

## FOUR NEW SPECIES IN THE GENUS BAKERELLA

(Homoptera-Fulgoridae-Delphacinae)

R. H. BEAMER\*

The genus *Bakerella* was described by David L. Crawford (Proc. U.S.N.M., Vol. 46, p. 601, 1914) with the Mexican species *Bakerella maculata* as genotype. The specimens of this genus from America north of Mexico have heretofore not been separated from *B. maculata*. The present paper describes four new species. The specimens of these were compared with the type of *B. maculata* in the United States National Museum by Doctor John Caldwell. It is his opinion that they are undescribed.

### Key to the Species

1. General form very robust (Mexico) ..... *maculata* Craw. 2  
General form more slender .....
2. Frons almost as wide as long ..... *rotundifrons* n. sp. 3  
Frons much longer than wide .....
3. Anal ring of male without processes ..... *bidens* n. sp. 4  
Anal ring with processes .....
4. Long wing forms with broad diagonal, fumose band from costa to mesal margin on outer third of clavus; aedeagus swollen dorsally on basal half ..... *fusca* n. sp.  
Long wing forms with barely a spot left of diagonal band; aedeagus swollen ventrally on basal half ..... *cinerea* n. sp.

\* Contribution from Department of Entomology, University of Kansas, Lawrence, Kan.

1. *Bakerella fusca* n. sp.

## Macropterous form

Resembling *B. maculata* Crawford but less robust, median fovea of crown broader and slightly shorter. Length male 2.75-3 mm.

**Structure:** Front about twice as long as wide, oval in shape, about as wide at union with clypeus as next crown; crown slightly longer than width between eyes, anterior fovea about twice as long as width at base, posterior fovea about twice as wide at base as length at middle; veins of elytra sparsely set with small, rounded projections.

**Color:** Front brown with three or four pairs of small mesal spots, usually one pair near clypeus, one pair just above middle and two pairs near union with vertex; three marginal spots, one near middle, one just above it and one near union with crown, light. Crown brown with lateral carina, base and sometimes other carina, light. Pronotum brown with mesal carina, posterior margin and sometimes a spot back of lateral carina, light. Elytra hyaline with diagonal band from spot on mesal border near apex of claval veins to costal margin more or less paralleling posterior margin of pronotum, band on cross veins extending to apex on Cu and  $M_{3+4}$  and small round bumps on veins, brown. Venter variegated, more brown than light.

**Genitalia:** Styles in lateral view widest at base, contracted on basal fourth, narrowed to apex and gently curved ventrally near middle; aedeagus in lateral view widest just beyond base, then narrowing on dorsal margin with about five retrorse dorsal teeth just before bluntly pointed apex. Anal segment with a pair of contiguous processes enlarged near their middle and about as long as diameter of segment.

Holotype male and 1 male paratype, Apache Co., Arizona, July 16, 1927, P. A. Read. Types in the Snow Entomological Collections.

2. *Bakerella cinerea* n. sp.

## Brachypterous form

Resembling *B. fusca* but wings cinereous instead of hyaline, diagonal dark stripe almost lacking, aedeagus swollen basally on ventral side instead of dorsally and apex with much larger teeth, not evenly spaced. Length: male 1.5 mm.; female 1.75-2 mm.

**Structure:** Front oval, widest just above middle, slightly wider at union with crown than with clypeus; crown rectangular, about one fourth longer than width between eyes, anterior fovea about twice as wide as long, posterior fovea about twice as long as wide, divided longitudinally with a ridge; elytra reaching to second abdominal segment, apices rounded, longest near middle of inner half, female more nearly truncate than in male, veins raised, rather evenly and sparsely set with round bumps.

**Color:** Front brown, usually with four pairs of small mesal light spots, one pair near distal end, one pair midway between middle and clypeus, one just above middle and one almost at union with crown; four marginal light spots, one at apex, one about the middle, another opposite middle spots and the

other near union with crown, all usually crossing lateral ridge and face; crown and pronotum dark with ridges usually lighter; elytra cinereous with rounded bumps on veins, two spots on mesal margin, one near middle and other at apex of clavus and a rather broad band at apex of elytra, except two mesal white spots, brown; venter brown to black, more or less spotted with light, pygofer and ovipositor of female black, bordered by light-margined notch of last ventral segment.

**Genitalia:** Styles about as in *B. fusca*; aedeagus in lateral view enlarged on ventral margin for basal two thirds, then constricted on outer fourth to less than one third greatest width, tip somewhat enlarged again on ventral side with five large, different-sized teeth on apical third of dorsal margin, anal segment about as in *B. fusca*.

Holotype male, allotype female, 16 male and 28 female paratypes, Lawrence, Kansas, Sept. 20, 1944, R. H. Beamer; other paratypes: 1 male and 2 females, August 23; 2 males and 1 female, September 4, same place, year and collector; 14 males and 7 females, Douglas Co., Kansas, Oct. 19, 1944, R. H. Beamer; 39 males and 17 females, Oct. 17; 2 males and 1 female, Oct. 18; 2 males Nov. 18; 1 male, Oct. 26, same place, year and collector.

## Macropterous form

Like the short-winged form except wings much longer than abdomen. Length male 3.25 mm. Elytra cinereous to semihyaline, veins raised with black bumps except on claval suture, black spot on mesal margin near basal third of clavus, another almost at apex, a third near center of corium on a diagonal with this last spot and costal margin, all parallel with posterior margin of pronotum; broad, dark band on cross veins running to apex of elytra along veins  $M_{3+4}$ , Cu<sub>1</sub> and Cu<sub>2</sub>.

Holomorphotype male, Lawrence, Kansas, August 23, 1944, R. H. Beamer, and 2 male paramorphotypes, same place and collector, Sept. 20, 1944; 1 male paramorphotype, Douglas Co., Kansas, August 17, 1944, R. H. Beamer.

Types in the Snow Entomological Collections. The specimens of this species were swept from the sedge, *Eleocharis palustris* (L.).

3. *Bakerella rotundifrons* n. sp.

## Brachypterous form

Resembling *B. cinerea* but front almost as wide as long, anal hooks of male forming a rounded curve and aedeagus with many spines on apical portion. Length female 1.75-2.25 mm.; male 1.25-1.75 mm.

**Structure:** Front almost as wide just above middle as median length, at union with clypeus slightly narrower than half greatest width; crown rectangular, about a third longer than wide, anterior fovea about three times as long as basal width, carinae distinct; elytra about as long as head and pronotum, oval in outline, veins definite with rather evenly arranged raised round black bumps, dorsal segments of abdomen with rather sharp median keel, the third segment with a pair of raised bumps on each side and the fourth with three smaller raised places on each side.

**Color:** The general color varies from buff to dark brown with the lighter individuals predominating. Front buff with at least a darker spot at apex and often apical third darker; usually four pairs of median and three marginal spots lighter; carina of crown and pronotum usually lighter; elytra semihyaline with raised round bumps on veins and two larger spots at apex dark brown; venter much darker than dorsum.

**Genitalia:** Male styles in lateral view almost straight, widest at base; sharply narrowed, then tapered to rounded apex; aedeagus in lateral view, with sides almost parallel and widest on basal two thirds, gently curving ventrally and narrowing on outer third, narrowed portion except apex covered with fine teeth; anal hooks broad at base, evenly curved ventrally from base to apices.

Holotype male, allotype female, 57 males and 42 females, Sun City, Kansas, Sept. 14, 1944, R. H. Beamer; other paratypes: 11 males and 16 females, Meade Co., Kansas, Sept. 9, 1944, R. H. Beamer; 2 males and 1 female, Douglas Co., Kansas, Oct. 17, 1944, R. H. Beamer; 1 male and 2 females, same place and collector, Oct. 20, 1944; 5 males and 8 females, Lawrence, Kansas, Sept. 20, 1944, R. H. Beamer.

#### Macropterous form

Resembling brachypterous forms but larger, generally darker and with wings about a third longer than body. Length of body 2 mm., to tip of wings 2.75 mm. Elytra hyaline except diagonal fuscous band from apices of claval veins to costa, paralleling pronotum and broader band on cross veins and extending to apex on  $M_2$  and  $M_{3+4}$ ; veins raised with rather evenly spaced, round, black bumps.

Holomorphotype female and 6 female paramorphotypes, Sun City, Kansas, Sept. 14, 1944, R. H. Beamer.

Types in the Snow Entomological Collections.

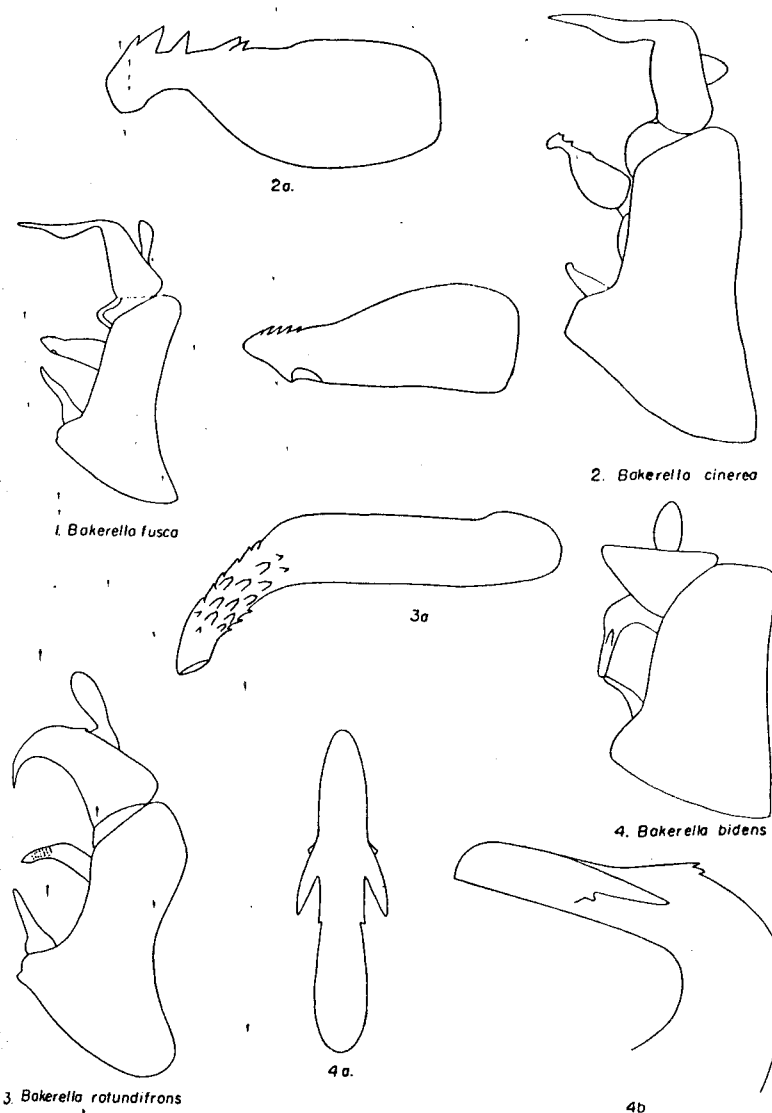
#### 4. *Bakerella bidens* n. sp.

#### Brachypterous form

Resembling *B. cinerea* but front narrower, round bumps on veins of wings very slightly darkened if at all, male aedeagus bent ventrally at a right

angle and anal segment without hooks. Length male 1.75-2.25 mm; female 2-2.5 mm.

**Structure:** Clypeus and front joined almost on same level, front definitely



#### Explanation of Plate

1. Lateral view of male genitalia *Bakerella fusca* n. sp.
- 1a. Lateral view of aedeagus of *Bakerella fusca* n. sp.
2. Lateral view of male genitalia *Bakerella cinerea* n. sp.
- 2a. Lateral view of aedeagus of *Bakerella cinerea* n. sp.
3. Lateral view of male genitalia of *Bakerella rotundifrons* n. sp.
- 3a. Lateral view of aedeagus of *Bakerella rotundifrons* n. sp.
4. Lateral view of male genitalia of *Bakerella bidens* n. sp.
- 4a. Dorsoventral view of aedeagus of *Bakerella bidens* n. sp.
- 4b. Lateral view of aedeagus of *Bakerella bidens* n. sp.

widest at middle, about same width at union with clypeus and crown, strongly carinate; crown in male almost square, in female longer than wide, anterior fovea about twice as long as basal width. Elytra of male longer than wide, reaching about to third abdominal segment, apices broadly rounded, veins raised with a few raised, round, scarcely darkened bumps, some of which bear setae. Dorsum of abdomen carinate at middle with semblance of raised bumps on sides of third and fourth segments.

**Color:** General color ranging from buff to cinereous with most specimens lighter. Front with spots as in *B. cinerea* often absent in lighter specimens. In male, elytra hyaline with apical third fuscous except apical border white, in female, hyaline with two to three apical spots fuscous with apical margin white.

**Genitalia:** Male styles in lateral view widest at base, tapered to rounded apex, gently curved ventrally; aedeagus in lateral view widest at base, tapered to apex, more suddenly so near outer third, bent ventrally at right angles near middle with a large retrorse spine near apical fourth, about as long as width of shaft at this point; anal ring without processes.

Holotype male, allotype female and 81 male and 17 female paratypes, Meade Co., Kansas, Sept. 13, 1944, R. H. Beamer. All specimens were swept from sedges near the big spring at the Meade County State Park.

Types in the Snow Entomological Collections.

---