

# THIELEANINE, A NEW GUAIANOLIDE FROM *DECACHAETA THIELEANA*

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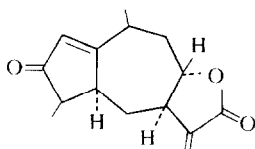
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**Key Word Index**—*Decachaeta thieleana*; Compositae; new guaianolide; sesquiterpene lactone; relative configuration.

A new guaianolide-type sesquiterpene lactone, thieleanine (1), was isolated from *Decachaeta thieleana* (Klatt) R. M. King & H. Robinson. The plant was collected in



Turrucare, Alajuela, Costa Rica and extracted by standard techniques to yield a crystalline solid (0.15% based on weight of dry material), mp 175–177° (sealed capillary in vacuum). The structure and relative configuration were established by X-ray diffraction techniques. Mass

spectrometry indicated a MW of 246.1253 which is consistent with  $C_{15}H_{18}O_3$ .  $\nu_m(\text{KBr}) = 1750, 1700$  and  $1650\text{ cm}^{-1}$  and PMR,  $\delta(60\text{ MHz, CDCl}_3)$ : 1.15 (*d*, 1H,  $J = 7\text{ Hz}$ ), 1.35 (*d*, 3H,  $J = 6.5\text{ Hz}$ ), 3.9 (*ddd*, 1H,  $J = 9, \text{H-8}$ ), 5.55 (*d*, 1H,  $J = 3\text{ Hz, H-13}$ ), 6.05 (*s*, 1H, H-2), 6.25 (*d*, 1H,  $J = 3.5, \text{H-13}$ ).

The crystal belongs to the orthorhombic space group  $P2_12_12_1$  with unit cell dimensions  $a = 6.843(2)$ ,  $b = 28.219(10)$ ,  $c = 6.789(3)\text{ \AA}$  and  $V = 1311.0(8)\text{ \AA}^3$ . The lactone ring is fused  $\alpha$  at the 8 position with both five-membered rings adopting flattened envelope conformations. The conformation of the seven-membered ring can best be described as a twisted chair.

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