

## THE PROBLEM OF OLD AGE

*“ The increased age of the population, although one of the most certain of phenomena, one of those subject to the closest observation, lending itself better than others to forecasts, and perhaps one of the most important, is nevertheless one which goes unheeded by the man-in-the-street ”.* So writes Mr. Sawvy, in a special issue of *Revue internationale des sciences sociales* (No. 3, 1963) devoted to an over-all survey of the complex problems and various trends of social gerontology, that relatively new branch of science which already encompasses a wide field covering both the individual and the social aspects of the phenomena of old age.

Several National Societies of the Red Cross are known to be giving their attention to these problems and in order to cope with them they have undertaken schemes which practical implementation has shown to be urgently necessary. This is well demonstrated by an article we published last year on “ Wern ”, a home for the aged which is run by the British Red Cross. The French Red Cross too is concerned with geriatrics and No. 141 (1963) of its review *Vie et Bonté* is devoted to this subject.

Dr. Bourlière's article in that review is of such topical interest that we have thought it worthwhile to reproduce it in full. Dr. Bourlière, who is a Professor at the Paris Faculty of Medicine and Director at the Claude Bernard Gerontology Centre, takes a cautious and realistic view of the problems arising from senescence and longevity. Several authors have contributed articles on the aging process, the locomotory organs and dietetic functions of the elderly and the aged. In the final pages of the review, details are given on social work in France for the elderly, highlighting the various achievements of the French Red Cross in this field.

## The Struggle Against Old Age

Contemporary man, no less than his ancestors, loves to cherish illusions. Hardly a week goes by, for instance, without our being assailed by news in the press, on the radio and television of the marvellous effects of a century of science on the span of human life, at least among the populations of Europe and America who enjoy high living standards and the benefits of "scientific hygiene". Infectious diseases are vanquished, or nearly so; degenerative ailments are receding, thanks to the patient and methodical labour of armies of research workers equipped with increasingly effective resources. Man is beginning to decypher the top-secret messages transmitted by genes and to see vaguely how these affect the synthesis of even the most complex molecules. Already some of the back-room boys have hinted at a new "golden age" in which the flight of time will, so to speak, be held in check and man—thirsting after perenniality—will be able to enjoy the benefits of a protracted youth for a hundred years or more.

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Unfortunately stark reality is quite different from these childish dreams. True, the results of biological experiments have been most encouraging, but their practical applications are extremely limited. Between the dissection of the molecule of desoxyribose in nucleic acid, and the knowledge of the human body with all its physical and mental complexity, there is a world of difference which will require to be explored for generations to come before we understand it in an anything like satisfactory degree. Even then, there is no reason for us to suppose that we can achieve a state of perpetual youth subject only to the hazards of politics and traffic.

Although cancer and even arteriosclerosis may one day be eliminated, that still would not mean that the adult organism would undergo no change for 80 to 100 years. There are not a few plants and animals in which these degenerative ailments are unknown, but they age nevertheless. Signs of old age have been demonstrated in certain macromolecules and it appears more and more probable that time leaves its mark on all structures, from

the DNA spiral to the cells, the tissue, the organism and to the individual himself. All forms of life seem to undergo progressive alteration in their vital processes. We may hope to check this slow but sure "wear and tear"; but for the time being it seems unlikely that it can be halted entirely.

But, it might be objected, is that not being incorrigibly pessimistic? Has not the average age of the human being increased considerably during the last 150 years? And as discoveries are now made with amazing rapidity, may we not look forward to an even more spectacular prolongation of the average life expectancy in the next few decades?

Indeed, when we compare the life expectancy of the Frenchman born under the first Empire with that of man today, we observe that it has almost doubled in a century and a half. For males the average age at death in 1805 was about 35, as against 65 today. For women the life expectancy has risen from 38 years in 1805 to 71 in 1955.

But what is the exact significance of these figures? Life expectancy at birth corresponds to the average age at death of the population as a whole. That is to say that the age of those who die a few weeks after birth is added to that of those who die in childhood, after maturity and in old age and the total is divided by the number of individuals taken into consideration. However, the most outstanding trend in vital statistics following Pasteur's revolutionary discovery of the XIXth century is the reduced infant mortality rate which 150 years ago in France was approximately the same as that of India today. It is this reduction in infant mortality which has enabled a greater number of people to reach maturity and old age, but that does not mean that the maximum span of life has for all that been changed.

It is therefore much more instructive to consider the life expectancy after 50 years of age—that is to say the number of years left to us after we have reached an age which we rightly or wrongly believe to be the age at which we have attained the fullness of our physical and mental faculties. What do we then notice?

In 1805, a Frenchman of 50 could expect to live another 18.1 years. In 1955 such a man could expect 22.4 more years of life. The Frenchwoman of 50 under the first Empire could expect to

live a further 18.9 years whilst her counterpart of today expects to live 26.7 years more. In spite of the inventions of Pasteur and Fleming, and fantastic advances in surgery and hygiene, the gain is slight : a little more than 4 years for men and a little less than 8 for woman !

For the more elderly, the difference is even less marked: in the course of 150 years the life expectancy of a 60-year old man has increased by only 2.2 years and in the case of women by 5.2 years. At 70, the gain is reduced to 0.3 years for men and 2.3 years for women.

At 80 years of age and afterward there is even an inverse tendency and the old man or old woman of today may expect to live for fewer years than a predecessor in the Napoleonic age. Indeed, in 1805 the life expectancy at 80 was 6.7 years for men and 6.8 for women, as against 4 and 5.9 years respectively in 1955. It therefore looks as if the elderly people of former times, a rare few who had during their lifetime withstood the numerous hazards of a world without asepsis, vaccins and antibiotics, had much more stamina than their descendents of today who reach the same age in greater numbers, but with less vitality.

All this must give grounds for modesty on our part. Biologists and doctors, psychologists and sociologists are only at the beginning of a long struggle against the various "degenerative" ailments which are still the major cause of death among the elderly. The causes of these ailments are complex, closely linked to the fundamental process of senility and it will no doubt require a great deal of time, imagination and money before the achievement of effective preventive and curative therapy.

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There is another observation which should encourage devotees of science fiction to caution. The impression is gaining ground nowadays that as progress is made in eliminating illnesses which have plagued mankind for thousands of years, others arise to take their place. These are sometimes referred to as "illnesses of civilization".

## Miscellaneous

Throughout the hundreds of millennia of man's existence, the pattern of his life changed remarkably little. From the time of *Zinjanthropus* of Olduvai (about 1,750,000 years ago) to the hunters of the Paleolithic period who lived no more than 15,000 years ago in what today is France, the way of life had changed relatively little. Whether they lived in warm countries or in the Tundra regions towards the poles, these collector-hunters regulated their lives, their migrations and all their daily activities according to the annual cycle of wild plant and animal life on which they relied for their subsistence. Their very numbers depended in the last resort on the wealth of berries, grains, roots and game which abounded in the regions where they lived. In this struggle for existence, there was no place for the weak in mind or body. Whilst this law of the jungle prevailed, humanity slowly but surely evolved from the pre-human stage to that of "homo sapiens". Under the pressure of natural selection for hundreds of millennia the weak were pitilessly weeded out, ensuring the survival of the fittest.

It was only about 12,000 years ago, somewhere in the "fertile crescent" of the Near East, that the great neolithic revolution began. Suddenly (on the geological time-scale) man's relationship to his environment underwent a change; nomadism gave way to settlement, husbandry of crops and animals replaced reliance on wild plants and game, seasonal variations in food resources tended to diminish, whilst surpluses, leisure and social distinctions began to make an appearance. This new way of life gradually spread to almost the whole world and to this day its survival need not be sought in darkest Africa, in the Indies or the Andes. It is present on our doorstep, in the spirit and customs of the peasantry of every country.

Finally, with the industrial and demographic revolution of the 19th Century, a third type of environment came into being and to which man is still adapting himself; the great industrial urbanism with its mass concentration, its specialization of labour, its intense competition, its high tension rhythm, its new values, its physical and moral pollution, its collective influences, etc. In brief, an enormous ants' nest in which individuals still have their own personalities and in which, for that very reason, problems of

physical and mental adaptation continually occur, from the cradle to the grave. This revolution is going on before our eyes, without our really being aware of it, but it is nonetheless profoundly changing man morphologically, physiologically, psychologically and pathologically. In childhood, for instance, biological development has accelerated rapidly in the short space of a few decades. A century ago, boys in France and England continued to grow until the age of about 26 : today growth stops at 18 or 19. Girls used to have their first menstruation towards 16 to 17 years of age, whereas nowadays it frequently occurs at 12 years and often even sooner. In a hundred years, therefore, the duration of physical growth has been shortened by about twenty-five percent, without our having any proof that intellectual maturity has been similarly accelerated.

Among adult city dwellers of today, a plentiful and rich diet is accompanied by a considerable reduction in physical exertion, resulting in a tendency for the population as a whole to become progressively fatter, at least until the age of fifty. Compulsion to work at a rapid pace, bustle and noise, constant worry and nervous tension, frequently give rise to abnormal fatigue, sleeplessness, irritability and anxiety. Specialization to a more intensive degree, earlier and earlier in life, is producing diminished interest in extra-professional matters, making more difficult the exercise of hobbies, those regulators of equilibrium and excellent source of intellectual relaxation. Added to all this are the noxious effects of increasing atmospheric and water pollution, widespread and contagious addiction (e.g. to tobacco and alcohol), indulgence in the use of certain drugs, etc.

The appearance of a completely new pathogeny under such circumstances is not surprising. Accelerated growth, it seems, is related to the appearance at an increasingly early age of certain degenerative ailments which in former times manifested their symptoms much later in life. For example, autopsies carried out on strapping young men in their early twenties killed in the Korean war revealed coronary disorders in 77 per cent of them. The incessant difficulties of adaptation to family, professional or social environment, so prevalent in our modern urban society, give rise to a whole series of causes of psychological disequilibrium and

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psychosomatic disorder, ranging from the typical hypertension of the native in a squalid shanty-town, uprooted from tribal life, to the mental troubles among New-Yorkers, described in the *Midtown Survey*. The air in our towns is polluted with tons of gas and toxic substances poured into it each day and the long term effects of this are discreetly passed over in silence. The same applies with respect to all the products—insecticides, herbicides, anti-rust compounds and dyestuffs—which today impregnate most of our food. As for traffic accidents, everyone knows that they constitute one of the major causes of death among adults.

Instead of deluding ourselves with visions of prolonging life to 150 years, I believe we must seriously consider the possibility of our losing on the one hand (through degenerative ailments and mental disorders) what we have gained on the other (decline of infectious diseases) since the beginning of the era initiated by Pasteur. In any case, it is now up to the biologists, psychologists and sociologists to combine their efforts to examine whether certain developments in our modern industrial society are not contrary to nature. For any single branch of science to attempt such a study of this vast problem would be futile. Only an all-out programme involving the sciences concerned would enable the achievement of results and permit us to lay the foundations of truly satisfactory hygiene for modern man.

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