

**A COURSE IN
EXPERIMENTAL
PSYCHOLOGY**

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A Course in experimental psychology by Edmund C. Sanford

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EDMUND C. SANFORD

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PLATE I.

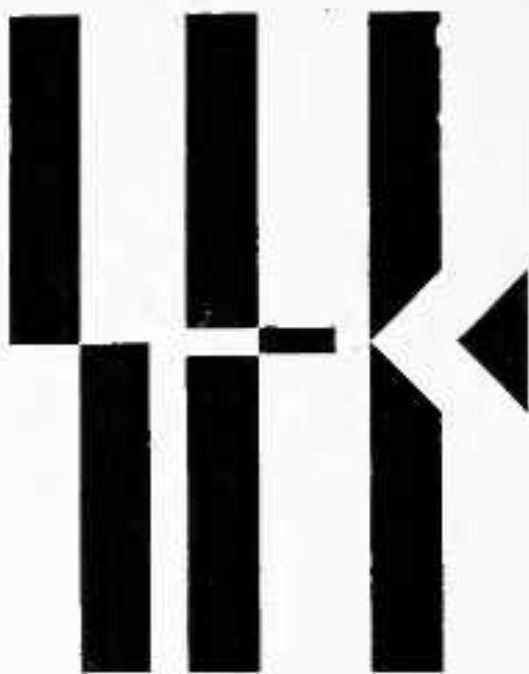


Fig. 1

Fig. 2

Fig. 3

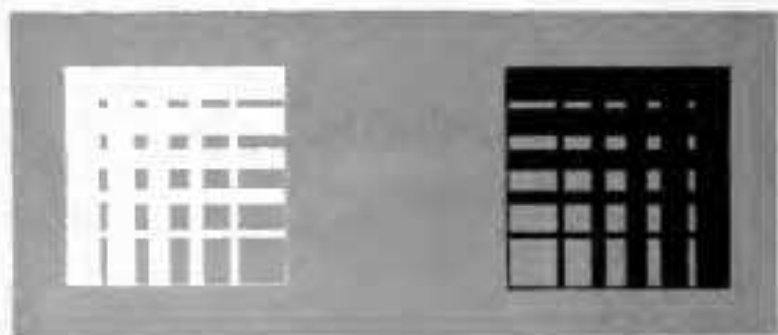


Fig. 4

Psych.
S224

A
COURSE
IN
EXPERIMENTAL PSYCHOLOGY

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PART I: SENSATION AND PERCEPTION.

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PREFATORY NOTE
TO
EDITION OF ADVANCED SHEETS.

THE portion of the course which follows will be found to treat of the senses only, and indeed not fully of them, for it still lacks a chapter upon some of the most interesting experiments in vision. The author's excuse for allowing the publication, even in this modest form, of so incomplete a work, must be the very extraordinary condition of experimental psychology at this time. Many laboratories have been opened, and many teachers of psychology are anxious to give their students the benefit of demonstrations and practice work, and yet there is absolutely no laboratory handbook of the subject to be had. At such a time half a loaf may be better than no bread — at least, so a number of the author's professional friends have seemed to believe; and, since the completion of the whole must be still further delayed, he offers this half loaf.

The course as planned consists of two parts: PART I on sensation and perception; and PART II on more complex mental phenomena.

PART I needs three chapters more to complete it: Chapter VII, on the Visual Perception of Extent, Distance, Direction, and Motion; Chapter VIII, On the Psychophysical Methods and Weber's Law; and Chapter IX, On Apparatus for the Study of the Senses. PART II will contain chapters on the following topics: Reflex and Voluntary

Movement, The Time Relations of Mental Phenomena, Association, Memory, Attention, and Emotion, so far as these subjects can be approached with experiments of moderate difficulty, together with a chapter on the apparatus necessary for such experiments.

E. C. S.

WORCESTER, *July*, 1894.

LABORATORY COURSE IN PSYCHOLOGY.

CHAPTER I.

The Dermal Senses.

THE sense organs of the skin give us besides pain, tickling, shudder, and the like, the more special sensations of contact, heat, cold, and pressure. All these may be received passively when our members are at rest, or actively when our members are in motion, in which case special sensations of motion are blended with those just mentioned. We also assign to each sensation a more or less exact location. To examine some of these skin sensations is the purpose of this chapter.¹

SENSATIONS OF CONTACT.

I. The Location of Touches. Touch yourself in several places with the same object, and analyze out, as far as you can, the particular quality of the sensation by which you recognize the place touched. This quality of a sensation is known as its "Local Sign."

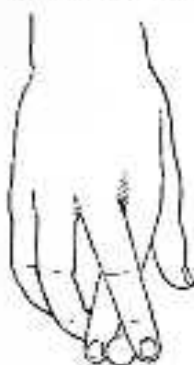
Lotze,² *A*, 328 ff., 465 ff.; *B*, 39 ff. Summary.

¹ As a general term for perceptions of touch in the widest sense, Max Dessoir (p. 242) suggests *Haptics* as an analogue of Optics and Acoustics. This he further divides into *Contact-sense* (including *a*, pure contact, and *b*, pressure) and *Psychoplastic*, from ψαλάσσειν, touching, handling (including *a*, active touch, and *b*, "muscle sense").

² For full titles of books and articles referred to, see the bibliography at the end of the chapter. When several articles from one author are given, they have been lettered *A*, *B*, *C*, etc., and the references marked accordingly.

2. Location of Touches. Cause the subject to close his eyes; touch him on the face-arm with a pencil point; and require him to touch the same point with another pencil immediately afterward. Estimate the error in millimetres and average the results for a number of trials, noting the direction of error, if it is constant. The subject must be allowed to correct his placing of the pencil if not satisfied with it on first contact.

3. Aristotle's Experiment. Cross the middle finger over the first in such a way as to bring the tip of the middle finger on the thumb side of the first finger. Insert between the two a pea or other small object. A more or less distinct sensation of *two* objects will result, especially when the fingers are moved. Some experimenters may find the illusion more marked when the pea is rolled about on the surface of the table with the crossed fingers, or when the third and little fingers are used instead of the first and middle fingers.



Aristotle, Hoppe, James, II., 86-87.

4. Eccentric Projection of Touches. Close the eyes, and tap with the tip of a cane on the floor, or, better still, on the walls and floor near a corner of the room. Notice that the origin of the sensations seems to be the tip of the cane and not the fingers or the arm. Attention to these parts, however, will show the true place of origin. If the cane is held rigidly at the lower end, there is little or no tendency to shift the sensations from the fingers and arm, unless the cane is limber. The eccentric projection of touches is only a special case of their location, and follows the same general laws. See also Ex. 41.

Weber, 483 f.; James, II., 31-43, 185-197; Dessault, 219-232.