lar bill by a figure of its shape and size. They were also required to draw plane figures with dimensions stated in inches, to reproduce the combined areas of these, and to estimate the dimensions of the paper used. To children a memory image is smaller than its object. The under-estimation of the coins and the bill by the younger children is enormous. The size of the dime, the nickel and the bill is also under-estimated by the adults. The degree of accuracy increases with grade. Grade is a better basis for classification than age. There are some characteristic fluctuations with sex, but on the whole there is no marked difference in the ability of boys and girls in this test. More attention should be given to perception of size in drawing.

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A Contribution to the Study of Illusions. FREDERICK E. BOLTON.
Am. Journ. Psych., IX., 2, p. 167.

The first part deals with 'the effect of size upon the estimation of weight.' Of the two series of blocks used, one varied in weight and the other in size, the standard being 55g. First, the blocks in the former series were matched by those in the latter (1) by pressing levers on which the blocks were balanced (*a*) out of sight, and (*b*) in sight, and (2) by lifting them between the fingers in sight. Then the process was reversed and the blocks that differed in weight were matched by those that differed in size, under similar conditions. The usual size-weight illusion occurs. Referring to the two methods, the effect of weight upon size is greater than the effect of size upon weight. The 'pressure' method gives a much larger mean variation and a smaller illusion. By the pressure method there is also an 'unexplainable' tendency to under-estimate the weight of the block compared.

The second part is a study of 'the effect of contour upon area.' The problem is, "Does any illusion of area ensue when the contour of a given surface is modified?" The general reply is negative.

C. E. SEASHORE.

Dreidimensionale Analyse von Ausdrucksbewegungen. R. SOMMER.
Zeitsch. f. Psychol., XVI., 4. Pp. 275-297.

The importance both for normal and abnormal psychology of the study of our involuntary muscular movements has long been acknowledged, but, unfortunately, the invention of instruments for the analysis of these movements has not kept pace with the demand. Every one who has worked with the planchette knows the difficulty, almost impossibility, of unraveling the record obtained from it as usually used,

and here one deals only with two directions and the extent of the movement. Professor Sommer is, therefore, to be congratulated the more for succeeding in constructing an instrument that permits not only a careful tri-dimensional analysis of a movement, but at the same time shows its duration and extent. Briefly described, the instrument consists of a stirrup for one or two fingers, connecting by compound levers with three styles which respectively mark on the revolving drum of a kymograph all movements, right and left, up and down, to and fro. The pen levers greatly magnify the movement, so that even the slightest tremors are shown. Several typical curves of reactions show some results obtained, and the advantages of the new instrument are evident. With such a series of levers, however, there must be a very fine adjustment and consequently some danger of derangement. With the addition of means for estimating the force of the movement the instrument would be well-nigh perfect. However, as it is, it will be of great value, and doubtless will be the means of directing more workers to this interesting field. The instrument may be ordered through the Psychiatric Klinik at Giessen. The price is not given.

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Growth of Children in Height and Weight. FREDERICK BURK.
Am. Jour. Psy., IX., 3, April, 1898.

This is not so much an original investigation into the subject indicated, as a careful study and correlation of the investigations of others. The writer's object seems to be to discover what bearing the extant studies in child-growth have upon the problems of Pedagogy. Extensive citations are made from Bowditch, Camerer, Combe, Hertel, Hansen, Key, Porter and many others; and the following are some of the conclusions drawn or suggested:

Growth, both in height and weight, is far more rapid during the first year than at any other time. Then follows a constant though rhythmical decrease in the rate of growth until the pubertal age, during which a very marked acceleration takes place, culminating in the virtual attainment of maturity, so far as height is concerned, in the 15th or 16th year for girls, and a year or two later for boys. The attainment of maturity in weight is, of course, considerably later than this for both sexes. The average boy is 19.68 inches in height at birth, about 29 inches at the end of his first year, 45 inches in his 7th year, and 55 inches in his 12th year. There is but little difference in the rate of growth of the two sexes until about the tenth year, when girls