Editorial

Fritz Verzár, 1886–1979

In September 1986 we celebrate the centenary of the birth of Professor Fritz Verzár, the founder of this journal in 1957 and its editor until 1971.

Fritz Verzár, born in Hungary, became Professor of Physiology before the end of the First World War, at the University of Debrecen, and its Rector in 1928/29. His first scientific paper was published in 1907, when he was 21, his last in 1976, when he was 90 years of age. This astonishing period of almost 70 years of unbroken creative scientific productivity is a testimonial to his outstanding mental and physical vigour and to his consistent and active enjoyment of all aspects of life.

His wholehearted interest in biological and medical research is reflected by the number of different fields in which he produced results which drew worldwide attention. While still in Hungary he came to realize the importance of vitamins and hormones for neurophysiology, hence his long-lasting interest in nutrition and in endocrinology. His early years in Basel (from 1930 on) centred on absorption from the intestine. Soon he became fascinated by the biological effects of high altitude and started research projects in the Swiss mountains. After the Second World War he served as expert with the World Health Organization and the Food and Agricultural Organization of the United Nations. And in 1954, two years before his official retirement from the chair of physiology at the University of Basel – he was then 68 – he published his first geronto-logical paper, on adaptation in old age.

The vigour of his mind is illustrated even better by the way he worked: in every field of research he concentrated on one basic biological problem, on which he could spend many long hours in the laboratory, even in his very last years – phosphorylation of sugars, concentration of atmospheric condensation nuclei, cross-linking in collagen during cellular ageing. At the same time, his thinking was open for new lines of research, and his flow of ideas stimulated many generations of young researchers who passed through the Verzár ‘school’.

We, former students, assistants and collaborators of Fritz Verzár in his Institute of Experimental Gerontology in Basel shared in this last creative period of his scientific life -gerontology. He founded this Institute after his retirement as Professor at the University of Basel, in 1956, at the age of 70. He was gripped by the conviction that ageing is basi-

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cally a normal physiological process, and thus can and must be considered and studied separately from age-related disease. For him ‘experimental gerontology’ was a scientific discipline distinct from ‘clinical gerontology’, and he vigorously defended this point of view at international congresses and in many publications over the next 20 years. As a consequence of his firm refusal to compromise, he steadfastly refused to accept clinically oriented manuscripts for his journal (then called ‘Gerontologia’) leading to the establishment of the sister journal ‘Gerontologia Clinica’ in 1959. Indeed, the last published paper authored by Fritz Verzár [Ex-perientia, Basel,

32: 746, 1976] is entitled 'Basic Research in Gerontology' and in it he is still actively campaigning for the return of biological research in gerontology to 'true basic research'. What has become of Verzář's ideas about gerontology? What position does our journal take today? The first and most important fact is that we do not anymore think that we can cleanly distinguish between what is 'normal' and what is 'abnormal' or 'pathological' in ageing. We have drawn the logical consequence, and ten years ago merged the two sister journals into Gerontology, international journal of experimental and clinical gerontology. This, we believe, has proven to be a fruitful step. The closer collaboration between those studying ageing in animal models and those looking at ageing man has led to the conviction that 'geriatrics', or the study of age-related disease, cannot be separated from the study of ageing in general. Diseases in old age are the outward manifestations of an underlying process, which in its most general form can be called 'progressive loss of adaptive mechanisms'. In that respect, we have left Fritz Verzář's way of

thinking. In contrast, his often expressed conviction that the central nervous system and its regulatory functions were the key to the ageing of the organism has moved to the centre of gerontological research today.

Less discussed today is his conviction that changes in the structure of collagen in connective tissue are just as important for the progression of ageing. In this context it should not be forgotten that rheumatic disorders, involving connective tissues, are one of the major characteristics of ageing in man.

An opportunity to take stock of recent worldwide research activities was provided through the 1986 Sandoz Lectures in Gerontology in Basel. As in Verzář's time there still remains the difficulty of bridging the gaps between the various specialized domains, especially between molecular and cellular biology on the one hand, and research at the higher levels of biological organization on the other.

However, there is also confirmation of progress. One traditional controversy, concerning the usefulness of cultured cells as a model for in vivo cell ageing may have become less pungent in that more emphasis is now being laid on stages preceding terminal phase III of the cultured cells. As stated by L. Hayflick, important predetermining molecular and biochemical changes seem to occur already in phase II, i.e. at a stage of cellular life probably more representative of the majority of mitotic cells in the ageing higher organism. Another old controversy concerns the question whether ageing is due to a 'programmed' or to a 'stochastic' process. R. Holliday, expanding on L. Orge's stimulating 'error catastrophe' theory, believes epigenetic factors at least to contribute to the ageing process. Point in case is some early evidence for cultured human diploid

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cells gradually losing their ability for DNA-cytosine methylation. Thus, some of Verzář's and his peers' ideas of earlier times regarding molecular changes impinging on the cell's vitality have been put onto a more concrete experimental basis. We are however still far from understanding just what is the cause and what is the consequence in those fragmented pieces of knowledge. We tend to get lost as soon as we approach integrated systems, where final cellular differentiation may in itself be considered the primary basis for ageing, whether it concerns neurons, cardiac and skeletal muscle tissue, or the haematopoietic stem cells.

How does Man fit into gerontological basic research in these modern times? Certainly a major concern is the maintenance of functional integrity for as long as possible. This, in turn, requires deeper insight into the relationship between ageing changes and disease. In this context, brain dysfunctions, especially those involving dementing conditions, are one of the great challenges for man-oriented gerontological research today. The regrettable lack of insight into the causal pathogenic mechanisms of diseases such as senile dementia of the Alzheimer type may keep us from finding a rationale for successful intervention for quite some time to come. In addition, what makes man so enormously difficult to study, compared to standardized laboratory animals or in vitro models, are the psychosocial factors, the effect of which both on diseased and normal function is at present the object of systematic study.

We may conclude that today, although there seem to be more open questions than ever before, gerontology is gradually entering a phase of intensified interdisciplinary cooperation – one of Fritz Verzár's most frequent and insistent demands. This progressive evolution from numerous isolated pieces of research to a wide interrelating research field justifies renewed hope that the long sought breakthrough in basic and also in man-oriented gerontology may soon be reality.

W. We are grateful for the impetus that Fritz Verzár gave both to gerontology as a whole and to us personally. He always demanded the best from us and was impatient and bit-ingly critical of poor experimentation and incoherent thinking. If Verzár

for his multi-facetted interests

was in his time called 'the last all-round physiologist'

we think of him today

on his 100th birthday

as the first all-round gerontologist.

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