two kymographs in the experimenter's room. Five persons served as subjects.

Wright records his experiments and concludes that they show that the subject's reactions form a curve which in shape agrees with the curve of his vaso-motor wave. Patrizi, in a somewhat similar series of experiments on one subject, reached similar but less decisive results, and therefore concluded against any relation between blood supply and reaction time. Wright, by confirming Patrizi's results on a larger scale feels himself justified in negating Patrizi's conclusions from those results.

HAVELOCK ELLIS.

Some Cases of Coloured Hearing [Audition colorée]. (Arch. de Psychol., Feb., 1904.) Lemaitre, Aug.

Three interesting cases of this condition are here recorded. The first shows how the condition may be acquired. A boy, æt. 7 (he is now 14), was playing in the country, near Geneva, with some young peasants who were amusing themselves with trying to gaze at the sun. Immediately afterwards he lay down on the grass and went to sleep. A little later a young shepherd shook him and said: "Get up!" To the child's stupefaction he saw against the shepherd's chest a mass of brilliant and changing colour, appearing and disappearing with each word that he uttered. Since then this phenomenon has been more or less persistent, and the words uttered by others (not those spoken by himself) call forth an elongated mass of oval colour, about the size of "the hollow of the hand," the colour varying infinitely not only with the person who speaks but with the same person at different times. The deeper and stronger the voice is, the lighter the colour (though the boy himself remarks that one would expect it to be the contrary way). The phenomenon is so marked that the boy, who is very intelligent, is dazzled and unable, for instance, to write to dictation, or to copy when others are talking. There is also some degree of photophobia. He is nervous and restless, unable to control perfectly the movements of his limbs, and with fibrillar twitchings of the calves. His grandfather was somnambulist. In explanation of the origin of the phenomenon Lemaitre puts forward the supposition that the child's nervous system had been rendered erethic by the insolation, and that the violent command "Get up!" overpassed the auditory region of the brain and reached the optic territory—an explanation which seems more ingenious than convincing.

In the preceding case the photisms were very variable. In a second case they were remarkably constant. It is that of a young man whose photisms are almost universal. He does not himself take much interest in them, yet when questioned concerning the colours of a long series of sounds and words, at intervals of a year, the examination being continued during three years, the changes in the colours were for the most part very slight.

In a third case the stability of the photisms was established not only for the individual but hereditarily. A boy, æt. 13, found that all the vowel sounds were for him accompanied by colours—*a* red, *e* white, *i* black, *o* yellow, *u* blue. He had never heard of the phenomenon from any other person, but on telling his mother he learnt that she also had

always experienced it, and saw exactly the same colour as her son for each vowel. As regards the diphthongs, however, mother and son were not agreed, and the mother's synæsthesias were more extensive than the son's.

HAVELOCK ELLIS.

Variability of Reaction-Time. (*Psychol. Bull.*, April, 1904.) R. Yerkes.

The *Psychological Bulletin* is a "literary section" of the *Psychological Review*, of some fifty pages, now published every month, and made up of short articles, reviews, and notes.

This paper on reaction-time deals with scientific method rather than with results. The author believes that investigators do not give sufficient attention to the variability of their results, and wishes to call attention to (1) the importance of variability in reaction-time statistics; (2) the need of choosing statistical methods in accordance with the nature of the material in hand and the demands of the problems; (3) the desirability of the more general use of curves of distribution; (4) the pre-eminent importance of relative variability, or the co-efficient of variability, for comparative reaction-time studies; and (5) the use of equality of variability as a basis of comparison in case of reactions to different modes of stimulation. In every study of reaction-time, he points out, it is usually desirable, and often necessary, to determine (1) the curve of distribution; (2) the mode (i.e. the most frequent group); (3) the average reaction-time, with its probable error; (4) the range of the series; (5) the standard deviation and its probable error; and (6) the co-efficient of variation. Several diagrams are given in illustration, and the paper will be found very valuable by those who wish to work out reaction-times in accordance with the methods now widely advocated by scientific investigators.

HAVELOCK ELLIS.

4. Clinical Neurology and Psychiatry.

On Unilateral Hallucinations of Hearing [*Sulle allucinazioni unilaterali dell' udito*]. (*Riv. di Patologia Nerv. e Ment.*, vol. ix, p. 228, May, 1904.) Lugaro, E.

Lugaro's patient, a married railway official, æt. 39 years, had a maternal aunt who suffered from about 40 years of age from delusions of persecution, and a sister who, from the age of about 39, suffered from auditory hallucinations and mental enfeeblement. He himself broke down after his father's death, in 1898, became intensely depressed, and shot himself with a revolver in the right ear. The external auditory canal and the drum were injured by the ball, which lodged in the temporal bone, and was probably only partially extracted, having been broken up in its progress. Notions of persecution and sitophobia followed the suicidal attempt, but these were soon relinquished, and patient professed to have forgotten them, though he remembered the other incidents of his early illness. In about two months he resumed his business, feeling perfectly recovered. Early in November, 1901, he