

necessary for quasi-compactness of the semigroup. A new proof of this result is given in Lotz (1981).

Section 3. The standard reference to retarded differential equations is Hale (1977), where it is shown that the solutions of (RCP), with values in a finite dimensional space  $F$ , yield an operator semigroup. The extension to arbitrary Banach spaces  $F$  was first made by Travis-Webb (1974). Plant (1977) showed the translation property (T) for the solution semigroup. Among the many papers pursuing this functional analytic investigation of partial differential equations with delay we quote DiBlasio-Kunisch-Sinestrari (1984) and Kunisch-Schappacher (1983). Our approach is essentially due to W. Kerscher. We show that the first derivative with an appropriate domain is the generator of a one-parameter semigroup on an abstract function space. Due to the translation property this semigroup yields the solutions of (RCP).

The aspect of positivity in (RCP) and its influence on the stability of the solutions was first studied in Section 4 of Kerscher-Nagel (1984). In Kerscher (1986) this is pursued by showing how Theorem 3.7 in combination with the domination of semigroups (see C-II, Section 4) can be used to derive many of the known "stability independent of the delay" - results (e.g., Cooke-Ferreira (1983)).