Notes on Megathymus yuccae (Boisduval & LeConte), with Description of a New Subspecies (Lepidoptera, Rhopalocera, Megathymidae)

H. A. Freeman[1]

MEGATHYMUS YUCCAE (Boisduval & LeConte)

Eudamus? yuccae Boisduval & LeConte, Lep. Am. Sept. pl. 70, 1833.
Castnia yuccae Walker, List Lep. Het. B. M. VII, p. 1583, 1856.
Skinner, Trans. Am. Ent. Soc. XXXVII, 202, 1911.
Barnes and McDunnough, Contributions I (3), 28, and plates, 1912.
Draudt, Seitz's Macrolep. V, 998, pl. 193c, d, 1924.
Freeman, Ent. News, V, LIV, No. 9, Nov. 1943.
Syn. *Megathymus yuccae alabamae* Freeman, Ent. News, Vol. LIV, Mar. 1943.

The original description of *Eudamus? yuccae* Bdv. & LeC. was presented in the form of a water color painting, "Histoire générale et iconographie des Lépidoptères et des Chenilles de l'Amérique Septentrionale, plate 70, 1833". There was no verbal description. Even though Boisduval and LeConte made no reference as to where their drawings came from, it is now known that John Abbot, of Georgia, prepared some of these, including the one of their *yuccae*.

When Walker listed the Heterocera in the British Museum he presented the following description of *yuccae:*

"*Castnia yuccae.*—Nigro-fusca; antennae capitatae, non falcatae; alae basi subfulvescentes, anticae fascia subapicali incompleta antice duplicata testacea, posticae testaceo-marginatae.

"Blackish-brown. Antennae capitate, not falcate; middle part whitish. Wings with a slight dingy tawny hue at the base. F. W. with a subapical, pale, incomplete, testaceous band, which is forked in front. H. W. with pale testaceous borders. U. S. with hoary borders, and with a triangular white subcostal spot. Length of body, 10-12 lines; of wings, 21-28 lines.—Georgia."

Riley (*Trans. Acad. Sci. St. Louis,* 3, 567, 1877) gave a fine description of the life history of typical *yuccae* including the imago, based on 13 specimens, all from larvae that fed at Bluffton, Beaufort County, South Carolina. These he compared with some Bolter specimens collected in Florida; and stated that the yellow is paler in the South Carolina specimens, and that the yellow borders of the wings of the Florida specimens are much broader.

When I described *Megathymus yuccae alabamae* I was convinced that there was no difference in the specimens of *yuccae* from South Carolina, Georgia, and Florida. In this I followed Skinner, Riley and Lindsey, Williams and Bell. Not long after the publication of my description I saw a pair of *yuccae* from Stone Mountain, Georgia in the collection of Stallings & Turner. The male specimen was similar to the two specimens from Anniston, Alabama and the female was different from specimens I had from Florida, so I assumed that *yuccae alabamae* extended over into western Georgia (whereas typical *yuccae* extended from South Carolina, down through central and eastern Georgia into Florida).

[1]Instructor in Chemistry, Forest Avenue High School, Dallas, Texas.

After much effort I finally obtained specimens of *yuccae* from South Carolina and Georgia. Just before Mr. H. W. Eustis of Augusta, Georgia, died he sent me two females and a male from Aiken County, South Carolina and a male from Stone Mountain, Georgia. These specimens were reared on *Yucca flaccida* Haw. and *Y. smalliana* Fernald. They are like the other two specimens that I have seen from Stone Mountain, Georgia, and the two specimens from Anniston, Alabama. The males resemble very much Abbot's drawing from specimens probably collected in Scriven County, Georgia (his home for some time). They also correspond with the description of *yuccae* based on specimens from Georgia, by Walker. Thus is it necessary for me to place the subspecific name *alabamae* as a synonym of typical *yuccae* (Bdv. & LeC.). There is no doubt that the specimens from South Carolina and Alabama differ from the ones from Florida, especially around Jupiter. I shall deal with both in detail.

MEGATHYMUS YUCCAE YUCCAE (Boisduval & LeÇonte).

Type.—I selected my best male specimen, which was from Aiken County, South Carolina, and made this the neotype. This specimen was collected April 7, 1951 by H. W. Eustis, and will be placed in the American Museum of Natural History.

Type locality.—Scriven County, Georgia. The neotype was collected only about 40 miles from the type locality, whereas my Georgia specimen was collected about twice that distance from Scriven County.

Description of the male.—Upper surface. Primaries: Black, with the base of the wings slightly tinted with light yellow. The three subapical spots are white. There is a yellow cell spot, 1 mm. wide and 2 mm. long, with two narrow white lines above it. Two yellowish-white spots, one out of line, below the subapical spots, nearer the outer margin. There are three yellow submarginal spots, in interspaces 1, 2, and 3, which vary in width from 2-3 mm. The spot in interspace 1 is indented slightly inward toward the base. The spots in interspace 2 and 3 are alike and form a nearly straight line on their inner side. Fringes checkered black and yellow, from apical angle to the inner angle. Secondaries: Black, with the base of the wings tinted with light yellow. There is a yellow marginal border that averages 2 mm. in width. Fringes yellow.

Under surface.—Primaries: Black, with the outer margins grey. The spots reappear and are somewhat lighter. Secondaries: Greyish-black, with the outer margins and costal margin grey. There is a single crescentic white spot below the costal margin.

Body.—Thorax greyish above and below, with some yellowish hairs near the posterior portion on the sides; abdomen black above greyish below. Palpi black above and grey on the under side.

Expanse.—Primaries 29 mm. from base to apical angle, 17 mm. from apical angle to inner angle. Secondaries 17 mm. from base to center of outer margin. Expanse of total specimen, 50-63 mm., average 60 mm.

Female.—Upper surface. Primaries: Black, with some grey and yellow hairs intermixed at the base. Spots are as found in the male, but larger. The cell spot is 2.5 mm. wide and 3 mm. long. The submarginal

spots show the same arrangement as the males and vary in size from 5 mm. in interspace 1 to 4 mm. in interspaces 2 and 3. The fringes are checkered black and yellow from the apical angle to the inner angle. Secondaries: Deep black, with the slightest indication of yellowish hairs near the base. Four yellow discal spots present, the upper two somewhat smaller than the other two. Average size of all four *ca.* 1.5 mm. A yellowish border, 2 mm. wide at the apical angle, gradually narrows toward the anal angle where it disappears. Fringes yellow with a few grey scales intermixed.

Under surface.—Primaries: Deep black, the outer margin slightly grey. The spots reappear and are about the same color as above. Secondaries: Basal and discal areas black, the remainder of the wings greyish. There is a grey costal margin, beneath which is situated a single crescentic spot. A rather indistinct submesal black line is present. A minute white dot is in the center of the wing.

Body.—Thorax brownish-black above, greyish beneath. Abdomen black above, greyish beneath.

Expanse.—Primaries 35 mm. from base to apical angle, 21 mm. from apical angle to inner angle. Secondaries 24 mm. from base to middle of outer margin. Total expanse 72 mm.

Redescribed from 10 specimens, 6 males and 4 females, collected at the following localities: Aiken County, S. C., April; Stone Mountain, Ga., April; Anniston, Ala., April; and Buffalo, Leon County, Texas, April.

Larval food plant.—*Yucca smalliana* Fernald, and *Yucca flaccida* Haw.

Megathymus yuccae buchholzi new subspecies

Male.—Upper surface. Primaries: Deep umber brown, the base of the wings heavily tinted with deep yellow. The three subapical spots are semi-hyaline. There is an orange-yellow cell spot, 1.5 mm. wide and 3 mm. long, with two to three yellow lines above it. Two yellowish spots, one out of line, below the subapical spots, nearer the outer margin. There are three deep yellow submarginal spots in interspaces 1, 2, and 3, varying in width from 2.5-4 mm. The spot in interspace 1 appears to be detached from those in interspaces 2 and 3, and is shaped somewhat like a V, with point directed toward the base of the wing. The spots in interspaces 2 and 3 bulge inward slightly toward the base. Fringes checkered brown and grey distinctly only half way from the apical angle towards the inner angle. Secondaries: Brownish-black, with some deep yellow hairs near the base. There is a broad deep yellow marginal border which averages 3 mm. in width. Fringes, intermixed grey and deep yellow scales.

Under surface.—Primaries: Warm brown, with the outer margin slightly greyish. The spots reappear and are somewhat lighter. Secondaries: Brownish-black, with outer margins and costal margin greyish-brown. There is a sordid white crescentic spot below the costal margin and a sordid white, line-like spot just outside of this spot.

Body.—Thorax brownish-grey above, brown beneath. Abdomen brownish-black above and brown beneath. Palpi brown above, brownish-grey beneath.

Expanse.—Primaries 29 mm. from base to apical angle, 19 mm. from apical angle to inner angle. Secondaries 19 mm. from base to middle of outer margin. Average total expanse 60 mm.

Female.—Upper surface. Primaries: Deep umber brown, with the base of the wings heavily tinted with deep yellow. The same spots appear as are found on the male but are much larger. They also show the same arrangement as the males. The cell spot is 5 mm. long and 3 mm. wide. The submarginal spots vary in size from 5.5 mm. in interspace 1 to 5 mm. in interspaces 2 and 3. There is a small deep yellow spot in interspace 1 about half way between the submarginal spot and the base. The fringes are brownish-black showing the slightest indication of light checkering. Secondaries: Deep umber brown, with some deep yellow hairs near the base. The discal band is composed of from 3 to 4 deep yellow spots, which vary in size from 1 to 2.5 mm. There is a rather broad deep yellow marginal border which varies from 3 mm. near the apical angle to 1 mm. near the anal angle. The veins are dark throughout the marginal border. Fringes, deep yellow with some grey intermixed.

Under surface.—Primaries: Deep brown with the area just below the apical angle greyish. The spots reappear and are somewhat lighter. Secondaries: Basal and discal areas deep brown, with the remainder greyish. There is a short greyish area about midway of the costa with a whitish crescentic spot just below. Just outside this is another smaller white spot. The discal band of spots reappear only as a somewhat lighter area.

Body.—Thorax brownish-grey above, brown beneath. Abdomen brownish-black above, brown beneath. Palpi, above brown, beneath sordid grey.

Expanse.—Primaries 34 mm. from base to apical angle, 22 mm. from apical angle to inner angle. Secondaries 24.5 mm. from base to middle of outer margin. Average total expanse 70 mm.

Described from 117 specimens, 66 males and 51 females. Twenty-seven males and 27 females were reared by Otto Buchholz from larvae that fed on *Yucca gloriosa* L., collected at Jupiter, Fla. These specimens emerged during March, April and May of 1946 and 1947; 21 males and 9 females were borrowed from the American Museum of Natural History and were from the following localities: Gulfport, Jupiter, Port Sewell, Orlando, St. Petersburg, Sarasota and Florida (no other data) and were collected during March and April from 1915 to 1947. There are 6 males and 5 females in the collection of Stallings & Turner from the following localities: Jupiter, Port Sewell, and Melbourne Beach, Fla. and were collected during February, March and April, 1947 and 1948. There are 12 males and 10 females in my collection from the following localities: Jupiter and St. Augustine, Fla., collected during March and April, from 1918 to 1947. Most of my Jupiter specimens were collected by Otto Buchholz.

This new subspecies is named for my good friend, Otto Buchholz, who reared most of these specimens.

HOLOTYPE. Male, III-13-47, Jupiter, Florida (Otto Buchholz) will be placed in the American Museum of Natural History. ALLO-

TYPE. Female, IV-16-47, Jupiter, Florida (Otto Buchholz) is in my collection. There are 26 male and 27 female paratypes in the collection of Otto Buchholz. There are 21 male and 9 female paratypes in the American Museum of Natural History. There are 6 male and 5 female paratypes in the Stallings & Turner collection. I have 12 male and 9 female paratypes in my collection.

Food plant of the larvae.—*Yucca gloriosa* L.

In comparing the two above described subspecies, *yuccae yuccae* differs from *yuccae buchholzi* in the following ways: (1) The general wing shape is different, *yuccae yuccae being* narrower than *yuccae buchholzi.* (2) The general ground color of *yuccae yuccae* is black, while the other subspecies is deep umber brown. (3) The spots are much lighter yellow in *yuccae yuccae* and are somewhat smaller. (4) The marginal border of *yuccae yuccae* is narrower than in *yuccae buchholzi.* (5) The fringes of the primaries of *yuccae yuccae* are much more checkered than in *yuccae buchholzi.* (6) There is only one crescentic spot on the lower surface of the secondaries, below the costa, in *yuccae yuccae* while most of the specimens of *yuccae buchholzi* have two, or at least an indication of two.

Notes

YUCCA PALLIDA McKelvey var. **edentata** (Trelease) Cory, comb. nov. —*Y. rupicola edentata* Trel., Ann. Rept. Mo. Bot. Gard. 22: 102. 1911. TYPE: Cedar Hill, Dallas Co.; Texas, *Reverchon,* June 20, 1903 (Herb. Mo. Bot. Gard.; examined on loan through courtesy of Dr. Robert E. Woodson, Jr.). Re-collected at the type locality by Mrs. McKelvey and by myself; also found at Benbrook, Tarrant Co. This variety, typical *Y. pallida,* and *Y. arkansana* Trel. grow together at Cedar Hill, the first named being the more common. *Y. arkansana* at this locality flowers one to two weeks earlier than *Y. pallida.* My observations on the plants at Cedar Hill did not seem to me to reveal evidence of hybridization between the two species, which Trelease and McKelvey (Yuccas of the Southwest, Part Two, pp. 62-63, 1947) believed to occur. Obvious differences in heads of leaves on the same or on different plants can be accounted for by differences in age and in local habitat conditions. Ordinary herbarium specimens of portions of plants do not show these features. Difference in flowering time would not favor cross pollination.——*V. L. Cory.*

CAKILE LANCEOLATA (Willd.) O. E. Schulz var. **geniculata** (B. L. Robinson) Shinners, comb. nov.——*C. maritima* var. *geniculata* Robinson in Gray, Syn. Fl. N.A. 1 pt. 2: 132. 1895. (Specimens cited from "Gulf Coast, Texas, *Berlandier,* no. 3103, Galveston, *Lindheimer,* May, 1843"; not seen. Recent collections examined from Aransas, Galveston, and San Patricio counties, on the Texas coast.) *C. geniculata* (Robinson) Millspaugh, Field Mus. Publ. Bot. 2: 126. 1900. (Millspaugh states that *Berlandier 3103,* the type, was collected at "Matamoros, Texas"; properly Matamoros, Tamaulipas, Mexico, opposite Brownsville, Cameron Co., Texas.) *C. lanceolata* prol. *geniculata* (Robinson) O. E. Schulz, Pflanzenreich IV. Fam. 105 pt. 2: 28. 1923. Schulz cites as synonyms *C. maritima* var. *aequalis* Chapm., Fl. S. U.S. ed. 2 (1887): 31, and var. *cubensis* Chapm., ibid. 606. However, these varieties were based respectively on *C. aequalis* L'Her. ex DC., Syst. 2: 430, 1821; and on *C. americana* var. *cubensis* DC., ibid. 429. The former