Pergamon

0022-474X(94)0032-8

J. stored Prod. Res. Vol. 31, No. 1, pp. 101–102, 1995

0022-474X/95 $9.50 + 0.00

Short Communication

The Shift of *Caryedon serratus* Ol. from Wild Caesalpiniaceae to Groundnuts Took Place in West Africa (Coleoptera: Bruchidae)

ALEX DELOBEL

Antenne ORSTOM, Laboratoire d'Entomologie, Museum National d'Histoire Naturelle, 45 rue Buffon, 75005 Paris, France

(Received 28 July 1994)

Olivier (1790) described under the name *Bruchus serratus* Ol. a seed beetle brought to him from Senegal; the host plant was unknown. Indian specimens of the same insect were described as *Bruchus gonagra* F. by Fabricius (1798). Decaux (1894) described from India *Caryoborus tamarindi* Decaux, a seed beetle reared from tamarind (*Tamarindus indica*) pods. The precise descriptions of the adult and of its biology indicate that *C. tamarindi* is probably another synonym of *Caryedon serratus* (Ol.). A specimen from Zaïre was again described by Pic (1924) as *B. sibutensis* Pic (Decelle, 1966). The distribution of *C. serratus* covers most of the old world tropics, and its host plants belong mainly—if not solely—to the family Caesalpiniaceae. It is worth mentioning that, of the eight unquestionable hosts of *C. serratus* (Robert, 1985; Nilsson and Johnson, 1992), six are present in Senegal: *Bauhinia monandra* Kurz, *Bauhinia rufescens* Lam., *Cassia sieberiana* DC., *Piliostigma thonningii* (Schum.) Mil., *Piliostigma reticulatum* (DC) Hochst and *Tamarindus indica* (L.) (Berhaut, 1975).

In 1958, Davey reported that *C. serratus* was found almost simultaneously infesting groundnuts in two distant areas: Senegal in 1913 and Java in 1917. For the latter record, Davey—who had not seen the specimens—based her assumption on the summary of an article by Roepke (1918). In fact Roepke (1917), who did not mention the name *C. serratus*, but "*Pachymerus chinensis*", mistakenly translated the Javanese term "tolo", which is the vernacular name of a dark variety of soybean (Horne, 1974), as *Arachis hypogaea*. Roepke mentioned the seeds of *Vigna unguiculata* and *Cajanus cajan* as alternative hosts of the pest, which suggests that "*Pachymerus chinensis*" was not a groundnut seed beetle, but rather a species of *Callosobruchus*.

Groundnut cultivation in Senegal was long considered as free from insect pests. In 1910, however, the quality of nuts delivered to the oil-works at Bordeaux experienced a sudden decline, which prompted French entomologists to examine groundnut stores, in Bordeaux as well as in producing areas. Insects responsible for the deterioration were found to be secondary pests, all unable to pierce groundnut shells: *Tenebroides mauritanicus*, *Oryzaephilus surinamensis*, *Tribolium castaneum* and an unidentified species of *Alphitobius*. The origin of the infestation was supposed to be in "mechanically or accidentally broken" pods (Pérez, 1910).

Reporting on the sanitary status of groundnut stores in Senegal, Azémard (1914) also explained secondary attacks (by *Plodia interpunctella*, *Tribolium confusum* and *Oryzaephilus surinamensis*) as

sequels to previous termite, wireworm and diplopod infestation. However, groundnuts were at that time already infested by *C. serratus* in some areas: Roubaud (1916), who visited Senegal in 1913, published a quite complete list of stored groundnut pests, including "*Pachymaerus acaciae* Gyllenhal", a misidentification of *C. serratus* as shown by Davey (1958) and Decelle (1966).

Today, the bruchid is a pest of stored groundnuts from Senegal to Chad and southwards to the Central African Republic and Congo (Matokot *et al.*, 1987). It has recently become a pest of groundnuts in Asia (Dick, 1987) and has colonized part of the New World tropics in the seeds of tamarind and ornamental *Bauhinia* species (Johnson, 1966; Nilsson and Johnson, 1992). The present-day distribution of *C. serratus* as a pest of groundnuts may be explained by successive introductions of infested material, as it was shown to be probably the case in Congo (Delobel and Matokot, 1991). There is no evidence of any further occurrence of a shift towards *A. hypogaea* in other parts of the world.

REFERENCES

Azémard (1914) Les insectes parasites des arachides au Sénégal. *Agron. Colon.* **2,** 106–110.

Berhaut J. (1975) *Flore illustrée du Sénégal*, Tome IV. Minist. Dévelop. rural, Dakar.

Davey P. M. (1958) The groundnut bruchid, *Caryedon gonagra* (F.). *Bull. ent. Res.* **49,** 385–404.

Decaux C. (1894) Métamorphoses du *Caryoborus tamarindi*, Coléoptère de la famille des Bruchides. *Le Naturaliste*, **16** (2ème sér.), 129–131.

Decelle J. (1966) *Bruchus serratus* Ol., 1790, espèce-type du genre *Caryedon* Schönherr, 1823. *Rev. Zool. Bot. Afr.* **74,** 169–173.

Delobel A. and Matokot L. (1991) Control of groundnut insect pests in African subsistence farming. *Proc. 5th Int. Work. Conf. stored Prod. Prot.*, Bordeaux, 1599–1607.

Dick K. M. (1987) Losses caused by insects to groundnuts stored in a warehouse in India. *Trop. Sci.* **27,** 65–75.

Fabricius J. C. (1798) *Supplementum Entomologiae Systematicae*. Proft & Storch, Hafniae.

Horne E. C. (1974) *Javanese–English Dictionary*. Yale University Press, New Haven & London.

Johnson C. D. (1966) *Caryedon gonagra* (Fab.) established in Mexico. *Pan-Pacific Ent.* **42,** 162.

Matokot L., Mapangou-Divassa S. and Delobel A. (1987) Evolution des populations de *Caryedon serratus* (Ol.) dans les stocks d'arachide au Congo. *L'Agron. trop.* **42,** 69–74.

Nilsson J. A. and Johnson C. D. (1992). New host, *Bauhinia variegata* L., and new locality records for *Caryedon serratus* (Olivier) in the New World. *Pan-Pacific Ent.* **68,** 62–63.

Olivier A. G. (1790) *Encyclopédie méthodique, dictionnaire des insectes* Vol 5. Pankouke, Paris.

Pérez J. (1910) Sur quelques insectes trouvés dans les arachides. *Bull. Soc. Et. Vulg. Zool. agric.* **1910** (3), 73–74.

Pic M. (1924) Nouveautés diverses. *Mél. exotico-entomol.* **42,** 1–32.

Robert P. (1985) A comparative study of some aspects of the reproduction of three *Caryedon serratus* strains in presence of its potential host plants. *Oecologia* **65,** 425–430.

Roepke W. (1917) Verslag over het jaar 1916–17, betreffende de technische wekzaamheden van het Proefestation Midden-Java, uitgebracht door den Directeur. *Meded. Proefstation Midden-Java* 28, 10–33.

Roepke W. (1918) Verslag over het Jaar 1916–17 [Report on the year 1916–17]. In *Rev. Appl. Ent.*, Vol. 6, 750 pp.

Roubaud E. (1916) Les insectes et la dégénérescence des arachides au Sénégal. *Mém. Comité Et. hist. scient. A.O.F.* **1,** 363–438.