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### THE OBJECTIVES OF MEDICAL PROGRESS\*

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IT is well for doctors as for all mankind to pause occasionally in their pursuits and meditate upon the achievements of the past, the trends of the present, and aims for the future. It was doubtless with this purpose in mind that the founders of the Massachusetts Medical Society set apart an hour at each yearly meeting for an Annual Discourse. In attempting to prepare myself for the honorable duty which devolves upon me to-day, it has been a source of pleasure and instruction to review the discourses delivered before this Society from the first dissertation of 1804 down to the present time. Some of these addresses have been of a technical nature which, with the passing of the years and the advance of medical science, are valuable chiefly from an historical point of view; others, concerned with the broader aspects of the medical profession in relation to the community, are as vital to-day as at the time of delivery. In reviewing this mass of medical literature one cannot fail to be impressed with the wisdom, intelligence, and high character of the men who have represented the medical profession in Massachusetts. Some of these addresses have stood out as landmarks in the history of medicine, notably the Discourse on "Self-Limited Diseases" by Jacob Bigelow in 1835.

In 1860 Oliver Wendell Holmes' famous discourse "Currents and Counter-Currents in Medical Science" contained the oft-quoted passage consigning the *materia medica* to the bottom of the sea, in a biting satire against the prevailing overmedication of that day. The sensation which this caused is attested in the passage of a resolution by the Society shortly afterwards disclaiming responsibility for all past and future annual addresses.

A frequent subject of heated discussion in the past has concerned the inroads upon the regular profession by various irregular systems. To those who are to-day greatly disturbed by the recent activities of the chiropractors, I would commend the reading of Dr. Edward Reynolds'

and Dr. John Ware's discourses of nearly one hundred years ago. Dr. Reynolds said, "It would not be an unreasonable expectation that the extension of medical light to the community should abate the prevalence of medical folly, except for the fact that the fountains of human credulity, flowing on in undiminished fullness for six thousand years, are evidently inexhaustible."

That the dangers of too much leisure were appreciated nearly a century prior to the New Deal is shown by the warning of Dr. George C. Shattuck in the Discourse of 1828. He said, "Increased luxury, diminished industry and the undue use of intoxicating liquors are impoverishing the fortunes, ruining the characters and destroying the lives of the immoral devotees to idleness and appetite."

Dr. John Homans, in his Discourse of 1844 on the "Character and Qualifications of the Good Physician", emphasized a quality which he himself possessed to a conspicuous degree and has handed down to his descendants of to-day. He said, "Integrity is the great principle that should be at the bottom of the medical character."

A perusal of the delightful address of Dr. Thomas N. Stone of Wellfleet delivered in 1872 shows that the attitude of the profession toward our Legislature has not greatly changed in fifty years. "Every year", he said, "witnesses the birth of some new theory in medicine, some grand discovery in the laws of Nature, who in her old age seems as prolific of law as a Massachusetts Legislature." Speaking of the stern granitic ideas of the Puritan fathers he said, "They could in theology stand strong doctrine to the seventeenthly of a three hours sermon. In pathology they could bear bleeding, sweating and purging, in as large doses and as oft repeated. The beloved youth of whom Jefferson was wont to tell who died of a decline notwithstanding his attentive physician had bled him twenty-six times was an effeminate son of the F. F.'s of Virginia, not a sturdy scion of the old Puritan stock."

Perhaps the most popular theme for annual discourses has been medical progress. This has been emphasized over and over again, and well

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may it have been so, for the progress has been truly remarkable. In some cases, dazzled by the brilliant achievements of their age, speakers have been lured into expressions of conviction that the ultimate had been reached. How often have such conclusions been confounded in the light of history!

The very pinnacle of medical progress would seem to have been attained in 1817 when the author of the Annual Discourse of that year in speaking of modern physiologists said, "They have so minutely investigated, and so perspicuously illustrated every topic connected with their profession that all pretensions to originality, and every claim to novelty are denied to their successors."

Dr. Josiah Bartlett in his address of 1810 said, "It has been remarked that more professional knowledge is at this time attainable in a single season, than was known to Hippocrates, Galen and their successors till the beginning of the eighteenth century. A case of fistula in ano, now considered as a simple disease, and often cured by our youngest practitioners, was in 1686, nearly seventy years after the settlement of Massachusetts so formidable and dangerous, that Felix a surgeon and Fagon a consulting physician were rewarded with forty thousand dollars for a successful operation on Lewis the Fourteenth of France, in consequence of which a national thanksgiving was religiously observed." This passage might seem to indicate a retrogressive rather than a progressive trend not only in pecuniary rewards since 1686, but also in the surgical treatment of fistula in ano since 1810.

That medical progress should be measured not solely by an enumeration of the obstacles overcome but by a survey of the advancement toward definite objectives, was emphasized by Dr. George C. Shattuck the second, who said in 1866 "no one can deny or doubt that we have made and are making great advances, but the horizon opens before us as we go on, and the extent of the field becomes even more apparent than our progress."

For a graphic illustration of this same point of view I must again turn to Oliver Wendell Holmes. He said, "Sir Edward Parry and his party were going straight towards the pole, in one of their Arctic expeditions, travelling at the rate of ten miles a day. But the ice over which they travelled was drifting straight towards the equator, at the rate of twelve miles a day, and yet no man among them would have known that he was travelling two miles a day backward, unless he had lifted his eyes from the track in which he was plodding."

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With these warnings fresh in mind I will venture a few guarded comments on the alluring

subject of medical progress since the days of our forefathers.

A striking feature of Colonial medicine was the participation by the clergy in the care of the sick. As Dr. Henry Viets tells us in his History of Medicine in Massachusetts, "the ministers were expert in phlebotomy, and they were wont to bleed and pray in all severe cases." This was merely the cropping out in America of the very widespread association of religion with the healing art which has prevailed in all primitive cultures. The early Greek temple medicine, the Asclepieia, exemplified this trait. It flourished in Egypt in still earlier times. In Europe in the Middle Ages the monasteries preceded the hospitals in the care of the sick.

Since then specialization in medicine has carried us very far indeed from this primitive blending of the functions of two related professions, so far in fact that there are now distinct signs above the horizon of the completion of a cycle with return to a recognition of the mutual benefits of peace of mind and of body. Dr. Walter Cannon in his Discourse of 1928, emphasizing the emotional elements in disease, laid a scientific foundation for the participation by the regular profession in a field which had hitherto been largely abandoned both by the medical profession and the clergy to faith healers and cultists.

The stoical fortitude displayed by our forefathers in withstanding the three-hour sermons, and the bleeding, sweating and purging in corresponding doses so vividly portrayed by Dr. Stone was not peculiar to New England. The heroic medical dosage of those Colonial days was merely the transplantation to these shores of the accepted principles of the medical art of the mother country.

The state of medical practice in England at the end of the seventeenth century is well illustrated by the amazing account of the fatal illness of Charles II in "The Mysteries of History" by C. J. S. Thompson. The King was treated by the foremost physicians of England, fourteen in number, in constant consultation. The diagnosis was never made, not even at the autopsy. Emetics, purges, clysters, bloodletting from arm and jugular, cupping, blistering of head and feet, scarification, secret elixirs, spirits of human skull and bezoar stones were employed without avail; fifty-eight different drugs in all were administered. The unfortunate King finally succumbed after six days, the irony of his famous apology for taking such an unconscionable time a dying seems obvious.

The contrast is striking between the status of medicine of this period and the status of literature and the arts, which had already reached a stage of development which has remained unsurpassed if not unequalled. The physical sci-

ences on the other hand have made amazing progress since those days. Medical science has gone far since the days of Charles II, somewhat of a laggard at first it has within the last half century made prodigious progress. The causal factor of one disease after another has been discovered and in many cases, especially in the bacterial diseases, their control secured. No longer do great epidemic scourges such as plague, smallpox, leprosy, cholera, yellow fever, dysentery, malaria, typhoid, typhus, and diphtheria decimate vast numbers of the people. Of the great infectious epidemics, influenza alone still rages at intervals unchecked through the teeming inhabitants of the civilized world. Equal progress has been made in controlling many of the hitherto obscure constitutional and deficiency diseases, such as diabetes, rickets, pernicious anemia, and scurvy. The triumphs of modern surgery have been even more spectacular; it is unnecessary to rehearse them before this audience. Though we may well be proud of these accomplishments of medical and surgical science in banishing or controlling most of the terrible epidemic diseases of the past, and mechanically readjusting many of the derangements of the human frame, the race is still sorely afflicted with ills of body and mind. As one malady is conquered and laid low, another seems to spring up in its place to attack mortal man.

Appendicitis, the pathology of which was first fully elucidated by Reginald Fitz in 1886, has undoubtedly existed from the earliest times. Yet it is only in the modern era that it has become such a factor in morbidity and mortality statistics. Infantile paralysis, which strikes such terror into the hearts of parents to-day, has been traced back to the earliest historical period. In the past it has been obscured by the greater ravages of the more deadly epidemics, for it is only after the elimination of the greater terrors that the lesser ones assume important proportions.

Reports of new diseases such as encephalitis lethargica, tularemia, granuloma inguinale, agranulocytic angina, epidermophytosis, etc., appear from time to time in the medical journals. These are probably not new diseases but pathological conditions of long standing which have been recognized and classified for the first time.

It may well be, however, that new bacterial diseases are actually evolving. Why should not bacteria undergo evolution as well as the higher plants and animals? Opportunity for the development of sports and mutations might well occur in organisms of such short life cycle. Kirtley Mather tells us to be sure that in the cliffs of the coast of Wales of the Cambrian period there are fossils of brachiopods indistinguishable in form and structure from their

descendants living to-day at the foot of these cliffs after five hundred million years. These, however, are striking exceptions to the well-nigh universal law of organic evolution. Are bacteria like brachiopods, or are there processes of evolution going on whereby these parasites of human woe in their fierce struggle with the medical profession for existence are developing by means of hard shell spores, or invisibility, or shrinkage in size, ways of withstanding the autoclave, or eluding the microscope of the bacteriologist and epidemiologist? This is an interesting speculation to which recent investigations of pleo-antigenic bacteria seem to lend scientific plausibility. I will venture just one prophecy that the time will never come when there will be an Alexander the Great in medicine with occasion to weep that there are no more diseases to conquer.

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In the troubled stream of medical progress with its many windings, countercurrents, shoals, rapids, and occasional stagnant pools, is it possible to determine the direction of the main trend? There is a confusion of conflicting views and opinions. Dire warnings of impending disaster to the profession have been freely uttered from diverse sources of late.

It was but a short time ago that the word efficiency was upon everybody's lips; efficiency experts were abroad in the land making surveys of every conceivable form of human effort. The medical profession did not escape their scrutiny. Some of the methods of the doctors and hospitals seemed crude, primitive, and wasteful, compared with the smooth working of big industrial establishments. Big business was worshipped as a god in those days. We doctors were told that we must adopt the efficient methods of big business, if we were to survive in the fierce struggle for economic existence.

Hospitals were especially criticized as extravagant in their administration and wasteful of human effort. I have seen, a few years back, an industrial efficiency expert in the operating amphitheatre of one of our large hospitals observing operations. His comments were to the effect that he observed much wasted motion. Doubtless true. No two surgical cases are exactly alike. The vermiform appendix has many hiding places, the sac of a hernia may likewise be exceedingly elusive. Care, patience, and constant vigilance, are the price of safety in operating. It is better to waste motion than blood or life. The avoidance of infection is cheap at the price of infinite pains and seeming fussiness. In other words, there is a vital human element in the relations of the doctor to the patient that cannot be standardized like the laying of bricks or the assembly of automobiles. Fortunately the danger of the adoption of the

factory-belt system in hospitals seems to have passed for the present.

There is much to admire and respect in the achievements of the great industrial organizations of America. Their prosperity has meant prosperity for the people and vice versa. Their leaders have been in the main broad-visioned, courageous, progressive, and often extremely philanthropic men. It is perhaps too much to expect them to be primarily altruists or sociologists. I am well aware that much of the medical research, of whose products we are so proud, emanates from foundations established by the generosity of wise leaders of the business world. Our medical schools and hospitals also owe a debt of gratitude to many such enlightened philanthropists. The best results, however, have been obtained in those institutions whose policies have been wisely left to experts in the field and not dictated from outside. Business naturally comes first for business men. Big business is inclined to look upon homo sapiens primarily as a consumer of material goods. With ever-expanding production big business has employed the wiles of the super-salesman and advertiser to force the absorption of an ever-increasing volume of automobiles and apartments, houses and house furnishings, refrigerators and radios, clothes and cosmetics, cigarettes, candies and chewing gum, until the saturation point present and future is attained. Homo and mulier sapientes less sapient than the name implies responded eagerly to the alluring program spread before them, cheerfully mortgaging their goods and their future in the mad pursuit of so-called happiness. Happiness as President Lawrence Lowell has so emphatically stated, contrary to the preamble of the Declaration of Independence, is not to be won by pursuit but is a by-product of earnest endeavor along other lines.

As a result of the orgy of spending and lending, borrowing and mortgaging in the pursuit of false happiness the nation has been brought almost to the verge of ruin. In the train of the financial and social shipwreck there has been an aftermath of mental and physical distress which has had its medical repercussions in worry, ill health, nervous breakdown, insanity and suicide.

To-day we hear less of the inefficiency of medicine; there is not so much criticism of the quality of medical care as of its cost. Big business rudely jarred from its former pedestal is fully occupied with its own problems; but a host of social economists have come forward raising their voices in a laudable attempt to restore order in a disordered land. In the days of prosperity the cost of medical care was not a pressing problem. To-day it has suddenly become a most vital one. It seems evident that

neither organized private charity, nor the charitable service of private physicians, which has so long been a part of the doctors' code, can be reasonably expected to carry the increased load of the indigent sick incident to unemployment and diminished wages on the part of a large proportion of the population. Many and diverse plans have been offered for the solution of this problem. National, state and community medicine, health and sickness insurance, group practice, hospital and university extension and other schemes have been advocated. There are advantages and dangers in these programs; varying local conditions require varying remedies. I have no solution to offer and can only observe that no radical or sweeping immediate change seems either necessary or wise. I agree with those who advocate a policy of carefully observed experimentation on a small scale, modifying methods according to varying conditions in different sections of the country. This is not a policy of "laissez faire", call it trial and error if you like, it is the scientific method, the process by which the medical progress of the past which we have been recording with justifiable pride has been attained. Accurate records of results should lead to an evolutionary development of those means best adapted to the needs. The situation is difficult and complicated. The best medical care depends on a personal relation between doctor and patient based on mutual confidence and harmony which it is difficult to secure in large coöperative efforts. We should be slow to discard the methods which in the past have on the whole given such good results until we are sure that newer ones are better.

Over and over again countless speakers in and out of the profession have emphasized the impending doom of the general practitioner submerged by the rising tide of modern specialization. To some of us on the contrary it has seemed that this very increase of specialism has made the position of the general practitioner all the more necessary. Medical practice has not advanced along a single broad highway. There are many diverging avenues and roads, some blind alleys, many branching paths and unfrequented trails. Signposts to be sure are not lacking along the way, but the multiplicity of conflicting directions bewilders the wandering patient seeking a haven of relief from his ills. If wise he will employ a trustworthy and experienced guide.

An eloquent plea for the family medical adviser was most ably presented by my immediate predecessor in 1933, and I imagine we all agree with him as to the desirability of establishing such a practitioner as he pictured. The prime requisite however, it seems to me, is to make sure of the family to be advised. To

some of us it appears that American family life is showing serious signs of disintegration. The entrance of women into business and industry, the prevalence of divorce, the tendency of human beings to herd together in large cities in monstrous apartments and tenements are all tending to restrict family life in America. The threat to family life is not confined to the United States by any means. It is undergoing its greatest perils at the hands of Soviet experimentation in Russia, the results of which are awaited with interest by the other nations of the globe. From the earliest period of recorded history and before, the family has been the foundation of human society. To be sure, there have been cultures scattered among primitive peoples founded on other bases, such as promiscuity and group marriage, but the peoples that have showed progress and made history have without exception maintained the family relation. Is the present concern about the preservation of the family occasioned merely by a trifling and temporary oscillation in the broad onward sweep of civilization, or is there a distinct deviation of trend from the broad pathway of the past? Who can tell?

Dr. W. M. Wheeler in a recent symposium on "Biology and Society" before the American Society for the Advancement of Science contrasted the societies of termites and hymenoptera with vertebrate and mammalian societies, the former being characterized by a communal association marked by harmony and coöperation and dominated by female leadership. Vertebrate and mammalian societies, and included in these is human society, have been harassed by what he calls the "problem of the male". Male leadership has resulted in strife, disharmony and constant change, and hence progress. The hymenoptera date back to geologic periods far antedating man. Furthermore, they go through thirty generations to man's one. Hence their society is a far more experienced one than ours. The query naturally arises: may these tendencies away from family life on the part of modern man, and I should not omit woman, which are causing some of us such great distress denote a social evolutionary trend toward the civilization of the ant and the termite? If so, very radical and to many of us unwelcome biological changes of structure and function will be necessitated to attain the highly perfected and coördinated society of these insects. It is true that already artificial means, such as sterilization of the unfit, have been adopted by man to meet certain threatening conditions; a further extension of this procedure might conceivably provide a class of sexless workers, but I have not yet heard any active propaganda by man for female domination or, by woman for the prodigious female fecundity of the arthropods.

After all, these insect societies may not be so pleasant and harmonious as they appear.

No psychoanalyst has informed us of their emotional conflicts, their egos, urges, and subconscious states. We do know that they engage in war and harbor the institution of slavery, two indications of disharmony, one of which civilized man has succeeded in eliminating after an age-long struggle.

Let us return to more immediate concerns. The very foundation of American democracy including the practice of family medicine depends on the preservation of family life. Each family occupying and owning its own home with a plot of land is an ideal, which was nearly realized in New England at the time of the founding of the republic, and is no less desirable now. Every head of a family should feel that he has a stake however small in the country. Nothing gives such a sense of responsibility and stability as the ownership of land. At the present time there is a widespread appreciation of this, and strong efforts are being made by some socially-minded leaders for the decentralization of industry, whereby men may live on small farms and work part time in small factories. This seems a promising experiment. With the automobile, improved roads, electricity, and the radio, the former isolation and drudgery of country life has been largely eliminated, and there has been a distinct and salutary movement back to the land which should be encouraged in every way.

The dangers moral and physical of a huge floating population aggregated in the great cities moving about from one wretched tenement to another in search of work or support, have been amply demonstrated in the last few years, and is well appreciated by the physician. The medical profession then if it seriously wishes to establish and maintain the family medical adviser must take part in the great social movement to safeguard the family itself.

With the progress of medical science and art the sum of medical knowledge which students must acquire becomes increasingly greater and now assumes appalling proportions in the minds of the elder generation. Fortunately, the younger generation seems to view the situation with a fair degree of equanimity and confidence. Each generation must learn more than its predecessor, not ignoring the discoveries and errors of the past; it must keep abreast with its own advances. The human brain seems to have been capable of absorbing this increased load of knowledge so far and the saturation point fortunately does not seem to have been reached for the higher intellects at least. In every generation there still are a few exceptional individuals, geniuses they are called, who are even capable of adding original contributions to the sum of previous knowledge.

Human offspring, however, are born into the world to-day as ignorant as they were six thousand years ago at the dawn of the historical era.

An increased capacity for acquiring knowledge may be inherited, but the knowledge itself has to be imparted, demonstrated, or hammered in, by a slow and painful process.

It is a source of frequent and perhaps sophomoric argument as to whether there has been actual advance in human intellectual achievement since the days of the Greeks. However debatable this question may be as regards attainments in literature and the arts, progress has been undeniable in the sciences, and especially in medical science. This does not necessarily imply an evolutionary advance in human brain power. The time interval has been comparatively short for evolutionary changes as judged by the time scale of man's ascent from simian stock. The advance in scientific knowledge has been gained bit by bit, and through generation after generation, by observation and experiment aided by the discovery and perfection of instruments of precision which have enormously extended the field of observation, so that the human brain to-day has tools to work with which were denied to its predecessors. There is no question that the educated man of to-day is required to retain a mental impression of a mass of facts and figures, words and formulae, which like entropy are ever-increasing and never diminishing with which the minds of the Grecian youth of the time of Aristotle were comparatively unencumbered. To continue the scientific advance and arrive nearer the goal of ultimate knowledge, each generation must hand on to the next the achievements and truths obtained at the cost of so much labor and suffering; hence in the medical profession our interest in, and solicitude for, those agencies engaged in the preservation, extension and promulgation of medical knowledge; medical schools, hospitals, libraries, health boards, and medical societies.

Those of us who have served on the examining boards of large hospitals and have had the opportunity of seeing large numbers of young medical graduates coming up for internship cannot fail to have been impressed with the capabilities of these young men, their mental activity, intelligence, and earnestness. It is a never-ceasing source of wonder to observe the adaptability of our surgical internes. They come to the hospital unskilled in the technique of a highly technical profession. After an eighteen-months' internship and a year or two of experience as resident, the best of them master the manual part of surgery to such a degree, that they equal and often excel the skill of their teachers who have spent a lifetime in the operating room. This phenomenon which is perhaps somewhat humbling to the pride of the visiting staff is for the good of the art. Judgment, poise, and discernment, are acquired somewhat more

slowly. There surely is no ground for anxiety on the score of the new material which is coming into our profession at least in this locality and in the larger hospitals. I believe the same to be true elsewhere as well.

A few words in praise of the older men in the profession, the practitioners of medicine and surgery, may be allowed as the privilege of one no longer an active participant in practice. With a few striking exceptions I firmly believe that the members of our profession have nobly upheld the principle of integrity of character emphasized by Dr. John Homans so many years ago. Taken by and large they have also upheld the best traditions of family life. Realizing a true sense of values they have led simple, unselfish, busy and happy lives free from the taint of commercialism and hypocrisy. They are almost universally lovers of nature and the great outdoors. Music, art, literature and sport have been abundantly cultivated in their spare hours. High-minded, humane and altruistic, no body of men is more worthy of respect and consideration. They have conquered many dragons in the past for the benefit of humanity. Others of a different breed now lie across their path.

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The triumphs of modern medicine and surgery have indeed been great. It would be both unnecessary and tedious to this audience to rehearse them in greater detail. How far then have we progressed toward our true objectives?

These objectives are generally stated to be the prolongation of life, the relief of suffering, the prevention and control of disease, and the promotion of the health and well-being of man.

As to the prolongation of life, reliable statistics conclusively show that life expectancy has been very considerably extended during the last century. One hundred years ago the average expectation of life at birth was about forty years. The latest statistics show the amazing figure of over sixty years for average life expectancy at birth. This extraordinary advance has been accomplished largely by a decrease in the mortality rate of infants and children. The mortality rate of adults of middle age and beyond has not been appreciably diminished in the last fifty years. It would be unreasonable to expect that the range of life expectancy should increase in the future at the rate which it has in the last hundred years. As long as man is mortal, disease and death must come. The effort to extend the span of life must inevitably come into ultimate conflict with the second objective, the alleviation of suffering, unless or until that ideal of the natural death so earnestly expounded by Metchnikoff should finally be attained. In this connection I feel impelled to express my personal conviction that the pro-

longation of life by highly artificial means, at the expense of suffering, in the last stages of fatal disease, is neither sensible nor humane.

The relief of suffering, our second objective, although very far from being attained has been immeasurably advanced; anesthesia, analgesia, nerve blocking, the aseptic treatment of wounds, expert nursing, and countless new inventions in technique and instrumentation have contributed to this end.

Our third objective, the prevention and control of disease, has already been commented upon. The record is a brilliant one in which medical science and art, drawing on the researches of many allied sciences, together with the cooperation of an enlightened people, have accomplished much with high hopes of an even more brilliant future.

Much still remains to be done. The uncontrolled incidence of many infections, especially those of the respiratory tract, including the common cold, influenza, and pneumonia, is a challenge to the profession of to-day. Cancer and other malignant tumors are perhaps the greatest scourges of modern times. The degenerative diseases of the vascular system seem to be definitely on the increase. Arthritis is as prevalent and crippling as ever. Nervous instability, mental derangements, idiocy and insanity are increasing problems.

Our final objective, the promotion of the health and well-being of man is one of vast scope. The promotion of health involves not only the prevention and control of disease, but the maintenance of the state of being well physically and mentally. The promotion of well-being involves in turn more than the maintenance of good health. The words "being well" when transposed to "well-being" have acquired a broader meaning denoting general welfare, including material and spiritual attributes of life which transcend the scope of medicine.

Much has been done for the promotion of the health and well-being of man, in preventive medicine, surgery and dentistry, through the instrumentality of many organizations, national, state, and local, engaged in promoting public health, sanitation, hygiene, physical, social and mental, accident prevention, social service, dietetics, health examinations, and public instruction. Much more remains to be done and "the extent of the field becomes even more apparent than our progress". The problems involved are the most serious and difficult which concern the medical profession to-day. It is not only the medical profession which is concerned, but the whole body politic. It will require the intelligent cooperative efforts of our governing bodies, and of all forward-looking agencies, professions, and individuals, to achieve real progress toward this objective.

The strain of present-day life is taking a heavy toll from those caught in the irresistible tide of what is called our advancing civilization. Not only does it exact its penalties on the nervous, circulatory and digestive systems, but the mechanized civilization of to-day is destroying its thousands and maiming its hundreds of thousands by direct external violence.

It has been the proud boast of man that in building up his civilization he has overcome the forces of nature, but in the process he has raised up mechanical monsters of destruction far more perilous than all the plagues of the past.

To the physician earnestly struggling to reduce the morbidity and mortality of disease the attitude of the public and the governing powers often seems incomprehensibly blind, if not callous. It is disheartening to say the least to those who have dedicated their lives to war on cancer, tuberculosis, and infectious disease, to realize how little value the community apparently sets on human life as manifested by its complacency toward the staggering sum of fatalities from accident, homicide, and suicide.

The widespread participation in all forms of insurance by the American people is doubtless commendable. It spreads the financial burden resulting from casualties, which might be crushing to an individual, over such a large number of policyholders as to seem nominal. By the same token it tends to dull the moral sense of responsibility of the reckless toward accidents. There is a state of mind altogether too prevalent which might be expressed in the vernacular: the company pays the damages, step on it. It is the community that pays in the long run and is paying grievous dear.

The insurance companies of course are well aware of the situation and have made commendable efforts to correct it. Corrective measures to be effective, however, must come from other sources.

Figures compiled by one of the large national insurance companies show that in the year 1933, there were 29,900 deaths in the United States as the result of automobile accidents; 4,850 of these were among children. Over 850,000 persons were injured; 139,000 of these were children under 14 years of age. In the last ten years over 273,000 persons have been killed by automobiles. In the last four years there have been nearly four million injured. These figures far overshadow the casualties incurred by the American Expeditionary Forces in the Great War. The official war figures are 36,694 killed in action and 224,089 wounded of whom 13,691 died of wounds. We are all well aware of the cost to the nation of the disabilities resulting from the World War. Estimates of the cost of the nearly four million injuries resulting from automobile accidents in the last four years stagger

the imagination. It is estimated that the cost of industrial injuries alone is over five billion dollars annually.

The mortality statistics of the census bureau for the registration area of Continental United States for the year 1929, the last year for which full official figures have been published, show over 94,000 deaths from accidents; over 16,000 suicides; and just under 10,000 homicides, a total of 120,000 violent deaths. These three forms of violent death together account for more victims than any single cause in the international classification of causes of death with the sole exception of heart disease, which was recorded as the cause of 245,244 deaths. Next comes cancer with 111,000, pneumonia and nephritis each 106,000, and so on down the list. For those in the active period of life, from twenty to forty-five years of age, deaths by violence exceed any other cause of death. It is significant that, of the 1,386,363 inhabitants of the United States who died in 1929, only 12,319 were recorded as dying of old age in that hectic year. What of the great epidemic scourges of the past? In 1929, 151 persons died of smallpox, nineteen of typhus, none of plague, none of yellow fever, none of cholera.

Of all the forms of death it would seem that violent and accidental death should be the most preventable except those resulting from the uncontrollable convulsions of nature such as storms on land and sea, earthquakes, floods, landslides, lightning, sunstroke, etc., which in this fortunate land have been factors of relatively minor importance. The blame is not to be laid on nature but on man.

The disabilities and deaths resulting from accident and depravity may not be considered to be strictly within the province of the medical profession. It is, however, the medical profession which is called on for the treatment of the victims, and with the same altruism which our profession has demonstrated in the prevention of disease we should join in the attack upon these modern scourges at their source. A very notable improvement in the rate of fatalities and accidents in industry has already resulted from the coöperative efforts of government, industry, and labor, with the medical profession. This is, however, but a part of the problem and the smaller part.

The profession needs to be aroused to the full implications of our objective of promoting the well-being of man. The problem involves grave questions of sociology, economics, and gov-

ernment, which are beyond our control, it is true, but the united medical profession should and would have an enormous influence for good if exerted in the right direction. To no one are the varying traits of weakness and nobility in human nature more deeply revealed than to the physician. He is by training and instinct sympathetic and understanding. He is well aware of the crying need in domestic life of the cultivation of those simple basic virtues upon which the maintenance of the home and family depend. He is equally well aware of the crying need of character, integrity and intelligence in public affairs. What body of citizens is better qualified to help in promoting these by precept and example?

Many organizations and individuals outside the medical profession are actively engaged upon these problems at the present moment. Many individuals and organizations within the medical profession and among them members of this Society have for many years waged a valiant battle for the betterment of social and industrial conditions affecting the health and well-being of the community.

The profession as a whole, however, is apathetic, reluctant to venture beyond what seems its legitimate field, but as Dr. Shattuck said so many years ago "the horizon opens before us as we go on".

Without relaxing for a moment our efforts along the lines of past endeavor, for the frontiers against disease so hardly won must be maintained and extended, we must at the same time take the offensive against an even more insidious foe infiltrating the fabric of our social welfare.

The active participation by the medical profession in civic, economic and sociological matters affecting the well-being of the people is, I believe, sorely needed to-day to avert a social cataclysm threatening the very life of the nation.

We must, like Sir Edward Parry's Arctic party, raise our eyes from the track along which we are plodding to above the horizon if we would measure the progress toward our true objectives.

I would not advocate a return to the teleological views of Galen, but a teleology of aim and effort is as essential in medicine as in religion of which it might be considered a part.

The occasion is pressing, the capabilities are at hand, may neither the vision nor the will be found wanting.