other autonomic functions so beautifully described by Snider and his colleagues, or in the account by Dell of viscero-somatic interactions mediated in the nucleus fasciculus solitarius.

Should we indeed comfortably assume that limbic mechanisms are called into play as essential elements in cardiovascular reflexes, for example, in which there is clearly a final common path through medullary centers? These centers can be influenced no doubt by limbic action initiated by such subtle environmental stimuli as territoriality, mating behavior or seasonal influences. Let us not lose sight of the global role of the limbic system when we attempt to assign relations of its activity to particular autonomic reflexes.

Klüver coined the term "psychic blindness" to describe the most elemental effects of temporal lobectomy, implying a broad impact on the organism's interactions with the environment. It is another strange irony that his work finds not a single mention in this book, nor could I find any reference to the classic studies of Bard and his colleagues on "the forebrain mechanisms concerned in the expression of rage and angry behavior". The meeting addressed itself to this challenging problem of possible differences in patterns of autonomic responses that might characterize the organism's response to differing situations. Lacey concluded that "the impact of the environment on the autonomic functions of the organisms could not be as diffuse as traditional doctrine would suggest, and that there has to be much more delicate modulation of the effects of internal and external events on autonomic functions".

Yet this reader carries away the impression that there remains a substantive gap between those experiments, primarily electrophysiological, which allow some direct evaluation of limbic activity at the highest behavioral level, as in reactions to novelty and in decision making, and the intricate network of diencephalic and brain-stem mechanisms on which the autonomic outflow depends. The bridges so far built remain tenuous and inadequate, and this meeting has elegantly explored but a few of the major paths toward needed knowledge. Moruzzi excellently summarizes our current and future prospects as seen from this meeting: "Throughout this monograph we hope to pose some of the older psychosomatic problems in new terms, so that we need no longer conclude, as Sherrington was compelled to do, that the liaison between psychological and physical was an insoluble mystery... It may be that we shall never be able to answer some of the older psychosomatic questions in the ways in which they have been asked, and probably what we must do is to ask quite new questions and see how far they will lead us". With this injunction in mind, the student of limbic function will find much in this volume to excite his creative fancy.

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Neurosciences research symposium summaries, Vol. 5. — F. O. Schmitt, G. Adelman, T. Melnechuk and F. G. Worden (Editors). (The M. I. T. Press, Cambridge, Mass., 1971, 566 p., $12.50).

This fifth volume in the series of Neurosciences Symposia summarizes a series of work programs previously published as separate reports. The current volume includes five major sessions held at M. I. T.'s NRP center in 1967–69. Each work session is nicely summarized by its respective chairman and NRP staff writers. Although the work sessions were held some time ago, the summarized material is succinct, updated and highly suitable for the newcomer as well as the experienced researcher. Contents of this volume cover a wide range of topics including: (1) The mode of action of psychotomimetic drugs by J. R. Smythies. (2) The structural and functional organization of the neocortex by K. L. Chow and A. L. Leiman. (3) The role of cyclic AMP in the nervous system by T. W. Rall and A. G. Gilman. (4) Macromolecules in synaptic function by F. E. Bloom, L. L. Iversen and F. O. Schmitt, and (5) Sensory transduction by L. M. Beidler and W. E. Reichardt. The beauty of these reports is that each participant's paper presented at the work session is briefly summarized so that this volume represents the current thinking of the many individual specialists in a given area.

As a neuropharmacologist, I especially enjoyed the discussions on psychotomimetics, cyclic AMP, and macromolecules in synaptic function. However, the sections on organization of the neocortex and sensory transduction are also important to the serious neuroscientist. This volume is of interest to electroencephalographers as reference material.

The editors and staff of NRP are to be congratulated on bringing together specialists and condensing their material into a digestible format. May many more such volumes appear to cover the ever increasing number of dynamic areas of the neurosciences. This volume is recommended for every medical library.

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Handbook of sensory physiology. Vol. IV. Chemical senses. — H. Antrum, R. Jung, W. R. Loewenstein, D. M. MacKay, H. L. Teuber (Eds.). Part 1: Olfaction. (Springer-Verlag, Berlin–Heidelberg–New York, 1971, 518 p., 212 fig., U.S. $ 36.50). Part 2: Taste. (Springer-Verlag, Berlin–Heidelberg–New York, 1971, 410 p. 176 Fig., U.S. $ 33.20).

The fourth part of the "*Handbook of Sensory Physiology*" pertains to chemical senses, and comprises two volumes: one dedicated to olfaction, one to taste.

The 16 chapters concerned with olfaction can be classified under four different headings: comparative anatomy and physiology, physiology and electrophysiology of olfaction in higher vertebrates, chemical foundations and general theories, psychophysiology. This shows that this first volume covers the whole of the subject, but of course, the quality and the interest of the different chapters are uneven.

K. E. Kaissling gives an excellent and exhaustive review of the comparative anatomy and physiology of olfaction in insects. This review bears upon the morphological and behavioral aspects of the subject. T. S. Parsons' article bears upon the comparative anatomy of nasal fossae, the discussion of their phylogenetic evolution and the various problems that such evolution suggests: *i.e.*, the monorhinal structure of the Agnathes, the archaic traits observed in amphibian