

which this is done are simple. Any device by which excitation may be lowered or heightened gradually below or above the threshold may serve the purpose. For touch and the muscular sense small balls of cork may be used—differing so slightly in size that when placed, say on the back of the hand in succession, the difference between the last one which is felt, and the next which is too light to be felt, is as small as possible. By running the series in the reverse order, from weights too small to be felt to others barely felt, and by an equation and average of errors, the point is determined where the excitation produces the smallest perceptible sensation.

As simple as this procedure seems, the conditions are so complicated in some of the senses as to occasion great embarrassment. The eye, for example, is found to have a "natural light" of its own, arising from mechanical movement, friction, or chemical action, from which it is never entirely free, and the smallest perceptible sensation of light must always include this natural factor. The conditions of the body before the experiment also cause great variations, as is seen in experiments on temperature and smell sensations. The threshold value for temperature is much higher or lower, for example, according as the earlier state has been one of higher or lower temperature. The following table exhibits the results of Fechner's experiment on the perceptible minimum :

PERCEPTIBLE MINIMA.

Touch.....	Pressure of .002 — .05 gr.
Muscular Sense.....	Contraction of .004 mm., right internal muscle of the eye.
Temperature.....	$\frac{1}{8}^{\circ}$ Centigrade (normal heat of skin 18.4°).
Sound.....	Ball of cork 1.001 gr falling .001 m. on g ass, ear distant 91 mm.
Light.....	Cast on black velvet by candle distant 8ft. 7in.

Space does not permit an examination of each of these determinations, and it is not necessary ; for the actual numerical values are not of great importance. The fact that there is a minimum under normal conditions and its determination