Description Of Sivasella N. Gen, (Foraminifera) From The Maestrichtian Of Sivas (Central Turkey)

Sivas Maestrihtiyen’indehi Sivasella n. gen. (Foraminifera) cinsinin tanımı verilmiştir.

ABSTRACT: Description of Sivasella monolaterali» n. gen. n. sp. in Maestrichtian of Şarkışla (SW Sivas) region is given.

ÖZI Şarkışla (GB Sivas) bölgesi Maestrihtiyen’inde bulunan Sivaella monolateralis n. gen, n. sp/in tanımı veril-miştir.
INTRODUCTION

This new genus of the family Orbitoididae has been discovered in the hard sandy limestone. The sample has been collected by Siyami Ösiër from the Maestrichtian of Şarkıgla (SW Sivas) (figure 1). Investigated sandy limestone sample was very hard, for this reason it was not possible to obtain free individuals. The present study is based on the examination of 54 thin sections.

The specimens are deposited at the Paleontological section of Mineral Research and Exploration Institute of Turkey, Ankara.

SYSTEMATIC STUDY

Order: FORAMINIFERIDA, Eichwald 1830
Family: ORBITOIDIDAE, Schwager 1876
Genus: SIVASELLA n. gen.
Type species Sivasella monolateralis n. gen. n. sp.

Diagnosis

Test free, low conical, concave-convex in shape, the one side of the test with hyaline filling material, the other side with lateral chambers, wall imperforate hyaline calcareous, equatorial and lateral chambers arcuate in shape, average diameter 0.94 mm, dimorphism present.

Description

Test free, low conical, concave-convex and rather small. Diameter is 0.72-1.32 mm, central thickness (height) is about 0.33 mm. Structure of the wall is imperforate hyaline calcareous. The surface of the one side of the test is covered by the filling material. The structure of the filling material is pure hyaline calcareous. Its thickness decreases from center to periphery. In the other side of the test is observed lateral chambers, their shape is arcuate. Embryonic apparatus of the macrospheric forms are very large and possibly bilocular as the Hellenocyclina apparatus (Dupeuble, Neumann, Villain, 1972). They are surrounded by thick imperforate wall. The equatorial chambers which round the embryonic apparatus are arcuate and the chamber's communications are made by stolons (figure 2).

Comparison and Remarks

Because of the similarities of embryonic apparatus and stolons, this new genus is placed in family Orbitoididae. This new genus resembles to Hellenocyclina (Reichel 1949) by its embryonic chambers and stolons but it clearly from differs it by having lateral chambers.

Stratigraphic occurrence

Maestrichtian of Sivas (Central Turkey).
Sivasella monolateralis cap.
(plate I, figure 1-10; plate II, figure 1-8; plate III, figure 1-8).

Derivatio-nominis: Sivas, a city from the central Turkey.
Holotype: (Si. 3), plate I, figure 3.
Palatype: (Si. 2, 6, 7, 8, 9, 10, 12, 15, 18, 19, 23, 25), plate I, figure 2, 6-10; plate II, figure 2, 5, 8; plate III, figure 1, 5, 7.
Material: 50 specimens in the hard sandy limestone.
Type locality: Kigla village, South east of Şarkıgla (SW Sivas).
Type level: Maestrichtian.

Description

Microspheric Form.
External characters. Test is free, low conical, concave-convex.
Structure of the wall is imperforate hyaline calcareous.
Measurements (mm, in 20 specimens)

<table>
<thead>
<tr>
<th></th>
<th>Maximum</th>
<th>Minimum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>1.62</td>
<td>0.87</td>
<td>1.19</td>
</tr>
<tr>
<td>Thickness of the filling material</td>
<td>0.064</td>
<td>0.066</td>
<td>0.064</td>
</tr>
<tr>
<td>Central thickness with filling material</td>
<td>0.34</td>
<td>0.24</td>
<td>0.30</td>
</tr>
<tr>
<td>Central thickness without the filling material</td>
<td>0.29</td>
<td>0.19</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Figure 2: Schematic drawings of Sivasella monolateralis n. gen. n. sp. (Si. 27), Showing equatorial chambers and stolons, X 100
Şekil 2: Sivasella monolateralis n. gen. n. sp. nin ekvatorial lokalınları ve stolonlarının gösteren şematik çizimi, (Si. 27), X 100
DESCRIPTION OF SIVASELLA, N. GEN. (FORAMINIFERA)

Diameter/height ratio varies between 3.6-4.8 (diameter, thickness of the filling material, and the central thickness is shown in figure 3).

Axial section. This section is very characteristic and important for the new genus. Because, the genus can be distinguished very easily from the other genera by its axial section. Internal texture of the microspheric forms are more delicate than the macrospheric forms. One side of the test is covered by the filling material. The structure of the filling material is pure hyaline calcareous and its thickness decreases from center to periphery. Embryonic chambers are very small, subspheric in shape. Their average diameter is about 56 µ, sometimes they can be seen double (plate I, figure 9) its diameter is about 24X36 µ. Equatorial chambers can be observed at the basal part of the filling material and they are arranged from center to periphery along the filling material. Their shape is arcuate as the Orbitoides chambers. In the second side of the test there are many lateral chambers which are arranged very irregularly. They are not well visible in our samples, therefore it was not possible to obtain the relationship between those lateral chambers and the equatorial chambers. The shape of the equatorial chambers are arcuate.

Equatorial section. Embryonic chambers cannot be observed in the equatorial section of the microspheric form but equatorial chambers are arcuate as the Orbitoides chambers. Chamber's communications are made by stolons.

Macrospheric form.

External characters. Test is free, low conical, concavo-convex. Structure of the wall is imperforate hyaline calcareous. They are found rather abundant as they are compared to the microspheric forms.

Measurements (mm, in 20 specimens)

<table>
<thead>
<tr>
<th></th>
<th>Maximum</th>
<th>Minimum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>1.03</td>
<td>0.67</td>
<td>0.69</td>
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<tr>
<td>Thickness of the filling material</td>
<td>0.10</td>
<td>0.09</td>
<td>0.07</td>
</tr>
<tr>
<td>Central thickness with filling material (height)</td>
<td>0.33</td>
<td>0.18</td>
<td>0.26</td>
</tr>
<tr>
<td>Central thickness without the filling material</td>
<td>0.25</td>
<td>0.12</td>
<td>0.19</td>
</tr>
<tr>
<td>Diameter/height ratio varies between 2.7 - 3.1.</td>
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</tr>
</tbody>
</table>

Axial section. Embryonic chambers are generally single and subspheric in shape. Its diameter is about 35 µ.

The other characters of the macrospheric form are the same of the microspheric form.

Equatorial section. Embryonic apparatus of the macrospheric form of Sivasella monolateralis n. sp. is very large and possibly bilocular without periembryonic chamber. Diameter of the embryonic chambers are 23X30X35 µ. They are surrounded by 12 µ thick imperforate wall. Equatorial chambers are arcuate with stolons, the equatorial chamber's communications are made by stolons (figure 2).

Association.

This new species has been found in hard sandy limestone with a rich foraminifera composed of Siderolites caL citropoides Lamarck, Orbitoides cf. medius (d'Arch.), Lepidorbitoides sp., Oniphalocyclus sp., Sıücoperculina sp., Globostruncana sp..

Acknowledgement

The Authors would like to express sincere thanks to Mrs. M. Neumann, Mr. J. Sigal and Mr. O. Bignot for their valuable comments.

CITED REFERENCES


Yayına geldiği tarih: 7.6.1977
Düzeltmiş yazının geldiği tarih: 1.12.1977
Yayma verildiği tarih: 1.12.1977
PLATE I
Sivasella monolateralis n. gen. n. sp.

Figure 1: Subaxial section, macropheric form, (Si. 1), X 102
Figure 2: Axial section, micropheric form, paratype, (Si. 2), X 55
Figure 8: Axial section, macropheric form, holotype, (Si. 3), X 148
Figure 4: Subaxial section, micropheric form, (Si. 4), X 70
Figure B: Subaxial section, micropheric form, (Si. 5), X 50
Figure 6: Axial section, macropheric form, paratype, (Si. 6), X 90
Figure 7: Axial section, macropheric form, paratype, (Si. 7), X 106
Figure 8: Axial section, micropheric form, paratype, (Si. 8), X 91
Figure 9: Axial section, micropheric form, paratype, (Si. 9), X 58
Figure 10: Axial section, macropheric form, paratype, (Si. 10), X 106

LEVHA I
Sivasella monolateralis n. gen. n. sp.

Şekil 1: Eksene yakın bir düzlemden geçen kesit, makrosiferik şekil, (Si. 1), X 102
Şekil 2: Eksenel kesit, mikrosiferik şekil, paratip, (Si. 2), X 55
Şekil 3: Eksenel kesit, makrosiferik Şekil, holotip, (Si. 8), X 148
Şekil 4: Eksene yakın bir düzlemden geçen kesit, mikroBİferik şekil, (Si. 4), X 70
Şekil 6: Eksene yakın bir düzlemden geçen kesit, mikrosiferik şekil, (Si. 5), X 60
Şekil 6: Eksene kesit, makrosiferik kesit, paratip, (Si. 6), X 90
Şekil 7: Eksenel kesit, mikrosiferik şekil, paratip, (Si. 7), X 106
Şekil 8: Eksenel kesit, mikrosiferik şekil, paratip, (Si. 8), X 91
Şekil 9: Eksenel kesit, mikrosiferik şekil, paratip, (Si. 9), X 53
Şekil 10: Eksenel kesit, makrosiferik şekil, paratip, (Si. 10), X 106
PI-AXE II
Sivasella moiolatoris n. gen. n. sp.

Figure 1: Subequatorial section, slightly oblique, microspheric form, (Si. 11), X 79
Figure 2: Subequatorial section, slightly oblique, macroospheric form, paratype, (Si. 12), X 187
Figure 3: Subaxial section, (Si. 13), X 47
Figure 4: Sandy limestone with Sivasella monolateralis n. sp., (Si. 14), X 57
Figure 5: Axial section, macroospheric form, paratype, (Si. 15), X 73
Figure 6: Subaxial section, microspheric form, (Si. 16), X 66
Figure 7: Subequatorial section, slightly oblique, macroospheric form, (Si. 17), X 170
Figure 8: Kquatorial section, macroospheric form, paratype, (Si. 18), X 128

LEVHA II
Sivasella monolateralis n. gen. n. sp.

Şekil 1: Hafifçe eğik subekvatoryal kesit, mikrosiferik şekil, (Si. 11), X 79
Şekil 2: Hafifçe eğik subekvatoryal kesit, makrosiferik şekil, paratip, (Si. 12), X 187
Şekil 3: Eksene yakın bir düzlemden geçen kesit, (Si. 13), X 47
Şekil 4: Sivasella monolateralis n. sp. 11 kumlu kireçtaşı, (Si. 14), X 57
Şekil 5: Ekseni kesit, makrosiferik geldi, paratip, (Si. 15), X 73
Şekil 6: Eksene yakın bir düzlemden geçen kesit, mikrosiferik gekil, (si. 16), X 66
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Figure 1: Embryonic apparatus, macrospheric form, paratype, (Si. 19), X 197
Figure 2: Axial section, macrospheric form, (Si. 20), X 137
Figure 3: Axial section, macrospheric form, (Si. 21), X 120
Figure 4: Subequatorial section, slightly oblique, macrospheric form, (Si. 22), X 143
Figure 5: Axial section, macrospheric form, paratype, (Si. 23), X 82
Figure 6: Sandy limestone with Orbitoides and Sivasella monolateralis n. sp. (Si. 24), X 22
Figure 7: Embryonic apparatus, macrospheric form, paratype, (Si. 26), X 103
Figure 8: Axial section, microspheric form, (Si. 26), X 61

LEVHA III

Sivasella monolateralis n. gen. n. sp.