

REPRESENTATIVES IN ROMANIA OF THE GENERA *DISSIMILITES* SARKAR, 1954 AND *TOXOCERATOIDES* SPATH, 1924 (ANCYLOCERATINA, AMMONOIDEA)

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Abstract. The recent find of some better preserved representatives of both genera allow completing their definition and content. Consequently, the species of *Dissimilites* recognized in Romania are *D. dissimilis* (d'ORBIGNY), *D. trinodosus* (d'ORBIGNY), and *D. subalternatus* (BRESKOVSKI), the last one thought to include and *D. brăstakensis* (DIMITROVA). Among these species, only the first one was met exclusively in the top of Lower Barremian, while all the other characterize both the top of Lower and the bottom of Upper Barremian. The genus *Toxoceratoides*, with the species: *T. royerianus* (d'ORBIGNY), *T. cf. starkingi* (ANDERSON), *T. cf. fustiformis* (v. KOENEN), *T. stefanescui* AVRAM, *T. parvus* n. sp., *T. depressus* n. sp. and *T. ? transitorius* n. sp., was recognized in the Bedoulian and/or lowermost Gargasian rock-sequences. Besides, the specimens published previously (Avram, 1976) as *Acrioceras?* (*A.?*) *cf. karsteni* [HOHENEGGER (UHLIG)] and *A.?* (*A.?*) *silesiacum* (UHLIG), from the Upper Barremian and Lower Aptian, respectively, are now considered as belonging to the genus *Toxoceratoides*, too. The "genus" *Tonohamites* SPATH, is framed as a monospecific subgenus (with its type species only) within the genus *Toxoceratoides*, while the species: *Tonohamites limbatus* CASEY, *T. aequicingulatus* (v. KOENEN), *T. undosus* (v. KOENEN), etc. are grouped in a new genus: *Raymondcaseyites* n. g.

Keywords: Ammonites, Barremian, Aptian, Systematics, *Dissimilites*, *Toxoceratoides*, *Tonohamites*, *Raymondcaseyites*.

INTRODUCTION

The general *Dissimilites* and *Toxoceratoides* are related each other not only by the similar history, from a complete rejection (in Wright, 1957) to a new promotion in literature, but also by a real relationship, due to their comparable coiling and ontogenetic evolution.

For these reasons they were put here together under a new discussion, on the ground of the most recent data achieved in literature and on the new Romanian evidences on the matter.

The Romanian fossils here under discussion are mainly housed in the repositories of the Geological Institute of Romania (nos. I G P.....), but also of the Faculty of Geography and Geology of the Iasi University (nos. IU). They were recorded up to now in such famous fossiliferous areas as Svinita (SW Romania) and Dâmbovicioara (southern end of the Carpathian Bend), but also in the East Carpathian flysh and in northern Apuseni Mts., as follows:

1. In the Temeneacia valley, very near to the Svinita village water reservoir (layer A, in Avram, 1994): top of Lower Barremian, with profuse leptoceratids, holcodiscids, *Kotetishvilia compressissima*, and also *Dissimilites trinodosus* (no. IG P 14750).

2. On the left slope of the same valley, between the site A and the first (uppermost) street of the village (layer C in the same paper): top of Lower Barremian, with *Holcodiscus caillaudianus*, *Kotetishvilia nicklesi*, etc. (Avram, 1994, 1999) and *Dissimilites trinodosus* (IG P 14747).

3. In the Tiganski valley right bank, immediately above the Svinita-Cozla highway (layer T8/13, ibidem): Upper Barremian, Sartousiana Zone (according to Ebbo *et al.*, 2000): poor assemblage with *Dissimilites trinodosus* (IG P 14748), above the layer with *Ancyloceras ? cf. orbigny*, *A. ? aff. barremense*, etc.

4. On the right slope of the Vodiniciki valley: Upper Barremian, with *Toxoceratoides ? (T. ?)* sp. (IG P 14751), immediately below the level with *Imerites giraudi* (layer Vd1).

5. On the left slope of the Danube, some 270 m S of the Vodiniciki valley mouth (layer 2+100 in Avram, 1994): bottom of Upper Barremian, assemblage including *Eulytoceras phestum* and *Dissimilites trinodosus* (IG P 14749), below the first occurrence of *Silesites seranonis*.

6. In the Orății valley, Dâmbovicioara: top of Lower Barremian, with *Torcapella* spp., *Holcodiscus* spp., etc. (site 18, in Patrușiu, Avram, 1976) and also *Dissimilites subalternatus* (IG P11823).

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7. In the left bank of the Sirnei creek near its mouth (site 915 P): Upper Barremian, with *Heinzia provincialis* (ca Sartousiana Zone), and *Dissimilites trinodosus* (IG P 19825).

8. On the left slope of the same creek, above the Dâmbovicioara village church (site 910 P): bottom of Upper Barremian, with *Eulytoceras phestum* and *Dissimilites* sp. (IG P 14826).

9. In the old route Rucâr-Bran at the Zamvelei valley spring (site 21 in Patrulius, Avram, 1976); Upper Barremian, with *Imerites giraudi*, *Eristavia*, etc. and *Toxoceratoides* (T.) cf. *fustiformis* (IG P 14824).

10. In a small tributary on the right of the Muierii valley (site 24, in Patrulius, Avram, 1976): lowermost Aptian, with the earliest *Neohibolites*, but below the FO of *Deshayesites*; assemblage, including *Toxoceratoides* (T.) *depressus* (IG P 14831, 14832).

11. Upstream, on the Muierii valley (sites 25 and 27 in Patrulius, Avram, 1976): Lower Aptian (Forbesi Zone), with *Deshayesites* spp., etc. but also with *Toxoceratoides* (T.) cf. *royerianus* (IG P 14829), *T. (T.) parvus* (IG P 14828), *T. (T.)* cf. *starrkingi* (IG P 14830) and *T. (T.)* aff. *depressus* (IG P 14833).

12. On the Cheii valley, downstream the Strâmba valley mouth (site 61 A): Lower Aptian, with *Deshayesites* aff. *normani* and *Toxoceratoides* (T.) *parvus* (IG P 14827).

13. In the left bank of the Prahova valley immediately upstream the Bătrâioarei valley mouth, at the southern end of the Carpathian Bend: top of Lower Barremian, with *Kotetishvilia ? prahovens* (Avram, 1999) and *Dissimilites subalternatus* (unregistered) (IG P 2038);

14. At the confluence between the Doftana and Musita valleys (site 36 in Avram, 1976): top of Lower Barremian, with *Kotetishvilia sauvageaui*, *Karsteniceras* aff. *beyrichi*, etc. and *Dissimilites dissimilis* (IG P 11132);

15. In the left bank of the Doftana valley, upstream the site 13 (site 31 in Avram, 1976): Upper Barremian assemblage, with *Pseudohaploceras* sp., *Melchiorites* sp., *Toxoceratoides* (T.) sp. (IG P 11135);

16. In a small tributary of the Priscului valley, at the Doftana valley spring (site 22 in Avram, 1976): Lower Aptian assemblage, with *Deshayesites* ex gr. *planus*, and *Toxoceratoides* (T.) sp. (IG P 11134).

17. On the right slope of the Ramura Mică valley, nearby the Babarunca valley mouth (site 14, in Avram, 1976): top of Lower Aptian, with *Toxoceratoides* ? (T. ?) *transitorius* n. sp. (IG P 11620); level with *Dufrenoyia* cf. *dufrenoyi*, *D.* cf. *notha*, etc. (recorded nearby, in site 15, Avram, 1976).

18. In northern Apuseni Mts, at the confluence between the Vasii and Măguri valleys, Pădurea Craiului (site 10 in Avram et al, in press): Lower/Upper Aptian boundary, with a rich assemblage of ammonites, including *Dufrenoyia* spp., *Colombiceras* sp., and also, *Toxoceratoides stefanescui* AVRAM (IG P 19153; 19214).

Besides, some ammonites belonging to the genera here under discussion could not be entirely clarified, being either deprived of any indication on their stratigraphical occurrence (e. g. *Crioceras dissimile* in Simionescu, 1898, no. IU-Cr b D122; *Toxoceras royeri* in the Popovici-Hatzeg coll. no. IG-P 10529) or too fragmentary for a correct definition (e. g. *Toxoceratoides emericianus* in Avram, 1976, no. IG P 11139, recorded in assemblage with *Colombiceras* representatives in the Târlung valley).

THE GENUS DISSIMILITES SARKAR, 1954
(type species: *Hamites dissimilis* d'ORBIGNY, 1842).

Although several authors adopted the genus very soon after its rejection by Wright (1957), only Ebbo *et al.* (2000) carried out some data concerning its type species ontogeny. According to these latter authors, the genus includes ammonites with "coquille de morphologie tripartite, à croissance lente, constituée d'une spire, d'une longue hampe et d'une crosse don't le retour peut être très long. L'ornamentation du phragmocône est constituée d'une alternance régulière de côtes principales trituberculées, simples, et des côtes intercalaire inermes et également simples. Sur la loje d'habitation les côtes sont soit simples, soit bi-à-trifurquées et uni-à-trituberculées. Les côtes franchissent la région ventrale sur la hampe et sur le retour de la crosse excepte dans le sommet de la hampe et sur le coude de la crosse où elle s'enterront sur l'aire siphonale".

This definition does not mention several features even of the species framed by these authors into the genus. Thus, the ornamentation of the shaft could be not exclusively simple [like in *D. dissimilis* and *D. trituberculatus* (d'ORBIGNY, 1842)], but also looped-trituberculate [*D. brestakensis* (DIMITROVA, 1967)], or irregularly zigzagging between the umbilical and lateroventral tubercles [*D. subalternatus* (BRESKOVSKI, 1966)]. Moreover, the ornamentation of the spire is simpler (but not trituberculate like in the genus *Acrioceras*, to which *Dissimilites* was joined by Wright, 1957), as it is obvious in the specimen here figured in Pls. I and II, Figure 6, and seems to be also observed in *D.* aff. *dissimilis* figured by Ebbo *et al.* (2000). Last fact is of a peculiar importance

for establishing the taxonomic position of the genus: it is nearer to the uppermost Barremian-Lower Aptian genus *Toxoceratoides* SPATH, differing from only by larger spire, longer shaft, longer hook and by earlier stratigraphic range.

The stratigraphic range of the genus, as here defined, is from the uppermost Lower Barremian (Compressissima Zone) up to the bottom of the Upper Barremian (Sartousiana Zone).

In Romania, the genus is represented by all the species mentioned above, as follows:

Dissimilites dissimilis (d'ORBIGNY) was recorded in the Lower Barremian sequence of the Carpathian flysh (here in Plate I and II, Figure 1, no. IG P 11132). Simionescu's (1898) example from his Plate IV, Figures 8 a-b (no. IU-Cr b D 122.) seems to be nearer to the *D. brestakensis* morphotype by its looped ribs. Its drawing in Simionescu (1898) is incomplete, missing the main ribs between the inner and lateral tubercles of the shaft (see Plate II, Figs 21 a-b, in this paper).

Dissimilites trinodosus (d'ORBIGNY) was recognized in Dâmbovicioara by Simionescu (1898) (lost) and by us, at the bottom of Upper Barremian (= Plate I and II, Figure 4, IG P 19825), and in Svinita both at the top of Lower Barremian (IG P 14747 and 14750, unfigured) and at the bottom of Upper Barremian (= Plate I and II, Figure 2, IG P 14749; Plate I and II, Figure 3, IG P 14748). The presence of the species up to the Sartousiana Zone (IG P 14748, 14749) was considered by Ebbo *et al.* (2000) as a misidentification. Nevertheless, the simple, trituberculate ribbing on the end of the shaft and on the hook in all Upper Barremian individuals here attributed to the species are too typical for being explained by homeomorphy, so that the enlarged range of the species is to be accepted.

Dissimilites subalteratus (BRESKOVSKI): the most complete specimen (= Plate I and II, Figure 6, unregistered), recorded at the Lower/Upper Barremian boundary in the Carpathian flysh (site 13, see above) proves that *D. brestakensis* (DIMITROVA) is only the young stage of *D. subalteratus*. In this larger interpretation, the species was recognized also in Dâmbovicioara at the top of Lower Barremian (= Plate I and II, Figure 5, IG P 14823, and Simionescu's, 1898, *Crioceras dissimile* - see above).

THE GENUS *TOXOCERATOIDES* SPATH, 1924 (type species *Toxoceras Royerianus* d'ORBIGNY, 1842; neotype in Casey, 1961)

Since Casey (1961) restored the genus several emendations were introduced, so that

the last main reviser – Aguirre-Urreta (1986) accepted it as follows: "Coiling ancyloceratid or toxoceratid. Ornament of initial spire and shaft consists of trituberculate and intermediate ribs. On the final hook the ornament is simpler, with single ribs intercalated with others that bi- or trifurcate from an umbilical tubercle. Suture line with bifid saddles and trifid lobes". Nevertheless, to include all the main features of the species listed by even this author, the diagnosis needs to be completed, as follows: (1) Although generally middle in size, there were counted small [*Toxoceratoides emericianus* (d'ORBIGNY, 1842); *T. biplex* (v. KOENEN, 1902); *T. biplicatus* (v. KOENEN, 1902), *T. sp. 5* in Delanoy, 1992] or, contrarily, very large species of the genus (*Toxoceratoides haughtoni* KLINGER & KENNEDY, 1977; *Toxoceratoides ? sp. inc.*, Thieuloy, 1990). (2) The ornamentation of the shaft could change from equal ribs, tubercleless or bearing minute ventral tubercles, to alternatively main tuberculate and single intercalatory ribs, the number of tubercles varying from 1-2 to 3 [*T. starkingi* (ANDERSON, 1938); *T. corrae* MURPHY, 1975; *T. ? greeni* MURPHY, 1975; *T. nagerai* (LEANZA, 1970, in Aguirre-Urreta, 1986), *T. renzoni* ETAYO-SERNA, 1979, but also *T. silesiacum* (UHLIG, 1883) and *T. sp. 3* in Delanoy, 1992]. (3) The looped ribs, or zigzagging across the sides and/or on the venter between the tubercles, are frequent (*T. corrae*; *T. ? greeni*; *T. haughtoni*; ? *T. rochi* CASEY, 1961, *T. krenkeli* FÖRSTER, 1975, , *T. sp. 1, 2 and 3* in Delanoy, 1992, but also some examples of *T. royerianus* from France: in Thieuloy, 1990, and Conte, 1999). (4) The ornamentation could weaken along the siphonal line. (5) The ribbing on the final hook is always thin and sharp (this feature being the only significant difference from *Tonohamites decurrensis* SPATH, 1924, type species of the genus *Tonohamites*, as defined by Casey, 1961, which displays very thick ribs on the hook).

Transitional between *Toxoceratoides* and *Tonohamites*, as observed by Klinger, Kennedy (1977) and by Aguirre-Urreta (1986), the trituberculate "*Tonohamites decurrensis*" is in fact much more related to the species here listed than to its own con-generic partners accepted by Casey (1961). Consequently, "*Tonohamites*" should be limited to its type species, and accepted as subgenus of *Toxoceratoides*. The other its species listed by Klinger, Kennedy and Aguirre-Urreta (see above), and especially *T. aequicingulatus* (v.

KOENEN), *T. limbatus* CASEY, *T. undosus* (v. KOENEN), *T. eichwaldi* (JASYKOW) have to be grouped in a new genus, more homogeneous: **Raymondcaseyltes** n. g., named in honor of the great British paleontologist who reorganized the almost whole ammonite paleontology of the Aptian-Albian time span. This new genus is characterized by a simplified ornamentation, with non- or few differentiate monotuberculate ribs on the shaft and remarkable thick single ribs on the bend and on the hook. Its type species here proposed: *R. limbatus* (CASEY) (Casey 1961, p. 89, Plate XX, Figures 3 a-c) illustrates all these features. The stratigraphic range of this genus is from the top of Lower Aptian (Bowerbanki Zone), up to the lower part of Upper Aptian (in Avram *et al.*, in press).

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The genus *Toxoceratoides* starts in Upper Barremian (horison with *Imerites* and *Eristavia*) and continues up to the top of Lower Aptian. It is represented in Romania by at least 7 species, as follows:

Toxoceratoides (T.) royerianus (d'ORBIGNY). New records of young, fragmentary specimens of this species in the lowermost Aptian sequence from Dâmbovicioara (= Plate I, Figure 7, IG P 14829), but also some illustrations by Martinez (1982) confirm the ornamentation with alternate main trituberculate and single intercalatory ribs of the species in youth, as figured by d'Orbigny (1842). Consequently, the specimen displaying a different ontogeny recorded in the Carpathian flysh and figured as *T. royerianus* n. ssp., by Avram (1976) has to be reconsidered as noted below (= *T. ? transitorius* n. sp.).

Toxoceratoides (T.) cf. starrkingi (ANDERSON). Two individuals, recorded in the Lower Aptian sequence of Dâmbovicioara (= Plate I and II, Figures 13, 14, IG P 14830) are different from Anderson's species (in Anderson, 1938 and Murphy, 1975) by earlier rise of median and inner rows of tubercles. The most complete of them (Plate I, Figure 14) is malformed, with a single, median row of ventral tubercles.

Toxoceratoides (T.) cf. fustiformis (v. KOENEN). A small fragment of shaft (= Plate I and II, Figure 15, IG P 14824) displays the typical ornamentation of the species, of single, projected, all trituberculate ribs. It was recorded in the middle part of the Upper Barremian sequence at Dâmbovicioara (site 9, see above). As the typical specimens are Lower Aptian in age (in Weissi Zone), its presence in Upper Barremian is to be underlined.

Toxoceratoides (T.) stefanescui AVRAM. (Plate I, Figures 16 a-b, IGP 19214; Figure 17, IG P 19153). This species was described recently (Avram *et al.*, in press) from the Lower/Upper Aptian boundary beds from northern Apuseni Mts (site 18, see above). It displays strong, trituberculate, gently projected main ribs, with 2-5 intercalatories in between, on the shaft, and only single, equal, slightly rursiradiate ribs, starting from rare, discontinuous umbilical rib-thickenings on the bend and on the hook.

Toxoceratoides (T.) parvus n. sp.
(Plate I and II, Figures 8, 9 a-b).

Holotypus: the specimen figured in Plate I and II, Figure 9 (IG P 14827), recorded in Lower Aptian sequence (the Forbesi Zone) of Dâmbovicioara (site 12 above).

Material: the holotype and one more specimen, the latter (IG P 14828, here figured in Plate I, Figure 8) coming from the same region, from the Forbesi Zone interval, too (site 11 above).

Description. Small toxoceratid with simple, equal ribs in very youth; the shaft is covered by alternatively trituberculate, looped main ribs and single intercalatory ribs up to its last third, where the body chamber begins. The last third of the shaft and the hook bear equal ribs, starting single or in pairs from the (only) umbilical tubercles.

The fragmentary second individual illustrates the initial stage, with equal, simple ribbing, and the second stage of the phragmocone, with main trituberculate looped ribs and single intercalatories in between.

Toxoceratoides (T.) depressus n. sp.

(Plate I and II, Figures 11, 12 a-c, 18 a-b)

? 1992 *Toxoceratoides* sp.5, Delanoy, p.97, Plate 33, Figures 4a-b.

Holotypus: the specimen figured in Plate I and II, Figure 12 (IG P.14831), recorded in lowermost Aptian sequence (site 10 above) from Dâmbovicioara.

Material. Beside the holotype, another example from the same site and layer (IG P 14832) and other three fragments (IG P 14833), gathered in assemblage with the first Description. The holotype is small, with strongly depressed whorl section in all stages of growth. The main ribs on the shaft are trituberculate, with stronger umbilical and lateral nodes and minute ventrolateral ones. The intercalatory ribs branch from the umbilical or lateral tubercles of the main ribs and bear only the small ventrolateral node, so that on venter all the ribs are uniform and tuberculate. On the bend and on the hook the lateral and, then, the ventral tubercles smoothen, so that equal ribs, rising in pairs from sharp inner tubercles cover the final

limb. In the specimens recorded in site 11 the ventrolateral tubercles on the end of shaft are very small or even absent.

Toxoceratoides ? (*T.* ?) *transitorius* n. sp.
(Plate 1 and 2, Figure 10).

1976 *Toxoceratoides royerianus* (d'ORBIGNY)
n. ssp., Avram, p.30, Plate III, Figure 12.

A well preserved shaft, recorded in the sequence with *Dufrenoyia* spp. in flysch deposits of the Carpathian Bend (IG P.11620, site 17 above) is apart by its ornamentation, made up to H = 6 mm of dense, equal, slightly projected ribs. Then, rare trituberculate ribs appear, with some five intercalatory ribs in between, the latter bearing ventral tubercles to which they join frequently by two. Projected, large ribs, alternating regularly with one intercalatory rib cover the last third of the shaft, like in typical *Toxoceratoides* (*T.*) *royerianus*. Supposed (by Avram, 1976) as being the younger stage of *T. royerianus* than those illustrated by the neotype of this species (in Casey, 1961), the specimen under discussion displays the usual ontogenetic

development of the *Toxoceratoides* (*Toxoceratoides*) species, but also that of *Toxoceratoides* (*Tonohamites*) *decurrensis*. Consequently, its taxonomic position is questionable, lacking the bend and the hook, the ornamentation of which discriminates between these subgenera.

Toxoceratoides spp.

The example IG P 11139, recorded in the top of Lower Aptian or in the lowermost Gargasian (with *Colombiceras*) and presented previously (Avram, 1976) as *T. emericianus*, displays a much slower ontogenetic evolution and is too incomplete for a sure specific identification. Similarly, the specimens IG P 11134 and IG P 11135 published in the same paper as *Acrioceras*? (*A.*?) *silesiacum* (UHLIG) and *A.*? (*A.*?) cf. *karsteni* [HOHENNEGER (UHLIG)], respectively, (here figured in Plate I and II, Figures 19, 20) belong in fact to the genus *Toxoceratoides*, but are too crushed and small for an accurate specific framework.

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PLATES

Plate I (photos) and II (details of ribbing)
(common for both plates, except the figures 21 a-b in Plate II).

- Figure 1: *Dissimilites dissimilis* (d'ORBIGNY). M. Stăfănescu's coll. (IG P 11132) from the site 14 (on page 24). Top of Lower Barremian.
- Figures 2-4: *Dissimilites trinodosus* (d'ORBIGNY). 2, E. Avram's coll. (IG P14749) from the bottom of Upper Barremian (site 5); 3, E. Avram's coll. (IG P 14748), from the Upper Barremian (site 3); 4, D. Patrulius and E. Avram's coll. (IG P 19825), from the Upper Barremian (site 7).
- Figure 5, 6: *Dissimilites subalternatus* (BRESKOVSKI). 5, P. Dumitrică's coll. (IG P 14823); 6, E. Avram's coll. (IG P 14824). Both recorded in the top of Lower Barremian (sites 6 and 13, respectively).
- Figure 7: *Toxoceratoides* (*Toxoceratoides*) cf. *royerianus* (d'ORBIGNY). D. Patrulius and E. Avram's coll. (IG P 14829) from the Lower Aptian (site 11).
- Figures 8, 9: *Toxoceratoides* (*T.*) *parvus* n. sp. 8=IG P 14828, from the site 11; 9= holotype (IG P 14827), from the site 12. Both, Lower Aptian in age, D. Patrulius and E. Avram's coll.
- Figure 10: *Toxoceratoides* ? (*T.* ?) *transitorius* n. sp. M. Stăfănescu's coll. (IG P 11620) from the top of Lower Aptian (site 17).
- Figures 11, 18 a-b: *Toxoceratoides* (*T.*) aff. *depressus* n. sp. D. Patrulius and E. Avram's coll. (IG P 14833), from Lower Aptian (site 11).
- Figures 12 a-c: *Toxoceratoides* (*T.*) *depressus* n. sp., holotype. D. Patrulius and E. Avram's coll. (IG P 14831) from the bottom of Lower Aptian (site 10).
- Figures 13 a-b, 14: *Toxoceratoides* (*T.*) cf. *starringi* (ANDERSON). Both, in D. Patrulius and E. Avram's coll. (IG P 14830), from the Lower Aptian (site 11).
- Figure 15: *Toxoceratoides* (*T.*) cf. *rustiformis* (v. KOENEN). D. Patrulius and E. Avram's coll. (IG P 14824) from the Upper Barremian (site 9).
- Figures 16 a-b, 17: *Toxoceratoides* (*T.*) *stafanescui* AVRAM. 16, paratype, E. Avram's coll. (IG P 19214); 17, holotype, M. Stăfănescu's coll. (IG P 19153). Both, from the top of Lower Aptian (site 18).
- Figures 19, 20: *Toxoceratoides* (*T.*) spp. 19= *A. ?* (*A. ?*) *silesiacum* (UHLIG) in Avram, 1976 (IG P 11134) from the lowermost Aptian (site 16). 20= *Acrioceras* ? (*A. ?*) cf. *karsteni* (UHLIG), in Avram, 1976 (IG P 11135) from the Upper Barremian (site 15).
- Figures 21 a-b (only in Plate II): *Dissimilites* aff. *subalternatus* BRESKOVSKI (= *Crioceras dissimile* d'ORBIGNY in Simionescu, 1898, Plate IV, Figs 8a-b; IU-Cr b D 122) Barremian (horison unknown) from the Muierii Valley, Dâmbovicioara.

All fossils are figured in natural size.



