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Title pages

William Black

AN ARITHMETICAL AND MEDICAL ANALYSIS

OF THE

DISEASES AND MORTALITY OF THE HUMAN SPECIES

LONDON 1789

Key passages

INTRODUCTION.

ABOUT one century only has elapsed since the first introduction and analysis of bills of births and mortality, in order to ascertain arithmetically the value of lives and annuities; and it forms a most interesting epoch in politicks, commerce, philosophy, and medicine. The prospects of life and death are calculated with the same exactness as the chances on dice, or the blanks and prizes in a lottery wheel. This science, however, had been employed merely for the purposes of politicks and traffick; none of the systematick medical authors, to the present day, having ever converted it to the advantage of their own profession, and of the community, medicinally. I believe the first dawn of medical arithmetick, in illustration of diseases, will be found in Dr. Jurin, and was the last resource in support of inoculation, then in its infancy, but vilified in print by physicians and divines. It was by demonstrating in numbers the comparative success under inoculation, and the natural disease, that this inveterate conspiracy against the practice could be defeated. Since that time, several fragments of medical

arithmetick are dispersed in the miscellanecus writings of Dr. Short. It has also been prosecuted with indefatigable industry by Dr. Robinson of the navy, and Dr. Millar of London, on the subject of fevers, in various parts of the globe, and the comparative success by different febrile remedies.

Those who are acquainted with the history of arts and sciences, will not be surprized at the rancorous opposition against medical arithmetick. Such has been the fate and first reception of many other useful discoveries, and of the most enlightened reformers and benefactors of mankind. The medical profession alone furnishes us with many hundred proofs of this malignity of human nature, this confederacy of knavery and ignorance. The circulation of the blood, and the Peruvian bark had each these hostile combinations and persecutions to encounter. With respect to medical arithmetick, what time must yet revolve before ignorance and bigotry shall be enlightened, prejudices and inveterate habits done away, envy, malevolence, and calumny silenced, I cannot determine.

Of this I am convinced, that it would be a most fortunate circumstance for medicine and mankind, to whose benefit the profession should be subservient, were the parliament of Great Britain to examine physicians on every disease, as they have lately done on the unfortunate malady of a Great Personage. The utility of the arithmetical system would then be as universally conspicuous throughout every disease, in any great emergency, as it was in insanity, or as it is in politicks and commerce.

In defence of the arithmetical system, and heretical innovation which I have endeavoured to incorporate with medicine, I solicit no more than a fair trial, enlightened judges, and an impartial verdict, according to the evidence and merits. I flatter myself, that I shall be able, by its assistance, to refute the assertion of a great Orator in parliament, immediately after the second examination of the physicians on the disease of a Great Personage; which was, "that medicine is a conjectural science, and insanity, above all other diseases, the most conjectural in the science." Without numerical data, there is too much truth in Mr. Fox's detection and exposure of medical penury and ignominy, which is not singular, nor new. But that disease, which, above all others, is universally thought the most difficult and conjectural, I have particularly singled out, both on account of its importance at this extraordinary crisis, and to prove the immense utility and extent of medical arithmetick; and, in this instance, to put it to the most severe test and trial. In this and other diseases I have broken open several fountains of truth and medical knowledge, which had lain concealed.

The great utility of medical arithmetick was an accidental discovery, at least to me, about eight years ago: for in the course of many preceding years attendance on medical lectures, at different universities, I never once heard the subject mentioned. I then found in London a violent literary warfare, respecting the advantages and disadvantages of general inoculation, especially in cities.

That learned physician Dr. Arbuthnot, in his preface to Huygens, "de ratiociniis in ludo aleæ," says, "There are few things which we know which are not capable of a mathematical demonstration; and when they are not, it is a sign the knowledge of them is extremely small and confused; and when a mathematical reason can be had, it is as great a folly to make use of any other, as to grope for a thing in the dark, when you have a candle standing by you."

The analysis, on an arithmetical plan of the public registers, not only of births, burials, and diseases, but likewise of the collected records of hospitals, dispensaries, and individuals, are overlooked by all the modern systematick authors. They leave us equally ignorant of the aggregate, or comparative number, or the force of those fiends which haunt and ravage the globe. To speak metaphorically, in medical books, the extensive desolation of the most rapacious tyrants and conquerors are confounded with the uninteresting history and petty deprivations of a robber. The professors of medicine hitherto have been combating enemies, without ascertaining their comparative number or devastation.

Every one knows, that from his prognosticks, which are confined principally to fevers, the father of medicine, Hippocrates, was idolized in Greece, and is revered by posterity. I am aware of the imputation of heresy, in calling the aphoristick prognosticks contracted and pinned. Without medical arithmetick it is impossible to reach the "grandeur of generality," the sublime of medical divination. In order to form general propositions of the ratio of mortality at various ages, and as influenced by climate, local situation, diet, drink, luxuries, customs, manners, professions, &c. of the absolute and relative havock by different diseases; and as influenced by age, cause, and duration of the malady, together with the most successful modes of cure, we should extend our views far beyond the narrow bounds of a parish, or even of a province; we should include an interval of many years, collective numbers, large groupes of mankind, and of morbid cases.

Again, when opinions are litigated in either medicine or surgery, and a thousand different leaders hoist their separate standards, assigning different causes, prognosticks, and modes of cure, what tribunal can possibly decide truth in this clash of contradictory assertions and conjectures; or by what clue can medical wanderers find their way through the labyrinth of prognosticks and therapeuticks, except by medical arithmetick and numbers? Perhaps some would here answer, the best authors should decide the controversy. Who are they, ancient or modern; of what nation, university, metropolis, party, or sect? To borrow Moliere's satirical expression, Hippocrates often says Yes, and Galen flatly No. The system of medical arithmetick, although it may not shew the best mode of cure that may hereafter be invented, it will, however, by comparison, determine the best that has yet been discovered, or in use. By this criterion we should prove our superiority over the physicians of the Continent. For as to our superiority or excellence, even if founded in the collateral branches of general science, it is of no consequence to the community. Physicians have been too long running astray in speculative or frivolous employments of philosophick drudgery. They can scarce yet be said to have liberated themselves from the reins and fetters of ancient or of modern metaphysics.

Medical arithmetick establishes on a solid foundation a multitude of the fundamental principles, or primary orders, of medical architecture; and erects platforms for completing the entire superstructure. The lumber and mountain of ponderous systems heaped together from Galen down to Stahl, can only be compared to Egyptian pyramids. In its most extensive application, medical arithmetick may be termed what trigonometry, geometry, and the telescope are to the arithmetician and astronomer, or the compass and quadrant to the navigator. By means of it, the highest and infinitely the most useful branches of medicine, the active and practical, may be rendered as certain as any other branches whatsoever of philosophy or science. This prosecuted throughout Europe, and the combined information contrasted, assimilated, and harmonized, seems alone to be wanting, to emancipate our profession from metaphysical infatuation, and the sneers of conjecture. There would be no difficulty to prove, that the analytical, metaphysical, and extemporaneous systems, from Hippocrates to the eighteenth century, are all defective and erroneous in the plan, materials, foundation, and fabrick. In the figurative stile of comparison, we must however confess, that the bricklayers have infinitely surpassed the architects.

The supposed innumerable varieties of fevers, and from which perplexity Sydenham could not altogether extricate himself, is now disproved by repeated experience, and by the infallible efficacy of general remedies. It is, however, as yet impossible to fix any definite medium or average of mortality in the above genera of fevers, whether remittent, nervous, putrid, or inflammatory. We have, within these few years, authentick records, wherein, under judicious and skilful treatment, of 200 sick in both remittent, nervous, and putrid fevers, only one or two *per cent.* died.

Nor was this success confined to European climates only; but extended through the tropical regions: whereas, under different and erroneous management, one half, and often the greatest part of the sick perished. The proof of these assertions may be seen in those learned authors, Lind, Millar, Robinson, Clarke, Lettsom, Sims, and others.

Not only in London, but throughout Britain, and throughout the globe, perhaps nine tenths of the fevers are of the remittent, nervous, and putrid type, and not of the simple inflammatory. But I exclude from this calculation the following exanthematous order, and the topical inflammations. The false lights hung out successively by multitudes of authors, and transmitted, in some degree, through the Boerhaavean school, to steer with the antiphlogistick compass and lancet in each hand, in the generality of fevers, have been the cause of numerous shipwrecks. Even that excellent modern author, Pringle, as Dr. Millar demonstrates, must, in this instance, be followed with extreme caution.

Throughout the intire morbid host of human foes, there is probably no such flagrant variation in the therapeutick barometer, or scale of mortality, as in that of the fevers hitherto described. Different curatory processes and remedies soon change the natural genus, symptoms, crisis, prognosticks, and event. No dangerous diseases almost whatsoever, are more successfully oppugnable under discreet medical regimen; and when entrusted to nature, from the days of Hippocrates to the present time, they have ever been extremely fatal. Sorry I am to add, that, perhaps in many instances, the errors and fatality of nature, have been less destructive than those of artificial and therapeutick mismanagement. Since the discovery of antimonials and Peruvian bark, the more liberal use of wine, and fresh air, and more sparing exercise of the lancet, few now, under skilful medical pilots, die, compared to the multitudes of sick: but still in the aggregate list of funerals, amounting to 780,000 annually in Europe, it may be doubted whether any other of the morbid foes commit such ravages amongst mankind.

TO THE READER.

WE are obliged to cut off the remainder of our comments, amounting to fifty pages, which would have completed, on our plan, the universal survey of the diseases, casualties, and mortality of the human species. The index ascertains the omissions. Under Gangrene I should have discriminated the ages, causes, mortality, and as originating from spontaneous corruption, external injuries, or surgical operations. Under Fractures I should have gauged the cures and miscarriages after the trepan and amputation; discriminating, at the same time, between sudden accidents and chronic diseases. This is a most important part of military surgery, and in a great measure unexplored. Through abscess, ulcers, and sores, of which there is such an overflow in our hospitals; and throughout cancer and lithotomy likewise, I should have applied the sure and certain test of medical arithmetick.

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