

Scientific note

**FIRST REPORT OF THE EXOTIC BRUCHID
SPECULARIUS IMPRESSITHORAX (PIC) ON SEEDS OF
ERYTHRINA CORALLOIDES DC. IN MEXICO
(COLEOPTERA: BRUCHIDAE)**

RESUMEN. Se reporta por primera vez en México la presencia del brúquido exótico *Specularius impressithorax* (Pic), al cual se le encontró alimentándose de un nuevo hospedero, *Erythrina coralloides* DC. Se proporciona información sobre el grado de daño que provoca este insecto a las semillas de esta leguminosa.

Specularius is an Old World genus, according to Kingsolver & Decelle (1979) including nine species and two subspecies; however, the genus need to be reviewed in the future. The most important species in the genus is *Specularius impressithorax* (Pic) because of its wide distribution and that it feeds on various species of *Erythrina*. The other species of *Specularius* feed on other legumes, except *Specularius ghesquierei* Decelle that feeds on unidentified species of *Erythrina*.

The genus *Erythrina* is a flowering plant that is pantropic in distribution. In 1974, Krukoff & Barnaby revised the genus and recognized 105 species; latter in 1977, Gunn & Barnes described the seeds of 101 species. Neil (1988) studied the biosystematic relationships of the species and recognized 112 species. Barrera *et al.* (2002) mentioned that the *Erythrina* includes 117 species. Most of the them are used as ornamentals; however some species are used in South America as food, such as *Erythrina edulis* because its flowers are prepared in salads and sweets and its infusion taken for anxiety and urinary problems. In agroalimentary programs seeds are transformed into flour with high protein content.

In January 6, 2007 the third author collected seeds of *E. coralloides* DC. on the campus of Colegio de Postgraduados, Montecillo, Estado de Mexico. The coordinates of the site are 19°27'45.73"N and 98°54'13.03"W at 2256 m above sea level. After some days bruchids emerged from the seeds. For identification we followed the Kingsolver (1986) and Romero & Johnson (1999) technique for genitalia study. The genitalia were compared with specimens of *S. impressithorax* deposited in the Entomological Collection of Fitosanitary Institute at Postgraduate College (CEAM). All material was pinned and labelled and stored at CEAM.

The bruchid species was identified as *Specularius impressithorax* (Pic), and constitutes the first report for this exotic species in Mexico. The analysis of 293 seeds showed that 169 (57.68%) were healthy, and 84 (28.67%) had seeds with eggs on them but without an operculum of emergence (OE). However, some of these were fertile (FE). This was easy to corroborate because after removing the egg the entrance hole that the larva made could be seen and dust could be seen inside of the egg, however none of these reached the adult stage. Translucent eggs were not fertile

(NF), sometimes it was possible to see the small dead larva inside the egg (Fig. 1A). The remaining 40 seeds (13.65%), showed one to nine glued eggs plus one to six OE (Fig. 1B) per seed (Table 1).

Johnson & Siemens (1995) and Johnson & Romero (2004) state that there are three guilds of bruchid oviposition on seeds: (Guild A) species that oviposit on fruits while on the plant; (Guild B) species that only oviposit on seeds exposed in fruits while still on the plant; and (Guild C) bruchids that only oviposit on seeds once they are exposed on the substrate. According to this guild classification system, *S. impressithorax* belongs to Guild B (Figs. 1C & D).

According to Romero & Johnson (2002) the only species of *Specularius* that feed on *Erythrina* are *Specularius ghesquierei* on *Erythrina* sp. (Democratic Republic of Congo) and the following host for the latter are: *S. impressithorax*. *Erythrina abyssinica* DC. (Sudafrica & Zimbabwe), *E. abyssinica* DC. subsp. *abyssinica* DC. (Tanzania), *E. caffra* Thunb., *E. crista-galli* L., *E. humeana* Sprengel (Rhodesia), *E. latissima* E. Mey., *E. lysistemon* Hutch., *E. mildbraedii* Harms (Nigeria), *E. orophila* Ghesq., *E. pallida* Britton, *E. sandwicensis* Degener (Hawaii), *E. senegalensis* DC. (Angola, Ghana, Nigeria), *E. variegata* L. (India). Therefore, *Erythrina coralloides* DC. is a new host record for this species.

At this moment, we do not know how widely *S. impressithorax* is distributed in Mexico. The only place where specimens have been collected is that mentioned above. It is possible that the introduction of the exotic bruchid was through infested seeds, perhaps in one of the *Erythrina* species from the Old World. Once relocated, this bruchid started feeding on *E. coralloides* that is a very abundant plant in many places of Mexico, USA and Central America.

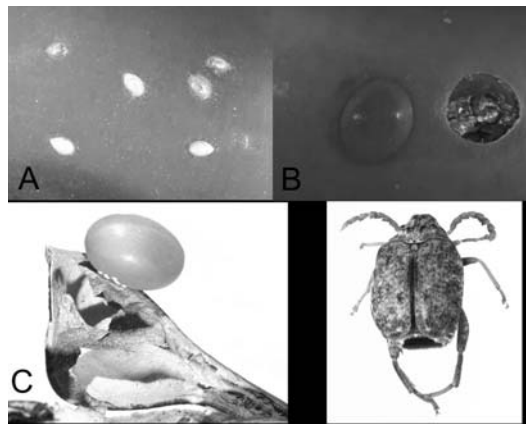


Figure 1. *Specularius impressithorax* (Pic). A) Fertilized and non-fertilized eggs glued on a seed of *Erythrina coralloides* DC., B) Emerging through the operculum of a seed of *E. coralloides* DC., C) Eggs glued on a seed of *E. coralloides* DC., D) Male adult.

Table 1. Number of *Specularius impressithorax* (Pic) eggs and operculum of emergence on *Erythrina coralloides* DC. seeds.

Number of eggs on seeds		Number of eggs and OE on seeds	
Number of seeds	Number of eggs/seed	Number of seeds	Number of eggs & OE/seed
1	7 (4 FE, 3 NF)	1	1 OE, 4e (2 FE, 2 NF)
1	5 (4 FE, 1 NF)	1	6 OE, 6e (6 FE)
1	7 (3 FE, 4 NF)	1	3 OE, 4e (3 FE, 1 NF)
1	4 (2 FE, 2 NF)	1	1 OE, 3e (2 FE, 1 NF)
1	8 (8 FE)	1	1 OE, 3e (1 FE, 2 NF)
1	4 (1 FE, 3 NF)	1	2 OE, 4e (3 FE, 1 NF)
1	6 (3 FE, 3 NF)	1	5 OE, 9e (9 FE)
1	6 (5 FE, 1 NF)	1	2 OE, 5e (5 FE)
1	5 (5 NF)	1	5 OE, 5e (5 FE)
3	3 (1 FE, 2 NF)	2	2 OE, 3e (3 FE)
3	4 (3 FE, 1 NF)	2	1 OE, 2e (1 FE, 1 NF)
4	3 (3 FE)	2	3 OE, 4e (4 FE)
5	2 (1 FE, 1 NF)	2	4 OE, 4e (4 FE)
6	2 (2 NF)	3	1 OE, 2e (2 FE)
6	5 (5 FE)	4	3 OE, 3e (3 FE)
14	1 (1 FE)	5	2 OE, 2e (2 FE)
14	2 (2 FE)	11	1 OE, 1e (1 FE)
20	1 (1 NF)		
Total 84		Total 40	

e= eggs, FE= fertile eggs, NF= non-fertile eggs, OE= operculum of emergence

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ACKNOWLEDGEMENTS. We thank Dr. Stephen Koch from the Programa de Botanica, Colegio de Postgraduados, for the plant identification, and M.C. Jorge Valdéz Carrasco from Programa de Entomología y Acarología, Instituto de Fitosanidad, Colegio de Postgraduados for taking the photographs.

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