

## THE BIOLOGY AND DISTRIBUTION OF *MEGARHINUS* ROBINEAU-DESVOIDY IN FLORIDA<sup>1</sup>

ERNESTINE H. BASHAM,<sup>2</sup> J. A. MULRENNAN,<sup>3</sup> AND A. J. OBERMULLER<sup>4</sup>

Florida State Board of Health, Bureau of Malaria Control, Jacksonville

The tribe *Megarhinini* consists of one genus of large, usually brilliant-colored diurnal mosquitoes (1). As the proboscis is curved downward, and not fitted for puncturing (4), the adults feed on nectar and plant juices (5). The larvae have been collected from tree holes, bamboo stems, leaf bases of *Bromeliaceae* (5), rock holes (2), rain barrels and other wooden receptacles, and even from metallic receptacles (3). Usually very large, the larvae are predacious (5). The genus is primarily a tropical one, but its distribution extends into the North Temperate Zone (1). Two species are recognized in the United States.

*Megarhinus septentrionalis* Dyar and Knab occurs in the eastern United States, north to New Jersey, west to Kansas and Texas (1). In the collection of the Florida State Board of Health there are three specimens from Florida which appear to be *M. septentrionalis* D. & K., according to keys published by Carpenter (1) and King, Bradley, and McNeel (4). Two males were collected from Cecil Field, Jacksonville, Florida, by W. E. Goldman on July 27 and September 12, 1943, respectively, and one male was collected from Tallahassee, Florida, by W. E. Goldman on April 9, 1946.

*Megarhinus rutilus* Coquillett occurs in Florida, Georgia, and South Carolina (1). The two species are indistinguishable in the larvae, male terminalia (2), and fe-

males (5). The males are distinguished only by the fore tarsal markings (4).

*M. rutilus* Coq. larvae and pupae were collected and reared by the authors from holes in water oak, live oak, scrub oak, orange, pecan, and pine trees, and from the following number and types of artificial containers: Three glass jars, two 1-gallon tin cans, three wooden rain barrels, an automobile tire, two 50-gallon steel barrels, an enamel cooking pan, a rowboat, a wash tub, and a metal syrup kettle. All artificial containers were located under or near trees, partially filled with debris and decomposing vegetation, and exposed to short periods of sunlight. Larvae taken in association with this species were: *Orthopodomyia signifera* (Coquillett), *Aedes triseriatus* (Say), *Culex quinquefasciatus* Say, and *Culex nigripalpus* Theobald.

Observations on feeding habits and length of larval stadia of three specimens are presented in Table I. It was noted that specimen No. 1 as a first instar was capable of remaining submerged for 34 minutes and specimen No. 3 as a fourth instar, for 16 minutes and 21 seconds.

A total number of 51 *M. rutilus* Coq. larvae were collected by the authors in four counties of Florida, from July to October 1946, as indicated in Table II. Other county records of *M. rutilus* Coq. on file with the Florida State Board of Health are: Broward County, Ft. Lauderdale, one reared male August 10, 1945, and one reared female September 12, 1945 (E. L. Seabrook-T. E. Duffey); Duval County, Jacksonville, two larvae June 12, 1943 (Bialolenki-Goldman), two females March 2, 1945, one female March 12, 1945, one male June 11, 1945, one male July 27, 1945, one male September 25, 1945 (Henry Hanson), one reared

<sup>1</sup> From Bureau of Malaria Control, Florida State Board of Health, Jacksonville, Florida, CDC Activities, U. S. Public Health Service.

<sup>2</sup> Biological Aide, CDC Activities, U. S. Public Health Service.

<sup>3</sup> Entomologist and Director of Bureau of Malaria Control, Florida State Board of Health, Jacksonville, Florida.

<sup>4</sup> Engineering Aide, CDC Activities, U. S. Public Health Service.

TABLE I. Feeding Habits and Length of Larval Stadia of Three *M. rutilus* Coq. Larvae Collected in Florida

Spec. No.	County	Town	Habitat	Date Collected	Instar	Feeding Habits	Pupated	Emerged
1	Sumter	Bushnell	Live Oak tree hole	7/6/46	1st	Devoured	7/22/46	7/26/46 Male
						87 <i>O. signifera</i> (Coq.) (all instars)		
2	Levy	Chiefland	Scrub Oak tree hole	7/26/46	3rd	Devoured	8/17/46	8/22/46 Male
						57 <i>O. signifera</i> (Coq.) (3rd and 4th instars)		
						50 <i>A. triseriatus</i> (Say) (4th instars)		
						5 <i>C. quinquefasciatus</i> Say (4th instars)		
3	Citrus	Inverness	Live Oak tree hole	7/22/46	4th	Devoured		Male
						10 <i>O. signifera</i> (Coq.) (3rd and 4th instars)		
						51 <i>A. triseriatus</i> (Say) (3rd and 4th instars)		
						10 <i>C. quinquefasciatus</i> Say (3rd and 4th instars)		

TABLE II. Collection Data on *M. rutilus* Coq. in Four Florida Counties

County	Town	Date Collected	No. Larvae Collected	Adults Reared
Citrus	Inverness	7/22/46	2	Male—Female
Citrus	Inverness	7/26/46	2	
Citrus	Inverness	9/18/46	7	
Hernando	Nobleton	8/1/46	1	Male
Hernando	Brooksville	9/4/46	2	2 Males
Hernando	Spring Lake	9/—/46	2	Male—Female
Hernando	Bay Port	9/11/46	1	
Hernando	Mud River	10/2/46	4	Male
Hernando	Brooksville	10/30/46	2	
Levy	Chiefland	7/26/46	6	3 Males—3 Females
Levy	Chiefland	7/28/46	1	
Levy	Williston	8/19/46	3	Male—Female
Levy	Cedar Keys	8/23/46	8	Female
Levy	Raleigh	10/31/46	4	
Levy	Williston	10/31/46	4	
Sumter	Bushnell	7/6/46	1	Male
Sumter	St. Catherine	9/17/46	1	Male

female August 22, 1945, one reared male and one reared female August 27, 1945 (A. E. Pritchard-E. H. Basham); Leon County, Tallahassee, 1943 (J. A. Mulrennan); Palm Beach County, Boca Raton, one reared male October 21, 1945, and one reared female November 9, 1945 (E. L. Seabrook-F. E. Duffey); and Volusia County, Deland, 1943 (J. A. Mulrennan).

#### Bibliography

1. CARPENTER, STANLEY J., MIDDLEKAUFF, WOODROW W., AND CHAMBERLAIN, ROY W. May, 1946. The Mosquitoes of Southern United

States, East of Oklahoma and Texas. University Press, Notre Dame, Ind. 292 pp.

2. DYAR, H. G. 1928. The Mosquitoes of the Americas. Carnegie Inst. Wash. Pub. 387. 616 pp.

3. HOWARD, L. O., DYAR, H. G., AND KNAB, F. 1912-17. The Mosquitoes of North and Central America and the West Indies. Carnegie Inst. Wash. Pub. 159. 4 vols., 1064 pp.

4. KING, W. V., BRADLEY, G. H., AND MCNEEL, T. E. 1944. The Mosquitoes of the Southeastern States. U. S. Dept. Agr. Misc. Pub. 336, rev., 96 pp.

5. MATHESON, R. 1944. A Handbook of the Mosquitoes of North America. Comstock Pub. Co. 314 pp.