

OBSERVATIONS ON A FAUNA OF FORAMINIFERA FROM MONTIAN BEDS IN TURKEY

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ABSTRACT.—The samples with *Laffitteina* collected from the different parts of Anatolia have been studied and their descriptions are given. Among these, two new species *Laffitteina boluensis* and *Laffitteina* cf. *bibensis* A form, have been detected and it is estimated that these together with the other fossils belong to the Montian.

THIS is a preliminary note concerning a recent discovery, the presence of the genus *Laffitteina* in Anatolia. As I am preparing to visit the different localities in question I hope to make a more comprehensive study which will subsequently give more details about the mode of occurrence as well as the probable affinities of the species.



The material on which this paper is based comes from different localities in Anatolia (Turkey). These beds are indicated in the accompanying sketch-map.

The Montian outcrops in Turkey contain, at numerous localities, many samples of *Laffitteina*, which are quite different in their external form, but as to their internal characteristics they are fairly similar and so take their positions under the same group of which *L. bibensis* Marie is the principal type.

The Montian strata of Turkey contain the following forms :

- Laffitteina* cf. *bibensis* Marie (B form)
- „ cf. *bibensis* sp. (A form)
- „ *boluensis* sp. nov.
- „ cf. *monodi* Marie
- „ sp.
- Miscellanea miscella* d'Arch.
- Operculina* sp.
- Rotalia* cf. *trichiformis* Lamarck.

Valvulina triangularis d'Orb.
Valvulina sp.
Clavulina sp.
Globorotalia sp.
Planorbulina sp.
Sigmoilina sp.
Sigmomorphina sp.
Miliola, *Idalina* sp.
Biloculina, *Triloculina*, *Quinqueloculina*,
Textularia sp.
Ammobaculites sp.

A certain number of ostracoda, fragments of lamellibranchia, Dasycladaceae, Bryozoa and of Melobesia accompany this fauna.

As this fauna is found in beds with *Rotalia* cf. *trichidiformis* (Lmk) *Valvulina triangularis* d'Orb., *Planorbulina* etc., we have to attribute it to the Montian (Lower Palaeocene) stage, rather than the Danian (or uppermost Cretaceous). Besides, this is superimposed by layers rich in Orbitoides, and in some cases they are succeeded by layers containing Nummulites of Thanetian age.

Family ROTALIIDAE

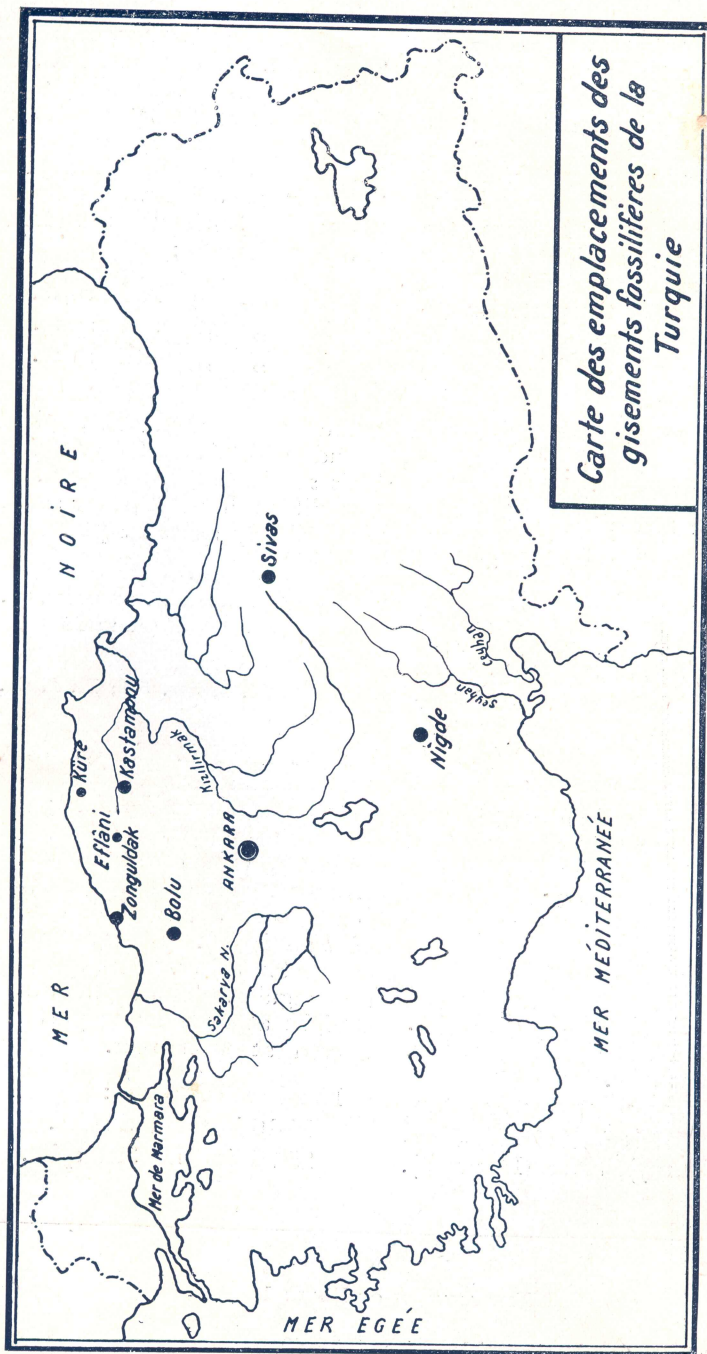
Genus LAFFITTEINA Marie, 1945.

LAFFITTEINA BOLUENSIS, sp. nov.

Pl. 2, figs. 3-8.

Locality : Bolu

The test is a spiral plane, slightly lenticular, with blunt or rounded edges. Diameter varies between 0.80 and 1.27 mm. ; thickness 0.30-0.55 mm. Specimens generally exhibit a slightly swollen surface, with



Carte des emplacements des
gisements fossilifères de la
Turquie

Text-Fig. 1

a distinct central mamelon, from which straight lines radiate outward. The surface is furthermore perforated by a multitude of larger circular holes, uniformly distributed on the whole surface; while on the reverse side, which is irregularly flattened, there appears a loosely spiral plate and numerous septa. On an equatorial section, one counts 3.5 spires. The apical spire is loose, the septa are regular, close, straight on their lower parts, and regularly curved towards the rear, on two thirds of the posterior extremities.

Number of septa :

13 in the 2nd spire.
20 in the 3rd spire.

Height of the spiral canal :

0.11 mm. in the 2nd spire.
0.19 mm. in the 3rd spire.

The initial chamber is rounded and of 0.06mm. diameter.

This new species somewhat resembles *L. monodi* Marie (1954) (p. 433, figs. 4-13 and 17-23). It differs from the latter in its equatorial section which is less loose, and by its more compact septa. It also reminds one of *L. Vanbelleni* Grimsdale (1952) (p. 232, pl. 22, figs. 3-11) with its loose spire, but differs from it by its more numerous spires, as well as by its surface.

LAFFITTEINA cf. *BIBENSIS* Marie
(Form B)

Pl. 1, figs. 1-4, Pl. 2, fig. 1.

1945, *Laffitteina bibensis* Marie, *Bull. Soc. Geol. France*, p. 430, Pl. I, figs. 1-6, t. figs. 1-3, 14-16, Ser 5, vol. xv.

Localities : Zonguldak (Yenice-Eflani), Bolu, Kastamonu (Daday), Ankara (Haymana), Nigde (Aksaray), Sivas (Mamuga).

This form is lenticular, with rounded edges, its diameter varies between 1.25 and 2.20 mm., thickness between 0.55 and 0.60 mm. The equatorial section exhibits 4 spires on a diameter of 1.50 mm. The spiral plate is thick, the septa quite close, though their lower parts being almost straight they are curved inwards toward the rear at their junction; the following gives number of septa :

14 in the 2nd spire.
25 „ „ 3rd spire.
30 „ „ 4th spire.

The height of the chambers is very much greater than width. The initial chamber is round with 0.06 to 0.07 mm. diameter. This species is very near to *L. bibensis* Marie, but differs from it in its small size and its more closely spaced septa.

LAFFITTEINA cf. *BIBENSIS*, sp. nov.
(Form A)

Pl. 1, figs. 5-6; Pl. 2, fig. 2.

Form A of *L. cf. bibensis*, which comes from the same locality, is much less abundant in comparison to form B; of smaller size, it varies between 1.08 and 2.00 mm. in diameter, and has a thickness of 0.60 to 0.75 mm. The external as well as internal characteristics are similar to those of *L. cf. bibensis* (B). In equatorial section, one counts 3.5 spires. The spiral plate is thick and regular. The septa are regular, close, straight at their lower parts and regularly curved at their rear.

Number of septa :

14-16 in the 2nd spire.
25-26 in the 3rd spire.

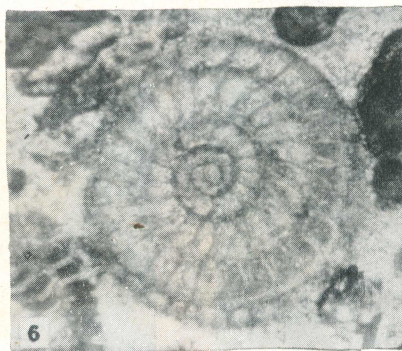
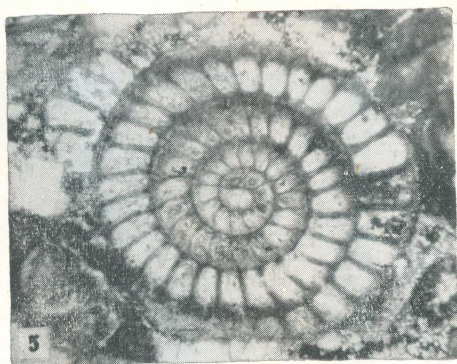
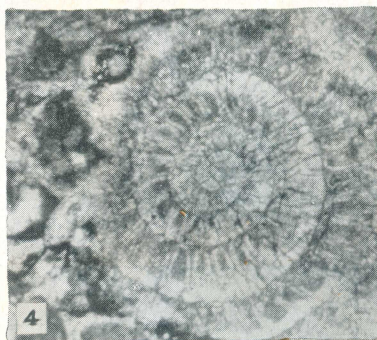
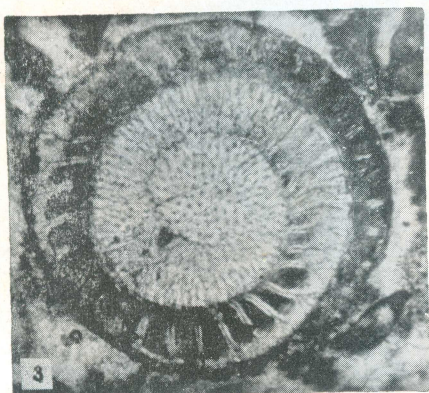
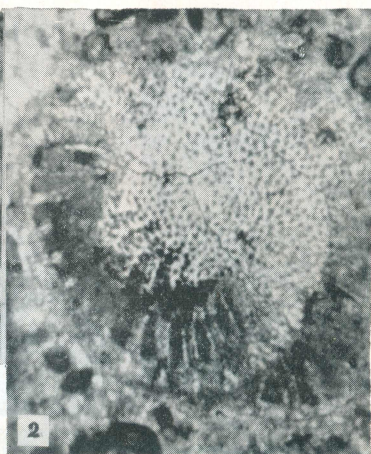
EXPLANATION OF PLATE 1

FIG. 1—*Laffitteina* cf. *bibensis* Marie, axial section, (B), x40.

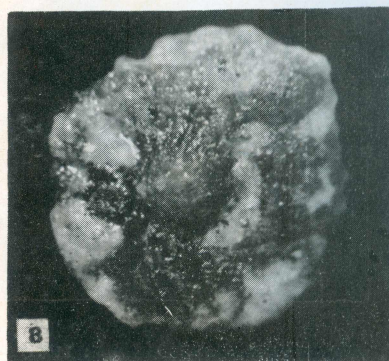
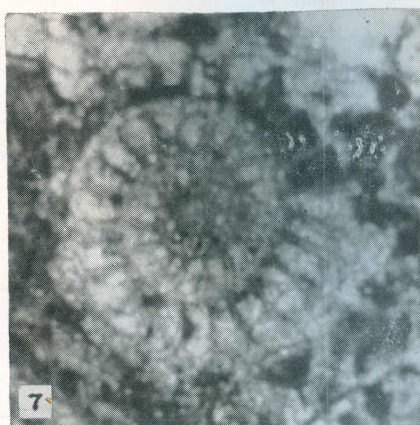
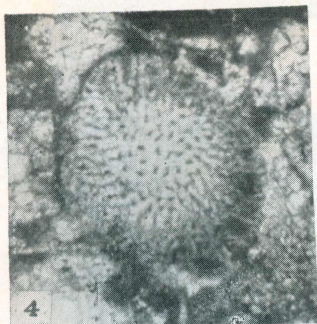
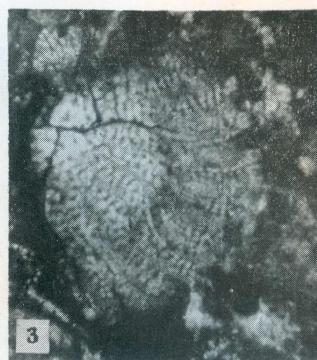
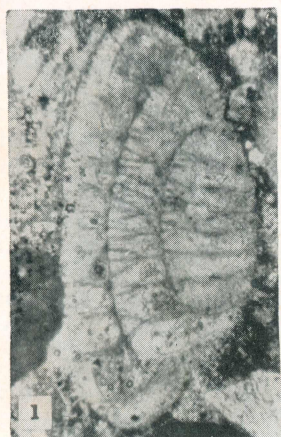
2-3 „ „ cf. *bibensis* Marie, surface, (B), x30.

4 „ „ cf. *bibensis* Marie, equatorial section, (B), x30.

5-6 „ „ cf. *bibensis* sp. nov. equatorial section, (A), x40.



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The initial chamber is double, one being larger, 0.06 mm. the other rather smaller, 0.04 mm.

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EXPLANATION OF PLATE 2

- FIG.—1 *Laffitteina* cf. *bibensis* Marie, axial section, (B), x30.
- 2 „ cf. *bibensis* sp., nov. axial section, (A), x30.
- 3-4 „ *boluensis* sp., nov. surface, x30.
- 5 „ *boluensis* sp., nov. axial section, x30.
- 6 „ *boluensis* sp., nov. axial section, x40.
- 7 „ *boluensis* sp., nov. equatorial section, x40.
- 8 „ *boluensis* sp., nov. surface, x40.
- 9 „ sp., axial section, x40.
- 10 „ sp., equatorial section, x40.