To eliminate any possible effect from the area of skin touched, M. Flournoy devised a second set of tests, in which the weights were lifted only by means of a string and ring. Out of 31 persons, 29 placed the box first (*i. e.*, as lightest), and 30 placed the metal case last. These results directly contradict those reported by Charpentier, in the *Arch. de Physiologie* (1891, p. 127). On closing the eyes, the difference disappeared.

Of 44 persons asked to state the weight of the objects, the average made the (supposed) heaviest 253 g. and the lightest 52 g. The divergence was greater in women than in men, and in literary men than in scientists. Of 30 asked to assign the relative weight, the average made the (supposed) heaviest 5.2 times the weight of the lightest; but when asked to add weights to the lightest till it equalled the heaviest, the average result was a mere doubling of its weight.

The illusion persists even after its illusory character is known; it is present in persons of every age. It is shown to be due to the volume of the object, rather than the area of contact. Finally, it is a direct argument against the innervation feelings, which ought to correct or even over-balance such an error of judgment. As an important datum bearing on the subject, I should suggest to M. Flournoy that he examine the case of postal clerks, who are commonly supposed to be able to detect slight differences of weight by mere lifting.

PRINCETON.

H. C. WARREN.

Recherches graphiques sur la musique. A. BINET ET J. COURTIER.
Revue Scientifique, 6 Juillet, 1895.

MM. Binet and Courtier have devised an apparatus for recording the normal movements of piano players which promises results valuable to both music and psychology. It consists of a rubber tube six millimeters in diameter running along directly under the keys and connected at both ends with an elastic drum which carries the recording style. The tracing is taken, as usual, on smoked paper. Errors that might arise from inertia of the apparatus are avoided by inserting in the tube a diaphragm with capillary opening. When a key is struck the style is deflected in such a way that the height of the deflection is proportional to the force of the pressure; the length of the deflection records the time; and finally the form of the curve gives a detailed account of the manner in which the movement was carried out. The whole apparatus is out of the player's sight and the tube is so adjusted that it does not increase appreciably the resistance of the keys, thus insuring entirely normal movements.

A number of interesting results are described, showing that irregularities which escape even trained ears are plainly seen in the curves and that the differences which distinguish good execution from poor are easily studied.

A series of experiments made with this apparatus will be reported in the next number of *l'Année psychologique*. C. H. JUDD.

LEIPZIG.

THE FEELINGS.

Review of A. Lehmann's Work, 'Die Hauptgesetze des Menschlichen Gefühlslebens.' TH. LIPPS. Göttingsehen gelehrten Anzeigen, 1894, Nr. 2, pp. 85-117.

A strongly written attack on the 'Lange-James' theory of emotion, Lipps maintaining that the primary psychological phenomenon in feeling is always the disturbance produced by the stimulus upon the Subject's system of *ideas*. The consequent bodily alterations hardly contribute at all to the emotion properly so-called, since the sensations which they yield are easily distinguished therefrom, as when Lipps himself is so 'touched' with sympathetic happiness in reading of romantic situations that he gets a distinctly painful constriction of the throat, which not only does not constitute, but positively conflicts with his emotional happiness. Moreover, if feelings were made of sensations, how could a 'self' arise? A certain group of sensations makes *my* body, because it is tied to feelings and strivings. These latter are the immediate *I*, and render *mine* whatever sensational content they go with, rendering alien whatever sensational content they separate from. They cannot themselves be sensational content. W. J.

Les émotions: Étude psycho-physiologique. Lange. Trad. Française de G. DUMAS. Paris, Alcan. 1895. Pp. 198.

A few words only are needed to announce the French translation of this well-known book for the theory of emotions, which it elaborates, is at present causing much discussion among psychologists. It is, however, interesting to note that the principal argument by which Lange seeks to prove that the emotions are the result of vasomotor changes is that it is incontestable that many emotions have a purely physical cause; for example, the exhilaration due to wine, the excitement and anger produced by certain drugs and the various emotions which in many diseases accompany abnormal conditions of the body. It would seem that the critics of the new theory of Lange and of James have not taken sufficient account of this argument.

A. B.