Foreword

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The understanding of psychobiological mechanisms participating in the predisposition, onset and occurrence of psychosomatic disorders is still very preliminary. However, the recent increase of knowledge in neurobiology and psychobiology has considerably improved basic and clinical concepts on the neuroendocrine control of bodily function [1–3]. In the present issue, five papers provide an introduction and overview into new and important areas of research.

The hypothalamus-pituitary-adrenal axis is one of the major pathways by which the brain communicates with peripheral organs. The pioneering research of Seymour Levine and his associates provided substantial insights into endocrine changes associated with behavioral stress [4]. In his paper, he summarizes recent animal research on social factors on the response to stress, focusing on the psychobiology of mother-infant interaction and social buffering. This research documents the importance of external social influences on a so-called endocrine system. While Dr. Levine's work represents a research strategy of observing alterations of biological systems in consequence of behavior, other researchers study the possible role of newly discovered neuromodulators on behavior. Within the last decade, many new brain peptides have been investigated, and some of them seem to play a distinct role in psychosomatic responses. The paper of Laurel Fisher and Marvin Brown summarizes recent knowledge on neuropeptides which participate in the control of the autonomic nervous system. Within the last decade, their own research and that of other investigators in this area has tremendously extended our knowledge of brain mechanisms which participate in the behavioral control of bodily functions and diseases [2, 5, 6].

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The relevance of animal data for human psychosomatic research concepts, however, may still be questionable. Thus, the paper of Stephen Wade and myself should illustrate the significance of neuroendocrine research for the understanding of human stress vulnerability. However, it seems to us that a deepened knowledge of stress reactivity in men may not simplify our clinical concepts in psychosomatic medicine but rather elucidate a complex puzzle of interacting psychobiological variables.

Other important interdisciplinary research is concerned with the understanding of the psychobiology of basic biological functions, such as sleep, reproduction, and nutrition [7]. Here, the imposing research of Richard Wurtman and his colleagues on the effects of dietary carbohydrates and proteins on neuronal functions may be of particular importance for psychosomatic medicine. In this issue, Hendrik Lehnert and Richard Wurtman point out the physiological and clinical implications of amino acid control of neurotransmitter synthesis and release. Their data suggest the possible existence of close interactions between selective intake of food constituents, specific neuroendocrine changes in the brain and the pituitary, and eating disorders.

Within the last two decades, psychoneuroimmunology has become another important and exciting area of research. The discovery of close communications between behavior, the brain and the immune system, led to numerous speculations on psychobiological mechanisms participating in immune-related disorders [8]. Both systems closely interact via the endocrine system. Furthermore, David Felten and his associates recently documented the existence of a neuronal connection between the brain and the immune system. Their paper summarizes such fundamental mechanisms in neural-immune signaling. I think that the knowledge of such neurobiological mechanisms may soon stimulate clinicians to extend or revise their current concepts on stress-related immune dysfunction.

I remember a paper of G. Albert, published in 1975 in the *Journal of Contemporary Psychotherapy*, from which I cite the following statement: 'The psychotherapist who allows himself to feel comfortable knowing well only one therapeutic mode fails in his obligation to learn everything he can that might be of benefit to his patients. And, as more and more becomes known of the neuronal underpinnings of human behavior, we are confronted more and more with the need to acknowledge

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that the time has come for psychotherapists to be knowledgeable in the workings of the nervous system as they relate to personality and the treatment of psychological disorders. We are called on, if we are conscientious about professional progress, to become – ultimately – neuropsychologists as well as psychotherapists' [9, p. 107].

Today, Albert's statement is still topical and relevant. However, most psychotherapists have not followed such a recommendation in the past 18 years. Others may have avoided the burden of interdisciplinary research. Thus, attempts to incorporate knowledge from psychoneurobiology into clinical psychosomatic research are still very rare [10]. The papers collected in this issue may hopefully stimulate some young researchers to use the treasure of knowledge from psychobiology as a guide and a tool for their clinical research.

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