Entomology Circular No. 284
June 1986

Fla. Dept. Agric. and Consumer Serv.
Division of Plant Industry

FIRST RECORDS IN THE UNITED STATES AND SOUTH AMERICA OF THE AFRICAN OIL PALM WEEVILS, *ELAEIDOBIUS SUBVITTATUS* (FAUST) AND *E. KAMERUNICUS* (FAUST) (COLEOPTERA: CURCULIONIDAE)[1]

C. W. O'Brien[2] and R. E. Woodruff[3]

INTRODUCTION: A series of weevils was collected in Miami, Florida, 5-XI-85, on male flowers of African oil palms (*Elaeis guineensis* Jacquin) by G. Gwin. Identified by the senior author as *Elaeidobius subvittatus* (Faust), it constitutes the first U.S. record. Another series of weevils from the same host, collected in Ecuador in December 1985 by M. H. Evans, was tentatively identified by the junior author and subsequently verified by the senior author as *Elaeidobius kamerunicus* (Faust), constituting the first published record for the Western Hemisphere.

DESCRIPTION: (Fig. 1-4) Adult *Elaeidobius* are small (1.8 to 4.Ø mm long), broadly

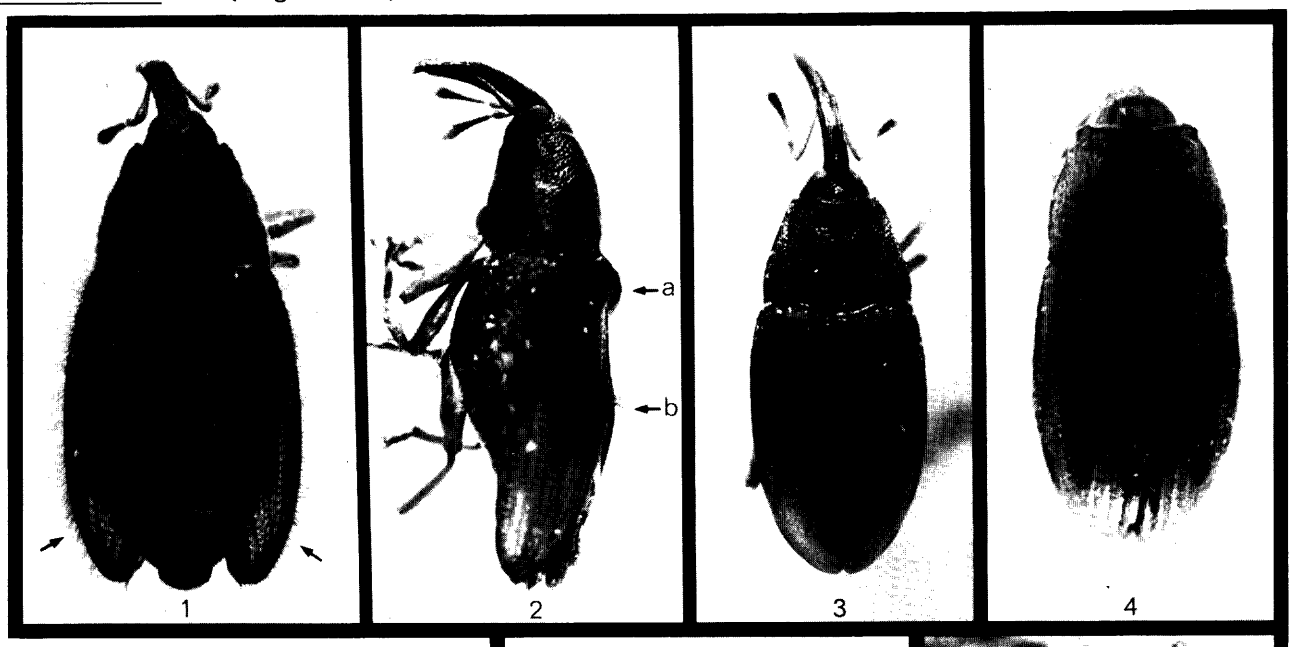

Fig. 1-3. E. kamerunicus: 1) dorsal view, male; note marginal setae; 2) lateral view, male; note calluses (a) and setal tuft (b); 3) dorsal view, female; note absence of marginal setae.

Fig. 4-6. E. subvittatus: 4) dorsal view; note maculations; 5) male, lateral view and 6) ventral view showing process between front legs.

elliptical weevils with a long, rather slender, carinate rostrum; prothorax with sides sharply margined. *E. subvittatus* is pale golden brown with a pair of submedian, broad, elongate, black marks on the pronotum; and a pair of submedian, narrow, elongate, black stripes on the elytra (Fig. 4). The male is strikingly sexually dimorphic and can be recognized easily by the presence of an anteriorly produced, broadly spatulate process between the front coxae (Fig. 5-6). *E. kamerunicus* is black, with 2 to 4, distinct yellowish to reddish, subapical marks, and 2 small, similarly colored, submedian, basal marks on the elytra (Fig. 2a) and a distinct elytral marginal fringe of long, curved, golden setae and a similar, erect sutural line of setae in the posterior half, behind a pair of very long, erect,

1/Contribution No. 634, Bureau of Entomology, FDACS, DPI
2/Professor, Florida A&M University, Tallahassee, FL 323Ø7
3/Taxonomic Entomologist, Bureau of Entomology, P.O. Box 1269, Gainesville, FL 326Ø2

reddish brown, sutural fascicles just behind the apical third (Fig. 2b). The immature stages have not been described, but larvae are typical, legless, C-shaped grubs, with a distinct, pale yellow to brown, sclerotized head capsule.

TAXONOMY: The genus ***Elaeidobius***, described by Kuschel (1952), contains 3 species native to Africa, 2 of which were subsequently assigned to the genus by Marshall (1958). The 2 species now found in the New World have a complex taxonomic history due to their unusual distributions and sexual dimorphism. Each has been described 3 times as indicated by the following synonymies:

Elaeidobius Kuschel 1952:272.

subvittatus (Faust) 1898:224 (***Derelomus***)
elaeisae (Bondar) 1942:461 (***Derelomus***)
maynei (Hustache) 1924:75 (***Derelomus***)
kamerunicus (Faust) 1898:225 (***Derelomus***)
callosus (Hustache) 1924:76 (***Derelomus***)
congoanus (Hustache) 1924:77 (***Derelomus***)

BIOLOGY: Bondar (1942) reported that *E.* ***subvittatus*** (as ***elaeisae***) swarmed in large numbers around flowers of the African oil palm, and that larvae develop in male flowers, often with 1 to 5 individuals in each. He believed that extensive destruction of pollen was detrimental to the pollination of female flowers. It is now well known that the opposite is true. The weevils are extremely beneficial and have been used by man, through introduction to palm plantations, for the pollination of these palms. Previously, hand pollination was required in areas where palms and weevils were not native, at great expense to the growers. Millions of dollars have been saved in Malaysia following the introduction of ***E. kamerunicus***, and growers have begun investigations into biological control of oil palm pests in order to reduce use of insecticides, to enhance the development of these important weevil pollinators (Anonymous 1981, 1982).

HOST: The African oil palm, ***Elaeis guineensis***, is the only host known for both weevil species treated here. This tree is widespread in Africa and has been cultivated in plantations in Asia, the East and West Indies, and South and Central America. Oil is obtained from the fruit (both husk and nut).

DISTRIBUTION: *E.* ***subvittatus*** was originally described also as ***elaeisae*** from Brazil by Bondar (1942) and has been reported from Honduras (O'Brien and Wibmer 1984). The discovery of this species in Miami, Florida is its first known occurence in the U.S. Surveys by the junior author (Nov. 1985) indicated that it was common and widespread in the Miami area, especially Fairchild Tropical Gardens and the U.S.D.A. Plant Introduction Station (Chapman Field). ***E. kamerunicus*** was described from Cameroun (West Africa), was described twice from the Belgian Congo (Zaire) by Hustache (1924), and was reported from Angola by Marshall (1958). It was intentionally introduced into Peninsular Malaysia, Sabah and Sarawak (Anonymous, 1981) and into Colombia, South America (unpublished, D. Whitehead, pers. comm.) and is here reported for the first time from the New World in Ecuador: Prov. Napo, 2Ø km. E. Francisco de Orellana (Coca) 27-XII-85, M. H. Evans.

LITERTATURE CITED:

Anonymous. 1981. Oil palm pollinator improves fruit set in Malaysia. Commonwealth Agr. Bur. (CAB) News (12):2.

Anonymous. 1982. Weevil worth US $115 Million P.A. Commonwealth Agr. Bur. (CAB) News (14):1-2.

Bondar, G. 1942. Notas entomologicas da Baia. VIII. Rev. Ent., Rio de Janeiro 12(3):427-47Ø, illus.

Faust, J. 1898. Drei neue Derelomus-Arten von W.-Afrika. Stett. Ent. Ztg. 59(7-9):224-226.

Hustache, A. 1924. Curculionides nouveaux du Congo. Rev. Zool. Afrika 12(1):43-89. (2nd pt.).

Klima, A. 1934. Coleopterorum Catalogus, Curculionidae: Erirrhininae. 28(14Ø):1-167.

Kuschel, G. 1952. Los Curculionidae de la cordillera chileno-argentina (1.ª parte). Rev. Chilena Ent. 2:229-279.

Marshall, G. A. K. 193Ø. New Curculionidae, with notes on synonymy. Ann. Mag. Nat. Hist., ser. 1Ø, 6:551-577, illus.

Marshall, G. A. K. 1958. On the Curculionidae (Coleoptera) of Angola. II. Publ. Cult. Comp. Diam. Angola (38):111-154, illus.

O'Brien, C. W., and G. J. Wibmer. 1982. Annotated checklist of the weevils (Curculionidae sensu lata) of North America, Central America, and the West Indies (Coleoptera:Curculionoidea). Mem. American Ent. Inst. (34):i-ix, 1-382.

O'Brien, C. W., and G. J. Wibmer. 1984. Annotated checklist of the weevils (Curculionidae sensu lata) of North America, Central America, and the West Indies-Supplement 1. Southwest. Ent. 9(3):286-3Ø7.

Wibmer, G. J., and C. W. O'Brien. 1986. Annotated checklist of the weevils (Curculionidae sensu lato) of South America (Coleoptera:Curculionoidea). Mem. American Ent. Inst. (39):i-xvi, 1-563.

This publication was issued at a cost of $689.30 or .20 per copy to provide information on proper recognition of plant pests. PI86T-22