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PALEONTOLOGY

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Heinzia sartousiana - from Upper Barremian Deposits of Georgia

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ABSTRACT **Index-species *Heinzia sartousiana* has been described in Georgia for the first time and an opinion has been expressed about the expediency to rename the zone Subpulchellia plana-Heinzia matura into the generally accepted name *Heinzia sartousiana*.**

Key words: AMMONITE, UPPER BARREMIAN.

With regard to its narrow stratigraphic distribution, *Heinzia sartousiana* has great scientific importance. Special interest of researchers toward this ammonite can be attributed to the fact that at present this ammonite is acknowledged as an index-species of the second zonė from the bottom of Upper Barremian in Mediterranean region [1,2]. In Georgia its corresponding zone is Subpulchellia plana-Heinzia matura. To our opinion the latter should be renamed into Heinzia sartousiana, and thus, conformity has been brought with the generally accepted name [1,2], as index-species of this zone (*H.sartousiana*) is quite often met in Georgia in many sections (Mukhuri pass, vv. Rondishi,Gelaveri, Shkmeri). This makes the question actual. This species has been described for the first time in Georgia.

Since first publishing of *Ammonites (=Heinzia) sartousianus* d'Orbigny ([3], p.319, tabl.94, Fig. 4, 5) this species has not been described. Since 1970-ies more frequent references have been made to it [1, 2, 4-7]. So far it was not discovered in Barremian deposits of Georgia. This name was only by the way mentioned in publication of M.V.Kakabadze and E.V.Kotetishvili [8]. In 1970 E.V.Kotetishvili described several specimens under the same of *Pulchellia galeata* Buch ([4], p.88, tabl.XY, Fig. 7a,b) from the deposits of "Lower Barremian" in the vicinity of villages Rondishi and Gelaveri. In "Comparison" of this species she wrote:"our specimen are identified with the figure by d'Orbigny (tabl. 94, Fig.4, 5)", i.e. to *Heinzia sartousianus* (K.,S.), which she, following V.Uhlig [9, p.248], included into synonymy *P.galeata* Buch [10]. In her following work E.V.Kotetishvili still attributed the same specimen ([5], p.44, tabl.I, Fig.1,2) to the mentioned species, increasing the number of works, included into synonymy, in which *Heinzia sartousianus* (d'Orb.) is considered to be as a younger synonym. Thus, for E.V.Kotetishvili the species *Heinzia sartousianus* and *P.galeata* are synonyms and according to priority principle, must be united into one species - *P.galeata*. However we can't agree with such opinion for in the course of study of above mentioned species, defined as *P.galeata* by E.V.Kotetishvili, who arrived at the conclusion that at first she defined correctly the identity of her specimen with figures of the species *A.satrousianus* d'Orbigny, but equaled this species mistakenly with the species *P.galeata*.

In regard to both species we can confirm the following. Sculpture of the specimens of E.V Kotetishvili (and ours) is in fact identical with that of *A.sartousianus*- a few ribs, start at the umbilical bend and at this point form not big thickenings along the ribs, bifurcate on sides, gradually expand strongly and make S-like bend. As for ventral side, they form high keels on both sides of siphon, which limit is narrow but quite deep sulcus slowly expanding toward aperture (see tabl.I, Fig.1). Contrary to this species holotype *P.galeata* Buch ([10], p.5, tabl.II, Fig.10) (to which E.V. Kotetishvili attributed her

specimens) has distinctive signs which imply the following the latter's ribs on sides (including single ones) are relatively narrower and make arch-shaped bend (crescentiform) directed backwards, as for siphon sulcu, it is wider and in comparison to *H. sartousiana* expands quicklier toward aperture [11]. These signs, not to mention others, are quite enough not to include E.V.Kotetishvili's specimens of ammonites into composition of *P.galeata* but to attribute them to *H.sartousiana,* which ought to be regarded as independent species. Valid name of *H.sartousiana* is acknowledged at present and is questioned by nobody [1, 2, 6, 8].

Paleontological material at our disposal, kept in the Museum of the Institute of Geology, Georgian Academy of Sciences, (collection N 108) leaves no doubt in correctness and necessity of attributing these and E.V. Kotetishvili's specimens ([4], p.88, tabl. XY, Fig.7a,b) (also the specimen defined as *H.(H.) aff. velesiensis* ([5], p.63, tabl.7, Fig.1-6, 8-?10) to the species *H.sartousiana*, parts of which are pictured in the present article (see Tabl.I).

Superfamily *Desmoceratoidea* Zittel, 1895
Family *Pulchelliidae H.* Douville,1890
Genus *Heinzia* Sayn,1890
Heinzia sartousiana (d'Orbigny)
Table I, fig.1-5

1840. *Ammonites sartousianus* d'Orbigny, p. 319, tabl.94, fig.4, 5
1970. *Pulchellia galeata* Kotetishvili, p.88, tabl.15, fig.7a,b
1980. *Pulchellia galeata* Kotetishvili, p.44, tabl.1, fig.1, 2
1980. *Heinzia (Heinzia) aff.veleziensis* Kotetishvili , p.63, tabl.7, fig.1, ?10, non fig.11
1987 *Pulchellia (Pulchellia) cf.sartousi* Immel, p.86, tabl.7, fig.9

H o l o t y p e from Upper Barremian deposits of France (d'Orbigny, 1840, p.319, tabl. 94, fig. 4, 5; see Vermeulen,1980, tabl.4, fig.1, 2).

M a t e r i a l. Four nucleuses from the collection of I.V.Kvantaliani are presented in fragments -[108(1013/1-2, 108(1013/1-12), 108(1013/1-1), 108(1013/1-8)]. Because of deformation (whores are strongly flattened) the parameters of our specimens deviate from parameters of holotype.Specimen 131/69 from collection of E.V. Kotetishvili is well preserved. One fragment (36/18) is from collection of M.Z.Sharikadze and specimen 108(Po 21/3)-from collection of L.Z.Sakhelashvili.

F o r m. Nucleuses are flattened with gradually increasing involute whores. Transverse section is ellipsoidal, which narrows towards siphonal side. Ventral side is concaved and represents very slightly expanding quite deep sulcus which is limited by characteristic, indented keels from both sides. Umbilicus is quite narrow, steplike, of

NN	D[1]	H	W	Du	h	H:D	E:D	Du:D	H:E	H:h
Holotipe	43.5	20.3	10.0	6.7	16.5	47	23	15	2.03	1.23
131/69	44.0	20.0	10.0	7.6	16.4	45	23	17	2.00	1.21

[1] D - maximal diameter, H - height of last whore, W - width of last whore, Du - diameter of umbilicus, h - height of whore on the opposite side of diameter (D), H:D, W:D...- correlation to diameter (D).

medium depth. Walls of the umbilicus steeply dipping with sharp bend are connected to the sides.

S c u l p t u r e. Nucleuses are accompanied by 24-27 wide flat S-like bent on sides ribs. The ribs, which start at the suture and form thickenings along the ribs at pre-umbilicus point, bifurcate until they reach the middle of sides. Near to the venter side at the end of ribs there are tiny paired tubercles,which gradually disappear as the shell grows. The width of ribs considerably prevails the space between ribs.

Table I

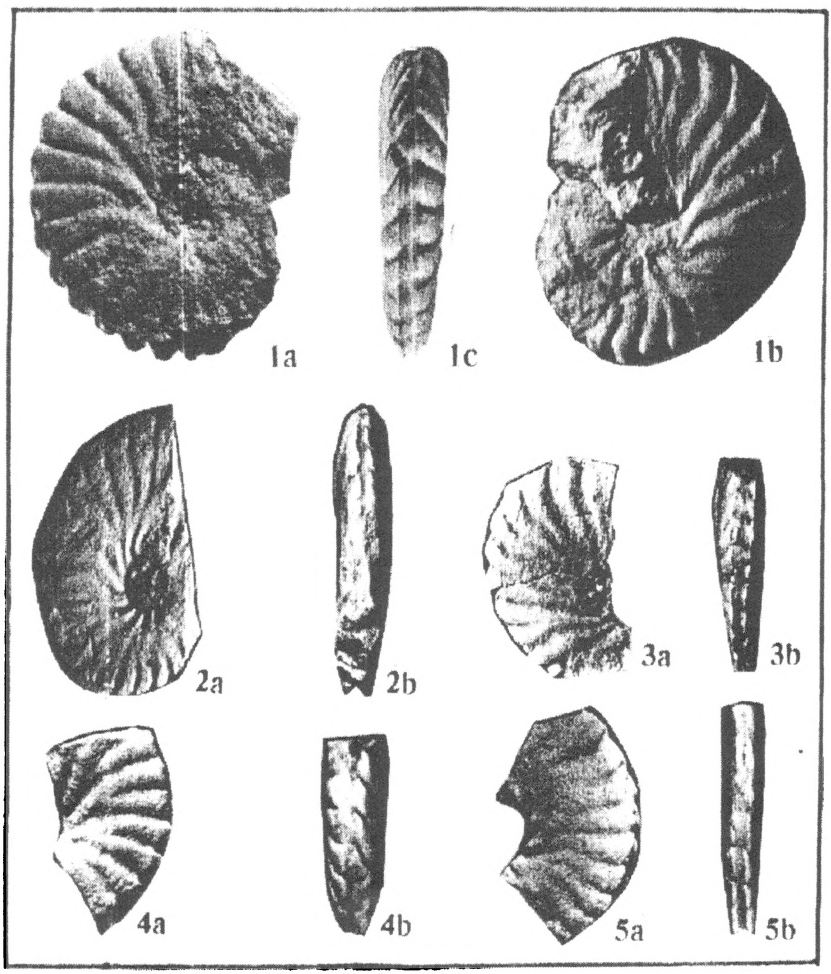

Fig.1-5. Heinzia sartousiana (d'Orb.). Zone Heinzia sartousiana, Upper Barremian of West Georgia. 1a-c - specimen 131/69-the vicinity of v.Rondishi (coll.of E.Kotetishvili, [4,5]); 2 - specimen 108(1013/1-1), 3 - spec.108(1013/1-2), 4 - spec.108(1013/1-12), 5 - spec. 108 (1013/1-8).-coll. of I.V.Kvantaliani.Mukhuri pass.

All pictures are given in natural size.

C o m p a r i s o n. The described species may quite easily be distinguished from other species of the given genus. The closest likeness is observed with *Heinzia provincialis* (d'Orb.) [12, v. II, p.99, N 598; see Vermeulen, 6, p.28, tabl. 4, fig.5a,b, 8-10], differing from it by more bent ribs on sides, relatively narrow umbilicus and whores. From *H.veleziensis* (Hyatt) ([13], p.136; see Gerhardt, 14, p.145, tabl.3, Fig.4; Burgle, 11, p.77, tabl.20, Fig.2) it differs by more bent,flat ribs on sides, relatively narrow, slowly increasing whores and space between ribs,also by narrow siphonal sulcus. The distinctive signs of the species *H.sartousiana* and *Pulchellia galeata* were dealt with in the introduction of this article.

D i s t r i b u t i o n. Upper Barremian of France and Georgia.

O c c u r e n c e. Upper Barremian (zone Heinzia sartousiana) of West Georgia (Mukhuri pass, villages Rondishi, Gelaveri, Shkmeri).

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REFERENCES

1. *P.G.Hoedemaeker, L.Bulot.*,Géologie Alpine, 66, 1990,123-127.
2. *P.G.Hoedemaeker, M.Company* et al.,Rev.Espan Paleontol.,8(I),1993,117-120.
3. *A.d'Orbigny.* Paléontologie Francaise. Terrains Grétacés, I, Paris,1840,662.
4. *E.V.Kotetishvili.* Trudy Geol. Inst. Acad. nauk Gruzii, nov.ser.,25,1970,115 (Russian).
5. *E.V.Kotetishvili.* Trudy Geol. Inst.Acad. nauk Gruzii,nov.ser.,67,1980,110 (Russian).
6. *J.Vermeulen.* Etude de la famille des *Pulchelliidae*. Reversion de trois éspèces types du Barremién du Sud-Est de la France. Présentés a L'Université de Nice fac.des Sci.et Techn., 1980, 92.
7. *R.Busnardo.* Mém.BRGM, N 125,Nantes,1984, 600.
8. *M.Kakabadze, E.Kotetishvili.* Mém. Descr.Carta, Geol. d'Itali,1995,103-108.
9. *V.Uhlig*-Denk. K. Ak.Wissench.,Bd. 46, Vienne,1883,290.
10. *L.Buch.* Pétrifications récueilliés en Amérique par M.A.de Humboldt et par Charles Dégenhardt. Berlin, 1839.
11. *H.Bürgl.* Catalogo de las ammonitas de Colombia, Parte I, *Pulchelliidae*. Inst. Geol. Nac., Bol. Geol.,V. IV,I,1956,119.
12. *A.d'Orbigny.* Prodrôme de Paléontologie stratigraphique universelle des animaux Mollusques et rayonnes. Paris,1850.
13. *A.Hyatt.* Pseudoceratites of the Creatacecus. U.S.Geol.Survey Monogr.,44, 1903, 250.
14. *K.Gerhardt.*N. Jahrb. f. Min.etc. Beilageband II, 1897, 118-208.