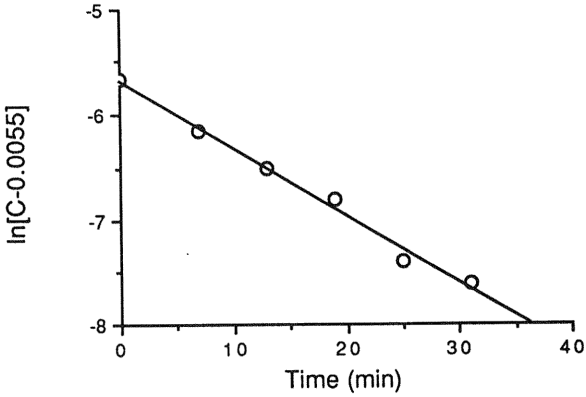

Fig. 8 Data from Fig. 6 treated using a niveau level of $C = 0.0055$. Least squares fit is $y = -0.764 = 0.0127x$ ($R = 0.97$). (Graph constructed from data reported by Farraj et al., 1988.)

5.1. Steady-State Situations

If a situation occurs where $A \rightarrow B \rightarrow C$ and the latter is fast, the kinetics can be simplified by assuming that [B] is "at steady state" throughout the time course. This, obviously cannot be true at the onset. The equations governing this situation are

$$\frac{d[A]}{dt} = -k_1[A] \tag{2.35}$$

$$\frac{d[B]}{dt} = k_1[A] - k_2[B] = 0 \tag{2.36}$$

$$\frac{d[C]}{dt} = k_2[B] \tag{2.37}$$

where the steady state has been imposed by setting the expression in Eq. (2.36) equal to zero. Hence

$$[A] = A_0 e^{-k_1 t} \tag{2.38}$$

and since it follows from Eq. (2.36) that

$$[B] = \frac{k_1[A]}{k_2} \tag{2.39}$$

then Eqs. (2.38) and (2.39) inserted into Eq. (2.37) give

$$\frac{d[C]}{dt} = k_1 e^{-k_1 t} \tag{2.40}$$