GERONTOLOGY: A MODERN SCIENCE WITH A LONG HISTORY

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Two words, gerontology and geriatrics, have with remarkable suddenness made their home in the English language. The word geriatrics was coined in 1914 by the American, I. L. Nascher (from the Greek geron, an old man, and iatrikos, medical treatment) to distinguish the special branch of medicine dealing with senile diseases, on the analogy of pediatrics, the study of children's diseases. The medical profession in England sometimes ignores the whole subject as a special branch and sometimes uses the word without comment as suitable English nomenclature; the lay public has in many cases taken up the word, but tends to use it with the wider connotation of gerontology. Gerontology is the study of all the problems of ageing: medical, psychological, social, economic, cultural. As a word it has hardly arrived in this country yet, but with the growing interest in old-age problems, it seems hardly likely that it will remain long unadopted.

The present age-conscious generation—with its national registration, its different identity cards for the young, middle and old age-groups, its post-war planning of social security measures and the warnings of its statisticians on the changing age-composition of its population—is perhaps more aware of its higher age-group than any previous generation. In less than half a decade, problems of the condition of the ageing members of our society have become a paramount topic of the day and their solution a target for to-morrow.

Awareness of the earlier age-categories, childhood and adolescence, has become increasingly acute within the last hundred years or so. The earliest pediatricians experienced much difficulty and many discouragements before convincing the medical profession that the ailments of children required special treatment and establishing pediatrics as a special branch of medicine. With the increase of interest in child conservation, medical interest in pediatrics increased and to-day this is one of the most important branches of medical science. Child psychology and the problems and maladjustments of youth have produced endless literature and it is now quite outmoded to take the storms and stresses of adolescence for granted as being the inevitable accompaniments of physical changes. It is accepted that the transition of life from childhood to adulthood may be full of causes for conflict, fear and defensive behaviour, and many psychologists have described cases of children who, on the threshold of the new phase of life, have shrunk back into the refuge of infantile fantasies.

There is, however, a conspicuous lack of apparent interest on the part of psychologists in the difficulties of the passage from maturity to old age. Yet there is surely matter enough for expert consideration, experiment and guidance in the conflict peculiar to the period of entry into old age, the conflict between the fear of death and desire for its postponement, on the one hand, and on the other fear of the ills and losses and disappointments of the remaining stretch of life, should the desired length of years be vouchsafed. Jung stands out as a rare modern psychologist to speak with sympathy and understanding on this subject, and goes so far as to advocate special schools for adults to prepare them for the new responsibilities which await them in the last stage of life.

While there is a dearth of objective commentary, there is no lack of literary evidence of the ambivalent attitude to old age from the earliest times to our own day. Down through the ages comes the accepted paradox: the whole of life is too short, its last part is too long! In Biblical times, old age was the repository of knowledge and wisdom (“ask thy father and he will show thee, thine elders and they will tell thee”) and the reward of righteous living (“that thy days may be prolonged”). But David’s dirge of the final years (“yet is their strength labour and sorrow”) and the vivid picture in Ecclesiastes, of the years “when you shall say, I have no pleasure in them,” are undeniably expressive of the spirit of the times. Of Cicero’s De Senectute, the classic of consolation-literature on the subject, Montaigne said, “Cicero’s book gives one an appetite for old age.” Yet it was Cicero who was responsible for the famous dictum, Senectus ipsa morbus est—“old age is itself a disease”—on which so much later philosophy and scientific effort were based.

In modern times, the two notes still strike. When the psychologist, G. Stanley Hall, retired from academic life, he produced his book, Senescence: the Last Half of Life (1922), a masterly ethnographic survey of old age from the vague eras of the past up to the time of defined history. Yet, for all his trained, academic detachment, he was so little able to avoid an atmosphere of melancholy that he warned his wife and son not to read the book lest it depress them too much. Sir William Osler’s half-pessimistic, half-jesting remarks in his Farewell Address, on “the relative uselessness of persons over sixty” roused enough uneasiness to produce a considerable correspondence of protest. Aldous Huxley, from the stand-
point of a younger man, contemplates old age with horror as "more appalling than death." Havelock Ellis raises a rare voice in praise of old age as the time when "the burden falls away. All the anxieties and responsibilities have become light; even if work remains, practice has made it easy," and again, "Call no man happy until he is old." John Cowper Powys, the most recent writer on The Art of Growing Old (1944), contemplating out of his seventy years' experience a wide range of the relationships of old people—social, domestic and economic—offers some philosophic answers to the age-old question of how to be happy though old.

Religion, philosophy, reverence, reminiscence all play their part in the problem of coming to terms with old age. Magic and alchemy have been resorted to for the swifter escapist solutions of fountains of youth and elixirs of life. Rejuvenation of the body and restoration of the forces of ageing man have been sought with endless ingenuity and refusal to accept defeat. The device of contact with a young girl, recommended to David when he "was old and stricken in years; and they covered him with clothes, but he got no heat," was employed by the Greeks and the Romans and has had followers in the medical profession in modern times. Cohausen, a doctor of the eighteenth century, published a treatise on one Hermippus, a Roman schoolmaster, whose life, passed amidst young girls, was prolonged to one hundred and fifteen years. Hufeland, the well-known author of Makrobiotik, a series of sound enough principles for the prolongation of life, quotes this and other examples with approval and observes, "adepts know well that the breath of young girls contains the vital principle in all its purity."

Serious scientists have contributed their share to the search for a specific against senescence and senile decay. At the end of the last century Brown-Séquard, and much more recently Steinach and then Voronoff, have sought to apply the results of their researches in organo-therapy for revitalizing the ageing bodies of men. Though the verdict of the scientific world has been at best doubtful as to any lasting results, the publicity attained by Steinach's and Voronoff's experiments and the popularity of their operations bore witness to the enormous number of elderly persons set on regaining the physical zest of youth.

A more hopeful and productive line of attack on old age has been that arising out of the view that old age is a disease. This view is reflected in such titles as Roger Bacon's Cure of Old Age and Preservation of Youth. Yet the work of this thirteenth-century Franciscan friar and physician, with its mixture of science with fable and philosophy, is prophetic with humanitarian understanding. His account of symptoms, signs and treatments, showing a fine understanding of Galen and Hippocrates, was rescued by Floyer in a more receptive age and presages much of the attitude of modern geriatrics. The doctrine that the process of ageing is wholly pathological, while it shirks the acceptance of inevitability in any diminution of powers, is a direct stimulus towards hygiene in all its forms. Metchnikoff's theory of auto-intoxication induced by external factors as the preventible cause of old age and death gained immense popularity of a valuable and constructive kind, since, along with his advocacy of sour milk for the destruction of putrefactive bacteria, he proposed a life-extension code of orthobiosis—right living, physically, mentally and socially. The eagerness with which a regimen for prolongation of life can be seized by the public is shown by the wave of enthusiasm aroused by Hufeland's book; the word Makrobiotik and the "Hufelandist movement" dominated a generation's thought. As much that is best in the national health measures of to-day grew out of public fears of the miasma of disease and the instinct of avoidance, so the individual fears of burdensome old age and premature death contributed their quota to hygiene and preventive medicine.

That old age is a condition that needs care has been recognized since the days of Hippocrates, the father of medicine, who differentiated and enumerated a catalogue of ailments peculiar to old people. Just as the 90th Psalm caused the widespread, fatalistic fixation of the span of life at seventy years, so the 12th chapter of Ecclesiastes has had enormous influence on later descriptions of the recognizable ills of approaching senility. From the sixteenth century onwards, books have appeared, interpreting the allegorical passages and illuminating them with observational recording of the outstanding characteristics of old age—the tremor of the hands, the tendency to stoop, the loss of teeth, the inclination to early waking, the failing eyesight, the growing apprehensiveness of environmental dangers, the greying of the hair, the waning of sexual desire and potency.

The earlier "care" literature of old age has the same tendency as the "cure" literature—the prescription of temperance for a healthy old age and prolonged life, with an occasional flash of insight into the effect of mind on body. Plutarch advised his ageing contemporaries to "keep your head cool and your feet warm; instead of employing medicines for every indisposition, rather fast a day; and while you attend to the body, never neglect the mind." The sixteenth-century "apostle of senescence," Luigi Cornaro (1467–1566), in his Sure and Certain Methods of Attaining a Long and Healthy Life, written at the age of eighty-three, gives an evaluation of the methods he has used to
reach and enjoy a ripe old age, in spite of having been practically broken in health at forty. His work, curiously sane among contemporaries resorting to astrology and witchcraft, preaches the same message of temperance and fasting.

Floyer’s *Medicina Gerocomica*, which appeared in 1724, was the first scientific treatise on Diseases of Old Age. Present-day knowledge of senile diseases is based upon Carl Canstatt’s *Krankheiten des höherem Allers und ihre Heilung* (1839), which checked the stream of thought that had outlined systems of hygiene based on observation but not on precise information. An important pioneering effort of J. M. Charcot, who in the late sixties inaugurated a course of study in senile diseases at La Salpetrière, the home for the aged in Paris, resulted in the publication of his lectures in 1867.16 His work is a milestone in old-age study, marking its complete emergence from speculative philosophy to the domain of science, with recognition of the ageing body, not as an obsolescent machine, but as having its own type-physiology. Aware of the responsibility of the trail-blazer, Charcot expresses both humility and hope as he acknowledges his debt to the past and looks forward to the future: “Traditional ties are not sundered; the labour of times gone by is not lost; and we shall treasure up the immense heritage which our predecessors accumulated in the course of centuries. Still it must be confessed that new horizons have opened to us...”17

The new horizons were defined and widened by Nascher who, in 1914, gave to the study a discipline and a name by publishing a textbook entitled *Geriatrics*. The extended scope of his subject is indicated in his sub-title: “The Diseases of Old Age and their Treatment; including physiological old age, home and institutional care, and medico-legal relations.”

The medical study of old age was continued in England by Robert Saundby,18 Leonard Williams19 and others. Williams anticipates something of the principles of modern geriatrics by devoting his book to “the consideration of the best means of arriving at old age, together with an inquiry into the present position of some of the maladies of middle age which militate against the attainment of a reasonable span of life.”20 But it was in America that the subject took living roots. Nascher was followed by his pupil, Malford W. Thewlis, with *Geriatrics: a Treatise on Senile Conditions*, published in 1919. This was followed by a greatly enlarged second edition five years later, and in the war years third and fourth editions, “entirely rewritten” and “thoroughly revised” followed each other in close succession (1941 and 1942). In the same few years, symposium after symposium on the subject of ageing was held in the name of medicine, science and public health.21 In 1939 appeared a vital book, *Problems of Ageing*, edited by E. V. Cowdry, in the form of a symposium mobilizing and integrating the work of specialists in different fields. It was sponsored by the Josiah Macy, Jr. Foundation, in New York, which in earlier years was only interested in degenerative disease.22 The development of interest from the major pathological hazards to the wider biological and psychological aspects of the ageing-process is significant. Still more significant is the appearance of a second edition only three years later, with added contributions on the psycho-social and economic aspects of the problems of ageing, notable among them being one by George Lawton on “Psychological Guidance for the Aged,” and another by Edward J. Stiegllitz on the “Social Urgency for the Research.” The pioneer in psychological guidance to retard and even reverse mental decline was Dr. Lillien J. Martin. Dr. Martin provided her own best case-history by starting, at the age of sixty-five, the San Francisco Old Age Counselling Centre, where, until the time of her death in 1943, at the age of ninety-two, she was still actively engaged in consulting work with aged clients. Her work is carried on and developed by Dr. George Lawton, founder and director of the Old Age Counselling Centre in New York.23 The Unit on Gerontology of the United States Public Health Service published in 1942 a survey of three hundred and five active studies in gerontology begun or projected by American scientists. Dr. Stiegllitz, who is consultant in Gerontology to this Unit, in his introduction to a symposium on geriatric medicine,24 emphasizes the importance of orientation of the biological, clinical and socio-economic aspects of the study of ageing man.

The American branch of the International Club for Research on Ageing, founded in 1939, has annual conferences for the discussion and integration of research of leading investigators in this field and has established a museum of senile tissues, clinical research on the effect of vitamins on old persons and, finally, a *Journal of Gerontology.*25

In this country there has been no such steadily progressive development in the study of ageing as in America. Nevertheless an increasing social awareness of the presence, importance and magnitude of that section of the population which is in the higher age levels became evident in about the middle of the war years, and the last two years have poured forth a spate of newspaper correspondence,26 housing schemes,27 literature and activities centred round the needs of ageing persons.28 In the period of heavy air raids, the Friends’ Relief Service rose to the occasion with prompt action for the removal of the aged from the target areas and the provision of homes and
hostels. Other more official arrangements followed, all intended as temporary expedients.\(^{29}\) But the emergency situation had brought to light disconcertingly extensive evidence of uncared-for old age and the emergency expedients became absorbed with other age-conscious activities into the beginnings of a long-term social work. Organizations, both voluntary and statutory, having direct contact with old people, began to draw together to discuss the common problem. The National Old People's Welfare Committee, established in 1941 as a committee of the National Council of Social Service, gradually became more and more representative of these organizations and in 1944 became an autonomous body working in association with the Council. To-day there are 9 regional and 120 local Old People's Welfare Committees in different parts of Great Britain, engaged in setting up hostels, visiting the lonely, organizing Home Helps Schemes, meals services, social clubs, holidays, convalescent treatment, making representations to the local authority regarding housing of old people and drawing public attention to the needs of old people by means of conferences, publications and exhibitions. An exhibition illustrating work being done and still needing to be done for “Old Age in the New World” was held at County Hall in March of this year. The report of the Assistance Board for 1944 (published in December 1945) is specially devoted to the conditions and circumstances of old-age pensioners.

While the forces of social welfare are thus mobilizing to provide palliatives for present ills, the spreading disease of old-age distress receives some check and relief but not cure. There is urgent need of finding roots and causes by deeper investigation and of integrating and co-ordinating all results, and so coming to a true cure of a condition of social pathology. The first real impetus to the scientific examination of old-age problems has been given by Lord Nuffield, and later the Nuffield Foundation, who supported a scheme of clinical research work carried out in co-operation with the London County Council at Tooting Bec Hospital;\(^{30}\) inaugurated, in co-operation with the Ministry of Health and Assistance Board, a country-wide survey of the condition of old people;\(^{31}\) at the end of 1944 made a donation of £3,000 which led to the establishment of the Gerontological Research Unit at Oxford, with Dr. Korenchewsky as its head;\(^{32}\) and early this year gave £20,000 to the University of Cambridge, on the strength of which the Psychological Laboratory is undertaking, under the direction of Dr. F. C. Bartlett, investigations into the causes and results of ageing, and measurement of work efficiency and adaptability in relation to age.\(^{33}\) Now Dr. Trevor Howell who, on the basis of his work with Chelsea pensioners, has contributed a good deal to encourage the co-ordination of geriatrics with institutional and home after-care, has been awarded a grant by the Nuffield Foundation, augmented by the London County Council, for research into chronic pathological changes in the aged.\(^{34}\) In medical practice, the profession begins to recognize that, by extending life and the proportion of the long-lived, it has helped to create a situation with wide social and economic implications, and to take its share of the responsibility. The changing age-composition of the population has focused greater attention on chronic and degenerative diseases and on hospital and home care of the aged and infirm; medical officers are drawn into group surveys of the living conditions of their ageing patients.\(^{35}\) In gerontology, as in other departments, medicine can no longer remain an independent, self-contained institution but must be linked with other social processes in the culture pattern.

While the present preponderance of old and elderly in the population is historically unique, the effect of a rapidly changing civilization in precipitating a social problem in the form of a section of the community has had its parallel in English history. In the sixteenth century, the rise of the new economy, the expropriation of the peasantry and the dissolution of the monasteries flooded the country with unemployed and unemployable thousands. While methods of driving and harrying could be used with the so-called “sturdy beggars,” it was perceived that the so-called “impotent poor,” of whom the aged formed a great part, must somehow be provided for or disposed of. The Poor Law Relief Act of Elizabeth in 1601 was the first act acknowledging State responsibility in the matter. There had been hospitals (“God’s Houses”) in mediaeval times, maintained by the Church, for the care of the aged and sick, rather than for their treatment, and many almshouses were founded for the same purpose during the sixteenth century, when charity as a divine injunction made good works a means of grace.

It is rare in the earlier philosophical and medical literature to come upon any reference to the aged as a group of people on the high age level. The writers are as a rule individuals themselves old, specially gifted, writing subjectively of their own experiences and for their own leisured kind. Only the remarkable Dr. John Smith of the seventeenth century, who only lived to be forty-nine and wrote his Portrait of Old Age\(^{36}\) in his thirty-sixth year, shows any sympathetic consciousness of the dependence and helplessness of the greater group of old people. “Let none,” he says, “give over their Patients when they come to be burdened with the infirmities of Age, as though they were altogether uncapable of having any good done unto them; . . . those that are negligent towards their
Ancient Friends are very near to those inhumane Barbarians and Americans who, with great pomp and alacrity, both kill and devour them, thinking thereby they perform a most charitable office in delivering them from those incurable maladies which will forever render them miserable."  At the end of the same century, the reformer John Bellers raises a voice for the welfare of the older worker in his proposed College of Industry: "that as they grow in years in the Collidge, they shall abate an hour in a Day of their Work, and when come to sixty years old (if Merit prefer them not sooner) they shall be made Overseers, which for ease and pleasant Life, will equal what the Hoards of a private Purse can give; and excel, in so much as it hath less care and danger of losing." 37

The history of the care and treatment of the aged groups of society is a history of opinion as to who is responsible—the family, the individual nearest of kin or of neighbourhood, the State, the employer, private charity, the people—and in the nature of that opinion is reflected the economy, the sanctions, the experience, in short the whole culture pattern of a given society. The answer which seems to be arising to-day to the questionings of generations is that the aged, with proper cooperation from society, need no longer be the dependent group they have been in the past and can take over a great deal of their own responsibility and a share of the group-load with it.

The centuries-old lament over impaired efficiency and diminishing powers with ageing has at last become outmoded. With the mobilization of a large percentage of older workers in the war effort, there has been no time to listen to this complaint, unless to seek to improve matters. 38 J. H. S. Bossard emphasizes the importance of remembering that the aged are not a separate entity in the community but ourselves at a later date. 39 Perhaps it is a significant symptomatic of the new attitude that the most active workers on old age problems in America are shown, by a consultation of the American Who's Who (1943) and curricula vitae in various journals, to be almost all in the fifth decade of their age. Dr. Martin Gumpert, the author of a vivid and challenging book, 40 warm with understanding of the ambivalent nature and difficulties of both the individual's ageing-experience and the reciprocal relations between the generations, announces himself as forty-six at the time of writing. The recent exhibition of the Old People's Welfare Committee at County Hall brought the lesson right home by showing to the visitor as first exhibit, under the label: "Old Age in the New World"—a mirror! Provision for old age is not all in pensions and financial savings. It is in the years of maturity that the best preparations are made to conserve health and functional efficiency so that the later years of life need not be made heavy with handicaps and impairments as of old. The concern of those who work-to-day for old age in the new world is to "add more life to the years rather than years to the life." 41

BIBLIOGRAPHY AND REFERENCES

For the most recent, authoritative review of the position, see:

INFANTILE ECZEMA

By I. R. MARRE, M.R.C.S., L.R.C.P.

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This is a common disorder, which embraces a number of different conditions, and in my experience can most reasonably be divided up into four unequal groups. These are:

a. Atopic or allergic group.
b. Seborrhoeic group.
c. Ichthyotic or Xerodermic group.
d. Infected group.

of which the first two groups comprise by far the largest number of cases.

I have found it useful to attempt to place each case in its special group, as treatment and prognosis vary a good deal. Occasionally one does see patients who show characteristics of more than one group, but this is by no means usual.

a. Atopic or Allergic Group

This is the largest group and consists of those children with true infantile eczema. There is commonly a history of family allergy such as asthma, hay fever or eczema, and really severe cases can give a history of allergy in the families of both parents.

The child is well at birth but shows first signs of skin trouble when about eight to twelve weeks old. This consists of a papular, papulo-vesicular or vesicular eruption involving the face and body, with a special tendency to affect the limb flexures. Typically a patch consists of an ill-defined erythema, closely set with vesicles, which is intensely pruritic and the child makes frantic efforts to scratch. Trauma leads to removal of the tops of the vesicles and to the exposure of a raw weeping surface which becomes crusted with dried serum. Persistent rubbing and scratching lead to an extension of the inflammation with infiltration and fissuring, and the child finally presents an excoriated, wizened, woebegone appearance that is characteristic. The disease is persistent and chronic, and prone to relapses and recurrences, but there is often a spontaneous improvement or healing towards the end of the second year.

It is in this group that eczematous infants may exchange their skin condition for asthma or hay fever as they get older, and they may go on to the chronic atopic eczema of later childhood, adolescence and adult life, with thickening and lichenification of the skin flexures. It is in this group, too, that the eczematous infant will give positive skin tests to proteins more frequently than in the other groups or than in normal children, but in my view this sensitivity is not specific, since I have found that the skin in infantile eczema will tend to show a positive result to a large number of protein skin tests, and that the withdrawal of these proteins seems to make little difference to the course of the disease. Occasionally one will find a child benefit markedly by the withdrawal of the protein to which it is especially sensitive. Substances which commonly give positive skin tests in these infants are Egg (particularly Egg-white), Milk, Wheat and Barley.

Treatment

The importance of local treatment is hardly to be overestimated, and all efforts must be made to protect the infant's skin from the environmental changes to which they seem unable to adjust themselves in their journey from the uterus to the outside world.

The infant must not be exposed to direct sunshine, strong winds or severe changes of temperature, and the temperature of the room should be kept evenly about 70° F. Clothing should be loose, light and soft, and wool should never be worn next to the skin; smooth cotton garments should be used in preference.