by objective increase in stimulation, while the experimenter sought to produce suggestion verbally in the remaining tests. This study is admittedly meagre and imperfect, owing to the lack of subjects (varying from twenty-four to eight) and the vagueness of the results, which cannot be classified in any satisfactory manner. Automatism seemed less noticeable in the perception of weights and the production of movement. S. arranges these subjects into five types: The wholly imbecile, which is beyond suggestibility; those of firm judgment which prevents suggestion; those of medium suggestibility, who are most numerous; the automatic; and the bizarre type, which is very irregular and indefinite. In comparing his results with those derived by Binet from normal school children, S. finds these types analogous to those of B.'s excepting that the bizarre is not noted, while the automatic type is found more frequently among the normal children.

Weak-minded and normal children seem to behave about the same; though the former seem less susceptible to suggestion, which is, in part, ascribed to the emotional character of the reactions of the latter.

6. This account of a study from the physiological laboratory of the Sorbonne, after reviewing the three theories of Helmholtz, Hermann, and Guillemin, which are set aside, offers the following explanation of vowel-formation: "Vowels are due to an intermittent aerolaryngean vibration, reinforced by the buccal cavity and producing *ou, o, a, é, i*, when the latter is in unison with the sum of the vibrations; transformed by it (the buccal cavity) and forming the other vowels when the unison does not exist; the number of intermissions gives the fundamental note on which the vowel is uttered. A whispered vowel is produced when the buccal cavity functions alone; the vowel is sung when the larynx functions alone; when the buccal cavity and the larynx function simultaneously, the vowel is spoken."

EDWARD FRANKLIN BUCHNER.

Avons-nous des sensations spécifiques de position des membres? ED.

CLAPARÈDE. *L'Année Psychologique*, 7^e Année, 1900. Pp. 249-263.

Claparède here vigorously reaffirms his negative answer to this title-question, by reviewing briefly the logical and psychological arguments in favor of the two possible answers; by referring to a few results which he has derived from tests on movements; and especially by a critical discussion and final rejection of the views of M. P. Bonnier, published in the latter's *l'Orientation* (1900), which maintain an affirmative answer to the question. Position cannot be felt immedi-

ately. It is a complex phenomenon, involving the intermediation of an association of images, and appearing as the result of 'inference,' the term with which C. replaces the word 'judgment,' employed in his earlier expositions. He thus indicates that our ideas of position as such are not due to mere sensations, nor to an active, conscious operation or process. Position is only a state of relation between diverse data presented by the pressure and tensions experienced in the portions of an arm, *e. g.*, which has moved. The determination of position is only a particular case of that psychical operation known as the localization of parts of the body, which in turn is regarded as totally dependent upon the fact that the various portions of the body offer surfaces possessing different degrees of sensitivity, whence the 'local color' which is a quality in tactile and muscular sensations. Thus position is an affair of perception, rather than the content of sensations locally derived; and it usually involves an escort of visual images which are called forth by muscular-tactile impressions. C. insists that introspective and experimental data can be interpreted only to the conclusion that 'sensations' of movement and of position must be regarded as qualitatively different.

One half of the article is devoted to an examination of the materialistic views of Bonnier, who regards the alleged 'sens des attitudes segmentaires' as the foundation of all our mental life. C.'s rather caustic strictures are properly placed, saving us, as they would if widely known, from a perennial pseudo-psychology which says that "tactile orientation results immediately from the topographical distribution of images in our [cortical] centers"!

EDWARD FRANKLIN BUCHNER.

The Synthetic Experiment. I. M. BENTLEY. Amer. Jour. of Psychol., XII., 2. Pp. 405-425.

A synthetic experiment is one where a given complex conscious state is made to result from the simultaneous production of simpler states. Dr. Bentley's article contains, first, a discussion of the theoretical significance of such experiments, and second, an account of methods used in the experimental synthesis of the tactual perception of liquidity. In the first part, he indicates the value of synthesis as a test of analysis, and notes that to be sure of the validity of a synthesis we must know (1) that no extraneous suggestion has produced the experience and (2) that the experience is produced only when all its components are present. He points out the difference between a synthesized perception and an illusion, a distinction that rests largely on