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The presence of the coffee berry borer, *Hypothenemus hampei*, in Puerto Rico: fact or fiction?

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Short Communication

The coffee berry borer, *Hypothenemus hampei* Ferrari (Coleoptera: Scolytidae), is widely considered to be the most devastating pest of coffee. Endemic to Central Africa, the coffee berry borer can now be found in most coffee growing regions throughout the world (Le Pelley 1968). Annual losses caused by this insect have been estimated at over $500 million annually (P. Baker, CABI Bioscience, UK; personal communication). One of the most widely cited references on coffee berry borer presence in different countries is that of Le Pelley (1968), where more than 20 countries, including Puerto Rico, are listed as having the insect.

A survey for the coffee berry borer in Puerto Rico in the major coffee growing areas of Lares, Utuado, and Adjuntas, in the summer of 1998 by F. E. Vega, G. Mercadier and N. Bayron Justiniano, followed by another survey of coffee samples from Utuado, Adjuntas, Lares, Yauco, and Maricao in June of 2002 by F. E. Vega, A. Sidor, and R. Franqui, indicated that the insect was not present on the island. This was interesting because if the insect had indeed been reported in the island, then its eventual eradication would be noteworthy. We therefore decided to investigate the origins of statements indicating the insect had been reported in Puerto Rico. Le Pelley (1968) cited a report by Roque (1946) which reads as follows:

> "Status of infestation of coffee by the coffee bean borer *Stephanoderes* sp. - The percentage of infestation of coffee berries at the two farms on the Lares-Adjuntas road where the pest was first noted has not increased since last year. At the Federal Experiment Station in Mayagüez, the infestation has been greatly reduced by a very thorough collection of the berries. Two new infestations have been discovered at the Demonstration Farm of the Agricultural Extension Service, in San Sebastían, and at three farms on the Lares-Utuado road. In the newly discovered infestations, the percentage of infested berries is very low. All infestations discovered so far have been in *Coffea excelsa*. None in *Coffea arabica*, although under laboratory infestation of *C. arabica* has taken place."

The accuracy of this report was questioned by Bergamin (1946), due to Roque referring to the insect as *Stephanoderes* sp. without specifying the species (*hampei*) whose damage and importance was quite well known at the time among coffee producing countries. In addition, he found it odd that the reported infestations only occurred in *Coffea dewevrei* Wildem & T. Dur. *(=excelsa)* which is known to be less preferred by the insect than *C. arabica* L. and *C. canephora* Pierre ex Froehner (=robusta) (Le Pelley 1968).

We have located an even earlier report (Nolla 1944) which reads as follows:

> "The coffee bean beetle. - The coffee bean-beetle has been reported from the Lares region. An infestation of 20 per cent was found this year in berries that had dried on trees in the Excelsa variety. It was found, however that the beetles do not continue to breed in these dried berries. Three months after collection all beetles had died. In Excelsa coffee the crops overlap-berries and various stages of development are found throughout the year. In the Arabian coffee all berries ripen more or less at the same time. To survive unless it has some other host, the insect requires the conditions offered by Excelsa coffee. No other host has yet been found. It may be found advisable to recommend the destruction of all Excelsa trees as a means of preventing the increase and spread of the insect."

This report is noteworthy because (1) there is no taxonomic

identification of the insect whatsoever; (2) a non-traditional name for the insect is used (the coffee bean beetle); (3) the insect is reportedly found on *Coffea dewevrei (=excelsa)* and not on *C. arabica* which is known to be more susceptible to attack and "*is used almost exclusively in Puerto Rico*" (Vicente Chandler *et al.* 1968; see also Martorell 1976); and (4) the coffee berry borer can survive for more than three, and even up to eight months on dried or overripe berries (Baker 1999). Neither Nolla (1944) nor Roque (1946) specify whether the insect was found feeding on the seed, which is a unique trait of *H. hampei*.

The evidence indicates that the insect reported by Nolla (1944) and Roque (1946) in coffee berries in Puerto Rico could not be *H. hampei*. We found additional evidence after finding a 1948 report by Wolcott in which he recounts that the insects collected from coffee berries in 1941 were identified by M. W. Blackman, a Scolytidae expert with the U. S. Department of Agriculture, as *Stephanoderes* "near, but not *hampei* Ferrari" (Wolcott 1948). The insect reported by Nolla (1944) and Roque (1946) might have been another species of Scolytidae, *H. seriatus* (Eichoff), which is known as the "false coffee berry borer" and can enter the coffee berry, but does not feed on the seed (Fonseca 1938). Unfortunately, we were not able to locate the specimens identified by Blackman in the Coleoptera Collection at the National Collections of Insects and Mites of the National Museum of Natural History, Smithsonian Institution nor at the Museo de Entomología y Biodiversidad Tropical of the Agricultural Experiment Station, University of Puerto Rico.

Our findings indicate that the coffee berry borer has never been present in Puerto Rico and that the citation by Le Pelley is based on a mistaken report. Insect misidentifications create a situation in which scientists make use of a source - in this case Le Pelley's book - to perpetuate a mistake, even though Bergamin had already questioned the veracity of Roque's report the same year it was published (1946); Le Pelley's mistaken attribution was published 20 years later. The consequences of these mistakes could have important implications, such as coffee being quarantined from foreign markets. For example, the Mexican government lists Puerto Rico among those countries from which coffee imports are prohibited (Diario Oficial 1996). Thus, even though the coffee berry borer has been reported in other Caribbean countries, e.g. Jamaica in 1978 (Reid 1983), Cuba in 1994 (Hernández 2002) and the Dominican Republic in 1995 (IICA 1999), so far Puerto Rico has remained free of the insect. This situation might change due to the increased coffee imports from the Dominican Republic and Costa Rica, where the insect is present. In order to prevent the entrance of this devastating insect to Puerto Rico it is imperative that requirements for 10% roasting of imported coffee be strongly enforced in order to kill coffee berry borers that might be present in the coffee seeds, and that coffee be shipped in plastic bags inside cloth bags, as is currently being done. A sampling program for the insect should be implemented in coffee growing regions, especially near roasting factories in Puerto Rico into which imported coffee is being brought. It is also imperative to initiate an extension program aimed at providing training to coffee growers on how to identify and prevent the spread of the insect.

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