

# THE DOMINICAN AMBER FOSSIL *LASIAMBIX* (FABACEAE: CAESALPINIOIDEAE?) IS A *LICANIA* (CHRYSOBALANACEAE)

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## ABSTRACT

The fossil flower described from Miocene Dominican amber, *Lasiambix dominicensis* Poinar, K.L. Chambers & A.E. Brown, tentatively referred to family Fabaceae subfamily Caesalpinioideae, has been reidentified as clearly a member of the modern genus *Licania*, family Chrysobalanaceae. The new combination *Licania dominicensis* is proposed. The species' affinities appear to be with subgen. *Licania* sects. *Hirsuta* or *Hymenopus*. This is the first report of *Licania* from Hispaniola and the first fossil of the genus from the Greater Antilles.

## RESUMEN

La flor fósil descrita del ámbar del Mioceno Dominicano, *Lasiambix dominicensis* Poinar, K.L. Chambers & A.E. Brown, referida tentativamente a la familia Fabaceae subfamilia Caesalpinioideae, se ha reidentificado como un miembro claro del género moderno *Licania*, familia Chrysobalanaceae. Se propone la nueva combinación *Licania dominicensis*. Las afinidades de la especie parecen ser con el subgen. *Licania* sects. *Hirsuta* o *Hymenopus*. Esta es la primera cita de *Licania* de la Hispaniola y el primer fósil del género de las Grandes Antillas.

## INTRODUCTION

A further review of the literature on genera of Neotropical angiosperms has led to the discovery that our recently published fossil genus *Lasiambix* (Poinar et al. 2008) is readily referable to the modern genus *Licania*, a member of Chrysobalanaceae widespread in Central and South America (Prance 1972, 1989). Both flowering and early fruiting stages were available for study, including a pre-anthesis flower showing the petals to be early-deciduous. No species of *Licania* are present in the Greater Antilles today (Prance 1989), the nearest occurring ones being *L. michauxii* Prance of the southeastern United States, and *L. leucosepala* Griseb. and *L. ternatensis* Hook. f. of the Lesser Antilles (Nicolson 1991). The genus is well represented in Mexico and Central America and becomes abundant in South America (Prance 1972, 1989).

## RESULTS

The following new combination is proposed:

***Licania dominicensis*** (Poinar, K.L. Chambers & A.E. Brown) K.L. Chambers & Poinar, comb. nov. BASIONYM: *Lasiambix dominicensis* Poinar, K.L. Chambers & A.E. Brown, J. Bot. Inst. Texas 2:464. 2008.

In the *Licania* species key of Prance (1989, p. 6), the best fit of *L. dominicensis* is with Key C; the presence of petals, together with the 3 stamens shorter than the calyx lobes, place it in either sect. *Hirsuta* or sect. *Hymenopus* of subgen. *Licania*. The absence of critical features such as leaf shape, texture, venation, pubescence, and inflorescence form does not allow the flower to be assigned to any modern taxon. In addition, its age and its provenance in Hispaniola argue against attempting to place it in any of the ca. 146 described species (Prance 1972, 1989). Based on the floral morphology available in the fossil, its closest relationships to modern species are with *L. costaricensis* Standl. & Steyererm., *L. latistipula* Prance (differing in its connate filaments), and *L. minuscula* Cuatrec. (G. Prance, pers. comm. 2009). The ranges of these taxa are in Central America and northernmost South America, rather than the Lesser Antilles or North America (Prance 1989).

## DISCUSSION

The discovery of the species' proper placement in *Licania* corrects its earlier mis-assignment to Fabaceae



subfamily Caesalpinioideae. The latter was based on our effort to reconcile the simple pistil, presence of a hypanthium, reduced number of stamens placed unilaterally, and drupaceous fruit with some common tropical family.

Dominican amber has been dated as late early Miocene to early middle Miocene (15–20 Ma; Iturralde-Vincent & MacPhee 1996; Graham 2003). It is interesting that within the correct family Chrysobalanaceae, *Licania dominicensis* shows a mixture of putatively apomorphic traits, such as the stamens short, reduced in number, and inserted on one side of the flower, with plesiomorphic ones like the petals present and the hypanthium (receptacle of Prance 1972, 1989) regular and campanulate, with the ovary positioned basally. This combination occurs in numerous modern species in the sections of *Licania* mentioned above, helping to differentiate the genus from relatives such as *Chrysobalanus*, *Couepia*, and *Hirtella* (Prance 1972).

This verified record of *Licania* from the Neogene of Hispaniola may be significant to studies of the spread, by dispersal or vicariance, of tropical forests northward into the Caribbean region, Central America, and North America (Graham 2003; Wendt 1993).

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