

Rev. geol. Amer. Central 5: 35-72; San José, Costa Rica 1986.

PERIODOS DE RECURRENCIA Y TIPOS DE SECUENCIAS SISMICAS DE LOS  
TEMBLORES INTERPLACA E INTRAPLACA EN LA REGION DE COSTA RICA

Walter Montero P.  
Escuela Centroamericana de Geología  
2060 Universidad de Costa Rica  
Apartado 35  
Costa Rica, Centro América

ABSTRACT

The recurrence periods ( $T$ ) of large earthquake ( $M_s \geq 6.75$ ), shallow ( $h < 60$  km) with occurred between 1800-1985 in the border between the Cocos and the Caribbean plate in the Costa Rican region, have been determined for the seismic zone of Osa ( $T = 30.0 \pm 11.5$  years) and Nicoya ( $T = 21.6 \pm 11.8$  years). In the seismic zone of Quepos and Papagayo, which complete the subduction front of this region, it could not be estimated a confidence recurrence period. In the same way, it has been estimated the recurrence period for the seismic zone that develops as a result of the internal deformation in the Caribbean plate, in the Costa Rica region and specially into the inner arc Arenal zone ( $T = 60 \pm 2.8$  years) and in the Valle Central ( $T = 29.5 \pm 9.9$  years).

Three different types of seismic sequences have been identified along the convergent margin of Costa Rica: 1) Isolated interplate events; 2) Single seismic sequences, with two or more main events that occurs in a five years periods and 3) Double seismic sequences that correspond to two single seismic sequences, separated by an approximate period of 10 years. In this last sequence, two ruptures are generally originated in the Nicoya seismic zone. As a result of the identification of this last type of seismic pattern, there is a probability that the single seismic sequence initiated with two events in August 23, 1978 (both with,  $M_s = 7.0$ ), and one on April 3, 1983 ( $M_s = 7.2$ ), could be completed in the next 10 years with a second seismic sequence represented by a double seismic pattern, including a new rupture in the Nicoya seismic zone.