luxotonic, lacking restricted receptive field, two; transient on, one. For one of the luxotonic units, darkening either eye diminished the maintained discharge, whereas simultaneous covering of both eyes fully suppressed it for several seconds before adaptation began. For the other binocular luxotonic unit either eye appeared capable of producing the maximal response, i.e., there appeared to be no significant summation, but the matter was not studied extensively.

Five of the six monocular units were luxotonic (e.g., Fig. 11*B*). The other responded to movement without regard to direction.

STATISTICAL EVALUATION. The major goals of these experiments initially were *1*) to assess the directness of afferent access to units of various categories, and *2*) to determine the types of visual signals (e.g., stationary figures, moving figures, color, diffuse light of various intensities) to which a unit would respond. It was hoped such multiple classification would reveal something of the organization of the system, what the striate cortex does, and how. Unfortunately, the major preexisting scheme of classifying units in terms of response to geometric properties of the stimulus proved to be of little help, since essentially all units were complex (25, 26). The few hypercomplex units displayed no unequivocally distinctive features among the nongeometric properties tested. There was, nevertheless, the possibility that other meaningful relations (e.g., between field size and latency to strobotron, to OT stimulation, or sensitivity to direction of movement; or between responding to strobotron and being insensitive to direction of movement, etc.) might be found. However, while a number of the more than 80 tested relationships for contingencies or correlations did demonstrate statistical significance, few were helpful in understanding either the data or the striate cortex.

An inverse relation was established between the number of forms of visual stimulation (among movement, local flash, and diffuse light) to which a unit responded, and the latency of its response to stroboscopic flash. (The number of units responding only to stroboscopic flash were too low for valid testing.) The less "specialized" type of unit, which responded to all three forms, had a median latency of 30 ms compared to 47 ms for units responding to two forms and 85 ms for those responding to only one other type of visual stimulus ($N = 9$ for each group; $H_c = 15.8$; $P < 0.01$).

In addition, latencies to stroboscopic flash and to movement, while not correlated either with latencies to OT or OR stimulation, were correlated with each other ($r' = +0.85$; $N = 7$; $P < 0.05$ on one-tail test). In all but one case latency to the strobotron, as might be expected from the difference in intensity, was much shorter than that to movement, 35 versus 80 ms (medians), respectively. There was also a tendency for direction-sensitive units to have longer latencies to the strobotron than did units insensitive to direction of movement (Table 3). Finally, luxotonic units also tended (P ca. 0.10) to have shorter latencies to strobotron and stimulation of OT than did nonluxotonic units. This one marginal case was the only instance in which OT or OR stimulation was found to be even remotely related to presence, absence, or mode of response, or to any other parameter tested.

Luxotonic units

Of 122 units examined with diffuse light, 49 (40%) gave a sustained response, i.e., their altered rate of discharge was maintained indefinitely for as long as the change in illumination endured. We have thus termed these units "luxotonic," and define them as having in light (e.g., 280 or 680 cd/m^2) versus dark a ratio of discharge which is maintained for > 1 min at a ratio $> 2:1$ or $< 1:2$, and/or having a rate of

TABLE 3. *Latency to stroboscopic flash for units sensitive and insensitive to direction of movement*

	Direction Sensitive	Nondirection Sensitive
Mdn	55 ms	40 ms
Q	32.50	11.37
N	17	22

Kruskal-Wallis test: $H_c = 3.09$, df = 1, $P = 0.08$.