In selecting the solution of (9) corresponding to the actual case, one needs the following initial values of q and r. These are obtained as follows. As long as the disturbance has very low amplitude, it is known that the wave is of sinusoidal shape and exponentially increasing amplitude. This phase of the phenomenon is not represented by our treatment which describes only the late phase of the motion. In fact, we may assume that the proper initial conditions for our problem correspond to the time when the exponential solution of the early phase breaks down. At this moment we have approximately $x = y$ and $dx/dt = dy/dt$. Making use of equation (5) and equation (8), this situation corresponds to

$$q = \frac{1}{4} \ln \frac{\rho}{\sigma}; \quad r = 0. \tag{11}$$

In Figure 2 the shape of the solution of equation (9) corresponding to these initial conditions is outlined.

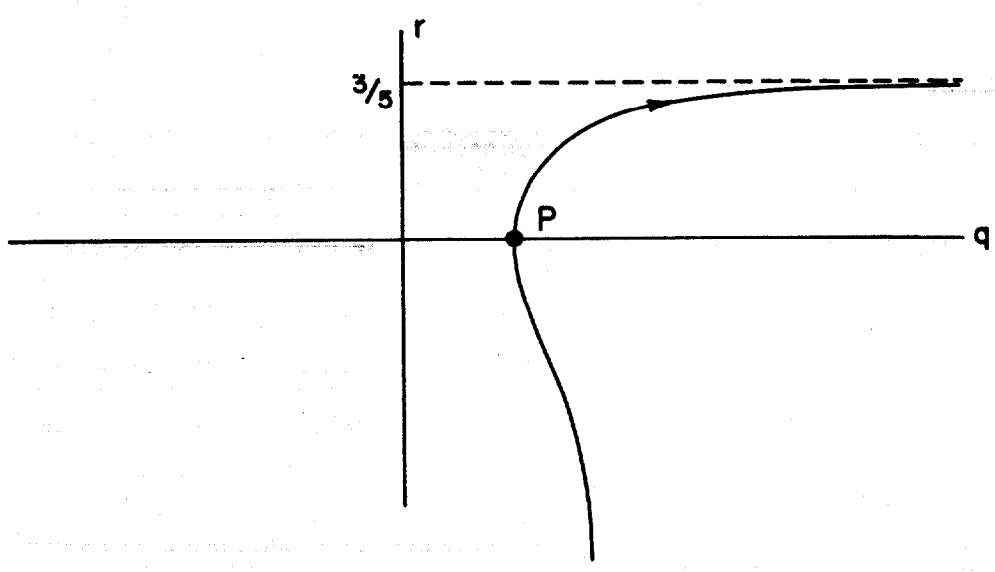

Figure 2