Stenochironomus nelumbus infesting leaves of *Nelumbo nucifera* and use of the term 'gall'

While reporting the invasive nature of *Stenochironomus nelumbus* (Diptera: Chironomidae), Mathew and Habeeburrahman[1] have indicated that this chironomid induces 'galls' on the leaves of *Nelumbo nucifera*. While leaf-mining habit is common among several plant-feeding aquatic Chronomidae[2], I was surprised to read about the capability of *S. nelumbus* to induce galls. As the current knowledge stands, the gall-inducing capability in Diptera occurs only in the Cecidomyiidae, Chloropidae and Tephritidae[3], and to a modest extent in the Agromyzidae[4]. A true gall is a modified tissue of the host plant, which expresses a suite of adaptations to provide food and shelter to the inducing arthropod[5,6]. In plant-morphogenetic terms, the gall-inducing arthropod initiates a perturbation in the growth activities of the plant and alters its differentiation processes modifying the plant tissue to its advantage[7]. According to Mani[8], '... galls involve complex developmental inhibition, differentiation, growth, and suppression of tissues and parts'. I am curious to know whether Mathew and Habeeburrahman[1] observed such striking changes in the leaves of *N. nucifera* consequent to feeding by the larvae of *S. nelumbus*. The images included in the paper do not indicate any striking change – either hypertrophy or hyperplasia, except for lifted translucent epidermises at sites where the larvae occur. Leaf-mining habit was presupposed for gall-inducing habit, especially in Diptera; but this presupposition is being currently challenged[3]. Moreover, Mathew and Habeeburrahman[1] report about leaf rotting, which, again, is an extremely rare feature among true galls of arthropod origin. Only in the stem and root galls induced by weevils (Coleoptera) and moths (Lepidoptera) does tissue-rotting occur, mostly because of accumulation of frass at one end of the tunnel; in other instances, tissue rotting occurs because of the association of a fungus with the gall-inducing insect, where the fungus will induce cell necrosis after the exit of the gall inducer.

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Response:

The invasion, outbreak, nature and extent of damage, and quarantine and management strategies for *Stenochironomus nelumbus* in *Nelumbo nucifera* under Indian freshwaters has been the scope of our paper. As we have discussed, initial reports on this pest are available only in Chinese language. We are sorry about the use of the term 'gall' that inadvertently crept in while translating the literature from Chinese websites using available tools. The symptoms observed under Indian freshwaters are leaf tunnelling, piling of faecal matter in rail on both sides of the larva and subsequent rotting of the leaves.

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Present status of critically endangered species of *Gyps* in Andhra Pradesh, India

Population decline of three resident species of vultures belonging to genus *Gyps*, namely Oriental White-backed vulture *Gyps bengalensis*, Long-billed vulture *Gyps indicus* and Slender-billed vulture *Gyps tenuirostris*, in the Indian subcontinent has become a conservation concern[1] and is among the most rapid ever reported in any bird species[2]. Decline in vulture populations was first detected in the early nineties[3], and between 1991–93 and 2000, more than 92% decline in the populations of Oriental White-backed vulture and Long-billed vulture has been reported from north, northwest and central India[4,5]. Between 2000 and 2003, the annual rates of decline of these two species was 48% and 22% respectively[6]. Largely, the population of vultures in the Indian subcontinent has declined[1,7] by more than 95% between 1990 and 2000. The Oriental White-backed vulture population was the worst affected[1], with a decline of 99.9%.

Among other reasons (including habitat destruction, decline in food availability, hunting, poor breeding success) for the population decline among *Gyps* species, diclofenac toxicity is considered a primary threat[6,8,9]. Diclofenac was till recently a