VANIA, A NEW FORAMINIFERAL GENUS FROM THE THANATIAN OF THE VAN REGION (EAST TURKEY)

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ABSTRACT. — A new genus of annular and aggluttinated larger Foraminifera *Vania* n.gen. (type *Vania anatolica* n.gen. n.sp.) from the neritic Thanatian of Van region (E Turkey) is described and figured. This new form, which belongs to the family Dicyclinidae Loeblich and Tappan, occurs also in the Thanatian of the Ankara, Sivas (Central Turkey), Malatya (E Turkey), Bolkar mountains (Central Taurus belt) and Hakkari (SE Turkey). The differences with the other genera showing comparable structures are discussed.

INTRODUCTION

A new Thanatian foraminifer which is found in the allochthonous limestone of Saray village to the north east of Van (Fig. 1) is described and discussed in this paper. When the species of the *Foraminifera* which were found in the same region described in Sirel et al. (1983) this newly defined genus had been figured and described under the name *Broeckinella* aff. *arabica* Henson in the above publication. However, the recent studies on this aggluttinated discoidal foraminifer from the specimens collected from the same locality following several visits by the authors, have shown that two alternating rows of apertures at the periphery of this discoidal foraminifer of the free samples are present.

In 1978 Cherchi and Schroeder made the revision of the holotype of the *Broeckinella arabica* Henson from Qatar Peninsula and also they have observed some remarkable characters about it. In the light of the findings of Cherchi and Schroeder (1978) and the presence of two alternating rows of apertures in the periphery, this discoidal foraminifer is established as a new genus by the authors.

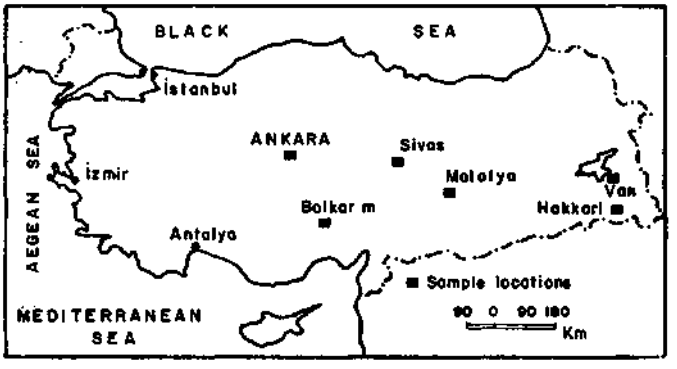

Fig. 1 - Location map.

It is realized that numerous specimens which were described and figured under the name *Broeckinella arabica* by Sirel (1976) and Sirel et al. (1983), from the Thanatian with *Alveolina (Glomalveolina) primaeva* Reichel of Ankara and Van regions, do not belong to the inadequately figured genus *Broeckinella.*

Due to the fact that the samples investigated outside the Van area were of hard rock types, such that it did not give the opertunity to obtain oriented sections of this foraminifer and for this reason this new genus was described and figured as *Broeckinella arabica* by Sirel and others.

SYSTEMATIC DESCRIPTION

Phyllum :*Protozoa* Goldfuss, 1817

Class :*Rhizopoda* Von Siebold, 1845

Order :*Foraminiferida* Eichwald, 1830

Family :*Dicyclinidae* Hellen and Tappan, 1964

Genus :*Vania* *n. gen.*

Type species :*Vania* *anatolica* n. gen. n. sp.

Derivation of name: Van, a city in Eastern Turkey.

Diagnosis. — Test aggluttinated, discoidal, biconcave, bilaterally symmetrical, margin slightly rounded, microspheric embryo is small and subspherical in shape, planispiral stage undeveloped with undivided few chambers, subdivided adult chambers spreading in flabelliform pattern followed by reniform stage later by annular chambers, the septa are simple, the lateral walls with a subepidermal network consisting of radially arranged main beams, shorter beams and beamlets parallel to the septa, apertures arranged in two alternating rows in the periphery.

Comparisons and remarks. — *Vania* n. gen. is very similar to *Pseudobroeckinella* Deloffre and Hamaoui (1969) by having three kinds of sub-epidermal partitions and two rows of the apertures in the periphery. But *Pseudobroeckinella* differs from new genus by unlike the disposition, nature and the number of the sub-epidermal partitions of the each adult chamber (Deloffre and Hamaoui 1969, p. 12, fig. 2,3). Another difference between these two genera is the lack of the flabelliform and the reniform chambers within the test *of Pseudobroeckinella* Deloffre and Hamaoui (1969, p. 12, fig. 1).

Vania n. gen. differs from *Broeckina* Munier-Chalmas (1882) by having beamlets and flabelliform stage; On the other hand the annular chambers of the *Broeckina* are subdivided by incomplete sub-epidermal partitions. These never reach the floor, whereas, those of *Vania* are complete and always continuous from the one chamber to other. There is another difference between wall structure of the test of the new genus and *Broeckina,* the former has aggluttinated wall structure and the latter has porcellaneous wall structure.

Both n. gen. and *Broeckinella* Henson (1948), are having three kinds of sub-epidermal partitions in the adult chambers. But the new genus is clearly distinguished from inadequately figured genus *Broeckinella* by the following characteristics.

1. The new genus has more annular chamber whereas there is no annular chambers in *Broeckinella.*

2. There is a difference between the arrangement of the apertures in the periphery of *Vania* and *Broeckinella,* the former having two alternating rows of apertures and latter has only one row aperture in the periphery.

This new genus resembles to *Cyclolina* d'Orbigny (1846) and *Ammocycloloculina* Maync (1958) by its external shape, arrangement of the chambers and wall structure but it differs from them by the presence of two alternating rows of apertures, beams and beamlets.

The descriptions of the *Qataria* and *Dohaia* Henson (1948) have been made only by their macrospheric forms. These genera have few planispiral and succeeding cyclical chambers; but, the

test of the new genus contains four growth stages (planispiral stage with microsphere, flabelliform, reniform and annular stages). There is another difference between arrangement of the aperture in the periphery of the new genus and *Dohaia,* Qataria; *Varna* n. gen. has two alternating rows of apertures in the periphery, the *Qataria* and *Dohaia* have numerous apertures appearing as small perforations on peripheral wall of the test.

Vania n. gen. differs from the contemporaneous genus *Saudia* Henson (1948) by absence of the pillars. .

The inadequately described genus *Cydopsinella* Galloway (1933) is clearly distinguished from the new genus by having two layers of annular chambers.

It is assumed that the foraminifer found in the same stratigraphic level (Thahatian, in *Alveolina (Glomalveolina) primaeva* zone) figured and described as *Broeckinella arabica* in Hottinger (1967) and Drobne and Hottinger (1971) from the Spanish, French Pyrenees and Yogoslavia, belong to *Vania* n. gen. n. sp.. Because they studied with insufficient figured specimens without embryo, juvenile and the other growth stages.

Vania anatolica n. gen. n. sp.

(PI. I, fig. 1-3; PI. II, fig. 1-6; PI. III, fig. 1-8)

1976 *Broeckinella arabica* Henson, Sirel, p. 102, P1. I, fig. 13.

1983 *Broeckinella* aff. *arabica* Henson, Sirel et al., p. 151, Pl. III, fig. 1, 2, 4.

Derivation of name: The name is derivated from Anatolia.

Holotype: The holotype of *Vania anatolica* n. gen. n. sp. is equatorial section and made from free specimen (85-01), illustrated by plate I, fig. 1,2.

Depository: Holotype and figured paratypes deposited at the Museum d'Histoire naturelle, Geneve, Suisse (85-01; 85-02; 85-78-88).

Material: Examined material consist of 45 free specimens from the type locality and 60 thin sections from the type locality and other localities (Ankara, Bolkar mountains, Sivas and Malatya regions).

Type locality: Kırmızı tepe, approximately 2 km Northeast of Saray village (Northeast of Van, East of Turkey).

Type level: Thanatian, *Alveolina (Glomalveolina) primaeva* zone.

Description

External characters: The test is finely aggluttinated, imperforate discoidal, slightly bi-concave; bilaterally symmetrical; margin slightly rounded in the adult; the suture flush or slightly depressed. The largest individual observed has a diameter of 6.5 mm, the greatest observed thickness at the margin is 372 m and the thickness at the center 98 m. There are two alternating rows of apertures in the periphery of the well preserved free specimens.

Internal characters: All the chambers are planispiral to annular and totally evolute. The microspheric embryo is subspheric, very small and its diameter varies between 86-124 m. The microsphere is connected with the first chamber of planispiral stage by the flexostyle (Pl. III,(fig. 8). The chambers of the *Vania anatolica* n. gen. n. sp. is arranged of planispiral, flabelliform, reniform and annular pattern. It is counted 3-4 planispiral, 6 flabelliform, 6 reniform and 13 annular chambers

in the holotype of the new species. The 3-4 planispiral undivided chambers partly encircle the microspheric embryo so that the embryo and periembryonic planispiral chambers is reniform in outline. All the chambers of the flabelliform, reniform and annular stage are sub-divided by three kinds of sub-epidermal partitions (main beams, shorter beams and beamlets). The lateral walls with a sub-epidermal network consisting of radially main beams, shorter beams and beamlets parallel to the septa (Fig. 2 A,B; P1. II, fig. 5; P1. III, fig. 6). The beams are in alignment from one chamber to the next and from one side of the median plane to the other (P1. II, fig. 3); the shorter beams are parallel to the main beams and perpendicular to the beamlets (Fig. 2 A,B). The sub-epidermal partitions are forming alveols (small cellular structures like a honey comb) with a rounded section at their opening into the chamber lumen (Fig.2 A). Also under the epidermis the cross section of the alveols gets rounded or subrounded in shape (fig. 2 A, B).

Distribution

Type locality: Kırmızı tepe, approximately 2 km to the north of Saray village (NE of Van) in Thanatian very soft argilleous limestone, with *Alveolina (Glomalveolina) primaeva, Orbitokathina sarayı* Sirel, Gündüz and Acar, *Ranikothalia sindensis* (Davies), *Ranikothalia* sp., *Sakesaria cotteri* Davies, *S.* aff. *dukhani* Smout, *Miscellanea miscella* (d'Archiac and Haime), *M. meandrina* (Carter), *Rhapydioninasp., Dictyoconus* n. sp., *Fallotella* sp..

Other localities: Polatlı (SW Ankara), in hard limestone of Thanatian with *A. (Glomalveolina) primaeva, Fallotella* sp., *Rhapydionina* sp..

Harabekayis, tepe (NE Malatya) in hard Thanatian limestone with *A. (Glomalveolina) primaeva, M.* cf. *miscella, Fallotella* sp..

Bolkar mountains (Central Taurus belt), in hard Thanatian limestone with *A. (Glomalveolina) primaeva, Fallotella* sp..

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P L A T E S

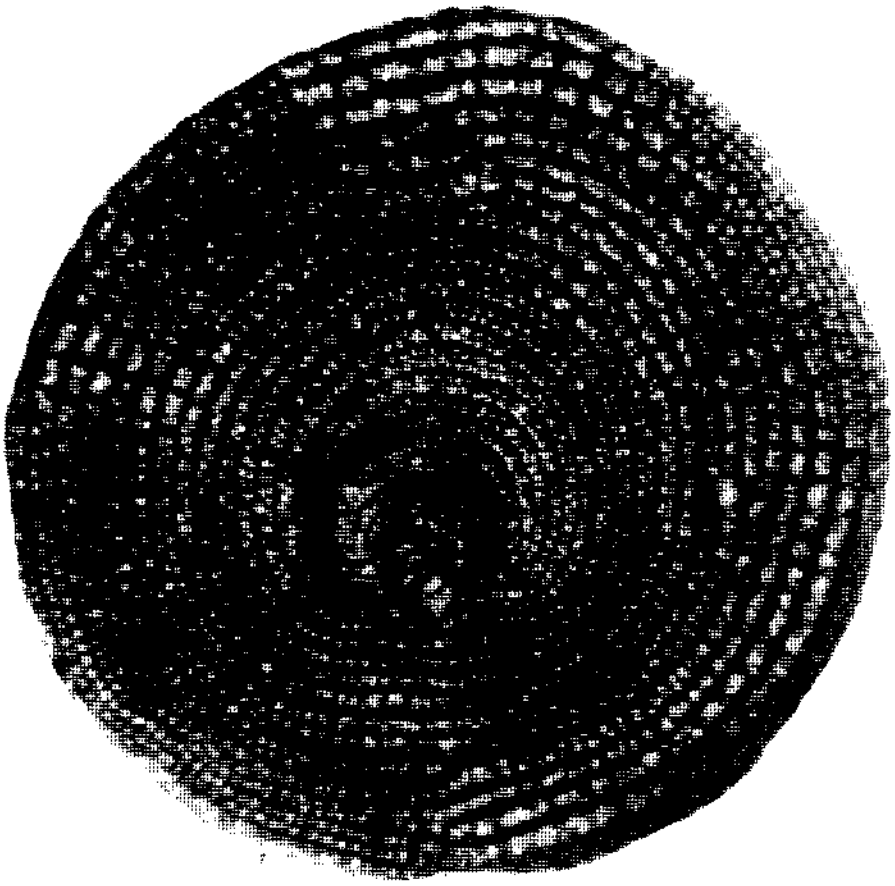
PLATE - I

Vania anatolica n. gen. n. sp.
Form B, Thanatian, Saray village (NE Van)

Fig. 1 - Equatorial section, slightly oblique, holotype (85-01), thin section prepared from free specimen, X 49.

Fig. 2 - Central portion of holotype, to illustrate microspheric embryo, planispiral, reniform and annular chambers, X 97.

Fig. 3 - Sub-axial section, tangential to periphery, paratype (85-02), showing two rows of apertures and sub-epidermal partitions, X 56.



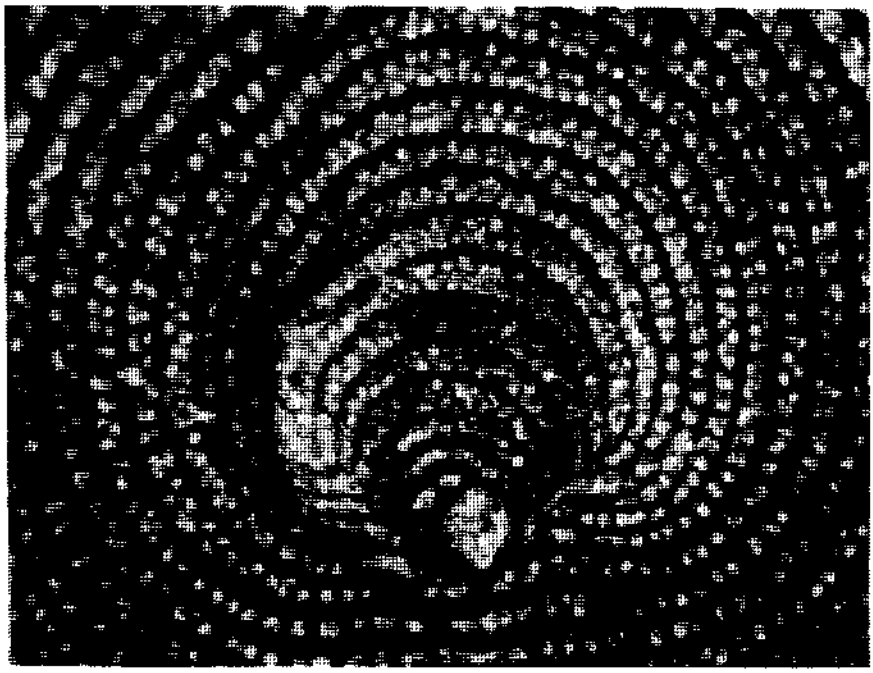


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PLATE - II

Vania anatolica n.gen.n.sp.
Form B, Thanatian, Saray village (NE Van)

Fig. 1 - Equatorial section, slightly oblique, paratype (85-78), thin section prepared from free specimen, X 27.

Fig. 2 - Central portion of paratype (Fig. 1), showing microspheric embryo, planispiral?, flabelliform, reniform and annular chambers, X 79.

Fig. 3 - Equatorial section, paratype (85-79), thin section prepared from free specimen, X 15.

Fig. 4 - Central portion of paratype (Fig. 3), to illustrate microsphere, flexostyle?, planispiral, flabelliform, reniform and annular chambers, X 56.

Fig. 5 - Equatorial section, slightly oblique, paratype (85-80), thin section from free specimen, X 16.

Fig. 6 - External view, partly decorticated specimen, (85-81), X 21.

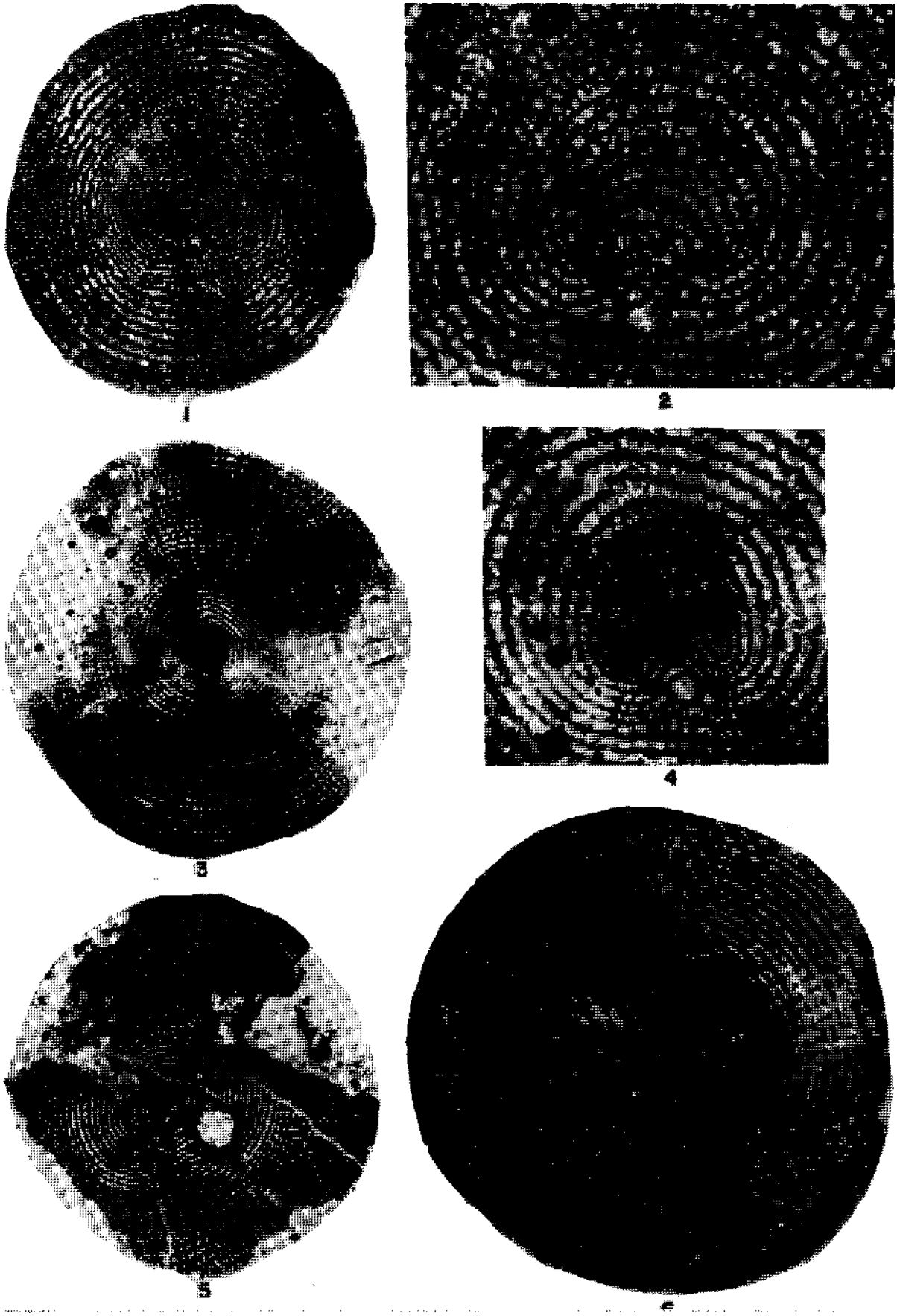

PLATE - III

Vania anatolica n. gen. n. sp.
Form B, Thanatian, Saray village (NE Van)

Fig. 1 - Axial section, paratype (85-82), thin section prepared from free specimen, X 40.

Fig. 2 - Sub-axial section, slightly oblique, (85-86), X 35.

Fig. 3 - Centered oblique section, slightly oblique to equatorial plane, (85-87), X 63.

Fig. 4 - Centered oblique settion, paratype (85-83), X 42.

Fig. 5 - Detail of the central portion of paratype (Fig. 4), showing microsphere, undivided planispiral chambers and divided adult chambers, X 88.

Fig. 6 - Strongly inclined oblique section, tangential to external surface and equatorial plane, paratype (85-84), showing main beams, shorter beams, beamlets, alveols and apertures, X 36.

Fig. 7 - Sub-axial section, slightly oblique, (85-88), X 39.

Fig. 8 - Central portion of equatorial section, paratype (85-85), showing microspheric embryo, flexostyle, undivided planispiral and divided chambers, X 95.

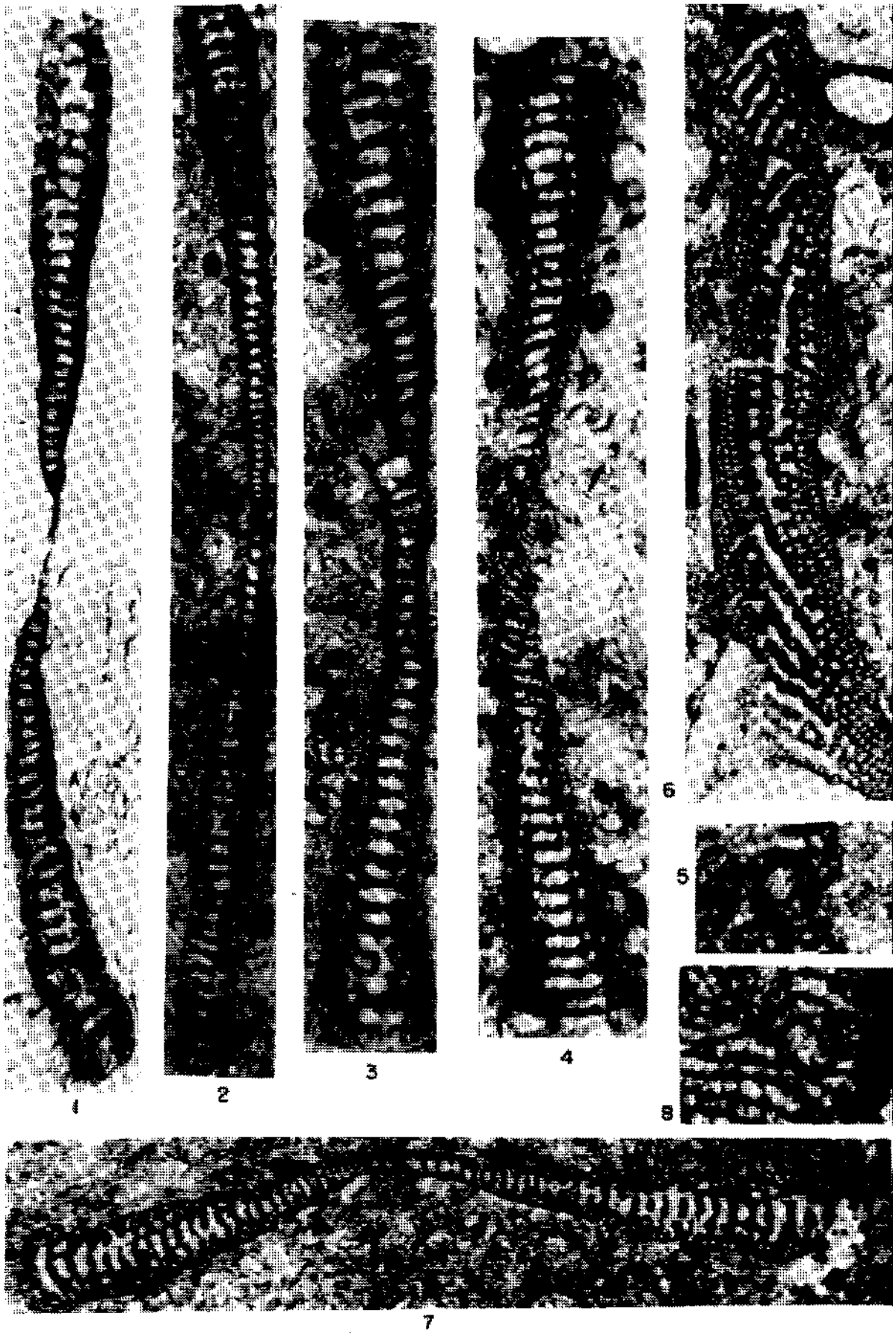
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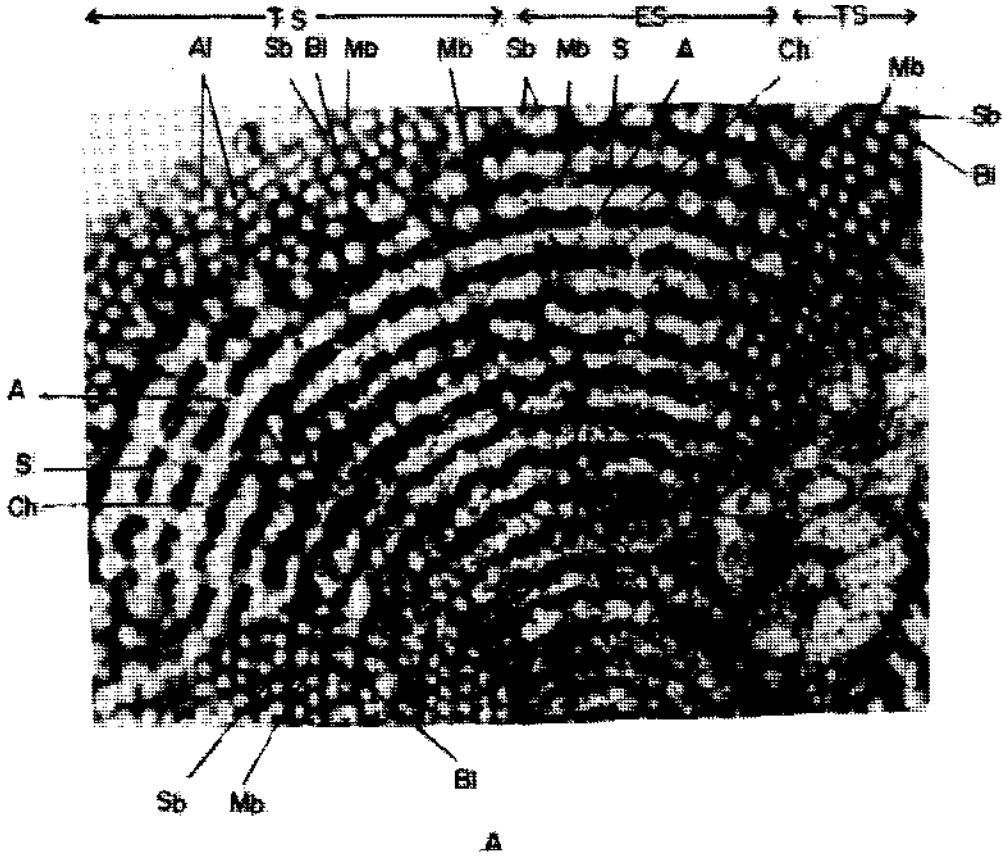
Fig. 2 - *Vania anatolica* n. gen. n. sp.

A-Equatorial section, slightly oblique (lower and left side of fig. 5, P1. II) (85-80), X 82; B -Structural model of new genus; showing structural elements of the test.
Equatorial section (ES); Tangential section (TS); Aksiyal section (AS); Subaxial section (SAS); Main beam (Mb); Shorter beam (Sb); Beamlet (Bl); Septum (S); Periphery (P); Apertures (A); Alveols (Al); Chamber (Ch); --- C Showing center.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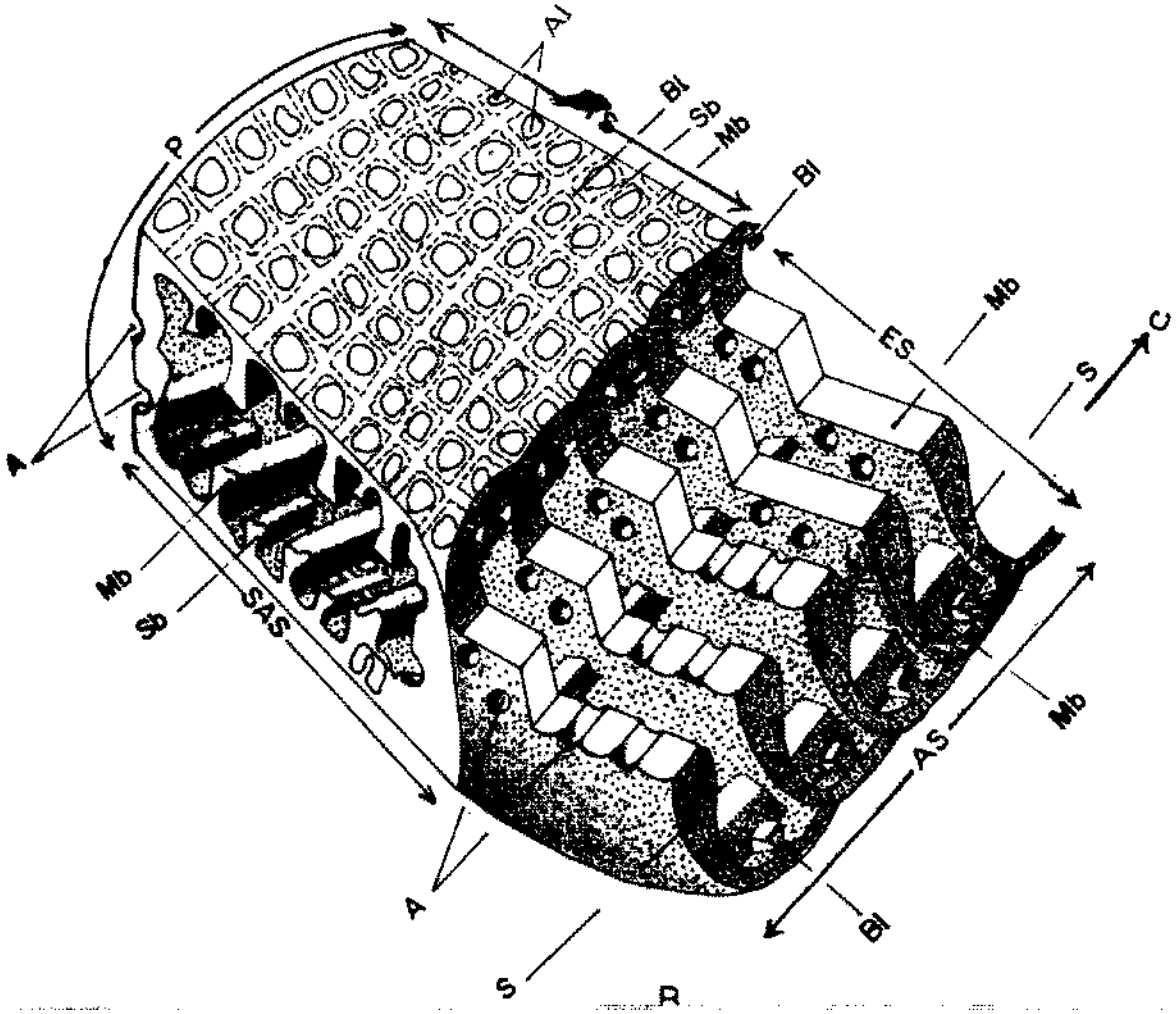
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