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**Notes on *Erythrina variegata* (LINNAEUS 1754)
(Rosopsida: Fabaceae) and *Quadrastichus erythrinae* KIM 2004
(Hymenoptera: Chalcidoidea: Eulophidae) in Seychelles**

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A b s t r a c t : *Quadrastichus erythrinae* KIM 2004 (Eulophidae), a gall inducer, is recorded from the Seychelles islands causing death of *Erythrina variegata* LINNAEUS (Fabaceae) on several islands. A checklist of species of the subfamily Tetrastichinae is added.

K e y w o r d s : *Erythrina variegata* LINNAEUS, *Quadrastichus erythrinae* KIM, Seychelles.

Introduction

Members of the subfamily Tetrastichinae are mainly parasitoids, but in some genera gall inducers are represented (La SALLE 2004, KIM et al. 2005). Several species have become invasive pests (KIM et al. 2004, 2005).

The recently described *Quadrastichus erythrinae* KIM 2004, induces galls on different species of *Erythrina* sp. (Fabaceae) causing severe damage or death of the tree. The biology of the species has been studied in Taiwan (YANG et al. 2004) and its chemical control in Hawaii (HARA et al. 2006).

The genus *Erythrina* LINNAEUS 1753 is represented by about 110 species in tropical and subtropical regions around the world. *Erythrina variegata* LINNAEUS 1754 is mainly planted as an ornamental tree, but is also used in farming, landscaping and as a medical plant (WHISTLER & ELEVITCH 2006). In Seychelles it is an indigenous species of the coasts (ROBERTSON 1989, FRIEDMANN 1994), but almost all individuals have been planted deliberately for landscaping purposes. The vernacular name is mourouk or bwa mourouk and the leaves are used to treat cough and asthmatic attacks (ROSALIE 1998).

Observations

Large numbers of *Erythrina variegata* LINNAEUS were planted on Fregate Island in the late 1990s as part of the habitat restoration programme on that island. Galls of *Quadrastichus erythrinae* KIM were first noted on *Erythrina variegata* LINNAEUS in 2002. By October 2002 all trees of this species planted on Fregate were affected leading to premature leaf loss. Galls affected 100 % of petioles and a high rate of mortality was

apparent. By 2003 all planted trees had died. In the same year the only naturally seeded plants of the species known in Seychelles died. One was a 2 m tall sapling at Grand Anse (Praslin Island), the other an exceptionally large tree (trunk diameter 2 m) at Grand Barbe (Silhouette Island). In this case premature leaf fall had been observed, but leaves had not been examined for galls. The cause of death is not known, but the timing implicates *Quadrastichus erythrinae* KIM. Similarly, it is reported that almost all *E. variegata* trees died on Mahé in about 2000 (D. Dogley pers. comm.). This may indicate that *Q. erythrinae* KIM arrived first on Mahé (the largest island of the group which also has all international transport connections).

Material

F r e g a t e : 5 ♀♀ on petioles of *Erythrina variegata* L., 1.10.2002 leg. Justin Gerlach (NHMW).

D i s t r i b u t i o n : Until now the species has been recorded from American Samoa, China, Hawaii, India, Japan, Mauritius, Philippines, Réunion, Singapore, Taiwan and U.S.A. (Florida).

Distributional and synonymic checklist of Tetrastichinae

Hitherto 18 species have been recorded from the Inner Seychelles. There are no records from the coralline outlying islands.

Endemic species are marked with an asterisk.

****Aprostocetus aeruginosus* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

****Aprostocetus agnatus* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Anonyme.

***Aprostocetus asthenogmus* (WATERSTON 1915)**

Tetrastichus metalliferus MASI 1917

D i s t r i b u t i o n : Inner Seychelles: Mahé.

****Aprostocetus distinguendus* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

****Aprostocetus dolichocerus* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Mahé, Silhouette.

***Aprostocetus hagenowii* (RATZEBURG 1852)**

D i s t r i b u t i o n : Inner Seychelles: Mahé, Silhouette.

****Aprostocetus longiventris* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Silhouette.

****Aprostocetus nigriceps* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Silhouette.

? *Aprostocetus stictococi* (SILVESTRI 1915)

D i s t r i b u t i o n : Inner Seychelles: Mahé.

***Aprostocetus theioneurus* (MASI 1917)**

D i s t r i b u t i o n : Inner Seychelles: Mahé, Silhouette.

***Melittobia assemi* DAHMS 1984**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

***Melittobia hawaiiensis* PERKINS 1907**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

***Nesolynx phaeosoma* (WATERSTON 1915)**

Syntomosphyrum trichops MASI 1917

D i s t r i b u t i o n : Inner Seychelles: Mahé, Silhouette.

***Quadrastichus erythrinae* KIM 2004**

D i s t r i b u t i o n : Inner Seychelles: Fregate.

***Tetrastichus dispar* MASI 1917**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

****Tetrastichus longifimbriatus* MASI 1917**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

****Tetrastichus nigricoxa* MASI 1917**

D i s t r i b u t i o n : Inner Seychelles: Mahé.

****Tetrastichus seychellensis* MASI 1940**

D i s t r i b u t i o n : Inner Seychelles: Mahé, Silhouette.

Zusammenfassung

Über *Erythrina variegata* (LINNAEUS 1754) (Rosopsida: Fabaceae) und *Quadrastichus erythrinae* KIM 2004 (Hymenoptera: Chalcidoidea: Eulophidae) auf den Seychellen. - *Quadrastichus erythrinae* KIM 2004 hat das Absterben von vielen Bäumen von *Erythrina variegata* LINNAEUS 1754 auf mehreren Inseln verursacht. Eine Artenliste der Unterfamilie Tetrastichinae ist beigelegt.

References

- FRIEDMANN F. (1994): Flore des Seychelles. Dicotylédones. — Paris (Orstom): 1-663.
- HARA A.H., JACOBSEN C.M. & D.M. TSUDA (2006): Chemical Control of the *Erythrina* (Wiliwili) Gall Wasp (EGW), *Quadrastichus erythrinae*: Trials and Tribulations. — (www.mauget.com/uhegwstudy.pdf).
- KIM I.-K., DELVARE G. & J. La SALLE (2004): A New Species of *Quadrastichus* (Hymenoptera: Eulophidae): A Gall-inducing Pest on *Erythrina* (Fabaceae). — Journal of Hymenoptera Research **13** (2): 243-249.
- KIM I.-K., McDONALD M. & J. La SALLE (2005): *Moona*, a new genus of tetrastichine gall inducers (Hymenoptera: Eulophidae) on seeds of *Corymbia* (Myrtaceae) in Australia. — Zootaxa **989**: 1-10.
- La SALLE J. (2004): Biology of gall inducers and evolution of gall induction in Chalcidoidea (Hymenoptera: Eulophidae, Eurytomidae, Pteromalidae, Tanaostigmatidae, Torymidae). — In: RAMAN A., SCHAEFFER C.W. & T.M. WITHERS (Eds), Biology, Ecology and Evolution of Gall-inducing Arthropods: 507-537.
- ROBERTSON S.A. (1989): Flowering Plants of Seychelles. — Kew (Royal Botanical Gardens): 327 pp.
- ROSALIE M. (Ed.) (1998): Medical Plants of Seychelles. Series Two. — Victoria (Natural Heritage): 75 pp.
- WHISTLER W.A. & C. ELEVITCH (2006): *Erythrina variegata* (coral tree), vers. 3.1. — In: ELEVITCH C.R. (Ed.), Species Profiles for Pacific Island Agroforestry (<http://www.traditionaltree.org>).
- YANG M.-M., TUNG G.-S., La SALLE J. & M.-L. WU (2004): Outbreak of erythrina gall wasp (Hymenoptera: Eulophidae) on *Erythrina* ssp. (Fabaceae) in Taiwan. — Plant Protection Bulletin **46**: 391-396.

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