

DESCRIPTION OF THE PUPA OF *DEINOCERITES*  
*PSEUDES* (DIPTERA: CULICIDAE)<sup>1</sup>

JOHN F. REINERT<sup>2</sup>

Department of Entomology, University of Florida,  
Gainesville, Florida 32601

ABSTRACT

The pupa of *Deinocerites pseudus* Dyar and Knab is described and illustrated for the first time. A table lists the range, mode, and mean number of branches of each pupal hair.

Females of *Deinocerites pseudus* Dyar and Knab are vicious biters and readily attack man as well as other vertebrates (Peyton et al. 1964, Galindo 1967). The feeding habits of this crabhole breeding species, combined with the isolation of St. Louis encephalitis virus from wildcaught specimens in Panama (Grayson et al. 1967), suggests that it may be a vector of this arbovirus. Currently nothing is known of its vector potential, but as a suspected vector, all stages should be described.

In their revision of the genus *Deinocerites*, Belkin and Hogue (1959) presented a description of the adults and larva of *D. pseudus* but stated that the pupa was unknown. The present paper gives a detailed description of the pupa. Chaetotaxy and morphological nomenclature used in this description follow that of Belkin (1962). The pupa is illustrated in Fig. 1-3 while Table 1 lists the range, mode, and mean number of branches for each pupal hair.

*Deinocerites pseudus* Dyar and Knab

*Cephalothorax* (Fig. 1): Hairs C-1-3, 6, 9 moderately long, C-4, 7-8 long, C-5 extra long, C-1, 5, 7 usually double, C-2 triple, C-3 single or double, C-4 usually triple, C-6, 8 usually single, C-9 single.

*Respiratory Trumpet* (Fig. 2): Strongly pigmented; tracheoid in basal third; index 4.23-4.75.

*Metanotum* (Fig. 3): Hairs C-10-12 moderately long, C-10 with 31-38 branches; C-11 usually double or triple; C-12 usually double.

*Abdomen* (Fig. 3): Hair 0-II-VIII minute, single; 1-I well developed, with 22-33 branches; 1-II-VII moderately long, 1-II usually with 8-9 branches, 1-III-V usually double, 1-VI usually with 2-3 branches, 1-VII single; 2-I-II moderately long, 2-III-VII short, 2-I-VII single; 3-VII single or double, 3-I, IV, VI-VII moderately long, 3-II-III, V long, 3-I-III, V-VI usually single, 3-IV with 2-3 branches; 4-I short, 4-II-VII moderately long, 4-VIII long, 4-I, V usually with 3-4 branches, 4-II, IV, VII-VIII usually single, 4-III usually single or double, 4-VI usually double; 5-I-III

<sup>1</sup>Publication costs were supported by Research Contract No. DA-49-193-MD-2177 from the U. S. Army Medical Research and Development Command, Office of the Surgeon General. The opinions contained herein are the private ones of the author and are not to be construed as official or as reflecting the views of the Department of the Army.

<sup>2</sup>Major, Medical Service Corps, U. S. Army.

moderately long, 5-IV-VI extra long, 5-VII short, 5-I usually triple, 5-II usually with 2-3 branches, 5-III usually single, 5-IV-VII single; 6-I-VI long, single, 6-VII short, usually with 3-4 branches; 7-I-II, V moderately

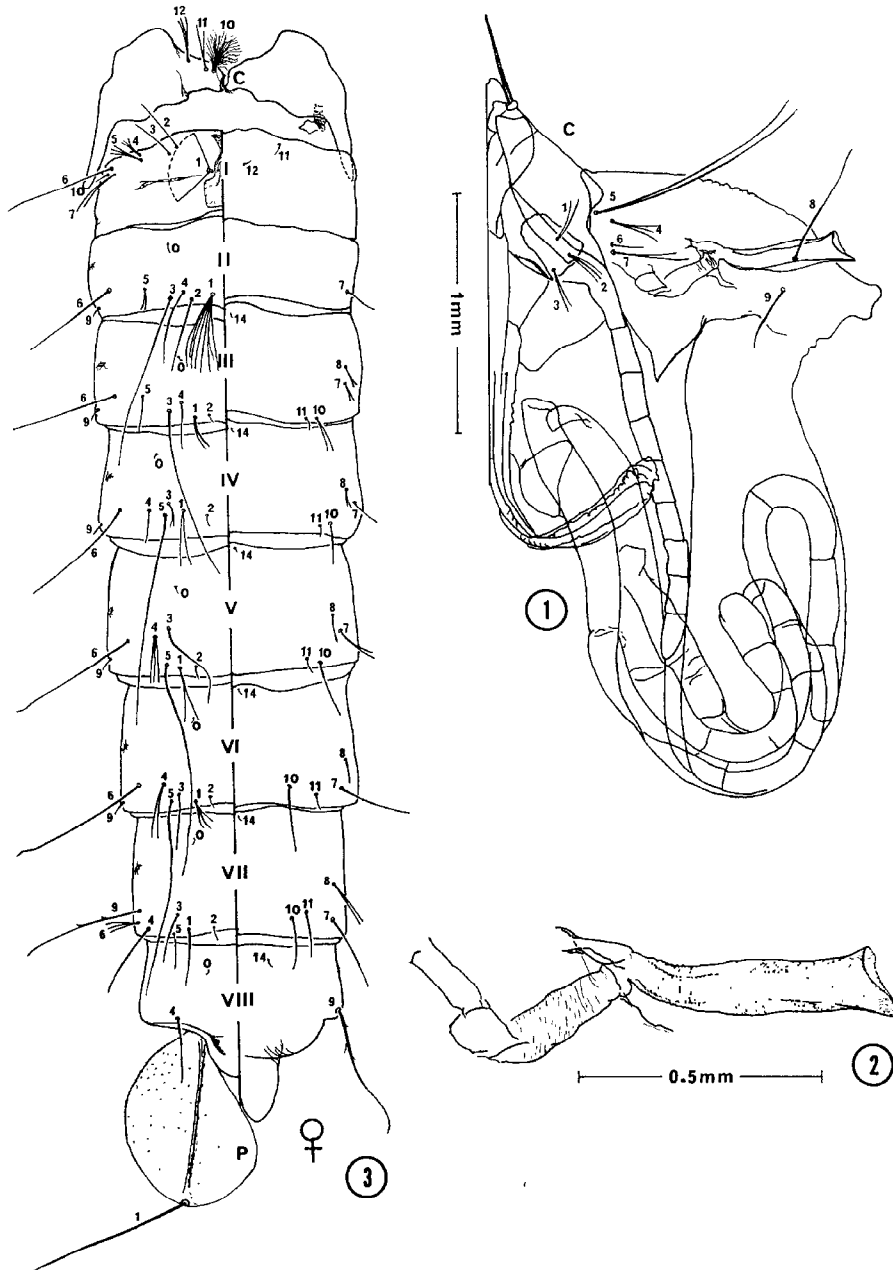


Fig. 1-3. Pupa of *Deinocerites pseudus* Dyar and Knab. Fig. 1. Cephalothorax. Fig. 2. Respiratory trumpet. Fig. 3. Metanotum and abdomen. C=cephalothorax, I-VIII=abdominal segments 1 through 8, P=paddle.

TABLE 1.—RECORD OF THE BRANCHING OF THE SETAE ON THE PUPAE OF *Deinocerites pseudus*

Hair	Range	Mode	Mean	Hair	Range	Mode	Mean
Cephalothorax				Abdomen III			
1	1-3	2	2	0	1	1	1
2	3	3	3	1	2-5	2	2.7
3	1-2	1	1.4	2	1	1	1
4	2-3	3	2.9	3	1	1	1
5	2-3	2	2.2	4	1-3	1	1.7
6	1-2	1	1.1	5	1-2	1	1.2
7	2-3	2	2.1	6	1	1	1
8	1-2	1	1.1	7	1-3	3	2.4
9	1	1	1	8	2-5	4	3.8
Metanotum				9	1	1	1
10	31-38	34	33.9	10	1-3	1	1.4
11	2-3	3	2.6	11	1	1	1
12	1-3	2	2	14	1	1	1
Abdomen I				Abdomen IV			
1	22-33	30	27.1	0	1	1	1
2	1	1	1	1	2-4	2	2.1
3	1-2	1	1.3	2	1	1	1
4	2-4	3	3.1	3	2-3	2	2.4
5	3-4	3	3.2	4	1-2	1	1.1
6	1	1	1	5	1	1	1
7	2-4	2	2.3	6	1	1	1
10	1	1	1	7	1-2	2	1.7
11	1	1	1	8	1-2	2	1.7
12	1	1	1	9	1	1	1
Abdomen II				10	1-2	2	1.5
0	1	1	1	11	1	1	1
1	6-10	9	8.5	14	1	1	1
2	1	1	1	Abdomen V			
3	1	1	1	0	1	1	1
4	1	1	1	1	2	2	2
5	2-3	3	2.6	2	1	1	1
6	1	1	1	3	1-3	1	1.4
7	1	1	1	4	3-5	4	4.1
9	1	1	1				

TABLE 1 Continued

Hair	Range	Mode	Mean	Hair	Range	Mode	Mean
Abdomen V (Cont)				Abdomen VII			
5	1	1	1	0	1	1	1
6	1	1	1	1	1	1	1
7	1-3	2	2.1	2	1	1	1
8	1-3	2	1.7	3	1-2	1	1.4
9	1	1	1	4	1	1	1
10	1-2	1	1.1	5	1	1	1
11	1	1	1	6	3-5	4	4
14	1	1	1	7	1	1	1
				8	2-3	2	2.2
Abdomen VI				9	1-2	1	1.2
0	1	1	1	10	1-2	1	1.1
1	2-3	2	2.4	11	1	1	1
2	1	1	1	14	1	1	1
3	1-3	1	1.2				
4	1-4	2	2.2				
				Abdomen VIII			
5	1	1	1	0	1	1	1
6	1	1	1	4	1-2	1	1.1
7	1-2	1	1.1	9	1	1	1
8	1-2	1	1.3	14	1	1	1
9	1	1	1				
10	1-3	1	1.6				
11	1-3	2	1.9				
				Paddle			
14	1	1	1	1	1	1	1

long, 7-III short, 7-VI-VII long, 7-I, V usually double, 7-II, VI usually single, 7-III usually with 2-3 branches, 7-IV usually single or double, 7-V usually double, 7-VII single; 8-III-V short, 8-VI-VII moderately long, 8-III usually with 4 branches, 8-IV, VII usually double, 8-V-VI usually single or double; 9-II-VI short, 9-VII-VIII long, 9-II-VII single; 10-I short, 10-III-VII moderately long, 10-I single, 10-III, V, VII usually single, 10-IV, VI usually single or double; 11-I, III-VI short, 11-VII moderately long, 11-I, III-V, VII single, 11-VI usually single or double; 12-I minute, single; 14-III-VII minute, 14-VIII short, 14-III-VIII single.

*Paddle* (Fig. 3): Ovoid, with tiny spicules along outer proximal 0.5 of margin, upper and lower surfaces sparsely clothed with minute spicules, midrib does not reach apex; 1-P long, single; index 1.28-1.42.

The above description is based on 6 female and 2 male pupal skins collected by the author at Brownsville, Texas on 6-7 March 1964.

LITERATURE CITED

- Belkin, J. N.* 1962. The mosquitoes of the South Pacific Univ. Calif. Press, Berkeley. 2 vols., 608 and 412 p.
- Belkin, J. N., and C. L. Hogue.* 1959. A review of the crabhole mosquitoes of the genus *Deinocerites* (Diptera, Culicidae). Univ. Calif. Pub. Entomol. 14(6): 411-458.
- Galindo, P.* 1967. Preliminary observations on the colonization and bionomics of the crab-hole breeding mosquito *Deinocerites pseudus* Dyar and Knab, 1909. Mosquito News 27(2): 187-190.
- Grayson, M. A., S. Srihongse, and P. Galindo.* 1967. Isolation of St. Louis encephalitis virus from *Deinocerites pseudus* in Panama. Mosquito News 27(2): 204.
- Peyton, E. L., J. F. Reinert, and N. E. Peterson.* 1964. The occurrence of *Deinocerites pseudus* Dyar and Knab in the United States, with additional notes on the biology of *Deinocerites* species in Texas. Mosquito News 24(4): 449-458.

The Florida Entomologist 53(1) 1970