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THE LAND PLANARIAN, *BIPALIUM KEWENSE* MOSELEY, 1878, IN MIDDLE TENNESSEE

CLAY M. CHANDLER

Middle Tennessee State University
Murfreesboro, Tennessee 37130

ABSTRACT

Several specimens and fragments of *Bipallium kewense* (Class Turbellaria, Order Tricladida) were found at two sites in middle Tennessee: 1) Gallatin, Sumner County and 2) Murfreesboro, Rutherford County. At both sites the populations seemed well established.

INTRODUCTION

Bipallium kewense (Class Turbellaria, Order Tricladida) is easily recognized by an expanded lunate head, five dark longitudinal stripes dorsally on an olive background, and a dark patch in the "neck" region. Sometimes attaining a length of 30 cm, it secretes mucus on which it moves over the substratum.

Although thought to be native to the Indo-Malay region (Hyman, 1940), *B. kewense* has become established in many areas outside its original range, supposedly through importation with plants and soil. Several occurrences of *B. kewense* in the adjacent U.S. have been recorded: Hyman (1943, 1954), Wallen (1954), Klots (1960), Dundee and Dundee (1963), Cole (1969), and Connella and Stern (1969). It also has been found in Japan (Kawakatsu and Aoki, 1968) and

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Norway (Snell, 1969). That a species, originally adapted to tropical and sub-tropical environments, could become so widely established in other areas is indeed remarkable. A discussion of adaptive responses to environmental factors in areas outside its original range is presented by Barnwell (1969).

Until now apparently no record of *B. kewense* from Tennessee exists in the literature, although two other species of land planarians have been reported for the state: *Microplana atrocyanus* from Sevier County (Hyman, 1943) and *Diporodermis indigenus* from Cumberland County (Hyman, 1954).

COLLECTIONS IN MIDDLE TENNESSEE

One specimen of *Bipallium kewense* (ca. 15 cm long) was presented to the Department of Biology of Middle Tennessee State University on 4 June 1973, by Dr. Joe E. Nunley who found it on the driveway of his home on 2nd Avenue, Murfreesboro, Rutherford County. Attempts to maintain this specimen alive were unsuccessful. On 29 September 1973, I visited the Nunley home and discovered 15 specimens of *B. kewense* in coiled positions on the underside of decaying boards which were adjacent to a shed in the backyard. The

area was well shaded, and the soil under the boards was damp, dark, apparently rich in organic matter, and had a temperature of 24°C. Centipedes, isopods, slugs, and arachnids were associated with the planarians. Four triclads were collected and ranged in length from 7 to 12 cm.

On 9 September 1973, Charles T. Aston, a student at MTSU, brought me one specimen of *B. kewense* (ca. 7 cm long) and three fragments that were the result of asexual reproduction by fission. These worms were collected from the yard of the W.M. Dedmam home Lakeshore Drive, Gallatin, Sumner County. The largest specimen of this collection was fixed in FAA, preserved in 70% ethyl alcohol, and deposited in the invertebrate collection of MTSU.



FIG. 1: Area around Dedmam home, Gallatin, Sumner County, Tennessee, in which numerous specimens of *Bipallium kewense* were found.

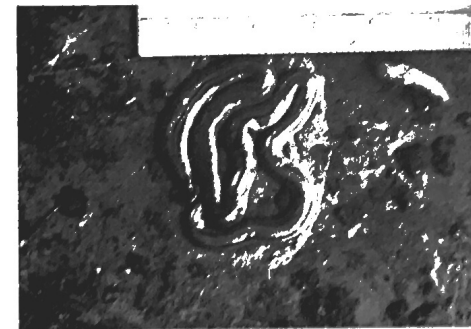


FIG. 2: *Bipallium kewense* in coiled position on the underside of a flower pot tray, Gallatin, Sumner County, Tennessee.

On 14 September 1973, Dr. Charles R. McGhee and I visited the collecting site in Gallatin and found numerous specimens and fragments of *B. kewense* beneath bricks and a flower pot tray adjacent to a patio at the rear of the house (Fig. 1). This area was partially covered with ivy, and the soil appeared similar to that of the Murfreesboro site and had a temperature of 23°C. A large population of isopods and some snails, earthworms, and phalangids were found with the planarians. Eight specimens of *B. kewense* were collected, the longest of these being ca. 17 cm when extended (Fig. 2). All of these worms together with soil and leaf litter from the collecting site were placed in a glass battery jar and maintained following the suggestions of Barnwell (1967).

Since both of the collecting sites had relatively large and apparently healthy populations of *B. kewense*, one may speculate that other populations have become established in similar microhabitats in Tennessee.

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