

NOTES ON THE BIOLOGY OF ASPISOMA IGNITUM (L.)  
(COLEOPTERA: LAMPYRIDAE): A NEW FIREFLY  
RECORD FOR PUERTO RICO

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During the early hours of clear nights of December 1983 and January 1984 one of us (JASB) noticed many firefly flashes over an old field at Bayamón, Puerto Rico where the vegetation consisted mostly of Gramineae and Leguminosae bushes rarely higher than 1.5 m. Flashes had not been seen there in previous years. For several nights during January 1984 JASB and several neighborhood boys collected more than 30 fireflies in less than 90 minutes.

Comparison with specimens in the collection of the University of Puerto Rico, Agricultural Experiment Station, Río Piedras and perusal of pertinent literature (Maldonado-Capriles and Navarro 1967, Medina-Gaud and García-Tudurí 1977, Medina-Gaud and Martorell 1973, Wolcott 1948) suggested that the species was a new record for the island. Dr. J. Ramos, (University of Puerto Rico, Mayagöz) identified the firefly as *Aspisoma ignitum* (L.) (Fig. 1). This identification was confirmed by Dr. J. E. Lloyd (University of Florida, Gainesville, FL). The presence of this insect constitutes a new genus and species for the Puerto Rican entomofauna. With this firefly, a total of 12 lampyrids are known for Puerto Rico (Wolcott 1948).

The total length of the collected specimens ranges from 11.5 to 15 mm making this one of the largest lampyrids known for the island. Females were slightly longer than males ( $\bar{x} \pm \text{sd}$  = 13.7 mm,  $n = 9$ ;  $\bar{x} \pm \text{sd}$  = 12.8 mm,  $n = 36$ ).

*Aspisoma ignitum* can be distinguished from all other known fireflies of Puerto Rico by its color pattern: dull green, pronotum with yellow areas; elytra with eight longitudinal yellow lines and a short yellow band (about  $2-3 \times 1$  mm) close to the anteroretrolateral area. The sexes can be distinguished by the ventral coloration of abdominal segments V-VII: males are bright yellow (Fig. 2), females have wide brown areas (Fig. 3). In addition, there are morphological differences on the margin of abdominal segment VII: on males there is a wide terminal concavity (Fig. 4) while females have a deep indentation (Fig. 5).

Flashing was first noticed at about 18:45 (30-60 minutes after sunset) and ceased about 19:30-20:00. Flying specimens seldom exceeded an altitude of about 3 m.; this observation agrees with that reported for San Andrés Is. (West Indies) by Farnworth (1969). These fireflies are relatively easy to capture because of their slow flight. Most of the individuals collected during the night were males and undoubtedly in this species, as in others, flying males locate stationary females (Lloyd 1971).

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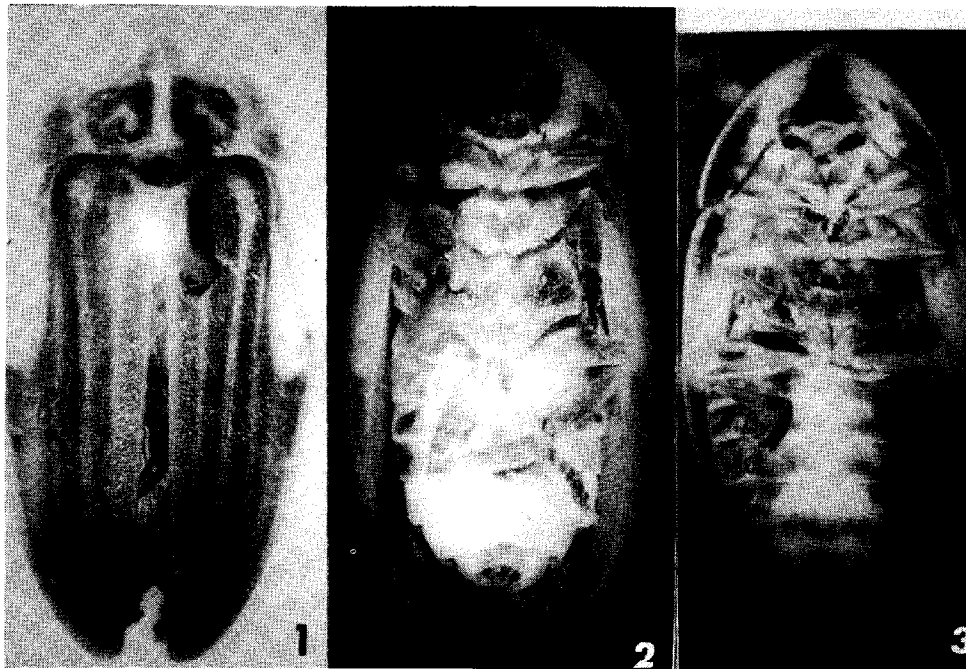


Plate 1. *Aspisoma ignitum* (L.)

Figs. 1-3. 1. Dorsal view. 2-3. Ventral views, 2. Male, 3. Female.

During the light hours (16:30-18:00) about 20 specimens were discovered, mainly among small branches near the upper part of bushes (mainly Leguminosae). Many specimens collected during this period were in copula (position ♂/♀, similarly oriented) (Fig. 6). In one instance a copulating pair was accompanied by a third specimen very closely associated to the anterior portion of the female.

According to Leng et al. (1914), Blackwelder (1944) and McDermott (1964), *A. ignitum* has been reported for Central America, México, Cuba, Hispaniola, several of the Lesser Antilles, Venezuela, Colombia and Brazil. In Puerto Rico this species has been collected in Carolina and in Bayamón, both in the San Juan Metropolitan Area. It has also been collected in Vieques, an island close to the east of Puerto Rico. The possibility that Wolcott (1948) overlooked this relatively large lampyrid seems unlikely and we consider that it might have reached the Puerto Rico region recently.

A single male was examined to determine the karyoformula using essentially schedule 5 as explained in Virkki (1983). The karyoformula of the species is  $9 + X$  (Fig. 7), as reported earlier (Virkki 1963) and is typical of the family (Smith and Virkki 1978).

*Material examined:* Puerto Rico, Carolina, Piñones, Nov. 5, 1983 (N. Virkki), one adult ♂♂, Acc. Num. 2-83; Bayamón, Urb. Riverview, near roads 22 and 167, over grassland (J. Santiago-Blay, V. E. Serrano-Sevilla, J. A. Figueroa-Sevilla and W. Martínez), 41 ♂♂, 10 ♀♀. Vieques Is., Isabel II, Jul. 7, 1983 (N. Virkki), one adult ♂♂, Acc. Num. 116-84. All specimens except 10, are deposited in the Entomology Museum collection of the Agricultural Experiment Station, Río Piedras, Puerto Rico.

We appreciate the collection efforts and kindness of: V. E. Serrano-Sevilla, J. A. Figueroa-Sevilla and W. Martínez. Dr. J. Ramos and Dr. J. E. Lloyd provided and corroborated, respectively, the identification of the specimens. Dr. N. Virkki (Univ. P. R., Agric. Exp. Sta., Crop Protection Dept., Río Piedras, PR) allowed the use of

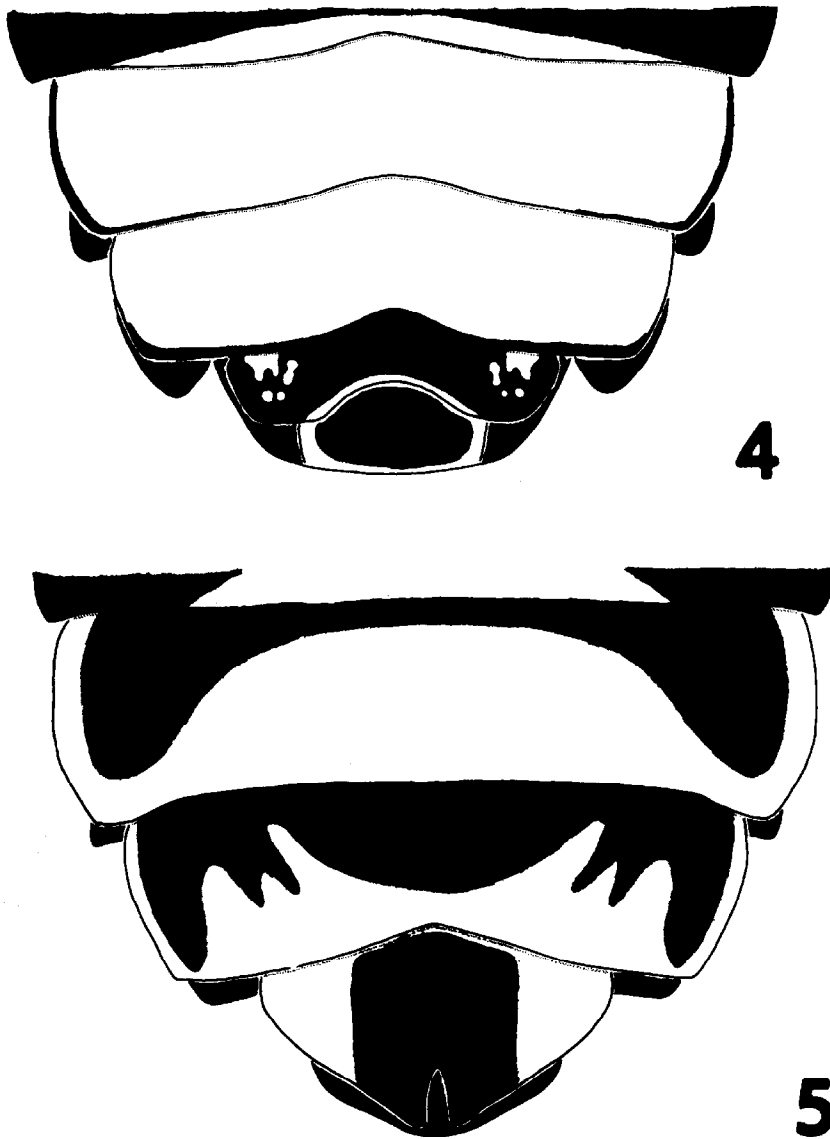


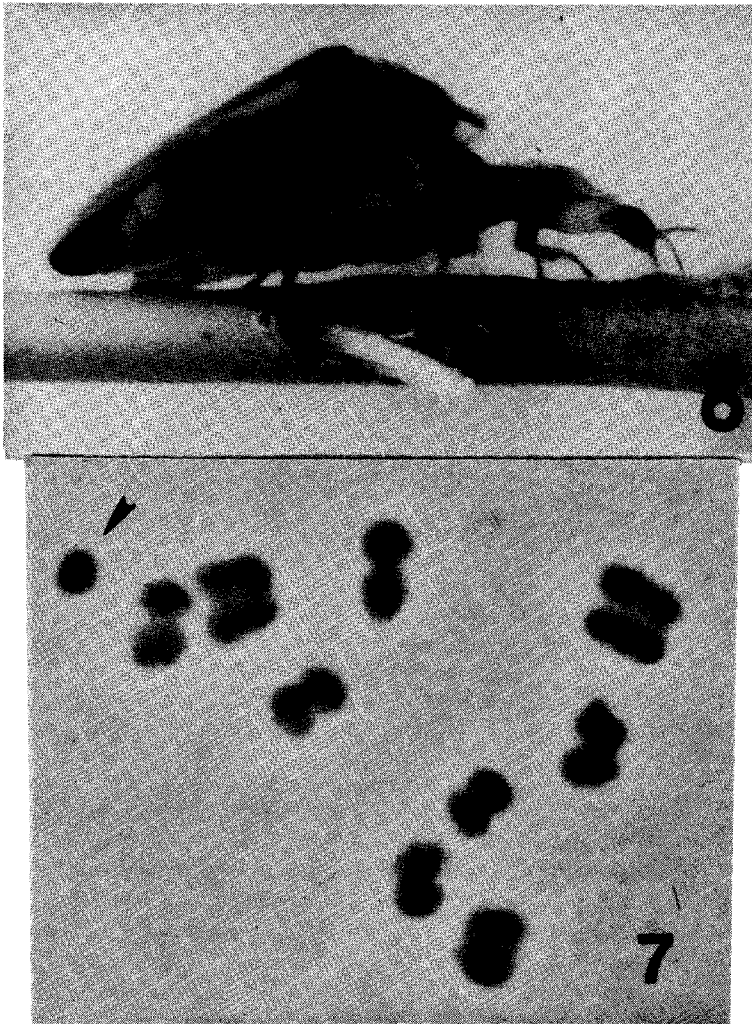
Plate 2. *Aspisoma ignitum* (L.)

Figs. 4-5. Terminal abdominal segments (ventral view). 4. Male, 5. Female.

laboratory space and facilities for the karyoformula determination. Dr. J. E. Lloyd, Dr. N. Virkki and Dr. J. T. Doyen (Dept. Entomol., Univ. Cal., Berkeley, CA) read the typescript and suggested changes. Mr. A. de la Cruz (Agric. Ext. Serv., Río Piedras) did part of the photographic work.

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*Aspisoma ignitum* (L.)

Figs. 6-7. 6. Copulating pair. 7. Metaphase I: 9 + X (arrowhead indicates X chromosome).

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A SPECIES OF *TRIPLOSPORIUM* (ZYGOMYCETES:  
ENTOMOPHTHORALES) INFECTING *MONONYCHELUS*  
*PROGRESSIVUS* (ACARI: TETRANYCHIDAE)  
IN VENEZUELA

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The spidermite *Mononychelus progressivus* Doreste is considered an economically important pest of cassava, *Manihot* spp. in Venezuela mostly during the dry season; very little is known about its natural enemy complex. During a routine count of the *M. progressivus* population (beginning of the rainy season, May 1981) in an experimental cassava plot to evaluate plant resistance to this mite, several dead mites were found on the underside of the leaves. When the cadavers were mounted in lactophenol and examined using phase contrast microscopy, the following structures typical of an entomophthoraceous fungus were observed: 1) non-ramified club-shaped or oval hyphal bodies with obtuse or slightly tapering ends 24-36 × 6-9 μm (average 28 × 8; n = 30, s = 4.3 and 0.8 = for length and width respectively) (Fig. 1) b) pyriform conidia with basal papillum and rugose wall 15-17 × 12-15 μm (average 16 × 14; n = 7, s = 1.5 and 1.1 respectively; larger dimension includes papillum length) and c) light-brown claviform anadhesive conidia 12-21 × 8-12 μm (average 19 × 10; n = 14, s = 1.8 and 1.3 for length and largest width respectively) (Fig. 2). These conidia were produced by the pyriform conidia at the end of a thin filament (2 μm diameter).

The morphological characteristics of this fungus are very similar to those of the one found infecting the mite *Eutetranychus banksi* (McGregor) in Florida, described as *Entomophthora floridana* (Weiser and Muma 1966) and considered now (Humber et al. 1981) to be *Triplosporium floridanum* (Weiser and Muma). The Venezuelan fungus also appears very similar to the one isolated from the mite *Tetranychus evansi* Baker and Pritchard and classified as a *Triplosporium* species (Humber et al). Measurements of structures of the three fungi are presented in Table 1. Based on the above considerations the Venezuelan fungus belongs to the genus *Triplosporium*, and most likely in the species *T. floridanum*.

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