

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

Sivas Maestrihtiyen'indehi Sivasella n. gen. (Foraminifera) cinsinin tammt

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

ÖZü Şarkışla (GB Sivas) bölgesi Maestrihtiyen'inde bulunan Sivaella monolateralis n. gen, n. sp/in tanımı verilmiştir.

INTRODUCTION

This new genus of the family Orbitoididae has been discovered in the hard sandy limestone. The sample has been collected by Siyamı ösler 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, concava-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, concava-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

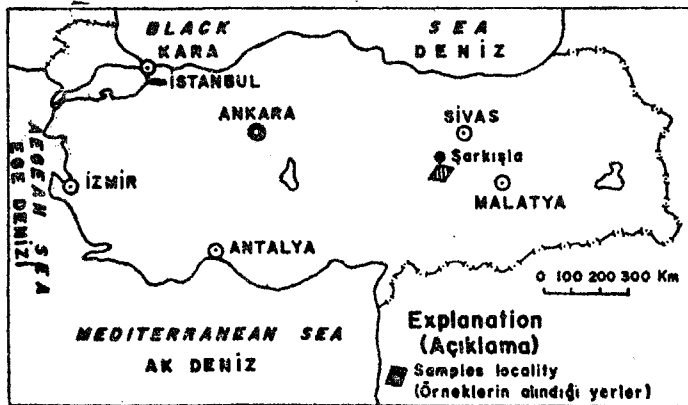


Figure 1: Location map.

Şekil 1: Yer bulduru haritası

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, concava-convex.

Structure of the wall is imperforate hyaline calcareous.

Measurements (mm, in 20 specimens)

	Maximum	Minumum	Average
Diameter	1,62	0,87	1,19
Thickness of the filling material	0,084	0,036	0,054
Central thickness with filling material (height)	0,34	0,24	0,30
Central thickness without the filling material	0,29	0,19	0,23

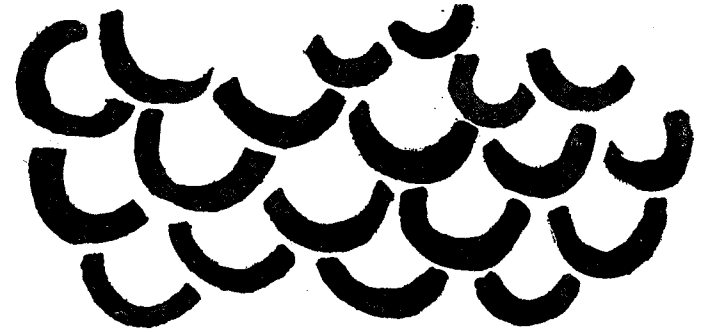


Figure 2: Schematic drawings of *Sivasella monolateralis* n. gen. n. sp. (Si. 27), Showing equatorial chambers and stolons, X 166

Şekil 2: *Sivasella monolateralis* n. gen. n. sp. nin ekvatoryal localarını ve stolonlarını gösteren şematik çizimi, (Si. 27), X 166

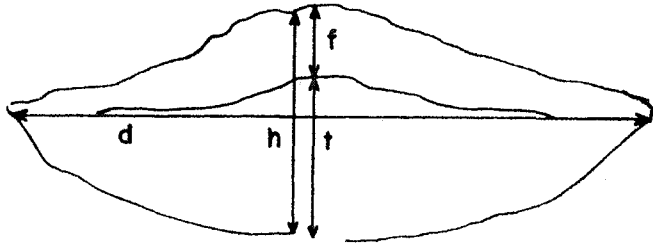
Diameter/height ratio varies between 3,6-4,8 (diameter, thickness of the filling material, and the central thickness is shown in figure 3).

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 56μ , sometimes they can be seen double (plate I, figure 9) its diameter is about $24 \times 36 \mu$. 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 cal-



d = Diameter (Çap)

f = Thickness of the filling material
(Dolgu maddesinin kalınlığı)

h = Central thickness with filling material
(Dolgu maddesi ile birlikte merkezi kalınlık)

t = Central thickness without the filling material
(Dolgu maddesiz merkezi kalınlık)

Figure 3: Schematic picture of the diameter, thickness of the filling material, central thickness with filling material and central thickness without the filling material of *Sivasella monolateralis* n. gen. n. sp.

Sekil 3: *Sivasella monolateralis* n. gen. n. sp. nin çapını, dolgu maddesinin kalınlığını, dolgu maddesi ile birlikte merkezi kalınlığını gösteren şematik resim.

careous. They are found rather abundant as they are compared to the microspheric forms.

Measurements (mm, in 20 specimens)

	Maximum	Minimum	Average
Diameter	1,03	0,57	0,69
Thickness of the filling material	0,10	0,09	0,07
Central thickness with filling material (height)	0,33	0,18	0,26
Central thickness without the filling material	0,25	0,12	0,19

Diameter/height ratio varies between 2,7 - 3,1.

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

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 perieembryonic chamber. Diameter of the embryonic chambers are $23 \times 30 \times 35 \mu$. They are surrounded by 12μ 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 calcitrapoides* Lamarck, *Orbitoides* cf. *medius* (d'Arch.), *Lepidorbitoides* sp., *Oniphalocyclus* sp., *Süocoperulina* sp.

Globotruncana 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

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- Reichel, M., 1949, Sur un nouvel Orbitoide du Cretace superieur MI lenique: *Ecloga Geol. Helv.*, 42, 2, 480-485.

Yanının geldiği tarih:
7.6.1977

Düzeltilmiş yazının geldiği tarih:
1.12.1977

Yayıma verildiği tarih:
1.12.1977

PLATE I

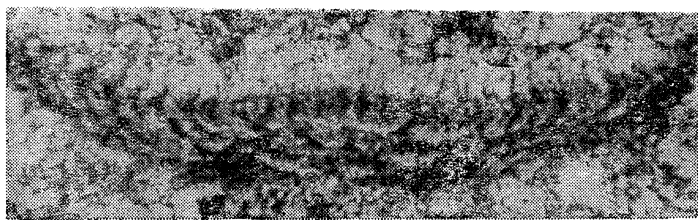
Sivasella monolateralis n. gen. n.sp.

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

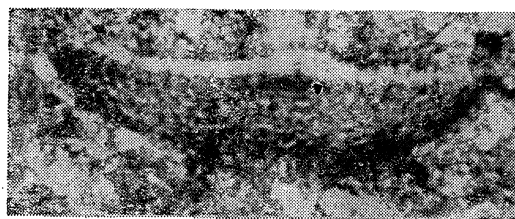
LEVHA I

Sivasella monolateralis n. gen. n. sp.

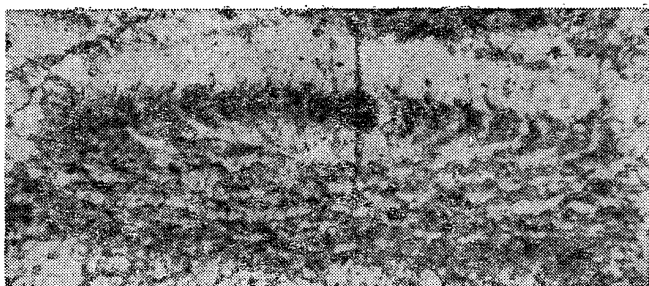
- Şekil 1: Eksene yakın bir düzlemden geçen kesit, makrosferik şekil, (Si. 1), X 102
gekil 2: Eksenel kesit, mikrosferik şekil, paratip, (Si. 2), X 55
Şekil 3: Eksenel kesit, makrosferik şekil, holotip, (Si. 8), X 148
Şekil 4: Eksene yakın bir düzlemden geçen kesit, mikrosferik şekil, (Si. 4), X 70
Şekil 6: Eksene yakın bir düzlemden geçen kesit, mikrosferik şekil, (Si. 5), X 60
Şekil 6: Eksene yakın bir düzlemden geçen kesit, makrosferik şekil, paratip, (Si. 6), X 90
gekil 7: Eksenel kesit, makrosferik şekil, paratip, (Si. 7), X 106
Şekil 8: Eksenel kesit, mikrosferik şekil, paratip, (Si. 8), X 91
gekil 9: Eksenel kesit, mikrosferik şekil, paratip, (Si. 9), X 53
Şekil 10: Eksenel kesit, makrosferik şekil, paratip, (Si. 10), X 106



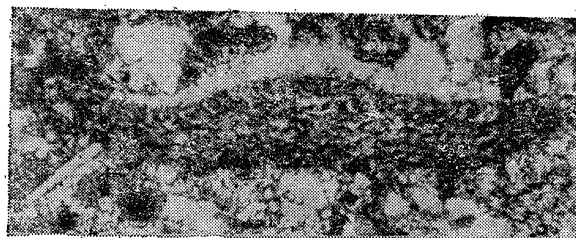
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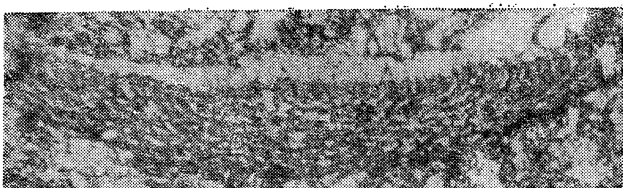
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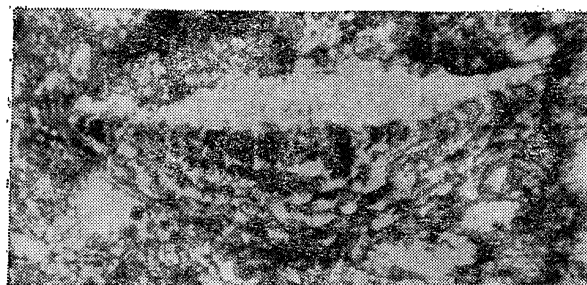
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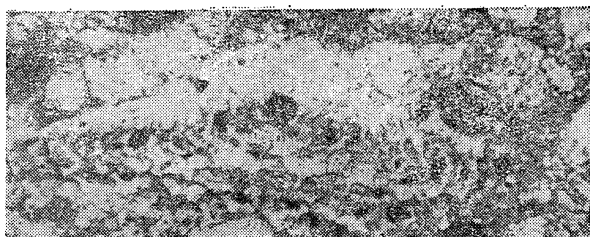
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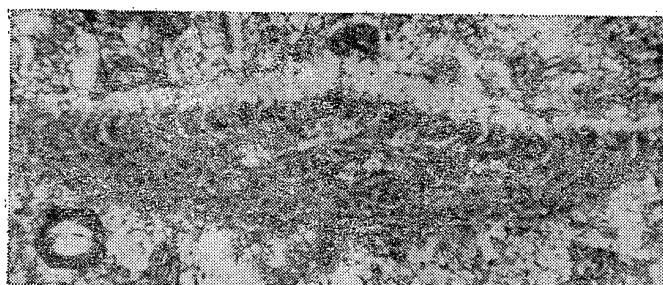
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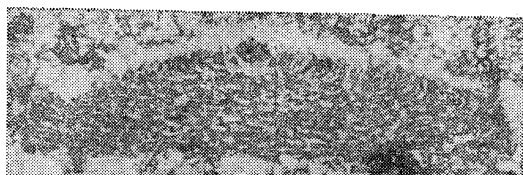
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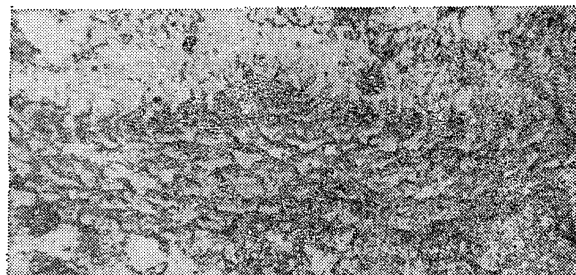
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PI-AXE II

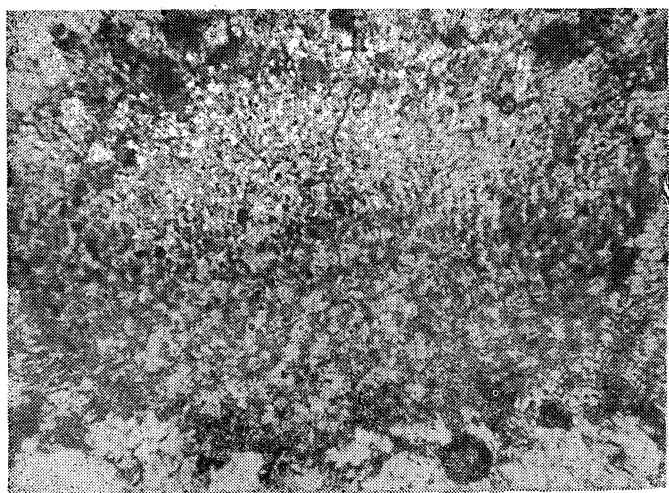
Sivasella moiolator n. gen. n. sp.

- Figure 1: Subequatorial section, slightly oblique, microspheric form, (Si. 11), X 79
 Figure 2: Subequatorial section, slightly oblique, macrospheric form, paratype, (Si. 12), X 157
 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, macrospheric form, paratype, (Si. 15), X 73
 Figure 6: Subaxial section, microspheric form, (Si. 16), X 66
 Figure 7: Subequatorial section, slightly oblique, macrospheric form, (Si. 17), X 170
 Figure 8: Equatorial section, macrospheric form, paratype, (Si. 18), X 128

LEVHA II

Sivasella monolateralis n. gen. n. sp.

- Şekil 1: Hafifçe eğik subekvatoryal kesit, mikrosferik şekil, (Si. 11), X 79
 şekli 2: Hafifçe eğik subekvatoryal kesit, makrosferik 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 B7
 şekil 5: Eksenel kesit, makrosferik şekli, paratip, (Si. 15), X 73
 Şekil 6: Eksene yakın bir düzlemden geçen kesit, mikrosferik şekil, (sı, 16), x 66
 şekil 7: Hafifçe eğik subekvatoryal kesit, makrosferik şekil, (Si. 17), X 170
 Şekil 8: Ekvatoryal kesit, makrosferik şekil, paratip, (Si. 18), X 128



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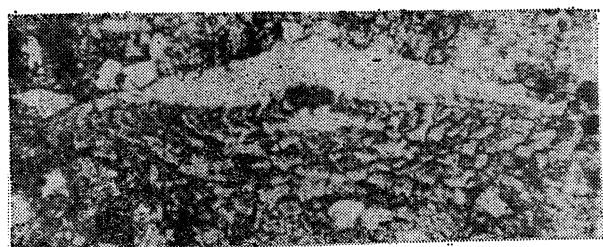
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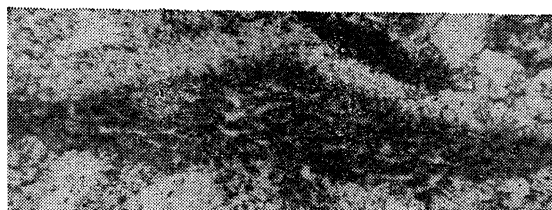
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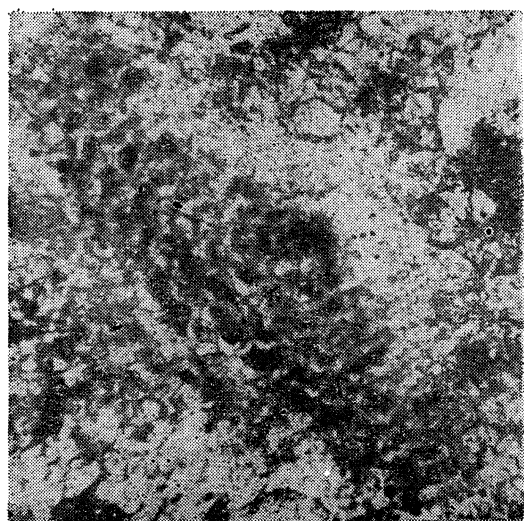
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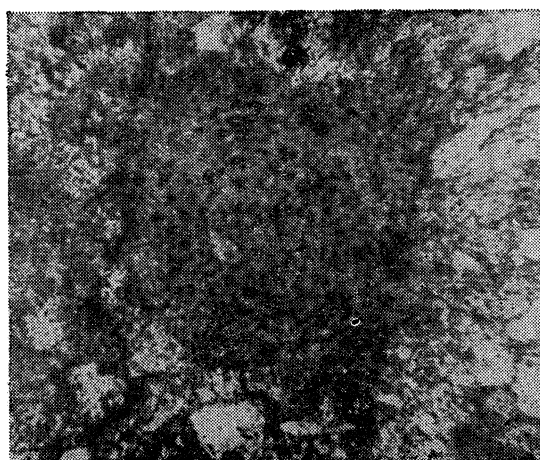
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PLATE III**»ivasella monolateralis n. gen. n. sp.**

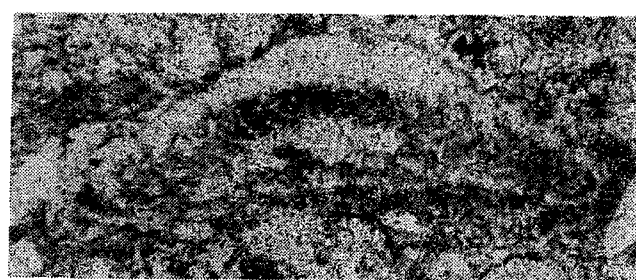
- Figure 1: Embryonic apparatus, macrospheric form, paratype, (Si. 19), X 197
 Figure 2: Axial section, macrospheric form, (Si. 20), X 137
 Figure 3: Axial section, macrospheric form, (Si. 21), X 120
 Figure 4: Subequatorial section, slightly oblique, macrospheric form, (Si. 22), X 143
 Figure 5: Axial 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.**

- Sekil 1: Üs locaH embiryonik cihaz, makrosiferik gekil, paratip, (Si. 19), X 197
 gekil 2; Eksenel kesit, makrosiferik gekil, (Si. 20), X 137
 Sekil 3: Eksenel kesit .makrosiferik sekil, (Si. 21), X 120
 gekil 4: Hafifçe eğik subekvatoryal kesit, makrosiferik gekil, (Si. 22), X 143
 Şekil 6: Eksenel kesit, makrosiferik gekil, paratip, (Si. 23), X 82
 gekil 6: Sivasella monolateralis n. sp. ve Orbitoides'li kumlu kireçtaşı, (Si. 24), X 22
 gekil 7: Embiryonik cihaz, makrosiferik sekil, paratip, (Si. 25), X 103
 Şekil 8: Eksenel kesit, mikrosiferik gekil, parotip, (Si. 26), X 61



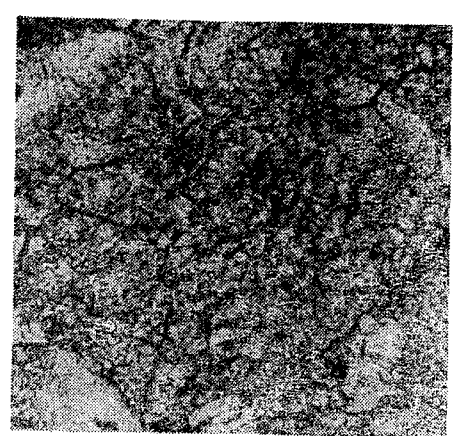
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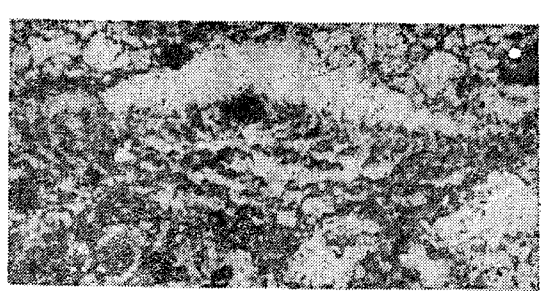
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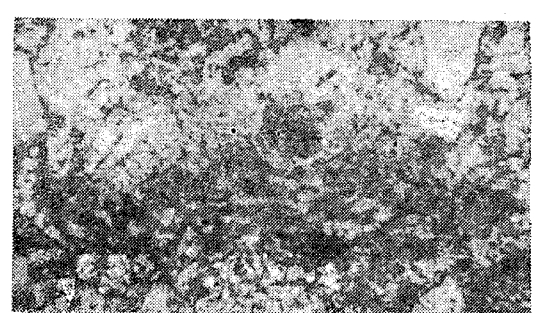
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