OCCURRENCE OF *Spaethiella coccinea* BOHEMAN (COLEOPTERA: CHRYSOMELIDAE, HISPINAE) ON *Theobroma grandiflorum* [WILLDENOW EX SPRENGEL] SCHUMMAN, (STERCULIACEAE), IN MANAUS, AMAZONAS, BRAZIL[1]

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ABSTRACT — A preliminary study on the ocurrence of *Spathiella coccinea* Boh. (Coleoptera) on *Theobroma grandiflorum* (cupuassu), native Amazonian fruit plant, are reported. *S. coccinea* is known to feed on leaves of many species of palm, and has been found in *Elaeis guineensis* (Palmaceae) leaves. From September 1994 to February 1996 observations were made on the behavior and seasonal aspects of *S. coccinea* and larvae, pupae and adults found on the leaves of cupuassu were hand collected. The highest number of insects was found in the rainy season February 1995.

Key Words: Coleoptera, Chrysomelidae, *Spathiella coccinea*, Cupuassu, *Theobroma grandiflorum*

Ocorrência de *Spaethiella coccinea* Boheman (Coleoptera: Chrysomelidae, Hispinae) em Plantas de *Theobroma grandiflorum* [Willdenow ex Sprengel] Schumman, (Sterculiaceae), em Manaus, Amazonas, Brasil

RESUMO — A ocorrência de *Spathiella coccinea* Boh. em plantas de *Theobroma grandiflorum* Schum. (cupuaçuzeiro), fruteira nativa da região Amazônica é aqui registrada. *S. coccinea* é conhecida como um Coleoptera que se alimenta de folhas de palmeiras de diversas espécies tendo sido encontrado na região de Tefé, alimentando-se de folhas de dendezeiros *Elaeis guineensis*. Durante dezoito meses foram feitas observações sobre o comportamento sazonal desses besouros, coletando-se manualmente larvas, pupas e adultos sobre e sob as folhas de cupuaçuzeiros. Encontrou-se o maior número desses indivíduos nos meses correspondentes ao período mais chuvoso.

Palavras Chave: Coleoptera, Chrysomelidae, *Spathiella coccinea*, Cupuaçu, *Theobroma grandiflorum.*

The cupuassu (*Theobroma grandiflorum)* is a native Amazonian fruit tree that is one of the species with the highest economic potential as its fruits are considered to be the biggest and best of their kind in the regional flora. The cupuassu has been planted with increasing frequency, mainly for industrial purposes, due to the yield of their perennial Fruits (Agenda do CNPq, 1985; Calzavara, 1987; Calzavara *et al*, 1988). Despite the economic value that it has aquired, little is known about the entomology of this plant (Silva, 1976; Falcão & Lleras, 1983; Barbosa, 1994; Venturieri, 1994).

Among all the beetles that visited this plant in our survey, *Spaethiella coccinea* Boheman (Chrysomelidae, Hispinae, former Cassidinae Lawrence & Newton, 1995) was observed feeding on the leaves of cupuassu trees

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(Barbosa, 1994). This species is known to attack leaves of many species of palm trees, and has been found in the Tefé region eating *Elaeis guineensis* leaves (Garcia, 1996).

Some species of *Spaethiella* feed on leaves of many different plants, such as palms and cacao (Bruch, 1939; Bondar, 1939; 1940; Genty *et al.*, 1978). Bondar (1939), observed that these insects do not cause serious damage in cultivated plants, since they do not consume a large amount of plant leaves, they have low rates of reproduction and the individuals in the population are widely dispersed. However, studies about the relation between insetcs that attack *Elaeis guineensis* leaves, like, the Hemiptera, Lepidoptera and Coleoptera, and the fungi of the genus *Pestalotiopsis* through the damage caused by the insects, can infect the leaves (Genty, 1978; Genty *et al.*, 1975; 1981; 1983; Vessey, 1981). Many espicies of this fungi was found associated with leaf spot on the coconut palms (Tuner, 1981) and indirectly, jeopardize the plant's economic value (Garcia *et al.*, 1996).

Given the economic value of this fruit tree and the likelihood that *S. coccinea* can affect its production, we decided to make observations on the behavior and to record the seasonality of this beetle on cupuassu trees.

To observe the beetles on cupuassu leaves we visited the site once or twice every 15 days from September 1994 to February 1996. The study was done in a private property located in the suburbs of Manaus, Amazonas, where there were nearly 1,000 cupuassu trees. Observations were made in 50 trees located on the the front, 50 trees on the lateral, 50 on the middle and 50 on the bordering of the forest.

The immature (larvae and pupae) and adults observed on the plants, were hand-collected and the leaves on which they were feeding were cut, put in plastic bags and taken to the laboratory where the separation and counting of the material was done. The larvae and pupae were always found on the inderside of the leaves in a cocoon-like protective cover (Figs. 1-5). This cocoon is a thread like structure built by the female over the eggs after oviposition. The female builds the cocoon with her own excrement, apparently protecting the egg, the larva and the pupa (Bondar, 1939).

During the course of this study we collected 96 larvae, 75 pupae and 27 adults of *S. coccinea* on cupuassu leaves (Tab. 1). The highest number of individual insects (85%) wascollected on plants in areas bordering the forest, while we found only 5% on trees located in the middle, 10% on trees at the sides and 0.5% on trees at the front of plantations. The month with the highest peak in the number of insects was during the rainy season in February 1995 (Fig. 6).

We noticed that the larvae, pupae and adults, of these beetles were always found on the upper surface and occasionally on the underside the leaves of cupuassu trees. The larvae of *Spaethiella tristes* have the opposite behaviors they were found feeding mainly on the epidermis and parenquima underneath the native palm leaflets leaving only the epider-

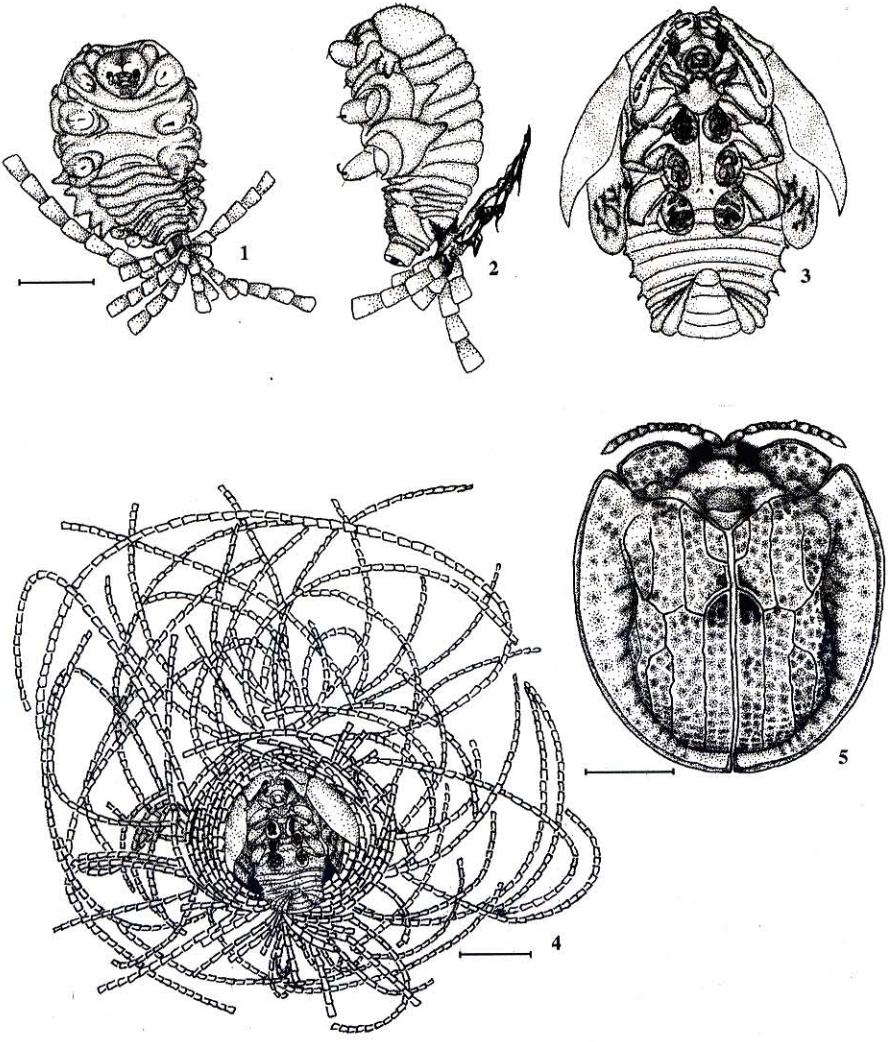

Figure 1-5. *Spaethiella coccinea* Boh. Figure 1 e 2 (1.0 mm) larvae Figure 3 (1.0 mm) pupae Figure 4 (2.0 mm) pupae underneath a cocoon-like protective cover and Figure 5 (1.0 mm) adult dorsal view.

Table 1. The numbers of larvae, pupae and adults of *Spaethiella coccinea* collected on the cupuassu trees from September/1994 to February/1996

Stages	MONTHS																	Total
	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	
Larvae	2	3	2	4	2	54	6	4	8	1	10	0	0	0	0	0	0	1	96
Pupae	0	0	0	0	0	20	6	5	4	15	14	9	0	0	0	0	0	2	75
Adults	1	1	1	2	0	12	2	0	4	1	1	2	0	0	0	0	0	0	27

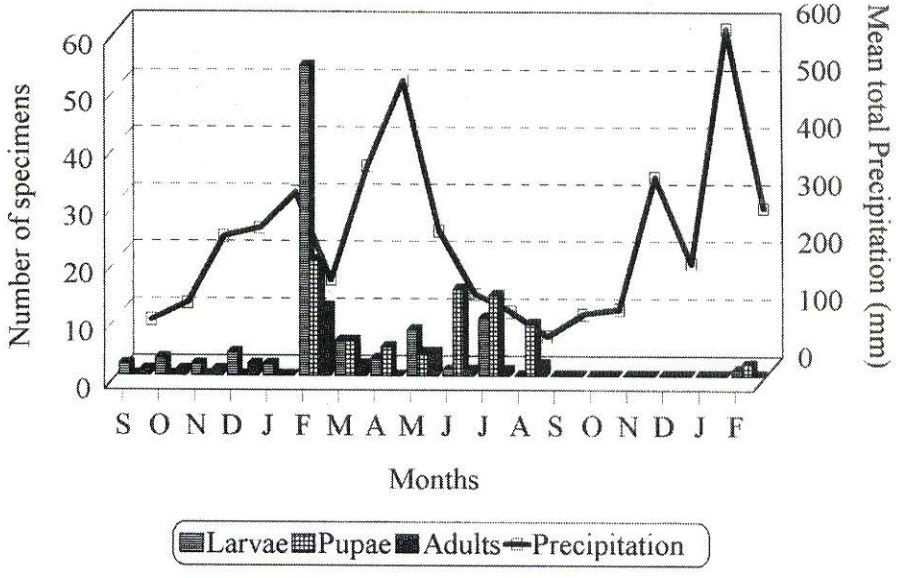

Figure 6. Monthly average of temperature, relative humidity, rainfall and population fluctuation of larvae, pupae and adults of *Spathiella coccinea* Boh. during 18 consecutive months of collections on the cupuassu trees, from September/1994 to February/1996.

mis of the upper surface untouched. The larvae of this species feed on about 4cm^2 of the leaf and their excrement was fixed on their last abdominal segment in a long filamented form, like a "cocoon" to protect the larvae (Bondar, 1940; Lima 1955). After emergence the adult remain under the cocoon until the body hardens and darken to adult coloration that may take many hours (Garcia, 1996).

We observed that once the adult exoskeleton hardens, *S. coccinea* leaves the "cocoon" after feeding on some parts of the leaf. The damage caused by these beetles on the cupuassu trees is not considered very serious. However, the presence of these insects on the plants could become the cause of many problems, since the damage can provide open door to entry of microorganism, that can jeopardize the plants production and its high economic value.

In this study we provide information for the farmers, who must be

alert to the presence of these insects (larvae and adults) on their crops and take care that the populations of these insects not increase out of control.

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