

The New England Journal of Medicine

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Volume 238

MAY 27, 1948

Number 22

ANNUAL ORATION

MEDICINE'S RESPONSIBILITY IN THE PROPAGATION OF POOR PROTOPLASM*

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THIS unexpected and undeserved honor has made me acutely aware of my lack of fitness to wear even for this short time the mantle that has graced such distinguished predecessors. Some of them have traced with inimitable charm and grace the progress of medicine through the years. Others have granted to you imaginative glimpses of its achievements in the years to come. As neither endowment nor inclination impels me to assume the role of either historian or prophet I shall ask you to consider with me not where we have been, not where we may be going, but where we are today.

Cynics, idealists, and sentimentalists have tried to define the role of the medical practitioner. I think that most of you who are, like me, average doctors from average communities would agree that our purpose is to enable mankind to make more effective adjustments to the harassments of his environment. Whether these stresses be furnished by trauma, bacteria or psychologic tensions will determine which particular exponent of the healing art is chosen. But the ultimate goal of one and all must be the enhancement of man's capacity for environmental adaptation. Let us examine the balance sheet, then, and evaluate our contributions to man's struggle for existence today.

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Only with profound fear and trembling would one hint that bacterial diseases have been brought under control. Men still die of infection, and undreamed of viral and bacterial mutations may lie in wait for us around the corner. But the contemporary triumphs of modern sanitation and preventive medicine, along with chemotherapy and the more recent antibiotics, certainly warrant more optimism in this field than in some others. In the field of trauma, likewise, these advances, as well

as the contributions of the physiologist, have done much to augment the achievements of the surgeon.

Our accomplishments in the field of endocrinology are still somewhat clouded by the perplexing variety of clinical manifestations and interrelations of these systems. But the vast unexplored vistas that stretch before us should not lessen our appreciation of the concrete contributions to the control of thyroid, parathyroid and pancreatic disease for which we may pay grateful tribute to a singularly gifted group of Boston clinicians. Equally encouraging progress is being made in the field of sex endocrinology, which, unfortunately, is still sometimes obscured by commercial exploitation and premature notoriety.

Thanks to the firm foundation laid by the metabolic investigations of thirty years ago the study of nutrition has progressed from the consideration of the laboratory subject to include not merely the sick patient but also whole groups and nations suffering from dietary deficiency. The smugness of our attitude toward these accomplishments will depend upon whether we are reviving a few individuals suffering from a specific deficiency or whether we are trying to rehabilitate an entire country. We may delegate to our interns the treatment of the individual pellagrin or the alcoholic patient with polyneuritis. But the great bulk of deficiency disease today reflects the economic status of the group rather than the incompetence of their doctors and as such bids fair to be a problem for governmental administration rather than individual therapy alone.

Current propaganda on cancer might suggest to the uncritical that here is a race in which medical accomplishment is being outstripped by some malevolent force. It is true that the male death rate for cancer has shown some increase for each decade from 20 to 75 years over the past 35 years. For example, the Metropolitan Life Insurance Company reports that the cancer death rate for in-

*Presented at the annual meeting of the Massachusetts Medical Society, Boston, May 25, 1948.

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sured groups from 45 to 75 years of age rose from 1120 per 100,000 in 1911 to 1530 per 100,000 in 1945.¹ The cancer death rate for all ages rose from 60 per 100,000 in 1900 to 130 per 100,000 in 1940, but it must be remembered that the age group over 45 years, in which the greatest incidence of cancer occurs, increased 67 per cent² during the same 40-year period. Furthermore the lay public and the medical profession have grown increasingly cancer conscious during this period, and this fact, coupled with improved diagnostic methods, probably accounts for some of the statistical increase in cancer deaths. Fortunately, there is a more hopeful aspect to the problem, which suggests that our intensive efforts are bearing fruit. During the period from 1911 to 1945, which showed an increase in male deaths from cancer, there was actually a slight decrease in female cancer deaths. And during the past ten years even the male death rate from cancer has begun to level off.¹ In this connection it is interesting to examine the cancer mortality trends for the last 12 years, adjusted to the age distribution of the total population and classified according to the site of the origin of the neoplasm. Whereas in both sexes there is still an annual increase in deaths from cancer of the respiratory tract, there has been a steady decline in deaths due to cancer of the skin, buccal cavity, stomach and liver. Cancer education and improved medical and surgical care have played a large part, but Potter³ believes that the decrease in deaths from gastric cancer is greater than could be expected from these factors alone. The work of the Kennaways⁴ suggests that gastric cancer arising after the second 25 years of life may be predestined by factors to which the body was exposed during the first 25 years. Potter³ has pointed out that the change in the death rate from gastric cancer began about 1926, some twenty-five years after significant changes took place in the American dietary,⁵ and suggests that there may be a causal relation. This raises a new hope of rational prophylaxis, which, with improvements in diagnostic technic and the therapeutic advances implicit in the recent developments of atomic physics, may still further lower the death rate from malignant tumors.

Whether or not we appear to be extending man's span of life will depend somewhat on our point of view. The pediatrician will point with justifiable pride to the fact that the life expectancy of the newborn white male was 64.44 years in 1945 as compared with 48.23 years in 1900. His sister had an even better outlook by several years. At 40 years in 1945 he had thirty years more ahead of him, which was only 3 years more than the 40-year-old male could expect in 1900. But the life expectancy of the 65-year-old man in 1945 was scarcely a year better than that of his father in 1900.⁶ It appears that the geriatrists can hardly join in the pediatricians' boasting. Our control of the infectious

hazards of childhood and early adult life seems to have had little effect on the wearing-out process. But whereas the death rate from cardiovascular renal disease has risen from 310 per 100,000 in 1900 to 495 in 1940, an increase of 62 per cent, the proportion of the population over 45 years of age has risen during the same period from 17.8 to 26.5 per cent, an increase of 67 per cent.² The Metropolitan Life Insurance Company therefore concludes that "The death rate from this group of causes, corrected for the aging of the insured population, dropped virtually 30 per cent (at ages 1 to 74 years) between 1911-1915 and 1940-1944."⁷ Although these figures suggest that the current furor about the rising death rate from degenerative vascular disease is misleading, the insignificant increase in expectation of life at 65 years of age today as compared with the figure 45 years ago indicates that immortality is not just around the corner. Perhaps this is just as well. The catastrophic implications of physical immortality stagger the imagination. Already the social and economic dislocations produced by an ever-increasing number of old people in our population is causing concern. Imagine the chaos if the aged never died off while even the puny birth rate attributed to college graduates continued! Of course even the most enthusiastic geriatrist would blanch at this prospect, but he is inclined to be a little vague when asked to what age it would be socially and individually desirable to extend life expectancy if we had it in our power to do so. Perhaps our goal should be the enrichment of living rather than the mere prolongation of life. This appears certainly to be more nearly within our grasp, and our contributions in this direction may atone in part for our failure to render man immortal.

All this, then, and man's ability to exist at extremes of temperature and barometric pressure bear testimony to medicine's contribution to his physical capacity for environmental adaptation, What of his psychologic adjustments? Has his mental and emotional equipment kept pace with the ever-increasing complexity of his environment? Has science, which has increased the psychologic stresses to which he is subject, helped him to develop behavior patterns of comparable effectiveness? The answer to this question will depend a good deal on what sort of measuring stick we use. No one really knows how many maladjusted people there are in his community, though the average practitioner may be inclined to venture a considerably higher estimate at the end of a busy day than at its beginning. But even his casual estimates are dependent on the economic status of his clientele and on his own insight. Rusk⁸ has stated that there are eight million people disabled by mental disease in this country, but the usefulness of this figure depends upon one's definition of disability. Selective Service rejections offer a more precise measure

of serious defects in our citizens' mental equipment. During the last eighteen months of the recent war, when the need for dwindling manpower made us progressively less critical of man's frailties, the Selective Service boards rejected 44 per cent of the 5,767,000 examinees; 26.8 per cent of these rejections were for mental disease, 2.6 per cent for mental deficiency, 4.1 per cent for neurologic disorders, and 12.8 per cent for subminimal intelligence.⁹ In other words, 46.3 per cent of all men rejected were deemed unfit on neuropsychiatric grounds to participate in the struggle for biologic survival. Not all of these were incapable of earning some sort of living or of making some degree of adjustment to their social group. Many were capable of defending themselves individually in a somewhat protective and paternalistic society. But they were deemed incompetent to participate in any such collective defense as was demanded for our survival as individuals and as a nation. In other words, they could not be relied upon to make up a winning team.

Forty-six per cent may seem like a high figure, but Selective Service boards were certainly not being unduly critical when manpower was so urgently needed. They may have been overzealous during the early part of the war, but this is not borne out by figures for medical discharges from the armed forces. During the three-year period of hostilities (1942-1945), 956,232 enlisted men were separated from the Army on certificates of discharge for disability; 379,486 (39.69 per cent) of these were for neuropsychiatric reasons.¹⁰ During the same period the Navy gave medical discharges to 318,798 Navy and Marine Corps personnel, and 104,735 (32.9 per cent) of these were for neuropsychiatric reasons.¹¹ In other words, in spite of attempts at preliminary screening by Selective Service boards, which eliminated nearly half of those called up, more than a third of these were rejected later, on admittedly neuropsychiatric grounds. These figures probably err, if at all, on the side of conservatism, for all of us who sat on "survey boards" were well aware of the frankly psychiatric character of many of the visceral symptoms that earned for their hosts a nonpsychiatric discharge.

The apologist will suggest that war is abnormal and no fair test of a man's social usefulness, even though it may well test the fitness of a society to survive. What is the incidence of serious maladjustment in civilian life? It would be interesting if we could examine from the psychiatric standpoint all members of a small town as the United States Public Health Service has recently done from the standpoint of diabetes. What would be the incidence of major mental disease and of the less serious types of neuropsychiatric disorders? At present we can form only a rough estimate of the burden that institutionalized nervous and mental disease imposes on society. In the United States in 1946

the hospitals for nervous and mental diseases had 46 per cent of all the hospital beds, and the general hospitals only 43.7 per cent. During the same year the former provided 232,055,685 treatment days, or 51.3 per cent of the daily patient load, compared to 181,232,355 treatment days given by general hospitals.¹² This cannot be attributed to the effects of the war, since the figures for 1936 show that hospitals for nervous and mental diseases provided 192,147,438 treatment days, representing 59 per cent of the daily patient load for all hospitals. Since then general-hospital beds have increased faster than those of the institutions for nervous and mental diseases, but the proportions are still roughly the same. In Massachusetts in 1946 hospitals caring for feeble-minded, epileptic and mentally diseased patients had 50 per cent of the total hospital beds and carried 56 per cent of the daily treatment load of all hospitals in the Commonwealth at a cost of somewhat over \$14,000,000.¹³ If we add to the 10,883,205 patient days in these Massachusetts hospitals in 1946 the man days spent in penal institutions, we may have some idea of the magnitude of this problem of maladjustment and the burden on the remaining few of us who have thus far managed to stay out of institutions.

One might conclude that the mental equipment of much of the population has not kept pace in its capacity for appropriate response with the increasing complexity of the environment. We might, for lack of a better scapegoat, blame science for this complexity. Those who have tried to understand a painting by Dali or the writings of Gertrude Stein might feel that the arts, too, must share the blame for this confusion. But these bizarre expressions can be escaped, unlike the noise of machinery, the speed of traffic, the split-second timing of assembly-line technic and the stresses, both social and economic, of a highly competitive society.

Has science attempted to atone for its responsibility by assisting the less well endowed to make more adequate adjustments? Certainly, the acknowledgment of this responsibility is reflected in the growth of psychiatric clinics, special schools for the handicapped, personnel councilors and so forth, but they reach a relatively small proportion of the needy. Much of the expenditure in the field of nervous and mental disease today is allocated to mere custodial institutional care. It is probably true that these misfits are cared for more cheaply, more effectively and with less risk to society than if allowed to run loose. It is open to question whether all these institutions are indoctrinated with the idea of rehabilitation. It is certain that the scanty budgets of many make it almost impossible. As a result many patients are released as soon as they are no longer an obvious menace to themselves or their social contacts although little has been done for long-range rehabilitation. The question may some day be raised

whether this protection and perpetuation of poor protoplasm by humanitarian institutions is handicapping society as a whole both economically and genetically. Sooner or later, if present trends continue, society will have to develop methods for enabling this growing horde to effect more adequate social adjustments or else take steps to reduce their appalling fecundity. It is an interesting commentary on our social organization that two antithetical forces like war and humanitarian institutions should protect the unfit at the expense of the fit. Yet we stage a war every twenty-five years and demand that only the physically fit and psychologically well adjusted be allowed the privilege of dying for their country. The unfit are protected to perpetuate the race. The inadequate personality is sustained inside and outside institutions by a variety of federal, state and municipal agencies. Even an indisposition to work seldom results in starvation. The unfit is not wanted by the Selective Service board, and even if he leaks through its wide-meshed screen and withstands the imprecations of his superiors he is seldom assigned to dangerous or fatal duty because he is incompetent and irresponsible. He may be shorn of prestige and material goods, but his voting and procreative powers remain unimpaired and he and his multitudinous

offspring bid fair to be with us always and in ever-increasing numbers. Not all of them can be institutionalized, and not all of them need to be. But they and their problems of adjustment to society constitute a real if unrecognized task to which medicine must shortly apply itself if our contributions to man's psychologic adjustments are to keep pace with our contributions to his physical adaptations.

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CHRONIC THYROIDITIS*

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CHRONIC thyroiditis, as evidenced by degeneration and fibrotic changes in the thyroid gland, is not a common disease entity but is encountered fairly frequently by the clinician and surgeon experienced in thyroid disease. The recognition of this pathologic process in the thyroid gland is important from the clinical aspect because its firmness, adherence and increase in size of the gland may cause it to be mistaken for malignant neoplasm arising in the thyroid gland.

Classification of this type of thyroid disease has always been more or less troublesome, and loosely used and poorly defined terminology has contributed in no small way to the confusion and disagreement regarding thyroiditis.

More than half a century has passed since Bernhard Riedel,¹ a German surgeon in Jena (1896), presented his original report on the condition of the thyroid gland that has since retained his name and has come to be known as Riedel's struma.

*Presented at the annual meeting of the New England Surgical Society Providence, Rhode Island, October 3, 1947.

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Sixteen years later, Hashimoto² reported what he considered to be a distinctly separate clinical and pathologic entity, struma lymphomatosa. Since these original reports, many articles have appeared in the literature concerning chronic thyroiditis, but little has been added to the knowledge of its etiology. Likewise, the clinical and pathologic picture, as known today, has changed little from the original descriptions.

Riedel¹ pointed out in his first report of 2 cases that the gland was of woody hardness and densely adherent to the trachea and surrounding blood vessels and nerves, all of which made it difficult to distinguish from a malignant lesion.

Hashimoto's² original report consisted of 4 cases, all in women over forty years of age, who presented essentially the clinical picture as it is known today. He was aware of the absence of inflammatory reaction and the lack of adherence to surrounding structures. He went further to point out the post-operative picture of myxedema, which disappeared after the internal administration of thyroid substance. The chief pathologic findings described were diffuse lymphocytic infiltration, atrophy of