

**Материалы III Международного симпозиума**

# ЭВОЛЮЦИЯ ЖИЗНИ НА ЗЕМЛЕ



# EVOLUTION OF LIFE ON THE EARTH

**Proceedings of the III International Symposium**

ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ОБРАЗОВАНИЮ  
ТОМСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ



ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО НЕДРОПОЛЬЗОВАНИЮ  
ТЕРРИТОРИАЛЬНОЕ АГЕНТСТВО ПО НЕДРОПОЛЬЗОВАНИЮ  
ПО ТОМСКОЙ ОБЛАСТИ  
INTERNATIONAL PALEONTOLOGICAL ASSOCIATION



International  
Palaeontological  
Association

# *Эволюция жизни на Земле*

*Материалы  
III Международного симпозиума  
1–3 ноября 2005 г.*

Томск  
2005

УДК 56.017.2:576.12(525)

Э 158

**Э 158 Эволюция жизни на Земле: Материалы III Международного симпозиума, 1–3 ноября 2005 г., г. Томск / Отв. редактор В.М. Подобина. – Томск: Томский государственный университет, 2005. – 440 с.: ил. и цв. вкл.**

ISBN 5-94621-147-X

Сборник содержит материалы III Международного симпозиума «Эволюция жизни на Земле», проведенного в Томском государственном университете 1–4 ноября 2005 г. В трудах симпозиума традиционно сохраняется сложившаяся рубрикация разделов, соответствующих рабочим секциям: 1. Проблемы эволюции и систематики высших таксонов. 2. Изменение факторов среды и эволюция биот. 3. Генетические и молекулярные основы эволюции. 4. Древняя жизнь и стратиграфия докембрия и раннего кембрия. 5. Органический мир морского палеозоя. 6. Органический мир морского мезозоя и кайнозоя. 7. Флора и палеоландшафты фанерозоя. 8. Позвоночные животные мезозоя и кайнозоя. 9. Органический мир плейстоцена, эволюция экосистем и древний человек. 10. Развитие биосферы по экспонатам палеонтологических музеев.

Сборник представляет интерес для биологов, палеонтологов, стратиграфов, археологов, аспирантов, студентов естественных факультетов и специалистов широкого профиля.

УДК 56.017.2:576.12(525)

**Редакционная коллегия:**

В.М. Подобина (отв. редактор),

Т.А. Липницкая, С.Н. Макаренко, Г.М. Татьяна

*При поддержке Территориального Агентства по недропользованию по Томской области, Томской горнодобывающей компании, Томского отделения «Газпромбанк»*

UDC 56.017.2:576.12(525)

E 158

**E 158 Evolution of Life on the Earth: Proceedings of the III International Symposium, November 1–3, 2005, Tomsk / Editor-in-Chief V.M. Podobina. – Tomsk: TSU Publishing House, 2005. – 440 p., ill.**

ISBN 5-94621-147-X

The book represents the proceedings of the III International Symposium “Evolution of Life on the Earth” held in Tomsk State University in November 1 to 4, 2005. The volume is organized into sections following the scientific workshops of the Symposium: 1. Problems of evolution and systematics of higher taxa; 2 Alterations in environmental factors and evolution of biotas; 3. Genetic and molecular essentials of evolution; 4. Ancient life and stratigraphy of the Precambrian and Early Cambrian; 5. Organic world of the marine Paleozoic; 6. Organic world of marine Mesozoic and Cenozoic; 7. Phanerozoic flora and paleolandscapes; 8. Mesozoic-Cenozoic vertebrates; 9. Pleistocene organic world, evolution of ecosystems and the ancient man; 10. Development of biosphere in the displays of paleontological museums.

The book will be of interest for biologists, paleontologists, stratigraphers, archaeologists, post-graduates, natural science students and experts.

UDC 56.017.2:576.12(525)

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*With financial support of the Territorial Subsoil Use Agency in Tomsk region, the Tomsk Mining Company, the Tomsk Department of “Gazprombank”*

ISBN 5-94621-147-X

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Section 9. PLEISTOCENE ORGANIC WORLD,  
EVOLUTION OF ECOSYSTEMS AND ANCIENT MAN

ODONTOLOGICAL DISTINGUISHING CHARACTERS OF THE  
PLEISTOCENE EURASIAN RHINOCEROS *STEPHANORHINUS KIRCHBERGENSIS*  
(JÄGER, 1839) WITH A REVISION OF THE SPECIES IN ITALY

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**INTRODUCTION.** The Pleistocene «tandem-horned» eurasiatic interglacial rhinoceros *Stephanorhinus kirchbergensis* (Jaeger, 1839) – better known in Russia as «nosorog Merka» (literally, Merck's rhinoceros) – has been previously identified, during the last two centuries, also as *Rhinoceros megarhinus* de Christol, 1834; *Rhinoceros leptorhinus* Cuvier 1836; *Rhinoceros kirchbergense* Jäger, 1839; *Rhinoceros Merckii* (or *merckii*, *mercki*, *merki*, *Mercki*) Kaup, 1841; *Dicerorhinus mercki* Kaup, 1841; *Rhinoceros incisivus* Mercki; *Rhinoceros leptorhinus* Owen, 1850; *Rhinoceros (Tichorhinus) Merckii* Brandt, 1877; *Rhinoceros Mercki (Merckii) var. brachycephala* Schroeder, 1903; *Coelodonta merckii* Abel, 1919; *Dicerorhinus kirchbergensis* Hooijer, 1947; *Dicerorhinus mercki (kirchbergensis)* (Jäger) var. *brachycephalus* Schroeder vel *Dicerorhinus merckii* Mayer, 1971. In monographs, the Plio-Pleistocene European rhinoceroses – *Coelodonta antiquitatis* (Blum.) and *Elasmotherium* excepted – have traditionally been assigned to the genus *Dicerorhinus* (Gloger, 1841); Fortelius, Mazza & Sala [4] have substituted the name *Dicerorhinus* for all the Plio-Pleistocene European rhinoceros species by *Stephanorhinus* – as *nomen conservandum* – the nomenclature previously introduced by Kretzoi (1942).

*S. kirchbergensis* has very often diagnostically been confused – and the same situation survives *de facto* at present – with other rhinoceros species, particularly with *Stephanorhinus hemitoechus* (Falconer, 1868) and *Coelodonta antiquitatis* (Blumenbach, 1799). In effect, apparently, there are some similarities with these two species, at least as regards some features. Again, many authors also misidentified *S. kirchbergensis* with *Stephanorhinus etruscus* (Falconer, 1868), *Stephanorhinus hundsheimensis* (Toula, 1902), *Stephanorhinus jeanvireti* (Guérin, 1973), *Stephanorhinus megarhinus* (de Christol, 1834), *Dicerorhinus orientalis* (Schlosser, 1921), *Rhinoceros binagadensis* Dzhafarov 1956 and others [2]. Besides, for a long time too many palaeontologists believed that *S. kirchbergensis* and *S. hemitoechus* represented only one species.

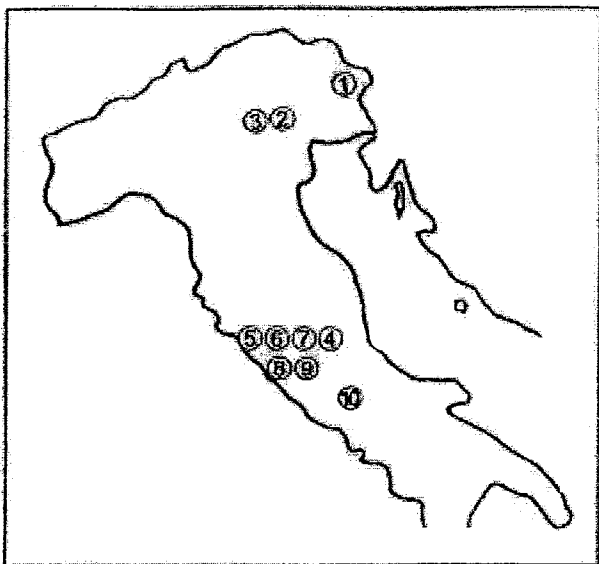
In spite of the progress which has been made during the past decades, we must accept – even if *oborto collo* –

that many nomenclatural and taxonomic problems incontestably still exist.

On the other hand, Loose [9] seized the opportunity to emphasize that «... any publications in which the name *Rhinoceros* (or *Dicerorhinus*) *merckii* is used, should be read with the utmost caution». Contemporary palaeontologists contribute to perpetuate this deprecable «tradition» from paper to paper, from handbook to handbook. One of the basic problems, from my point of view, is represented by the fact that too often the diagnoses are based exclusively on postcranial rests (osteological basis) so that errors of identification among the species are frequently possible, whereas the attribution by means of teeth is unequivocal, a fact that too many specialists find too difficult to accept. But, unfortunately, since «*palaeontology of the mammals is mostly odontology...*» [9], it is absolutely necessary to keep in mind this ground notion, and to understand that, as a general rule, teeth are an environmental response; for this reason, they do not necessarily testify the dimensions of an animal (large teeth do not mean a large animal, but at the most a large skull) and, by the same token, when similar, they do not necessarily indicate a phylogenetic relationship between them.

My personal opinion is in favour of the wide agreement – as Heissig [7] previously asserted – that the rhinoceroses are a highly stereotyped group with little morphological divergence; in other words, it means that, morphologically, substantial intraspecific differences and, conversely, interspecific likenesses may usually be found among them.

According to Wuest [11], Bernsen [1: 46, 104] Guérin [5, 6], Kurtén [8] and other prominent palaeontologists, *S. kirchbergensis* was depicted as a large-sized rhinoceros, in some cases absolutely gigantic («the biggest *Dicerorhinus* which lived on the planet») even if Loose [9: 19] has always vigorously rejected this thesis. However, anatomically, *S. kirchbergensis* has a very elongated half-high posture skull (as a browser) with an ossified *septum nasalis* only in its anterior portion; from the lateral view, a remarkable convexity indicates the insertion of the frontal horn; the *mandibula* is showing a long symphysis, and a horizontal high, heavy, thick branch with a very brachyodont dentition. The graviportal postcranial skeleton, undoubtedly of



**Figure** – Index maps of the geographical localization of the sites: (1) **Cava Italmonti** (Vernasso, Cividale del Friuli, Udine); (2) **Cava “Calcara”** (Monte di Malo, Vicenza); (3) **Fornace di S. Ambrogio di Valpolicella** (Verona); (4) **Farfa river at Ponte sul Farfa** (Roma); (5) **Castel di Guido** (Roma); (6) **Roma, Aniene river at Monte Sacro**; (7) **Roma, Sedia del Diavolo**; (8) **Roma, Tor di Quinto**; (9) **Roma, Tiber at Ponte Molle** (or Ponte Mollo, now called Ponte Milvio); (10) **Cava Bernardo & Vincenzo Di Pede** (Madonna di Valle Radice, Sora, Frosinone)

*Stephanorhinus* type, with big and long bones suggests, morphologically, a demi-cursorial animal. Out of the several reconstructions of the species, in my opinion that of Flerov seems to be very close to reality.

The spreading areal of *S. kirchbergensis* would include a large part of the eurasian continent – in Siberia, at least up to 110° E [2] – in this context excluding the areals situated at high latitudes – save only one case, in Siberia, where remains of *S. kirchbergensis* came to light at about 64° N [2, 3] – and both in the British and the Mediterranean Isles.

In literature, some reports on the presence of *S. kirchbergensis* in South-East Asia are also referred; nevertheless, they obviously will have to be attentively evaluated as possibilities of misidentifications with other local species (perhaps, *Dicerorhinus yunchuchensis* Chow and/or *Dicerorhinus choukoutiensis* Wang) still exist.

**MATERIALS.** Among a great amount of fossil material belonging to rhinoceroses and available in palaeontological collections of Italian museums, some odontological remains (isolated teeth and jaws) coming from ten localities of Northern and Central Italy (Figure) have been excerpted. Until to-day, all the material described here is still unpublished.

**1) Cava Italmonti** (Vernasso, Cividale del Friuli, Udine, Friuli Venezia Giulia, North-Eastern Italy). A travertine quarry opens in the village of Vernasso at the border between the towns of Cividale del Friuli and San Pietro al Natisone, along the SS 54 highway (Udine–Kobarid [Slovenia] axis). Here, in some natural cavities developing in carbonatic blocks and in rock fractures of carst origin, filled with «red sands», two second upper

molars, as well as one fourth upper premolar and one second lower molar have been recovered [MFSNU 220297-220298-220299-220300] (Pl. 1; Fig. 1, 2, 3). The odontological rests are preserved at Museo Friulano di Storia Naturale in Udine;

**2) Cava «Calcara»** (Monte di Malo, Vicenza, Veneto, North-Eastern Italy). Only one isolated fourth upper premolar [MPP s.n.] (Pl. 1; Fig. 4; *calcum*) comes from Cava Calcara near Monte di Malo (Vicenza). The tooth, recovered in a rock crack in which some other osteological remains were contained, represents the sole remains collected in the Calcara quarry (collections of Museo Paleontologico in Priabona near Monte di Malo);

**3) Fornace di S. Ambrogio di Valpolicella** (Verona, Veneto, North-Eastern Italy). Three upper molars, three upper premolars, three lower molars, and two lower premolars (MCSN-V 9637, MCSN-V 9638, MCSN-V 9641, MCSN-V 9646, MCSN-V 9647 figuring in Pl. 1; Fig. 5, 6, 7, 8, 9) have been found in Fornace di S. Ambrogio di Valpolicella (Verona) in the first half of the XX century. Even if isolated, the remains form two semiarches, an upper and a lower-one respectively, belonging to only one individual; no more information on this discovery is available (collections of Museo Civico di Storia Naturale in Verona);

**4) Farfa river at Ponte sul Farfa** (Fara Sabina, Roma, Latium, Central Italy). In the second half of the XIX century, near Fara Sabina (about 40 Km north-east of Rome), along the left bank of the Farfa river (an affluent of the Tiber), only one isolated second upper molar [MPUR 1432/40] (Pl. 3; Fig. 1) has been discovered; no further information on this discovery is available (collections of the Museo di Paleontologia of University «La Sapienza» in Rome);

**5) Castel di Guido** (Roma, Latium, Central Italy). In the second half of the XIX century – 17.4 Km west of Rome, along the SS 1 Aurelia highroad, Roma–Civitavecchia axis – near Castel di Guido, only one isolated first upper molar [MPUR s.n.] (Pl. 3; Fig. 2) has been recovered; here too, no information on the discovery is available (collections of the Museo di Paleontologia of University «La Sapienza» in Rome);

**6) Roma, Aniene river at Monte Sacro** (Latium, Central Italy). In February 1906, along the right bank of the Aniene river at Monte Sacro (at that time, a suburb of Rome), two isolated third upper molars [MPUR 1428/24 (Pl. 3; Fig. 3a, 3b) and MPUR 1476/105] came to light; no more information on the discovery is available (collections of the Museo di Paleontologia of University «La Sapienza» in Rome);

**7) Roma, Sedia del Diavolo** (Latium, Central Italy). A full upper jaw [MPUR 1498] (Pl. 2; Fig. 1a) was found, in the second half of the XIX century, at Sedia del Diavolo (now, piazza Elio Callistio; at that time, a suburb of Rome); no more information on this discovery is available (collections of the Museo di Paleontologia of University «La Sapienza» in Rome);

**8) Roma, Tor di Quinto** (Latium, Central Italy). In 1894, in Tor di Quinto (at that time, a suburb of Rome), three isolated teeth – second lower premolar [MPUR 1458/54],

Dimensions of the *S. kirchbergensis* (Jaeger, 1839) teeth from ten Italian localities, mm

N	SPECIMEN	COLLECTION	BL	LL	MW	DW	LOCALITY
1	II upper molar	MFSNU 220297	70	=	70,3	55	Cava Italmonti, Vernasso (Cividale d. Friuli, Udine)
2	II upper molar	MFSNU 220298	70,5	50	71	55	Cava Italmonti, Vernasso (Cividale d. Friuli, Udine)
3	IV upper premolar	MFSNU 220299	46,5	38	60	52,5	Cava Italmonti, Vernasso (Cividale d. Friuli, Udine)
4	II lower molar	MFSNU 220300	55,5	49,5	33,5	35,8	Cava Italmonti, Vernasso (Cividale d. Friuli, Udine)
5	II upper molar	MCSN-V 9637	69	50,5	66	53,5	Fornace di S. Ambrogio di Valpolicella (Verona)
6	III upper premolar	MCSN-V 9638	47	39	60	56	Fornace di S. Ambrogio di Valpolicella (Verona)
7	I upper molar	MCSN-V 9641	59	47	65	54,5	Fornace di S. Ambrogio di Valpolicella (Verona)
8	II upper molar	MCSN-V 9646	67	50	68	54	Fornace di S. Ambrogio di Valpolicella (Verona)
9	IV upper premolar	MCSN-V 9647	51	45	67	58,5	Fornace di S. Ambrogio di Valpolicella (Verona)
10	II upper premolar	MCSN-V s.n.	37,2	27	39,2	43,7	Fornace di S. Ambrogio di Valpolicella (Verona)
11	III lower molar	MCSN-V s.n.	62,3	59	34,8	37	Fornace di S. Ambrogio di Valpolicella (Verona)
12	IV lower premolar	MCSN-V s.n.	45,1	39	30,2	34,5	Fornace di S. Ambrogio di Valpolicella (Verona)
13	III lower premolar	MCSN-V s.n.	38,5	36,3	24	30,7	Fornace di S. Ambrogio di Valpolicella (Verona)
14	IV upper premolar	MPP s.n.	45,5	38,5	65,8	56,5	Cava Calcara, Monte di Malo (Vicenza)
15	II upper molar	MPUR 1432/40	62,2	48	65,5	57,3	Farfa river at Ponte sul Farfa (Fara Sabina, Roma)
16	I upper molar	MPUR s.n.	48,8	47	57,2	47,1	Castel di Guido (Roma)
17	III upper molar	MPUR 1476/105	>52,4	=	>53	>46	Roma, Aniene river at Monte Sacro
18	III upper molar	MPUR 1428/24	62,8	=	58,6	52	Roma, Aniene river at Monte Sacro
<b>JAW (P<sup>2</sup>-M<sup>3</sup>) MPUR 1498 ROMA, SEDIA DEL DIAVOLO</b>							
19	II upper premolar	MPUR 1498-1	=	=	=	=	Roma, Sedia del Diavolo
20	III upper premolar	MPUR 1498-2	39	28	42	38,1	Roma, Sedia del Diavolo
21	IV upper premolar	MPUR 1498-3	47,3	37,3	58,2	48,1	Roma, Sedia del Diavolo
22	I upper molar	MPUR 1498-4	=	=	=	=	Roma, Sedia del Diavolo
23	II upper molar	MPUR 1498-5	65	47	67,4	50,7	Roma, Sedia del Diavolo
24	III upper molar	MPUR 1498-6	57,8	=	51,7	48	Roma, Sedia del Diavolo
25	IV lower premolar	MPUR 1455/86	45,2	42,4	22,1	24	Roma, Tor di Quinto
26	III lower premolar	MPUR 1455/87	32,6	31,8	22	26,5	Roma, Tor di Quinto
27	II lower premolar	MPUR 1458/54	31,2	24	13,6	19,8	Roma, Tor di Quinto
28	I (or II) lower molar	MPUR 1412/8	49,5	40	27,8	30	Roma, Tiber at Ponte Molle (Ponte Milvio)
29	II upper molar	MPUR 1417/115	66,5	54,3	76	>50	Roma, Tiber at Ponte Molle (Ponte Milvio)
30	IV upper premolar	MPUR 1421/107	49,5	39,5	71,6	61	Roma, Tiber at Ponte Molle (Ponte Milvio)
31	I upper molar	MPUR 1445/27	51,3	37	50,9	44,6	Roma, Tiber at Ponte Molle (Ponte Milvio)
32	III upper molar	MPUR 1454/117	67,8	=	57,2	54,1	Roma, Tiber at Ponte Molle (Ponte Milvio)
33	III upper molar	MPUR 1454/118	58	=	56,8	52,1	Roma, Tiber at Ponte Molle (Ponte Milvio)
<b>JAW (P<sup>3</sup>-M<sup>3</sup>) MPUR 1499 ROMA, TIBER AT PONTE MOLLE (now called PONTE MILVIO)</b>							
34	III upper premolar	MPUR 1499-2	39,5	30,8	48,2	42	Roma, Tiber at Ponte Molle (Ponte Milvio)
35	IV upper premolar	MPUR 1499-3	46	38	60	50,4	Roma, Tiber at Ponte Molle (Ponte Milvio)
36	I upper molar	MPUR 1499-4	48	42,8	55,5	47,5	Roma, Tiber at Ponte Molle (Ponte Milvio)
37	II upper molar	MPUR 1499-5	71	47,5	70,9	52,4	Roma, Tiber at Ponte Molle (Ponte Milvio)
38	III upper molar	MPUR 1499-6	63,4	=	58,2	52	Roma, Tiber at Ponte Molle (Ponte Milvio)
<b>JAW (P<sup>2</sup>-M<sup>3</sup>) MPUR 1497 ROMA, TIBER AT PONTE MOLLE (now called PONTE MILVIO)</b>							
39	II upper premolar	MPUR 1497-1	35	21,7	39,2	36	Roma, Tiber at Ponte Molle (Ponte Milvio)
40	III upper premolar	MPUR 1497-2	44,2	34,5	57,6	44,8	Roma, Tiber at Ponte Molle (Ponte Milvio)
41	IV upper premolar	MPUR 1497-3	47,8	38	63,2	51,1	Roma, Tiber at Ponte Molle (Ponte Milvio)
42	I upper molar	MPUR 1497-4	=	=	=	=	Roma, Tiber at Ponte Molle (Ponte Milvio)
43	II upper molar	MPUR 1497-5	=	=	=	=	Roma, Tiber at Ponte Molle (Ponte Milvio)
44	III upper molar	MPUR 1497-6	=	=	=	=	Roma, Tiber at Ponte Molle (Ponte Milvio)
45	III upper premolar	Ist.It.PU s.n.	44	31	54	50	Cava Di Pede, Madonna di Valle Radice (Frosinone)
46	I upper molar	MNPEPR s.n.	62	40	64,5	51	Cava Di Pede, Madonna di Valle Radice (Frosinone)
47	II upper molar	MNPEPR s.n.	65,5	45	67	59	Cava Di Pede, Madonna di Valle Radice (Frosinone)

BL = buccal length; LL = lingual length; MW = mesial width; DW = distal width.

fourth and third lower premolars [MPUR 1455/86, MPUR 1455/87] (Pl. 3; Figg. 4a, 4b, 5) – have been recovered in tuffaceous conglomerates; no more information on this discovery is available (collections of the Museo di Paleontologia of University «La Sapienza» in Rome);

9) **Roma, Tiber at Ponte Molle** [or **Ponte Mollo**, now called **Ponte Milvio**] (Latium, Central Italy). In the second half of the XIX century, in an outcrop on the right bank of the Tiber at Ponte Molle (or Ponte Mollo; now called Ponte Milvio; at that time, a suburb of Rome), two upper jaws [MPUR 1499, MPUR 1497] (Pl. 2; Fig. 2a, 2b) and five isolated teeth – first, or second, lower molar [MPUR 1412/8], second upper molar [MPUR 1417/115], fourth upper premolar [MPUR 1421/107] (Pl. 3; Fig. 6a, 6b, 7a, 7b, 8a, 8b), first upper molar [MPUR 1445/27], two third upper molars [MPUR 1454/117, MPUR 1454/118] – have been recovered. Here too, no further information is available (collections of the Museo di Paleontologia of University «La Sapienza» in Rome);

10) **Cava Bernardo & Vincenzo Di Pede** (Madonna di Valle Radice, Sora, Frosinone, Latium, Central Italy). In a crack of this travertine quarry, five isolated teeth have been recently recovered: second, third, fourth upper premolars [Ist.It.PU s.n.], first and second upper molars [MNPEP s.n.] (not figuring here); two of them are much damaged. The five teeth appear unequivocally associated and, consequently, belonging to the same jaw.

The fossil material is preserved in the collections of the Istituto Italiano di Paleontologia Umana (v. Vittorio Veneto 108, 00187 Roma) and at the Museo Nazionale Preistorico Etnografico «Luigi Pigorini» (v.le A. Lincoln 6, 00144 Roma).

A detailed list of the materials, their measurements, and localities is given in Table.

**ODONTOLOGICAL DISTINGUISHING FEATURES.** The odontological features are listed together since the same patterns may be observed on all of the material. Odontologically – great dimensions apart! – *S. kirchbergensis* has a very brachyodont dentition with high crowns; nevertheless, in both the upper and lower jaws, the premolars (as in other rhinoceros species much molarized), by comparison, appear much less brachyodont than the molars; this feature is more evident in the upper dentition.

On both the upper and lower teeth, the enamel is very thick, often smooth and bright; as a general rule, the coronal cement is absent; rarely, if present, it is very thin. In a very high percentage (at least 90 % of the cases), the buccal (vestibular) sides of the teeth are characterized by the presence of sub-vertical bluish lines. Sometimes, also some styli may be present. Metrically, at a glance, it is evident that there is a great variability among the dimensions of the same teeth typology with wide superpositions in comparison with those of other rhinoceros species. For this reason, from my personal point of view, biometry has to be considered (and used) very cautiously.

**Upper dentition.** The upper teeth (particularly the molars) are much higher buccally than lingually. From the

occlusal view, the ectolophe of both the first and the second molar is rather similar to that of *S. hemitoechus*; nevertheless, in *S. kirchbergensis* its folds are shallow; in particular, the fold between paracone and mesostyle in *S. kirchbergensis* appears less emphasized than in *S. hemitoechus*, so that, on the whole, the undulation of the ectolophe in *S. kirchbergensis* appears to be «softer». In comparison with other rhinoceros species, the premolars are mesially considerable broad (and, by comparison, lingually relatively short); the folds of the ectolophe are shallow, the anterior valleys are very narrow; the ectolophe, mesially – and, often, also distally – curves strongly towards the inside of the tooth. In both the molars and the premolars, the protolophes and the metalophes show a remarkable bulbosity which, particularly on the second molar, may be of considerable dimensions (see MPUR 1432/40, 1454/118, 1498-5); however, these dimensions are not related to those of the tooth.

**Lower dentition.** In contrast with the upper jaw, significant differences between molars and premolars cannot be observed in the lower dentition, the lower premolars being much more molarized than the uppers ones, reason for which, when molars and premolars are isolated, it may often be problematic to distinguish from each other. However, their valleys are always drastically reduced in comparison with those of other rhinoceros species.

**DISCUSSION.** Unfortunately, all these remains are characterized by a lack of reliable stratigraphic data; in this situation, all the finds may dubiously be referred to the Middle Late-Late Pleistocene. From my personal point of view, this lack does not affect the present work; based on observations of specimens coming from ten Italian localities, it is morphological in its essence, its objective being that of pointing out the most salient distinguishing characters of the dental apparatus of *S. kirchbergensis*.

According to all expounded above, there is no doubt that *S. kirchbergensis* – among the Plio-Pleistocene rhinoceros species – is characterized by very suggestive odonto-morphological traits and is, therefore, one of the most distinctive species; this means that there are systematical differences between the teeth of this species and those of others.

At present, from the fossil evidences, *S. kirchbergensis* – unlike *Coelodonta antiquitatis* (Blum.), which abounds in Eurasia, as well as other Plio-Pleistocene rhinoceroses – seems to be decidedly rare in that territory, being reported from a relatively limited number of localities only. Recognized as a Middle Late Pleistocene species in Western Europe, it is certain that *S. kirchbergensis* is represented in Eurasia by four skulls only (Daxlanden, Mosbach, Steinheim a. d. Murr and Irkutsk), some upper and lower jaws, and some dozens of isolated teeth. Unfortunately, both cranial and postcranial easily datable rests are, *de facto*, very few.

The reasons of this rarity have not been unraveled yet; according to Loose [9], it may probably be due to two reasons: its ecological niche was unfavourable for its fossilisation or it was really a rare animal; I incline to the



Plate 1. *Stephanorhinus kirchbergensis* (Jaeger, 1839); Middle Late – Late Pleistocene (?); North-Eastern Italy. **Cava Italmonti** (Vernasso, Cividale del Friuli, Udine, Friuli Venezia Giulia); 1) second upper molar [MFSNU 220298], occlusal view; 2) fourth upper premolar [MFSNU 220299], occlusal view; 3) second lower molar [MFSNU 220300], occlusal view – **Cava "Calcara"** (Monte di Malo, Vicenza, Venezia Euganea); 4) fourth upper premolar [MPP s.n.] (calcum), occlusal view – **Fornace di S. Ambrogio di Valpolicella** (Verona, Venezia Euganea); 5) second upper molar [MCSN-V 9637], occlusal view; 6) second upper molar [MCSN-V 9646], occlusal view; 7) first upper molar [MCSN-V 9641], occlusal view; 8) third upper premolar [MCSN-V 9638], occlusal view; 9) fourth upper premolar [MCSN-V 9647], occlusal view

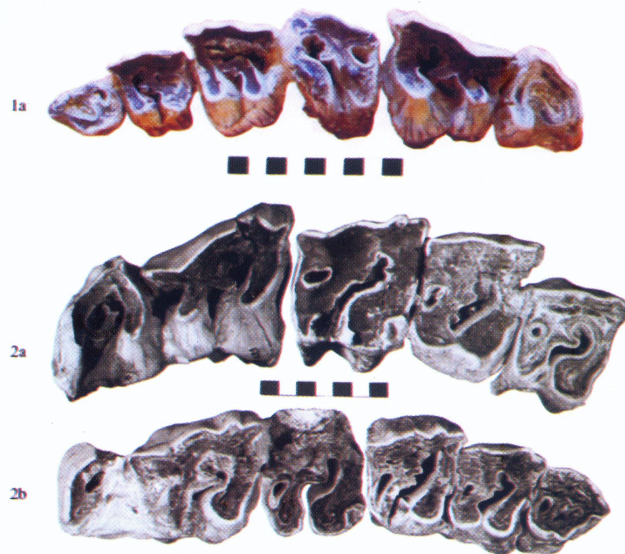


Plate 2. *Stephanorhinus kirchbergensis* (Jaeger, 1839); Middle Late - Late Pleistocene (?); Latium, Central Italy. **Roma, Sedia del Diavolo**; 1a) full upper jaw [MPUR 1498], occlusal view – **Roma, Tiber at Ponte Molle** (or Ponte Mollo, now called Ponte Milvio); 2a) upper jaw ( $M^3-P^3$ ) [MPUR 1499], occlusal view; 2b) full upper jaw ( $M^3-P^2$ ) [MPUR 1497], occlusal view



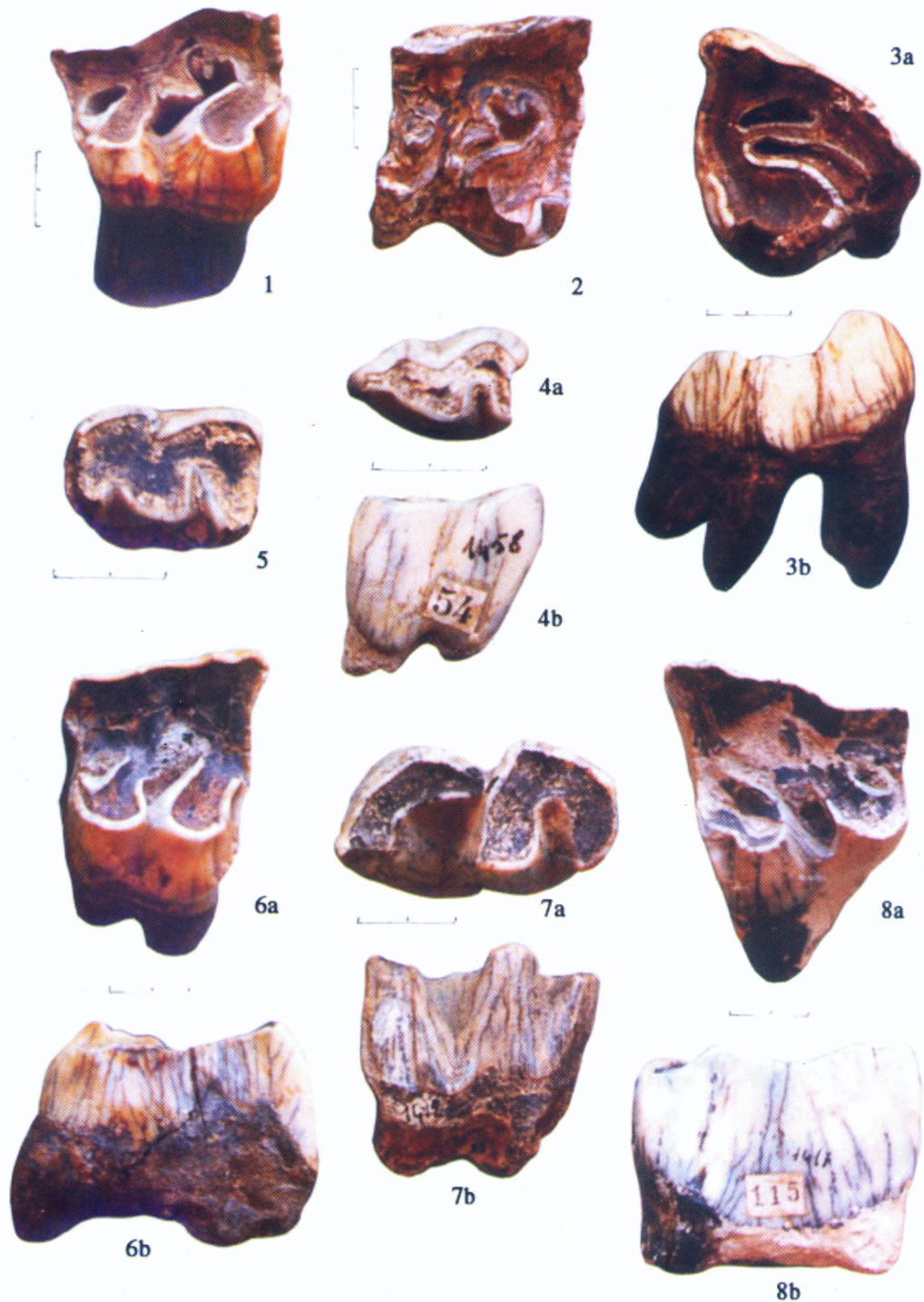


Plate 3. *Stephanorhinus kirchbergensis* (Jaeger, 1839); Middle Late - Late Pleistocene (?); Latium, Central Italy. **Farfa river at Ponte sul Farfa** (Roma); **1**) second upper molar [MPUR 1432], occlusal-lingual view – **Castel di Guido** (Roma); **2**) first upper molar [MPUR s.n.], occlusal view – **Roma, Monte Sacro**; **3**) third upper molar [MPUR 1428], **a**) occlusal view and **b**) buccal view – **Roma, Tor di Quinto**; **4**) second lower premolar [MPUR 1458], **a**) occlusal view and **b**) vestibular view; **5**) third lower premolar [MPUR 1455b], occlusal view – **Roma, Tiber at Ponte Molle** (or Ponte Mollo, now called Ponte Milvio); **6**) fourth upper premolar [MPUR 1421], **a**) occlusal-lingual view and **b**) mesial view; **7**) first (or second) lower molar [MPUR 1412], **a**) occlusal view and **b**) lingual view; **8**) second upper molar [MPUR 1417], **a**) occlusal-lingual view and **b**) buccal view

second hypothesis. At the same time, I find rather plausible a third hypothesis: it might be a question of a hybrid form.

In any case, the rarity of this species – despite of its being widely spread in Eurasia – has been witnessed on the Russian territory [2] as well as in the West European area. Not only; the present study was also partly motivated by the fact, useless to deny when faced with evidence, that *S. kirchbergensis* is a rhinoceros still little investigated, and consequently, not well known yet.

Until today, even if it would seem that *S. kirchbergensis* (unlike *C. antiquitatis* and many other animals which abound in the primitive parietal art) has not been represented in the rock paintings, it «interacted» with fossil humans: O. da Veiga Ferreira [10] reported few carved fragmentary bones referable to this species discovered at La Gruta nova de Columbeira near Bombarral, and at Mealhada (both located in Portugal).

The faunal complexes – including *Mammuthus chosaricus* Dubrovo, *Elephas antiquus* Falc. & Cautl., *Hippopotamus antiquus* Desmarest, *S. hemitoechus* (Falc.), *C. antiquitatis* (Blum.), *Elasmotherium sibiricum* Fischer, *Camelus knoblochi* Nehring, *Bison priscus* Boj., *Bos primigenius* Boj., *Equus ex gr. mosbachensis-germanicus*, *Equus caballus* L., *Equus hydruntinus* Reg., *Megaloceros giganteus* (Blum.), *Saiga tatarica* L., *Rangifer tarandus* L., *Capra ibex* L., *Cervus elaphus* L., *Capreolus capreolus* L., *Dama dama* (L.), *Ursus spelaeus* Rosenm., *Canis lupus* L., *Sus scrofa* L., *Castor* sp., *Trogontherium* sp.) – and the floristic complexes (Conifera, *Betula*, Graminacea, Cyperacea, Cicoria, Chenopodiacea, compositis) suggest a palaeoenvironmental landscape dominated by Conifera; but often also the open forest, as well the extensive grasslands with sparse trees, the steppe, the savanna, the prairie, and even the thick forest and the Mediterranean one; sometimes, the cold steppe with scarce trees. The temperature seems to be a very variable factor.

The problem concerning the phylogenetic relationship between *S. kirchbergensis* and other ancestral rhinoceros species is still unresolved; *S. megarhinus* (de Christol, 1834) being confined to the Early Pliocene, a wide *iatus temporalis* is placed between it and *S. kirchbergensis*; on the other hand, a belonging to the same *cladus*, cannot be excluded.

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