must always be coincident a system of mentalities which under certain conditions becomes what we call a consciousness."

This, it seems to the reviewer, is the central problem. What are these 'conditions'? And why call these systems *mental* unless or until these conditions have been fulfilled? The real logic of Mr. Marshall's article seems to be this: In organic function we find and describe unity and continuity of life process, expressed in the idea of growth. The unity and continuity of function in the life process imply orderly and continuous activity with reference to an end. But the idea of end has meaning only in or with reference to conscious experience. Therefore, in consciousness alone is to be found real unity of process. Whether this is idealism or not is an entirely distinct question, depending upon one's conception of the nature of consciousness.¹

The assumption of unconscious mental states seems only confusing. We have already the convenient category of the neural or the physiological for the unconscious conditions of consciousness. Why then create a realm of the unconscious psychical to account for them? Why would it not be as legitimate to postulate a subphysical world to account for difficulties in physics as to posit a subpsychical realm to account for these unconscious conditions of consciousness?

Two further points: It seems to the reviewer that Mr. Marshall distinctly weakens his argument by his defense of the 'back-stroke' theory of the emotions. His own skilful analysis of the organic circuit seems rather to imply (what he denies) that 'the data for consciousness are in all cases supplied through afferent channels.' But very timely seems the criticism of Mr. Morgan's introduction of 'effective consciousness,' to account for the higher forms of animal behavior. "The principal objections to the view that consciousness at times 'enters in' to guide behavior, and at times does not, lies in its unacknowledged denial of the unity of process in consciousness."

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EXPERIMENTAL.

Eye-movements and the Aesthetics of Visual Form. G. M. STRATTON. Philosophische Studien, Bd. XX. (Wundt's Festschrift, II. Thiel), pp. 336-359.

The substitution of photographic records of eye-movements for introspective testimony as to the way in which the eyes behave is

¹ See a forthcoming article on 'The Functional Theory of Parallelism' by the present writer in the *Philosophical Review*, where this thought is developed.

without doubt a long step in advance. Photographic methods as applied by Professor Dodge to the measurement of reaction times, and similar methods as applied by Professor Stratton in this investigation to the determination of the direction of eye-movements, show how utterly unreliable are all the statements based on mere introspection. Professor Stratton finds that in following the outlines of simple figures, such as circles and rectangles, and various kinds of curves, the eye does not make a movement corresponding to the line followed, but moves forward in a series of irregular and often wholly ungraceful lines. A circle, for example, is followed by movements that describe a triangle or an irregular closed figure. A rectangle is followed in both curved and unequal straight movements. Graceful curves and ungraceful irregular lines are followed by the eye in movements hardly distinguishable from each other. These facts lead Professor Stratton to the conclusion that eye-movements do not contribute the chief factors to our recognition of æsthetical forms.

Æsthetical form is due rather to a wider process of synthesis. The regular curve is more gratifying to us than an irregular line because its regularity economizes our attention. We can apprehend its purpose or principle as a fixed and unitary formula of direction. The wavering and uncertain purpose of the ungraceful line is by contrast uneconomical of attention. Among the various regular lines, curves have more of the suggestion of life. The graceful flight of birds and the movements of the skater, or similar forms of living movement, come vaguely into consciousness when we feel the beauty of a graceful curve. There may be an organic vasomotor or muscular response as a secondary sensuous basis for this association with living movement.

Æsthetical form is thus seen to be not merely a matter of sensation. It is a matter of general interpretation and involves all phases of mental nature. Indeed, our author finds in his study opportunity to emphasize the relation of the æsthetical to the moral and religious purposes of life.

The theory of æsthetical form here outlined has broad implications which we shall expect to find Professor Stratton working out in greater detail in the future. The present article is exceedingly suggestive in its conclusions; in its earlier experimental part it is a large contribution to our knowledge of eye-movements.

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