Cottell (H. A.)

The Medical Millennium.

The Doctorate Address of the Medical Department of the University of Louisville, Session of 1894-95.

By H. A. COTTELL, M.D.

Professor of Medical Chemistry and Microscopy and Clinical Diseases of the Nervous System in the University.

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THE MEDICAL MILLENNIUM.

THE DOCTORATE ADDRESS OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISVILLE, SESSION OF 1894–95.

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I love the young. They are the "heirs of all the ages." They are the delight of the present and the hope of the future. Civilization and society are to-day what they are because of the advent of the young. How wonderful, how beautiful, is the complete life! It comes in like the morning, fresh and fair, in garments rosy and golden. It waxes to noontide in robes agleam with the full, white light of day, and it gently wanes to its setting in vesture of mellow, dissolving tints.

As the world goes, young men are naturally divided into three classes—they who float, they who retrograde, and they who advance. Like drift upon the river, some move upon the surface of affairs. What their fathers were, if it be easy, they are content to be. They float their little distance adown the stream of time, obedient to every current, the sport of every eddying whirl, and should their lives develop any thing of note it is incidental or accidental.

Like meteors pulled from their course by Earth's superior attraction, others become the slaves of passion and animalism, and, as meteors take fire when they traverse the earth's atmosphere, so these scintillate as they disintegrate in the downward plunge to death.

Like earnest travelers, others set out upon the doubtful journey of life. They wish for something better than they have known, and they push into the unknown with courage, with strength, and with patience. They know full well the difficulties and dangers of the way; the dreary forests, the stony paths, the barren wastes, the steep ascents, the hidden pitfalls, the yawning chasms, the raging torrents, and the thundering avalanches which must be traversed, overcome, avoided, or escaped. But yonder is the mountain of their hope, fair in the purple distance,

and here and there along the way are the footmarks or the blazemarks which show that others have made the journey, and on the mountain is the temple of success, perhaps of fame. So the travelers toil on, and in toiling become telling factors in the affairs of men.

Gentlemen of the graduating class, with these last I rank you, and bid you full welcome to the profession of medicine. You have joined an army more noble than any which followed Hannibal, Alexander, Cæsar, Napoleon, or Wellington; than any which ever wasted or defended a country, for your office is to save life, not to destroy it; to keep the "temple and the tower" in peace, not to cast them to the ground.

And now, looking down the vista of your long future, let each one of you try to see himself moving there as he would like to be seen. If you go there masked, or as the player of a part, the sham may work, but not for long; for "life is real, life is earnest," and as your object is, so will your movements be. One sees himself pursuing wealth, another sees himself following fame, but each must see a man not afraid of work nor discouraged by reverses.

How many doctors are rich? Few, indeed; and these few as a rule have secured the treasure at the hymeneal altar. As for fame, it is far more difficult to gain than wealth; for Fame is a maiden more coy and more indifferent to the addresses and protestations of her lovers than any heiress who ever wasted her goodly treasures upon a fortune-hunting doctor.

The physician who aspires to eminence among his contemporaries may attain it if he be healthful and strong enough to win it by incessant labor through long and doubtful and discouraging years. But eminence in his own day gives him no hold upon real or posthumous fame. Says Carlyle: "It is good to understand that no popularity and open-mouthed wonder of all the world, continued even for a long series of years, can make a man great. . . . Popularity is as a blaze of illumination, or alas! of conflagration, kindled round a man, showing what is in him, not putting the smallest item more into him, often abstracting much from him, conflagrating the poor man himself into ashes and *caput mortuum*. And then, by the nature of it, such popularity is transient. Your series of years quite unexpectedly, sometimes almost on a sudden, terminates; for the stupidity of men, especially of men congregated in masses round any object, is extreme. What illuminations and conflagrations have kindled themselves as if new heavenly suns had risen, which proved only to be tar barrels and terrestrial locks of straw!

Profane princesses cried out, 'One God, one Farinelli!' and whither now have they and Farinelli danced?" So wrote the philosopher of Craigenputtock of what were once called great artists and literati, and the same may be said, but alas! with greater force, of what are called great physicians and surgeons.

Let us consider some of the greater names in our profession and note if there be not many of whom you have never heard. Æsculapius was a demigod in pre-Homeric and Homeric times, and a myth in later classic and sub-classic days. Of the Asclepiades, Machaon and Podalirius owe their places in the files of time to the fact that Homer mentions them in his poems. Machaon extracted arrows, sucked the wounds, and spread upon them the "healing medicaments." He was in high esteem among the Greek heroes at the siege of Troy, and his skill in surgery was made the point of a moral by the aged Nestor in the famous lines:

> "A wise physician, skilled our wounds to heal,
> Is more than armies to the public weal."

Podalirius had his fame much augmented by a lucky accident. Being cast on the shores of Caria at the close of the Trojan war, and being presented to the king, whose daughter was sick, he conceived the brilliant idea of bleeding her. The princess survived the treatment, and Podalirius secured her hand in marriage, with a rich grant of land. Thus he is named in history as the inventor of phlebotomy, and seems to be the first doctor who proved a successful fortune-hunter among the fair. Machaon and Podalirius are euphonious names in the history of early medicine; but they are doubtfully genuine, and it can not be proved that they left behind them any thing of permanent value.

Hippocrates is really a great name; a mighty pinnacle standing sublime and sunset-flushed among long ranges of hills and lesser mountains. He had, however, the royal privilege of writing the first treatise on the healing art, and therefore he would have been called the father of medicine and esteemed great, even if he had been a man of small intellect instead of the genius that in truth he was. But to-day, while his teachings are a gulf-stream in the sea of medical thought, his writings are little known. Few physicians can read his works in Greek, and fewer care to possess them in vernacular translations.

Celsus, the Latin physician, closes the classic era of medical literature, and Dioscorides begins the Christian era. They were great men, indeed, but notable mostly in the fact that nobody now reads their works.

Galen, the last great physician of antiquity, wrote many volumes, which save his name from oblivion. Indeed, he founded a school in medicine. But his classic books lie unread of this progressive age and moulder in musty libraries. A scholar and a brilliant professor in medicine, who often mentioned in his lectures the name and teachings of Galen, did not know that he was born in Pergamus, and that he wrote his works in Greek.

From the beginning of the eighth century of the Christian era till the beginning of the nineteenth century the list of great names is very long. Their writings and their teachings are interesting to the medical historian and antiquarian. But the most that can be said of most of them is that Fame, like the Royal High Executioner in "Mikado," "has got them on her list," and if she should lop off their pseudo-immortal heads, "they never would be missed." Let us march a few of the more distinguished of these worthies out of the shadows, and note how many of them are slight acquaintances, strangers, or names and nothing more: Paulus Ægineta, Backtishwah, Ishak Ben Solieman, Howell, Avicenna, Arnold, John of Gaddesden, Rabelais, Paracelsus, Ambroise Paré, Servetus, Vesalius, Valsalva, Fallopius, Harvey, Sir Thomas Browne, Malpighi, Lower, Leeuwenhoek, Swammerdam, Nuck, Boerhaave, Santorini, Morgagni, Havers, Cullen, Pott, Louis, Meckel, John Hunter, Scarpa, Ed. Jenner, Hahnemann, Abernethy, Larry, Abercrombie, Laennec, Bright, Addison, Sir Charles Bell, Velpeau, Graves, Duchenne, and following these the host of original workers who, after the idol-breaking of the French Revolution and the intellectual awakening which ushered in the century of grace wherein we live, have placed medicine upon a scientific basis and made their names familiar as household words.

To conserve their fame not a few have had the good luck to have their names attached to certain anatomical organs or diseases which they first described or discovered, and, as Dr. Holmes has put it, "the name goes rattling down the ages with the disease or the discovery like a tin pan tied to a dog's tail." And thus the tin pans labeled Bright, Addison, Pott, Bell, Graves, Basedow, Duchenne, Meniere, etc., get scoured into new luster with every diagnosis of the diseases which bear them. The student of anatomy is not likely to forget Vesalius after noting that his foramen in the sphenoid bone is not large enough to hold a pin whereon to hang the label that keeps the discoverer's name in remembrance. He can never pull open the only valve in the brain, but forsooth

he must pull up with it the name of Vieussens from memory's vasty deep. Nor will he be unmindful of Hugier or Havers after a sail in fancy through the canals whose vapors keep their names from desiccation in the cells of memory. At the same time he wishes that Nuck had been given an overdose of nux vomica before he found the canal which the most careful dissection generally fails to reveal. He knows not whether Arnold was a Benedict or not, but he wishes he had been enough of a traitor to Science to have left untraced the auricular branch of the pneumogastric nerve. And he would feign that Jacobson had been a daughter and trained to simple domestic duties instead of the man-child who developed into the minute dissector who traced out the little thread-like nerve that makes the tympanum a drum to sound his fame adown the ages. He prefers the current jellies of bacteriological culture media to that which makes the name of Wharton a film upon the mnemonic cells of his cultured brain.

The love-lorn student can never meditate upon the subtle mysteries of the human heart without recalling the great name of Valsalva. He wonders if the crimson-flooded sinuses in his fair one's heart are holding his memory with such a fealty as the heart of every subject in the dissecting-room must hold the memory of the great anatomist. If she prove untrue, he deems the dereliction due to the baneful influences of the fatal tubercle, and as passion's tempests Lower the name of Sœmmering grows green in memory as he fixes with jealous eyes his yellow spots upon the hated visage of his successful rival.

The name of Henle he holds in sweet recollection when he reflects upon the service that the loops have afforded him in threading the renal labyrinth. But he doubts the truth of the Scottish proverb that "it takes many a Meckel to make a muckle" in contemplating the complexities of the sphenopalatine ganglion. He drinks to the health of all the immortal host of anatomists in liquors more stimulating and refreshing than that of Morgagni, and, wishing that Scarpa had angled for trout instead of anatomico-surgical spaces, he calls into service the long, external respiratory nerve for a full breath and a big sigh of relief as the Bell is rung which drops the curtain upon his anatomical studies.

The truly great names in the list, if greatness is to be measured by the far-reaching worth of their discoveries, are Harvey, Hunter, and Jenner. The first discovered the circulation of the blood, the second made surgery a science, and the third unearthed vaccinia, whereby he rendered harmless the most fatal and loathsome of epidemic diseases.

Servetus was also a great man. He discovered the minor or pulmonary circulation, and his fame should have rivaled Harvey's; but, alas! for human endeavor, the chief claim to notoriety that Servetus seems to hold to-day is the honor of having been burned for a heretic when John Calvin ruled Geneva. In our time may be added to these great names those of Virchow, Graefe, Charcot, Lister, Pasteur, and Koch; and they, with that ancient pinnacle, Hippocrates, shall stand high and resplendent in the light of truth when the hills and the lesser mountains of names and fames medical lie leveled by the hand of Time.

Be ambitious, young man! Aspire to be great; but forget not that the lust for fame is vanity, and that he who follows after fame need not be disappointed if, too late to retrace his steps, he finds himself in the bogs, and not upon the shining heights of life, with a will-o'-the-wisp vanishing into thin air under his nervous grasp.

Since wealth is fickle and fame is vain, what shall the young doctor place before him as the worthy object of his life-long endeavor? The cause of a common humanity. For an honest man, however humble, striving to do his work in the world, will ever be an object of affectionate regard to him who meditates deeply upon the mystery of life.

Says Huxley: "We live in a world which is full of ignorance and misery, and the plain duty of each and of all of us is to try to make the little corner he can influence somewhat less miserable and somewhat less ignorant than it was before he entered it."

In this era of our worky-day world every thing seems to be giving way to business and the things that make for gain. The poets are little read, art finds but slim support, and science would have as poor a show as it had in the days of the Borgias or of the Spanish Inquisition if it were not that men have found out how to make it contribute directly to material prosperity.

This is the age of mechanical achievement, of steam and electricity, of telephones, phonographs, and kinetiscopes. Never was the inventive genius of man, in things which make for wealth, at such high tide as now. The devices, the inventions for saving man labor and making him rich are marvelous in our eyes, and will be the wonder of the coming ages. But are we not too rapidly exhausting the resources of the world? The noble forests, "God's first temples," where our fathers worshiped God and first pronounced the creed of liberty, are going, and will soon be no more. The streams which once drove our saws and turned our millstones and spindles are too weak to compete with

our mighty steam-engines, and waste their force as they wander seaward. The wind besieges the hills or blows over the meadow sweeps in vain, no fans inviting it to become what it is willing to be, the servant of man. The mighty pulses of the sea are wasted in beating the sands and rocks of the shores, while the coal measures of the earth are plundered daily of the millions of tons required to feed the hungry furnaces of the factories and mills of industry over the civilized world. But when we reflect that the best boilers and engines ever constructed waste at least 70 per cent of the force disengaged by the oxidation of the coal in their furnaces, and that on an average the waste is from 95 to 97 per cent, we may well pause and consider if our boasted material progress is not, after all, like a blazing pine torch, brilliant, indeed, but brilliant only because of its rapid destruction.

In this are we not robbing posterity? For, certain as this waste of power goes on for a few centuries, the coming man will have to find new sources of kinetic energy or go back to the simple devices of primitive civilization. And after all does our boasted material progress mean real progress for man? Are not the rich only made richer thereby and the poor poorer? Are not men of this day dividing into two classes, the rich master and his laboring slave? He who does not see this has but to reflect upon the doings of the labor organizations and the recent strikes, the occasional puffs of smoke, the low mutterings of subterranean thunder, and the earth tremblings, which seem to presage a tremendous volcanic upheaval.

But great upheavals may make new continents. Out of compost grow fair fruits and flowers. Through fermentation of the blood of the grape cometh the mellow wine. The golden age of science has been ushered in, and the prophetic eye can see in the dappled east the rosy flush which betokens the dawning of the medical millennium. For side by side with this material progress is the advancement of your profession. Instruments of precision have been put in the doctor's hands which make possible diagnoses and surgical operations never dreamed of by our fathers. In addition to this medicine has made such advances through recent discoveries in bacteriology and in serum therapeutics, and has acquired such facilities in hygiene and in prophylaxis, that epidemics are getting to be things of the past, while the list of preventable diseases is wonderfully extended. Yellow fever respects the mandates of quarantine, and cholera and the plague do knock in vain at Hygeia's sevenfold-bolted doors, while those subtler sporadic diseases that prey on individual vic-

tims here and there have had wrung from them the secret of their power, and must sooner or later surrender unconditionally to science. Diphtheria, that fell destroyer of young life, has, like the Sphinx of Thebes, at last encountered an Œdipus who can guess her riddle, and must soon submit to chains, if not to death. And consumption, more dreadful and more dreaded than the Gorgonian Medusa, has been tracked to her dark, secret hiding place, and must be slain.

Upon the walls of the oldest church in a neighboring city is a tablet bearing this melancholy inscription: "In memory of James Wade, who died on the 7th day of October, A. D. 1795; Nicholas Everett Wade, who died on the 31st of November, A. D. 1795; Sarah Everett Wade, who died on the 18th day of December, A. D. 1795; Stephen Wade, who died on the 22d day of December, A. D. 1795; Noah Wade, who died on the 20th day of October, A. D. 1806, children of David E. and Mary Wade; also Mary Wade, consort of David E. Wade, who died on the 28th day of April, A. D. 1811."

It does not take a seer to read in these solemn lines the doings of tuberculosis a hundred years ago. It is a history repeating itself in the memories of us all till hope grows weak and the heart sick. Can we not go back a century and weep with that mother who, like Niobe, saw her children slain by arrows more deadly than those of Artemis or Apollo. The consort of her young life and love gone many years before, chased into the shadows by the same destroying demon, and the children which love had seemingly left to be the stay and comfort of her advancing years, withering one by one, like roses blight-smitten when the buds gave fairest promise of fragrance, bloom, and beauty. In vain were tears and cries and prayers; in vain were drugs, charms, amulets, and simples; in vain was her journey to the wilderness upon the banks of the beautiful Ohio. No priest could placate with sacrifices the angry god. The decree had gone forth, and the fair victims, each in his turn, were pitilessly slain.

Such comfort as religion and poetry could give, this mother had; but we know too well that she went broken-hearted to the grave. There are many such death-wasted and disease-blighted families to-day, but science speaks to them words of good cheer. She shall pluck the arrows from the quiver of the implacable destroyer, and say to the fond mother there shall be no more weeping Niobes because of the ravages of consumption, "in Rama" no more "lamentations and weeping and great mourning, Rachel weeping for her children, and refusing to be comforted because they are not." Medical science has mastered

the problem of eliminating phthisis from the causes of death, where, like a fury on a mountain of skulls, it stares the statistician out of countenance and issues death warrants for more victims than are slain by all the wars, pestilences, and famines of the earth combined. That tuberculosis can be stamped off the face of the earth is a hygienic possibility, and when mankind shall become as much in earnest in securing health as in securing wealth it will be done.

The great problems in medicine to-day are hygienic, not therapeutic, though therapeutics seems to be getting the better of diphtheria. The most desirable thing in the affairs of man is, first, the making of people healthy, and, second, the making of them happy. The dyspeptic Puritanism which whines over the necessity of suffering as a means of grace can have no place in a superstition-free and scientifically-enlightened philosophy. What we want, and what hygiene is yet to give us, are comfortable homes for all mankind, aseptic alike of the germs of zymotic disease and of the taints of the common vices, where noble and healthful men, noble because they are strong and healthful, and sweet and beautiful and healthful women, beautiful and sweet because they are healthful, shall rear their little families of disease-unblighted children, happy because healthful, and giving promise of future attainment in the good, the beautiful, and the true, promises which shall not be broken because hygienic medicine has made the keeping of such promises possible.

The classic Greeks well understood the necessity of hygiene, but, as they had no science to solve the problems for them, their methods were often cruel and at best only partially effective. They destroyed the sickly and weakling children by exposing them in the forests, where they died of starvation or became the prey of wild beasts. For those that were considered fit to survive they prescribed temperance in diet and the most invigorating physical culture. The result was a race of men and women the like of whom the world had never before seen, nor since has seen. A walk through Attica, or Peloponnesus, or down the lovely vale of Helicon, in the palmy days of Greece (could he have been there), would have brought the blush of shame to the cheek of any modern lover of his kind; shame at the thought of what man is in comparison with what he could be. Noble and strong and beautiful men and women were seen on every side, and with this physical perfection went hand in hand a mental strength that needed only the sweetening and restraining influences of a true religion to have made them

as strong and as beautiful in morals as they were in body and in mind. What they did in war let Marathon and Salamis and Thebes and Thermopylæ attest. What they did in literature and in art the world ever since has been trying to do, but alas! in vain. But, having no science to guide them, cholera, yellow fever, and the plague blew out of the Levant the breath of death upon them, and phthisis and other diseases invaded their fair ranks.

Hygiene is the glory of modern medicine, and her glory will brighten with the age that the centuries shall put upon her. Not only shall preventable diseases cease to be, but many affections now deemed inevitable must also cease to be. For the time shall come when all victims of hereditary disease shall be barred by statutory law from reproducing their kind. Of course it will be said that such legislation would put an embargo upon personal liberty; but if this were true the embargo would be off in a few generations, to the lasting good of the human race. Nor is it too much to hope that, under the scientific enlightenment which must come in the onward march of truth, the victims of hereditary disease will rise into fuller and higher liberty and refuse to be the mediums of the descent of disease to coming generations.

You will not live to see the millennium which I have attempted to describe, but you may do much by your work and teaching and influence among men to hasten the glorious dawning. For in the higher reading of the law of the survival of the fittest these seemingly utopian ideas are scientific truths, and that they will be fully realized no doctor with faith in medicine and faith in the final triumph of good can for a moment doubt.

When Fielding's traveler from this world to the next had gone some distance through hell he expressed to his guide surprise that he had seen no physicians there. The guide gave him a knowing look and told him not to go too fast. Said he: "Hell appears just now to be without doctors because they are all over in the City of Diseases holding a convention for the purpose of devising some way of purging the soul of its immortality." The doctor in the flesh may be laughed at to-day by the satirist as indulging in utopian visions of disarming disease and extracting the sting of death, while in fact disease rages on every hand and the undertaker has enough to do.

The most poetic hygienic dreamer knows full well that diseases of degeneration will always be, and that "all that live must die, passing through nature to eternity." But he knows also, as no one else can

know, that in the fullness of time, under the fuller knowledge to come, every infectious and contagious disease will cease to be. To further "this consummation" is distinctly the duty of every young man who espouses medicine. Keats, telling what the poet should be, says:

> "'Tis a man who with a man
> Is equal, be he king
> Or poorest of the begger clan,
> Or any other wondrous thing
> A man may be 'twixt ape and Plato."

To the good physician the meanest and weakest and worst member of the human family is a brother, whose sufferings must be assuaged or mitigated, whose vices must be corrected if possible, and whose soul must be started on the upward journey to the higher spiritual spheres. You may go in and out among the rich, but if you are worthy of your calling much of your life will be passed among the poor, whose heartfull thanks, with your own sense of duty done, will be your only but sufficient reward.

With such a heritage as medicine gives you, and such incentives to work as it holds out to you, consider well, young man, what you shall do. What part are you to take in the mighty work? Will you turn your profession into a mere means for acquiring money, thus making it a business simply? Will you angle for popularity or fame? Or will you hold the office as one of priestly function, and, planting yourself upon a broad philanthropy, resolve to do your full duty to medicine and to mankind, be the result wealth and fame or poverty and a name unknown?

The young physician who makes this vow and is faithful thereto goes forth into a world of sin, ignorance, and suffering the noblest of missionaries and a ministering spirit of archangelic dignity. "*Gedenke zu leben*," said the great Goethe. "Yes, 'think of living.' Thy life, wert thou 'the pitifullest of all the sons of earth,' is no idle dream, but a solemn reality. It is thy own; it is all thou hast to front eternity with. Work, then, . . .—'like a star, unhasting, yet unresting.'"

LOUISVILLE.