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A NEW SPECIES OF *RETICULITERMES* (ISOPTERA) FROM JERUSALEM, PALESTINE

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Specimens of *Reticulitermes* from Jerusalem appear morphologically distinct from other species of *Reticulitermes*. The enlarged clypeus was first noticed, and the new form was subsequently studied to determine whether it was a variant of *Reticulitermes lucifugus* or a new species. The possibility of its being an introduced form is considered unlikely because of its specific distinction.

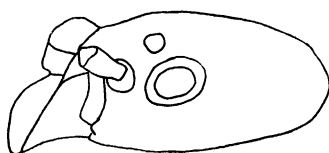
***Reticulitermes clypeatus*, new species**

Figures 1, 2

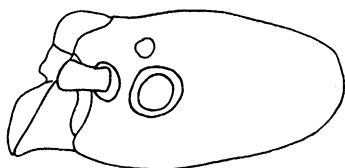
IMAGO: The body color is light reddish brown to dark reddish brown. The eye is comparatively small, with a proportionally wide sclerite surrounding it. The ocellus is less than its diameter from the eye. The postclypeus is dark and protrudes noticeably, appearing in profile as a protruding wedge, with the apex approximating a right angle. The antennae number 17 articles (16 segments plus the stapes). Bristles on the head are slightly more sparse than in other species of the genus, but not distinctively so. The tibia is darkly pigmented, blending to a much lighter color distally, with the midpoint of the color gradient being approximately one-half of the length of the tibia. The tarsi are pigmented and not translucent.

COMPARISONS AND AFFINITIES: Three specific morphological distinctions were found for the imagoes: protruding postclypeus, blending tibial coloration, and a proportionally wide sclerite surrounding the eye. The postclypeus does not protrude in *R.*

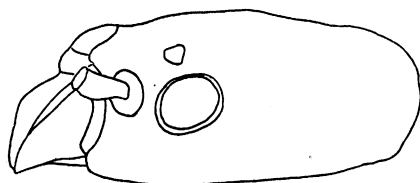
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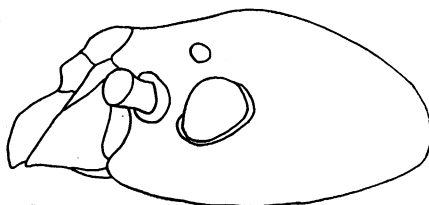
1



2



3



4

FIGS. 1-4. Heads of winged forms, profile. 1. *Reticulitermes clypeatus*, new species, male. 2. *R. clypeatus*, new species, female. 3. *R. lucifugus* var. *santonensis*, male. 4. *R. lucifugus*, male.

flavipes, *hageni*, *virginicus*, *hesperus*, *speratus*, *arenicola*, *chinensis*, *fukiensis*, *flaviceps*, and *lucifugus*. It does protrude in *lucifugus* var. *santonensis*, but not to such a great extent. The eye sclerite is proportionally narrow in *flavipes*, *hageni*, *virginicus*, *hesperus*, *speratus*, *chinensis*, *fukiensis*, *flaviceps*, and *lucifugus*. It is almost as wide as the new form in *lucifugus* var. *santonensis* and *arenicola*, although distinctly of different proportions. The entire tibia is pale and unpigmented in *flavipes*, *hageni*, *virginicus*, *hesperus*, *speratus*, *chinensis*, *fukiensis*, *flaviceps*, and *lucifugus*. The blending in *hesperus* is similar to that in the new form, while in *lucifugus* var. *santonensis* approximately the proximal third is dark and the distal two-thirds light. *Reticulitermes lucifugus* var. *santonensis* is similar to the new form in all three respects, although there are significant differences. The coloration of *lucifugus* var. *santonensis* is redder, the postclypeus is distinctly of different shape, the blending of the tibial coloration is proportionately different, the eye sclerite is proportionately smaller, and the general body size of *lucifugus* var. *santonensis* is larger.

TABLE 1
SPECIFIC DISTINCTIONS

	Tibia coloration	Eye sclerite	Clypeus shape
<i>clypeatus</i>	+ ^a	+	+
<i>arenicola</i>	—	(+)	—
<i>chinensis</i>	—	—	—
<i>flavipes</i>	—	—	—
<i>fukiensis</i>	—	—	—
<i>hageni</i>	—	—	—
<i>hesperus</i>	(+)	—	—
<i>lucifugus</i>	—	—	—
<i>speratus</i>	—	—	—
<i>lucifugus</i> var. <i>santonensis</i>	(+)	(+)	(+)
<i>virginicus</i>	—	—	—

^a Symbols in table signify: (+) indicates morphologic similarity; +, *clypeatus* characteristics; —, not *clypeatus* characteristics.

SOLDIER: The soldiers in the collection were not from the same colony as the winged forms, so no incontestable linkage between the two castes can be made to date. However, the occurrence of a morphologically distinct winged form and the somewhat distinct soldier form seems to justify placing the soldier in the same

TABLE 2
MEASUREMENTS (IN MILLIMETERS) OF IMAGOS OF *Reticulitermes clypeatus*, NEW SPECIES, AND *Reticulitermes lucifugus*

	<i>clypeatus</i>	<i>lucifugus</i> Bordeaux, France	<i>lucifugus</i> var. <i>santonensis</i> La Rochelle, France
Length without wings			
Range	4.22-5.09	4.83-5.70	3.80-4.70
Mean	4.33	5.25	4.20
Number	10	6	4
Length of head to side projection			
Range	.84-.94	.90-1.10	.86-1.19
Mean	.89	1.00	1.06
Number	10	6	7
Width of head			
Range	.88-.98	1.04-1.11	1.11-1.17
Mean	.93	1.09	1.14
Number	10	6	3
Eye, max. diameter			
Range	.17-.21	.23-.27	.24-.28
Mean	.20	.25	.26
Number	10	6	6
Distance, ocellus to eye			
Range	.02-.07	.04-.06	.04-.06
Mean	.03	.04	.05
Number	10	6	6
Pronotum width			
Range	.74-.80	.87-.94	.95-1.02
Mean	.76	.92	.99
Number	10	6	7
Pronotum length			
Range	.41-.50	.50-.54	.58-.62
Mean	.45	.52	.59
Number	10	6	7
Clypeus length			
Range	.21-.26	.24-.27	.13-.32
Mean	.24	.26	.22
Number	10	6	7
Postclypeus length			
Range	.17-.20	.17-.18	.08-.17
Mean	.19	.17	.13
Number	10	6	7
Postclypeus width			
Range	.46-.53	.53-.58	.53-.60
Mean	.49	.56	.55
Number	10	6	7
Antennal segments	17	18	19
Number of specimens	10	1	6

species. It is considered as a morphotype to the winged forms. No obvious morphological distinction other than a gross size difference (table 3) could be detected. Slight distinctions could be drawn from the measurements, but none other than gross size was considered specifically valid. The soldier of *Reticulitermes clypeatus*, new species, is therefore easily distinguished with the naked eye from the larger *lucifugus* form.

TYPE LOCALITY: Jerusalem, Palestine, May 16, 1943, Is 25, J. Wahrman Coll., imagoes; January 30, 1947, coll. A. Zuckerman, soldiers, workers, nymphs.

DEPOSITION OF TYPE MATERIAL: Holotype and paratype imagoes and morphotype and paramorphotype soldiers are deposited in the Emerson collection of the American Museum of Natural History.

DATA ON SOME SPECIMENS USED IN TABLES 1, 2, AND 3

- arenincola*, Pine, Indiana, type colony, May 17, 1930, determined and collected by E. Goellner, imagoes, soldiers, workers
- chinensis*, Suifu, Szechwan, China, paratype from type colony, determined by T. E. Snyder, collected by D. C. Graham, imagoes, soldiers, and workers
- flaviceps*, Formosa, determined by A. Emerson. "*Leucotermes speratus*," determined by N. Holmgren, one imago, one soldier, one worker, from Holmgren
- flavipes*
- fukiensi*¹, Foochow, China, type colony, determined and collected by S. F. Light, 1200 feet, July 9, 1923, queen, king, soldiers, workers
- hageni*¹
- hesperus*¹
- lucifugus*, Bordeaux, France, determined and collected by H. Buchli, April, 1949, imagoes, workers, soldiers
- lucifugus*, Bordeaux, France, determined and collected by H. Buchli, April, 1949, imagoes
- lucifugus*, Madeira, Spain, determined? by Siebolt, two imagoes, two soldiers, two workers
- lucifugus*, Vigo, Spain, determined by A. Emerson, collected by Hase, November 10, 1926, soldiers, workers
- lucifugus* var. *santonensis*, LaRochelle, France, collected by H. Buchli, 1950, A imagoes
- lucifugus* var. *santonensis*, 30 miles south of LaRochelle, France, determined by A. Emerson, collected by H. Buchli, 1950, B imagoes
- lucifugus* var. *santonensis*, LaRochelle, France (tentative identification based on soldiers), determined by A. Emerson, collected by H. Buchli, soldiers, workers
- virginicus*¹
- speratus*, Soochow, China, determined by S. F. Light, collected by N. Gist Gee, dealated imagoes

¹ No data recorded on specimens measured.

TABLE 3
MEASUREMENTS (IN MILLIMETERS) OF SOLDIERS OF *Reticulitermes clypeatus*, NEW SPECIES, AND OTHER SPECIES OF *Reticulitermes*

	<i>clypeatus</i>	<i>lucifugus</i> Bordeaux, France	<i>lucifugus</i> Madeira, Spain	<i>lucifugus</i> Vigo, Spain	<i>lucifugus</i> var. <i>santonensis</i> LaRochelle, France	<i>hageni</i>	<i>virginicus</i>
Head and mandible length							
Range	2.31-2.50	2.92-3.10	2.85-2.90	2.60-2.80	2.87-3.02	2.21-2.29	2.54-2.71
Mean	2.38	3.01	2.88	2.70	2.97	2.24	2.65
Number	8	2	2	2	3	3	3
Head capsule length							
Range	1.49-2.17	2.10-2.22	2.10-2.50	1.80-1.90	1.73-2.08	1.48-1.57	1.72-1.85
Mean	1.59	2.16	2.12	1.80	1.93	1.51	1.79
Number	8	2	2	2	3	3	3
Head, max. posterior width							
Range	.91-.96	1.34-1.37	1.27-1.31	.87-1.24	1.28-1.30	.94-.98	1.14
Mean	.93	1.35	1.29	1.04	1.29	.96	1.14
Number	8	2	2	2	3	3	3
Labrum length							
Range	.31-.40	.45-.50	.28-.33	.32-.33	.27-.39	.33-.37	.37-.40
Mean	.36	.48	.31	.32	.34	.35	.38
Number	8	2	2	2	3	3	3
Labrum, posterior width							
Range	.25-.33	.33-.38	.35-.37	.20-.32	.33-.37	.23-.25	.30
Mean	.29	.36	.36	.26	.34	.24	.30
Number	8	2	2	2	3	3	3
Pronotum width							
Range	.67-.76	1.00-1.04	.90	.84-.87	.94-1.00	.64-.70	.84
Mean	.73	1.02	.90	.85	.95	.67	.84
Number	8	2	2	2	3	3	3

TABLE 3—Continued

Pronotum length									
Range	.39-.46	.44-.49	.45-.47	.40-.45	.50	.36-.43	.42-.49		
Mean	.43	.46	.46	.43	.50	.40	.46		
Number	8	2	2	2	3	3	3		
Postmentum length									
Range	1.11-1.20	1.34-1.37	1.29-1.35	1.14	1.04-1.17	.94-1.00	1.10-1.30		
Mean	1.12	1.35	1.32	1.14	1.13	.97	1.22		
Number	8	2	2	1	3	3	3		
Postmentum, max. width									
Range	.37-.44	.53-.56	.47-.50	.42-.47	.49-.50	.36-.42	.41-.43		
Mean	.42	.55	.48	.44	.50	.39	.43		
Number	8	2	2	2	3	3	3		
Postmentum, min. width									
Range	.15-.17	.20-.23	.15-.17	.17-.20	.20-.26	.17-.20	.15-.17		
Mean	.16	.22	.16	.18	.23	.18	.16		
Number	8	2	2	2	3	3	3		
Postmentum index									
Range	.35-.44	.39-.42	.32-.33	.40-.43	.40-.52	.41-.50	.36-.38		
Mean	.38	.40	.33	.41	.46	.46	.37		
Number	8	2	2	2	3	3	3		
Mandible, right, length									
Range	.91-.96	1.15-1.17	1.07-1.12	.68-1.07	1.20-1.23	.84-.90	1.00-1.03		
Mean	.92	1.16	1.09	.88	1.21	.87	1.01		
Number	8	2	2	2	3	3	3		
Mandible, left, length									
Range	.89-.94	1.10-1.14	1.07-1.10	.68-1.04	1.17-1.23	.86-.87	1.00-1.02		
Mean	.90	1.12	1.08	.86	1.20	.86	1.01		
Number	8	2	2	2	3	2	3		

