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Observation on a survival adaptation of invasive *Opuntia stricta* (Haw.) Haw. growing on *Acacia leucophloea* (Roxb.) Willd

Karthick S[1*], Ramakrsihnan B[2], Samson A[3], Girikaran P[4], Gnanavel R[5]
[1-4] Mammology and Forest Ecology Wing, Department of Zoology and Wildlife Biology, Government Arts College, Udhagamandalam, Ooty, Tamil Nadu, India
[5] Plant Molecular Biology Laboratory, Department of Botany, Government Arts College, Udhagamandalam, Ooty, Tamil Nadu, India

Abstract
The biological invasions are a major constituent of global change, and they cause several pessimistic impacts on biodiversity, ecosystem services, and human well-being. On 14th October 2015, 12.30 PM during the field on the Moyar valley The Nilgiris, Tamil Nadu. We were observed an *Opuntia stricta* grew on *Acacia leucophloea.* After three years on 27th June 2018, 10.00 AM we were visited the same place for a field work purpose yet again we were observed the same plant growing healthy on the trunk of the same native *Acacia leucophloea* tree. This is an interesting observation because *Opuntia stricta* an erect or sprawling shrub up to 2 m (6.6 ft) in height it grows on soil surface and these plants are not an Epiphytes and Parasitic plants. This observation clearly shows that the survival capacity of the invasive species than the native plants. Through this observation, we conclude and strongly recommend a concerted effort is needed to clear these like unwanted invasive species to save a natural and sustainable environment in the future.

Keywords: survival adaptation, invasive, *Opuntia stricta*, *Acacia leucophloea*, moyar valley

Introduction
Thousands of plant species have been introduced to countries around the world, both accidentally and intentionally for a host of reasons, including agriculture, forestry, and ornamental purposes (Mack 2003) [7]. According to Blackburn *et al*. 2011 [3] many of these alien species have naturalized and some have become invasive. It is estimated that there are over 751 invasive trees and shrub species globally (Rejmánek and Richardson 2013). These biological invasions are a major component of global change, and they cause several negative impacts on biodiversity, ecosystem services, and human well-being (Pimentel 2002) [9].

On 14th October 2015, 12.30 PM during the field on the Moyar valley (located between E.°N, 77.14°E and 11.47°N, 76.59°11.70) The Nilgiris, Tamil Nadu. We were observed an *Opuntia stricta* grew on *Acacia leucophloea* (Fig.1) actually the total height of the *acacia* tree from the ground level was 15 meters, the height of the *O. stricta* growing at 10 meters on the tree trunk. After three years on 27th June 2018, 10.00 AM we were visited the same place for a field work purpose again we were observed the same plant growing healthy on the trunk of the same native *Acacia leucophloea* tree. *Acacia leucophloea Willd*. (Syn. A. Alba Willd, Family Leguminosae) commonly known as Safed Kikar is a moderate-sized deciduous tree (Maheswari, 1963 and Anonymous, 1985) [8, 1]. It is large thorny tree attaining a height of 35 m and a diameter at breast height of 100 cm. Trunk stout, dividing into several large diameter branches. Open-grown specimens have a characteristic wide umbrella-like crown. Through our observation the plant was growing healthy on the tree more than three years without any disturbances. This is an interesting observation because *Opuntia stricta* an erect or sprawling shrub up to 2 m (6.6 ft) in height it grows on soil surface and these plants are not an Epiphytes (Epiphytes are not parasites but simply rely on their host trees for support, epiphytes do not have conventional roots that extend into the soil. (Benzing 1990 and Lowman 1999) [2, 6] or Parasitic plants (A plant that derives some or all of its nutritional requirements from another living plant). This observation clearly showing the survival capacity of the invasive alien plants. According to CABI 2016 statement *Opuntia stricta* is a spiny perennial succulent shrub which is native to south-east USA, eastern Mexico and some Caribbean Islands. This species has been recorded as naturalized and/or invasive in several African countries, India and Sri Lanka in Asia, Yemen and Saudi Arabia in the Middle East, France, Italy and Spain in Europe, and on the Galápagos Islands, Cuba, Madagascar and Australia

According to Dean and Milton (2000) [4], Crows are a major dispersal agent of invasive *Opuntia* species across large parts of the arid interior of South Africa, similarly our observation shows that the birds are the major dispersal agents. Unlike other *Opuntia* species, *O.stricta* has less benefits and higher impacts which reduce human well-being. (Larsson 2004) [5]. According to Sudhakar Reddy *et al* 2008 [11] an invasive alien plant that has escaped from its unique ecosystem and is reproducing on its own in the regional flora is considered a naturalized species. Those naturalized aliens that become as successful as to spread in the flora and displace native biota or threatens valued environmental, agricultural or personal

resources by the damage it causes are considered invasive. This observation shows that the survival capacity of the invasive species than the native plants. Through this observation, we conclude and strongly recommend a concerted effort is needed to eradicate these like unwanted invasive species to save a natural and sustainable habitat in the future.

Fig 1: Invasive *Opuntia stricta* growing on native *Acacia leucophloea* tree. (Photo: Karthick.S)

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