

# THE BRIDGE

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*"The Bridge thou seest,"* said he, *"is Human Life; consider it attentively."*—ADDISON.

## I

JOSEPH Addison's "Vision of Mirza" has stayed with most of us since our schooldays. The bridge with its broken arches still spans the dark rolling tide which seems to come out of an impenetrable mist, and flowing on loses itself in similar obscureness. Countless multitudes are engaged in the perilous business of traversing the bridge, but they are constantly dropping through the structure into the rushing tide, and are carried onward to the vast ocean now darkened from our sight. None ever reaches the other side. The greatest fatalities are among those just entering upon the bridge, as if they were unaware of the hidden trapdoors and inexperienced in the art of picking their way and avoiding danger. Towards the middle, the procession maintains a less broken march, although often harassed by armed persons who frequently force marchers on the trapdoors and into the tide. Towards the end, the casualties are tragically heavy, and while a very few keep up a sort of hobbling march even on the broken arches, they drop through, one after another, as if wearied and worn by so long a march. A peep at the happy landing place of many of the victims is vouchsafed in the vision, and a rather depressing suggestion as to the whereabouts of the others.

When we come to interpret the allegory, we find ourselves most concerned with the activities on the bridge itself. For it represents human life. The trapdoors and all the dangerous persons and devices are the accidents, wars and diseases that rob individuals of their essential right to travel at least their three score and ten arches. The claim of the human unit to so much earthly existence is as inherent and fundamental as that of the plant which, evolving from the seed in the Spring, goes on to flower and fruit, and returns to its constituents of earth and air and water in the Fall. When it fails in this short cycle, something has gone wrong. The seed was defective perhaps, the soil unsuitable; it lacked proper care in its tender weeks, or it may have been robbed of its birthright by preying animals or violent disturbances of Nature.

Such process of growth, maturity and decay is as inevitable in the life of the human being as it is in the plant. The similarity

is most obvious and striking; and were it not for a deep-seated conviction that the best of our being shall go on as a separate entity when the bodily part has devolved to its constituent elements, there would be more truth than poetry in addressing the lilies of the fields as our sisters and fraternizing on equal terms with the pines and hemlocks.

Touchstone, whom the melancholy Jaques described as a "material fool", probably spoke more wisely than he knew, when gazing upon his dial he waggishly commented on the passing of time:—

And thus from hour to hour we ripe and ripe,  
And then from hour to hour we rot and rot,  
And thereby hangs a tale.

The tale has been told with no material changes since Adam's day. Physical growth stops at maturity, but a general development or ripening goes on to middle age; after that, the process is one of degeneration—a certain type of dry rot. It is, however, almost as slow as the ripening process, a fortunate circumstance in the economics of human effort and progress, for much of the wisdom of the ages is garnered while mankind is creeping down the Western Slope. When Death closes the normal span of life, it performs its destined function. Death from old age is in every sense the fulfilling of the natural law, and the transition is easy and probably painless. The multitudes that dropped into the tide at the further end of the bridge are not represented as grasping at everything about to save themselves. Rather did this resistance appear among those who had still a goodly part of the way to travel.

The activities we call Life find their play in the soft protoplasmic matter of the body cells. We begin in jelly, and we end in stone. If Lot's wife had been changed into a pillar of stone, instead of salt, the miraculous character of her transformation would be less obvious. For the whole process of normal decay tends in this direction. As the years roll on, we are gradually replacing the softer matter of our bodily structure with woody fibres; and these in turn pick up stony deposits from the blood, and produce an unelastic brittle structure. Hence the hard walled arteries of the old man, thickened so they carry insufficient blood, and unable to meet the changing requirements of the bodily tissues. His protoplasm is drying up, and the fluttering life cell is being woven about by fine spun threads which will change to harder consistency. The cell is choked off, cannot reproduce itself, and the process may go on for a long time. "Dying by inches" does seem to have a

real basis. "Dying by cells" would be better. The man is on the way to his stony metamorphosis. Only certain structures reach their real change, because life becomes extinct before the end result is attained. This is the "unperceived decay" of Goldsmith's poem. On a physical basis it is what a human being has a right to expect, and quite likely was the normal scheme of things which did not contemplate disease and the other agencies that interrupt and shorten the span of life.

The marvels of modern science have made some men wonder if the barriers of old age could be broken through, and the human machine by some revivifying process be enabled to go on, and on, and on. The thought is not new. Ancient philosophy speculated on an elixir of life; modern science has experimented, without perhaps any great hope, with gland transplantation and the like, and the results give no promise that our old stock may be thus rejuvenated. No tissue stimulus yet known can turn the fixing process of the years into a riot of cellular vitality. The alternative, and all Nature suggests it, is to grow old gracefully, which is a way of saying to grow old scientifically; meaning, of course, the conforming of our activities to the whispering wisdom of inevitable tissue change. Buying a moment's mirth to wail a week, doubtful at all times, waves a danger signal in the face of old age.

The Gaelic poet, Ossian, wrote of the weariness and the dreariness of the last span of life. Other writers, mostly poets, have seen fit to become emotional over its loneliness and sterility. Shakespeare's "lean and slippered pantaloon" indicates nothing but the sombre melancholy he would give his character, Jaques. Old people need not the sympathy such literature tends to arouse. They are often the happiest ones in the world. The allegory does not suggest that even those tottering on the last broken arch are trying to turn back; they are still moving on. Even dramatic literature has not found happiness for the characters it transferred from Age to Youth. Age lives in retrospect, to it an open book; Youth tries to penetrate the dark recesses of the Future; the living Present has for both its pleasure and its pains, but on close appraisal the odds seem to favour Age.

The best preparation for a healthy old age is to enter its cycle without the burden of disease. Normal decay of the years is quite consistent with excellent health and reasonable mental and physical activity. It enjoys immunity from most of the diseases of youth, and from many of those that are incidental to middle life. The disease tendencies of heredity it has left behind. It is in a sense the end result of successful fighting against the con-

tagions and other maladies which beset human life. It is true, of course, that some may enter the age cycle somewhat maimed from the struggle, and are thus not so well equipped to enjoy the pleasant routine of those mellow autumn days.

Health organizations might be expected to give advice to those men and women of our country now rounding out the traditionary span. It consists largely in one word, *adjustments*. Don't butt your head against the adamant of tissue change. Don't try to put the energy and enthusiasm of twenty-five into the business and social activities of seventy-five. The septuagenarian or octogenarian that is doing this successfully is very likely an exception, and like the single swallow does not make a summer; certainly not an autumn.

A cheerful outlook, who can estimate its value? It is part of the nourisher of old age; its good effect on the general physical wellbeing of the individual is not questioned. Combined with interest in the activities of others, particularly young people, it is indeed the water made wine which the Master has kept until near the end of the feast.

To give the poor as well as the rich a chance to enjoy the fruits of old age seems a call on the better part of our humanity and, therefore, under a democracy, a call upon the State. Poverty and want appear nowhere so ugly as when they stalk mid the long shadows cast by the fast declining orb of life. Modern medicine can give old people advice on their adjustment to the changing conditions of their health. Yearly examinations by a competent doctor, and the avoidance of unauthorized drugs and miscellaneous remedies, will help greatly to escape the unevenness and danger spots on the line of march.

## II

Mirza's vision revealed a countless multitude at the entrance of the bridge. No sooner had they broken through the cloud that concealed the mysteries of the beginning of life than they were at once in trouble with the harsh realities of the world. And the casualties were exceeding great. The trapdoors seemed numerous and subtly set here, and the marchers little skilled in the art of avoiding danger. Youth and infancy are represented thus with the diseases and disabilities incidental to the first span of existence. If the allegory were written to-day, quite likely the picture would not be so depressing; for medical science and an ever developing social conscience have gone a long way towards salvaging the weaker

ones of infancy, and creating conditions where youth may be better guarded and developed to a hardy maturity. The survival of the fittest was not only cruel, but it was, too, a fallacious doctrine; because the weakling of infancy, given a chance to develop and overcome the handicap, often outstrips in physical and mental power his more favoured rival in the race.

That he may have a good start, we must grope back into the thick cloud which hides his beginning. This is a zone of mysteries, and it is not easy to find one's way. Science has carried the torch into many of its darkest caves, and has drawn their secrets into the light. It has shadowed the fertilized ovum (the beginning of a human life) in the strange wanderings of its first days until, reaching a suitable environment, it settled down for a prolonged period of growth. And it made other observations, too. It discovered this embryo may start with a disease handicap due to one or both of the parties to its being; that while carrying no real disease, it may be a weak, fragile thing, unable to draw from its surroundings a healthy robust growth. In brief, Science has been able to observe and appraise the forces that make or mar the new human unit during the two hundred and eighty days he is being developed and equipped to meet the realities of independent existence. They are testing days these, tho' the busy world about us pays little heed. Nature here as elsewhere can be "red in tooth and claw," and the wastage of human life is considerable. Conditions other than actual disease enter this vital zone where the whole world's hopes are being moulded and prepared. The pangs of despised love, the cringing of honest nature under the conventions of society, the wretchedness of poverty, and the liberties and eccentricities of our social life—all, and many others, may mildew the evolving fruit or pluck it bodily from the stem. When the strongest of all human passions meet the complexities of the more artificial things we call civilization, we are sure to have anomalies. The seething mass of sex literature mixed with economics and birth control, which our day has produced, is evidence enough of the confusion wrought. It is long since Tennyson wrote of the "sickly forms that err from honest Nature's rule."

Our job, however, has to do mostly with the actual diseases that determine the welfare of the born and the unborn infant. Recognition of hereditary disease in one or both parents is the duty of the doctor and of public health. Contrary to the general belief, comparatively few diseases are transmitted to the offspring. Certain tissue tendencies, which we do not understand, well may be, but many of these completely disappear after adult life has been at-

tained. There are some, however, directly transmitted, and they may either destroy the product of conception or cling maliciously to their innocent victim. The result is a diseased baby. Apart from hereditary tendencies transmitted by mentally defective parents and which constitute a heavy social and economic problem, the worst evils are found in venereal diseases. There is often direct infection here, and the newly born infant may have the evidence of the ignorance, recklessness or viciousness—or all combined—of one parent or both. Ignorance is the most potent cause, particularly when found combined with a low standard of morality. Many of the unsigned letters that reach the desk of a Health Minister are appeals for some form of action to meet the evils of venereal diseases. Almost invariably they suggest sex education—in the home, in the schools, in the pulpits. Rarely is the development of a higher type of morals mentioned, and one begins to wonder how much can be accomplished without it.

Knowledge is doubtless power here as elsewhere; but not by this force alone can the deep woven woes of centuries be disentangled and combed from our complex and uneven social structures. The colossal evils of war have many times been seared into the brains of those who will stop to think. In the old days, when it was in a large measure the sport of kings and rulers, knowledge of what it meant played little part among the masses whose voices were not heard in determining whether it should or should not be. But the minds of the millions who have come back from the last war are teeming with knowledge of all that war means; and the answer this world wide wisdom of experience gives is to explore the depths of science and invention for methods to make more ghastly the technique of the next upheaval.

You cannot eradicate the vices of our social life by scientific instruction on the things that tempt and delude human beings, unless the moral elements of Right and Wrong are interwoven in the structure. And amid shifting standards of morality this is no easy job. Public Health must do its duty, even if it cannot do all. Science has many resources for protecting and curing human ills, but it is yet too ponderous to overtake and hold all the multitudes that find mirth, and often destruction, along the path of dalliance. To save many of the millions Mirza saw entering on the bridge, Science must go back into the dark cloud from which they emerged to meet and correct the blemishes heredity would allow to go unchecked.

## III

Mirza observed most activities on and near the centre arches of the bridge. Shakespeare's world stage is here, with its exits and its entrances. He also noticed the trap doors were set less thickly here, and many of them could be avoided if the individual was not forced upon them by armed antagonists. Adult life is represented with all its energies and complexities; where citizens of the world sweat and toil; where civilization is moulded and genius and intellect set up their standards to be seen, copied and enhanced by the impatient millions already pressing through the entrances. The hurly-burly of life is here; it is good and bad and indifferent. Some, with faces of celestial cast, are apart and gazing reverently towards the heavens; others are engaged in fomenting tumult and otherwise seducing unsuspecting victims to destruction. The whole picture has a melancholy tinge, but inspires pertinent reflections, and suggests those practical lessons so often found in Oriental allegory.

A few weeks ago, I had the privilege of listening to an address by Dr. Charles H. Mayo. He is now retired from active surgical work, and is devoting the resources of an able mind and a marvellous experience to an appraisal of what modern medical science has done in prolonging human life and in lessening the evil of disease. Leaving war and accident out for the present, we may say that nearly all the trapdoors of active existence are due to disease. He stated that over twenty years have been added to the life expectancy of the human family; which means, of course, that the average, not the ultimate, span has been lengthened. In other words, twenty per cent. more human beings now make their way to near the further end of the bridge than was possible forty years ago. The greatest gains have been made in infancy and childhood. A lot of the trapdoors have been nailed down, and others are not so covertly hidden. Diphtheria, that slayer of children, has yielded its secrets to the prying eyes of science, and is now in chains. Scarlet fever, another virulent disease of childhood, is rapidly losing its terrors under preventive and curative therapeutics, and more intelligent enforcement of the laws of public health. The recognition of focal infections, their influence on disease and on physical and mental growth, and the adoption of competent corrective measures have profoundly and beneficently affected that important cycle of life wherein human beings are moulded and prepared for the real adventures ahead.

The newborn baby brings with him the right to live and play his part; when he doesn't, something has gone wrong. The error

may be woven into heredity and entangled mid such evolutionary forces that present day science and society may be quite unable to unravel and correct it. We cannot reach back through the decades, and centuries even, to give heredity its proper stance; but modern science can do much to cure the evils of the end results. Broadly, Governments, and social organizations in general, appropriating the knowledge research has placed in their hands, are endeavouring to arrange such conditions as will give infancy and childhood their best opportunity to survive the incidental hindrances of heredity and the besetting diseases and environmental disabilities which gather about their cycle of life. Outside an ideal civilization, such effort can never be more than partial; every addition, however, takes us just a little higher, and helps to make easier the ascent and grander and nobler the prospect of the view. Squalidness and poverty make an ugly picture in childhood, worse even than in old age; and it is just here that the genius of science and of government has its fundamental problem; and, in its solution, if ever it comes, the key to Democracy's real kingdom shall be found. In the race of progress science has outstripped world economics; and civilization, like double-headed Janus, is watching both. We seem to be caught in a zone where there is not effective co-operation between the one and the other of these potent forces. Economics must quicken its pace for the desired union to take place; for while science may stand briefly to look and listen, it is not in its nature to turn back to meet the laggards on the trail. From the present world wide difficulties may come a fusion and adjustment of these agencies of progress; and when it is consummated, Governments will look more and more to the health and happiness of each individual and to the general mental and physical development of all classes of the people.

While modern science has closed many trapdoors and put danger signals about others, the complexities and competition of modern life have increased the subtleties of others. On the middle of the bridge were seen great multitudes in pursuit of "baubles that glittered in their eyes and danced before them". They did not always succeed in catching them, and of ten lost their perspective and their lives in the attempt. The human machine is a marvel of craftsmanship. Among created things it stands supreme; "the paragon of animals, the glory of the universe". It has been discreetly poised and designed to meet the ever changing and often strenuous vicissitudes of daily life. Its power is supplied by a force we call life, and we don't know very well what the intrinsic nature of this subtle power is. Its expression, in one form or an-



other, constitutes everything that is worth while; the supreme achievement in Art itself is to make the inanimate look alive. When Michel Angelo completed his "Moses", he cried out in the rapture of creative feeling, "Speak, man, speak". Strong and skilfully adjusted as is this human machine, it may break down under its own driving power, or be shattered by the obstacles an insidious environment may cast in its way.

Mirza observed most activities on that part of the bridge where adult youth and middle age laboured and fretted at their part. Left to unravel the ordinary problems and pursue their normal activities, the great majority passed safely along these spans, leaving behind newcomers who eagerly took up their unfinished work, filling the gaps too in the ranks of those who had broken under the strain and who for other causes had been forced into the tide.

The complexities of our modern life have added to the casualties. Diseases of the nervous system appear here; for the greatest strain occurs where the burdens are the greatest. Insanity has markedly increased. The long drawn nervous tension of recent years has broken down thousands of individuals, and made them susceptible to the inroads of intercurrent acute diseases. There is no good health where the mind is distraught and the general nervous system jangled and out of tune. Much of the underworld crime, and many of the wars, most probably have their origin in an hysteria, or at any rate badly functioning nerves. A healthy brain and nerves in the individual and the nation will do more for universal peace than the League of Nations. When individuals begin to have distorted perceptions, it is time to call a doctor and notify the police. When Governments devolve into similar mental ineptness, disaster in one form or another is dogging their steps. The man who says there is not real insanity behind the present preparations for another world war places upon himself a heavy burden of proof.

"Take any shape but that", said the tyrant Macbeth, "and my firm nerves shall never tremble". The "shape" was the break down of his own nervous mechanism, which had led him from one crime to another, and finally and inevitably to his own doom. "O, gentle sleep, Nature's soft nurse", were the words of poor old Henry IV, as he sought to call back to his shattered brain the best of all agencies for restoring tranquillity and normal judgment. There seems to be a real pathological basis for saying that to-day the whole world is suffering from a nervous malady; and the specialist in nervous diseases often finds himself in doubt as to the out-

look for his patient. The "baubles" that glittered in the eyes of many on the bridge and decoyed them to destruction are still on the job, and have added to their powers of distorting the concepts and perceptions of mankind.

Medical science has done much to close the trapdoors in young adult and the middle spans of life. A goodly part of the added life expectancy, referred to by Dr. Mayo, comes in this period. The discoveries of Lister and Pasteur made modern surgery one of the greatest gifts ever given to our race, and in the words of Lord Moynihan of Leeds, "saved more lives than all the wars of the ages have thrown away". The ailments of the flesh are understood as they never were before, although there remain still diseases which have not yielded all their secrets. In view of the advances of the last half century, however, he would be a hopeless skeptic who would deny the likelihood that disease will finally be brought under complete control. To cure disease, alleviate suffering, and prolong human life—the old ideal of the medical profession; much of it is already realized, the rest lies in the way of the future, and the keenest searchers in the world are persistently hunting out the route. The march over the three score and ten arches is being robbed of many dangers, and old age comes to view complacently the rolling tide which brings men, by and by, to the happy islands and glittering seas.