say I contradict my former assertion, and that I have told a moral untruth. So that by your manner of address you prevent me having recourse to the very means necessary to refute what is evidently false.* Addressing only the individual is unfair, it is mere stratagem of argument; it is not at all satisfactory. But other persons beside myself do exist, and I have a right of argument to appeal to them; and, directly I do so, sciential medicine is refuted in a moment.

Pro. I am not (nor are geometers) able either to defend or to refute, without reducing by some means the opponent to a dilemma. To be put in a dilemma is the consequence of talking out of the truth; and to be dissatisfied, is the very common consequence of being in a dilemma, refuted, foiled. And

* Any number of persons who are in communication and possess a community of data and powers of inferring are as one person:—they can only decide by their power to decide (which is the power of one individual amongst them). And the dilemma here complained of by one individual (Mr. Contra) is a dilemma which any number of persons are equally much in.

you entertain a very erroneous notion of sciential medicine, if you (as your tone constantly implies) suppose, that giving satisfaction to your ill-thinking self is any part of sciential medicine's object. The science will show you how to prove medicine as well as the pure sciences are proved, but geometry is only proved by what you call (and you attempt much with names) "stratagem" of argument, and remember that the science can teach no road to truth, by your dictation, if you prescribe the means. But I choose my own means, and "you Mr. Individual" is not unfair, it is only a short method of expressing part of an argument, it means nothing more than "you are not another," and keeps that truth prominently in view; and by so doing, tends to give the individual a feeling of the dilemma you complained of:—to foil the cunning of those who (for the purpose of refuting) make dishonest mental reservations; and to teach the individual that he cannot (without contradicting himself) refute what is according to his individual power to know: it keeps considerations simple; it gives no greater argumentative advantage. Addressing only the individual does not prevent you appealing to all the world if you please, and if you have more solicitude for others than for yourself, the world is before you, do what you can with it. But if you appeal to other persons, remember (what is frequently forgotten) that other persons, their minds, their knowledge, are external things not to be created by supposition; you are not to introduce into argument such minds as never were in the world. And any

truth concerning others is to be advanced (unless you can find some other method of advancing) through you, that is, through your own individual power to know. And if in consequence of your unnecessary appeal to others, the argument becomes complex and obscure, I shall require you to state it minutely and fully, that is, to develop your truth.

Con. Then I shall appeal again to a person not knowing what I do know; to the boy in the street, because, according to my individual power to know that thing A, has, according to the boy's individual power to know, no existence; and because (using sciential medicine) what is according to my individual power to know, is according to truth, that A does not exist according to the boy's individual power to know is a truth. And because the thing A, according to the boy's individual power to know does not exist, he (if obedient to sciential medicine) must decide that the thing A has no existence. But because, according to my individual power to know, the thing A has an existence; I, obedient to sciential medicine, must decide that the thing A has an existence. The boy, according to sciential medicine, must decide that the thing has no existence; but I, according to sciential medicine, must decide that the thing has an existence; therefore the boy's decision, which is according to sciential medicine, is erroneous.

Pro. By using sciential medicine, and appealing to another person, and by giving (as the professors of acephalous medicine by the best efforts of their intellect generally do) but about half an argument,

you have afforded me an opportunity of giving a short reply by a parallel half argument. According to avoirdupois (the boy's power to know) there is not a pound, according to troy (your power to know) there is a pound, therefore the decision of avoirdupois is erroneous.

131. *Con.* Then, I appeal in the same manner to a person (my teacher) who knows what I do not know.

Pro. Then I give (distributing names differently) the same reply.

132. *Con* According to my power to know! according to his power to know! according to troy! according to avoirdupois! I know the decisions are different, but truth must be something independent of us, and of our decisions; the matter is for men to get at the truth, not for them to decide anyhow, as you teach.

Pro. Sciential medicine teaches but one manner of decision. Do not delude yourself by such words as "men," and "get at the truth." By "men" you mean, men one after another—that is, *some men* first. There is no truth, but what *some* men are at; for truth is always a mental affection: it never is "independent."

133. *Con.* But some mental affections are right, and some are wrong.

Pro. And you have undertaken to show that the mental affections, obtained by the rules of sciential medicine, are wrong.

134. *Con.* To deprive you then of the power of applying to my argument such a nonsensical parallel

as you did when I appealed to another person (the boy), I shall speak of myself only, and only of my power to know.

There are two things, my past self, and my present self; and by substituting in the argument advanced my past self for the boy, the argument I now state is the same I have stated, except that the two contrary decisions are by my own individual power to know; and as my last decision is contrary to my former decision, and both decisions were according to sciential medicine, my former decision and sciential medicine must both be erroneous. In that case, sciential medicine produces an absurd self-contradiction.

Pro. The instances are different, and require a different argument. In the instance of yourself and the boy, both decisions were at the same time. Time was not concerned. But in the instance of your present self and your past self, both decisions are not at the same time. Time is concerned. State the argument.

135. *Con.* Time has nothing to do with truth: but to comply with your unreasonable request—the argument is, because, according to the power to know of my past self, the thing did not exist; my past self, reasoning in obedience to sciential medicine, decided "it does not exist:" and because, according to the power to know, of my present self, the thing does exist, I, reasoning in obedience to sciential medicine, decide "it does exist;" and because right reasoning never produces different or contrary decisions; and because the decisions in

these instances, produced by the reasoning of sciential medicine, are contrary decisions; the reasoning of sciential medicine is not right reasoning. Or, because truth is the same at all times, and never different from, or opposed to itself; and because those decisions of sciential medicine are different, and opposed to one another, one of the decisions must be erroneous, they cannot both be true. Sciential medicine must be wrong.

Pro. As you did not approve of my last parallel half argument, I will give you another to disapprove of. A farmer (past self) had five sheep in one enclosure, four in another, six in another, and three in another, when he was compelled to decide how many sheep he had; and he, by adding, found that five, four, six, and three, are eighteen (not a score). In five minutes after that decision, the farmer (present self) obtained two more sheep in another enclosure, and being again compelled to decide how many sheep he has, he, by adding, finds that five, four, six, three, and two, are twenty (is a score). Then the argument you have advanced is—

Because, according to the power to add, of the past farmer, the thing (a score) did not exist; the past farmer adding, in obedience to arithmetic, decided it (a possessed score) does not exist. And because, according to the power to add of the present farmer, the thing (a possessed score) does exist; the present farmer adding, in obedience to arithmetic, decides it (a score) does exist; and because right adding never produces different or contrary decisions; and because the decisions

produced in these instances by the adding of arithmetic are different and contrary decisions; the adding of arithmetic is not right adding. Or, because truth is the same at all times, and never different from or opposed to itself, and because those decisions of arithmetic are different and opposed to one another; one of the decisions must be erroneous, they cannot both be true. Arithmetic must be wrong.

136. *Con.* You fool; your pretended parallel argument is essentially different to my argument. The farmer, after the five minutes (present self), by adding (reasoning), obtains an amount (a decision) different to what he, before the five minutes (past self), did obtain, because he has actually obtained the possession of more sheep; but in my argument my present self has obtained possession of nothing which my past self had not. The argument is not a parallel.

Pro. The farmer, after the five minutes (present self), obtains by adding (reasoning) a different amount (decision), not because he has obtained the actual possession of more actual sheep, but because he has obtained possession of more mental affections, more sheep of the mind. [For if he had obtained the actual possession of more actual sheep without receiving mental affections from them (that is, without obtaining possession of more sheep of the mind), the actual sheep would not have been taken into the adding, and his decision (the amount obtained), after the five minutes, would have been the same with the decision (or amount obtained)

before the five minutes. Or (as red things give the sensation of green) if actual oxen had given the mental affections of sheep, or if mental sheep had come of themselves, his adding (its amount), his decision after the five minutes, would have been different from his decision before the five minutes, though no actual sheep had come into his possession.] The mental affections, not the actual things, are the data upon which the decision is founded; it is the sheep of the mind which the farmer adds up, and his decision after the five minutes is different from his decision before the five minutes, not because his former adding or decision was erroneous, but because he has more data to decide by, more things to add up. And (that reasoning is right reasoning, being always assumed, and as right reasoning is always the same, and from the same quantity of data, can never give different decisions) in the argument you advanced, your present self obtains a decision, different from the decision of your past self, not because the decision of your past self was erroneous, but because your present self has more data to decide by, more mental affections to add up. My argument is an exact parallel.

137. *Con.* But in the instance of the farmer and the sheep, there is a change in actual things; the additional actual sheep came into possession, and in the instance of my present self and past self, the things of creation are unchanged, are at both times the same.

Pro. In the instance of the farmer, the mere existence of the additional actual sheep is at both

times the same, but after the five minutes, the actual sheep are changed with relation to the farmer; changed from non-givers to givers of mental affections. In the instance of your present and past self, the mere existence of the actual things of creation is at both times the same; but those actual things of creation which give to your present self the additional data, are changed with relation to yourself, changed from non-givers to givers of mental affections. Mental affections are the things reasoned from. And (as considering power to know will teach) whether additional mental affections are obtained by change in external actual things, or change in yourself, or by your going to additional data, or additional data coming to you, matters not.

138. *Con.* But in the instance of the farmer; that which he has to decide before the five minutes, is not the same question as that which he has to decide after the five minutes. The first question is "Does there now, on the 31st of December, exist a score of sheep in my possession?" But the second question for decision is, "Does there now, on the first of January, exist a score of sheep in my possession?" The questions are two and very different; but in the instance of my past self and present self, the question is one and the same, "Does that thing exist?" Your argument is therefore no parallel.

Pro. In the instance of the farmer, the questions to be decided are different. And as by "reasoning," is always meant "right reasoning," so by "a question" is always meant "a rational ques-

tion;" and as no person can decide by fact, or according to fact (that is, as a person can only decide by mental affections, or according to mental affections), no rational question-putter ever asks for a decision by or according to fact; but for a decision by or according to mental affections, to knowledge, to truth: so the rational question put to your past self was, "Does such a thing exist in knowledge?" that is, "in present knowledge;" that is, "Does such a thing now, Dec. 31, exist in knowledge? in truth?" and the question put to your present self is, "Does such a thing now, Jan. 1, exist in knowledge? in truth?" The questions put to, and the decisions of, the farmer, before and after the five minutes, have a difference; and the questions put to, and the decisions of, your past and present self, have exactly the same difference. Every rational question concerning the existence of a thing, is a question whether it exists (not in in fact in the universe, in future knowledge, but) in present knowledge, in present truth: and every decision concerning the existence of a thing, is a decision that it does, or that it does not, exist in present knowledge, in present truth; and the consequence is that the word "now" (referring to present) is part of every rational question, and part of every assertion in science.*

* By the word "question" is here meant, a question put for decision; a question for investigation is a different thing. Investigation looks to the universe and to facts, to obtain new mental affections; but decision looks to only mental affections already obtained.

139. *Con.* But if right decision at one time is one thing, and five minutes after is the diametrically opposite, what is truth?

Pro. What it is.*

140. *Con.* If such unstable decisions are truths, truth is of very little value.

Pro. That is muttering against Heaven, not demonstrating against sciential medicine.

141. *Con.* But as the decisions of sciential medicine are so unstable, sciential medicine is of no value.

Pro. The decisions of sciential medicine appear to you unstable, only because you, for the purpose of refuting, have had recourse to a boy, and thorough ignorance of the science; and I, to give you tether enough, have not pointed out how pitiful were the expedients you have recourse to. If, while a person is a boy, while he is ignorant of the science, he undertakes to do what men, old in, and best acquainted with, acephalous medicine, dare not do, to decide by himself—his individual decisions will (in sciential medicine, as in geometry) be continually subject to correction, by other persons who know more, or by the records of "the science of the many." But when he is acquainted with "the science of the learned few," his decisions, though mortal, are not refutable: for example—say there

* A demonstration from one quantity of data is one thing, a demonstration from another quantity of data is another thing; and (superficially explained) a truth is that which is founded on a demonstration from one quantity of data, and which no demonstration from any quantity of data will now refute. A truth is now irrefutable, but always mortal.

are twenty-four diseases, the names of which are the letters of the alphabet, and according to all the present knowledge of all mankind,* whiteness of tongue is a symptom, in only A, B, C, D, E, F, G, and H. Before a boy knows that whiteness of tongue is a symptom in any disease (that is, before he has any knowledge of sciential medicine), the assertion, "whiteness of tongue is not in any disease," is a truth in his own general knowledge; then (learning a little sciential medical truth) he perceives that whiteness of tongue is in A: and the former mortal individual truth ("whiteness of tongue is not in any disease") is, by the beginning of his science, corrected, dead, non-existent. But that truth now dead was adopted, and was subject to correction, and was corrected, because the boy was not acquainted with the recorded science; for the (to him new) truth (viz. "whiteness of tongue is in A") which caused the correction and death of his former truth, is written in the recorded science, and mere reading would have taught it him. Then "A is the only disease in which there is whiteness of tongue," is become a true assertion of his individual science. But it is immediately proved to him, that "there is whiteness of tongue in B;" on the tender of which demonstration, the former truth ("A is the only disease in which there is whiteness of tongue") is, by the progress of his individual science, dead and

* What is here vaguely meant by "all the present knowledge of mankind" is, when demonstrated, arranged, and recorded, what is vaguely meant by sciential medicine.

annihilated; but that truth ("A is the only disease, &c.") was adopted and was subject to be annihilated, or rather was annihilated, because the boy was a tyro, not acquainted with the recorded science; for the (to him new) truth (viz. "whiteness of tongue is in B") is arranged and written in the records of science, and mere reading would have taught it him. Then "A and B are the only diseases in which there is whiteness of tongue," is become a truth in his individual science of medicine, but that truth is unstable, because that "whiteness of tongue is in C," is a truth of the learned already written in the science. Then that "A, B, and C, are the only diseases in which there is whiteness of tongue," is become a truth in his individual science, but unstable; because that "whiteness of tongue is in D," is a truth already arranged and written in the science of the learned. And so the progress of science (of his science) correcting and annihilating truths one after another, the individual proceeds till that "whiteness of tongue occurs in only A, B, C, D, E, F, G, H," is a truth in his individual science, and is a truth to all mankind; for no man knows of whiteness of tongue existing in any other disease any more than he knows of a portion of space existing, included within two straight lines, or of a green woman with a blue beard existing in a mountain; or of the tangible existence of any fantastical thing of imagination. And that truth is to you a stable truth, for it continues till some man discovers whiteness of tongue in some other disease, or that the tongue obtains a whiteness from the

mere circumstance of being thrust forward between the white teeth; that is, till some man discovers what no man knew before.* And though sciential medicine, in the infancy of its detail, is (as geometry was and is) subject to correction from the progress of science, still in sciential medicine every successive step is a demonstrated truth; and ample as the records of medicine are, it will be very easy to put at once the main body of the science beyond the correction or influence of any new truth, which your span of life or allotted portion of nouse will discover.

142. *Con.* You undertake to show that medicine is as proveable as geometry is? Now show me that geometry is as subject to those successive steps, to those corrections and annihilations of truth, which sciential medicine is liable to.

Pro. Observing time, declare your meaning of the word "liable;" discriminate between the science of the individual, of the few, of the many, and of the multitude; and between proveable and proved; and put your command into the form of a counter-demonstration.

143. *Con.* But by representing that truth is liable

* To the correctness of this explanation it is not necessary to show that any tongue obtains whiteness from the mere circumstance of being thrust forward. But it is a truth that some tongues which in the mouth are red tongues, are, when put out of the mouth, white tongues. The whiteness is mechanically produced, and observing the fact, unties, in the doctrines of dyspepsia, a knot which Abernethy used to cut.

to correction and annihilation, your science and you represent that to be a truth, which all philosophy has hitherto regarded as an error; and (even words apart) sciential medicine must be false, because its representation of truth is such as to leave nothing for the word "error" to be applied to: you call all errors truths.

Pro. Error is, as truth is, what it is, in spite of both you and sciential medicine; remembering sciential medicine's division of the word "refutable" (and other such words) will teach you what truth is, and what error is, according to sciential medicine; and will show you that both are coexistent with the science. But to reply to your meaning of your objection—I admit that the representations given by sciential medicine leave nothing for the word "error" to be applied to. According to sciential medicine's representations which are in the abstract, there is no error; because it is not the office of sciential medicine to represent the department of error. By "power to know," sciential medicine means right acting of power to know; and by "reason" and "reasoning," it means right reason and right reasoning; and under sciential medicine, that is, under the right action of power to know, or right reasoning, of course there is no error. The observance of sciential medicine does away with error, not as you expected by putting a stop to all progress of science, and so making all men miserable; or by giving at once omniscience to all men; but by showing what truth in reality is,

and by showing how to obtain it. Henceforth, errors and fallacies do not emanate from imperfect reason, but are the children of stupidity.

144. *Con.* Again adverting to the universality existence of an individual thing: though I do not know of the thing's existence, still it is manifest the thing may exist.

Pro. What do you mean by the word "may?"

Con. Possible.

Pro. Possible: to what power do you mean?

Con. Possible to nature.

Pro. Possible to nature is possible to nature's God; and he, by giving a little light, or changing a little law, could alter all things, and falsify and revolutionize all human knowledge in a moment. "To nature possible," you say; and by the implied meaning of that assertion, and your omitted inference, you require of me an argument that Omniscience and Omnipotence together could not falsify. Science does not teach what works are possible to Omnipotence. Science is human knowledge of what nature has done, not visionary surmises of what she "possibly" could do. *

145. *Con.* That was not my meaning of the word "possible," nor of the word "may." By either of them I mean liable or probable. When I say the thing may exist, I mean there is a liability of its existence.

Pro. "There is a liability" is not an argument, but a mere assertion against. Tell me your mean-

* The confines of science run between the liable and the possible.

ing of the word "liability," and in this instance prove, if you can, the existence of that thing which the word refers to; or try to prove, and I will then show your argument to be false. Liability does not apply to sciential medicine's first position.

146. Such are a few of the objections and part-arguments, which may be easily advanced against sciential medicine's first great truth, and such are a few of the many replies which may be easily given to them. Against the first doctrine of sciential medicine, objections, each assuming many forms, may, without thinking, be advanced in great numbers; but a little able thinking, a very little real knowledge of only the superficial properties of pure science, will considerably diminish the ease with which objections are advanced. But, remember, an objection is not an argument; and if ten thousand objections are advanced against sciential medicine's first great truth, and if of those ten thousand objections, ten thousand admit of no reply, still sciential medicine's first great truth remains unshaken, for its base rests upon all human knowledge, positive and negative: it has all truth for its foundation, and its words are to all mankind, "By me you reason, and by me you know; without me you cannot reason, without me you can know nothing. Such are my pretensions." So it matters not how many objections your ignorance or fancy may suggest; it matters not how ill your previous notions harmonize with truth; and it matters not how many good half arguments your little knowledge may enable you to oppose to those

pretensions; and neither does it matter how strong dissent, how violent opposition, or how energetic derision is; things of that sort matter not,—till you can show some method of reasoning, some portion of knowledge not dependent on sciential medicine's first truth, or till you you can show sciential medicine's method of reasoning, leading astray, or supporting a fallacy; that is, till you can by full and irrefutable argument prove some emptiness in the pretensions advanced by sciential medicine's first great truth, you cannot shake it. And when you have showed one fallacy, supported by, or one atom of truth not dependent on, the truth of sciential medicine's first assertion, then my ready testimonial shall be, "Sciential medicine was in its very essence and in every atom false, and I have abandoned it."*

147. All knowledge is dependent on sciential medicine's first position. To show that the truths of geometry are:—all geometry is dependent on the truth of axioms; and a little consideration will show you, that the truth of every axiom is dependent on sciential medicine's first truth. Take (it matters not which) any axiom in geometry: two straight lines cannot enclose a space, or, there is no portion of space enclosed by two straight lines. Then—speaking of all persons in the world—it is manifest, that if one combination of two straight lines enclosing a space (or one portion of space

* And having abandoned it, shall take another first principle, re-arrange the science, give it the old name, and advocate it again.

enclosed by two straight lines) was produced, or its existence proved, the stated axiom would be invalid; the validity of the axiom is then dependent on the fact, that all the men in the world, by their power to know, cannot prove the existence of such a combination of two straight lines, or such a portion of space, and "all men cannot prove," means no individual man can, so that the truth of that axiom, and (all axioms being alike) of every other axiom, and (all the science depending on axioms) the truth of the whole science of geometry—the science of the many—depends upon your individual inability to prove the existence of such a portion of space, or rather (with reference to all the axioms) depends upon the inability of your power to prove, that is, upon the inability of your power to know. And it matters not whether you are unable to prove, because your power to prove is feeble, or because actual things do not afford the means of proof. The individual who arranged the problems and wrote the book of geometry held communication with the world, and, that neither all men nor himself could prove the existence of such a portion of space, he decided by his individual power to know; and because the portion of space had no existence according to his individual power to know, he decided that it had no existence, and wrote an axiom (the truth of which depends on the non-existence so decided on) down in his book of science. And it is by your individual power to know, that you know the truth of geometry; and because, according to your individual power to know, such a portion of

space does not (amongst mankind or with yourself) exist, you decide it has no existence, and admit an axiom (the truth of which depends on the non-existence so decided on) into your individual science of geometry.

148. "But" (and this is an important point, which I have till now, speaking of geometry, studiously avoided) objecting geometers will say, "Because the truth of an assertion is, as the truth of an axiom is, dependent on an individual thing, is no proof that the individual thing causes the assertion to be true. The truth of the axiom, "Two straight lines cannot enclose a space," depends, it is true, on the inability of an individual power to prove the existence of that space; but because an individual is, by his power to know, unable to know, or to prove, the existence of the space, that inability alone does not cause the axiom to be true."

149. Or, to state the objection in other words: There are three things to be noticed with respect to power to know or prove. There is power to prove that a thing does exist, (by demonstration: i. e. by the positive action of power to know,) and there is not power to prove that a thing does exist, (a mere negative action, or inability of power to know, or the scales not moving,) and there is power to prove that a thing does not exist by (as in the first instance) the positive action of demonstration. Power to prove, then, has two actions, the positive and negative; and though the truth of the axiom is dependent on the fact, that the space does not exist

according to one (the negative) of the methods of acting which power to know has; still a decision, that the space does not exist, when that decision is obtained by the mere negative acting of power to know, does not alone cause the axiom to be true. Though proving an existence of the space by the positive action of power to know, would make a denying axiom untrue; not proving the existence does not make the axiom true. We geometers know the axiom you quote is true, for a two-fold reason; 1st, because we know that no person can prove the existence of the enclosed space; and, 2ndly, from knowing the properties of straight lines, we know that two straight lines cannot enclose a space; and sciential medicine, to establish a non-existence, must prove it by the positive action of power to know.*

150. To this objection and these statements of some geometers I reply, that the first part of the two-fold reason by which they know the axiom to be true, (that is, the first part of that which causes the axiom to be true,) is a decision by the negative action of power to know; and the second part of the two-fold reason, or what they call the second part of that which causes the axiom to be true, is non-existent; the knowledge they pretend to the possession of does not exist. They know, from the properties of straight lines, that two cannot inclose a space! I deny it; and I require a declaration of

* Which sciential medicine can very easily do in that signification of the word "prove."

what that knowledge is; and I also require it developed how they know, or the demonstration. Geometry never proves what we are now speaking of,—an universality non-existence. Geometry assumes one non-existence, and from that assumption infers another, but it never proves it by the positive action of power to know; such proof is not in human knowledge; and sciential medicine denies that there is any other method, or part-method, of proving an universality non-existence, than the method of proof or decision by the negative (if you please improperly to call it so) action of individual power to know. It requires omniscience to prove such a non-existence, and the word prove, in the sense I have latterly often used it, means, "know by omniscience."

151. But whether a thing exists in the universe, and whether a thing exists in that individual combination, or in that time and that place, are queries which common thinking commonly confounds; and partly because that confounding exists, and partly because geometry, after its manner, positively proves some of non-existences, there is generally prevalent the very erroneous notion that all geometrical non-existences are proved by the positive action of power to know, and that for the purpose of pure science it is necessary that all medical non-existences should be proved by the same positive act of the mind. Such erroneous notions are inculcated by unthinking commentators on the pure sciences, who represent that all the multitudinous truths of geometry are founded on a few axioms, and that

those axioms (by no means a few) are truths which are intuitive—truths which are to mind (such is the nature of mind) self-evident; and not knowing or not telling what "intuitive," or "evident," when joined to "self," means, the commentators on geometry by their metaphysics furthermore represent that the human mind is a thing which always turns (as the new-born babe does, by instinct) to embrace the abstract properties of every thing which "lies evenly between two extreme points." By such representations erroneous notions of power to prove and of proof are abundantly engendered, and they are nurtured and strengthened by those reiterated expressions of that blind adoration which the ignorant of geometry ever pay to the science. But the very erroneous assumption that human knowledge has given or is able to give positive proof of an universality non-existence, springs chiefly from, and is mainly stayed by, the greater double assumption, that geometry never assumes, but rightly founds its reasonings on, right foundations—an error which nothing but correcting geometry can correct.

152. There are then many means, or rather there are many manners, of obtaining mental affections. To obtain a portion of omniscience, and mental affections by it, is (say) one manner; by obtaining inspiration and mental affections by it, is another and different manner; by demonstrating, by getting enchanted, by obtaining a delirium, by turning lunatic, by supposing, by dreaming, by intuition, by sense, by innate spontaneous self-production, are

so many manners (real or not real) of obtaining mental affections. To any one sort of mental affections, obtained by any one of all these means or manners of obtainment, you may give any name you please: or you may apply one general name to all the mental affections which are obtained by any two, three, four, &c. manners of obtainment. Those mental affections which are obtained by delirious actions of mind, you may, if you please, call "invincible truths," and you may, if you please, apply the word "knowledge" to the mental affections obtained both by supposing and dreaming. But names do not affect natures, giving unlike names of things which are alike to one another, does not make the things unlike one another; and giving the same name to things which are unlike to one another, does not make things alike to one another.

153. The many and very diverse mental affections obtained by these several means of obtainment are before you: consider the validity of the following arguments:—according to delirium, there were four men and one monster in the chamber; but according to vision, there are but two men in the chamber; therefore, according to delirium, two men and one monster are gone out of the chamber. And again, (first taking the assumption, "What is not actual must be verbal,") according to inspiration, there are actually three, but according to demonstration, there is actually but one; therefore, two of the three must be verbal. Again; according to troy, the animal did weigh two pounds, but according to avoirdupois, it now weighs two pounds and a half;

therefore, according to troy, it is now half a pound heavier than it was. And again, according to glee and enchantment, the world goes well, but according to moody somberness, the world turns awkwardly, therefore the world is—what? I leave the hipped to examine their usual inference, and try by a different manner of reasoning to decide how the world goes and what the world is.

154. Such confounding of mental affections,—such confusing together of very different things, will need to have its fallacy pointed out, only when some person is found so blind as not to see it without a demonstration. Yet such are the arguments of geometry. Geometry says (or rather the commentators on geometry say, and geometry itself, if compelled to speak out, must say) that, "according to intuition," of two things, one is either greater, or equal, or less, than the other: (an axiom which geometry ought to enumerate in the lists of its beggarly assumptions:) and then geometry demonstrates that the one is not greater than, nor equal to, the other; and then the argument of geometry is,—According to supposition, it is one of the three, but according to demonstration, it is not either of the two of the three; therefore, according to supposition, it is the other of the three. Or, according to intuition, it is one of the three, and according to demonstration, it is neither of the two of the three; therefore, according to intuition, it is the other of the three.*

* "By intuition" (intuition being axiomic) is, of course, in the estimation of geometers, a much better manner of

155. These arguments of geometry (words apart) are one; and such are all geometry's arguments—

obtaining knowledge than "by demonstration." And, in my representation, I have given the geometers the advantage of that, by saying, "therefore, according to intuition, it is the other of the three." But geometers may, if they please, (preserving the same absurdity,) say, "therefore, according to demonstration, it is the other of the three." Or, thickening the absurdity, by adding to the imaginary means of obtaining knowledge, they may introduce a third power to know, and say, "According to intuition, it is one of the three, and according to demonstration, it is neither of the two of the three; wherefore '*right reason*' dictates the inference, that it is the other of the three." The error of geometry consists in assuming, that mental affections obtained by the action of intuition (one action of mind) are of the same sort as mental affections obtained by the action of the mind's power to demonstrate: (another action of mind:) that two manners of operating produce the same sort of thing. But there is as much diversity between mental affections produced by intuition, and mental affections produced by demonstration, as there is between mental affections produced by dreaming, (one action of the mind,) and mental affections produced by supposing (another action of the mind): for a truth is a truth, because it is founded on demonstration, or produced by the demonstrating action of mind, (and for no other reason,) but a mental affection from intuition is not founded (nor foundable) on demonstration; the two mental affections are therefore essentially different:—a mental affection from intuition has not that "founded on," which is the essence of a truth. And even were the mental affections of the same sort—still asserting is not proving, and, for valid argument, geometers must prove that they are; nay, though intuition be very much superior to demonstration, still so long as the two thus work together, the absurdity is abiding; and whether "self-evidence" or any other word be substituted for intuition, the absurdity, in the nature of things, is the same.

all founded on axioms.* Axioms are things of supposition; for intuition (stripped of its decoying tawdry, the name) is supposition: an "intuitive truth" is a single confident supposition: that is, an intuition bears the same relation to an elaborate supposition from many things, as a single inference bears to an elaborate demonstration:—many intuitions make a supposition, as many inferences make a demonstration. Geometry, though in its conclusions right, (as some suppositions are,) by accident, is founded on suppositions. And, asserting that these suppositions are universally admitted, is still only asserting that geometry is founded (as old ballads are) on popular belief:—an absurdity is none the less being for more extended. And, in addition to the absurdity of commencing with suppositions, geometry, in the instance I have mentioned, is guilty of the still further absurdity of inferring the existence of one thing from the known non-existence of another. Such, when investigated by sciential medicine, are the empty pretensions of geometry. [Mr. Geometer, your science is out of joint;—it is all wrong, and you cannot put it right, without adopting the principles of sciential medicine.] By observing the diversity between "according to intuition" and "according to demonstration," you perceive the truth of what I, nineteen minutes ago, told you—that in twenty

* In undertaking to show how medicine can be proved "as well as geometry is proved," I do not take advantage of any of the many errors in geometry.

minutes, the whole of geometry might, by the progress of science, be corrected. A little consideration of geometry's manifest emptiness will teach you, that universality non-existences are never proved by the positive action of power to know—"proved" in the instance, meaning "known by omniscience;" and (my undertaking requires that I speak it in a parenthesis) a little knowledge of sciential medicine, and contrasting that science with geometry, will also teach you, that both in the use of axiomic assumptions and in the choice of them, geometry, in its essential construction, is a very bungle.

156. It is the continual tendency of all philosophy to attribute every thing which is common to something occult, and there is a strong tendency in all false learning to consider well-known and tangible truths as deriving their existence from something which is so remote from every thing manifest and tangible, that seeming wisdom can undetected give a name, and at the same time a nature, to it; can declare what it is, and what it is not,—and uncontradicted declare—for it is whatsoever false learning chooses to make it—a thing of its own creation. Thus, living truths, the children of Heaven, are affiliated on monsters of man's producing, and then they and their slandering pedigrees are disseminated, inculcated, established, till being bowed down to the truths themselves, they (in just revenge for their false fatherings) pervert the intellect, fetter the mind, and effectually prevent the progress of science. It is on this account that the manifest axiomic truths of geometry are attributed to intuitive actions of

mind—things of fancy's creation; and it is in consequence of the false foundations of geometry harbouring a supposition, that beside demonstrative there are "intuitive" truths: it is in consequence of this great inherent fallacy of geometry, that all intellect and mind in the science of medicine have been so long stationary or retrograding. But geometry has, forsooth, been long established, and 'tis the fashion of all men,' tis the vice of the mind, it is the moral and besetting sin of every man, to worship without inquiring the idols which his ancestors built,—to sacrifice truths to the gods of his fathers:—all men do it, and it is only by thus representing, by thus sneaking in amongst the crowd and hiding from self behind the failings of others, that I am able to escape from heavy self-censure, for having, in medicine, been kept so long from the light by those and other delusions of geometry.

157. Banishing fantastical notions of intuition, and considering that when an axiom denies an universality existence, its defenders have not the power of appealing to any individual instance in support of its truth; will teach you that such an axiom can be known to be true only by the negative action of power to know, i. e. only by the second part of sciential medicine's first position; will teach you the fact that no power to know is able to prove, by positive action, the non-existence of one portion of space included by two straight lines. And further that the truth of this axiom is dependent on the mere inability of an individual to prove, is as manifest as it is that the production of one such por-

tion of space, would falsify the universal axiom. Such is the relation sciential medicine has to geometry. Geometry is sciential medicine, or geometry is false.

158. It is by sciential medicine's first position that every truth of every science is known. The most manifest and the best known of all knowledge rest on sciential medicine's first great truth. When it is demonstrated that the earth is lighted by one sun, then, according to the first part of sciential medicine's first position, there is one sun, from the mere fact of the demonstration; and when you know there is one sun, it is by the second part of sciential medicine's first position that you know there is only one sun, merely because the existence of the second is not proved. By the first part of sciential medicine's first position, and by it only, you know that mankind has two thumbs, and by the second part you know that he has only two thumbs. And it is only by sciential medicine that you can know how many suns are visible by day, and how many are visible by night, or how many heads and hands each individual of mankind has.

159. Sciential medicine's first position is the essential of all knowledge: and why inability to know of, or to prove the existence of, a thing, should be proof of its non-existence; that is, why man being compelled to decide, and having nothing to decide by, but his weak and erring power to know, should be compelled to decide that a thing does not exist, from the mere circumstance that he is not able to know of, or to prove, its existence; why such should

be the case (and other things worthy of notice), a little consideration of one explanatory simile will show.

160. Admit for a moment that a person when he enters the medical profession, or the world, or at some anterior time, is without any mental affections. Having no mental affections, his mind is a piece of white paper, and over this white paper, reason personified stands a scribe and a guard.

To convey meaning, and as names being nothing, any will serve a temporary purpose, I shall call a mental affection of sense which a person possesses, without knowing whether it corresponds to any external thing, "a fantasy;" and a mental affection of reflection (one that is affirming or denying), not known to be true, "an imagination:" a mental affection of sense known by the individual possessing it, to correspond with some external thing, "an idea," and a mental affection of reflection known to be true, "a perception:" that is, taking for example the words "There are arteries:" if a pupil merely reads in a dictionary "Arteries, tubes which convey blood from the heart," without knowing that arteries do exist, the mental affection which a person obtains, by merely such an explanation of the meaning of the word "arteries," that mental affection which the word "arteries" is the sign of; and which a person has, without knowing whether arteries do actually exist, is "a fantasy." And that mental affection which a person obtains, by merely hearing and knowing the meaning of the word "are" in the sentence; that is, the mental

affection which the verb "are" refers to; and which a person has without knowing whether "are" is true, is "an imagination." And the mental affection which the word "arteries" refers to, and which a person possesses, knowing at the same time that there actually are such things as arteries in existence, is "an idea," and that mental affection which the word "are" refers to, when possessed by a person who knows it to be true, is "a perception."

Allowing these words to bear these meanings, the person just entering the medical profession, and who has reason as a scribe and a guard over his white-paper mind, has to receive his first lesson in medicine. His preceptor first tells him verbosely the meaning of the word "arteries," and he reads in a medical dictionary, "Arteries, tubes which convey blood from the heart." But till the actual existence of such tubes is known to the pupil, the mental affection which reading, and hearing the word and its meaning, give (if they give any), is "a fantasy." But reason being the scribe, will not write a fantasy on the white-paper mind of the pupil, and being a guard, will not allow his preceptor to write it there; and consequently the pupil has not yet had given him, nor himself obtained, any mental affection concerning arteries. As reason does not write on his mind articulate sounds, or the names of fantasies, without a sufficient object, there is yet nothing written on the mind of the pupil; his white-paper mind is white paper still; and the

moment after hearing and reading, the pupil has not the slightest recollection of ever having heard or read the name, or its explanation; he has not the slightest idea of an artery, or of ever having heard of an artery. The preceptor then finding that while reason is the guard he can make no impression on the mind by any other means, shows the pupil some arteries, or proves that the tubes do exist, and that they convey blood from the heart, gives full demonstration that "there are arteries." In consequence of the demonstration given, or by the pupil himself obtained, reason writes on the white-paper mind "there are arteries," and the pupil has then on his mind an "idea" of arteries, and a "perception" of their existence. The preceptor then affirms, "there is arterial action" (that is, contraction of artery, which is independent of elasticity, and palpable). But reason says, "That is a mere assertion," and refuses to write on the white-paper mind of the pupil either the imagination of "there is," or the fantasy of "arterial action." But, says the preceptor, "The existence of arterial action is an established doctrine." Reason smiles, but still refuses to write it. But, urges the preceptor, "The existence of arterial action is taught in all the great schools of the metropolis, all the great authorities of this and every other kingdom teach the existence of arterial action." Reason sneers, but still refuses towrite it: and by no efforts of assertion is the preceptor able to give to the pupil (who has reason for a guard over his mind) any idea of arterial action, or any

perception of its existence.* (And so the pupil who searches merely among assertions and authorities for the existence of arterial action can never obtain the slightest perception of it.) Neither arterial action nor any perception of its existence is yet written on the white-paper mind; then the pupil is compelled to decide whether arterial action exists; and for the purpose of deciding, he looks to the paper of his mind,† finds it not written there, and as what is not on the mind cannot influence the judgment, he decides it does not exist. And a nerve is one thing, an artery is another thing, a probability is another thing, an equality is another thing, a green woman with a blue beard is another thing, and the existence or non-existence of every individual thing is decided by the same method of decision.

161. Reasoning (the acting of reason) is demonstrating, and you in this simile perceive that reason, reasoning, or demonstrating, is (by personification) the guide by which mental affections are admitted into, or onto, the mind of the pupil (elected to form his individual science). The mind is at first blank, and you perceive that it is by the rule of reason, and by it only (merely by the consent or dissent of the scribe and the guard), that some things are ad-

* A person may have a fantasy and an imagination without having the slightest idea or perception. I am not under this simile attemping to discuss arterial action, or to point out the steps by which inference is arrived at.

† As said before, investigation looks to the universe; but decision looks to the things on the mind—to mental affections.

mitted into, and other some excluded from the mind (or the science). The same guard (reason) when in reality placed over the white paper—which prevents the most fantastical imaginations entering the mind (or the science) because the evidence or proof of them is deficient—with equal power and efficacy, and for the same reason, prevents any seeming moderate imagination entering the mind. The same power which prevents ghosts and sea-serpents entering the mind, excludes arterial action from it, and any rule of admission, any law of election, that will let in unproved arterial action, will admit a sea-serpent.

162. Unwritten-on whiteness is the first state of the mind. And duly considering that it is the duty of the individual possessing the white-paper mind, to set reason as a guard over it, that it may be kept white from every thing which does not come with such credentials as reason shall approve of, and considering how perceptions are first obtained, will teach you that unwritten-on whiteness is the first rational state of the mind. The rational mind in its first state has not written on it (is not impressed with) the existence of any thing; perfect vacuity is the first state of the rational mind; the person possessing it, does not know of the existence of any thing, and (metaphysicians will perceive the verbal latitude of the explanation I am giving) the possessor of a mind in such a state, when compelled to decide, must, by adding up the nothings which are on his mind, decide that nothing exists. The second state of a rational mind is with only one

impression made on it (as the idea of arteries), and the possessor of a mind in such a state, when compelled to decide whether that one thing (artery) does exist, must decide, as geometers do, by what is written on his mind, by his power to know, and is compelled to decide that artery does exist. And the possessor of such a mind, when compelled to decide whether arterial action exists, is compelled to decide, as every geometer decides, that arterial action does not exist. And that decision is "an universal;" and being irrefutable by the mind which gave it, is (if a mind with one impression could possess a demonstration) good demonstration, and remains good till it is refuted by the admission of more things on the mind.

163. By duly considering that the first state of the rational mind is total whiteness, and that every subsequent state of the rational mind is (as the mind is never full) partial whiteness, and by remembering that the guard over the whiteness will approve of nothing, but what is founded on good reasoning (proof), you will perceive why it is that he who wishes to put a new impression on the mind of another,* that is, why he who wishes to put on rational whiteness of mind (which knows of no existence), an impression of the existence of a thing must (reason being guard over the whiteness) present what he wishes written, with the credential which the guard will require (the proof). The necessity of offering proof being the consequence of

* Old impressions are erased by impressing new ones.

reason being the guard. Considering which will lead you to a full understanding of, why it is he who asserts the existence of a thing (and not he who denies its existence) from whom proof is required. And you perceive why asking a person to believe in the existence of a thing, without offering him proof of its existence, is assuming that reason is not the guard over his mind.

164. Considering attentively that the several methods of obtaining knowledge (knowledge finding you, or you finding knowledge) are but so many several means of writing on the mind, and considering that what is not written on the mind cannot influence the judgment, and that it is by what is and what is not written on the mind that all men decide—will teach you why it is, that he, who has of real philosophy enough, or of modern learning little enough, to know that he has not omniscience nor superhuman knowledge; never attempts to decide that an individual thing does not exist in the world, but diligently labours to write on his own mind the knowledge recorded on the mind of mankind and himself to find knowledge: and as knowledge is truth, he—when required to decide, instead of attempting by analyzing, to decide what does and what does not exist in, the universe, he is by necessity content to decide what does and what does not exist in the truth.

165. But you of acephalous medicine may if you please still perambulate the earth searching for superhuman knowledge; you may still persistingly endeavour to guide yuur professional conduct by

truths of so high a standard, that no progress of science—no efforts of ages—no future discovery—no new revelation—can ever correct; by unalterable, immaculate, immortal truths. You may still, as you have done, search after omniscience and accept of no guide that is less exalted. And then, you may blind all mankind, if you can, that none of the thinking or unthinking may see the irreconcilable confusions, and the miserable contradictions of your visionary seemings, and pitiful opinions; you may, while aiming at infallibility, go, hide, if you are able, your impotence of judgment.

166. I have now stated sciential medicine's first position, and have given a laboured explanation of its second part—pointed out the relation which it has to geometry, and (for the purpose of putting it more and fully within your cognizance and perception) I have given several collateral explanations and considerations, with many repetitions, and I have scantily showed how it is affected by the most important of the many objections and arguments which the ill thinking or the philosophy of the time may suggest against it.

167. The first position of sciential medicine has relation to only such inquiries for decision as are universal: as—whether a specific thing exists in the universe; and probability or liability has no relation to such inquiries—inquiries concerning "universality existences:" the first position of sciential medicine is not implicated with probability or liability, but the second position will refer to inquiries whether a specific given thing exists in a

specific (given) time, place, combination, &c. * and such inquiries concerning "particularity things" being implicated with probability, renders it necessary, before proceeding to the second position, to determine what that thing is which the word "probability" or "liability" (considering them both as one) refers to.

168. Concerning probability—That an individual should mingle in society—that he should hear what others say, and should talk himself—that he should receive instruction in many schools, be taught in science by many masters, and be for many years himself a teacher—that he should study the writings of others, and be himself an author—that his mind should be continually placed in all the diverse circumstances and positions of social and scientific communication—that he should spend a long intellectual life, and then die without having, at any time, had the slightest perception of what others or himself intended by a sign which he and they daily made to one another:—that in half a century of thinking, no thought, no feeling, no suggestion, should arise, to teach him that he was ignorant of what he every hour heard or uttered, is nothing extraordinary—that such should be the case of one man, is no matter of surprise.—But, that multitudes of men—that all the members of the medical pro-

* From the two things "in a particular time" and "in a particulr place" (both being "particular") one abstract (idea or thing) is formable; and that thing (having no name) I sometimes refer to by the six words "in, time, place, combination, et, cetera:" the three last of which words are foreign and for explanation only.

fession—(notwithstanding their scrutiny of one another, in spite of hot controversies, and under every urgent requirement of circumstance)—should, year after year, preserve such a vacuity of intellect, that, for age after age, no little thought—no accident of mind,—no stray suggestion from any other science,—should present itself to unquiet their ignorance, or to teach the learned professors of acephalous medicine their no-knowledge of important things, and their unpardonable ignorance of even their own meaning of words so common and so constantly occurring in their science as "probable" and "liable" are,—the actual occurrence of this; the professional and long-persisted-in use, without any meaning, of words, which have ever been the very vowels of all medical discourse, shows—alone considered, fully shows—how thoroughly brainless, heads which are well-tongued may be. There is nothing so empty as medical talk.

169. When he uses the word, ask any professor of acephalous medicine, "What do you mean by 'probable'"? He will think it a very extravagant question; and will sneeringly accuse you of extravagant folly in asking it. And (allowing him time to vent his exclamations) if you patiently and quietly elicit his knowledge of probability; or if you examine your own notions; or by guess, or interpretation by context, endeavour to discover the meaning which "liable," "probable," "may," and "possible," have in acephalous medicine; you will find that such words, instead of referring to any rational mental affection obtained through the organs

of sense, refer to some internally engendered vermin of the head,—the entozoa of the brain. Instead of referring to any mental affection which has any relation to other men's bodies or minds; or to any external thing of creation,—you will find that each of such words refers to only some ghost of some perception,—to some apparition—that is ever frightening men from decisions, by constantly haunting the mind,—to some innate weakness, delusion, or vision in the mind, which nothing produces; but which "comes," as old women say of idiopathic diseases, without cause, "of itself," a something which is in its nature so strange, that though its name is a noun, it is not a thing, and its existence is what, and what only, mere assertion will prove.

170. Real probability—the thing itself—that thing which the word "probability" ought to be applied and confined to, is that thing which is plainly seen in such instances as this. Two black and eight white balls being in a bag, and a blindfold person taking one ball out of the bag, one "probability" is, that he did, does, or will, take a white ball. The probability seen in this instance is something which (to use only chemical language) depends on the numerical proportion which the balls of one colour bear to the balls of the other colour, and on the manner of taking one ball; it is the probability or chance of arithmeticians; and beside the probability of the arithmeticians, there is in the universe no other probability. Medical probability is arithmetical probability; and therefore subject to the defi-

nitions and minute calculations of the arithmeticians.

171. The erroneous notions prevalent in the medical profession concerning probability, make it expedient for you to notice especially that probability is not a feeling, impression, persuasion, nor an affection of your mind; but is a something which exists (as external things do) whether you know of its existence or not. It is as much a thing as any ratio in geometry, or any other thing in the universe, is a thing: and for admission into science, the existence of medical probability as much requires and as tangibly admits of proof, as the existence of any law of nature or of any property of things does; and belief in, without proof of, probability is no more justified in medicine, than belief without proof in geometry is. Yet, probability is now made the mere hider of ignorance. In acephalous medicine it is a mist which every speaker (when afraid of scrutiny or detection) runs into, which every medical author (like an ink-fish) throws around, to protect by obscuring his doctrines: "We must depend on probability" or "there may be" is the ready and unmeaning excuse,—the pitiful allegation,—the meagre "ethic rag," with which every unable reasoner salves his conscience, and covers his impotence of decision. 'Tis the substitute for all knowledge—'tis the answer for every thing. The professors of acephalous medicine have discovered, and continually and loudly proclaim, that "probability is not proof:" so (under that plea) every fool in the profession thinks he

has a right to be a fool, because probability is probability.

172. But that property of probability which, above every other property, it especially behoves you to take a more than especial notice of, is, that probability is always a thing of things, and a thing after things, that is, a probability is always a thing of some other thing; and being always of, or belonging to, is therefore inseparable from other things (as a form is always a thing of some other thing); and on that account it is that in showing (or in science), probability is always a thing "*after*" things; that is, the probable existence of a named thing (as the form of a named thing) can never be known till "*after*" the actual existence of the named thing itself (one thing of the sort) is known. Hence probability is never implicated in any inquiry, "whether such a thing does (*i. e.* did) exist in the universe," or "whether such occurrence ever did happen." Probability is never implication in an inquiry concerning an universality existence; it is solely a thing of time and place and individual instance, it has relation to only "particularity" existences.

173. Understanding, then, what the word "Probability" or "Liability" refers to,—understanding what that thing Probability or Liability is; the second position of sciential medicine is its first position applied to individual things, with "the liable" implicated.

"*Whatever individual thing does, according to your individual power to know, exist in a specific*

time, place, combination, &c., does exist in that time, place, combination, &c., according to truth; and whatever individual thing does not, according to your individual power to know, liably exist in a specific time, place, combination, &c., does not exist in that time, place, combination, &c., according to truth." *

174. As the evidence which proves the liable existence of a thing is the lowest evidence of that thing's existence, and as, when there is not of a thing's existence the lowest evidence, (less than the lowest being none,) there is not, when you are compelled to decide, any evidence of its existence; this second position of sciential medicine rests on (and on the same foundation as) its first position, and substituting "liable existence" for "existence" is subject to the same objections, and admits of the same collateral considerations in support of it. So that only one objection which geometers suggest need be noticed.

175. "Of two things, one is either greater, equal, or less, than the other. I am not able (do not know how) to demonstrate that A is liably greater than B; therefore, according to sciential medicine, A is not greater than B; and I am not able to prove that A is liably equal to, nor that it is liably less than, B; therefore, according to sciential medicine, the one thing A is neither greater, equal, nor less than, the other thing B, which is absurd, therefore sciential medicine is false," objectors say. The very

* Sciential medicine can also prove the non-existence of a thing in a time, place, &c. by "positive" demonstration.

plain answer to that very simple objection is, that the universal position, "of two things, one is either greater, equal, or less, than the other," is true of the two things A and B, and when applied to them, the meaning of it is, that A is liably greater, and it is liably equal to, and it is liably less, than B, so that no objector can know that A is " either greater or equal or less than B" without first knowing (having first demonstrated) that A is liably greater, equal, and less; and the objector who says that the one thing A is either greater, equal, or less, and that he is not able to prove A liably greater, contradicts himself.

176. Such are the doctrines of sciential medicine concerning non-existences; doctrines which admit of great diversity of wording, and in consequence of the erroneous meanings of such words as, "truth, according, proof, fact, thing," (these and other words being made by philosophy the representations of things which have no existence,) the doctrines conveyed in these words (when in outline) are liable to much misinterpretation, but simply expressed, the doctrines are: 1st position—That your inability to know of, to prove—the universality existence of a specified or named thing, is to your individual power to know (as much as any proof is) positive proof of that thing's non-existence, and you are compelled to infer that it does not exist, and—2nd position—Your inability to prove the liable particularity existence of a specified or named thing is to your individual power to know, positive proof that the particularity thing does not exist. And it

is on these positions that all human knowledge is founded, and on these that sciential medicine rests every assertion which derives an existence.

177. Assertions and reasonings apply to things; and in reasoning and asserting, discrimination of one (or one sort of) thing from another is of course necessary. That mental (or verbal) specifying by which one sort of thing is distinguished from another sort of thing, is classifying.

178. An impression of how much importance a right understanding of classification is, or of how much importance ability to classify fully and rightly is, in every science, may be given you, by quoting (without saying whether true) two assertions from philosophy, "Reasoning is classifying," and "All reasoning is only classifying."

179. And how ably the professors of acephalous medicine (in their reasonings) generally classify, may be taught by simply asserting, that they discriminate one thing from another by the same mental operations by which "the ox knoweth his owner, and the ass his master's crib."

180. Yet what classifying and classification are, is amply taught by philosophy in general, to which teachings I (in giving this outline) refer you; pressing (for the purpose of correcting that perversion of mind which is given by the iniquitous practice of teaching one classification of diseases), pressing you to consider that as classifying is separating, nature never classifies—never forms classes. All classification is arbitrary, the mind has full power to classify as it pleases. It is especially necessary for you

to notice that a person can put what things he pleases into a class, and apply what assertion (what verb) he pleases to them, and to notice also that geometry (as it does not teach investigation) does not teach the art of classifying, nor how to make assertions, but consists of assertions already made and applied. Yet, so thoroughly perverted is the intellect of aeephalous medicine, that it is necessary for me to press on the remembering part of your mind, that to rightly make, and rightly apply assertions, is the office of him who constructs the demonstration. That an assertion when made is well founded and true, is the care of him who makes it.

181. The doctrines of classification are, in sciential medicine, "the doctrines of combination and separation :" which, though very simple, have a very comprehensive application. A combination is an individual thing, and a separation (or existing separate) is a thing equally individual; and for decision, sciential medicine's universal tone of inquiry is (notice the simplicity) whether an individual thing exists in truth; and sciential medicine in its views of things, sees greenness (an individual thing) existing, and sees that form existing combined with that colour, with that specific gravity, with that and that property, and with that surrounding temperature (one combination), making together that piece of metal.* A symptom is an individual thing, and sciential medicine sees those several symptoms com-

* Philosophical attempts to determine what matter is, are nothing more than attempts to obtain knowledge by other means than the senses.

bined with other things, and with a living body, and calls the combination a fever. A phenomenon is a thing, and sciential medicine sees many combined, and with body, and calls the combination a life. But as ideas appertaining to mechanical things thrust themselves into the thing referred to by the word "combination," and as I expect the medical mind (preferring a mechanical bounding to things) will not consent to apply the word combination to things which are merely within the influence of one another, and as the "*circumstances*" which a thing is under, are (philosophically, though not mechanically) of the thing itself a part important, I introduce the word "association," that you may, if you prefer the word, apply it to what are commonly called "circumstances." Thus, that form, those individual properties (of a human body), those individual symptoms, that purity and that temperature of atmosphere, are "combined," together making one combination; or, in other words, that form, those properties, symptoms, are combined, making a combination, and that combination is "associated" with another combination made of that purity and that temperature of atmosphere.

You will perceive how verbs are applied to combinations and separations when considering sciential medicine's method of

Proving Universal Truths.

182. There are two sorts of universal truths; those which affirm existences, and those which deny existences; and you are already aware that scien-

tial medicine founds every universal which denies an existence upon the second part of its first position; and justifies such founding by averring that in like cases geometry is either sciential medicine, or geometry is false; that no such universals are, in or out of geometry, by any other means known or proved, that (concerning existences) rightly deciding, is not deciding what exists in fact, but what exists in truth. And sciential medicine's first position (containing the one principle of the million—of all truths) being connected with every individual truth, founding an assertion on it is giving good demonstration; * and without founding on sciential medicine's first position, there is no knowledge—truth cannot be distinguished from fallacy—but with it (and founding on it), what and why a man is, and what and why a man is not, justified in believing can be known, and every assertion which a man is justified in believing can be demonstrated.

* In sciential medicine every individual truth is reducible to—connectable with—foundable on—its first truth, and every individual truth in the science can be showed to be a truth as assuredly as its first truth is a truth. And the first truth of sciential medicine is reducible to—connectable with—foundable on—any and every truth of any and every other science; and the first truth of sciential medicine can be showed to be a truth as assuredly as any truth in any other science is a truth. Thus, through its first truth, any truth in sciential medicine is reducible to — connectable with—foundable on—any other truth in any other science; and thus every truth in sciential medicine can be showed to be a truth as assuredly as truth exists, or as assuredly as man can know. Compare the narrow bunglings of geometry to that. Of the three phrases I have used—as knowledge is a net—the best fitting is "connectable with."

183. Under its first position sciential medicine (for example) asserts :—

There is no space included by two straight lines.

There is no metal of ten times the specific gravity of platinum.

There is no second sun.

There is no nervous fluid.

There is no arterial action.

There is no greenness existing separate from substance.

There is no greenness combined with that form and vitality, or that colour and that form are never combined : or there is no such combination.

There is no combination of two straight lines enclosing a space.

There is no combination of that colour (of silver) with that specific gravity, malleability, ductility, tenacity, associated with that temperature existing separate from solubility in nitric acid.

There is no combination of those five symptoms, that form &c. of body ; associated with that state of atmosphere, and that combination associated (combined) with curability.

There is no combination of those three symptoms existing separate from the property of curability.

There is no combination of those several properties of that powder with the property o being diaphoretic.

184. Before making any one of these assertions, it is (as it is with geometers) the assertor's circumspection—his knowledge of science—and his object in making the assertion which permits and dictates

the assertion—decides whether it shall deny the existence of a combination or of a separation. And when one of these assertions is made, its undeniable nature rests on your inability to produce the existence denied,* and on the fact that you, while under that inability, are compelled to decide on the truth of the assertion. And simply counter-asserting "there may be," is vain unless you can prove or show the truth of the "may" asserted, which (as these are universal denials) you cannot. And each of these so-made assertions is caused to be true and known to be true by being connectable with any other truth—(that is, founded on demonstration) and irrefutable.

185. As any one truth in sciential medicine is (through "power to know") connectable with any other truth, any truth which denies an existence can of course be inferred through a demonstration from any other truth. "There is no arterial action" can (by pleading power to know) be inferred from "There is no nervous fluid," or from "There is no space included by two straight lines." Wherefore those persons who, instead of deciding, seek for

* "How do you know there is no arterial action?" The question has two meanings. "How did I obtain the knowledge?" and "How do I know that the knowledge or mental affection when obtained is a truth?" How I obtained the knowledge is nothing to you; it came in a dream, or a bird of the air brought it. But how I know the mental affection when obtained to be a truth, I am compelled to show; and I do show by showing that denying the principle of reason by the action of which that mental affection is obtained takes away all proof—annihilates (not the mere million but) all human truths.

assent, may, for the purpose of obtaining what they are so reverentially fond of, demonstrate, after the fashion of geometry, any denying universal which is hard to believe, from any other universal to which credulity is given with more ease: by which method of proving, some quantity, but no strength, of argument is obtained; for all inference rests either immediately or mediately on sciential medicine's first position.

186. When inferring an universal, which denies an existence mediately through a demonstration (*i. e.* by positive action of power to know) from some other universal, it is necessary for you to avoid a manner of faultily inferring which is common in geometry, prevalent in every science, and when practised in medicine leads directly to absurd conclusion; and by the practising of which sciential medicine seems at once reduced to an absurdity; that is, it is necessary for you to notice that the non-existence of one thing is no proof of the existence of another thing. A proof is a perceived proof, and a truth is a known truth: and simply because the mental affection of "greater than" is not written on the mind, it does not necessarily follow that the mental affection of "equal to," or "less than," is written there. Because "equality" is not written on the mind, it does not follow that "inequality" is; and a consideration that "equality" is not written on the mind, will not alone write "inequality" there. There is no such thing as what is commonly meant by a "necessary alternative." For your understanding of sciential medi-

cine, it is necessary for you to notice that "there is equality" is one (assertion or) thing; "there is not equality" is another thing; "there is inequality" is another thing; and "there is not inequality" is another thing: and as fact is truth, and truth is known truth, and as existence or non-existence is existence or non-existence in truth or in knowledge, the real meanings of those four assertions are, "equality is known to exist"—"equality is not known to exist"—"inequality is known to exist"—and "inequality is not known to exist:" and when the mind is fully impressed with the fact that, to man, an existence is an existence in truth, or an existence according to power to know, it will easily perceive that the reverse of "equality known to exist" (i. e. "equality not known to exist") is alone no proof that "inequality exists:" or expressing the same in other phraseology—because "according to your power to know, equality is not," is no proof that therefore, "according to your power to know, inequality is." Because equilateral triangles are (if such were the case) never equiangular, is alone no proof that they are always unequiangular; because they are never unequiangular, is alone no proof that they are always equiangular; and that, for the same reason that the non-existence of greater magnitude does not alone prove the existence of equality of magnitude.

187. To infer the universal non-existence of one thing from the universal existence of the reverse thing (or *vice versa*), it is (calling equality and inequality "conditions" of a thing) first necessary to

prove by demonstration from individual instances (and by the use of sciential medicine's first position), how few conditions the sort of thing can exist under, and then (the conditions being only two) to aver (under first position) that being (or not being) under the one condition, it is not (or is) under the other. Always remembering that, when inferring an universal which denies an existence through demonstration, it is especially requisite to attend to the primary proving of the number of conditions.

188. Sciential medicine then demonstrates those universal truths which deny existences by founding them on its first position, or by inferring them from data conjointly with the use, more than once, of the first position.

189. With respect to those universals which affirm existences, it is worthy of notice that geometry infers them from an individual instance:—"Because that equilateral triangle is equiangular, all equilateral triangles are equiangular," is virtually the argument of geometry; for geometry demonstrates that one equilateral triangle is equiangular, and, subsequently, as often as the inference is required, says, "Because that individual equilateral triangle is equiangular, therefore this other equilateral triangle is equiangular." But because the first equilateral triangle was equiangular, is not a proof that the second is, till it is proved that the fitness (or the validity of the inferences) of the demonstration which was applied to the first triangle was not dependent on some accidental circumstance.

Thus, if I take a right-angled triangle, and I demonstrate that its side opposite its right angle is double the length of its base, and then infer that because the side opposite the right angle is double the length of the base in that (the first) right-angled triangle, therefore in this (the second) right-angled triangle, the side opposite its right angle is double the length of its base; my inference is not valid till I have proved that the fitness (or the validity of the inference) of the demonstration which I applied to the first right-angled triangle, was not dependent on some accidental circumstance. Because one triangle of three equal sides has an individual property, therefore every other triangle of three equal sides has the same property, is of itself (is *alone*) an inference no more legitimate or allowable than is, Because one animal of four legs possesses one property, therefore every other animal of four legs possesses the same property; or, Because one man has one property (is rich), therefore every man has the same property (is rich). Such, geometry's blind method of jumping to a conclusion, is not reasoning; it is defective in that classification, or in that exhibition of sameness, which is the constituting essence of demonstration: and is only half an argument. It is a manner of arriving at a conclusion, which, if practised in medicine, would continually lead to conclusions which are notoriously false.*

190. The right (and therefore sciential medi-

* This instance of false reasoning in the pure sciences is another reason why demonstration has not been applied to

cine's) method of managing the intellect, for the purpose of proving those universals which assert existences is (remembering that the order of showing the method of proof in the abstract is not the order of the application), for example, first to take an individual equilateral triangle, to prove that the three angles in that one individual instance are equal to one another. And then, not to regard the equality of the three angles as the "necessary consequence" of the equality of the three sides (for it is only in the exhibiting that it is consequent); but to consider that, in that one instance, equality of angles is combined with equality of sides. Nature has combined the one thing, equiangularness, with the other thing, equilateralness, and that combination is proved to exist in one instance, and (for phraseology's sake say) in another instance. Then the argument is, Because equilateralness is combined with equiangularness in some instances, and because equilateralness exists (using first position) not combined (uncombined) with equiangularness, in no instance, therefore, is equilateralness of triangle, always combined with equiangularness of triangle; that is, all equilateral triangles are equiangular.* And that is an argument possessing every property of demonstration, with a conclusion possessing every property of a truth.

medicine. The pure sciences have deluded us; led us, and kept us astray from the light.

* Because there are in knowledge, in truth, instances in which it is combined, and because there are in truth no instances in which it is not combined (posit. 1), therefore it is combined in every instance.

191. Again, take a portion of silver, prove that in it, that colour, specific gravity, malleability, fragility, ductility, tenacity, are in combination; and that one combination is combined with the property of solubility in nitric acid.* Then, because that combination of those six things exists combined (in one instance) with that solubility, and because that combination of those six things never exists in any instance not combined with that solubility (position 1), therefore that combination of those things is always combined with solubility in nitric acid. And as the name "silver" is (by caprice say) always given to that combination of those six things, all portions of silver (omitting the consideration of time) are soluble in nitric acid. And that is an argument so good, that its conclusion possesses every property of truth, and an argument too good to be convincing to ill thinkers.†

* The things spoken of here are abstracts, are properties —but in some instances a verbal observance of such a diversity as exists between "a triangle of three equal sides" (which is an individual thing) and "a triangle possessing equilateralness" (which is an individual thing possessing an abstract thing) makes language almost unintelligible.

† In these arguments there is, for brevity sake, a little nicety (concerning "conditions") omitted; but the same omission pervades geometry, and is unimportant. Many persons suppose that the question, "How do you know that those six things never exist not combined with solubility," will refute these arguments? The question is (as all questions in argument are) absurd; but the argument implied by the question will refute geometry, but will not refute sciential medicine: for sciential medicine knows by that which it refers the assertion to—its first position; on the truth of which all truth depends.

192. Another instance: Prove by demonstration that this portion of grass is green, and has vegetable life. Then, because the colour green (greenness) is in this one instance combined with vegetable life, and because you cannot show (position I) the colour green existing in any instance not combined with vegetable life; therefore you are compelled to infer that in every instance the colour green is combined with vegetable life.

That argument is an instance of right reasoning from deficient data, but if (as asserted) you cannot show the colour green existing in any instance not combined with vegetable life, you are compelled to infer that this green baize has vegetable life; and while you are not in communication with other persons, that inference has every property of, and therefore is a, truth: it is founded on demonstration, it is connectable with, and rests on, the same foundation as any and every other truth, and is irrefutable; for you cannot refute what is according to your power to know, though the first person you state the truth to will show it to be "mortal," and give your individual science progress: and he will show your truth to be mortal, will kill it, and give your individual science progress, not by showing that the method of reasoning was wrong, but by producing additional data for the reasoning to be applied to; *i. e.* by subjecting additional data to the very same reasoning.

193. Those universals, then, which affirm existences, sciential medicine proves by first demonstrating the truth of the assertion, when applied to one

individual thing (an equilateral triangle), and then abstracting from that individual thing (triangle) an abstract universality thing, or a property to make a class with (equilateralness), and then affirming (by virtue of its first position) that the abstract thing (equilateralness) never exists (combined or) not combined with the object of the universal assertion (equiangularness). In thus asserting, in thus proving universals, sciential medicine asserts and proves in the same manner in which all demonstration does, and with the same irrefutable result.

194. Those universals which deny existences are either founded entirely on sciential medicine's first position, or inferred from it and data: and sciential medicine's first position is used twice in proving those universals which assert existences. And it is observable that in those assertions which prove the non-existence of a thing by being merely referred to sciential medicine's first position (as the non-existence of the combination of that colour—of silver,—specific gravity, tenacity, malleability—fragility, ductility; with insolubility in nitric acid), in those assertions no previous knowledge of the thing (silver) enters into the argument. That you have tried by experiments with many pieces of silver, and found that none of them possessed insolubility, assists nothing in the proving—the knowledge so obtained is not needed in the proof of the non-existence of the insolubility; for the non-existence of that insolubility is (as all non-existences are), by nature, on the rational mind; for the rational mind is by nature a piece of white paper, with nothing

written on it. The knowledge so previously obtained only directs you what denying affirmation to make (how to construct the demonstration), and by its direction you, knowing the science, affirm the non-existence of insolubility of silver. And directed by previously obtained knowledge (knowing the science of things), you avoid asserting that the colour green never exists not combined with vegetable life. Hence, though sciential medicine shows how to prove all things, it will still be necessary for you to know the science; the selection of assertions and the construction of demonstrations being, in sciential medicine as in geometry, matters of your own behovement. You may, if you please, commence making assertions, and constructing demonstrations in geometry, or in sciential medicine; but that your assertions and demonstrations, when made, shall be irrefutable demonstration, is your care.

195. The same manner of reasoning which proves the parts of things to be combined or separate, proves the "circumstances" of things to be combined or separate (or associate or unassociate).

196. When, for the purpose of proving universals, reason is applied to individual things, it must be remembered that sciential medicine's first position is not applicable to particularity existences; they being complicated with liability.

197. And it is worthy of especial notice that "equilateralness is always combined with equiangularness," is very different from "equiangularness is always combined with equilateralness."

198. Thus sciential medicine proves all universals

which affirm or deny the existence of a thing. And then (by its manner of proving those universals which are concerning existences) it proves that every question is a question concerning the existence of a thing, and that every assertion in science is an assertion concerning the existence of a thing. The existence or non-existence of things is the whole of knowledge.

199. And considering how reason stands as a scribe and a guard over the paper mind, which is by nature white, and considering how existences are written on the white mind, shows why it is that assertions which deny existences are never, by any positive action, written on the mind, that is, they never rightfully enter an unmingled recorded science.

200. And here I pause to point out the beautiful simplicity of sciential medicine. Every question is a question concerning the existence of a thing, and on the presentation of any question to the mind, the first mental act is analyzing the question, to find out what that thing is the universality existence of which the question is concerning;* then, if the existence of that thing is not proved (not written on the white-paper mind), the thing does not exist; if it is proved (is written on the white-paper mind), the thing does exist; or, being a question of

* And knowing specifically what the thing is, much facilitates deciding whether its existence is proved, and also tends much to the success of investigation, by pointing out what data is necessary to the proof, and thereby directing where to search for it.

time, place, &c., if the liability of the thing's existence is not proved, the thing does not exist. Thus the universe of intellect is divided into two parts, existences and non-existences; or into those impressions which you have on your mind, and those impressions which you have not on your mind; which you (reason being the guard) have not been able to obtain by either searching after, or waiting to receive.

Proving the Present from the Past.

201. In medicine the great perceived difficulty of proving the present, or future, from the past, does not arise from any difficulty of inferring, but almost solely from the reasoner's ignorance of classification. He does not know what combination of things to apply the verb to. The professors of acephalous medicine rarely read and never study; they form opinions at random, but never meditate; and from their ignorance of "metaphysical" facts they do not know how to assert.

202. In the pure sciences the present is always assumed; because a triangle had such a property, therefore it now has,—and twice two were and are four,—are statements of the pure sciences; wherefore sciential medicine, to prove as well as the pure sciences prove, is not required to prove the present from the past, or the future from the past or present. But sciential medicine's manner of reasoning from the abstract of things, instead of reason-

ing from any thing which is individual (the abstract of a thing being always, by its nature, the same thing, as equilateralness is the same thing to-day as it was yesterday), allows of proving the present from the past, and the future from the present. The same method of mental proceeding (the use of the first position) by which sciential medicine demonstrates that such a thing, a combination, separation, &c., did not exist, serves equally well to demonstrate that such a combination does not now exist, or that such a separation does not now exist.

203. Thus, by applying the first position (as discretion shall dictate) to either a combination, or to a separation, the present is proved as the past is; or, another method, when it is proved that "it was so," sciential medicine having proved the number of "conditions," asserts (under position 1) "it either is so now, or some change has taken place, and no change has taken place, because (position 1) you, Mr. Individual, now compelled to decide, cannot show that it has: therefore it is so now. And, concerning the future, as every known-of individual thing affects some sense, every known-of thing has one or more sensible properties, which combined, maket he thing itself; and as every present property is a now quiescent future action; when present properties are demonstrated, future actions and effects on sense are demonstrated, and future effects on sense, &c. combined are future things. Thus sciential medicine proves the future from the past,

and surmounts the difficulty of time without proving that the laws of nature never vary.* In applying this manner of proving, it will be often requisite that you mark a broad distinction between future knowledge (which is never attainable) and knowledge of the future.

204. I have now showed you how sciential medicine proves that a given individual thing, separation, combination, &c., does not exist in the world. I have showed you how sciential medicine proves that either of these does not exist in this or that time and place: and (when the parts of things are proved) I have showed you how sciential medicine proves the existence of a combination and of an association in the world, and in specified time and place; and, in doing so, have showed you how universals are proved, and how things of present time (the time man always reasons in) and of future time are proved.

Two of the seven alleged impossibilities are overcome.

205. In showing you how to surmount the remaining five obstacles, which keep you from a right and accurate knowledge of the works of nature, I direct your especial attention to one of nature's laws, which, though on the surface of all her works, and though felt by every man, no man has hitherto seen. "Nature has placed a limit on coincident," or "there is no unlimited coincident." Sciential me-

* Let the laws of nature vary as they may, the object in demonstrating is to construct an irrefutable argument.

dicine asserts this under its first position—proves it—by the method of proving the universal. And the method of giving irrefutable demonstration of all human knowledge is now before you.

206. The limit which nature has placed on coincident is the most sublime of all the works of creation. It is the limit of coincident which causes diversity in things, and enables mankind to discriminate one part of creation from another. The truths most palpable to all mankind, the plain demonstrations of science, the most minute and intricate subtleties of philosophy, all human knowledge are dependent upon the limit of coincident. Limited coincident, like attraction, pervades the universe; and, like attraction, is upon every atom. While the property of attraction, by its mighty workings, gives stability to the universe, and exhibits to man the omnipotence of his Creator; the limit of coincident, by pervading every known thing, puts it within the reach of human knowledge, and exhibits the benevolent omniscience of Him who created all things. Philosophy looks at attraction, and sees Omnipotence in every thing; it looks at the limit of coincident, and sees Omniscience on the surface of every thing. By attraction and limited coincident, every thing is seen to be the work of Omnipotence, with the mark of Omniscience upon it.

207. A little consideration of the common meaning of the adjective "coincident" and of the noun "coincidence" will perhaps be sufficient to enable you to perceive what sciential medicine means by

the "limit of coincident." In sciential medicine "the limit of coincident" has relation chiefly to the operations of nature, and (for the purpose of explaining by a plain example) assuming that nature makes a bag, puts into it and draws out of it black and white balls, and that (she knowing what she does, but) we being blindfold to her operations can only calculate probabilities; and assuming that the present time, or the time occupied in drawing, is of no duration, and that nature, having drawn a ball of one colour, never next draws a ball of the same colour, when the probability (or chance) is more than one hundred to one against it: assuming this, shows what sciential medicine means by the limit of coincident with respect to events. Nature having drawn one white ball draws another white ball, and the two drawn (time annihilate) together, is a coincidence; and the drawing of each was coincident with the drawing of the other; and the second ball was drawn under a calculable probability, that is under a law: and the law it was drawn under is the law of coincident (with respect to events), or the law of happening together. And as nature never draws (is not allowed to draw) a second coinciding ball, when the probability is, by our calculation, more than one hundred to one against it, the "one hundred to one" is the limit of the allowance, or "the limit of coincident." The one hundred to one is under the laws of nature; "the limit of happening together without known cause." And an event happening together with a naming of it, a

thinking of it, an expectation, &c., without known cause, is a coincidence, or a coincident.*

208. The chances against a coincident happening may be one, two, twenty, two thousand, or any number to one. The proportion which the chances for, bear to the chances against, its happening, is "the value of the coincident." And asserting that a coincidence never happens when the chances against its happening are an innumerable number to one, is asserting that all coincident is limited.† And not only events happening, but things corresponding, being like, tallying, &c., are embraced in sciential medicine's doctrines of coincident. One feature in one person being, without known cause, like one feature in another person, is a coincidence. A square inch on a table being by chance like a square inch on a chair, is a coincidence.

209. But directing present attention to only events—coincident is happening together in time and place without known cause. And, though proof that the laws of nature are fixed, is not necessary to the validity of the arguments which sciential medicine founds on the limit of coincident, yet a deep conviction that nature's laws are always the same—that they are never suspended—that every

* Happening together (coincident, the adjective) in one instance is a happening together (a coincident, the noun).

† If you doubt the limit of coincident, see what that man has done since he was born, and find another who has done exactly the same: or, there is a laurel leaf, produce another like it.

event which happens, happens by law, by inevitable necessity, will considerably accelerate your comprehension of the doctrines derived from the limit of coincident. Consider then, the withered leaf which falls in autumn from a tree in America, falls by cause inevitable; and the leaf which at the same moment falls from a tree in England, falls also by cause inevitable: the same power which impels the planets in their spheres, compels the two falling leaves to fall—and the inevitable necessity which compels each of the two leaves to fall, compels each to fall at that especial moment—and they fall together by necessity. The robin which chirps in the forest abroad, and the robin which chirps in the garden at home, both chirp from cause, and together from necessity. The man who, in another kingdom, from some efficient motive, utters a word, and the man who, in this kingdom, from some efficient motive, utters the same word at the same moment, both utter the same word together by necessity.* And these happenings together are instances of coincident.

210. When (time of observation for the simplicity of expression considered as of no duration) two things happen together, they are, in conversational phrase, either cause and effect, or mere coincident; that is, they are things happening under one of those two circumstances or conditions. And the manner of proving in any instance that two

* In the doctrines of necessity and free will there are two queries. Necessity after and necessity before the formation of the efficient motive.

things are in the relation of cause and effect, is by first proving (by the method of proving the universal) that things do always happen under one of the two conditions, and then asserting under the first position, that no coincident exists (or is ever produced) wherethe chances are so many (as in the instance) to one against its happening; that is, that the number of chances in the instance against the things happening, is beyond the limit of coincident: therefore the things in the instance are not a mere coincident. And as the things are either mere coincident, or cause and effect, and they are not mere coincident, therefore they are cause and effect. Such is the method of reasoning by which sciential medicine demonstrates, irrefutably, the relation of cause and effect (or such is the essence of the method).

211. And a superficial glance at this method of demonstrating will teach you the necessity of turning your eyes away from arithmetic and her calculations of chances, and the necessity of looking to and of considering the things of nature, and their happenings; till nature and meditation have taught you sciential medicine's doctrines of coincident.

212. But to accurately apply this method of reasoning (in the manner I have stated it) to any individual instance (for the purpose of proving that the individual event is not a coincident thing, because the chances against the coincident happening are in number greater than any under which coincident ever does happen, or are beyond the limit which nature has placed upon the happening of

coincidence) would require (if not a knowledge of exactly where the limit of coincident is), would still require an accurate knowledge and calculation of how many chances there are for, and how many there are against, the event happening. And though such calculations, and the application of the reasoning, in the manner I have stated it, is in some instances easy, still an obtainment of the knowledge requisite to enable an accurate application of it to every instance, would require the observations of an age, and the necessity of previously obtaining that knowledge would (if the stated were the only practical manner of applying the reasoning) make the utility of sciential medicine very remote. But for the immediate utility of sciential medicine, and for the advantage of every science, it fortunately happens that all reasoning (being classifying) is reasoning from same to same, or in other words from like to like. And in the doctrines of cause and effect (for the purpose of proving which the doctrines of coincident are introduced) all reasoning is from one combination to a like combination, or from one combination of things, associate with such circumstances, to the like combination of things, associate with the like circumstances. And all reasoning in the doctrines of cause and effect being thus from like to like, the reasoning (instead of requiring accurate valuations of coincident and consequent averments that, at a specific number of chances against, the limit of the coincident is fixed) allows the averment of "such" a coincident, the word "such" referring, not to the number of chances for or

against, but to the number of the concurrent or coincident things. "Such a coincident," that is "such a mere concurrency of events, never happened"—"the number of the concurrent events is beyond the limit of coincident," are permitted averments.

213. And proving the relation of cause and effect, and giving other proofs founded on the limit of coincident, are further made very easy by the astonishingly narrow limit within which coincident is by nature confined. An examination of nature's products and events will show, contrary to arithmetic, that (naming the value of the coincident by the number of events which are coincident) while a coincident of two things is common, a coincident of three things is (using specific numbers to mark the difference of vague and unproved impressions) five hundred times less common; and a coincident of four things is fifty thousand times less common than a coincident of three things: and a coincident of five things is not ten million times less common than a coincident of four things, but never did, never does, happen. Such are the, for explanation's sake, implied, but not yet asserted doctrines of sciential medicine.

214. In stating the abstract principle, sciential medicine asserts, as it asserts other non-existences, that there is no unlimited coincident; that in every sort of happening-together there is a limit to coincident. And a person, in using the manner of reasoning, denies the existence of "such" a coincident as is indicated by "such" a number of co-

incident or concurrent things, taking the number of coincident things (as all things for classification, assertion, and reasoning, are taken) by science and discretion.

215. In considering proof founded on the limit of coincident (as in considering the whole system of sciential medicine), it will be necessary for you to examine minutely what "begging the question" is; and that books will teach you.

Cause and Effect.

216. A conviction of how much importance a correct knowledge of cause and effect is, to you of the profession, may be obtained by considering that the doctrines of medicine are the doctrines of cause and effect. What causes disease and what causes a recovery are almost the whole of medicine.

217. But a true conviction of how much knowledge of cause and effect, of how much real knowledge of medicine, you of acephalous science now possess, can only be obtained by putting aside your abundant respect for self and persons, and by examining the knowledge possessed by the least instructed and the most ignorant of society, or by observing the doings of a lower order of animals. With the uninstructed, an eclipse is the omen of a war, a comet causes a public calamity, the croaking of a bird is the sign of some domestic evil, a scroll of tallow is the forerunner, or the cause, of death, a piece of coal is an occasion for a coffin, touching cures the evil, nine sixpences prevent fits, the liver of a newt is a cure for headach, the

drippings of a gibbet drive away melancholy, physicians cause cholera, all symptoms can be put into and be visible in a phial, and charming cures many diseases. And you, the enlightened of the profession, hear of persons who hold doctrines of this sort, and you pity them and call them fools. But you pity them and call them fools because, and only because, you are thoroughly beam-blinded by self. Foolish is a comparative term, and they are not foolish, they are only out of fashion. Theirs were once the fashionable doctrines; they have their methods of reasoning, their oracles, which they blindly bow to, and credulously take their creeds from: yours are now the fashionable notions; you have your methods of reasoning, and you have your oracles, which you as blindly bow to, and as credulously take your creeds from; and their methods of reasoning and your methods of reasoning, are exactly the same methods of reasoning. You the learned, you the most learned professors of acephalous medicine, obtain and defend many of your acephalous doctrines by the very same methods of reasoning by which the pitifully ignorant of society obtain and defend their gross absurdities,—their methods of reasoning are your guides. Go, you professors, to the lowest orders of society, select the most ignorant, (from whom nature has not withheld the common gift of reason,) learn what their creeds are, and ask them how they know, induce them to give their reasons; then mingle with yourselves,—communicate your doctrines to one another, and tell one another how you know; give your reasons;

then (if feelings of derision will allow) analyze the reasons given, and you will by analyzing find that, learned as you think yourselves, you guess what causes disease, and suppose what cures disease by the same absurd principles of judgment which the ignorant you pity use. But fashion is yours, and the well-satisfied and the well-deluded public is with you; and you have many sounding oracles to appeal to and mighty authorities to support you. But dare you, or dare your oracles, show their reasonings? Dare your great authorities come out and uncover their emptiness? Can your dictum-uttering oracles in the whole records of their science show how they have formed their decisions, and then, in any class of persons, show any manner of deciding absurd as ignorance ever practised or credulity assented to, which I cannot show them practising and assenting to? If they dare, and if they can, and if they do, I will ever after abandon reason, and kneel and cringe to every man that bears a name, and be through life the obsequious slave of every fool that ever twaddled medicine. But no, your great authorities will teach, and dictate, and command, and condemn, (for on others they, without their wits, are cunning workmen,) but their circumspect discretion will prevent them telling how they know. There is not now a man amongst them whose inward witless cunning will let him fully and aloud proclaim how he knows that medicine is and bread is not a curer of diseases, and then enable him to shield his knowledge from deserved derision.

But there are amongst them men—(and let the men themselves deny it, and I will hereafter point them out)—there are amongst them men to whom hundreds, and to whose opinions thousands daily bow, who know and who directly dictate what is, or what is not, the known causer of diseases by reasonings which, if applied to common things, any poor half-witted scullion girl must walk the treadmill for acting on. The reasoning which will prove that a wreath of tallow is both an omen and a cause of death,—the very same reasoning is often the sole dictator of the great physician's mystic scribble; and the phial which the suffering sick man looks through so anxiously, and while deluded by a name, and while life flickers, thinks he sees salvation in it, and waits the hour for swallowing,—that very phial is often filled by the reasoning which will prove (and tremble at the proof) that there is something awfully and ominously true in dreams. "Tell it in Gath," that professors may know it, "publish it in Ashkelon," that shame may visit them; or (shame not visiting them) that they may receive that rich retribution which they will so justly deserve. The reasonings by which you professors of acephalous medicine determine the causes and the cures of disease are when fully developed truly pitiful; and when your ignorant and erring reasonings and your emptiness of intellect are, as I ever and anon find them, combined with the peevish intolerance and the blustering importance and pomp of self-assumed superiority, they make a

thing which, justly estimated, is a creature as pitiful and as contemptible as any that society ever tolerated or Heaven suffered to live.*

* To the scientific—a test for a medical man. Ask him, how he knows that a medicine cures a disease; how he knows what does the patient good; how he knows what causes a disease, or what does the patient harm. Ask him, how he knows that one thing is the effect of another thing, or that one thing is the cause of another thing; how he distinguishes a recovery from a cure. Ask him, what the evidence is which convinces him, and how he reasons from it. And when he refers (as it is probable he will) to instances in which the effect follows the alleged cause, as often as fifty in every hundred times, and appeals to your common sense,—tell him, that horses and dogs have common sense enough to know there is a connexion between two things, of which the one follows or antecedes the other so often as fifty in a hundred times; and ask him, if his doctrines of medicine are determined by such common sense. Or if, as is more probable, he refers to instances in which the effect follows the alleged cause in ninety-five of every hundred times, and declares the connexion is so manifest that every person can see it,—tell him, that in such instances the connexion is so manifest that reptiles and creeping things can perceive it; and ask him, if such perceivings are his guides in medicine. Ask him, what his guides, his manners of reasoning, are; ask him for (apart from instances) a general rule applicable to all like cases—tell him you want it for your guidance: and if under such askings he is, as it is likely he will be, in a hurry to go, let him go—you will see him again, and again after that; and do not forget (for it is a matter of importance to you) to elicit from him, by little and little, *how* he knows,—what his guides, rules, and methods of reasoning are. And when you understand, meditate well on, and apply the rules he has given you to common things; see whether you, by the rule your doctor has given you, can with the evidence which your servant will supply you with, prove that commencing a work on a Friday produces misfortune—that a winding-sheet in the candle is connected with a subsequent death, and apply the rule to fortune-telling. Recollect

218. "A cause is that which produces a new thing, and an effect is the new thing produced." Such (the common definitions of cause and effect) give, and till the meaning of the word "produce" is fully declared, can give, but a very imperfect knowledge of the things signified. You know where to find the things themselves, to them in this outline I appeal and I refer you.

219. Much of the very much puzzlement which

who of your friends have departed this life lately, and see whether you can, by the rule of reasoning which your doctor has given you, show that the deaths of your friends were caused by the (inseparable antecedents) visits of medical men. Apply the rule to things following and going before one another, but known to be not cause and effect; to things which you did suppose but now know are not cause and effect and vice versa, and to things which certainly are cause and effect; in each instance reasoning from effect to cause and from cause to effect. Look at the very great number of real cases,—the immense quantity of true evidence which "quack doctors" publish, and try whether you can by the rule of reasoning which your doctor has prescribed, show the efficacy of quack medicines, and try whether the reasoning applied will prove that days cause nights. And if you have not misunderstood the rule, which is your doctor's and which your doctor has given to you, and if by repeated applications you find it is fallacious,—N.B. tell him of the applications you have made, and let him explain if he can—and if after full explanations you find that he has no guides, or that his guides are fallacious, that his reasonings are erroneous; and if you have ladies in the house who (caring nothing for cure,) when a little indisposed would like to be pleased by a medical gentleman, and when very ill would love to be tickled to death; and if you have a house-dog so old and so diseased that his life is a misery, and yet so faithful and so affectionate that you cannot kill him, then (while they are well) tell your women that your doctor is "*a very nice gentleman,*" and put your house-dog under his care.

exists in the common professional notions of cause and effect is removed by discarding from the mind (when meditating on these things) all notions of relation, except that very simple relation included in the simple idea of "following after" or "going before." By excluding from the mind the very vague thing signified by the verb "produce," and by admitting into the mind only the mental affections of "following after" and "going before," an individual cause is mentally made to be "that thing which is followed by that thing which is preceded by"; and if to these mental affections you add the other mental affection, signified by "always," "by necessity," or "inseparably;" a cause is then, "that thing which is necessarily followed by that thing which is necessarily preceded by," or a cause is "that antecedent which is necessarily followed by that sequence, which sequence is necessarily preceded by that antecedent;" and an effect is "that sequence which is necessarily preceded by that antecedent, which antecedent is necessarily followed by that sequence." Or, if you consider that, as one part of one piece of paper, is to another part of the same piece of paper connected in space, so an individual cause is to its effect inseparably connected in time; you will obtain a discriminative and guiding idea of what an individual cause is and of what its individual effect is, when the two in reality (or by mental annihilation of other things) exist isolated from all other things, from all intervening or disturbing influences. And by considering what cause and effect are when isolate, and by

considering that "dependent on" is not "caused by," you will perceive that for the purpose of proving that one individual thing (A) is necessarily followed by another individual thing (B), which individual thing (B) is necessarily preceded by that thing (A) which it (B) necessarily follows; that is (in other words), for the purpose of proving that the things in question possess when isolate the properties which when mingled with other things they do not visibly possess; that is (in other words), for the purpose of proving that the things in question possess the properties which cause and effect possess; it would (for one plain method of proof) be necessary to obtain the things in the state of isolation, and to observe them while in that state. But (speaking without regard to comparatively rare instances) the intervention of other things and the existence of unknown causes make it impracticable for man so to obtain and so to observe things so isolate; and because it is impracticable, mankind is compelled to have recourse to the (other) method of proving—by the limit of coincident.

220. And here notice (for your ignorance makes it necessary that you attend to the truisms), because some things possess properties and relations which man cannot accurately know of, does not prevent him knowing what he does know. Because there are some things which man does not know, does not prevent him discriminating what he does know (truth) from what he does not know. Because there are some things which man is not able to obtain, to observe, or to know, does not prevent him

obtaining, observing, and knowing those things which he is able to obtain, to observe, and to know. Man, though not omniscient, is able to know as far as he is able to know. And a mistaken notion of your own powers and of what others require of you, makes it necessary for me to inform you that when you are ignorant you may be mute.

221. And for a right understanding of cause and effect, it is further necessary that you abandon the mental habit of suspending the laws of nature; the habit of supposing that a cause can exist without operating,—can exist without producing its effect.

222. Sciential medicine considers what cause and effect are when isolate; that (rather than a relation) they are inseparable connexion,—that they are an inseparable "combination" of things in time. And things and events, as they are presented by nature, are mixed together, but some things admit of being either *altogether* separated, or observed apart from some other things (as the combination of a, b, c, d, may be obtained and observed separate from e, or from the one combination of e and f), or many things may be, *one after another*, obtained and observed separate (as b, c, d, e, f, may at one time be observed separate from a, at another time a, c, d, e, f, may be observed separate from b, and so on, as in chemical analysis). And sciential medicine, for the purpose of showing what is influential, begins its inquiry into cause and effect where physical separation (or the power of isolating) ends: that is, takes a thing (simple or combined) which is as much as possible isolate from the influence of all other

things,—keeps it isolate,—and while isolate observes what effects are produced by the thing itself,—by the individual (known or unknown) parts of the thing operating on one another,* and by unknown influences (or unknown "causes"), and the effects thus produced, while the thing is as much as possible isolate, are the first product of events (or the first amount of influence), then sciential medicine to this first isolate thing adds by (if possible) an isolate adding, a second thing (which has been previously as much as possible isolated), and observes the effects produced while the two are together and isolate from other things, which effects include the effects of the things known and unknown, and the effects of the change or of the adding, and are the second product of events (or the second amount of influence). Thus, things are to any extent one by one added to another thing, or to other things whose amount of influence (under all unknown causes) is previously known: and a too simple view of the matter is, that subtracting the product of events produced by any number of things before another thing is added, subtracting that product from the product produced after the other thing is added, shows (as both products were produced under all unknown causes) the influence of the other added thing.

223. By thus commencing an inquiry into cause and effect where physical separation ends, and by adding things one by one, sciential medicine keeps

* The thing itself cannot produce an effect, but this latitude of explanation is given for the purpose of showing that the method of proceeding appreciates every influence.

the inquiry simple, and disposes of (excludes from all subsequent observation and argument) the great number of uninfluential things which surround every thing as it exists mingled with the other things of nature (and a thing existing surrounded by only uninfluential things is isolate), and by observing the product of events (all unknown causes operating) previous to every adding, sciential medicine deprives opposers of the power of obtaining counter arguments from those great bug-bears "unknown causes," (for the influence of all unknown causes is known and calculated,) and by observing the events produced (their concurrency) the limit of coincident is learnt, or rather, by observing the concurrences of events, a person privately learns how to aver (under prop. 1) that "such" a coincident never happened.

224. It is necessary for you to observe that a specific time is necessarily an ingredient in every inquiry concerning cause and effect. "Following after" and "going before," "present power" and "future action," always imply time. And, as in investigating it is necessary first to isolate, and subsequently to keep isolate from every known disturbing influence which may arise from that complex mingling of things in the rapid current of events which nature permits and (to limit coincident) promotes; so in giving proof (in averring the "such") it is necessary to state the obtained and preserved isolation and the specific time of isolation and observation.

225. And as the thing which is a cause is necessarily "followed by," and the thing which is an effect is necessarily "preceded by," for the purpose of discriminating between "dependent on" and "caused by," (that is, for the purpose of proving that two things have the connexion of cause and effect,) it is necessary to prove that the one thing is (when isolated from influential things) always "followed by;" and it is further necessary to prove that the other thing is, when isolated from influential things, always "preceded by;" that is, to prove beyond all counter proof, or (as in every instance of proof) as far as knowledge goes, or (to explain in language which you will understand better, the nonsensical medical language of those who only offer past evidence) for the purpose of proving that the two things A and B are in the connexion of cause and effect, it is necessary to prove both that A is the cause of B, and also that B is caused by A; that is, it is necessary to reason from cause to effect and from effect to cause.

226. Sciential medicine, by its manner of proving universals, proves that (what is not here necessary for the abstract argument) there is no cause but what is a combination of two things; that is, every cause is the contacting of two things. Thus, it is not the gunpowder which produces the explosion, nor is it the spark, but it is the contact of the gunpowder with the spark; or the spark and the gunpowder contacted and acting together produce the explosion. The two things, the contact of which

is a cause, I call "con-actors." It is especially necessary for you to observe that every cause is of two con-actors.

227. And further, when you are hereafter meditating on the connexion of cause and effect, and especially when considering (what ought never to be lost sight of) the two "con-actors," which enter into the composition of every cause, it will be necessary for you to observe the diversity there is between a property and a cause. A property belongs to one thing—is the attribute of one "con-actor," a quiescent half-worker. And a cause belongs to a contact of two things, is the attribute of only a contact, and is a non-quiescent full worker. The diversity of these is great, though philosophers (not knowing that a cause always consists of two con-actors) constantly confound between a property and a cause. Two things are in contact when they are within the sphere of action,—within the influence of one another.

228. Inquiry into (and proof of) the connexion of cause and effect is twofold.

1st. Respecting both con-actors,—either whether those two things are, when contacted, the cause of that event, or whether that event is caused by the contact of those two things.

2nd. Respecting only one con-actor—either whether that thing is, when contacted with some other unknown thing, the half cause of that event; or whether that event is caused by the contact of that thing (con-actor) with some other unknown thing (con-actor). That is, whether the event is produced

by a cause in which the thing inquired about is one con-actor.

229. Decision and giving proof is in the first inquiry very easy—the antecedent (or cause) being, say, always followed by the sequence (or effect), and the sequence always preceded by the antecedent. Yet the mingling of diverse things and the intervention of disturbing influences—make the method of proving to be in essence the same in both sorts of inquiries; and the method of exhibiting proof is in the first sort so simple, or in both sorts so much the same, that giving an instance in the second will sufficiently illustrate the manner of proceeding and reasoning in both; whether the reasoning be from cause to effect, as in showing the effect of medicines; or from effect to cause, as in showing the causes of diseases.

230. Taking then an instance, in the second sort of inquiry, for the purpose of proving the connexion of cause and effect generally :—To prove that opium will (according to common and very erroneous language) *cause* sleep, is (in more correct but still erroneous wording) to prove that a piece of opium will cause a man to sleep, which (in expression a little more correct) is to prove (the pieces of opium being classed) that every piece of opium, in one class of pieces, will cause to men, in one class of men, a sleep in one class of sleeps. The inquiry implies and the proof refers to classification of the doses of opium, and classification of the persons who swallow the doses, and to classification of the sleeps occurring amongst men.

231. To inquire whether, and to prove that, a piece of opium in the stomach will always cause sleep to every man of a class of men, is to inquire whether, and to prove that, there is always in the stomach of every man of that class a con-actor, the contacting of which with the other con-actor (a piece of opium) will (produce) be inevitably followed by sleep; and (words apart) is an inquiry and a proof in the first class of inquiries concerning cause and effect. And though the professors of acephalous medicine who seek and want proof, without knowing what they seek for or want proof of, continually require proof of the assertion that "opium will always produce sleep," and, triumphing over sciential medicine, exultingly proclaim that nothing is proved till that (falsehood) is proved; yet no person who knows what he is seeking after, or whose experience in thinking has taught him, that every cause has two con-actors;—no person who half understands what the inquiry or required proof really is, and no person who knows what classification is; or that right reasoning will not prove a falsehood; ever requires proof that a piece of opium in the stomach will cause sleep in every instance.

232. The inquiry in its present state is, whether the some sleep which follows the swallowing of some opium is produced by a cause, in which cause the swallowed some opium is one con-actor; or whether the opium in the stomach is a con-actor in the cause of sleep; and the proof required is the proof of that.

233. Every question whether opium is one con-

actor in the cause of sleep in man, is a question whether individual pieces of opium, in one class of pieces, are con-actors in producing individual sleeps, in one of the classes of sleeps; in individual men in one class of men. And as each of these three classes is made by the question, and (made as all questions and assertions are) arbitrarily; the question may refer to, and the class of opiums may include, all pieces of opium, from the smallest to the largest, or only pieces of a grain in weight; and the question may refer to and the class of sleeps may include all sleeps, or only disturbed or heavy sleeps; and the question may refer to and the class of men may include all men, or only men who are a hundred years old, or men a month old. The meaning of the question determines what is included in each class, and of what proof is to be given.

234. To prove then that any of one-grain pieces of opium are (not causes of sleep, but) con-actors of sleep in individual men, each one of which men is combined with a pulse above 90 and below 100, a feeling of being ill and hungry according to his own testimony, a white tongue, and with daylight and a temperature of atmosphere above 50° and below 70°. Taking the time for observation at an hour. In this question for proof the class of opium includes only the pieces which weigh just one grain, the class of sleeps include every sleep, and the men included in the class of men, are specified.

235. I shall for simplicity sake assume (though it is not necessary to this example) that you are composing a system of medicine, and that you have

therefore previously isolated and proved that there is not in the temperature of atmosphere, nor in any other thing with which the bodies of such men are associated or combined, any known cause (con-actor) of sleep, and also that you have already proved that sleep sometimes comes without any known cause.

236. It is only from observation that you can know that men of this class ever do go to sleep, and it is only by the same means that you can know how often or how constantly they sleep. For the purpose of deciding these two points you make observations upon men of the class; and for the purpose of subsequently determining where is that limit of coincident which arises from the mingling of diverse things in time or place, you make your observations in an order which will enable you to determine the limit—in the order of mere time or place; or according to any rule which is dictated by the position of things themselves; not as nurse maids prove the veracity of omens, by self selection of instances without any order of observation.

237. Taking then, men of the class (who have *not* swallowed opium) in, say, chronological order, the 1st which comes under your observation is asleep within the hour;—No. 2 is asleep, 3 is, 4 is, 5 is not, 6 is, 7 is, 8 is, 9 is not, 10 is, 11 is, 12 is not, 13 is, 14 is, 15 is, 16 not, 17 is, 18 not, 19 not, 20 not. In those instances where opium was *not* swallowed, the sleep of the 1st was not "an effect" of opium, but was merely coincident to the fixing of attention on him, and so of the 2, 3, 4, 6, &c. And as sleep occurred in each of the instances

1, 2, 3, 4, that consecutive occurrence of similar events is a "concurrency" of coincidents. Now meditate a little on those cases; No. 1 fell asleep within the hour without any known cause, and then 2 did, then 3, and then 4—there is a concurrency of four cases—four men consecutively fell asleep—and why did not five consecutively? Why did not the 5th man fall asleep also? Manifestly because there was some diversity belonging to the 5th man (that is, to the fifth combination), and he was mingled between 4 and 6, and that mingling of a diversity between similars prevented the concurrency of coincidences proceeding beyond 4, that is, limited the coincident to 4. If there had been no limit to coincident, the concurrency would have gone on consecutively to more than 10,000,000 instances. But the doctrine of sciential medicine is, that nature always so mingles things with things diverse as to prevent unlimited accidental concurrences of like things;—to limit coincident. Or in other words, the doctrine of sciential medicine is, that either the concurrences of like things are limited, or we know the (cause) reason why they are not limited. *

238. You have now made observations on a series of 20 cases; not for the purpose of weaving any of those 20 cases into the argument by which you prove that the opium operates; but merely that you may know how to construct the argument;—how to

* Which doctrine analysed is, "We either know or we do not know."

assert (under position 1) an universality non-existence. And I will assume (for the purpose of explanation) that the series of those 20 men, in which the limit of coincident is at 4, is the only series you ever observed, heard of, or read of; that it, Mr. Individual, is the full contents of your power to know.

239. If you could take for observation the same 20 men again under (in all respects) exactly the same circumstances, and take again the same time for observation, it is manifest they would all fall asleep again in exactly the same manner (or other 20 men exactly similar would). But men exactly similar, or the same men under exactly the same circumstances, cannot be taken for observation. Yet if you (from having observed the operation and the non-operation of opium on many classes of men) assert that opium produces sleep in "such" a class of men, your assertion is all that is presented to him you address; and in explaining to him what you mean by "such" a class, you enumerate such things as (according to your limited or extensive knowledge) were the characteristics of the men which you observed did fall asleep; and the characteristics of those which you, making your own class, assert will fall asleep (and you assert what you please, and that your assertion is right is your care), you, directed by your knowledge, apply your assertion to what class of men you please, and to a class as wide and as narrow as you please; and in specifying the class, you name its characteristics, that is, you enumerate those things which are essen-

tials to the class; and as you state the essentials of the men on which you assert the opium operates, you state *all* the essentials; and therefore if you have classified rightly the men you observed that opium did operate on, and the men you assert it will operate on, they are, so far as the operation of opium and so far as your assertion are concerned, *essentially* the same. And under the circumstances of right classification and explanation (and if you cannot rightly classify, you do not know what you are talking about), the production of sleep without opium or the production of sleep with opium in the respective series where opium is or is not given, and where knowledge is obtained, will be (for want of unattainable nicety) *about* the same. *

240. For the purpose of explanation, assuming that you have observed how frequently sleep occurs without the swallowing of opium in the series of 20 men; and assuming that you have now the same 20 men, or men exactly similar in all circumstances, to try the effect of opium upon; if you merely take them under observation, as you did before, without giving them opium, it is manifest they will fall asleep again exactly as they did before from unknown causes; and if you not merely take them under observation, but at the same time give each of

* It is only for explanation I assume they are "about the same." The demonstration does not rest on the assumption. But an assertion in medicine is as accurately true as an assertion in geometry, and (not being so) the mental manœuvre by which assertions are made true is widening their classes. And the progress of science narrows classes, and thereby gives more minute knowledge.

them a grain of opium, then (assuming that one grain of opium is a con-actor in the cause of sleep) it is manifest the 20 men generally will be under two causes of sleep,—the unknown cause, and the cause in which the one grain of opium is a con-actor. But taking each man under observation, mentally annihilating the unknown cause (to prevent it acting), and then giving him the one grain, will show (in the course of an hour) the operation of the opium alone. From which operation one individual man after another *is* and is *not* asleep within the hour so consecutively as to form, say, the following series, 1 not, 2 not, 3 not, 4 not, 5 is, 6 not, 7 not, 8 not, 9 is, 10 not, 11 not, 12 is, 13 not, 14 not, 15 not, 16 not, 17 is, 18 is, 19 is, 20 is. Thus 7 men fall asleep from the operation of the opium only. But if when giving the opium the operation of the unknown cause on these 20 men had not been mentally suspended, Nos. 1, 2, 3, and 4, would have slept from the operation of the unknown cause; No. 5 would have slept from the opium; 6, 7, and 8, from the unknown cause; 9 from the opium; 10 and 11 from the unknown cause; 12 from the opium; and 13, 14, and 15, from the unknown cause; and that is an occurrence of the one event—sleep—in 15 consecutive instances—an undisturbed concurrency of fifteen like events without the mingling of any diverse thing,—and that, when the opium operated, or met with the other con-actor, in only three instances (5, 9, and 12). *

* It may be supposed that the concurrences where the

241. Considering that the longer the time of observation is, the more time, or opportunities, any foreign or unknown cause (or con-actor) has to operate, and that the shorter the time is, the fewer are the opportunities; and that in double any specific time, double the number of such events may happen (and wherefore must appear in the series); shows the importance of taking a specific time when observing, and the importance of stating that specific time when proving. And considering how little opportunity any foreign or unknown thing has to intervene or operate in a time which is very short, shows why the evidence afforded by instances in which (as in many experiments) the effect immediately follows the cause, is so conclusive. And if when considering the above assumed instances you consider that a concurrency of three things is by the laws of nature five hundred times more difficult of occurrence than a concurrency of two things, and that a concurrency of four things is five thousand times more difficult than a concurrency of three, and that the difficulty immensely increases at every addition of one to the concurrency and that there is somewhere a limit of concurrency (that is a limit of coincident), you will perceive the principle upon which scientific medicine reasons. Having from observation learnt

agent is not given, and the concurrences where it is given, will be found so nearly alike as not to admit of discrimination; but an appeal to fact astonishes, by showing how suddenly the influence of an agent puts (where knowledge is obtainable) the concurrences beyond the limit of coincident.

how to assert non-existences, sciential medicine, for the purpose of founding an irrefutable argument on demonstration, secretly resolves (as geometry secretly resolves on the construction of its demonstration) to assume that the limit of coincident is in such cases at 14; that is, resolves to deny (under pos. 1) that a coincident of 15 such things ever happened: or otherwise, for the purpose of shocking prejudices and provoking anger, and for the purpose of compelling opponents to aid in discovering where accurately the limit of coincident is, sciential medicine is guided by fact only, and in addressing you, Mr. Individual, secretly resolves on observed fact to assume that the limit of coincident is at 4. Supposing then that the concurrency of fifteen instances had been a co currency of only five, sciential medicine produces that concurrency of five events where opium had been swallowed. And to prove argues that in the production of that concurrency of five events the opium either did or it did not operate, that is (expressing it simply), either the five events are effects or they are mere coincidences (under one of the two conditions); but they are not coincidences, because such a concurrency of five events (remembering the isolation and the three classifications) never occurs without the swallowing of opium (pos. 1) that is, the happenings are beyond the limit of coincident, therefore the happenings were produced by the opium—by a cause—a cause in which opium was one con-ac-

tor; that is, opium is a con-actor in the cause of sleep. *

242. And that argument (though in principle fully developed in the doctrines I have stated, yet for the convenience of conveying meaning not given in connected detail and by no means accurately worded) is an argument from cause (pieces of opium) to effects (sleeps); and when the same method of argument has been applied from effects to cause (under the like three classifications, and a like order of observation), it is a demonstration that (in common language) the two things are in the connexion of cause and effect; or (in better language) that opium is a con-actor of sleep: and you, Mr. Individual, with your utmost power to know, aided by all men and all facts in the world, cannot refute it; † and that method of reasoning (or the principle of that method of reasoning) from the limit of coincident is applicable to all the doctrines of cause and effect, † and always leads to correct and never leads to erroneous conclusions, † and is always sufficient to distinguish what man is, from what man is not, justified in believing, concerning cause and effect. †

243. Beside the above, there are other manners of proving the doctrines of cause and effect, by

* For the purpose of conveying meaning, these statements are false—for the argument thus far proves only "dependent on."

† Method of proving universals.

the same principle of reason. In the argument stated, the concurrences observed are those of individual effects (as a concurrency of 4 or of 15); but concurrences and the limit of coincident may be observed not only with respect to individual cases, but also with respect to individual series of cases; or, a series of cases (as the observations properly made and recorded by A) may be connected to another series (as the observations properly made and recorded by B), by erasing (in obedience to a law fair and declared) one concurrency of events, from the commencement of one series or the termination of another, in such a manner as to prevent any increase of any concurrency being, in appearance, formed by the mere connecting of the series; and thus any number of series may be connected together into one series, and that one, when formed, may be again divided into series, each containing any specific number of concurrences; and the number of times which the event does not happen in each series so formed by division, may be made the enumerator of a fraction, and the number of times which the event does happen may be made the denominator, or *vice versa*, and then the fractions so obtained are themselves a series having its concurrences and limit of coincident observable.

244. And when in possession of a number of series where the agent has not been administered, and of a number where it has, there are visible, to even superficial seers, many sorts of concurrences and

coincidents upon which inference may be founded; as of case with case, concurrency with concurrency, series with series, the result of one number of series with the result of another number; amount with amount, and proportion with proportion; and other means of proof which ordinary skill in constructing argument will suggest; but the principle of the reasoning is the same in all; and any position or argument which fully exhibits that its truth is dependent on that limit of coincident which nature (by mingling diverse things) has placed in all the works of creation, will demonstrate the connexion of cause and effect in every instance where it is visible to man.

245. Against this method of proving the connexion of cause and effect, you, Mr. Individual, cannot now advance one single argument; you may bluster amongst suppositions as long and as lustily as you like; and you may suppose, dream, and assent to, whatever you can and you please; but though explanation can, argument cannot be founded upon either dreams or suppositions; and so ill-directed have your investigations, under the guidance of your acephalous science, ever hitherto been, that you have now nothing but suppositions or waking dreams to argue from; you are now without one integral tittle of the evidence necessary either to prove or to know the truth of the doctrines upon which the science of your life mainly depends—the doctrines of cause and effect. Your observations through life have ever been so ill directed that you

have yet not obtained any facts to found a counter-proof upon.

The alleged impossibility of proving the connexion of cause and effect, is, by exhibiting the method of irrefutable demonstration, surmounted.

Demonstrating from the Evidence of Sense.

246. An impression on a sense is an effect, and the doctrines concerning the impressions on, or the the evidence of, the senses, are the doctrines concerning cause and effect; wherefore proof from the evidence of sense, or demonstrating the connexion between an object of and an impression on an organ of sense, is demonstrating the connexion between cause and effect.

247. It is the unthinking cant of philosophy, and (as any thing which will cover defects is sure to become a general favourite) it is become the common medical cant, to expatiate largely on the deceptions of the senses, and to magnify the fallacies which they are subject to. We are told, forsooth, that the moon, when rising, is to vision larger than when risen; though accurately measured by instruments it, when rising, is in reality smaller in appearance. And in medicine great care is taken to impress on the mind a conviction that the eye is very deceptive. We are told that a joint may, by a little change in form, colour, or by the wasting of adjacent parts, appear to the eye greatly enlarged, when in reality it is not so. We are constantly warned against the delusions of sense. And when

considering proof, from the evidence of the senses, what do these truisms, teachings, and solemn injunctions, in reality amount to? Just thus much: that vision is not a proper instrument to measure with; that, in function, the human eye is not a yard of tape. A discovery which one would have thought the medical philosophers might have hit upon, without waiting for any babe or simpleton to point it out to them. But again it is urged, that beside the deception which vision is subject to, with relation to size, form, distance, the eye is liable to be deceived by a thousand fallacies. Admitting that it is liable to be deceived by ten thousand fallacies, they all arise from a few sources, or admit of being arranged in a few classes. And when stating a position for the purpose of proof from the evidence of sense, the assertion advanced has (as in cause and effect) relation to a class of men (a class of observers), and a specification of the class declares not only what the observers were, but, so far as essential, what circumstances they were under when making observations (when seeing or hearing); and if imperfect light is a known source of fallacy to vision, exclude (when collecting evidence or making assertions) that circumstance from the class of observers (let them, for the purpose of proof, make their observations in perfect light); if seeing through a medium is a source of fallacy, exclude that from the class, and so exclude every other known source of fallacy. And when (in observing or assenting) every known source of fallacy is (as in isolating, and asserting the isolation in cause and

effect) excluded, the operation of seeing is subject to no known source of fallacy; wherefore the assertion is not liable to be refuted by the exhibition of any known source of fallacy: and then (in spite of unknown causes, or unknown sources of fallacy) the evidence of sense is proved by exhibiting beyond the limit of coincident, as in cause and effect. Which method of proving is alike applicable to instances in which the sources of fallacy are not excluded, or are excluded only as far as possible.

Thus another of the alleged impossibilities is irrefutably surmounted.

248. It is the cant, it is the unwitting quackery of the elder professors of acephalous medicine, to plume themselves on—by inuendo to boast of—their extensive experience. "Experience teaches," "experience is very valuable," "experience is the precious pearl which can only be purchased by bartering life for it," "experience is every thing;" are the constant cries, the continued and confident assertions, of all those who, being aged, think they possess experience; and know that, having learnt little, having seen much, is all they can boast of. Appeals to experience, and thereon demands of respect, are (as commonly meant), with persons in general, the nursery methods of managing children who are not yet permitted to think for themselves. And appeals to experience, and demands of respect, as commonly meant amongst the professors of acephalous medicine, are the methods by which your greatest authorities govern your underlings—are, of the many, two of the means most efficacious in

managing dolts. Experience and authority are the gigantic bug-bears by which the weak and the childish in intellect are either stilled into submission, or frightened out of their wits. Such appeals are part of the confederate and manœuvring management by which the aged (dotards or not dotards) endeavour to preserve for their by-gone methods of thinking, for their worn-out intellects and flagging energies, that superiority which, by chronological priority of birth, they once possessed over the later born.

249. But what is meant by experience consists of two things, of two halves—impressions on sense, and inferences from those impressions. The clown can see as well as the philosopher; and the professors of acephalous medicine can discriminate colours as well as milliners, can smell as well as perfumers, and taste as well as epicures or cooks; but they can reason from what they see or taste no better than a milliner or a cook. Their senses are strong; they can see any thing; but their intellects are weak, they can prove nothing. Miserably weak is the intellectual half of their experience. And "a thing is no stronger than its weakest part," being a law of mechanics which is equally applicable to things of the mind;* miserably weak are both halves of their experience.

250. A written truth is a recorded discovery, and a science is the history (without the chronology) of discoveries—a record of what ages have seen or

* Whately's Logic.

perceived; yet in acephalous medicine it is the practice of men to turn from the accumulated harvest of ages, to live miserably on the beggarly scantiness of their own individual gleanings. Amongst the professors of acephalous medicine, it is the impudent pretensions of many to represent that what truths time has in many ages afforded, dwindle into nothing when compared with what themselves in a few moons have seen; and that, though in all their self-seeings they never perceived one atom of truth. Beggarly and empty are the pretensions which they found on their individual experience. It is the experience of each which confirms opposing fools in their opposite and contradictory absurdities. Are the oldest the best arithmeticians? Do geometers found their pretensions to knowledge on appeals to experience? No: for in the eyes of proof, experience is a narrow-minded dreaming dotard: and in the eyes of truth experience in medicine has for ages been a murdering idiot: it was he who added to the heat, and gave brandy to the burning fever: and every murdering absurdity that ever was in medicine rested on and (as men now do) constantly appealed to experience. Beware of experienced fools. Learn how to look after proof: learn to despise authority.

Demonstrating from Human Testimony.

251. Human testimony, which (notwithstanding the empty fuss made about experience or individual observation) is the greatest source of human know-

ledge, is complicated with the evidence of sense; but that complication does not make the argument applied to it more complex. Truths, the existences of things, are proved from human testimony, by taking individual witnesses of the class in an order that will exhibit nature's minglings of diverse things (and men are things very diverse), specifying the class, and the isolation, as far as obtained, from known disturbing influences, and then exhibiting testimony concurrent beyond the limit of coincident; which limit of coincident, with respect to testimony, is learnt (as all knowledge is obtained) by observation. And such coincident is, in many cases, within very narrow limits; "At the mouth of two witnesses, or at the mouth of three witnesses, shall the matter be established," is both the law and the gospel.* And as, when proving the connexion of cause and effect, the pieces of opium, the men and the sleeps, are each classed, so in proving from human testimony, the witnesses, the testimony, and the objects of sense, are each classed.† And

* Deut. xix. 15. 2 Cor. xiii. 1.

† To counsellors in law. The materials of demonstration are soonest presented by that testimony which is concerning only simple sensations: but much of the evidence commonly elicited is mingled with the inferences of the witnesses. And as medical evidence, being doctrinal, is solely inference, and as the professors of acephalous medicine cannot infer, you can always invalidate their evidence. Doubt the sanity of the science, or doubt the witnesses' knowledge of the science: remember that the reasoning in medicine is only the common reasoning which is commonly applied to common things. Ask him how he knows that which he asserts, and remember that every "thing" men-

as the concurrent testimony relating to some objects of sense exceeds the limit of coincident much sooner than the testimony relating to other objects (as black is more easily distinguished from white than one shade of black is from another), it is necessary to notice accurately the classing of the objects of sense; though in medicine the major part of knowledge depends on objects of sense, as distinguishable from one another by means of the several senses (one sense often aiding or correcting another), as black is from red.

Thus another confidently alleged impossibility is easily and irrefutably surmounted.*

252. In demonstration (or knowledge) from human testimony is chiefly involved the (to decision in medicine) greatly important question whether the liable existence of a thing can be known before the actual existence of the thing itself (i. e.

tioned in an assertion is, by the meaning of the assertion, classed. Ask him to specify his classes; consider on what the truth of his assertion depends; that is, consider what existence or non-existence (of a thing), or what occurrence or non-occurrence (of an event), would make his assertion untrue, and require him to assert that such thing or event always did exist or occur, or that it never did: and then ask him how he knows that the "always" or the "never" is true. Cleverly apply such a method of examination to any professor of acephalous medicine, and you will find his intellect such a shuffler that jurymen of plain sense will laugh him out of the witness-box.

* This concerning testimony is a method of demonstration which I give to the church, enabling theologians to demonstrate the truth of the gospel *better* than the truths of geometry are demonstrated; leaving to sophistry no peg to hang a cavil on, and striking infidelity dumb.

one thing of the class) is known. Sciential medicine, under its first position, asserts it cannot be known. To consider the question:—

Con. One man bears witness that he saw the thing, another man (isolate &c.) makes the same assertion. Now, if the thing does not exist, it is, according to sciential medicine, five hundred times more unlikely (more difficult) that the third man should say he saw it existing, than it was that the second should assert he saw it existing: but yet the third man does assert he saw it; and then if the thing does not exist, it is five thousand times more unlikely (or more difficult) that the fourth man should say he saw it, than it was that the third man should assert he saw it; but so strong are the manifestations, that in spite of the difficulty the fourth asserts he saw it, and four is, say, the limit of coincident; and whether we know of its existence or do not, sure it is, from the concurrent testimony of four, probable (or liable) that the thing does exist; for if only one man more (the next witness) asserts its existence, its existence is certain.

Pro. Put what you have said into the form of an argument, showing what liability is, and the existence of it.

Con. Four like men assert the thing does exist; and like men, being of one class, may be all considered as one man (a bag) having in him false assertions and true assertions (black balls and white balls): the question, or the thing in question, is presented to a man (the bag), and elicits (draws) from him a yea assertion (a white ball), and is again

and again presented and draws a like yea assertion (a white ball) every time to the number of four times (the assumed limit of coincident). Now, if the thing does not exist, it is according to sciential medicine impossible (according to all human knowledge) that the fifth man can assert it does exist; but if the thing does exist, the fifth may assert that he saw it, or he may assert that he did not see it; he (the bag) containing yea and nay assertions (white and black balls) is liable to have drawn from him another yea assertion that it does exist (another white ball); and when he has given out a yea assertion (a white ball), the limit of coincident is exceeded, and the existence of the thing is proved, and the man (or bag) is liable to give the assertion out, so the existence of a thing is liable to be proved. And that is proving the liable existence before the universality existence of the thing itself is proved.

Pro. In the counter-argument you have advanced there are three manifest fallacies. To notice only one of them:—In relation to the drawing of balls from a bag, our knowledge of (or the validity of our assertions concerning), what is, or is not liable, depends upon the classification of the balls and the classification of the men drawing the balls; and it is only by knowing that the class of blindfold men have drawn black and white balls (that is, only by knowing the universality existence) that we know they now are liable to draw the one or the other: the classification of the drawer is indispensable to our knowledge, and to the validity of your assertion

(as a person having a predilection to black balls, and not blindfold, is not liable to draw a white ball). In the argument you have used, you have rightly enough classed the assertions by comparing them to black balls and white balls, but you have not classed the elicitor (drawer); nor can you class the drawer, because the drawer is either an existence or he is a non-existence, and between the one and the other of these there is an essential difference; and you do not yet know which of the two it is, you cannot yet know that "such" a drawer (elicitor) under such circumstances (the limit of coincident arrived at) ever did draw a yea assertion (a white ball), so you cannot prove (by that argument) that the drawer is liable to draw a yea assertion.

253. *Con.* To prove it by another argument, then:—Out of every hundred instances in which four persons have given their concurrent and consecutive testimony that they saw the thing existing—in ninety-nine of every hundred of such circumstances, the consecutive fifth man, when appealed to, has given his concurrent testimony; therefore in this individual instance (one in the same class with the hundred), the probability (say the liability) is that the fifth man, when appealed to, will give his concurrent testimony, and by so doing prove the existence of the thing. In that argument I have observed classification—the hundred men and the one man are in the same class; and that class includes all men, and are the bag; the yea and nay assertions in them are white and black balls; and the drawers in the one hundred instances, and in the

one instance, are in the same class; the drawer (elicitor) in each instance is "such circumstances as have elicited the concurrent testimony of four consecutive witnesses." *

Pro. The great seeming validity of the argument you have now advanced, partly depends upon the fact that you have lost sight of one essential property of probability. But that we may proceed, I admit that your argument is, so far as you have expressed it, valid: now please to express the ultimate argument and inference implied.

254. *Con.* Such circumstances are liable to draw from the fifth man, that is, the fifth is liable to give his concurrent consecutive assertion, that he saw the thing existing; and his testimony would, when given, prove the existence of the thing: therefore, there is a liability of the thing's existence, and that liability is proved before the existence of the thing itself is proved.

Pro. That argument is trebly false.† But to notice only one fallacy: The liability which you have by

* Though the drawer or elicitor is here classed, the class as specified does not specify the real essentials of it, for "such circumstances" include two things—the thing (or its non-existence), and the circumstances associated with the thing: now the existence of the thing itself, as well as the existence of the circumstances combined with it, is necessary to the classification and to the validity of the argument, for if the thing is non-existent, though the circumstances do exist, it is impossible that the fifth man can bear concurrent testimony. The fallacy which here lies under "such circumstances" is the same as in the last argument.

† It confounds between a now-proved liability and a liability to be proved, that is, present and future; a liability relating to the person, and a liability relating to the thing,

my admission proved the existence of, is the man's liability to give proving evidence of the existence of the thing; the liability you have given proof of is a liability appertaining to the man, not to the thing's existence. Now prove that because there is a liability that the man will (at a future time) give that evidence, therefore there is now a liability of the thing's existence.

255. *Con.* The man will either assert that he saw the thing, or he will assert that he did not see the thing; if he asserts that he saw——

Pro. Pause there; no supposition is admissible into an argument—by if-ing you may prove any thing.

256. *Con.* The man's assertion when given will be under one of two conditions; it will be one of two sorts; it will be a yea assertion or a nay assertion, if—I am allowed to use that if—it is the common practice in right argument.

Pro. It is the common practice in argument, but no "if" is ever introduced into right argument; you are not allowed to use it, and that "if" presents a difficulty which, in your attempt to prove, you cannot surmount.*

257. The erroneous supposition that the liability of a thing's existence can be known before the

and between a liability of the thing's existence, and the mere circumstance that the question may ultimately be decided yea or nay.

* The necessity of using the illegitimate "if," and the inability to prove, depend upon the impossibility of classing a yet unknown elicitor (drawer) of testimony.

Beside the above stated, there are other counter argu-

actual existence in knowledge, that is, in the universe, of the thing itself is proved—that very absurd supposition arises partly from having not considered what liability is, partly from confounding a present liability with a future liability, partly from confounding one present liability with another present liability, or the liability of one thing with the liability of another—in great part from asserting (when endeavouring to show) "there is a liability," instead of attempting to prove its existence—and in great part from the absurd use of supposition in argument—but in still greater part from (when attempting to prove, as in the arguments advanced) assuming the next witness (the fifth) already obtained, and then arguing from him, instead of considering in the first place how that witness is obtained, instead of first arguing that mingling of diverse men, from which the fifth witness must be consecutively taken; forgetting that nature has so mingled men and things, that if four like (yea) men are together (as in a row), the chances are more than fifty thousand to one that the adjoining fifth man is a diverse (a nay) man; and forgetting that the liability which exists before the witness is taken from the universal mingling, is very different from the liability which exists after he has been consecutively taken—the argument being by necessity very different; and then forgetting that though a chance of a chance is a less chance, proving the liability that there *is* (existing) a liability of

ments founded on the classes or grades of things: all of which are either reducible to the same dilemma, or are arguments which I cannot put into words.

the existence of the thing "A" is not proving a liability of the existence of the thing "A." *

258. But the absurd supposition, that the liable existence of a thing can be proved before the existence of the thing itself is proved, mainly rests upon the common mental confounding of the present thing liability now proved now present, with the fact, that at some future time investigation may enable mankind to decide that the thing in question does exist. "The thing may exist, therefore there is a liability of its existence," is a common absurd assertion. "The thing may not exist, therefore there is not a liability of its existence," is an argument equally valid. Thus excellent logicians excellently well prove the one present thing liability to be and not to be. And thus the acephalous professors of acephalous medicine suppose and assert that a thing has a liable existence, merely because they—who can imagine any thing—can form an imagination concerning it. And thus the acephalous professors of acephalous medicine suppose and assert the liability of a thing's existence, merely because they—who can decide upon nothing—can coin and keep open a question concerning it. †

* You cannot prove a liability of a liability of a liability till you can prove in the future, till you can now think in future time. And as acting by necessity after a motive is formed, is very different from being under necessity before the motive is found, the doctrines of free will and necessity are complicated with a like predicament.

† To the juniors of the profession. As you, instead of using the intellects of manhood, subserviently and obsequiously adopt the mere opinions and seemings of others—it is important that you possess some tests by which men's

Demonstrating from Circumstantial Evidence.

259. The proof which is derived from circumstantial evidence is exhibited in the form of demonstration by exhibiting beyond the limit of coincident. For instance, one guilty person has his attributes, another has his, and by observing many guilty persons, their acts, attributes, associate circumstances, &c., the attributes, associated circumstances, &c. of guilt are known. And to demonstrate that a person, is guilty is to demonstrate in the manner I have explained, according to the variety of the arguments adducible, that the person possesses the attributes of guilt beyond the limit of coincident (or beyond the accidental tallying of things).

manners of thinking, writing, and talking, may be known, that you may thereby be able to know whose opinions are worthy of the least notice. One test is: if you hear a medical man say, "It is probable the thing exists," when he cannot show where it did exist, or "It is probable that such is the case," when he cannot show where such was the case, or "It is probable," or "There is a liability," or "a chance that such an event will happen," when he cannot show where such an event did happen; or, "It may be," when he cannot show where it was, or if (allow for inconsideration) you hear a medical man deliberately and repeatedly use the word "probable," or "liable," or "may," or "possible," (or any word of such meaning,) when stating general doctrines, in the common medical manner of stating doctrines, put a mark upon that man, and never again notice his opinion, he is not sufficiently much a thinker to know what he is talking about.

Thus another of the alleged impossibilities is irrefutably surmounted.

Proving without the use of many Postulates.

260. By demonstrating from the evidence of sense, human testimony, &c., sciential medicine proves without assuming any technical definition; and by demonstrating universals &c., sciential medicine proves all which geometry takes by postulates or assumes by axioms. And, as sciential medicine's first position is in truth connected, and in exhibition connectable with every truth in the world, (its first position is of the net, that mesh, or rather string, which is first pointed to,) sciential medicine's first position is on demonstration; and as some of sciential medicine's manners of demonstrating are applicable to every truth, sciential medicine demonstrates the whole of human knowledge without the use of either an unproved definition, a postulate, or an axiom.*

Thus another of the alleged impossibilities is irrefutably surmounted.

261. Thus, those difficulties of demonstrating which arise from the seven alleged impossibilities are surmounted; and without attempting accurate and unintelligible wording. Because two pills and two pills together are four pills, and four pills and

* Sciential medicine cannot demonstrate in one word or two words, but claims the privilege of uttering without ceasing, as many words as are necessary to its demonstrations.

four pills together are eight pills, are truths in medicine which can be (say) demonstrated as well as the pure sciences are demonstrated; there are some truths in medicine which can (in reality and according to your individual power to know) be demonstrated as well as the truths of the pure sciences are demonstrated. And because you, Mr. Individual, by your utmost power to know do not know of any truth (justifiable belief) in medicine which cannot be demonstrated (which I by sciential medicine cannot demonstrate) as well as the truths of the pure sciences are demonstrated, therefore, according to your individual power to know (whether correct or not), there is in medicine no truth (justifiable belief) which cannot be proved as well as the truths of the pure sciences are proved; and because you, Mr. Individual, are compelled to decide, and to decide by and according to your individual power to decide, (or to know,) therefore you are compelled to decide (whether correctly or not) that there is in medicine no truth which cannot be demonstrated as well as the truths of the pure sciences are demonstrated (that, correct or not, must be your decision); and because there are in medicine some truths which can, and there is no truth which cannot, be demonstrated as well as the truths of the pure sciences are demonstrated, therefore every truth in medicine can be demonstrated as well as the truths of the pure sciences are demonstrated—that must be your decision.*

* Some of my professional brethren have gone about trumpeting their virtuous propensities, by declaring how

262. And (shortening the verbiage of argument) because there are some of truths (beliefs) in medicine (two pills are not twenty pills) which can be distinguished from any fallacy as well as the truths of the pure sciences can be distinguished from fal-

anxious and prompt they, on every occasion, are to expose those quackish and empty pretensions which they lament to say some in the profession have the dishonest audacity to put forth. And "Oh that sciential medicine were in some recognised shape! Oh that I could catch hold of it! I would very soon prove to the public its emptiness and folly. I should like an opportunity to hold scientiaI medicine and its author up to the general derision which they both deserve; but he has too much circumspection to submit it to scrutiny in any tangible shape,—he dare not do it, and he knows he dare not." These (or such as these) are the expressions of virtuous indignation which (with others of derision and contempt) more than one person in the profession has, in language loud enough for a private party, repeatedly given vent to. N.B. Sciential medicine is now before you in a recognised and tangible shape. Now prove its emptiness and folly. But lest the incompatible expressions and vague language used for the purpose of conveying meaning, or lest the seeming inconclusive nature of what is in reality conclusive demonstration, or lest any other excuse should still afford you an opportunity to condemn covertly, or lest there should still be left to you an opportunity to swagger in private, aloud, and aloof; if any man *in* the profession, or any conclave of professors will deny sciential medicine's one present ultimate inference, my friends and I, or I alone, will, on behalf of the science, reply to any arguments against it which he or they can advance—upon these conditions, that nothing but moral truth shall be stated: all communications shall be written and subscribed to: any individual argument may be retracted, but not erased: and the controversy shall be subject to publication at the request of any individual in either party: and, N.B. he who will, against a science or a man, state privately what he dare not publicly assert, is a sneaking slanderer.

lacies; and because (position 1) there is no truth (justifiable belief) in medicine which cannot be so distinguished; therefore, every truth in medicine can be distinguished (I by sciential medicine can distinguish it) from any fallacy as well as the truths of the pure sciences can be distinguished from fallacies. And because there are some truths in human knowledge which can be demonstrated and distinguished from fallacies, as well as the truths of the pure sciences are demonstrated or can be distinguished from fallacies; and because there is in human knowledge (position 1) no truth which cannot be so demonstrated and so distinguished; therefore every truth in human knowledge (that is, all human knowledge) can be demonstrated and distinguished from any fallacy as well as the truths of the pure sciences are demonstrated and can be distinguished from fallacies.

Wherefore, every assertion which can be known to be true can be proved to be true.

263. Besides the seven difficulties I have mentioned, there are, as I have told you, hosts of others, some of which seem weighty, and admit of being stated in seeming good argument, but most of which vanish under a mere attempt to write them in the words and form of counter-demonstration; and others, by the half-educated non-thinkers unthinkingly and gossipingly advanced, are worthy of only derision. Every mind raises its own objections according to its own crookedness, but every deliberate objection, showed to be an offspring of a mind, as it is, will in tuition and full system receive

especial notice; but retracting all mere verbiage, regarding only mental affections, and restricting attention to only medicine, the averment of sciential medicine in this prefatory outline is, that the seven major difficulties being removed by exhibiting the right methods of reasoning, the remaining many little difficulties either vanish before the same reasonings, or the methods of overcoming them are already sufficiently explained in books of philosophy.

264. Circumspection teaches those who feel themselves to be cachectic valetudinarians in either mind or reputation to be chary in stating positions; cautiously to abstain from practising that positiveness of connected assertion; to be wary of offering that explicit fulness of step-by-step inference which is necessary to the construction of every legitimate and honest argument against. And the professors of acephalous medicine will often, by the allegation of some fact or by some good half-argument, covertly assume a position or cowardly imply an inference which, from the rankness of its folly, no coaxing nor taunting can induce them to put into words. The acephalous head often unhesitatingly implies what the tongue (gossip as it is) obstinately refuses to utter. And when you are alone, take care not to delude yourself; and when not alone, take care that you be not deluded by such unopen, cowardly, and essentially dishonest practices. And when considering sciential medicine's one inferred and ultimate position, remember that when looking at or opposing a fallacy, the first part of seeing and

the first part of counter-demonstration is direct denial, and the last part of showing and refuting is prefixing the word "therefore" to that denial. And if when considering the doctrines of sciential medicine (so far as given in this outline) strong objections and strong feelings of dissent arise in your mind, remember that sciential medicine rests solely on its irrefutability, is founded on reason, and laughs at and holds in contempt your assent and dissent, your blustering and dotard authorities; and if that remembrance removes none of your feelings, and you still entertain your empty dissent, then consider seriatim those properties of pure science which I have enumerated, examining the relation of each to the ground of your dissent; see whether your objections apply to, whether your arguments against will refute any one of the many geometries; and if you are still confident in your dissent, write your direct denial, and write in full your reasons for it; state explicitly and fully the arguments against sciential medicine, defining (or declaring the meaning of, by directing where to find the thing referred to by) each word which is essential or technical to the argument; and if you are still confident in your dissent, and if where your precious reputation is concerned you are as bold in acting by your own judgment as you are when the life of another is concerned, then publish what you have written, publish your counter-demonstration, for it is the interest of especially you of much experience to publish a refutation of sciential medicine; for if the science be irrefutable, if it be

true, it gives to the junior part of the profession the power of appealing irrefutably to the ample records of medicine; the power of obtaining by their youn genergies the possession of and the means of proving that they possess, more real knowledge than those of older intellects have. Sciential medicine elevates the good reasoner and lays low your great authority; it taxes you with being dreamers awake, men unable to decide, impotent of judgment, and in the hearing of the public taxes you. Some of the public are easily led "astray;" some may take hold of and be "deluded" by sciential medicine. The young in science always greedily devour new truths; and some of the juniors in medicine, into whom you habitually instil your notions, and to whom you doubly dedicate your labours, may lay hold of, or be "deluded" by, sciential medicine—may think it true, and, taught by the science, may (with or without your permission) dare to think for themselves; and unless you prove the science to be false, unless you show that the truths of medicine cannot be demonstrated, some of the juniors, some of the underlings to whom you have hitherto with so much facility dictated, may, instead of your authority, require of your experienced selves, your proof; and some, guided by sciential medicine, may search after doctrines which are true, rather than notions which are fashionable; and by searching after such unfashionable things they may lose their obsequiousness, and find perchance of honesty enough to bid you either prove or hold your peace, and by such bid-

dings fathom your shallow pretensions, and do away your empty dignity. Sciential medicine, if unrefuted, may produce such and many such effects as these; wherefore, the defence of your pretensions, the preservation of your dignity, the maintenance of your authority, your fatherly solicitude for the welfare of your junior brethren, your general philanthropy, your self-interest,—all urgently solicit you to publish a refutation of sciential medicine; the seeming facility of the refutation tempts you, and I taunt you to refute it.

265. "Medicine is not a pure science," "There are no means of giving positive proof in medicine," "We must depend on probability," "We are justified in believing," and (what is alone sufficient to hoist up every professor of acephalous medicine to the derision of every thinking man) "We are justified in *supposing*," are the frequent expressions, the common pleadings, the ready subterfuge in which you of acephalous medicine shelter your vagueness of intellect, your errors of judgment, and your emptiness of science. But the means of demonstration are now placed irrefutably in defiance before you; your subterfuge is taken from you: henceforth proof is required. Go, whisper your slanders in a chamber now, go mutter your curses in a corner, but without the reality put forth no more of your pretensions to knowledge, send forth no more refuse of science in your books of acephalous medicine, no new accumulations of new absurdities, no new editions of laboured old idiocies, prove what you teach, give us the demonstration, or take you

care that I (or some other "simpleton," flushed with the recent acquisition of new truths) do not tax you with a deliberate design to gull the public, and by the evidence of the accusation fix the taxing on you.

266. Many medical-minded men, unpractised in thinking, strangers to steady meditation, whose views continually confound and whose intellects are ever aberrating from the specific point of inquiry, think ramblingly that no one truth is manifest so long as their minds can stray into any other (however remote) doctrine, which is still to them obscure; they cannot see how any subject can be fully understood while they feel themselves to have the power of forming any half-formed imaginations. Place before such persons one well-developed truth, and if they cannot cavil, they ask for explanation of another; give them the explanation asked for, and, unable to refute, they ask for several more; give them again the several they ask for, and if again they cannot cavil, they, more dissatisfied, ask again for many more; and if you give again the explanations which they ask for, they ask again and again for more and more, and still unable to refute, they wish and ask for another and another "world of words." The profession is full of such modern Alexanders of science, who because they can do nothing in one world, sigh for another to conquer. Such magnificent minds will receive no truth which has another beyond it; will accept of no system which does not at once (and without any seeing on their part) show them all the mysteries of nature

unravelled. Such men and such minds ever are and ever will be displeased with irrefutable outlines.

267. Nature, by "Heaven's first law," has, with mankind in general, liberally mingled such as by nature are "hewers of wood and drawers of water;" and the established manner of electing the members of medical science does not exclude from the profession those good things which nature has bountifully bestowed upon communities in general; those men who, formed for "hewing and drawing," are more fitted to act than to think—who (as every man is prone to his forte) dearly love acting and deeply despise thinking; to whom unravelling doctrines is irksome as picking oakum; who in every undertaking begin without meditating, act on without thought, and end without reflecting: such are the genuine "practical men" of acephalous medicine. These rail at sciential medicine; they call it (and terribly great is the odium they would by their christening fix upon it), they call it "speculative," "an idle speculation which leads to nothing practical;" thus by their assertions broadly avowing that their present actions are not guided by any prior thought, nor their present thoughts connected with any past action, and that the doctrines of cause and effect, and that reasoning from the testimony of others, and from the evidence of their own senses, have no influence on their practice of medicine. They contemn metaphysical doctrines, and for aught they know act without either right doctrines, metaphysics, or mind. Yet, sifting will show that these practical men, these actors by instinct, who pre-

tend to see without thinking, and hear without judging, guide their doings by the dictates of metaphysics gone mad. These practical men, who contemn as a vision every thing which is not in a box or a bottle, are yet haunted and guided by fancy's creations; they see liabilities every where, and when they see that a patient's existence is awfully vibrating between life and death, and when they see, as they oftentimes may see, that the finger of decision rightly placed on the "yea" or the "nay" would save to a family its hope and support; and when in the crisis they know that right action is solely confided to them—instead of acting they stand staring at liabilities which have no existence, are frightened from going to decision by ghosts of their own raising, and not daring to decide, dare do nothing: and thus they are the inert half causers of the ruin and the death of thousands—and that, because they are free from the imputation of metaphysical thinking, because they are pure "practical men."

268. Some professors of medicine who never examined the foundation of any doctrine, who know nothing of the revolutionizing effect which the change of a rudimental tittle may have on a science or a system; who observe amongst themselves and their brethren a vague uniformity of action; who see that as one man treats his patients, so another man treats his; who perceive but a very loose connexion between doctrine and action; who traverse the earth to and fro, seeing some patients die and some patients recover; who call every recovery a

cure, and never suspect that authorized doctrine and death may walk hand in hand—such men, confident their general treatment is right, confident their main doctrines are true, confident that (without having reason) they possess the main truth—such men can see no effect that sciential medicine, or right reasoning in detail, can have on their practice. But, without the attainment of any new truth, can such men by searching not see many men ill, who get well without medicine; some men very ill, and yet without medicine, under the privations of poverty, and in spite of every seeming adverse circumstance, recover? Do such men never see some patients recover under one method of treatment, and others recover under (and for aught they can show equally well cured by) a different method of treatment? When such men show the result of one treatment, did they never hear as well exhibited a result equally successful from the very opposite treatment: when such men glory in the mighty things which they in some diseases do, when aided by the manifold ingredients of a druggist's shop, did they never see as much of good effect produced by the mighty doings of a dose of salts? And can such men, with their powerful medicines, do, and show they do, more than others do, or equally well show they do, with the millionth portion of a grain of chalk? And in such seeings, and by such considerations, do such men not in many cases see a question, whether their medicines work good or evil; and do such supposing men not see that in many instances "medicine versus no medicine" is a cause yet to

be tried by right reason; and are they before the trial confident that right reason and a just estimate of things will not give an unwelcome or an unexpected verdict? And do such men not see, do they not fear, the revolutionizing influence which the introduction of right reasoning (fully showing nature and science in fair competition) may have on the practice of medicine? When opinion is exploded, when authority is dead, and when truth is no longer determined by vote; now, that demonstration of any truth is attainable; who, of the boldest in the profession, that has seen the doings of the quacks, will now guarantee that no arising "Solomon" or "Saint" shall bestir himself, collect his evidence of fact aright, put it in form rightly to show the efficacy of his peculiar medicine; exhibit beyond the limit of coincident an amount greater than any or all of the profession can exhibit; prove, better than geometry is proved, that his patent medicine is a cure; tie the tongues of the professors by positive demonstration of that; throw defiance in their teeth, and, single handed, cover all the acephalous dreamers and supposers with the derision of the public; and then, aided by the public, compel all the learned professors of acephalous medicine to obey the commands of some hawker of sealing-wax, or vender of cloth? Now that right reason is attainable, who is the medical man, or which is the medical corporation, will give the guarantee?

269. But, should showing the methods of demonstrating medical knowledge, before the lapse of much time, produce any change in practice, or any

such events; still some professors of acephalous medicine, disliking the trouble of thinking, readily comfort themselves with the expectation that whatever the introduction right reasoning may ultimately effect, it will have no operation *yet*. "Sciential medicine may be true, but like phrenology it will be many years before any notice is given to it. Circumstances will never require me to learn it; the old science will last my time;" are the sentiments with which many console themselves. And by the expression of such sentiments excellently well do they prophesy, if they prophesy aright. But the science of phrenology was, to the day of its discovery, unsought for and unwished for, and when first propounded seemed at the best but an isolated curiosity, or petty bauble, having (except to extravagant conceptions) no application to utility. It was a science which men must attain and well master before they could perceive its use; a science which, from its infancy, advanced (as all mixed sciences hitherto have) begging for its existence; dependent for diffusion on solely the reluctant assent of mankind, and living by their approbation. But the reasonings of sciential medicine are what every thinking man has felt the want of, what philosophy has ever seen the value of. And, hardly daring to hope that humanity could attain it, philosophy has still ardently desired and diligently searched age after age for what is now in outline offered you. Had phrenology, instead of asking men's assent, advanced with its evidence in the form of demonstration (whether convincing or not); had the science

known how to silence; it had soon swept into obscurity and derision all its drivelling opposers. And sciential medicine solicits the assent of no man, it begs for no man's approbation; let fools obtain conviction as they can: but the attitude of sciential medicine is the attitude of offence, its language is the language of defiance—it solicits nothing, but offers you, Mr. Individual, a twofold opportunity of showing yourself a fool, by either assenting to what is not proved, or dissenting from what is: it bids you either produce your refutation or hold your peace. Sciential medicine gives you leave to sneak away, and tell your drivellings and your dreams, but the science commands you to be dumb in its presence.* And the doctrines of sciential medicine are not the narrow technicalities of an individual science, they are the essence of geometry, and tax geometers with false reasoning; they are the principles of logic, and hold logicians in derision; they are the first principles of every science, the methods of adding up any quantity of data;† the foundation and the means of certainty

* It is in stating arguments as in making promises, a man will often state what he dare not write and sign his name to: wherefore "in the presence of sciential medicine" is in writing, in argument, and in the presence of the public: the science, like geometry, cannot be twaddled, and declines defending itself in a private squabble.

† Because a person knows geometry and arithmetic, he does not therefore know the area of every field in Europe: the data must be obtained and added up. By "added" I mean *estimated*: and adding additional data in sciential medicine often produces, as in algebra, a less amount.

to all human knowledge. The doctrines of sciential medicine are right reasoning, and wherever good judgment or right reasoning is requisite, there sciential medicine is required; and wherever right reasoning is, there the doctrines of sciential medicine are. Sciential medicine is part of every thing; the common affairs of life are unwittingly guided by it; it mingles with merchandise, influences politics, and is part of every man's religion. And sciential medicine is mankind's sole decider, the only umpire between diverse judgments, presenting to every correct disputant the means of showing that he has the truth and the means of silencing all opposition. It puts an end to controversy. It puts, too, the science of medicine fully within the cognizance of the scientific, and by so doing, subjects the doctor to the just scrutiny of every right-judging patient. And boldly do you elders prophesy when you aver that the coming of right reason, when presented to all, will visit you with no disturbing change; and docile are your notions, and gently runs your blood, if, when publicly and tauntingly taxed with folly, your learning does not, in self-defence, scrutinize the pretensions of the accusing science; and to your acephalous science the scrutinized and developed truth is death.

270. Escape from truth, if you are able; call it a bauble, and take care that no man require of you a knowledge of it; say sciential medicine is a straw (a straw that no man can shake!), and then notice whether the drowning are the only dying who are willing to catch at a straw. However unwilling you

elder professors may be to look backwards through truth, and see all the labours of life misdirected, and that all your past energies sought after folly; however grievously you may feel the necessity of beginning your learning again; and however ill or irksomely re-education may fit on your feelings; however much you may shrink from the trouble of obtaining the truth by the laborious accumulating of evidence; still necessity and exhibited truth are commanding, and there is no shrinking from duty: and it is your duty, the especial duty of your life, to investigate, to meditate on, and to decide respecting, every thing which presents itself in the form, or in the name, of medical truth. It is for taking every chance, for scrutinizing every remote promise of good, it is for leaving no stone unturned, that food, in fees, is given you. Examine with moral eyes the sovereign tendered you, and in it you will see a slice (small, but sufficient, if absent, to produce a breach of continuity) offered you for deciding whether sciential medicine is a bauble; then, without the labour of examination, without deciding, take the offered fee, purchase food with it—and put yourself on a moral level with the taker of what is not his own, and the utterer of clipped coin. "The old science will last my time!"—"Too much trouble!" He who shrinks from labour while life is daily on his hands, may amongst his sins of omission soon discover murder.

271. Another assertion violently advanced against sciential medicine is, that its reasonings are abstract, and very difficult to understand. The reply is short.

Every truth rests on abstract reasoning (because on an universal), and is by abstract reasoning known; and if you, Mr. Individual, cannot understand that reasoning which is abstract, you have either entered the profession of medicine too soon, or you have been in it too long; be you therefore quick in quitting it. Your line of life was ill chosen; it is not every mother's darling who is able to walk in the higher departments of science; go—where no intellect is needed—go—change your trade!

272. Again, I am told that sciential medicine consists of nothing but antique truisms;—Admitted; what is the inference? Again, that it is contrary to all the doctrines of all the wisest men and best philosophers that ever lived;—Admitted; what is the inference? That still it leaves us much to learn;—Admitted; what is the inference? That the science as first advanced is full of contemptible boastings—tut! tut!! since the invention of papyrus no book of science ever went forth with half such pretensions as will these few pages;—The (if you please, "contemptible" and "boasting") pretensions are admitted; what is the inference? "Therefore the author is a"—Pause there; if you have no other means of knowing what the author is than by his book, what the author is, is nothing to you;—"*Therefore medicine is not as proveable as geometry,*" is the inference you have to arrive at if you can. *

273. Beside the objections I have mentioned,

* Objections to, and arguments against, sciential medicine, thankfully received (cartage paid).

many will be founded on solely the verbal part of the representations given. Meanings are generally so loosely and so vaguely affixed to words, and words (even such as "or" and "not") are therefore so ill-suited to convey accurate allusions to the definite things they ought to refer and be confined to; and the necessity of having a discriminative knowledge of the thing referred to by a word when it is first used, and of having a constant remembrance of the reference which the word has, every time it is used, will require from full exposition and tuition such a declaration, and such a fixing of meaning, and such a constant opportunity of recourse to the meaning affixed, as nothing but ready access to a written record of meanings can afford to those who enter on the study of the science. Supplying such a record will supersede the necessity of verbose and tedious repetitions, and alone remove many of those many objections which have their origins in words.

274. Opportunities of stating and of explaining away other objections, of advancing and of meeting other arguments against, and of asking and giving full explanation of any verbal doubt or obscurity, will be afforded by the discussions after each lecture. Sciential medicine's simplicity of decision will, if observed, alone effectually prevent such discussions from assuming the form of idle wrangling; but still further to guard against that and other evils of debate, and more effectually and permanently to secure the advantages which discussion rightly managed will afford, and that nothing

stated against sciential medicine however small may escape attention, I shall require statements adverse to the doctrines to be written, or by the advancer dictated, specifically worded for writing; which statements, when written, will of course be subject to alteration or restatement as often as the will of the advancer dictates; but the first statement and its alterations always appearing on the record, will declare and keep to the question, and by showing you and me the necessity of, will teach us both, accuracy of averment. Such statements will be divisible into the three classes of arguments against, objections to, and require dexplanations. And for the purpose of keeping in your steady remembrance that truth is the object sought after, that the mind as it is, is what doctrines are addressed to, and still more effectually to exclude that profitless wrangling which arises from mere argumentative dexterity, and to exclude the major part of the fooleries of systematic logic, the discussions will open under two (and only two) simple laws. None but believed statements to be advanced, that is, only the moral truth to be stated; and the meaning of a word or sentence is either the declared meaning of the user, or (the user's meaning not being declared) any believed to be meant. * With these two laws I undertake to defend sciential medicine from your solicited attacks,

* The observance of this second law, alone supersedes and annihilates more or less than two-thirds of logic.

upon any terms on which you can defend geometry from my attacks.

275. It is easy for a propounder to state those consideration points which to his methods of thinking are of most importance, and to state and refute arguments against his own doctrines; while points important to, and arguments suggested by, a mind differently toned, would, perhaps, suddenly confound him. The discussions after lecture will afford me opportunities of observing the working of minds different from my own, and will afford you full opportunities of stating those arguments against, which are suggested by diverse methods of thinking. I undertake to refute every argument you singly or collectively can advance against the essential doctrines I teach (terms upon which no teacher of acephalous medicine can deliver a paragraph); and in replying to your arguments against sciential medicine, I shall first apply a refutation to each, and then show you the suggestions which were presented to my mind by the statement of your argument, and the trains of thought by which I obtained the refutation. Hoping by these means, aided by a few observations on sciential medicine's construction of arguments, to teach you the mental operation of supporting and refuting—the art of honest argument—knowledge, occasions for which arise in every scientific communication, and the want of which is one chief cause why the solemn inquiries of accumulated professors of acephalous medicine ever dwindle into profitless and empty

twiddle twaddle. Thus the discussions will afford you (by principles for the able and by-rules for the feeble) a guide in every argument, show you the general laws of argument, give you full opportunities of applying, and of fully investigating, the doctrines of sciential medicine, and fully develop their irrefutability.

276. And for the purpose of showing the ready application which the doctrines of sciential medicine admit of, to exhibit them as a guide in study, to show how easily they analyze evidence, and how soon they sum up, and to show you (with all the formalities and requisites of demonstration if you please) that my heavy accusations against the science you have hitherto studied are well founded and just, but especially to lower those dreaming authorities which are now high in your adoration, I shall request you to name any author of a system in medicine who is now high in your estimation; and when named, I shall apply the principles and doctrines of sciential medicine to the doctrines he has advanced, show the evidence necessary to inference, analyze the evidence, show its summing up, and wherein deficient, apply his reasonings to common things, and show their relations to the principles and doctrines of sound judgment; and show, so far as the details he has given and the subjects he has treated of admit of the showing, that he, educated in acephalous medicine, is ignorant of all the right principles and doctrines essential to a right and real knowledge of medicine—that acephalous medicine is thoroughly acephalous.

277. In adverting to the established doctrines of medicine, and in examining the common acephalous methods of reasoning, I shall direct your especial attention to the errors of especially the great: because exposing their absurdities tends to lower authority, and it teaches charity. It will teach us how to acquit and forgive those actors of that seeming iniquitous priestcraft recorded in the history of papal theology—seeing that the Romish Church, in the days of her deepest degradation, was not more astray from the right path! was not more aloof from the truth! than are the members of the medical profession at this moment; and by knowing how earnestly they *search* after truth, and by their known liberality of feeling, we know that it is in very simplicity they err;—in a simplicity which, while it has abandoned them to become "as gods" in their own imaginations, it is yet so amiable that by it they have escaped from the other portion of the twice-told curse; by their amiable simplicity they (in their own department) have escaped the curse of "knowing good from evil."

278. And for the purpose of showing, beyond what the discussions after lecture will show, the facility with which the doctrines of sciential medicine remove all diversity of judgment, I shall apply them to the decision of any medical controversy you mention, or to any part of any controversy you point out; always submitting the applicability, as the truth, of the doctrines to your full investigation.

279. And for the purpose of affording you an op-

portunity of collecting, in addition to your opportunities of composing, arguments against the doctrines of sciential medicine, and for the purpose of affording those of my medical brethren who "will refute sciential medicine in a moment," an opportunity of trying for a month, and for the purpose of shocking the prejudices, and shaking a little the strong convictions of the scientific public, I shall, when amended and enlarged, publish this prefatory lecture. And though by so doing, I expect from the scientific correction in some minor points (and my doctrines of coincident are hardly correct if I do not receive it), yet so far as the essential doctrines of sciential medicine and the professors of acephalous medicine are concerned, I laugh in anticipation of their blundering attempts to refute them, I laugh at their cowardly constructed and confidently concluded half arguments against.

280. The Royal College of Surgeons have nicely and astronomically measured the length of the science of surgery, declaring it to be three hundred hours long, and requiring each pupil in their acephalous science to listen twice over to that length of oration; hence their teachers in acephalous medicine are compelled by regulations to give the required number and measure of lectures—to the few grains of truth they give which are worth picking up, they are compelled to add a great quantity of chaff for the purpose of making up the required number of chaldrons; and hence the members of the profession are becoming habituated to measure learning by length, and expect to be taught by a legion of lec-

tures, but (ample time for discussion being allowed) the doctrines I teach will be taught in a few.

281. Though intellect is not necessary to the practice of acephalous medicine—though attention to the right methods of reasoning is not required from those from whom a knowledge of your acephalous science is required, yet to any person entitled to and requesting it I shall give a certificate of attendance on these lectures; and to any person who, in addition to attending the lectures, understands the doctrines, I shall, if required, give a certificate that he knows how to reason rightly—how to discriminate one disease from another—how to know the causes and the best treatments of diseases—how to distinguish true from false doctrines, and how constantly to increase and accumulate knowledge by study and observation: and to preserve a broad distinction between the two sciences, and that the professors of acephalous medicine may have no participation in what they are so anxious to disclaim, I shall certify that it is only from these lectures that such knowledge can be obtained.

282. There is in the mind of the public a purblind persuasion—a conviction half formed and half pulled to pieces—that the voluminous science of acephalous medicine rests upon some foundation. The scientific public now and then read a treatise on medicine, and they see assertion following assertion, till of assertions a full system is made, and they suppose that each of these assertions rests on some accumulation of unproduced evidence, that the whole of the system is founded on some great foundation,

some foundation great as all the records of medicine, and too great to be accumulated by any one system writer, or by the steam-power of any one printing machine, and assuming its existence and not knowing exactly where to find it, the scientific public search no further. But that professor of acephalous medicine who has investigated his especial department knows where the foundation of his science is found; he knows well that the great foundation of acephalous medicine is with that other great thing—is with the elephant which the earth rests upon. Or, shall I call you professors of acephalous medicine by the name which you so fondly and frequently give to yourselves—"Imitators of Nature;" the name is just, for as Nature has suspended her world, so have you hung your system—on nothing: excellent "Imitators of Nature!" Your science has no foundation.* Let them, the juniors of acephalous

* Acephalous medicine is not founded on fact, for its professors never were able to infer doctrine (knowledge of the future) from fact. It is curious to observe with what incredulous astonishment the medical mind looks at, and derides, the absurdities of antiquity, while itself is wholly absorbed in exactly the same absurdities. Imagination says that the alchemists of old filled their laboratories full of nature's materials (facts), that their houses were stored with, and that they had warehouses full of, the diverse materials of nature (thousands of facts), and that they ever exultingly exhibited their magnificent accumulations; and when asked "And what is the use of all this?" they immediately replied, "Perceive you not that there is gold in these materials, and that I have only to get it out!" And they blindly laboured through their lives, and from all their materials never obtained one atom of what they sought for. So amongst the professors of acephalous medicine there are in this modern

medicine, read the accumulated assertions of which their science is composed; and let them (ever fond of skimming the surface) suppose, while reading, that they are skimming the cream which rises from the depth of the science; but let them search deeper, and they will find that their cream is chiefly the scum on the surface of folly; let them imagine the assertions they meet with in books are the collected and carefully concocted honey abstracted from myriads of flowers, but they will find, if they analyze, that the doctrines they swallow are mostly the slaver of authorship, the spume emitted by the mind diseased,

day, men whose heads are filled with facts (the diverse materials of nature), whose libraries and houses are stored with facts:—nay, who have too, warehouses full of the multitudinous, diverse, inert, and mute materials of nature (which warehouses they call "museums"), and such men exultingly exhibit their magnificent accumulations: and when asked "And what is the use of all this?" they immediately answer, "Perceive you not that there is useful knowledge in these things, and that we have only to get it out!" But they blindly labour through their lives, and from all their mute materials they never elicit one particle of the needful knowledge of the future; or, by the alembic of their brains they obtain *about* as much useful knowledge from their facts as the alchemists of old with their crucibles did gold from their materials. Mark that man whose head is full of morbid anatomy; or who when he hears one case forthwith tells a dozen of the same sort, and draws no inference—obtains no knowledge of the future from any thing: put a mark upon him—for with all his stores of materials, he (the "matter-of-fact man") is idiot alchemy's blindest devotee. The profession is now full of alchemists: alchemy is in high fashion now. But till knowledge of the future is founded on it, a fact, whether in a head or a bottle, is part of the refuse of science. "Knowledge of fact is of no use."—JOHN HUNTER.

a morbid secretion, in which there is certainly much of strong poison, for parts of it taken (not neutralized by self-contradictions) stultify the student and kill the patient.

283. It is because there is no reason, because there is no intellect in acephalous medicine, that the youth who enters the profession under the ardour of hope and ambition, conquering the difficulties which beset his ingress to the science, and delighted with the daily addition and newness of knowledge, soon masters the rudiments, and proceeding a step further, meets with manifest inconsistencies and glaring contradictions, finds himself puzzled; and taught to respect authority, bid to bow to names, believing it presumption to think for himself, laments that to his young and diffident perceptions, authorities which he has been ever taught to respect, never daring to question, contradict one another; and names which he has been ever taught to bow to, are opposed to one another—he is puzzled and astonished at such an unexpected occurrence in science, attributes the discrepancies which study presents to his perceptions to his own want of discernment and dulness of intellect; he proceeds in his studies, hoping that further knowledge will unravel the difficulties; discrepancies and contradictions multiply; he still proceeds, confusion thickens at every step; every searching finds dissatisfaction: till hope of mastering the science flies, ambition turns to apathy, and despondency paralyses exertion, till the progress of time brings him a new, an hospital era in his education; then unable, by study,

himself to discover the truth, deluded by pompous appearances, and being face to face with eminent men—in the presence of authorities to whom 'tis the virtue of thousands to succumb, the fashion of hundreds to worship, and his inculcated duty to cringe to, he attaches himself to some set of teachers, swallows with wonder their complacent dictation, listens ignorantly awe-struck to the words of his oracles—and never daring to question what he is bid to believe, abandons his birthright of reason, changes the daring intellect of the boy to the acephalous and cringing mental subserviency of the full-grown slave, and thus thoroughly changed, haunts an hospital till the day—the great day—of "going up" is arrived, when well-elected examiners request him to repeat unto them some parts of the lessons which some parts of themselves have repeated to him; and having ascertained that his memory is good, that by rote he repeats the lessons which were, and remembers some facts which for ever are gone, they, without reason, or reason in him, aver he is able to manage what comes, and to do as he lists; and while recollection is the sole part of mind he is able to use, they bid him, by rightly inferring, apply things fit for things past to things in the future. With a memory well stored with every school cure, and with knowledge of all that is right by assertion, he enters the practice of medicine—sees diseases in forms he never had heard of, but for every ten cases he has full forty treatments, but which sort of case requires which sort of treatment is not by his memory taught; so he searches his

notes of lectures (memoranda made at school), and while he searches finds that patients die, and medicines act in opposition to all the laws and doctrines he has learnt; he turns to search farther the records of his science, and finds them all confusion, a wilderness of nothing but vague generalities, in the form of useless and irrelative dogmas; and while under the anxiety of saving a life, and while searching for an individual and applicable truth, he learns, if any thing can teach him, how much he has been deluded with the thorough emptiness of that seeming universal knowledge which great authorities, celebrated schools, and shallow unsifted pretenders, have palmed upon him for science, and in agony of soul he curses every doctrine which is separate from the evidence and the proof it rests upon. Or, not taught to see the delusion he is under, he does as most of his medical brethren do; he no longer appeals to universal experience,—the wisdom of ages is to him of no use: unable to give to another his seemings, he allows not another to fix knowledge on him; despising all truths which ages have known, he is taught by the narrow experience of self; and no longer searching for definite doctrines, he studies the science of extending his practice, he pleases his patients, and full well remembers the greater events of their lives and their deaths; he sees and thinks not—and he then is become a thorough, abandoned, pure practical man; and so he remains, till mingling, as in dreams, the words of past years which had slipped from the mind with

the things of to-day which are pressed on the feelings, and influenced most by what makes most impression, he dreaming or waking concocts his own doctrines, and bids patients get well, while he avoids giving the means and the medicine which some have died taking, or "hopes" they will not die in the treatment which he ("my experience") has seen some patients live through. And in such biddings and hopings he gives (how consoling!) all the pith of his brains. Or, not bigoted solely to the narrow circle of his own individual experience, thinking that now and anon some hint may be had, or some lesson be learnt from another, he joins by permission some of his associated brethren, some society for the promotion of medical science, where—intellect never entering—idolizers of self and worshippers of one another meet—and with true fraternity of feeling, talk of things which once were, seek after seemings, swallow opinions, feed upon garbage—and feeding to fulness fatten self-satisfaction,—and think that contentment so purchased is truth.

284. Honey is best tasted when concrete, folly best seen when concentrate, and individual inabilities are best estimated by observing that many of them amount to nothing. And it is by observing the proceedings of medical societies—it is by observing that the inabilities of professors, when accumulated, amount to impotency, that the acephalous nature of the science they study is best appreciated. When Bacon took away the folly of *reasoning without*

fact, he left us under the equally great delusion of *fact without reasoning;* and the professors of acephalous medicine unable to reason, without the power of inferring, and not knowing that only that knowledge which applies to the future is useful, meet in medical societies, and in solemn conclave talk solely of things which are past, found drivelling questions on by-gone facts,—egotistically communicate their seemings, — all busily intent on mutually vomiting and swallowing one another's opinions.* And so utterly impotent is the accu-

* To the juniors of the profession. He who in a scientific discussion says, that some rain falls on the earth, that it flows into a cranny, then runs first north and then north-east, and flows into a puddle of such a size and such a shape, communicates a fact. But unless the fact has some relation to the subject under discussion, and unless the narrator can show its relation, by connecting it to the subject by some legitimate inference, the communication of it is an empty impertinence. That a person thinks so and so, or that he has such an opinion, is a fact: and he who in a scientific discussion tells what particular part of his mind some evidence strikes upon, and through what particular and tortuous sinuses of his intellects his disjointed and isolated ideas ooze, communicates a fact; but unless he can show what relation his opinion has to the truth, or can connect that fact to the subject under discussion by some legitimate inference, the communication of it is empty impertinence. "What relation has your opinion to the truth?" "What is the inference from the fact that you are of opinion that *it is so*?" "Therefore, the probability is that it *is not so*," is the inference of Locke in like instances. An opinion is a mental affection obtained by one mental method of summing up; the visions of dreams are mental affections obtained by another mental process, and a truth is a mental affection

mulated intellect of the educated in acephalous medicine, that professors of the science meet, and neither by premeditation nor by any accidental oozing does any useful knowledge, session after session, escape from any one of them. So utterly impotent are their reasoning powers, that even the verbal sign of mental inference—the word "therefore"—never occurs in their proceedings; that or any other sign of inference is the "so be it," the "amen," which ever sticks ominously in the throat of medical professors,—they cannot utter it; or, in the proceedings of medical societies, there are about as many sessions as there are inferences, that is, counting both the right (?) and the wrong, there appears from their accumulated strength about one inference a year. Yet the members of such societies are well satisfied, because they are thoroughly well deluded; they busy themselves with fact, and then suppose

obtained by another mental method of summing up; and between a truth and an opinion there is as much essential diversity as there is between a god and a grub; and there is a tendency in all men (as if it was the nature of language) to give the best names to their own things; and when a man says "my opinion," (though he may mean "my waking dream"), he never means "my proof:" and when you, in estimating men, hear a man talk, in his own department, of what "seems" to him, or of his "opinion," instead of "the proof" and "the truth;" or say, "I think," instead of "the truth is," put a mark upon that man, and never again give any attention to his talk; he is no man of scientific truth; he is no rational investigator of the external things of nature; he is a mere dabbler in the puddles of his own brains.

they have obtained useful knowledge; they look into the past, and are confident they are at the truth; but, "like monkeys at a looking-glass," they never catch hold of it, and near as it seems, they never can.* And there are now in the metropolis of Britain medical societies who when you ask them their age point to their archives and talk of centuries, and yet from the hour of their institution to the present moment, all the useful knowledge they have obtained may find record ample enough on the head of a shilling, and permanent enough on the tail of a tadpole. Such is acephalous medicine, and such are its professors; things fitly made, and by many of the scientific fitly used for laughing-stocks; and persons who are becoming, and I will bear my testimony "justly becoming," a proverb to the people—persons who liberally labour for the public good, and for their blindness amply reap derision.

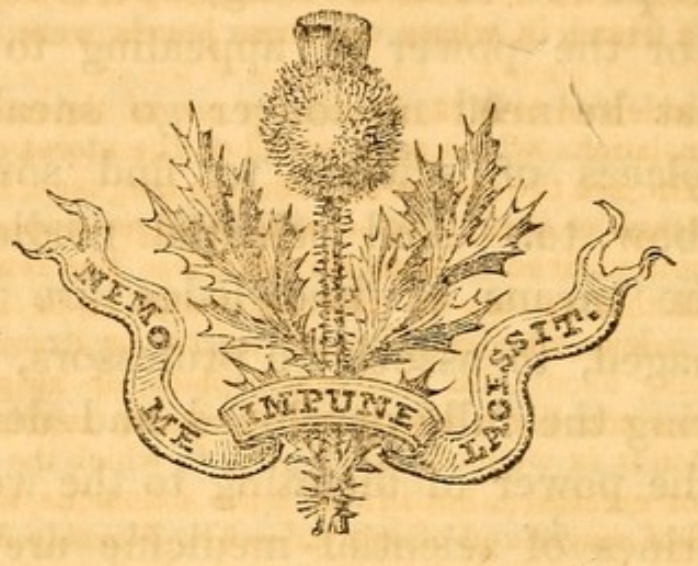
285. It is under these circumstances, pitiful as they are, that the much-needed doctrines of sciential medicine are offered you; doctrines which, when understood, beautifully simplify all fundamental truths, show what the essence of all proof is, clearly explain and fully remove all those difficulties which for ages have foiled all the efforts of

* I advise the medical societies of the metropolis (the medico-chirurgical especially) to publish *all* their facts; and as no useful knowledge—no useful "living" truths—ever came out of their past inert facts, as a suitable title to them, or motto, I recommend these two words—"*Addled Eggs.*"

philosophy, and that by means more simple than the four plain rules of arithmetic—so very simple that (verbiage apart) any very child can understand them; nay, doctrines which every child by nature knows. Converse with those whose intellects no education has yet disordered—with those whose minds no father has yet perverted; mark how they reason—notice their decisions—to learn the great essential doctrine of sciential medicine go to my preceptors, little children; and they will teach you, it is written on the tongue of every babe—the mind, by nature, is the essence of sciential medicine. Yet this knowledge of children is able to correct the elaborate works of the learned, not merely line after line, nor paragraph after paragraph, but chapter after chapter, and book after book; and this childish reasoning is strong enough to scatter the proudest philosophy of the age. This childish reasoning, though yet in the infancy of its application, is able, by its demonstrations, to grasp every truth, and mighty enough to build up one universal science; in comparison to the future perfection of which, idolized geometry, the god of my youth, is an old beggar standing with one foot on postulates and another on axioms, with lameness in one leg and rottenness in the other, leaning for support against begging definitions, without any power to touch, or to see, or to perceive, any thing external to the superficies of his own body—an abstract useless assuming absurdity. While sciential medicine (the science which first taught man how to prove, and

when showing him how to prove one truth, taught him how to prove every truth—for usefulness and intellect the first science in the world) has doctrines which are applicable to every part of every science, giving to every individual medical professor the power of reasoning, and of deciding for himself, or the power of appealing to the truth itself, that he need no longer go sneaking about the by-places of science to find some golden calf to bow to. And sciential medicine gives, where the means of knowledge are ample and well managed, to associated professors, the power of declaring the fully developed and demonstrated truth,—the power of dictating to the world. And the doctrines of sciential medicine are offered to take away those blundering, beggarly, and contemptible confusions of the acephalous science, which justly subject professors to the general derision of mankind; to teach the professors of acephalous medicine (and by dissemination to teach the public too) that sciential medicine is their master; to take from the elders the vested right of reasoning wrong, to put the rising before the risen generation, to teach the summing-up of evidence, to teach the systematizing of truths, and to show how the accumulated knowledge of ages may be turned in a focus on any individual patient: and, by showing the right methods of reasoning, to teach the right manners of feeling, that the professors of medicine may both save lives and be, as they ought to be, the advisers and guides of society:—to teach the just

estimation of things, to give the power of discrimination, to brand error, to put a seal on the forehead of truth, and to introduce certainty to all human knowledge.



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