

## Foreword

While engaged for many years in the study and practice of human pathology, my interest has always centered around the organ structure and its changes. Undoubtedly, I led myself along this path under the profound influence of my teacher, Prof. Norio Suwa (1915 - 1996). He was a figure who was not so much a diagnostic pathologist as a philosopher, always asking what a significance the form of biostructure may have on its function. In contrast, I am rather an ordinary pathologist, spending a larger part of my time studying problems much closer to the practice of pathology. However I have to acknowledge there is also some peculiarity in my own way of thinking as pathologist. Coming to encounter a huge variety of pictures every day, I used to look for problems that seemed accessible to studies from a "structure and form" point of view.

Today, the frontiers of pathology seem growingly assisted by molecular studies. I think this may be a natural course of event in the history of science, but cannot help asking a question. The knowledge about, perspectives in, and technique to study the structure and form of organs—aren't these another indispensable and invaluable weapon of pathologists? Don't they belong to our own expertise where we can identify ourselves? Isn't the science of structure and form the very aspect of biomedical science where no workers in other fields can compete with us? To me, it seems to be of profound significance for the future advancement of pathological research if we manage to synthesize the molecular and structural studies. There is however a problem. While one can find plenty of textbooks for molecular biology, in morphology there is none that provides us with the ABC of research. And this may be the reason why, as stated above, problems of form still abound in human pathology.

As a matter of course, my study has taken a meandering course, with plenty of trials and errors. It was not until about twenty years ago that our studies began taking a more straight course. In one aspect, I owe the acceleration of studies to the introduction of computers which then became available in our laboratory, and this greatly assisted in analyzing organ structure. Also, for the academic influence I am indebted to researchers working in other fields, many of whom I came to know through Science on Form Japan, an interdisciplinary forum established in 1985. And of course, I have to thank my young coworkers, many of whom came to my laboratory to study problems they embraced during their activities as clinicians. Preparing this manuscript, I was struck by the affluence of works performed and left by them.

In this book I intended to compile the studies of my team and of myself. Because the works were all based on analysis of form, I made it an editing principle that in introducing every subject of study, all the context, including the motive, methodological considerations and the understanding reached, be illustrated with an image. What I am afraid is that the geometric rationale given at some places may seem, particularly to non-biomedical workers, too much lengthy and presenting only intuitive descrip-

tion. Please let me say that working in biomedical domain, I myself, and perhaps most of the readers, may not be much skilled in mathematical thinking.

Taking this opportunity, I would like to express my gratitude to Prof. R. Takaki of Tokyo University of Agriculture and Technology (physics), who, as president of Society for Science on Form, has helped me getting acquainted with methods and knowledge in the study of form. Profound thanks to Dr. James P. Butler, Associate Professor of Medicine, Harvard University Medical School, for his sincere discussion over the manuscript and kind advice on English wording. Last but not least, my gratitude to Mr. K. Oshida, SciPress, who undertook to publish this book. Without his help and encouragements, I would not have managed to put into arrangement our studies that all had been left in a mess.

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