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NOVUS THEÆTETUS

OR

SENSE AND SCIENCE;

BEING THE

INTRODUCTORY ADDRESS

DELIVERED AT

ST. THOMAS'S HOSPITAL,

OCTOBER 1st, 1869.



BY

WILLIAM H. STONE, F.R.C.P., &c.,

FORMERLY SCHOLAR OF BALLIOL COLLEGE, OXON.

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RESEARCH REPORT

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NOVUS THEÆTETUS.

AN introductory address is in some sort a lay sermon, and the field open to the speaker is so wide as to embarrass by its very extent. No thoughtful man can have turned his attention to the vast subjects and noble aims of our profession, even for a limited number of years, without having many topics on which he longs to express an opinion. No conscientious man can see before him an assemblage like the present, consisting, in part at least, of younger aspirants to knowledge, the materials from which the future profession is to be moulded, without his heart burning within him to speak.

But mere random extemporaneous speech, however good in intent, would probably result in a futile beating of the air, and might run the risk of impertinence, at least of irrelevance, in the mouth of one, himself a junior, amid seniors and former teachers. I have therefore

endeavoured to choose a central point from which to start—a lay text, indeed, beneath which to shelter my own feebleness, and as a guarantee that my utterances, whatever their value, are at least mature and deliberate. Whence can this text be better drawn than from the calm and statuesque grandeur of the ancient philosophic world? a world so remote, that though its light, like that of a fixed star, shines steadily upon us through the halo of time, it is all but uninfluenced by the movement of our petty orbits, and is free from the aberrations of passion and controversy, which in these later days have diverted and distracted men's minds.

Protagoras held that “man is the measure of all things,” *πάντων ἄνθρωπος μέτρον*. How far is this metaphysical dogma true for us? Against what fallacies may it guard? Can we deduce from it the proper tone of mind in which to approach the study of science, and more especially medical science?

But first let me bring before you the scene in which this proposition was originally discussed, and who were the interlocutors, as we find them in the ‘Theætetus’ of Plato.

About half way between Athens and the Peiræus, Terpsion, coming from his country estate, meets Euclid, a kindly man, who has just parted from their young friend Theætetus, borne on a litter, wounded and sick, from the camp at Corinth, suffering especially from the dysentery, then epidemic in that encampment. "And a fine fellow too," quoth Euclid; "I have heard men praise him highly for his conduct in the battle; and it reminded me how marvellously true a prophet Socrates has turned out. For he was charmed with him, after a conversation they had together, and said he must needs become illustrious if ever he reached manhood."

What was the conversation? Can you tell me about it?

So they sit down together, in a scene of which every object is sacred to the history of art, science, and literature. Beside them the Cephissus flows softly through olive groves into the Phaleric bay; in front rises Mount Hymettus; on their left stands the "eye of Greece," the Acropolis, over which towers Pheidias' noble work, the colossal bronze statue of Athena Pro-

machus. Euclid then recites the conversation as gathered from the lips of Socrates himself; how Theætetus affirms that science is sense, or perception, *ὄνκ ἄλλο τί ἐστίν ἐπιστήμη ἢ αἴσθησις*. Socrates considers this as identical with the proposition of Protagoras, that man is the measure of all things, of those which exist, and of those which do not exist—*i. e.* positively and negatively.

The deception of the senses is discussed; how with the same breeze one man is warm, another cold. So it comes about that Socrates propounds a theory which still holds good, and which daily receives fresh illustration, namely, that all nature is in a constant state of flux, movement, and mixture, *ἐκ δὲ δὴ Φορᾶς τε καὶ κινήσεως καὶ κρασέως προς ἄλληλα γίγνεται πάντα*. Colour is propounded as a test of sense, followed by size and heat,^{*} by the effects of wine in sickness and health, by the facts of memory, and the value of general consent; until a definition of science is arrived at higher and more accurate in Plato's opinion than that first enunciated.

It is not, however, my present object to spend time in analysing this graceful dialogue. It

stands a monument of dialectic power, the work of a master mind—a mind so bold, so pure, and so far reaching; so singularly similar in thought, and even at times in language, to the writings of Saul of Tarsus, that there is ground for the fanciful idea which has been propounded, that Socrates may have been one of those half inspired prophets who, we are told, were occasionally granted to the Gentile world.

My object is rather contrast than commentary.

The two thousand and odd years which have rolled by since these thoughts were recorded, have changed, even inverted, their bearing and relation; so that what was rank heresy and sophism in the old metaphysician, may, it seems to me, if rightly interpreted, be a very watchword and symbol to the physician (I use the word in its etymological sense) of to-day. And I venture, in all humbleness, to call the following remarks, *Θεαίτητος δεύτερος*, or, a *Novus Theætetus*, in memory and admiration of the great English philosopher who adopted the same course, though on a far larger and grander scale, toward the chief logical work of Aristotle; I mean the ‘*Novum Organon*’ of Bacon.

Man, then, I assert, is, at least in science, the measure of all things. But let me at once disavow any low and materialistic interpretation of the axiom; to me it involves no petty cynicism, no attempt to drag down the highest thoughts of our nature to a miserable average of mediocrity, or to deny all but what is obvious to the meanest capacity. The typical man is the very highest and noblest impersonation the mind can grasp, short of what has been revealed: even revelation does not exclude the type; for, setting aside the mystery of the Incarnation as too solemn for such an occasion as this, the anthropomorphism which mingles necessarily with all man's ideas of a Supreme Being, is matter of old comment, and is not more apparent in the legends of Vishnu, Brahma, or Buddha, than it is in the Hebrew Scriptures.

It is then to the archetypal man, in his highest development, that we must make our final appeal. His convictions are law absolute, his senses the inlets of all knowledge. And here I at once join issue with those two men sitting beside the Cephissus. So vivid is the old picture, that one can never read the 'Theætetus' without longing

to add oneself as a third and unworthy *πρόσωπον* to the dialogue, and to say, Why this tacitly assumed antagonism between sense and science? Why the ill-concealed attempt to erect principles of spurious nobility out of facts which must have been ultimately derived from one of the five or six channels of the mind, and except through one of which the elaborated product cannot see light?

Throughout the argument runs a tendency to saddle sense with its separable defects and disorders. Colour, heat, size, memory, the action of stimulants, are all notoriously to be appreciated by relation, and in varying degree. But there is and must be a standard and modulus for each, to which we may appeal; though it is not discernible in equal degrees by all and every one, or even by the same, at all times and under all circumstances of health and sickness.

Here, however, we must fain leave the Cephissus, for their conception of sense is so vastly different from ours that they would not believe or understand us. In the difference lies the nucleus of this argument. Their eyes see a few miles with difficulty; their ears hear sounds

immediately around, and are gladdened by the flute, the plectrum, or the voice; their fingers touch objects within arm's length only; our fingers have power to record their lightest movement thousands of miles away across an ocean, and in a land which they know only by legend; our ear is tutored to the measured thunder of the ordnance, to the swell of the full organ, and to the rhythmic cadence of the fugue. Nay, more, our ear can follow the breathed air as it permeates the lungs, and trace the life-blood as it courses through the heart. Our eyes embrace things infinitely great and small, from the infusorial animalcule, or the blood-corpuscle, to the huge disc of Saturn, Uranus, or Neptune as it rolls through space. Nay, more, they can even break up light itself into its elements, and measure the retreating speed of the Dogstar, whose very distance figures can but ill express.

Mainly for these reasons I ask you to reconsider the whole question; for I submit that human senses are not in degree, hardly in kind, what they were in classic times, and even until very lately; so much are they aided, enlarged, corrected, and modified by the helps and mea-

asures with which science has furnished them.* There are so many landmarks laid down, so many standards determined by mathematical physics, that the proverbial error of the senses on which Plato descants, though it is still true of everyday life and of common observers, is fast being eliminated from scientific research. In this elimination, in this conscious and patient attainment of precision, it is essential that we, as men of science, should labour to take our part.

It is not only as a metaphysical axiom that the saying of Protagoras has worth. It is of even more value when transferred to physiology. Here, pre-eminently, man is the measure of all things; and I know of no proposition I should more impress on a beginner in medicine than the paramount duty of studying the healthy organism. Like the perfect intellectual man, the

* A good illustration of a mathematical standard derived from an unexpected quarter, and acting through a new sense, may be seen in the latest method of comparing the strain on the different parts of "Lattice Girders." The tension bars are made of steel wire of known dimensions. On setting these into vibration the musical note given out can be accurately tested against an instrument of known pitch. From this the number of vibrations per second, and the tension of the wire, is easily calculated.

healthy body is a type to which all morbid states must be referred. This is no otiose and theoretic dogma, but one which lies at the very root of good treatment and our daily duties. It was clear even to shrewd old Aristotle, who remarks that *ὁ ἰατρος οὐ τὴν νοῦσον θεραπεύει ἀλλὰ τόνδε*: the physician does not treat the disease, but this or that man. With all our boasted advance we have not got beyond this, some of us not so far. I need not refer to such palpable paralogisms as that involved in homœopathy, where every symptom, instead of being regarded as a disordered function, or the result of a morbid organ, is deliberately treated as a separate entity, to be opposed by a similar entity; but I refer to what one sees in current medical literature, where the most opposite modes of treatment are recommended for the same disease. In pneumonia, sometimes wine, sometimes bleeding, sometimes tartar emetic, sometimes expectancy; or in rheumatism, purgatives, mercury, colchicum, iodine, lime-juice, potash, blisters, and patience. In the light of our text the confusion becomes eminently simple, for we treat the man in whom the morbid process is set up,

not the process itself, which is often obscure, always intangible. Every remedy may be both needed and successful, only we must learn when and how to use them; and in this lies the very quintessence of a true doctor. The observations of Xavier Bichât, as recorded in his treatise 'De la Vie et de la Mort,' have always seemed to me of the greatest practical value. We have to combat the tendency to death; and the rough analysis into death, commencing at the brain, the heart, or the lungs, though perhaps not absolutely perfect and exclusive in all cases, tends to give precision to our thoughts, and affords excellent indications of the direction our therapeutic efforts ought to take.

There is another way in which man, as he comes before us, should be the object of our careful study; I mean in the attentive observation of shades of expression, or peculiarities of attitude. Such indications carefully watched for and closely observed may often furnish the missing link in a chain of symptoms, and materially help in attaining the accuracy of diagnosis which it is our life's purpose to arrive at. There is nothing in which ordinary men differ more

from one another than in this faculty of noticing significant trifles. In some the habit of advertency amounts almost to an instinct. It does so in women, perhaps, oftener than in men ; and it is one of the many advantages to be derived from their quiet, gentle, patient ministrations about the bed of sickness, that attention is often drawn by them to some delicate sign, at first seemingly trivial, but from which, farther on, important issues may arise. When I go back to my own student days, I can recall at least two whom the graceful old custom of our hospital permitted me to call Sister, to whom I owe many a good hint, and not a few grains of practical experience. Now that these duties are even more strictly and efficiently performed, it is more than ever the interest of the student, by courtesy and kindly feeling, to secure the good-will and co-operation of every one with whom he is brought in contact, whether in the sick-room or the wards.

It follows as a corollary from what has been said above that, if the senses are acquiring new powers of accuracy and minuteness through the aid of modern science, it is more than ever our duty to cultivate them and to expurgate their

errors. In the general appreciation of disease by objective symptoms there is, perhaps, fear lest we fall behind our predecessors; for undoubtedly the temptation is great to rush at once to the accurate, though limited, evidence of an instrument or a test without previously surveying its whole bearing on the case. Certainly the older school of practitioners did attain wonderful precision in what a late intelligent writer has named facial diagnosis. As a boy I saw pericarditis thus diagnosed without auscultation, and the opinion was confirmed after death. In this hospital I was at first amazed to see pneumonia detected and fever differentiated by the same method. I well remember the pleasure with which I began to feel a growing power of the same kind in myself, and I wish the pleasant experience to all beginners. It was not very soon, nor until I had made many blunders. False pride may deter us from these; but surely it is far better to make them early, under the kind and judicious correction of an experienced teacher, than to have them exposed, or, still worse, to feel conscious of their possibility when you are yourselves alone, and responsible in the

management of a case. If ever fatigue should steal over you in the exercise of your clinical duties, I should say to my brother students, Take the advice of one not many years your senior, and struggle against it. The immediate effort will be far less irksome than the sickening heart-rending feeling which will come over you some day as you stand beside the bed, perchance the dying bed of a fellow-creature, haply a dear friend or a relative, and feel that you have not used your best endeavour to master the questions his sickness involves, and that death may hang on your bygone negligence. The patient and the bystanders may not find you out, but your own conscience will, and that cruelly.

It is not, however, the great space-piercing sense of sight alone that needs cultivation in our department; but even more those of Touch and Hearing. In medicine the latter, in surgery the former, have vast predominance. We may almost deny that "seeing is believing," so much does our art depend on hearing, or, as we learnedly call it, auscultation. This sense, and that of touch in the majority of men, are sadly neglected, stifled, as one may say, by their big

brother Sight. I am emphatically no conjuror, or I would prove this instantly; but the proof can safely be left to those very small magicians the spirit-rappers and table-turners. Heaven defend me from dragging you or myself into this dirty gulf of twaddle and triviality. It shows a sort of epidemic credulity which is melancholy to contemplate, and a deeply illogical habit of mind in the bulk of men which would hardly have been possible in the time of Plato. Partly, I grant, impostors count on the successive shocks men's minds have received from the whirlwind progress of modern science. After railways, electric telegraphs, photography, and spectrum analysis, there is some excuse if feebler minds (and it is sad to find how numerous they are) give up all control of themselves, and, in a kind of moral intoxication, flabbily believe and reassert any trash which a needy adventurer acutely foists upon them. A sober philosopher of the practical sort, whose name is still fresh in our memories, puts this clearly.

“I am afraid,” says Sir Benjamin Brodie in his ‘Psychological Enquiries,’ “that we need not go back so far as the age of the Crusades, nor

refer to the disciples of Joanna Southcote, or the Mormonites, for instances of such credulity on the part of a considerable portion of mankind. We have indeed discarded our faith in astrology and witches; we pity the ignorance of the poor African, who, in a season of drought, seeks the conjurations of the rainmaker; we cannot well comprehend how it was that the civilised Athenians of the third century should have believed that marble statues would feel offended, and show their displeasure by leaving their pedestals and walking about at night. Nevertheless, with all our boasted wisdom, and all our advance in knowledge, there are at the present day many who believe in things not supported by better evidence than these. There are epidemics of opinion as well as of disease, and they prevail at least as much among the well educated as among the uneducated classes of society."

Besides the perfecting of individual senses, there is a department of sense culture which deserves fuller study and development than it has hitherto received; I mean what may be termed the intercorroboration of one set of im-

pressions by another, or by their correlatives in another man. Hardly anything has been done in this direction for medical observation, though its principle was suggested by Plato in the very work we are considering, when he tells us *ἐπισκοπεῖν καὶ ἐλέγχειν τὰς ἀλλήλων φαντασίας*—to revise and test one another's perceptions. This is habitually done by the astronomer in his tables of "personal error" for different observers, and is well combined with the education of the eye in the "judging distance drill" to which our soldiers and volunteers are trained. There should be an organized system of this nature in every good medical school; at present I only know of one where the foundation of physical diagnosis, the training of the eye, ear, and hand are carried on regularly as part of the student's curriculum. But I feel sure I speak to no unwilling audience in expressing a hope that such a class, founded on a basis of mechanics and physics, should be formed in the new and beautiful building to which we hope ere long to transfer our school.

Time would fail me if I endeavoured to follow the maxim of Protagoras into all its ramifica-

tions. In psychological medicine man is essentially the measure of all things; we have for a datum the general estimate of sanity as gathered from observation of mankind at large, and sanctioned by common consent. Until we have precisely limited this, our speculations must be vague as to the thousand aberrations which the mind, the most delicate and complex of our instruments, is subject to.

Statistics, whose influence on medicine is daily becoming greater, from the more accurate mapping out of their domain, rest on a kindred truth; for they are based on the singular law which runs through the most fortuitous and apparently variable actions and affections of man. In his birth and death, his health and disease, even in his crimes and misfortunes, there is a measure derived from himself, and rendered of practical use by reasoning back from the aggregate to the individual. Upon this standard we have succeeded in establishing the immense business of life assurance, a form of contract which, in spite of recent sad mishaps and gross mismanagement, I believe to be intrinsically sound, and of service to the community.

Fain would I wander in your company into the flowery regions of art, to show you the human figure pre-eminent as the type, modulus, and standard of all that is most beautiful in form and outline. But time wanes apace; and there is still one interpretation of the apophthegm which comes as matter no less of duty than of pleasure; I mean the pious commemoration of good and great men, our predecessors in this noble art, and themselves the measure which we should mete ourselves withal. Here, at St. Thomas's, we are the inheritors of an old name and a time-honoured reputation. I believe there is no better school in England, and there is something in a venerable foundation like this, which, to my mind, exceeds all pride of birth or dignity of mere genealogy. It represents, not a line of weak erring men, but a continuity of good works, a steady unbroken pedigree of helpfulness and benevolence. We who are taken into this family, like the *Asclepiadæ* of old, bear on our shoulders a proportionate responsibility. Beneath the shadow of our Royal Boy-founder's statue we are all, in some sense, the descendants of Mead, Fordyce, and Elliotson, of the Clines, Astley Cooper, and Cheselden.

Death, indeed, marks each and every year with its ravages. It seems but yesterday that our theatre echoed with the calm philosophic voice of Joseph Henry Green; the earnest yearning truthfulness of Richard Grainger; or the brilliant perspicuity of William Brinton. The past year has added one more to the list, a man who, whatever else he might be, was a thorough son of St. Thomas's. Gilbert Mackmurdo served long and faithfully; he gave his best powers to the Hospital, and was of an exceptional kindness to his younger brethren. He never forgot a familiar face; and there is many an old pupil, far away on duty, maybe in India or Japan, or sunk into the deeper solitude of a remote country practice, who, when the returning first of October recalls faint memories of student days, will give a thought, not ungrateful or unfriendly, to one whose place knoweth him no more.

We who remain, the brotherhood of St. Thomas no less than of St. Luke, should strive earnestly to model ourselves on the several virtues and excellences of those who have gone before. A few years will probably scatter us to the four corners of the earth; but it was here that, as in

the *λαμπαδηφόρια* of old, the Torch of knowledge was handed to us, which we are commissioned to carry bright and shining to the end of our pilgrimage;—and then to hand it down, undimmed, and unblemished by our errors or our indolence.

Let me, in conclusion, sum up the practical issue of the points adverted to. While in these later days we are entrusted with powers of perception, an insight into nature, and a control over external agents which the wildest dreams of ancient philosophy never contemplated, a task and responsibility is thereby thrown upon us far exceeding that of our forerunners, namely, the duty of cultivating and improving those augmented powers to their highest capability.

Although I have thus in a manner made the panegyric of sense, it has been, throughout, sense fortified by sound preliminary training, tested with mathematical accuracy, and guided by logical method; subservient, therefore, in one aspect, to law, which, as ably defined by the Duke of Argyle, is, perhaps, the best modern equivalent for the subject matter of Plato's *Ἐπιστήμη*. It is in the very grandeur of our

recent acquirements, in the very grasp and extent of our late speculations, that lie their greatest risks. Hence an increasing grossness of error, and the growth of wilder heresies and misconceptions.

It has seemed not inappropriate to insist upon these propositions in an inaugural lecture. For in science, and especially in our branch of it, we are all alike and for our lifetime students, gathering pebbles of information beside the great undiscovered Ocean of Truth. But though the vast stores already accumulated are disheartening, and universal knowledge has become a chimera, let us be of good courage; by the assiduous culture of the senses and faculties with which we are gifted, it may perchance be allowed to each one of us to add our contribution to the sum of medical or physiological discovery. By so doing we shall fulfil our final purpose, we shall help in the great work of relieving the sick and suffering among our fellow-creatures, and do honour to the ancient and beneficent foundation which some of us this day join as novices.



