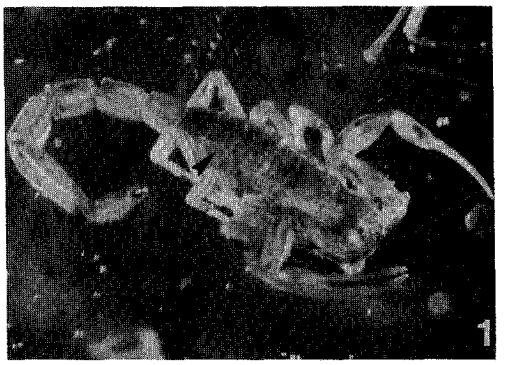
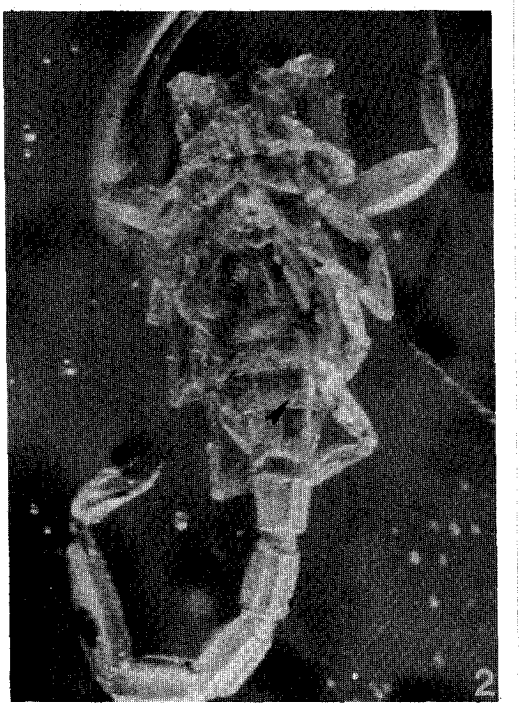
A NEW SPECIMEN OF *MICROTITYUS AMBARENSIS* (SCORPIONES, BUTHIDAE), FOSSIL FROM HISPANIOLA: EVIDENCE OF TAXONOMIC STATUS AND POSSIBLE BIOGEOGRAPHIC IMPLICATIONS

Three fossil buthid scorpions have been described from Hispaniola, all from single juveniles embedded in Dominican amber: *Centruroides beynai* Schawaller, 1979, *Tityus geratus* Santiago-Blay and Poinar, 1988, and *T. ambarensis* Schawaller, 1982. Whereas in the type species of the genus, *Microtityus rickyi* Kjellesvig-Waering, 1966, femoral trichobothrium d_2 is absent, *M. ambarensis* bears it, providing one of the main reasons for its original placement in *Tityus*. Scrutiny by several researchers led to the suspicion that *T. ambarensis* may belong to *Microtityus* Kjellesvig-Waering, 1966. Armas (1988) transferred *T. ambarensis* to *Microtityus* without having available the holotype or other specimens (Armas to Schawaller 29 May 1987; Schawaller to Armas 8 July 1987; in litt.). Evidence from a new fossil specimen now supports the placement of *T.*





Figures 1, 2.—*Microtityus ambarensis* (new specimen): 1, dorsal view, note three dorsal mesosomal keels (arrowhead points one keel); 2, ventral view, note suboval spiracles (arrowhead points one spiracle).

ambarensis in *Microtityus*. We also discuss possible biogeographic interpretations of this find in light of a vicariance model.

The new scorpion, which is 7.6 mm long, is in a piece of amber believed to have come from La Toca mine, Northern Dominican Republic. Amber from that mine has been dated as approximately 30-40 million years old (Lambert et al. 1985). The exact origin of the amber piece with the holotype of *T. ambarensis* is not clear. Based on the ratio of the overall total lengths (1.2), we conclude that the new specimen is a second instar, one instar less than the holotype. Two of the three dorsal mesosomal keels are evident (Fig. 1) and the spiracles are relatively small and suboval (Fig. 2); these are critical qualitative generic characters obscured in the holotype (Armas 1988). The dentition of the pedipalp movable finger is almost non-overlapping and there is a small pectinal tooth count (10-11, for this species), as typical of *Microtityus*. The full complement of pedipalp femoral trichobothria present in this specimen distinguishes the taxon from the small South American buthid *Mesotityus* González-Sponga, 1982. The holotype

was, in contrast to its description, originally illustrated with eight, instead of seven, mesosomal tergites (Schawaller 1982).

With the exception of *M. ambarensis*, all other described species of *Microtityus* are extant; all are small (< 25 mm long at adulthood). *Microtityus ambarensis* can be distinguished from *M. dominicanensis* Santiago-Blay, 1985 and *M. consuelo* Armas and Marcano Fondeur, 1987 by the number of pedipalp finger rows and pectine tooth number: *M. dominicanensis* has 10 rows and 8 teeth; *M. consuelo* has 11 rows and 14 teeth.

The genus *Microtityus* is neotropical buthid taxon known from Brazil, Venezuela, Trinidad, Virgin Islands, Dominican Republic, Haiti (Santiago-Blay, in prep.), and Cuba. The genus has not been reported for Jamaica, Puerto Rico or the Lesser Antilles. We suggest that when the Caribbean plate(s) first contacted the South American plate about 60-80 mya (Pindell and Barrett, in press), ancestors of today's Caribbean *Microtityus* fauna migrated from the south. However, although the Caribbean plate seems to have been in contact with continental land masses, direct dry land connections have not been proven. We cannot indicate whether the arrival of *Microtityus* to the area was a product of vicariant or dispersal events. Further splitting and accretion of the Greater Antilles land masses produced subsequent vicariant events reponsible for the development of a 100% endemic *Microtityus* fauna.

J. Yellen kindly allowed author JASB to study the specimen and provided the data on the probable collection site of the new fossil piece. P. Craig and J. Yellen did the photographic work. E. E. Williams, M. Perfit, J. L. Pindell, G. A. Polis, W. D. Sissom and S. Stockwell reviewed the manuscript and suggested changes. The authors are most grateful to them all.

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