Further Section

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Comment on the article of D. J. Ingle titled
'Interocular Integration of Visual Learning by
Goldfish'

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INGLE has given us an informative insight into his logic in analyzing the problem of interocular interaction in learning. His presentation has merit particularly because of its logical sequence.

It is evident from his paper that he has hope for the usefulness of his studies in neurophysiological investigations. I, of course, share that hope. I suspect, however, that effective interaction between neurophysiologists and neuropsychologists will depend upon more than the skills and tools of the two. It will depend, in addition, on more precise Information of an anatomical character which will allow us to identify the course and locus of converging processes, Information which we possess at present in terms less than optimally helpful to the neurophysiologist. It will also depend upon the availability of more precise and testable theory relating to the significance of the anatomical connections and locations. Precise theory also awaits improvement in our anatomical knowledge.

It is chiefly because these needs exist that the present Journal was born. A single vehicle is provided in which the four ingredients necessary for progress are brought together, the four ingredients being precise studies of behavior, physiology, and anatomy together with the integrating fabric of well worked out theory. Adequate theory must have relevance to behavioral, physiological and morphological scrutiny and must be suscep-tible to improvement through each of these empirical avenues.

In more specific terms, INGLE suggests that convergence of optic input may be achieved in the Thalamus or midbrain tegmentum. It should be clear that before a neurophysiological approach to these areas can be rewarding, we must know *where* to probe in the thalamus or tegmentum and we must think about *how* the areas probed operate. That is the role of anatomy and theory.

In general, we will look forward, in the pages of this Journal, to contributions which improve our knowledge of anatomy and which bring together, through theory, the complementary Information of anatomy, physiology and behavior.

INGLE
87

I. In particular

unfortunately we do not know enough as yet about the loci of convergence and the paths of interaction in the optic system of the goldfish. For that matter

our knowledge is far from adequate for any animal. Perhaps in the future it can be said that we are on the right road and that progress toward effective Integration is being made.

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