A FORAMINIFERAL FAUNA OF THE WILCOX EOCENE, BASHI FORMATION, FROM NEAR YELLOW BLUFF, ALABAMA.*

JOSEPH A. CUSHMAN.

ABSTRACT. Comparatively little is known of the foraminifera of the American Wilcox Eocene. The material from Yellow Bluff, Ala., adds somewhat to the known fauna of the Bashi formation and indicates that certain species may be used as index fossils for this part of the Wilcox Eocene. One new species and a new variety are described.

SEVERAL papers in the last few years have given considerable information on the foraminiferal faunas of various formations of the Eocene Wilcox group. This part of the Eocene has been rather neglected in comparison with the Claiborne and Jackson groups and with the Paleocene Midway group.


The material used here is from the Bashi formation, collected by Dr. C. G. Lalicker, secs. 13 and 24, T. 11 N., R. 5 E., 4½ miles SE. of Yellow Bluff, west bank of Alabama River, Wilcox Co., Alabama. This fauna adds somewhat to the previous Bashi records and confirms those species already recorded. The fauna indicates that it is not from a very shallow habitat but of medium depth.

The figures are all of the same magnification for convenience in comparison. A number of the species, from the records, seem to be index fossils for this part of the Wilcox Eocene and should be useful in correlation.

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Joseph A. Cushman.

Family TEXTULARIIDAE.

Genus SPIROPECTAMMINA Cushman, 1927.

Spiropectammina wilcoxensis Cushman and Ponton (Pl. 1, Figs. 1, 2).

_Spiropectammina wilcoxensis_ Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 51, Pl. 7, Fig. 1.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 78, Pl. 13, Figs. 1, 2.—Toumin. Journ. Pal., Vol. 15, 1941, p. 571, Pl. 78, Fig. 1.

The types of this species are from the Wilcox Eocene, one mile N. of Ozark, Alabama. It is also recorded from the Bashi formation of Woods Bluff, Alabama. Toulmin records it from the Salt Mountain limestone, Bashi and Hatchetigbee formations of Alabama, and the Vincentown sand of New Jersey. He also notes its occurrence in the Nanafalia and Tuscaloosa formations of Alabama. Typical specimens occur in the Bashi material.

Family LAGENIDAE.

Genus ROBULUS Montfort, 1808.

Robulus sp. (Pl. 1, Fig. 3).

Rare specimens, probably young, occurred, but cannot be specifically determined. They may be the young stages of _R. wilcoxensis_ Cushman and Ponton.

Genus MARGINULINA d’Orbigny, 1826.

 Marginulina sp. (Pl. 1, Fig. 4).

Several specimens, all young megalospheric forms, occurred but are not specifically identifiable without more material.

Genus DENTALINA d’Orbigny, 1826.

_Dentalina_ wilcoxensis Cushman, n. sp. (Pl. 1, Figs. 5, 6).


Test small, elongate, of nearly uniform diameter throughout, circular or slightly compressed in transverse section, rounded at the initial end; chambers few, slightly if at all inflated, increasing only slightly in height as added; sutures distinct but not depressed, strongly oblique; wall smooth; aperture terminal, rounded, with the border finely toothed. Length 0.50 mm., diameter 0.10-0.12 mm.
Holotype (Cushman Coll. No. 39230) from the Wilcox Eocene, Bashi formation, 4½ miles SE. of Yellow Bluff on west bank of Alabama River at old ferry landing, Wilcox County, Alabama.

This species differs from *Dentalina mucronata* Neugeboren in the higher and fewer chambers and less tapering test. It occurs also in the Paleocene Naheola formation at its type locality, Naheola Landing, on Tombigbee River, Choctaw County, Alabama, as figured in the above reference.

**Family POLYMORPHINIDAE.**

**Genus GUTTULINA d'Orbigny, 1839.**

*Guttulina problema* d'Orbigny, var. arcuata Cushman, n. var.

(Pl. 1, Fig. 7).

Variety differing from the typical in the smaller size, more pointed base, and more lobate form.

Holotype of variety (Cushman Coll. No. 39233) from the Wilcox Eocene, Bashi formation, 4½ miles SE. of Yellow Bluff, on west bank of Alabama River at old ferry landing, Wilcox County, Alabama.

A comparison of this form with totopotypes of the typical form from the Miocene of Austria shows that the two are distinct.

*Guttulina wilcoxensis* Cushman and Ponton (Pl. 1, Fig. 8).

A few specimens from this Bashi locality are probably the young of this species but no adults were found.

**Genus GLOBULINA d'Orbigny, 1839.**

*Globulina gibba* d'Orbigny (Pl. 1, Figs. 9, 10).

Specimens of this species are fairly common in the Bashi material. Toulmin notes its occurrence in the Nanafalia, Tuscaloosa, and Hatchetigbee formations of the Wilcox group.

**Genus POLYMORPHINA d'Orbigny, 1826.**

*Polymorphina* sp. (Pl. 1, Fig. 11).

A single specimen with definitely biserial chambers in the adult is figured. No others were found in the material. It is probably a young stage. It somewhat resembles the figures given by Toulmin (1941, Journ. Pal., Vol. 15, Pl. 80, Fig. 11) from the Salt Mountain limestone and referred to *Glandulina*
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*abbreviata* Neugeboren, and by Cushman and Garrett (1939, Contr. Cushman Lab. Foram. Res., Vol. 15, Pl. 14, Fig. 10) from the Bashi at Woods Bluff, Alabama, but is more strongly compressed. It does not have the same shaped chambers or sutures as *Pseudopolymorphina decorata* (Reuss) (Toulmin, Pl. 80, Fig. 14).

Family NONIONIDAE.

Genus NONIONELLA Cushman, 1926.

*Nonionella wilcoxensis* Cushman and Ponton (Pl. 1, Fig. 12).

*Nonionella wilcoxensis* Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 65, Pl. 8, Fig. 12.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 82, Pl. 14, Fig. 15.—Cushman, U. S. Geol. Survey Prof. Paper 191, 1939, p. 29, Pl. 7, Fig. 13.

This species was described from the Wilcox Eocene, Tuscaloosa sand, one mile N. of Ozark, Alabama. It has also been recorded from the Bashi formation, Woods Bluff, Alabama. A single specimen occurred in the material from near Yellow Bluff.

Family HETEROHELICIDAE.

Genus GÜMBELINA Egger, 1899.

*Gümbelina wilcoxensis* Cushman and Ponton (Pl. 1, Figs. 13, 14).


This species was originally described from material of Wilcox age from near Ozark, Alabama. It is recorded by Toulmin from the Salt Mountain limestone and Tuscaloosa sand of Alabama. The specimens from the Bashi are typical.

Genus EOUVIGERINA Cushman, 1926.

*Eouvigerina excavata* Cushman (Pl. 1, Fig. 18).

*Eouvigerina excavata* Cushman, Contr. Cushman Lab. Foram. Res., Vol. 16, 1940, p. 66, Pl. 11, Fig. 18.—Cushman and Todd, l. c., Vol. 18, 1942, p. 35, Pl. 6, Figs. 20, 21.

A single specimen occurred in this Bashi material but is typical. The types are from the Midway Paleocene of Alabama, some material from the Naheola formation.
Genus PSEUDOUVIGERINA Cushman, 1927.

Pseudouvigerina naheolensis Cushman and Todd (Pl. 1, Figs. 15, 16).


Typical specimens of this species, originally described from the Naheola formation, are fairly numerous in the Bashi formation. Some unusually long ones are figured here.

Family BULIMINIDAE.

Genus ROBERTINA d’Orbigny, 1846.

*Robertina* wilcoxensis Cushman and Ponton (Pl. 1, Fig. 17).

*Robertina wilcoxensis* Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 66, Pl. 8, Fig. 19.—Cushman and Parker l. c., Vol. 12, 1936, p. 96, Pl. 16, Fig. 13.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 82, Pl. 14, Fig. 16.—Cushman and Todd, l. c., Vol. 18, 1942, p. 36, Pl. 6, Figs. 22, 23.

This species was described from the Wilcox near Ozark, Alabama. It has since been recorded from the Bashi at Woods Bluff and from the Paleocene Naheola. This is the earliest known species of the genus. It is rare in the Bashi material.

Genus VIRGULINA d’Orbigny, 1826.

*Virgulina* wilcoxensis Cushman and Ponton (Pl. 1, Figs. 19, 20).

*Virgulina wilcoxensis* Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 67, Pl. 8, Fig. 22.—Cushman, Special Publ. No. 9, Cushman Lab. Foram. Res., 1937, p. 6, Pl. 1, Fig. 17.—Cushman and Garrett, Contr. Cushman Lab. Foram. Res., Vol. 15, 1939, p. 82, Pl. 14, Figs. 19-21.—Cushman, l. c., Vol. 16, 1940, p. 67, Pl. 11, Fig. 19.

The types of this species are from the Wilcox Eocene near Ozark, Alabama. It has also been recorded from the Wilcox, Bashi formation, of Woods Bluff, Alabama, and from the Paleocene Midway of Alabama. It is fairly common in the Bashi material.

*Virgulina* cf. dibollensis Cushman and Applin (Pl. 1, Fig. 21).

Rare specimens resembling this Jackson species occur in the Bashi material. They are very distinct from *V. wilcoxensis*.

Genus BOLIVINA d’Orbigny, 1839.

*Bolivina* cf. midwayensis Cushman (Pl. 1, Figs. 22, 23).

A few specimens from the Bashi material strongly resemble this species. They are much smaller and may be only immature specimens or may possibly be the young of *Loxostomum wilcoxense*. 
Genus LOXOSTOMUM Ehrenberg, 1854.

Loxostomum wilcoxense Cushman and Ponton (Pl. 1, Fig. 24).

Loxostomum wilcoxensis Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 67, Pl. 9, Fig. 3.—Cushman, Special Publ. No. 9, Cushman Lab. Foram. Res., 1937, p. 174, Pl. 20, Fig. 22.

The types are from the Wilcox Eocene, Tuskeahoma sand, one mile N. of Ozark, Alabama. Rare specimens in the Bashi material seem to be identical.

Loxostomum sp. (Pl. 1, Fig. 25).

The figured specimen in some respects resembles L. claibornense Cushman but is not the same. It is probably a new species but more material is necessary to give the full characters.

Genus BIFARINA Parker and Jones, 1872.

Bifarina tombigbeensis Hadley (Pl. 1, Figs. 26-28).


The records for this species are all from Woods Bluff, Alabama, the type locality of the Bashi formation. It is not surprising therefore to find that this is one of the more common species in the Bashi material from near Yellow Bluff. It is probably a good index fossil for this part of the Eocene.

Genus UVIGERINA d’Orbigny, 1826.

Uvigerina alabamensis Cushman and Garrett (Pl. 1, Figs. 29-31).


The types of this species are from the Bashi formation of the Wilcox Eocene at Woods Bluff, Alabama. It is abundant in the collection from the Bashi near Yellow Bluff, Alabama, and should, with the preceding species, make a good index fossil for this formation.

Family ROTALIIDAE.

Genus LAMARCKINA Berthelin, 1881.

Lamarckina wilcoxensis Cushman (Pl. 1, Figs. 32-35).

Lamarckina wilcoxensis Cushman, Contr. Cushman Lab. Foram. Res., Vol. 2, 1926, p. 9, Pl. 1, Fig. 3; Cushman and Ponton, l. c., Vol. 8, 1932, p. 70, Pl. 9, Fig. 4.—Glaser, Problems of Paleontology, Moscow Univ., Vols. 2-3, 1937, p. 381, Pl. 2, Fig. 29.
The types of this species are from the Wilcox Eocene, Bashi formation, of Woods Bluff, Alabama. It was also recorded from the Tuscahoma sand, one mile N. of Ozark, Alabama. Glaessner recorded it from the Eocene of the Caucasus region. It is fairly common in the Bashi material from near Yellow Bluff.

Genus VALVULINERIA Cushman, 1926.
Valvulineria scrobiculata (Schwager) (Pl. 2, Figs. 1, 2).

*Anomalina scrobiculata* Schwager, Palaeontographica, Vol. 30, 1883, Pal. Theil, p. 129, Pl. 29(6), Fig. 18.

*Valvulineria scrobiculata* Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 70, Pl. 9, Fig. 5.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 85, Pl. 14, Figs. 32, 33.

This species was described from the middle Eocene of northern Africa, a region which has numerous species in common with the southern United States. It has been recorded from the Wilcox Eocene, Tuscahoma sand, one mile N. of Ozark, Alabama, and from the Bashi formation at Woods Bluff, Alabama. It is common in the Bashi material from near Yellow Bluff, Alabama.

Valvulineria wilcoxensis Cushman and Ponton (Pl. 1, Figs. 36, 37).

*Valvulineria wilcoxensis* Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 70, Pl. 9, Fig. 6.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 85, Pl. 15, Figs. 1, 2.

This species occurs with the preceding one near Ozark and at Woods Bluff, Alabama. It occurs in typical form in the Bashi material from near Yellow Bluff, and both species should make good markers for this part of the Wilcox Eocene.

Genus EPONIDES Montfort, 1808.

Eponides lotus (Schwager) (Pl. 2, Figs. 5, 6).

*Pulvinulina lotus* Schwager, Palaeontographica, Vol. 30, 1883, Pal. Theil, p. 132, Pl. 28(5), Fig. 9.

This species is now widely recorded from the Eocene of northern Africa, the Caucasus, Cuba, and the East Indies. It occurs in the Wilcox Eocene, Tuscaloosa sand, near Ozark, Alabama, and from the Bashi formation at Woods Bluff, Alabama. It is common in the Bashi material from near Yellow Bluff. Specimens apparently identical occur in the Naheola formation of the Paleocene Midway group.

Genus SIPHONINA Reuss, 1850.

*Siphonina wilcoxensis* Cushman, Proc. U. S. Nat. Mus., Vol. 72, Art. 20, 1927, p. 3, Pl. 2, Figs. 1-3.—Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 70, Pl. 9, Fig. 7.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 86, Pl. 15, Figs. 7-9.—Israelsky, Proc. 6th Pac. Sci. Congress, 1939, p. 578, Pl. 7, Fig. 3.—Toulmin, Journ. Pal., Vol. 15, 1941, p. 605, Pl. 81, Figs. 15, 16.

This species seems to be an excellent index fossil for the Wilcox Eocene, recorded from all the formations, and from the Eocene of California. It is common in the Bashi material from near Yellow Bluff.

Family CASSIDULINIDAE.

Genus PULVINULINELLA Cushman, 1926.

*Pulvinulinella obtusa* (Burrows and Holland) (Pl. 2, Figs. 7, 8).

*Pulvinulina exigua* H. B. Brady, var. *obtusa* Burrows and Holland, Proc. Geol. Assoc., Vol. 15, 1897, p. 49, Pl. 2, Fig. 25.—Plummer, Univ. Texas Bull. 2644, 1926 (1927), p. 151, Pl. 11, Fig. 2.

*Pulvinulina exigua* (H. B. Brady), var. *obtusa* Cushman and Ponton. Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 71, Pl. 9, Fig. 9.—Jennings, Bull. Amer. Pal., Vol. 23, No. 78, 1936, p. 34, Pl. 4, Fig. 4.—Howe, Geol. Bull. 14. Louisiana Geol. Survey, 1939, p. 81, Pl. 11, Figs. 4-6.

*Pulvinulina obtusa* Cushman and Garrett, l. c., Vol. 15, 1939, p. 27, Pl. 15, Figs. 12, 13.—Cushman and Renz, l. c., Vol. 18, 1942, p. 11, Pl. 2, Fig. 16.—Cushman and Todd, l. c., Vol. 18, 1942, p. 42, Pl. 7, Figs. 19, 20.

This species is widely distributed in the Midway, Wilcox, and Claiborne. It is rare in the Bashi material from near Yellow Bluff.

Family GLOBIGEKRINIDAE.

Genus GLOBIGERINA d'Orbigny, 1826.

*Globigerina* cf. compressa Plummer (Pl. 2, Figs. 9, 10).

Very small specimens with five chambers in the adult whorl were found in the material from near Yellow Bluff and may belong to this species which has been widely recorded from the Midway and Wilcox.
Globigerina triloculinoides Plummer (Pl. 2, Figs. 11, 12).

Globigerina triloculinoides Plummer, Univ. Texas Bull. 2644, 1926 (1927), p. 134, Pl. 8, Fig. 10.—Jennings, Bull. Amer. Pal., Vol. 23, No. 78, 1936, p. 35, Pl. 4, Fig. 10.—Glaessner, Problems of Paleontology, Moscow Univ., Vols. 2-3, 1937, p. 382, Pl. 4, Fig. 33.—Cushman, Contr. Cushman Lab. Foram. Res., Vol. 16, 1940, p. 72, Pl. 12, Fig. 15.—Toulmin, Journ. Pal., Vol. 15, 1941, p. 607, Pl. 82, Fig. 3.—Cushman and Todd, Contr. Cushman Lab. Foram. Res., Vol. 18, 1942, p. 43, Pl. 8, Figs. 1, 2.—Thalmann, Stanford Univ. Publ., Univ. Ser., Geol. Sci., Vol. 3, No. 1, 1942, p. 13 (list).

This species is widely distributed in the Paleocene, Midway and lower Eocene Wilcox. Specimens from the Bashi near Yellow Bluff seem to be typical.

Globigerina cf. pseudo-bulloides Plummer (Pl. 2, Fig. 13).

A few specimens in the material from near Yellow Bluff may belong to this species.

Family GLOBOROTALIIDAE.

Genus GLOBOROTALIA Cushman, 1927.

Globorotalia wilcoxensis Cushman and Ponton (Pl. 2, Figs. 14, 15).

Globorotalia wilcoxensis Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 71, Pl. 9, Fig. 10.—Cushman and Garrett, l. c., Vol. 15, 1939, p. 88, Pl. 15, Figs. 21, 22.

The records for this species are from the Wilcox Eocene, Tuscaloosa sand, one mile N. of Ozark, Alabama, and from the Bashi formation at Woods Bluff, Alabama. It is frequent in the Bashi material from near Yellow Bluff, Alabama. Cole records it from the Midway Paleocene of Florida wells but the figure given is apparently not the same as the Wilcox species.

Globorotalia wilcoxensis Cushman and Ponton, var. acuta Toulmin (Pl. 2, Figs. 16, 17).

Globorotalia wilcoxensis Cushman and Ponton, var. acuta Toulmin, Journ. Pal., Vol. 15, 1941, p. 608, Pl. 82, Figs. 6-8.—Cushman and Renz, Contr. Cushman Lab. Foram. Res., Vol. 18, 1942, p. 12, Pl. 3, Fig. 2.

The types of this variety are from the Salt Mountain limestone of the Wilcox Eocene of Alabama. It occurs also in the Paleocene of Trinidad. A few specimens occurred in the Bashi material from near Yellow Bluff.

Family ANOMALINIDAE.

Genus ANOMALINA d’Orbigny, 1826.

Anomalina umbonifera (Schwager) (Pl. 2, Figs. 18, 19).

Discorbina umbonifera Schwager, Palaeontographica, Vol. 30, 1883, Pal. Theil, p. 126, Pl. 27(4), Fig. 14.
EXPLANATION OF PLATE 1.
(All figures X50.)

Figs. 1, 2. Spiroplectammina wilcoxensis Cushman and Ponton. la, side view; b, apertural view.

Fig. 3. Robulus sp.

Fig. 4. Marginulina sp.

Figs. 5, 6. Dentalina wilcoxensis Cushman, n. sp. 5, Holotype, a, side view; b, apertural view. 6, Paratype.

Fig. 7. Guttulina problema d’Orbigny, var. arcueta Cushman, n. var. a, side view; b, apertural view.

Fig. 8. Guttulina wilcoxensis Cushman and Ponton.

Figs. 9, 10. Globulina gibba d’Orbigny.

Fig. 11. Polymorphina sp.

Fig. 12. Nonionella wilcoxensis Cushman and Ponton.

Figs. 13, 14. Gämbelina wilcoxensis Cushman and Ponton.

Figs. 15, 16. Pseudowigerina naheolensis Cushman and Todd. 16a, side view; b, apertural view.

Fig. 17. Robertina wilcoxensis Cushman and Ponton.

Fig. 18. Eowigerina excavata Cushman.

Figs. 19, 20. Virgulina wilcoxensis Cushman and Ponton.

Fig. 21. Virgulina cf. dibollensis Cushman and Applin.

Figs. 22, 23. Bolicina cf. midwayensis Cushman.

Fig. 24. Lozostomum wilcoxense Cushman and Ponton.

Fig. 25. Lozostomum sp.

Figs. 26-28. Bifarina tombigbeensis Hadley. 27a, side view; b, apertural view.

Figs. 29-31. Uvigerina alabamensis Cushman and Garrett. 31a, side view; b, apertural view.

Figs. 32-35. Lamarckinia wilcoxensis Cushman. 32, 33, 35, ventral views; 34, dorsal view.

Figs. 36, 37. Vatelulineria wilcoxensis Cushman and Ponton. 36a, ventral view; b, peripheral view; 37, dorsal view.
EXPLANATION OF PLATE 2.
(All figures X50.)

Figs. 1, 2. *Valvulineria scrobiculata* (Schwager). 1a, dorsal view; b, peripheral view; 2, ventral view.
Figs. 3, 4. *Siphonina wilcoxensis* Cushman. 3, dorsal view; 4, ventral view.
Figs. 5, 6. *Eponides lotus* (Schwager). 5, dorsal view; 6a, ventral view; b, peripheral view.
Figs. 7, 8. *Pulvinulinella obtusa* (Burrows and Holland). 7a, ventral view; b, peripheral view; 8, dorsal view.
Figs. 9, 10. *Globigerina cf. compressa* Plummer. 9, dorsal view; 10, ventral view.
Figs. 11, 12. *Globigerina triloculinaoides* Plummer. 11, dorsal view; 12, ventral view.
Fig. 13. *Globigerina cf. pseudo-bulloides* Plummer. Ventral view.
Figs. 14, 15. *Globberotalia wilcoxensis* Cushman and Ponton. 14, dorsal view; 15a, ventral view; b, peripheral view.
Figs. 16, 17. *Globberotalia wilcoxensis* Cushman and Ponton, var. *acuta* Toulmin. 16a, dorsal view; b, peripheral view; 17, ventral view.
Figs. 18, 19. *Anomalina umbonifera* (Schwager). 18a, dorsal view; b, peripheral view; 19, ventral view.
Fig. 20. *Cibicides blanpiedi* Toulmin. 19, dorsal view; b, peripheral view.
Figs. 21, 22. *Cibicides howelli* Toulmin. 21a, dorsal view; b, peripheral view; 22, ventral view.
Figs. 23, 24. *Cibicides praecursorius* (Schwager). 23, ventral view; 24, dorsal view.
Anomalina umbonifera Cushman and Ponton, Contr. Cushman Lab. Foram. Res., Vol. 8, 1932, p. 72, Pl. 9, Fig. 11.

The types of this species are from the middle Eocene of northern Africa. It occurs in the Wilcox Eocene, Tuscaloosa sand, from one mile N. of Ozark, Alabama. Similar specimens were found in the Bashi material from near Yellow Bluff, Alabama.

Genus CIBICIDES Montfort, 1808.

Cibicides praecursorius (Schwager) (Pl. 2, Figs. 28, 24).

Discorbina praecursoria Schwager, Palaeontographica, Vol. 30, 1883, Pal. Theil, p. 125, Pl. 27(4), Fig. 12; Pl. 29(6), Fig. 16.


This species described from the middle Eocene of northern Africa occurs in the Midway Paleocene and Wilcox Eocene of the southeastern United States. Specimens are fairly common in the Bashi material from near Yellow Bluff, Alabama.

Cibicides blanpiedi Toulmin (Pl. 2, Fig. 20).


The records for this species include the Salt Mountain limestone and the Nanafalia formation of the Wilcox group and the Naheola formation of the Midway group. A single specimen in the Bashi material from near Yellow Bluff, Alabama, seems to belong to this species.

Cibicides howelli Toulmin (Pl. 2, Figs. 21, 22).


Cibicides howelli Toulmin, Journ. Pal., Vol. 15, 1941, p. 609, Pl. 82, Figs. 16-18.—Cushman and Renz, Contr. Cushman Lab. Foram. Res., Vol. 18, 1942, p. 13, Pl. 3, Fig. 10.

This species is recorded from the several formations of the Wilcox Eocene and from the Paleocene of Trinidad. There is a considerable amount of variation in our specimens from the Bashi formation near Yellow Bluff, Alabama, but they seem to form one series.

CUSHMAN LABORATORY FOR FORAMINIFERAL RESEARCH,
90 BROOK ROAD, SHARON, MASSACHUSETTS.