I am most honoured to chair this joint meeting of the EDTA and the ISAO, a symbol of the necessary alliance — scientific and, in my mind, not only scientific — between Europe and America. The programme says that I should give an introductory talk. The message I would like to propose may be expressed as follows: we nephrologists have every reason to be proud of our beloved mistress, I mean nephrology.

What was nephrology twenty-five years ago? The word itself was not in use. Doctors interested in renal diseases knew that chronic nephritis was a frequent disease, of totally unknown origin, leading to uraemia and death after a dreadful agony. And they had nothing in hand to oppose this fate. In 1959 the International Society of Nephrology was founded and the word nephrology, first proposed by French researchers, was unanimously accepted. That same year, chronic dialysis was born and the first successful renal allotransplantations were published. The great adventure of modern nephrology was beginning.

A very special feature of this adventure is that it opened new paths not only for renal physiology and renal disease, but also for all of medicine. Let me describe a few examples.

First, nephrology was at the origin of modern techniques of intensive care (réanimation médicale, as we say in French). Nephrologists had discovered that renal failure is not only failing elimination of urea and other waste products; it is also a failure of the system controlling the composition of the milieu intérieur. Since Claude Bernard we knew that the life of each of our cells depends on the stability of the milieu intérieur. Along the same line, nephrologists demonstrated that alterations in the composition of the milieu intérieur (pH, serum potassium, water distribution and so forth) are as important as nitrogen retention in uraemia. Controlling the milieu intérieur in patients with renal failure proved to be highly effective. A new medical concept was born: in any acute condition, whatever its origin, the control of the milieu intérieur is an essential part of the treatment. This is the very basis of intensive care and it has probably saved more lives than the discovery of antibiotics. Nephrologists have also been pioneers in the replace-
ment of defective organs. First, replacement by a machine — this is the remarkable story of the artificial kidney. And second, replacement by a living organ. Our colleagues specialising in heart, liver or pancreas diseases are probably ten years behind us in the realm of organ replacement. And the successful transplantation of organs other than the kidney will derive from techniques devised by nephrologists.

Nephrology has also introduced new concepts in the classification of diseases. Not so very long ago, diseases were classified much as botanical species. Each disease had its precise cause, its distinct lesions, specific clinical manifestations and sometimes well-defined treatment. Typhoid fever or acute mercury poisoning are good examples. It so happened that the study of some renal diseases such as glomerulonephritis just did not fit within this classical approach. Membranous glomerulonephritis, for instance, may have such varied causes as lupus, parasitosis or penicillamine poisoning. In return, lupus can induce either proliferative or membranous nephritis. It soon became apparent — and this is true for all of medicine — that the classification of diseases could no longer take the form of a catalogue with a single-entry system. The classification changes with each criterion: aetiology, pathogenicity, pathology, clinical manifestations and so forth. The whole of medicine was to benefit from this new concept of a multiple-entry approach to disease.

Nephrology has also been a pioneer in the study of some new pathogenic mechanisms, which have proved important for many other areas of medicine. I could give several examples: previously unknown types of complement activation, or the role of circulating immune complexes, or the importance of local complex formation within the diseased organ. In my opinion the greatest of these pioneering advances by nephro-immunologists concerns autoimmunity. Two renal diseases, Goodpasture’s syndrome and lupus nephritis, led nephrologists to study autoimmune pathology, and they soon provided information which greatly changed our traditional concept of autoimmune diseases. The first new idea was that finding autoantibodies does not prove that they are the cause of the lesion: they may well be secondary, in response to a lesion of totally different origin. The second idea is that autoimmunity largely results from anomaly of the immune system: the best example I can find is the NZB mouse, which nephrologists are studying as a possible model of lupus. In this model a disorder in T lymphocyte maturation precedes the autoimmune process; the latter is preceded by a decrease in T-suppressor lymphocytes. And the same anomaly has now been found in many human renal and nonrenal autoimmune diseases. The isolation and synthesis of a circulating thymic hormone, again by a group of nephroimmunologists, will perhaps be an important step in the treatment of such conditions.

In summary, nephrology has not only created a revolution in renal medicine, it has also changed the approach to many other fields. Indeed, if we consider that nephrology in the modern sense was born only 25 years ago, we may say that it proved to be a child prodigy and that it now reaches young adulthood having already made a remarkable contribution to all of biology and medicine.