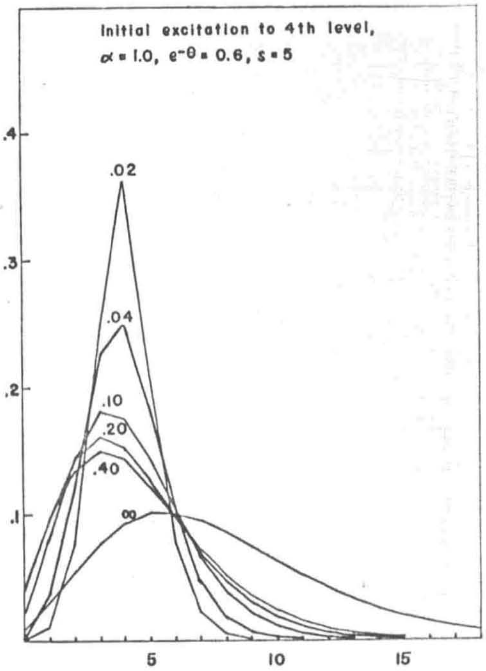

FIG. 3. Plots of $A_n/\Sigma_i A_i$ vs n.

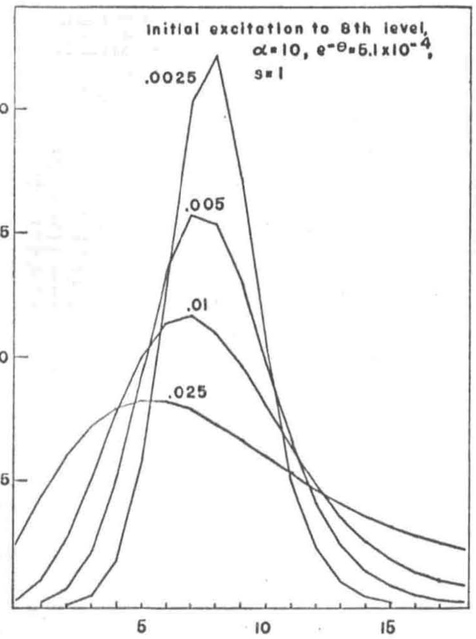

FIG. 5. The curve for which $aMt=0.025$ shows "piling up" at its right-hand end. This is also seen in some of the curves in Fig. 6.

One can conceive of various experiments by which the presence of such a mechanism could be detected. One of them is obviously flash excitation and high-speed spectroscopy, as used, for example, by Norrish. Another is flash photolysis of the following type. Let us assume that a reactant has a (dimensionless) critical energy ϵ^*. If we flash excite a trace of reactant to energy levels a short distance below ϵ^*, energy exchange with the heat bath (assumed at room temperature) only will occur, and, as shown previously, this will result in only a negligible number of molecules being collisionally excited to energies $\geq \epsilon^*$, so that the primary quantum yield would be low. In this case,

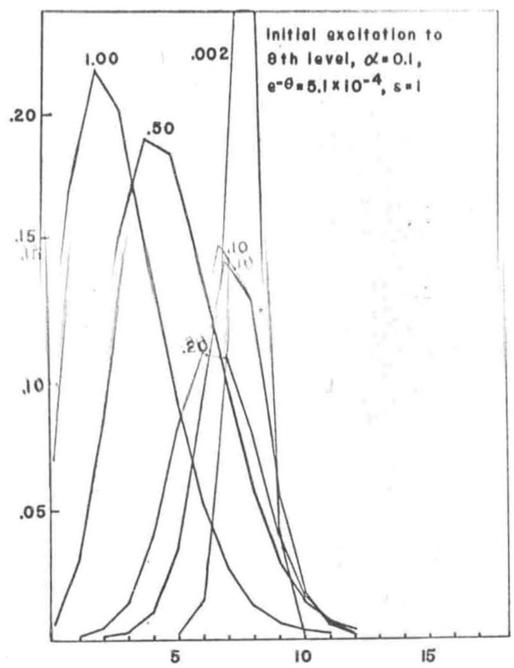

FIG. 4. The value of $e^{-\theta}$ used here and in Fig. 5 corresponds to that for oxygen at room temperature. As $t \rightarrow \infty$ only the zeroth level is populated. Note the change in vertical scale between Figs. 1, 2, and 3 and Figs. 4, 5, and 6.

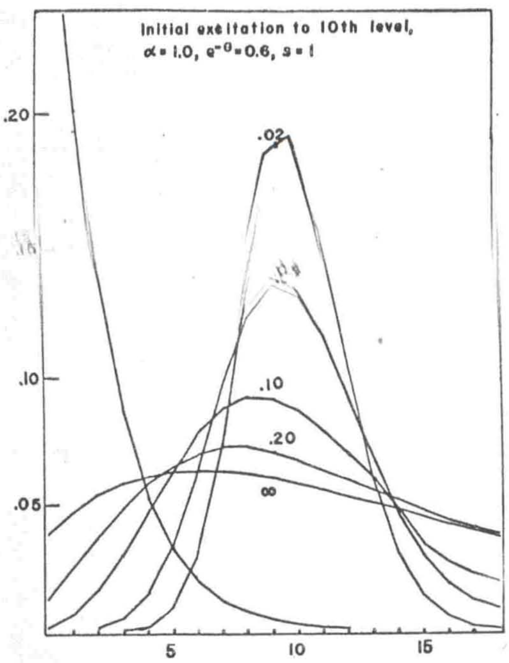

FIG. 6. Plots computed for a model identical to that shown in Fig. 5, except that the heat-bath temperature is much higher.