New Record of Lilioceris sp. (Coleoptera: Chrysomelidae) Infesting Cycas Plant (Cycas revoluta) in Assam

Samiran Pathak[1], Bandana Deka[2*]

[1]Principal Scientist, HRS, Assam Agricultural University, Guwahati, Assam, PIN: 781017

[2]Assistant Professor, Department of Zoology, SBMS College, Sualkuchi, Assam, Pin: 781103

[*]Corresponding Author

DOI: https://doi.org/10.51584/IJRIAS.2025.100800014

Received: 30 July 2025; Accepted: 04 August 2025; Published: 29 August 2025

ABSTRACT

Cycas revoluta, commonly known as the sago palm, is a gymnosperm of the family Cycadaceae, native to Asia and widely cultivated for its ornamental value. Despite its palm-like appearance, it is unrelated to true palms (Arecaceae). Known for its hardiness and tolerance to mild cold, *C. revoluta* is frequently used in landscaping and bonsai, and in some areas, as a source of sago. The species is vulnerable to several insect pests such as spider mites, scale insects, mealybugs, aphids, red palm weevils, caterpillars, and various beetles that damage its foliage and reduce plant vigor. Notably, beetles also play a dual role as both pests and potential pollinators. Among them, Lilioceris species have been observed feeding on Cycas species in New Guinea and Thailand. In 2024, Lilioceris sp. (Coleoptera: Chrysomelidae) was documented for the first time infesting C. revoluta in Assam, India. The larvae caused papery leaf damage and bored into the leaf stalks before pupating in soil cocoons. Adult beetles, identifiable by their bright red coloration, further damaged the foliage. This finding marks a new pest record for C. revoluta and highlights the need for targeted pest management strategies for this economically and horticulturally significant species.

Keywords: Lilioceris sp., Cycas revoluta, New record, Chrysomelidae, Assam

INTRODUCTION

Cycas revoluta, a member of the family Cycadaceae, is a gymnosperm species native to Asia. Commonly referred to as the sago palm, it is not a true palm; its only relation to the palm family (Arecaceae) lies in the fact that both are seed-producing plants. The species name revoluta refers to the characteristically curled-back margins of its leaves.

Among all cycads, C. revoluta is the most widely cultivated. It is a prominent feature in botanical gardens worldwide, valued for its ornamental appeal. The plant is extensively used in landscaping and is also prized as a bonsai specimen. In certain regions, it serves as a source for sago production.

First described in the late 18th century, C. revoluta is noted for its hardiness and tolerance to mild cold, particularly when grown in dry soils. In temperate climates, it typically sheds its leaves during winter but reliably produces a new flush of foliage in spring.

C. revoluta is susceptible to various insect pests that adversely affect its foliage and overall health. Common pests include spider mites, scale insects, mealybugs, and aphids, which typically damage the leaves by feeding on sap, causing discoloration, leaf curling, and general decline in plant vigor. Additionally, infestations by red palm weevil, leaf beetles, and caterpillars are also noted.

Beetles, in particular, have been increasingly associated with cycads. According to entomological and cycadological studies (Shepard, 1997), many beetle species either bore into the frond rachis or trunk, or they attack the reproductive cones of cycads. Interestingly, several beetle species have also been reported to act as

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue VIII August 2025

pollinators.

One notable example is the chrysomelid beetle *Lilioceris clarki* (Baly), which has been documented feeding on the fronds of Cycas species in New Guinea (Szent-Ivany et al., 1956). Similarly, larvae of another *Lilioceris* species were observed feeding on the leaflets of *Cycas siamensis* Miquel in Thailand (Shepard, 1997). The golden leaf beetle Lilioceris nigripes (Fabricius) (Coleoptera: Chrysomelidae: Criocerinae), feeds on the foliage of cycad species in two families, Cycadaceae and Zamiaceae, along approximately 1,000 km of coastal Queensland, northern Australia (Wilson, 2021).

In 2024, an occurrence of *Lilioceris* sp. (Coleoptera: Chrysomelidae) was recorded for the first time on *Cycas revoluta* in Assam. The infestation was initially observed in July on potted plants, where early-stage grubs caused conspicuous damage to the leaflets, rendering them papery in appearance. As feeding progressed, the grubs were found boring into the leaf stalks (Fig 1). Grub stage was 17-20 days. Pupation occurred in the soil, enclosed within a characteristic leathery cocoon, with the pupal stage lasting approximately 15 days (Fig 3).

The adult beetles are easily recognizable by their bright red coloration and lived for 24-28 days. They feed on the foliage by scraping away the green mesophyll, resulting in extensive foliar damage (Fig 2). This observation represents a significant addition to the list of insect pests associated with *C. revoluta*, with potential implications for the management of this economically and ornamentally important cycad species in the region.

Fig. 1: Lilioceris sp. grubs infesting cycas plant in nursery

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue VIII August 2025

Fig. 2: Lilioceris sp. beetles feeding cycas leaves in laboratory

Fig. 3: Lilioceris sp. pupae and emerged beetle in laboratory

REFERENCE

1. Shepard W.D. (1997). Lilioceris sp. (Coleoptera: Chrysomelidae). Herbivory on Cycas siamensis Miguel (Tracheophyta: Cycadales). The Pan-Pacific Entomologist,73(1). Pp.36-39.
2. Szent-Iványi, J. J. H., Womersley, J. S. and Ardley, J. H. (1956). Some insects of Cycas in New Guinea. Papua and New Guinea Agricultural Journal, 11. Pp. 53–56.
3. Wilson G.W. (2021). The beetle 'Liliocerisnigripes' (Fabricius) (Coleoptera: Chrysomelidae: Criocerinae) feeding on cycads in north-east Australia. North Queensland Naturalist, 51. Pp. 50-56.