

fusion in terms of qualitative incorporation, of which the peculiarity is 'their unitariness, their organization, and the presence of unique characteristics not to be found in the incorporated elements.' "It is the direct apposition of qualities without the introduction of spatial or temporal connectives." It is not identical therefore with consonance as Stumpf held it to be, 'for consonance is only one of several moments that contribute to the unity of the tonal complex.' Nor is the fusion of Ebbinghaus, which is the converse of analysis, identifiable with this interpretation. Wundt's type is not synonymous, because it covers space and demands a dominating element. What is derived from the history of the conception of fusion is first the "Herbartian doctrine of the closer and more remote union of ideas; from Stumpf a mass of empirical data regarding the structure of sensational complexes; Külpe gives thus a systematic setting of the facts, and Wundt acquaints us with the enormous influence of attention upon the synthesis of mental formations. And these are all indispensable data for a complete doctrine of fusion."

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### EXPERIMENTAL.

*The Relation of Motor Power to Intelligence.* T. L. BOLTON, American Journal of Psychology, XIV., 351-367.

This paper, suggested by the evolutionary theory of motor development, is an attempt to show that tests of motor power may be used as measures of intelligence or of mental alertness. A large number of good and poor children of eight and nine years of age were tested with regard to the following points: (1) Rapidity of voluntary control as determined by the number of taps made in five trials of five seconds each; (2) steadiness in standing as shown by the ataxiagraph; (3) steadiness and precision of movement with either hand as tested by passing a needle between strips of brass. All of the tables show strikingly that with brighter children, motor power increases with age. Poor children show slight advance. In fact, in the precision test, the eight-year children of this class surpassed those of nine years by as much as the nine-year-old bright children surpassed those of eight years in the same class. Moreover, the bright children showed increasing power of growth through practice and increasing power to resist fatigue. The poor children became fatigued very quickly.

In the PSYCHOLOGICAL REVIEW for July, 1903, R. L. Kelly publishes a set of experiments, which, though different, bring out practi-

cally the same results as those of Dr. Bolton. Experiments such as these are valuable as preliminary work. They should lead to a more careful analysis of the problem and to a separation of the many factors involved. The problem of individual differences is so complicated that much careful experimentation is needed before pedagogical applications can safely be made.

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*Die reproducierte Vorstellung beim Wiedererkennen und beim Vergleichen.* A. McC. GAMBLE und MARY WHITON CALKINS. Ziet. f. Psych. u. Phys. d. Sinnesorgane, Band 32, S. 177 und Band 33, S. 161.

This work was done at Wellesley College. The first part gives an account of the authors' attempt to repeat Lehmann's experiment in which he sought to prove that recognition rests upon associated thoughts alone. Some slight variations were introduced in his method. Three practiced and twenty-one unpracticed reagents were given an average of 47 odors and they were instructed to write down in serial order all the thoughts which each odor called up in mind, to mark every pause in the course of the thoughts that were reproduced, to note the odor as known or unknown and to underscore the name when it occurred to them. The outcome is brought together in a summary at the end, the main points of which are: Recognition does not rest upon reproduced thoughts: (1) Since such accompanying thoughts, which are not only clear, but correct, are often present in the consciousness of the unknown; (2) since associations, clear enough to be reproduced, are not present in all cases, where recognition is distinct; and (3) since in the cases in which the reagents noted the serial order they generally declared that the accompanying thoughts followed the recognition. The question of the essential nature of recognition must remain inaccessible for statistical treatment. The analysis of the result "leads to the conviction that 'unknownness' is a clear and positive conscious content and not merely the absence of recognition."

The second part deals with the importance of names for the consciousness of likeness and of difference. This experiment also was a repetition with modifications of one by Lehmann. The particular purpose was to avoid certain sources of error which are pointed out in Lehmann's work. There are two parts. In the first comparisons were made between the members of several graduated series of gray and blue papers and of colored fluids, and in the second odors divided in two groups were compared with one another. Each member of