group is given as follows :

$$(3.20)\qquad (T(t)f)(x,v) = \begin{cases} f(x-vt+k,v) & \text{if } k-1\leq vt-x\leq k \text{ and } k \text{ even;} \\ f(1-(x-vt+k),-v) & \text{if } k-1\leq vt-x\leq k \text{ and } k \text{ odd.} \end{cases}$$

Obviously one can apply Thm.3.12 and Thm.3.14 respectively, in order to prove existence of strictly dominant eigenvalues. We consider two typical cases in the following corollaries. The meaning of $r_{ess}(T(t))$ and $\omega_{ess}(T)$ is explained in A-III,3.7 .

<u>Corollary</u> 3.16. Suppose that T is a positive semigroup such that $\omega_{ess}(T) < \omega(T)$. Then $s(A) = \omega(T)$ is a strictly dominant eigenvalue. If in addition there exists an eigenfunction which is a quasi-interior point of E_+ (e.g., if T is irreducible) then $s(A)$ is a first order pole of $R(.,A)$.

<u>Proof</u>. There exist $\varepsilon > 0$ such that for every $t > 0$ the set $\{\lambda \in \sigma(T(t)) : |\lambda| \geq \exp((s(A)-\varepsilon)t)\}$ contains only (finitely many) poles of $R(.,T(t))$ each being of finite algebraic multiplicity. In view of A-III,Cor.6.5 the set $\{\lambda \in \sigma(A) : \mathrm{Re}\,\lambda > s(A)-\varepsilon\}$ is finite and contains only poles of $R(.,A)$. Thus we can apply Thm.3.14. It follows that $s(A)$ is strictly dominant.
For the final assertion we refer to Rem.2.15(b).

□

<u>Corollary</u> 3.17. Suppose that T is an irreducible, eventually norm continuous semigroup having compact resolvent.
Then $s(A) = \omega(T)$ is an algebraically simple pole and a strictly dominant eigenvalue.

<u>Proof</u>. By Thm.3.7(c) we know that $s(A) > -\infty$. Thm.3.12 is applicable since we assumed that T is irreducible and has compact resolvent. Thus $s(A)$ is an algebraically simple pole and $\sigma_b(A) = s(A) + i\alpha\mathbb{Z}$ for some $\alpha \geq 0$. In addition $\{\lambda \in \sigma(A) : \mathrm{Re}\,\lambda \geq -1\}$ is compact since T is eventually norm-continuous (see A-II,Thm.1.20). It follows that $s(A)$ is strictly dominant.
By A-III,Thm.6.6 we have $s(A) = \omega(T)$.

□

In the following proposition we give a condition which ensures that for certain perturbations Thm.3.14 can be applied. Moreover, we state a criterion ensuring existence of a dominant eigenvalue.