

NOTE ON SOME FORAMINIFERAL SPECIES ENCOUNTERED IN THE WELL SAMPLES OF SOUTHEASTERN TURKEY

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I. INTRODUCTION

This paper describes some characteristic features of the Foraminifera encountered by the author while carrying out the micropaleontological studies of the well samples of the Raman and Garzan oilfields, Southeastern Turkey. In the present paper, our subject is 8 species from Cretaceous and Paleocene horizons of these wells. In the next notes, we will continue to describe the other foraminiferal species encountered in the same levels.

II. SYSTEMATIC DESCRIPTION

Family BULIMINIDAE

Genus *Bolivina* D'Orbigny 1839

Bolivina incrassata Reuss 1851

Pl. I, fig. 1 a, b, c.

1851 Reuss, A. E. — Die Foraminiferen und Entomostraceen des Kreidemergels von Lemberg. *Naturw. Abh., Wien, Österreich, Ba. 4, Abth. 1, p. 45* (Catalogue of Foraminifera).

1927 Cushman, J. A. — Some characteristic Mexican fossil Foraminifera. *Jour. Pal., vol. 1, p. 161, pl. 28, fig. 11.*

1931———The Foraminifera of the Saratoga Chalk. *Jour. Pal., vol. 5, no. 4, p. 310, pl. 35, fig. 17 a-b.*

1932———Foraminifera from the Ripley formation of Western Alabama. *Jour. Pal., vol. 6, p. 281, pl. 41, fig. 21.*

1932 Macfadyen, W. A.— Petrology and the Western Rift of Central Africa. *Geol. Mag., London, vol. 69, p. 497, pl. 35, fig. 19 a-b.*

Figure. — a, front view, b, Side view, c, apertural view.

Description. — Test is elongate, ovate and compressed. Chambers are biserially arranged. The periphery is rounded. Aperture is elongate and extending downward in the, apertural face. Length 0.589 mm., breadth 0.285mm., thickness 0.076 mm.

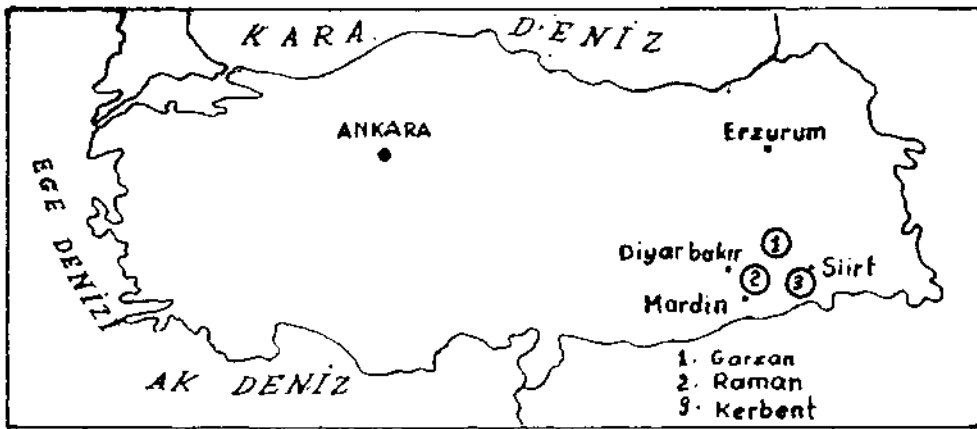
Level. — Upper Cretaceous.

Locality. — Raman well no. 26, (1166-68) m.

Other occurrences :

- Raman 15, (1160-64) (1220-22), (1224-26) m.
- Raman 17, (1076-78) (1200-02), (1220-22) m.
- Raman 22, (1012-16) m.
- Raman 25, (1184-76) (1198-1200) (1230-32) (1240-42) m.
- Raman 26, (1166-68) (1218-20) (1242-44) m.
- Raman 27, (1170-72) (1210-12) m.
- Raman 28, (1122-30) m.
- Garzan 3, (1304-10) (1368-70) (1410-12) m.
- Garzan 4, (1288-92) (1330-32) (1400-02) m.
- Garzan 5, (1400-10) m.
- Garzan 6, (1290-98) (1308-10) (1348-50) (1368-70) m.

Depository of the samples. — M. T. A. Museum.



Sketch-map showing locations of the wells where samples were collected

Genus *Buliminella* Cushman 1911

Buliminella obtusa (D'Orbigny) 1840

Pl. I, fig. 2 a, b.

1840 *Bulimina obtusa* (D'Orbigny) Craie blanche, p. 39, pl. IV, fig. 5-6.

1941 Marie, P. — Les foraminifères de la craie à *Belemnitella mucronata* du bassin de Paris *Mus. National Hist. Nat., Mem., Paris 1941, n. s. tome 12, fasc. 1, p. 199, pl. 30, fig. 290 a-f, 294 a-e.*

1946 Schijfsma — The Foraminifera from the Hervian (Gampian) of Southern Limburg. *Mad. Geol. St., ser. C-V, no. 7, pp. 80-81, pl. 4, fig. 9.*

Figure. — a, apertural view; b, side view.

Description. — Test is ovate or guttiform; about one and a half times as long as broad. Whorls are few and have about four inflated chambers in each whorl.

Wall is finely perforate. Aperture is Y shaped, in a depression of the last-formed chamber. Apertural face is limited at the base of the last lobe by a triangular or rhombic lip. Both sides of the sutures at the last whorl are limited by two narrow and long lips.

Length 0.380 mm., breadth 0.209 mm., thickness 0.288 mm.

Level- — Upper Cretaceous.

Locality. — Raman well no. 17, (1230-32) m.

Other occurrences :

Raman 16, (1408-10) m.

Kerbent (621-651) m.

Depository of the samples. — M. T. A. Museum.

Family HETEROHELICIDAE

Genus *Gümbelina* Egger 1899

Gümbelina plummerae Loetterle 1937

Pl. 1, fig. 3

1937 Loetterle, G. J.— The micropaleontology of the Niobrara formation in Kansas, Nebraska and South Dakota. *Geol. Sun. Bull., Lincoln, Nebr., U. S. A., Ser. 2, no. 12, p. 33.*

1938 Cushman, J. A. — Cretaceous species of *Gümbelina* and related Genera. *Contr. Cushman Lab. Foram. Res., Sharon, Mass., vol. 14, pp. 15-16, pl. 3, figs. 3-5.*

Figure.— Apertural view.

Description. — Test is elongate, V shaped, coiled in the early portion, later biserial, faintly but definitely striate. Chambers are few, large, inflated. The thickness of the chambers in the later portion is greater than the width. Sutures are curved and oblique, somewhat horizontal, depressed and distinct. Aperture is a large, broad arch at the inner margin of the last- formed chamber. Length 0.243 mm., breadth 0.123 mm., thickness 0.095 mm.

Level. — Upper Cretaceous.

Locality. — Raman well no. 25, (1184-86) m.

Other occurrences :

Raman 22, (1012-1016) m.

Kerbent (603-615) (615-621) (651-657) (675-681) (717-723) m.

Depository of the samples. — M.T.A. Museum.

Family GLOBIGERINIDAE

Genus *Globigerina* D'Orbigny 1826

Globigerina pseudobulloides Plummer 1926

Pl. IV, fig. 1, a-b

1927 Plummer, H. J. — Foraminifera of the Midway formation in Texas. *Texas Univ. (Bur. Econ. Geol.), Austin, Texas U. S. A., Bull. no. 2644, p.133-134, pl. 8, fig. 9 a-e.*

Figure. — a, dorsal view; b, ventral view.

Description. — «Test rotaliform, very obtusely trochoid to plane dorsally, composed of about two and one-half convolutions, of which the last consists most generally of 5 (rarely 6) highly ventricose chambers increasing rapidly in size; periphery broadly rounded and lobate; shell wall thin and distinctly punctatej but finely reticulate; superior face bearing a spire of small chambers only very slightly elevated above the chambers of the final whorl; inferior face less convex and with a very distinct, though not large, umbilical depression; aperture a single, lunate opening on the last chamber extending from the margin to the umbilicus.»

Diameter 0.304 mm.

Level. — Paleocene.

Locality. — Raman well no. 26, (780-798) m.

Other occurrences :

Raman 15, (800-1160) m.

Raman 16, (990-1410) m.

Raman 17, (1010-1012) m.

Raman 25, (860-1182) m.

Raman 26, (686-1212) m.

Raman 1, (2125'-2135')

Garzan 2, (860-1300) m.

Garzan 3, (772-1256) m.

Garzan 4, (770- 772) m.

Garzan 5, (940-1310) m.

Garzan 6, (. 750-1294) m.

Hermis 2, (86.5- 121) m.

Depository of the samples. — M.T.A. Museum.

Globigerina triloculinoid.es Plummer 1926

Pl. IV, fig. 2 a-b

1927 Plummer, H. J. — Foraminifera of the Midway formation in Texas. *Texas Univ. Bull., (Bur. Econ. Geol.), Austin, Texas, U. S. A., No. 2644, p. 134-135, pl. 8, fig. 10.*

1936 Jennings, P. H. — A microfauna from the Monmouth and Basal Rancocas group of New Jersey. *Bull. Amer. Pal., Ithaca, N. Y., vol. 23, No. 78, pp. 35-6, pl. 4, fig. 10.*

Figure — a, dorsal view; b, ventral view.

Description. — «Test spiral, trochoid, composed of about two convolutions, the last of which is composed of three and a half very rapidly increasing and highly globose chambers; periphery very broadly rounded and distinctly lobate; shell surface strongly reticulate; superior face rounded with a very low spire of neatly coiled tiny chambers of the preceding whorl; inferior face rounded with

a very shallow umbilical depression; aperture a small arched slit on the last chamber ...»

Diameter 0.304 mm.

Level. — Paleocene.

Locality. — Raman well no. 27, (980-982) m.

Other occurrences :

- Raman 15, (800-1160) m.
- Raman 16, (988-1380) m.
- Raman 17, (830-832) (1010-12) (1076-78) m.
- Raman 25, (800-1380) m.
- Raman 26, (686-1346) m.
- Raman 27, (750-1402) m.
- Raman 1, (2125'-2135')
- Garzan 2, (860-1386) m.
- Garzan 3, (968-1446) m.
- Garzan 4, (1352-1354) m.
- Garzan 5, (770-1474) m.
- Garzan 6, (718-1320) m.
- Garzan 2, 108 m.

Depository of the samples. — M.T.A. Museum.

Family ROTALIIDAE

Genus *Lockhartia* Davies, 1932

Lockhartia ramanae Ten Dam, 1953

Pl. II, fig. 1 a, b, c

1953 Ten Dam, A. — Two new species of the Foraminiferal genus *Lockhartia* from Turkey. *Bull. Geol. Soc. of Turkey*, vol. 4, no. 1, pp. 84-98.

Figure. — *a*, dorsal view; *b*, ventral view; *c*; axial section.

Description. — Dorsal side convex, flatly conical, ventral side slightly convex to almost flat, periphery rounded, marked by a narrow imperforate rim. Dorsal side shows 3-4 whorls with numerous chambers, up to 8-11 in adult specimens. Chambers more or less distinct, not embracing at all. Sutures gently curved backwards. Ventral side shows the chambers of the last whorl. Chambers triangular, near the periphery covered by granules, the umbilicus filled by a few larger pillars, showing as larger granules. Sutures very slightly depressed near the periphery, radial. Wall relatively thick, finely perforate on both dorsal and ventral side, with imperforate zones marking the sutures. Surface on the dorsal side is smooth, and on the ventral side is granulate. Aperture on the ventral side, at the base of the; last formed chambers, and is very difficult to observe.

Diameter 0.828 mm., thickness 0.648 mm.

Level. — Upper Cretaceous.

Locality. — Raman well no. 22, 1340 m.

Depository of the sample. — M. T. A. Museum.

Genus *Eponides* Montfort, 1808

Eponides beisseli Schijfsma, 1946

Pl. III, fig. 1 a, b.

1946 Schijfsma — The Foraminifera from the Hervian (Campanian) of Southern Limburg, p. 84, pl. 4, figs. 13 a-c.

Figure.— a, dorsal view; b, ventral view.

Description.— Test is biconvex, the spiral side is more convex than the umbilical side, the outline is circular. Chambers on the umbilical side are rather distinct, triangular in shape, and only those of the final whorl are visible; this whorl has seven chambers. The chambers are longer than broad on the spiral side. Sutures on the umbilical side are distinct, converging at the center of the test and are perpendicular to the periphery. Sutures on the spiral side are curved backwards and are very oblique to the periphery. Aperture is indistinct, extending from the periphery onto the umbilical side.

EXPLANATION OF PLATES

PLATE - I

- Fig. 1 - *Bolivina incrassata* Reuss, 1851
 a) front view X 105
 b) side view X 105
 c) apertural view X 105
- Fig. 2 - *Buliminella obtusa* (d'Orbigny), 1840
 a) apertural view X 92
 b) side view X 92
- Fig. 3 - *Gumbelina plummerae* Loetterle, 1937
 apertural view X 117

PLATE - II

- Fig. 1 - *Lockhartia ramanae* Ten Dam, 1953
 a) dorsal view X 62
 b) ventral view X 62
 c) axial section X 62

PLATE - III

- Fig. 1 - *Eponides beisseli* Schijfsma, 1946
 a) dorsal view X 80
 b) ventral view X 88
- Fig. 2 - *Spiroplectammina expansa* (Plummer), 1927
 a) side view X 77
 b) apertural view X 36

PLATE - IV

- Fig. 1 - *Globigerina pseudobulloides* Plummer, 1926
 a) dorsal view X 48
 b) ventral view
- Fig. 2 - *Globigerina triloculinooides* Plummer, 1926
 a) dorsal view X 37
 b) ventral view

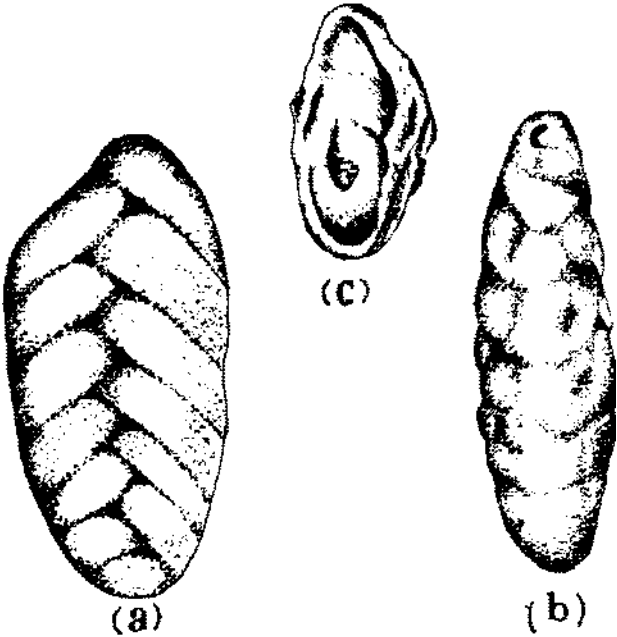


Fig. 1



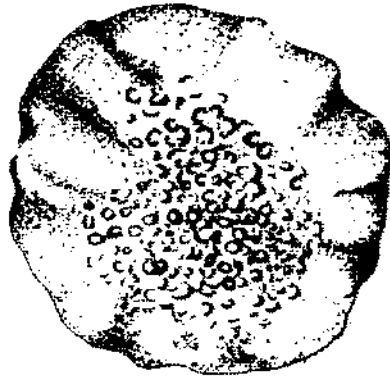
Fig. 2



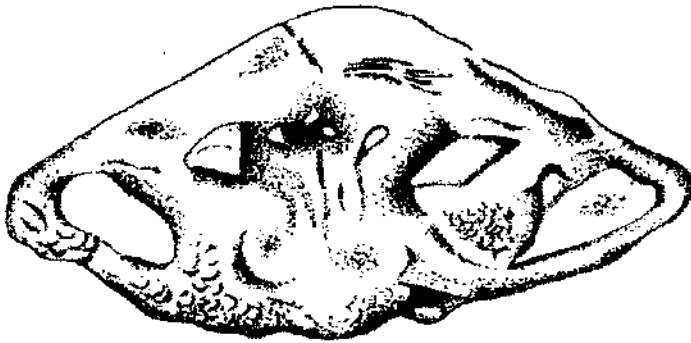
Fig. 3



(a)



(b)

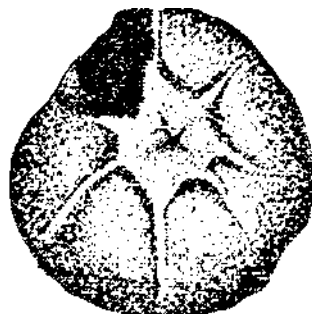


(c)

Fig. 1

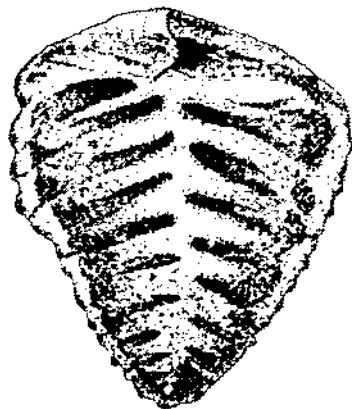


a



b

Fig. 1

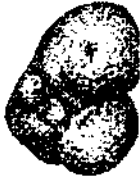


a



b

Fig. 2

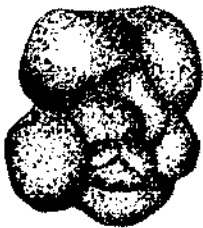


a

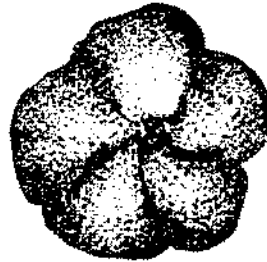


b

Fig. 1



a



b

Fig. 2

Length 0.418 mm., breadth 0.399 mm.

Level. — Upper Cretaceous.

Locality. — Raman well no. 26, (780-798) m.

Other occurrences :

Raman 27, (1100-1102) m.

Kerbent (2180'-2190') (2160'-2170') (2140'-2150')
(2110'-2120') (2250'-2260') (2210'-2220')

Depository of the samples — M. T. A. Museum.

Family TEXTULARIIDAE

Genus *Spirolectamina* Gushman 1927

Spirolectamina expansa (Plummer) 1927

Pl. III, fig. 2 a,b.

1927 *Textularia carinata* var. *expansa* Plummer — Foraminifera of the Midway formation in Texas. *Texas Univ. Bull., Austin, Texas, U. S. A., No. 2644, p. 67.*

1941 *Spirolectamina expansa* (Plummer), Le Roy, L. W. — Small Foraminifera from the late Tertiary of the Netherlands East Indies; part 2 - Small Foraminifera from the late Tertiary of Siberoet Island, off west coast of Sumatra, Netherlands East Indies. *Colorado School of Mines, Quart., Golden, Colo., vol. 36, No. 1, p. 69.*

Figure- — a, side view; b, apertural view.

Description. — Test subtriangular in outline, broad, nearly as broad as long; margin sharply angular but unflanged, somewhat lobate. Chambers are compressed, broad and numerous. Sutures are strongly limbate towards the axis of the test and tapering toward the margins. Shell surface is finely arenaceous, sutures more coarsely arenaceous than the chambers. Aperture is a distinctly arched opening in a depression at the base of the septal face.

Length 0.266 mm., breadth 0.171 mm.

Level. — Paleocene.

Locality. — Garzan well no. 6 (1058-1060) m.

Other occurrences :

Garzan 2, (910-912) (920-922) (930-932) (1306-08) m

Garzan 3, (926-928) (962-964) m.

Raman 16, (910-912) (920-922) (930-932) (1306-08) m.

Hermis 1, 120'125', 20'30', 90'95', 70'75',

Hermis 2, (6-7) (1-2) m.

Depository of the samples. — M. T. A. Museum.

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- (1931) : The Foraminifera of the Saratoga Chalk. *Jour. Pal.* vol. 5, no. 4, pp. 297-315, pl. 35, fig. 17 a-b.
- (1932) : Foraminifera from the Ripley Formation of Western Alabama. *Jour. Pal.* vol. 6, p. 281, pl. 41, fig. 21.
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