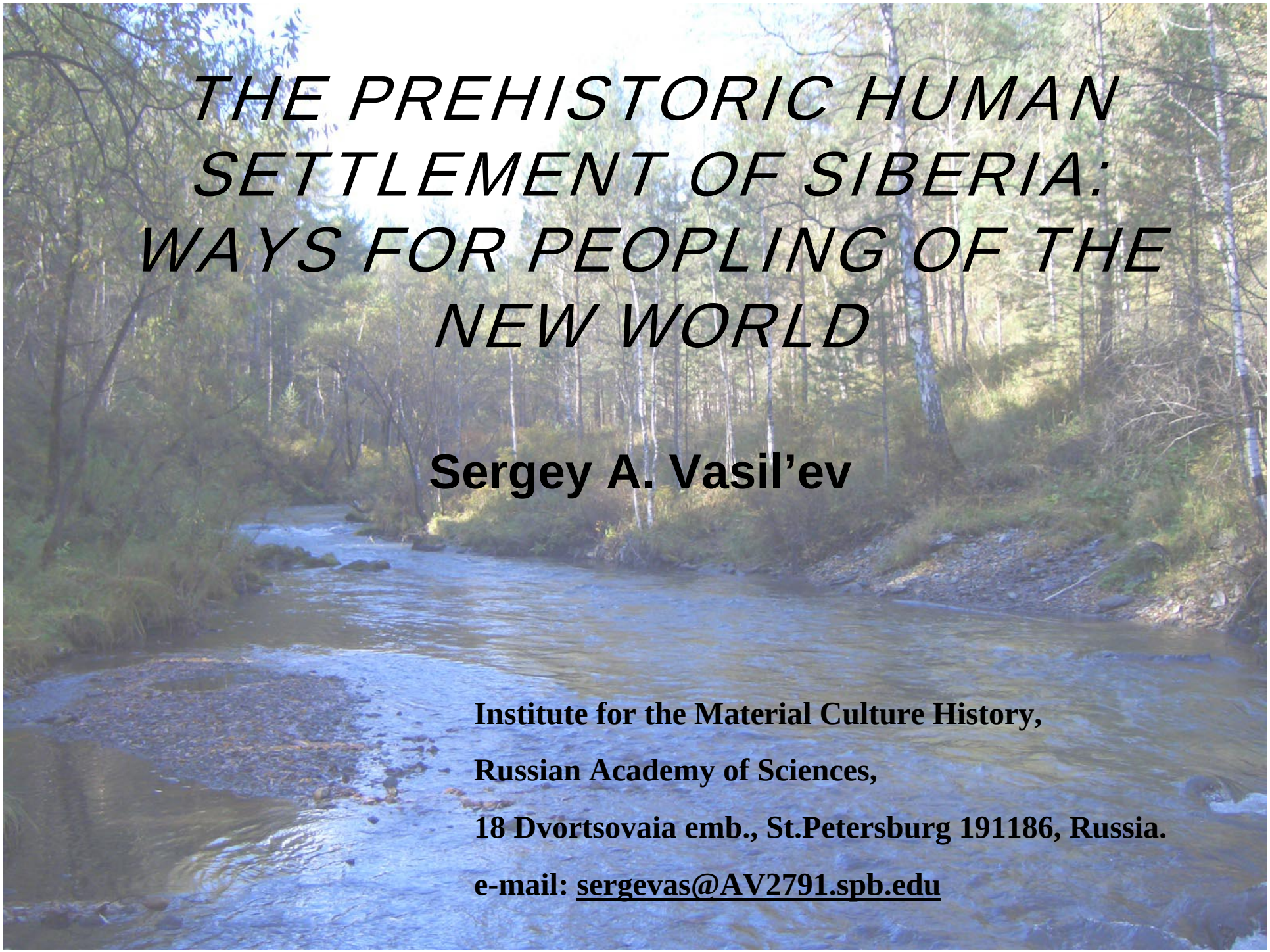


THE PREHISTORIC HUMAN SETTLEMENT OF SIBERIA: WAYS FOR PEOPLING OF THE NEW WORLD

Sergey A. Vasil'ev

Institute for the Material Culture History,

Russian Academy of Sciences,

18 Dvortsovaia emb., St.Petersburg 191186, Russia.

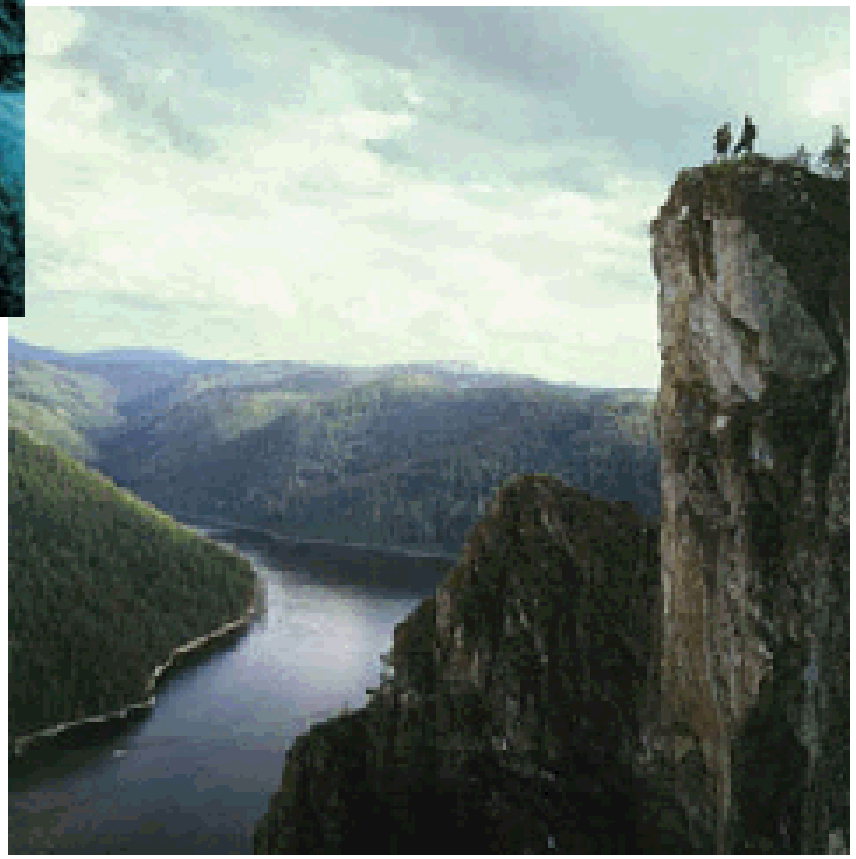
e-mail: sergevas@AV2791.spb.edu


Russia
0
800 km
0
800 mi
30°
90°E
150°
180°
Arctic Ocean
Svalbard (Norway)
Barents Sea
Kara Sea
Novaya Zemlya
Laptev Sea
East Siberian Sea
Bering Sea
Sea of Okhotsk
Sea of Japan
Yellow Sea
Caspian Sea
Black Sea
Aral Sea
Baltic Sea
Persian Gulf
Lake Baikal
U.S.
Provideniya
Pevek
Anadyr'
Cherskiy
Evensk
Tiksi
Dikson
Magadan
Petropavlovsk Kamchatskiy
Okhotsk
Okha
Sakhalin
Yuzhno Sakhalinsk
Komsomol'sk
Sovetskaya Gavan'
Urgal
Khabarovsk
Izvestkovyy
Vladivostok
Tokyo
Japan
N.Korea
Pyongyang
Seoul
S.Korea
Beijing
Ulaanbaatar
Mongolia
China
Kazakhstan
Russia
Ire.
U.K.
Dublin
London
Norway
Oslo
Belg.
Amsterdam
Neth.
Deri.
Sweden
Copenhagen
Stockholm
Germany
Berlin
Finland
Helsinki
Murmansk
Belomorsk
Czech Rep.
Prague
Aust.
Vienna
Poland
Warsaw
Riga
Tallinn
Estonia
Latvia
Lithuania
St. Petersburg
Arkhangel'sk
Naryan Mar
Slovakia
Bratislava
Budapest
Hung.
Vilnius
Minsk
Belarus
Novgorod
Konosha
Pechora
Vorkuta
Noril'sk
Yug.
Smolensk
Vologda
Tver'
Moscow
Kotlas
Salekhard
Tazovskiy
Igarka
Arctic Circle
Ukraine
Romania
Bucharest
Kiev
Bryansk
Moldova
Chişinău
Orel
Ryazan'
Nizhniy Novgorod
Bulg.
Voronezh
Kazan'
Perm'
Nadym
Urengoy
Surgut
Nizhnevartovsk
Yakutsk
Vilyuysk
Lensk
Aldan
Berkakit
Tynda
Penza
Saratov
Samara
Yekaterinburg
Tobol'sk
Rostov na Donu
Volgograd
Ufa
Chelyabinsk
Tyumen'
Kurgan
Novorossiysk
Ankara
Armavir
Turkey
Orenburg
Omsk
Tomsk
Novosibirsk
Krasnoyarsk
Lesosibirsk
Ust'Ilimsk
Ust' Kut
Bratsk
Tayshet
Blagoveshchensk
Astrakhan'
Orsk
Novokuznetsk
Abakan
Irkutsk
Chita
Borzya
Barnaul
Ulan Ude
Georgia
T'bilisi
Armenia
Yerevan
Azerb.
Azerbaijan
Baku
Syria
Iraq
Baghdad
Astana
Kyzyl
Uzbekistan
Turkmenistan
Tehran
Ashgabat
Tashkent
Almaty
Bishkek
Kyrgyzstan
Dushanbe
Tajikistan
Iran
Kuwait
Saudi Arabia
Afghanistan
Kabul
Pakistan
Lena
Ob
Yenisey
Vilyuy
Aldan
Amur
Angara
Irtysh
Kama
Volga
Pechora

West Siberian lakes

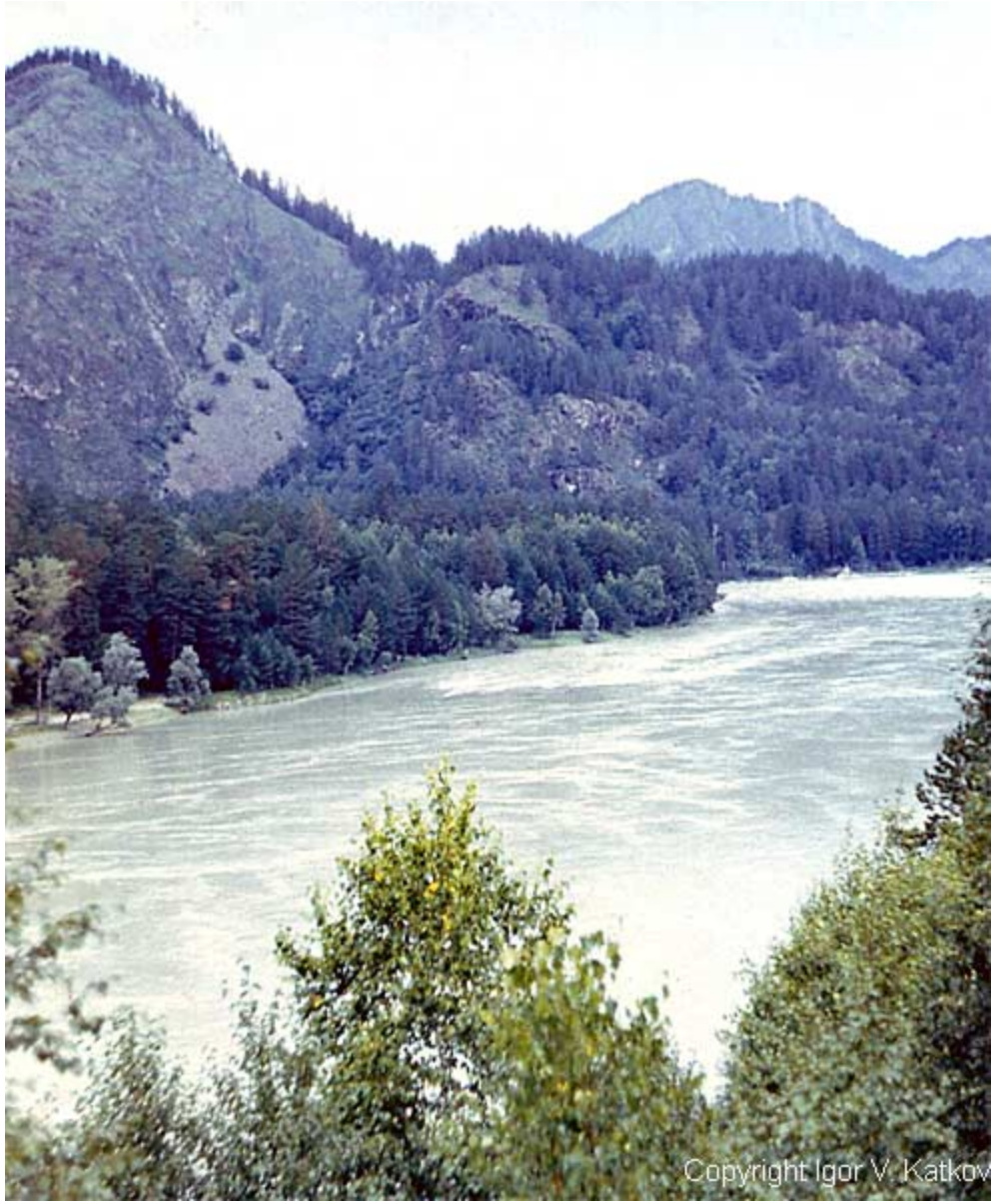
West Siberia. The Tom River

Central Siberian Plateau



The Angara River

Altay
The Kuium River



Altay
The Katun River

Yenisei near Krasnoiarsk

The Angara Waterhead

Lake Baikal

Trans-Baikal

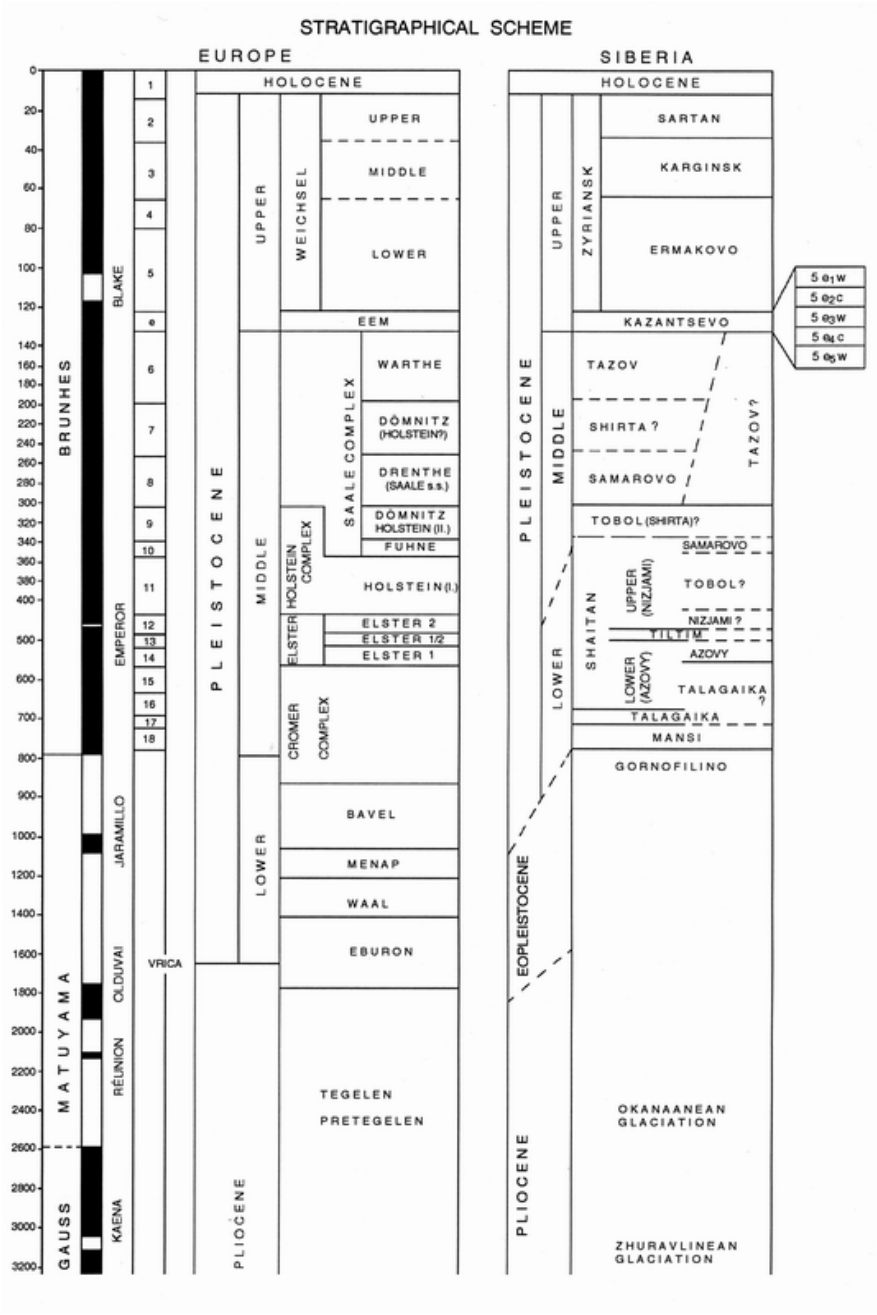
Pacific

Taiga at Primorye

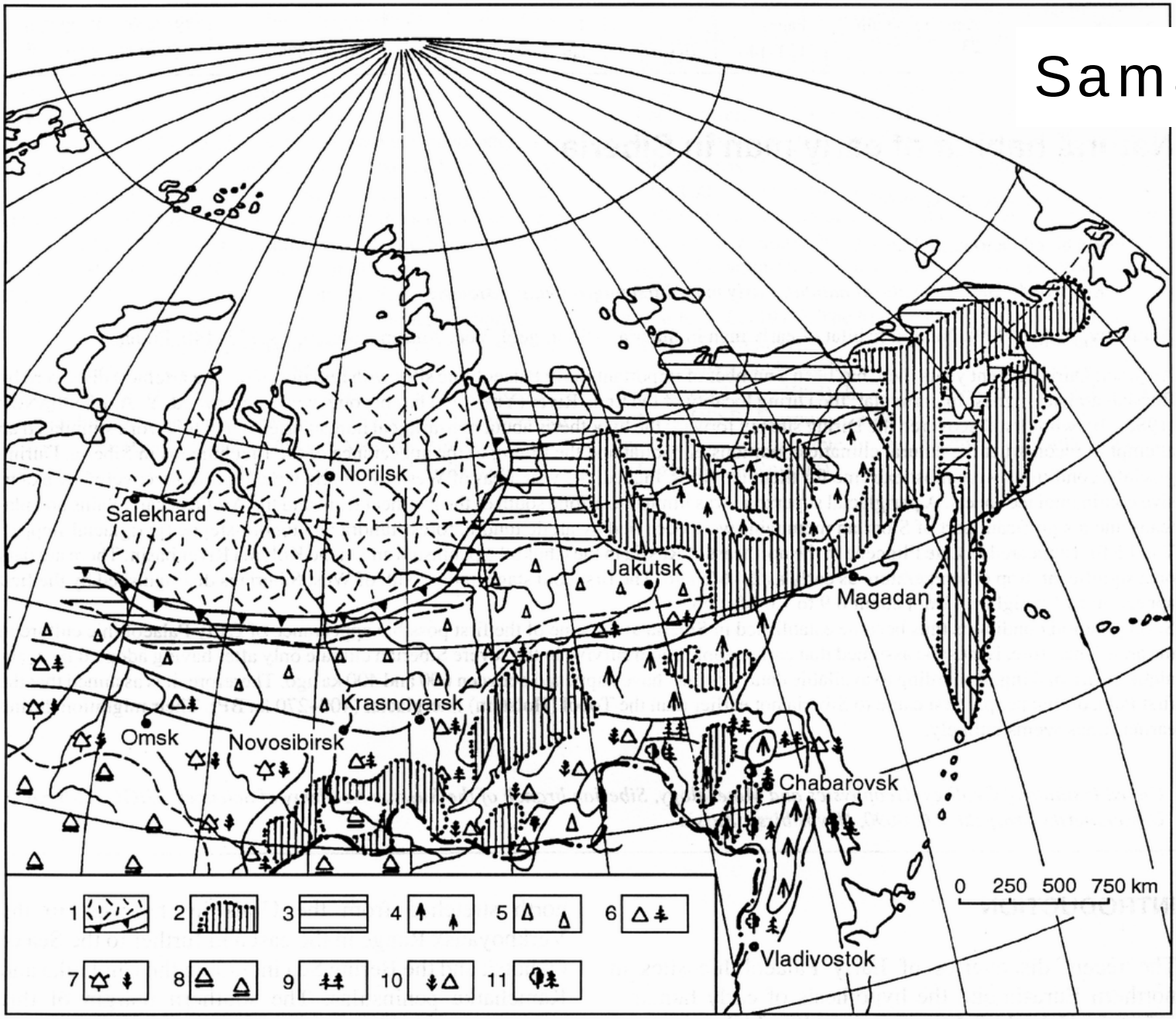
Kamchatka

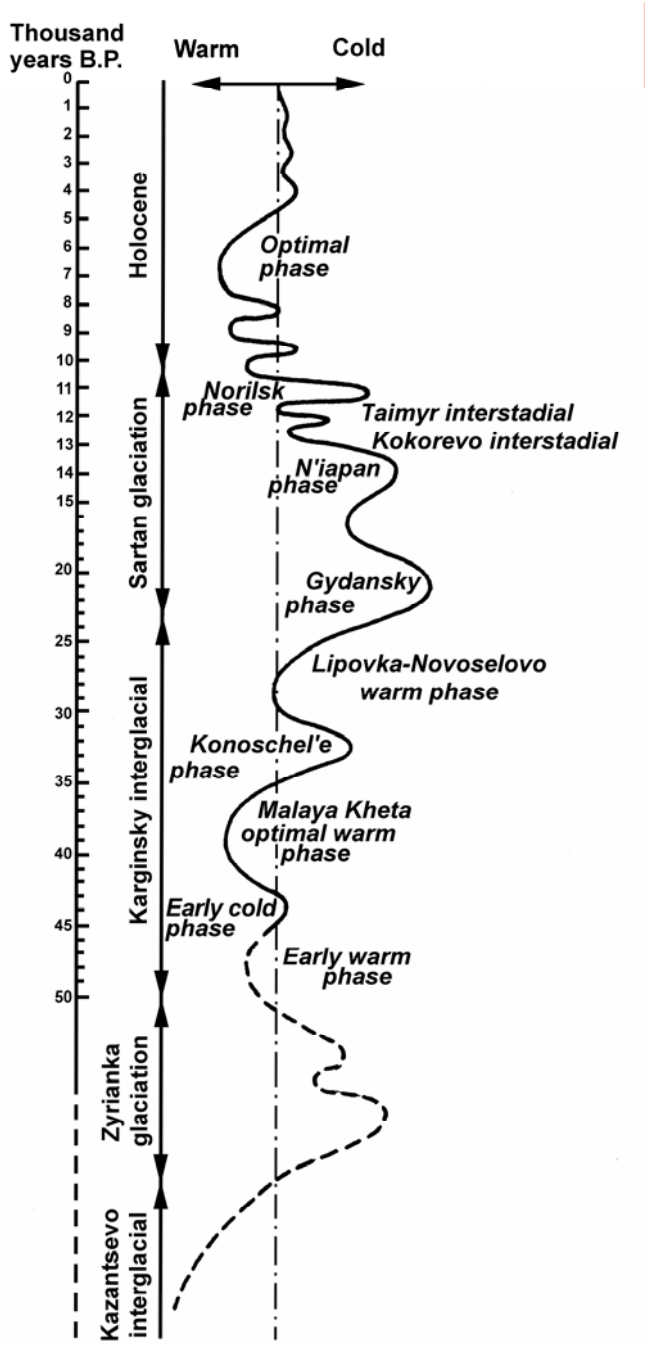
Kamchatka

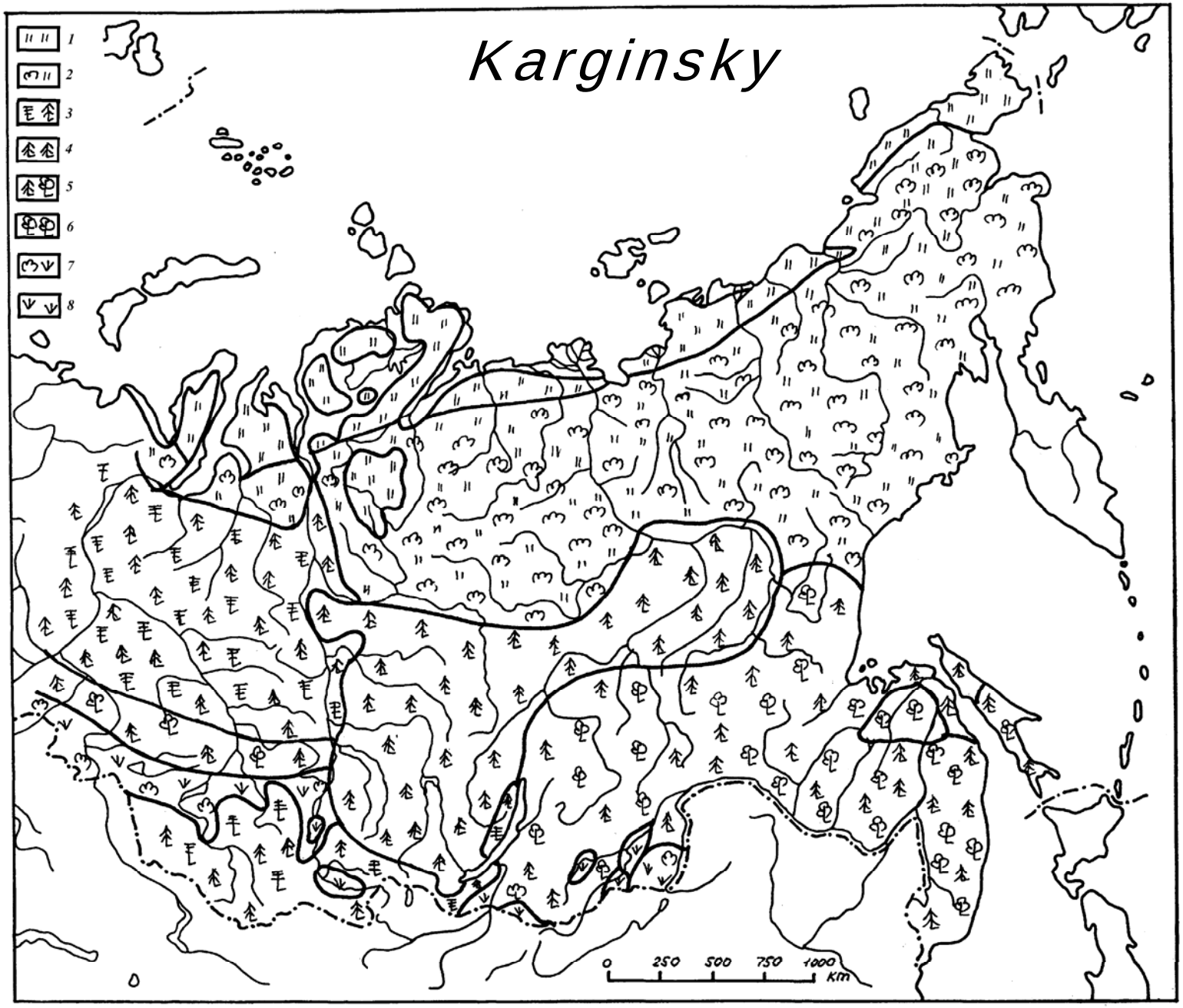
Chukotka

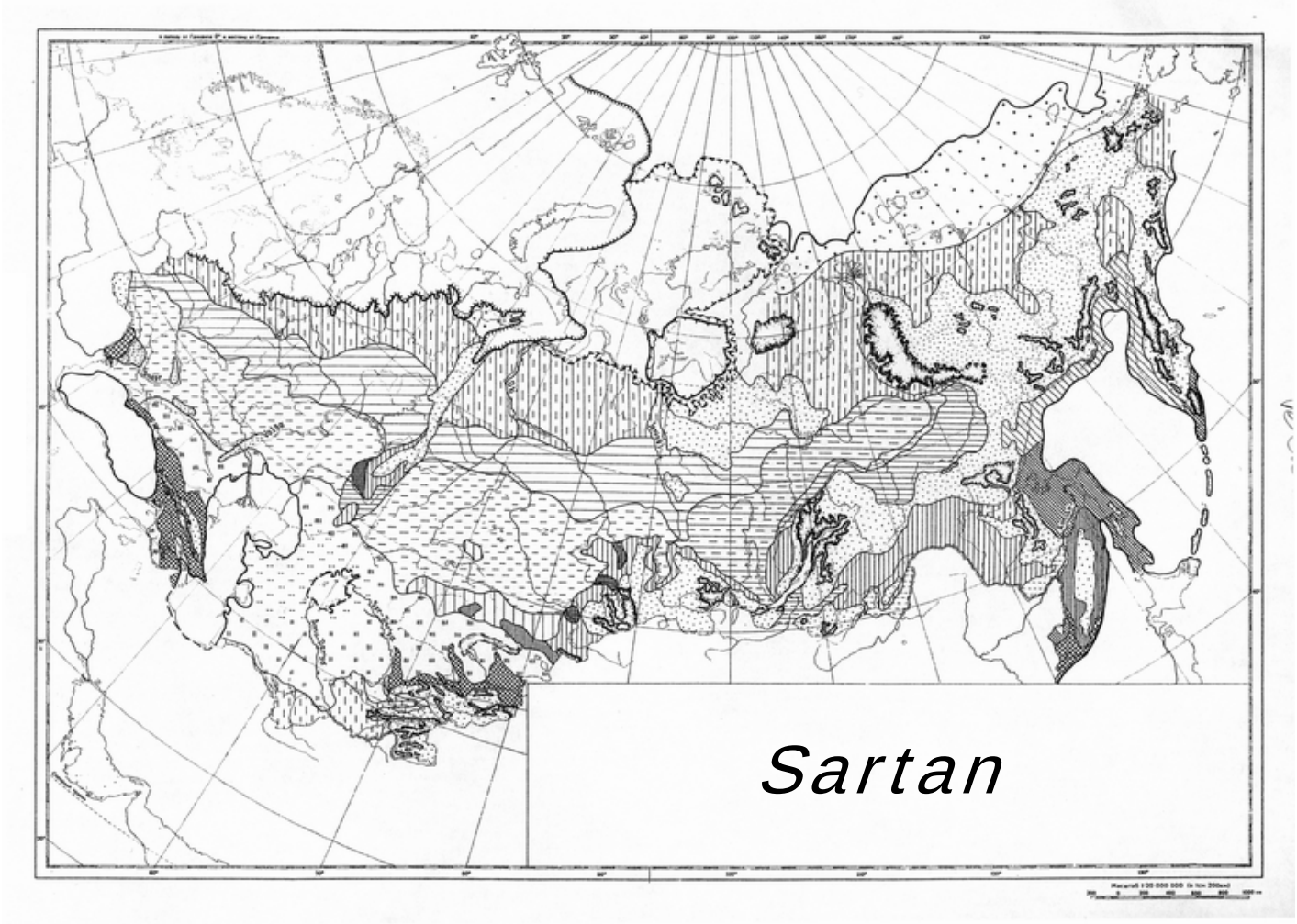

STRATIGRAPHICAL SCHEME
EUROPE
SIBERIA
HOLOCENE
PLEISTOCENE
PLIOCENE
UPPER
MIDDLE
LOWER
WEICHSEL
SAALE COMPLEX
HOLSTEIN COMPLEX
ELSTER
CROMER COMPLEX
UPPER
MIDDLE
LOWER
ZYRIANSK
SHAITAN
UPPER (NIZJAMI)
LOWER (AZOVY)
EOPLEISTOCENE
PLIOCENE
BRUNHES
MATUYAMA
GAUSS
BLAKE
EMPEROR
JARAMILLO
RÉUNION
OLDUVAI
KAENA
VRICA
1
2
3
4
5
e
6
7
8
9
10
11
12
13
14
15
16
17
18
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
500
600
700
800
900
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
UPPER
MIDDLE
LOWER
EEM
WARTHE
DÖMNITZ (HOLSTEIN?)
DRENTHE (SAALE s.s.)
DÖMNITZ HOLSTEIN (II.)
FUHNE
HOLSTEIN (I.)
ELSTER 2
ELSTER 1/2
ELSTER 1
BAVEL
MENAP
WAAL
EBURON
TEGELEN
PRETEGELEN
SARTAN
KARGINSK
ERMAKOVO
KAZANTSEVO
TAZOV
SHIRTA ?
SAMAROVO
TOBOL (SHIRTA)?
SAMAROVO
TOBOL?
NIZJAMI ?
TILTIM
AZOVY
TALAGAIKA ?
TALAGAIKA
MANSI
GORNOFILINO
OKANAANEAN GLACIATION
ZHURAVLINEAN GLACIATION
TAZOV?
5 e1W
5 e2C
5 e3W
5 e4C
5 e5W

Age (years BP)	Palaeomag-netic Epochs	Isotopic Stages		European Scale	Siberian Scale		Faunal Complexes
		1	Holocene	Holocene	Holocene		Modern
		2	Upper Pleistocene	Wurm	Zyrianka	Sartan	Upper Palaeolithic (Mammoth)
		3				Karginsky	
		4				Ermakovo	
100,000		5		Riss/Wurm	Kazantseva		?
		6	Middle Pleistocene	Riss	Bakhta	Taz	Ancient mammoth
200.000	Bruhnes	7				Shirta	
		8				Samarovo	Khazar
300,000		9		Mindel/Riss	Tobol'sk		?
		10					
400,000		11					
		12	Lower Pleistocene	Mindel	Niziamsky		Viatka, Oler, Tologoi
500,000		13					
		14					
		15					
600,000		16			Shaitansky		
		17					
		18					
		19		Gunz/ Mindel	Talagaika		
700,000	Matyama	20	Upper Eo-Pleistocene	Gunz			


Samarovo
Norilsk
Salekhard
Jakutsk
Magadan
Krasnoyarsk
Omsk
Novosibirsk
Chabarovsk
Vladivostok
0 250 500 750 km
1
2
3
4
5
6
7
8
9
10
11


Thousand years B.P.
Warm
Cold
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
20
25
30
35
40
45
50
Holocene
Sartan glaciation
Karginsky interglacial
Zyrianka glaciation
Kazantsevo interglacial
Optimal phase
Norilsk phase
Taimyr interstadial
Kokorevo interstadial
N'iapan phase
Gydansky phase
Lipovka-Novoselovo warm phase
Konoschel'e phase
Malaya Kheta optimal warm phase
Early cold phase
Early warm phase


Karginsky
1
2
3
4
5
6
7
8
0 250 500 750 1000 km



Periglacial region:
1. Arctic desert

2. Montane subarctic desert, montane tundra, and subalpine and alpine meadows in regions of mountain glaciation

3. Vegetational complex of tundra, steppe, and forest (larch, pine, and birch), and local halophytic communities

4. a. Periglacial forest steppe with larch, pine, birch, and tundra elements
b. Forest steppe with birch and pine

5. a. Open forest of larch and birch with tundra elements
b. Open birch and spruce forest

6. a. Open pine forest of low-mountains regions
b. Light coniferous montane forest
c. Dark coniferous and birch montane forest

7. Dark coniferous and coniferous/broad-leaved forest refugia

8. a. Periglacial steppe dominated by European and Turana elements
b. Periglacial steppe dominated by Mongolian and Dauro-Manchurian elements

9. a. Forest steppe with European broad-leaved trees
b. Forest steppe with Manchurean broad-leaved trees

Extraglacial region:
10. Mixed-grass flatland steppe

11. Grass/*Artemisis* steppe and scattered flatland semidesert

12. Montane steppe and semidesert

13. Coniferous/broad-leaved and broad-leaved mountane forests

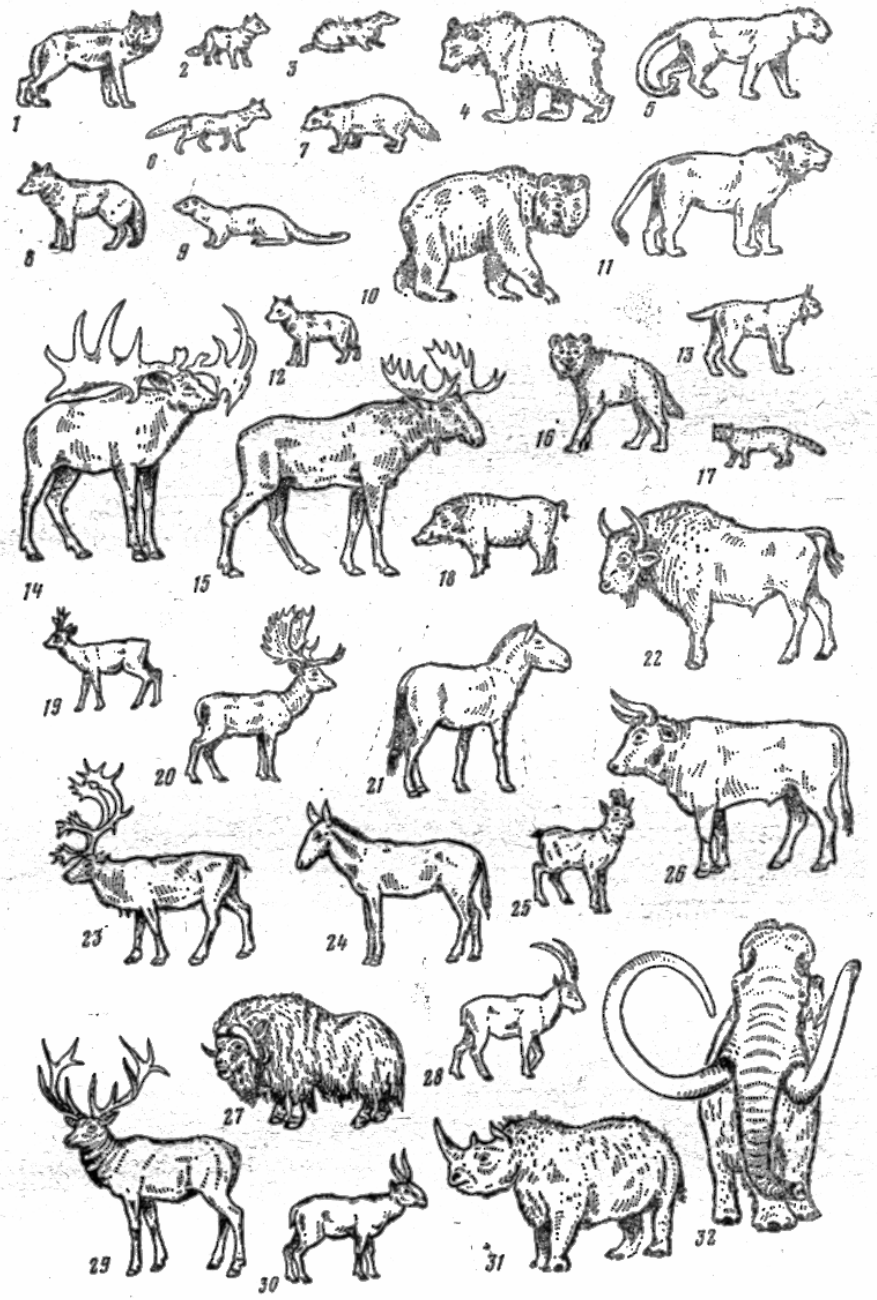
14. Areas outside vegetational reconstruction

15. Glacial limits: a. Maximum variant. b. Minimum variant

16. Mountain glaciers

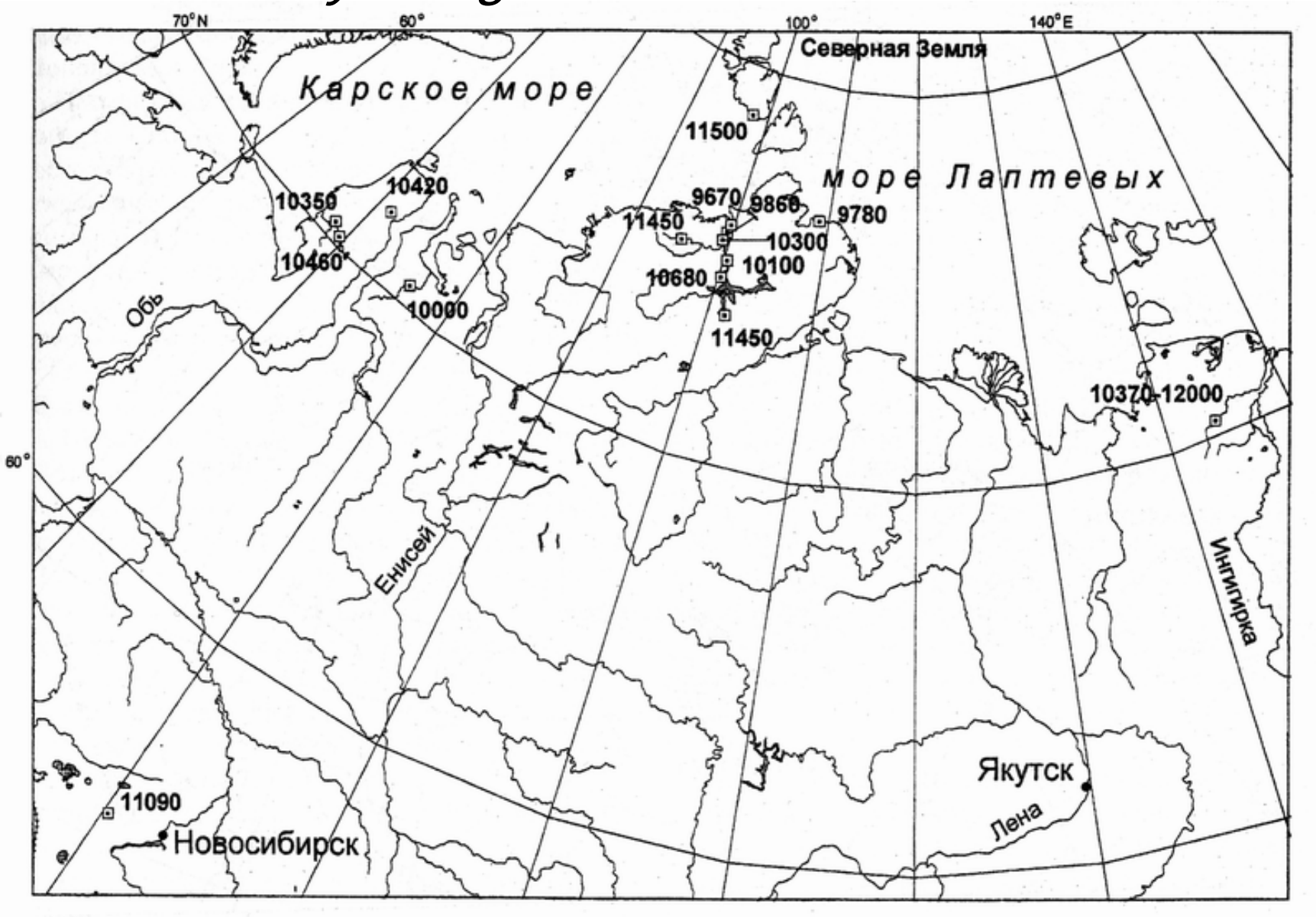
17. Coastline

18. Unreconstructed coastline

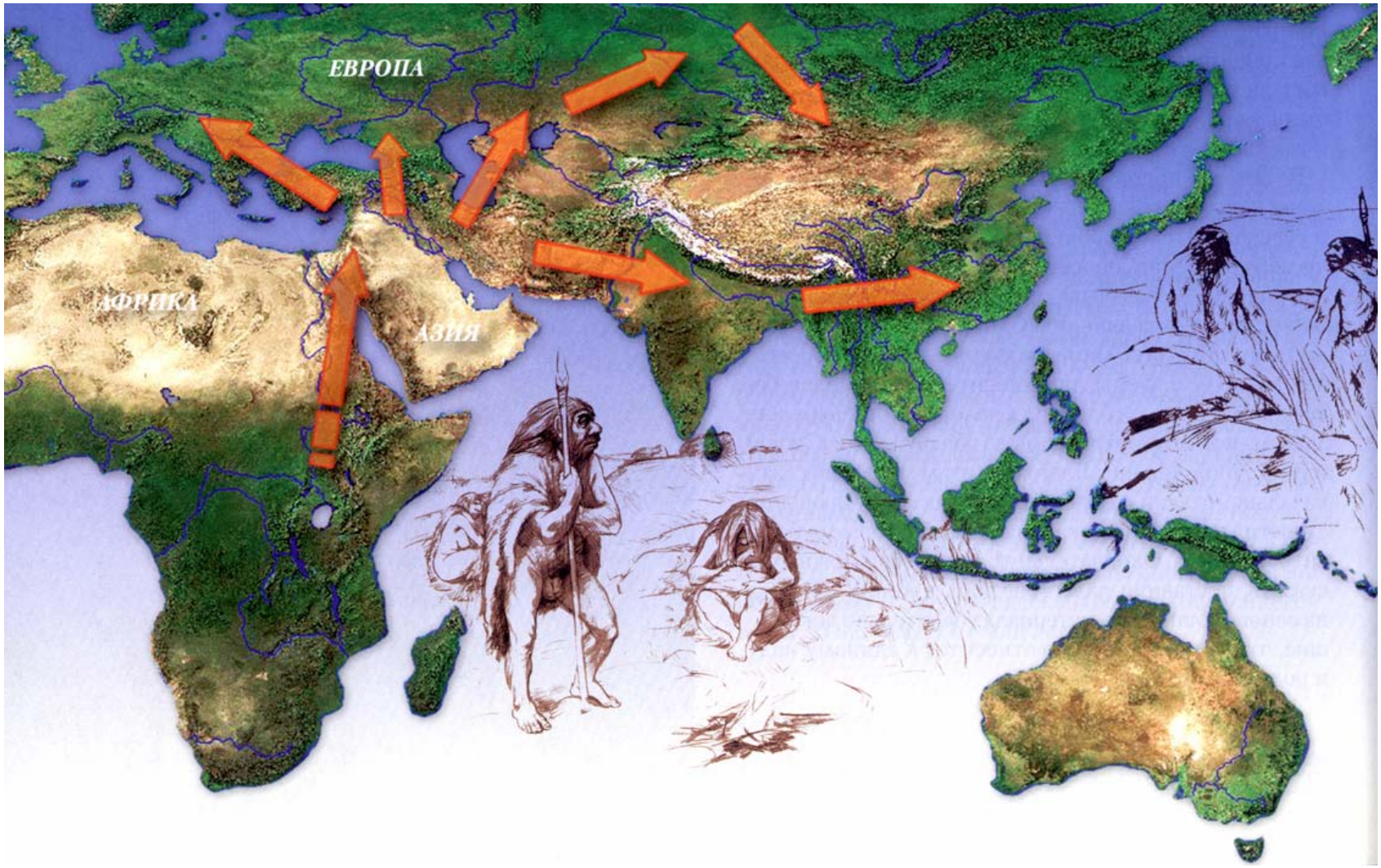


		M	EUP	MUP	LUP
Proboscideae					
Mammoth	Mammuthus primigenius				
Perissodactyla					
Horse	Equus caballus				
Asiatic wild ass	Equus hemionus				
Wooly rhinoceros	Coelodonta antiquitatis				
Artiodactyla					
Camel	Camelus sp.				
Red deer	Cervus elaphus				
Manchurian deer	Cervus elaphus xanthopigus				
Roe deer	Capreolus capreolus				
Giant deer	Megaloceros sp.				
Musk-deer	Moschus moschiferus				
Elk	Alces alces				
Reindeer	Rangifer tarandus				
Baikal yak	Poephagus baikalensis				
Bison	Bison priscus				
Aurochs	Bos sp.				
Spiral-horn antelope	Spiroceros kiakhtensis				
Goitred gazelle	Gazella subgutturosa				
Mongolian gazelle	Procapra gutturosa				
Wild sheep	Ovis ammon				
Snowy sheep	Ovis nivicola				
Goral	Naemorphedus caudatus				
Musk-ox	Ovibos moschatus				
Saiga antelope	Saiga tatarica				
Ibex	Capra sibirica				
Carnivora					
Wolf	Canis lupus				
Arctic fox	Alopex lagopus				
Red fox	Vulpes vulpes				
Corsac	Vulpes corsac				
Dhole	Cuon alpinus				
Brown bear	Ursus arctos				
Cave bear	Ursus spelaeus				
Cave bear	Spelaearctos uralensis				
Sable	Martes zibellina				
Marten	Martes martes				
Wolverine	Gulo gulo				
Ermine	Mustela erminae				
Weasel	Mustela nivalis				
Altai weasel	Mustela altaica				
Polecat	Putoris eversmani				
Badger	Meles meles				
Otter	Lutra lutra				
Spotted hyaena	Crocuta spelaea				
Cave lion	Panthera spelaea				
Tiger	Panthera uncia				
Bob cat	Felis lynx				
Manul cat	Felis manul				

The youngest mammoth sites

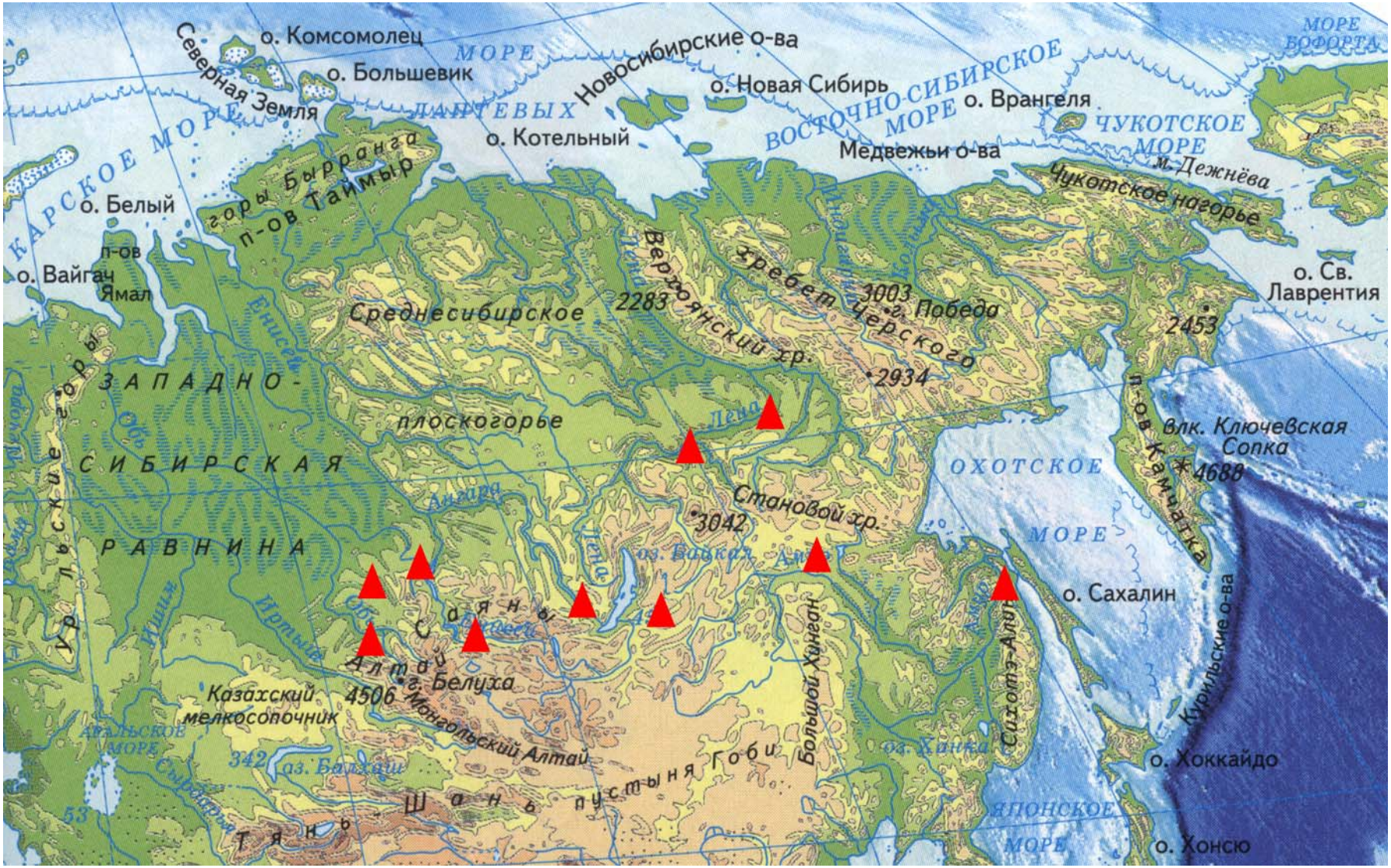


Early Man Dispersals

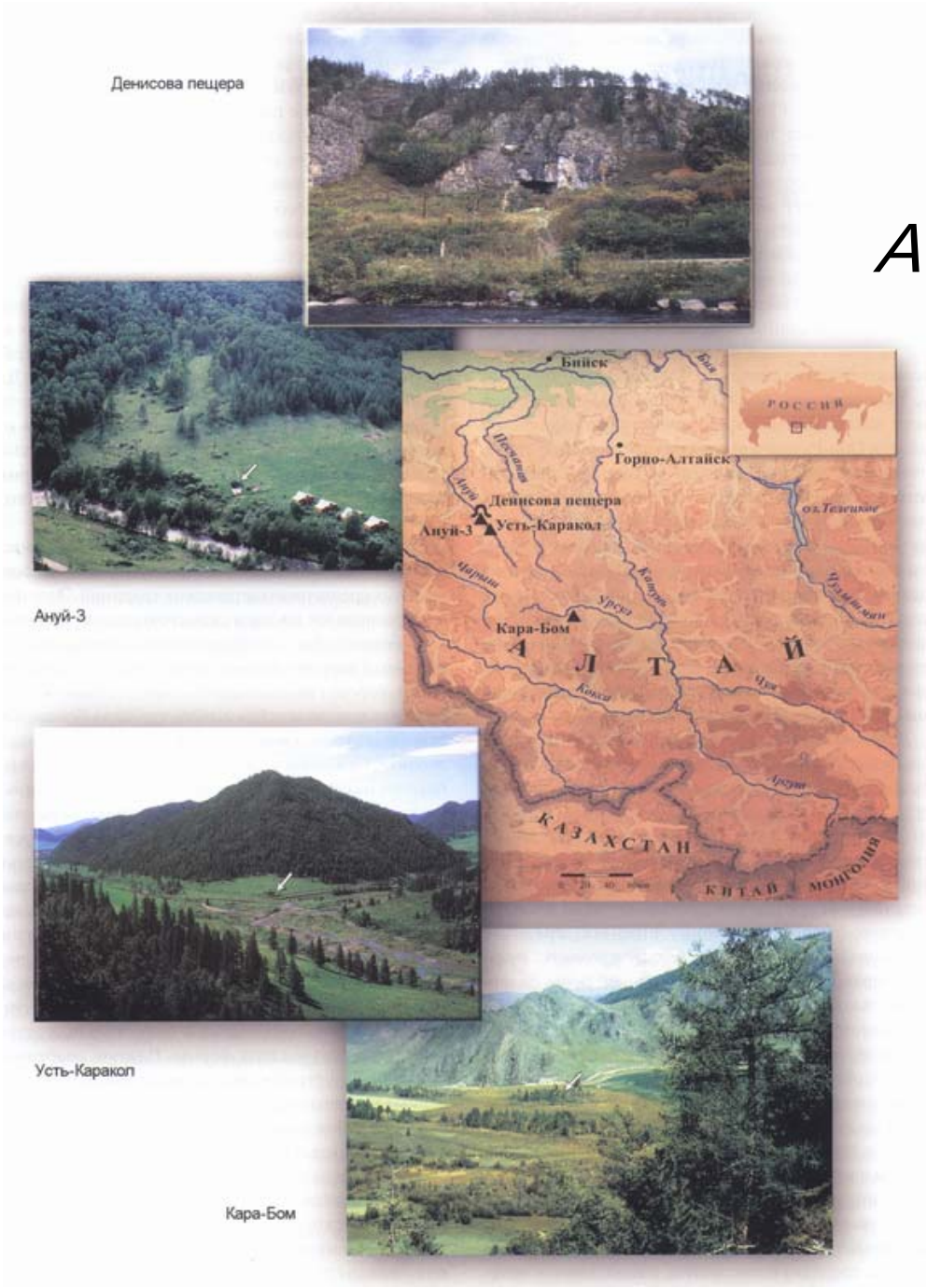



SIBERIA

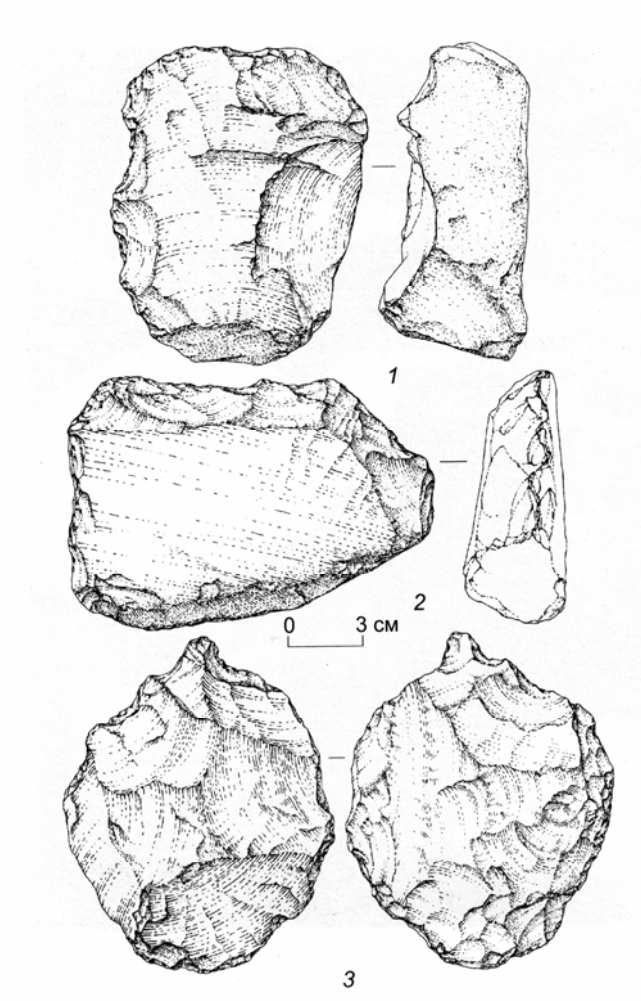
Lower Paleolithic



Altay Mountains



Karama

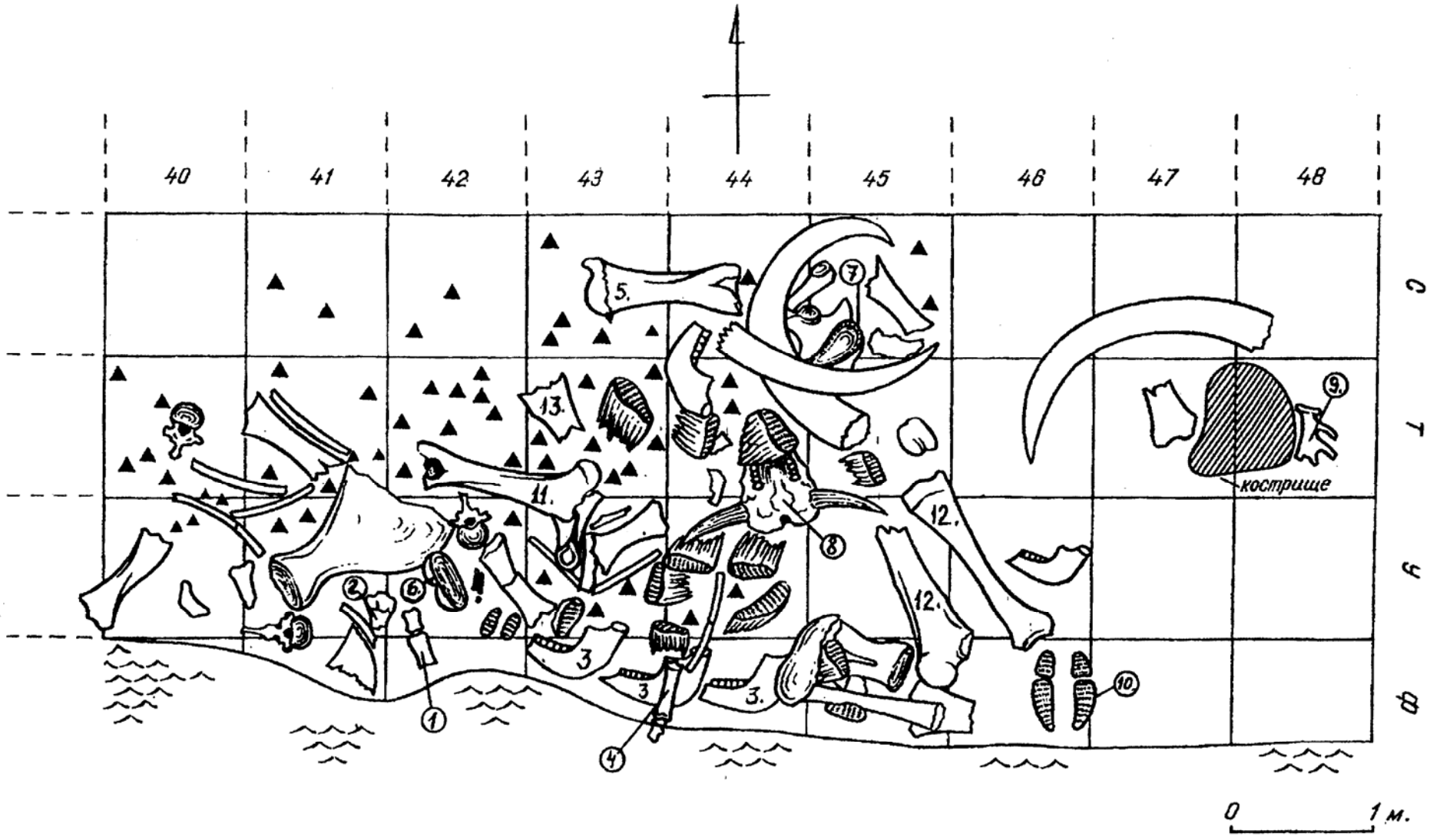


Mokhovo I

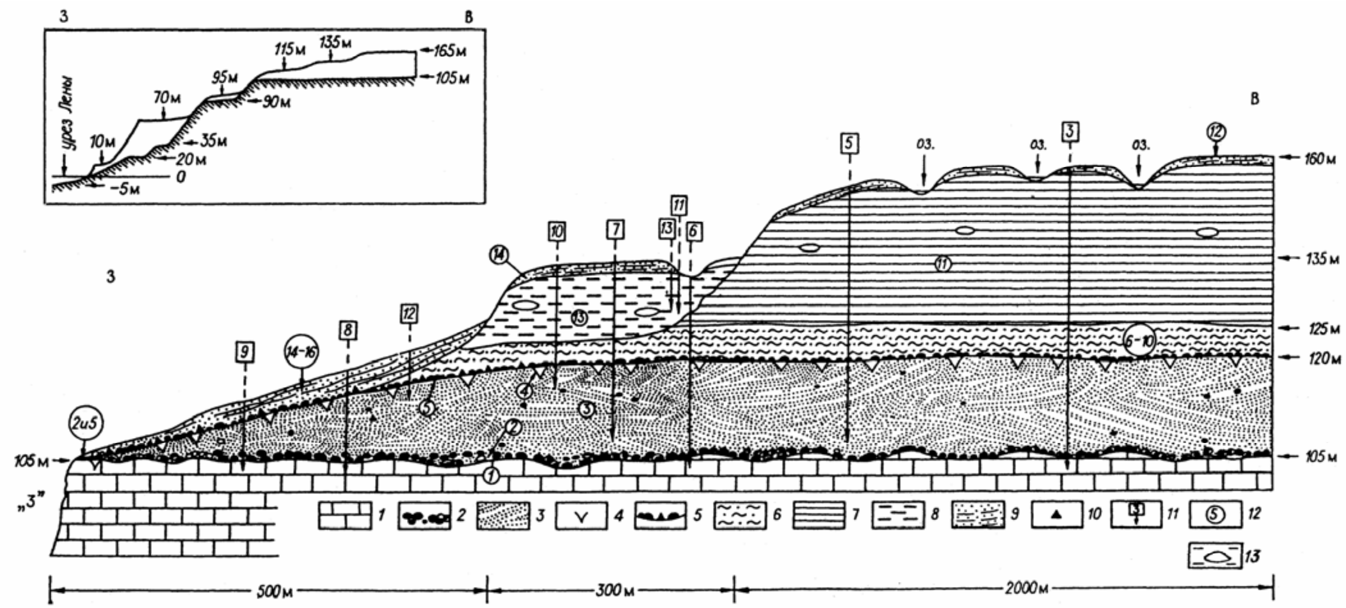
Kamennyi Log

Kamennyi Log

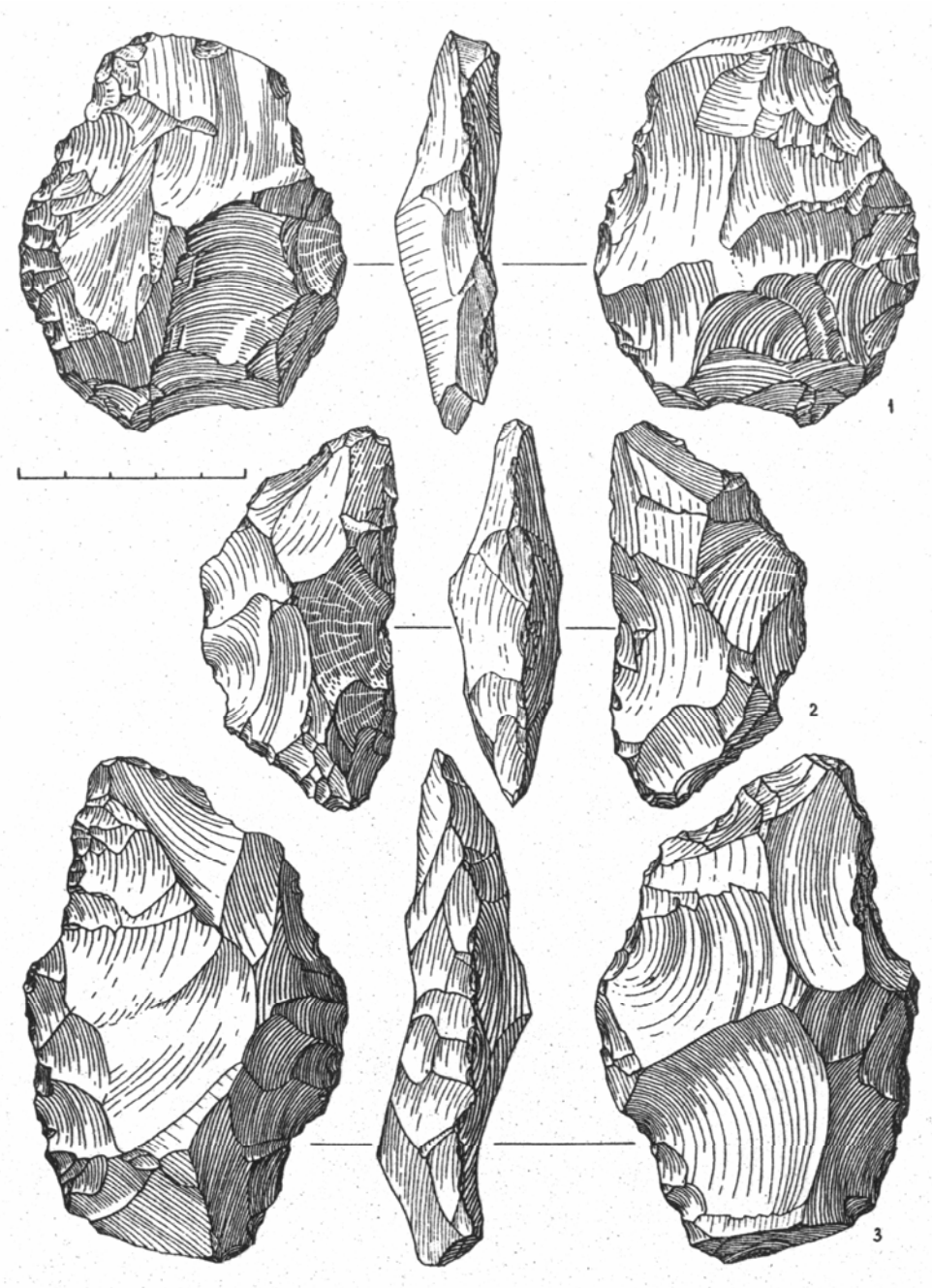
Ust'Izhul



Diring

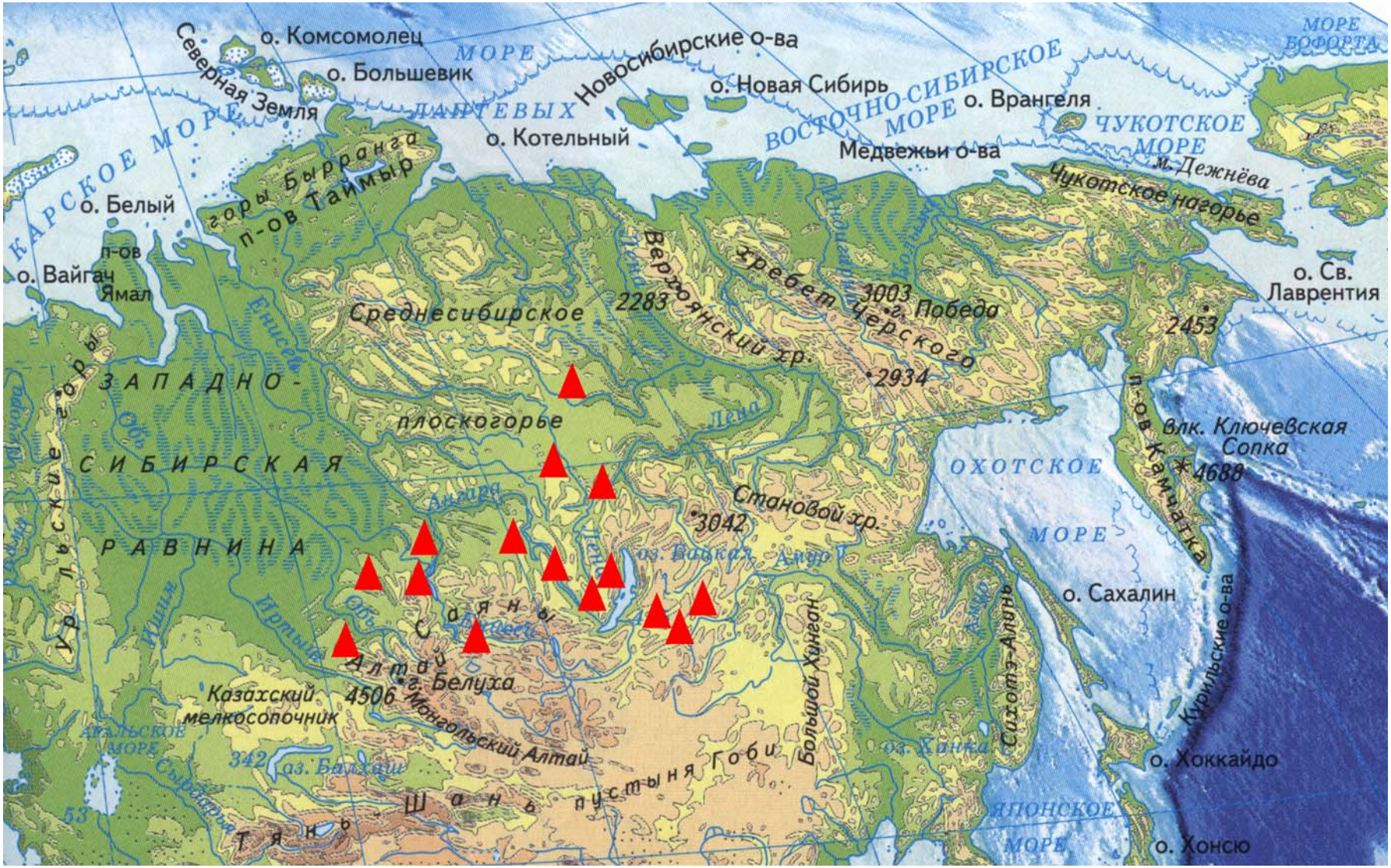


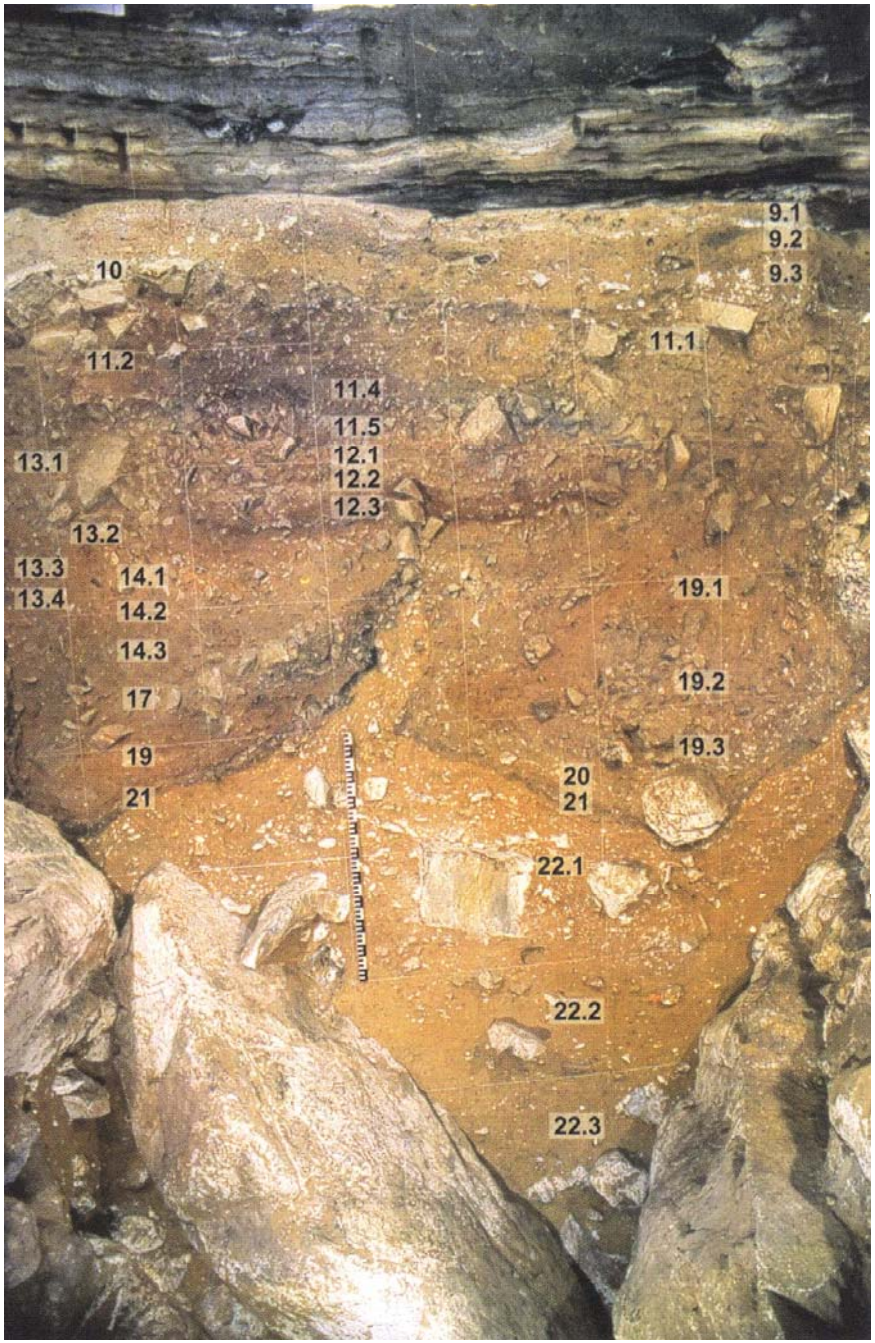
З
В
урез Лены
10м
70м
95м
115м
135м
←165м
←105м
←90м
←35м
←20м
−5м
0
оз.
← 160м
← 135м
← 125м
← 120м
← 105м
105м →
„З"
500м
300м
2000м



Torgalyk A

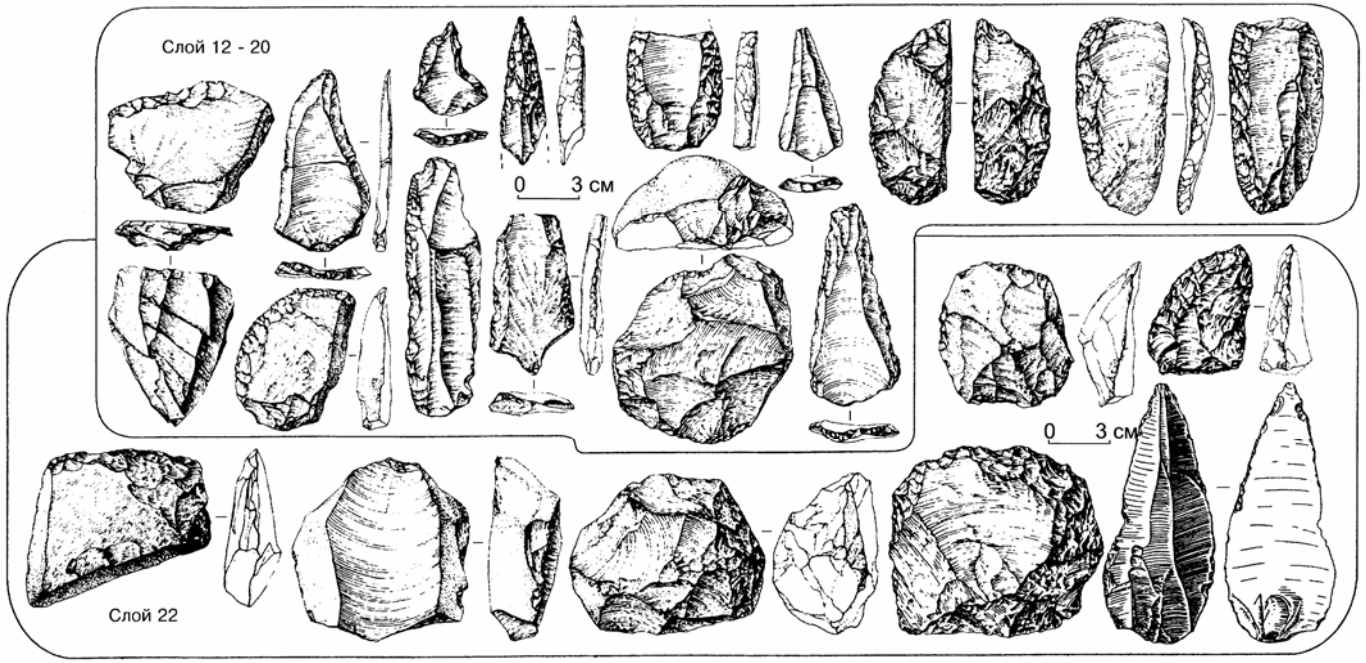
Middle Paleolithic

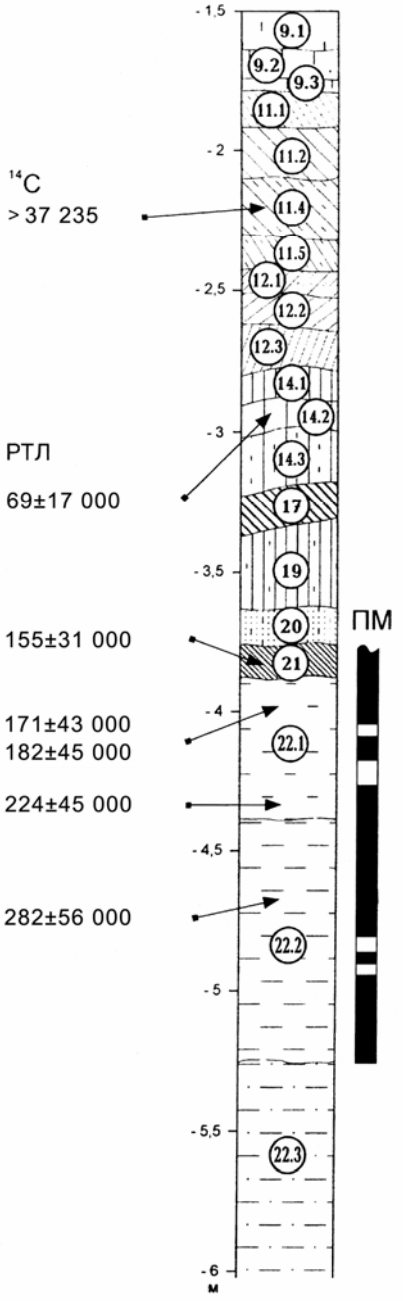


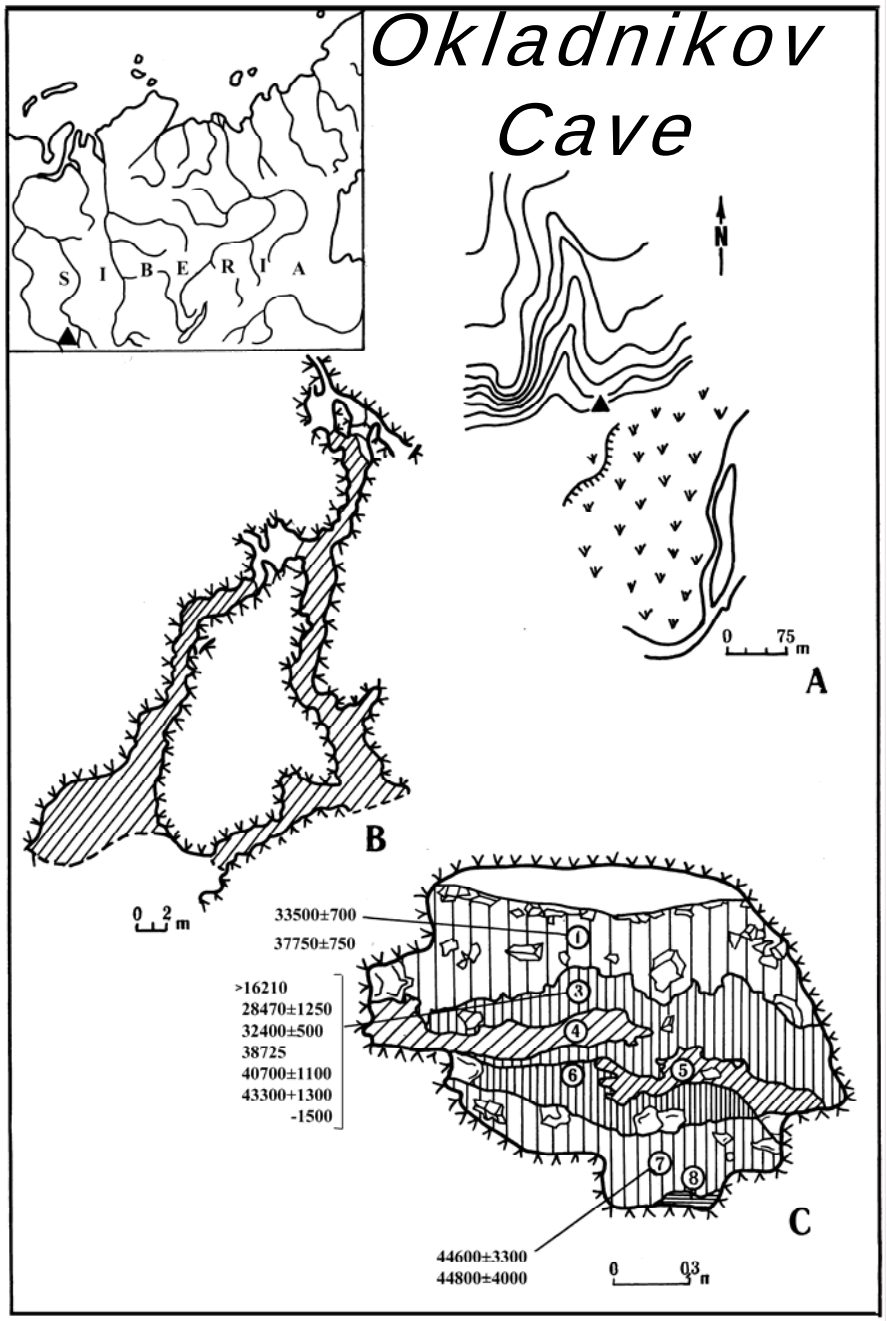


Denisova, Central Chamber

Denisova Cave







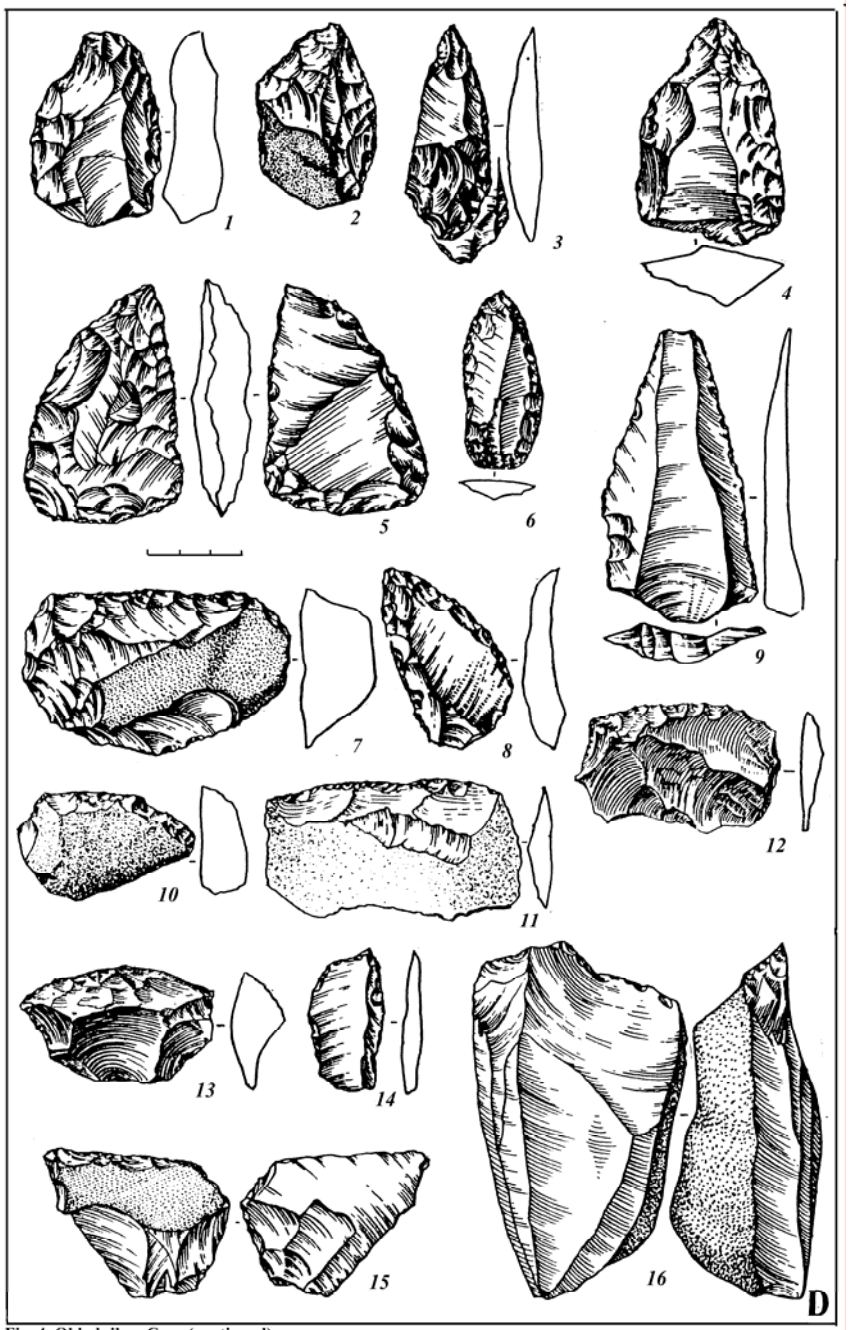


Fig. 4. Okladnikov Cave (continued).

Mokhovo II

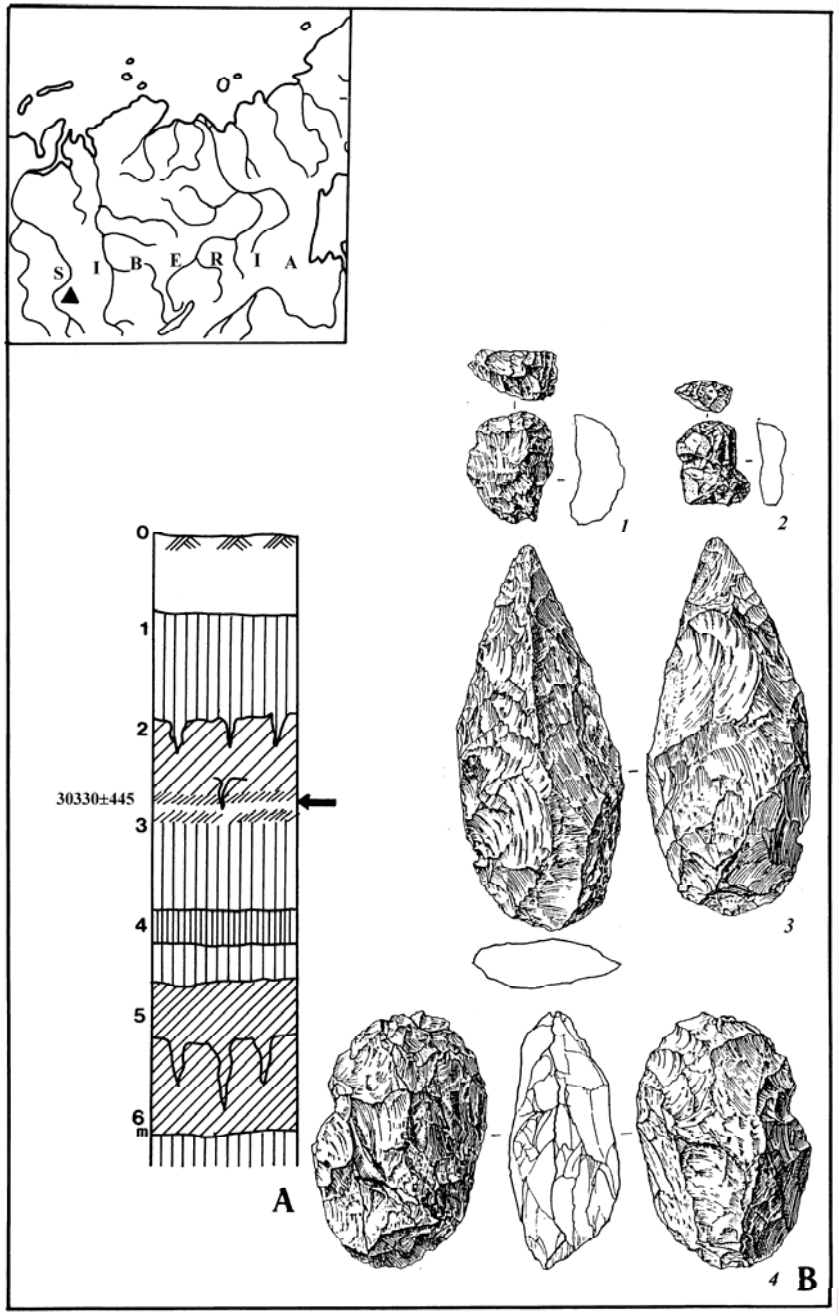
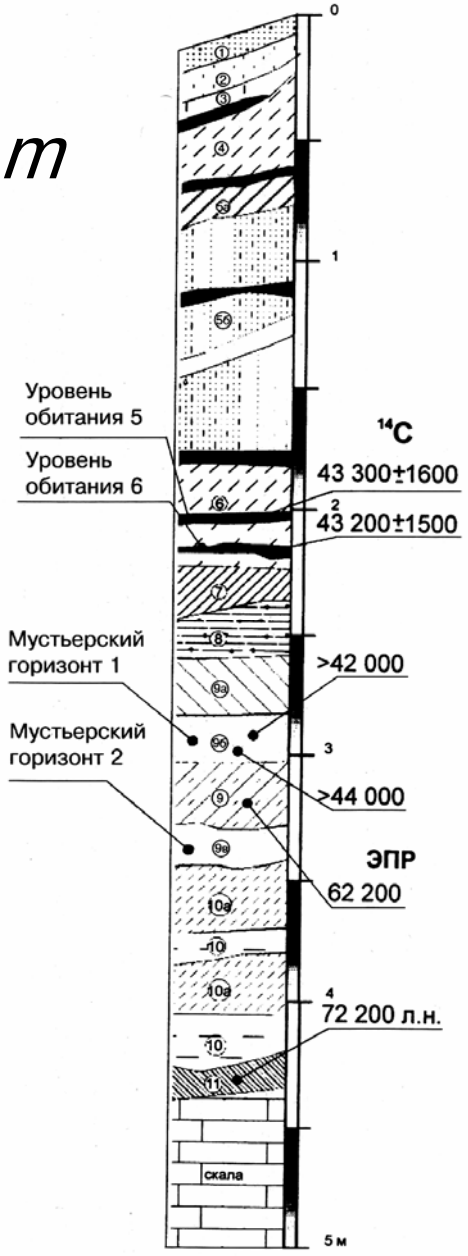


Fig.7. Mokhovo II.

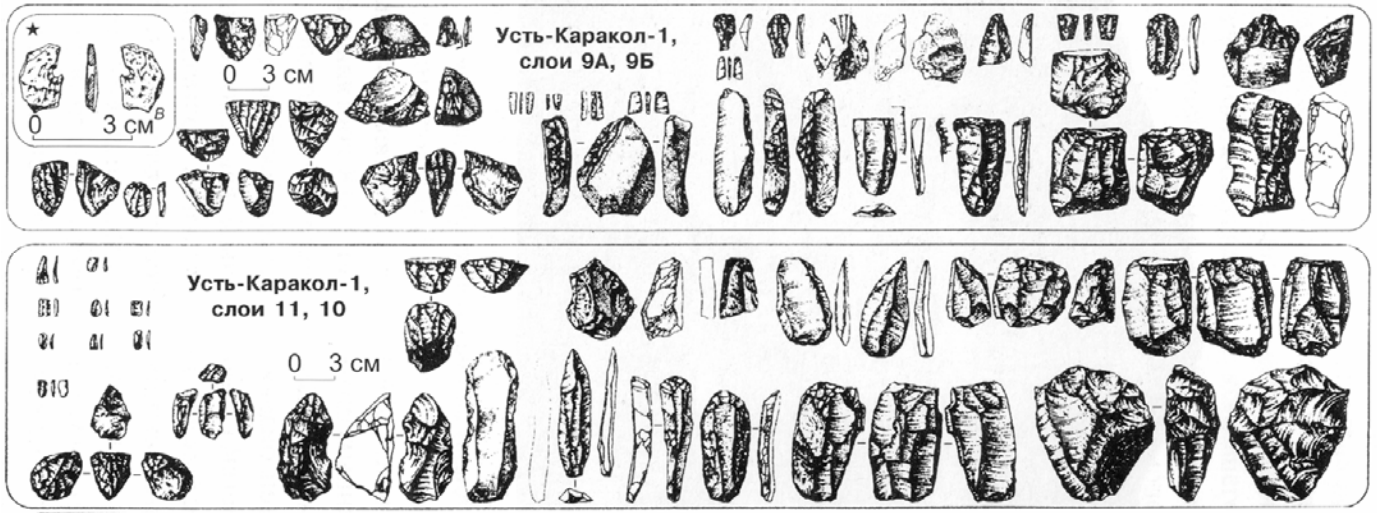
Early Upper Paleolithic

Kara-Bom


0
1
2
3
Уровень обитания 5
Уровень обитания 6
Мустьерский горизонт 1
Мустьерский горизонт 2
^{14}C
43 300±1600
43 200±1500
>42 000
>44 000
ЭПР
62 200
72 200 л.н.
скала
5 м


Позднепалеолитические уровни обитания 6, 5
0 3 см

Ust'Karakol I

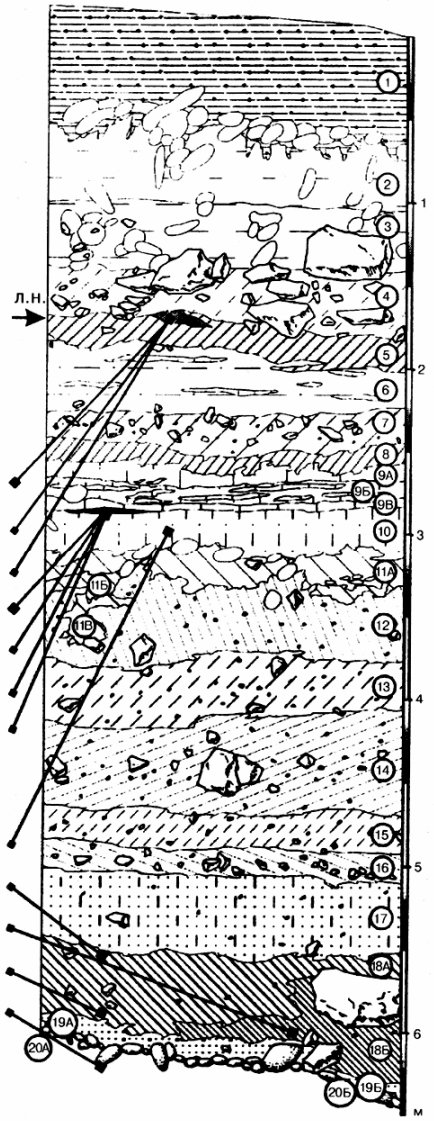


^{14}C

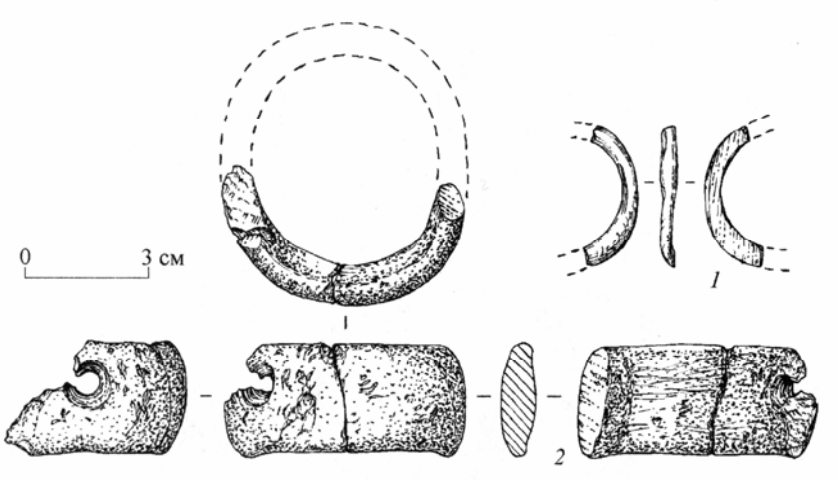
26 305 ± 280 (СОАН-3261)
26 920 ± 310 (СОАН-3356)
27 020 ± 435 (СОАН-3356)
29 720 ± 360 (СОАН-3359)
29 860 ± 355 (СОАН-3358)
33 400 ± 1285 (СОАН-3257)
35 100 ± 2850 (СОАН-3259)

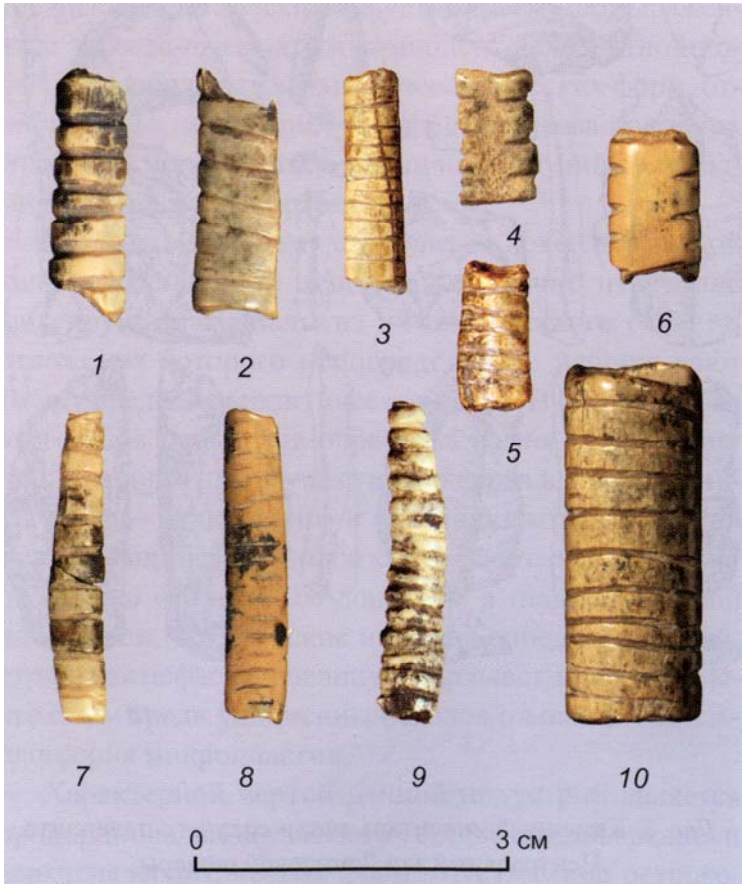
РТЛ

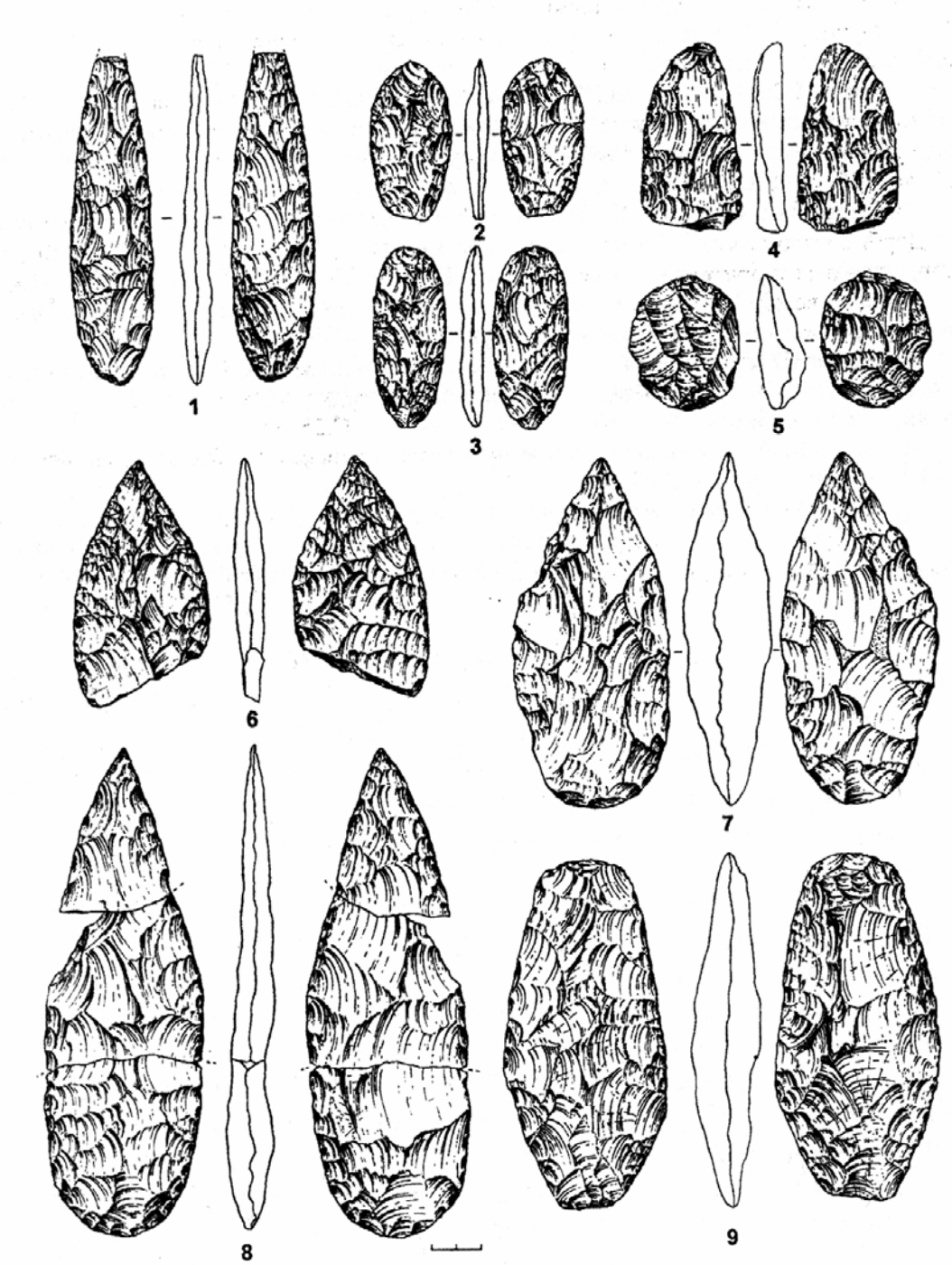
50 ± 12 000 (РТЛ-660)
90 ± 18 000 (РТЛ-658)
100 ± 20 000 (РТЛ-659)
130 ± 33 000 (РТЛ-661)
210 ± 42 000 (РТЛ-640)



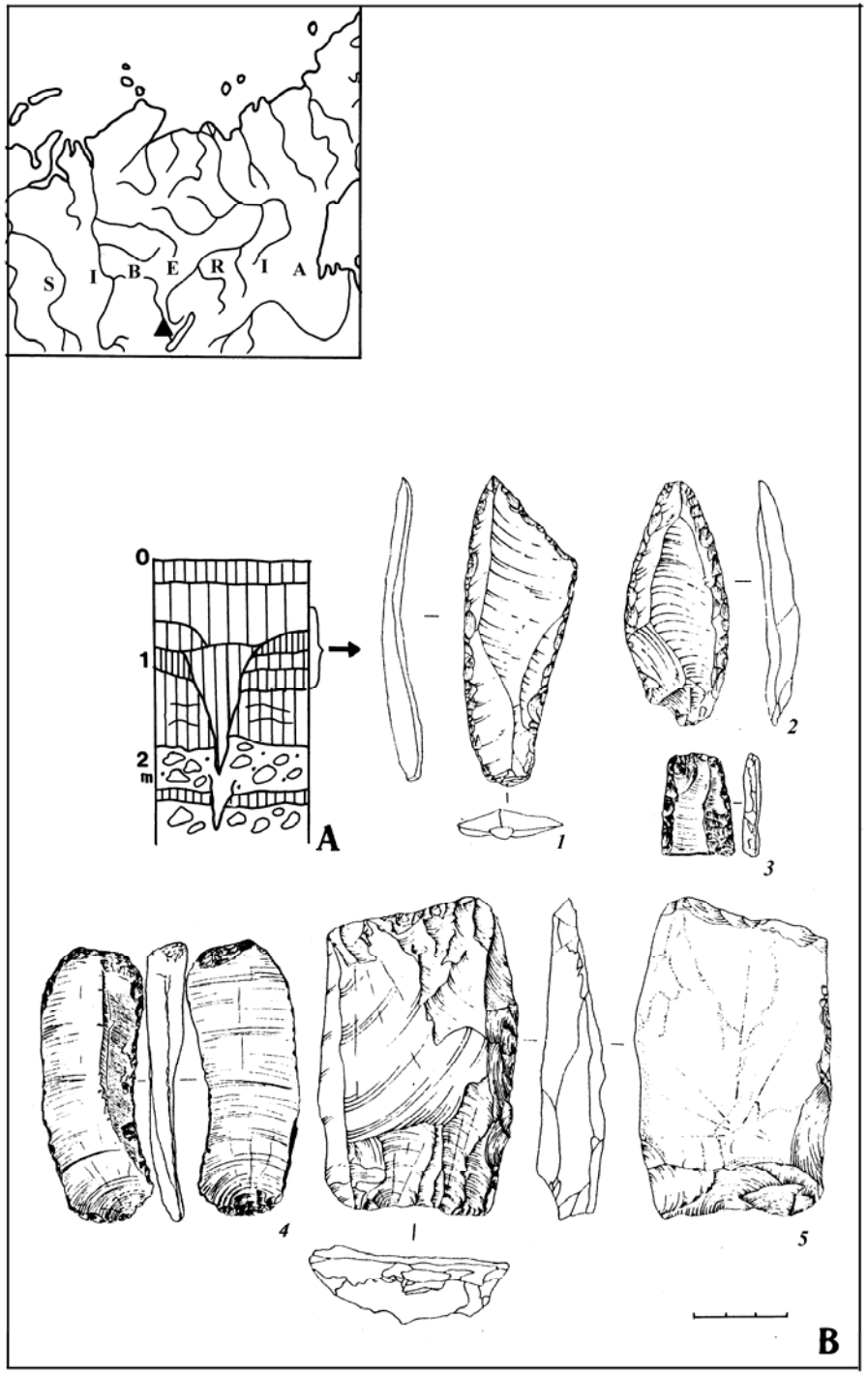
Denisova, Layer 11







Derbina



Arembovsky

Tolbaga

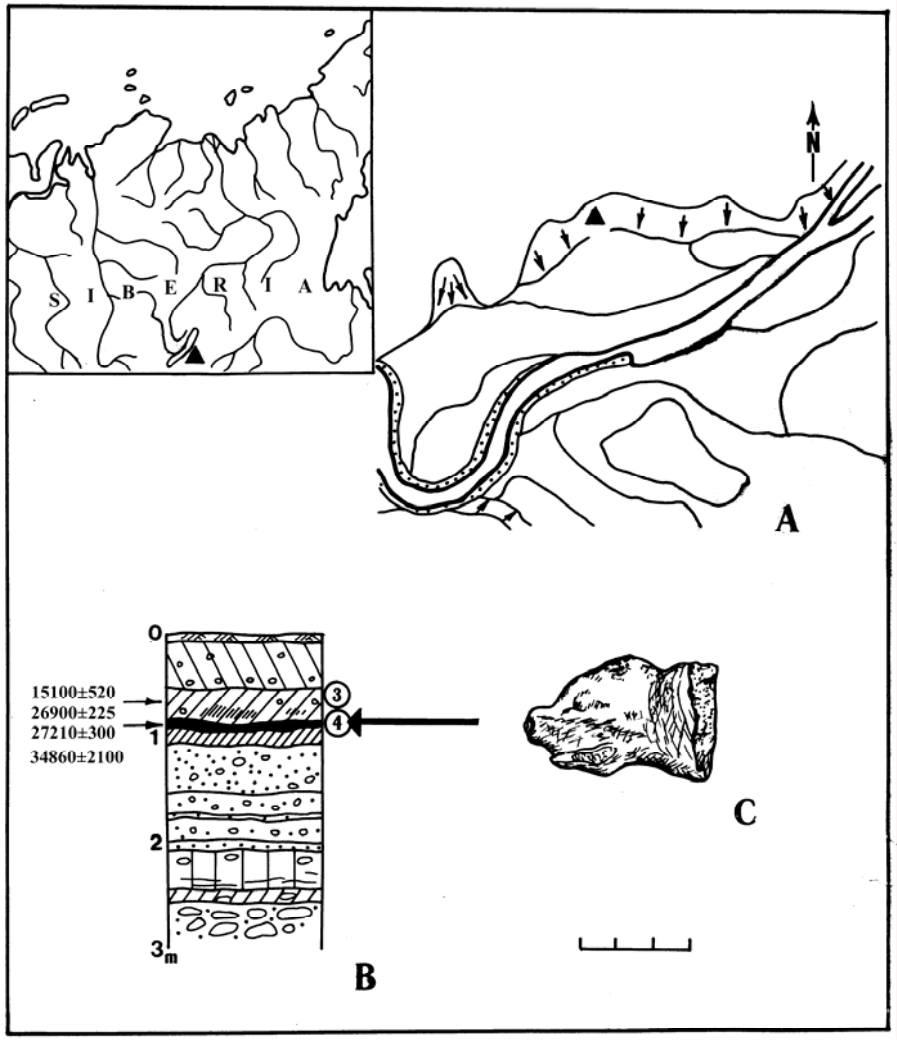


Fig.9. Tolbaga.

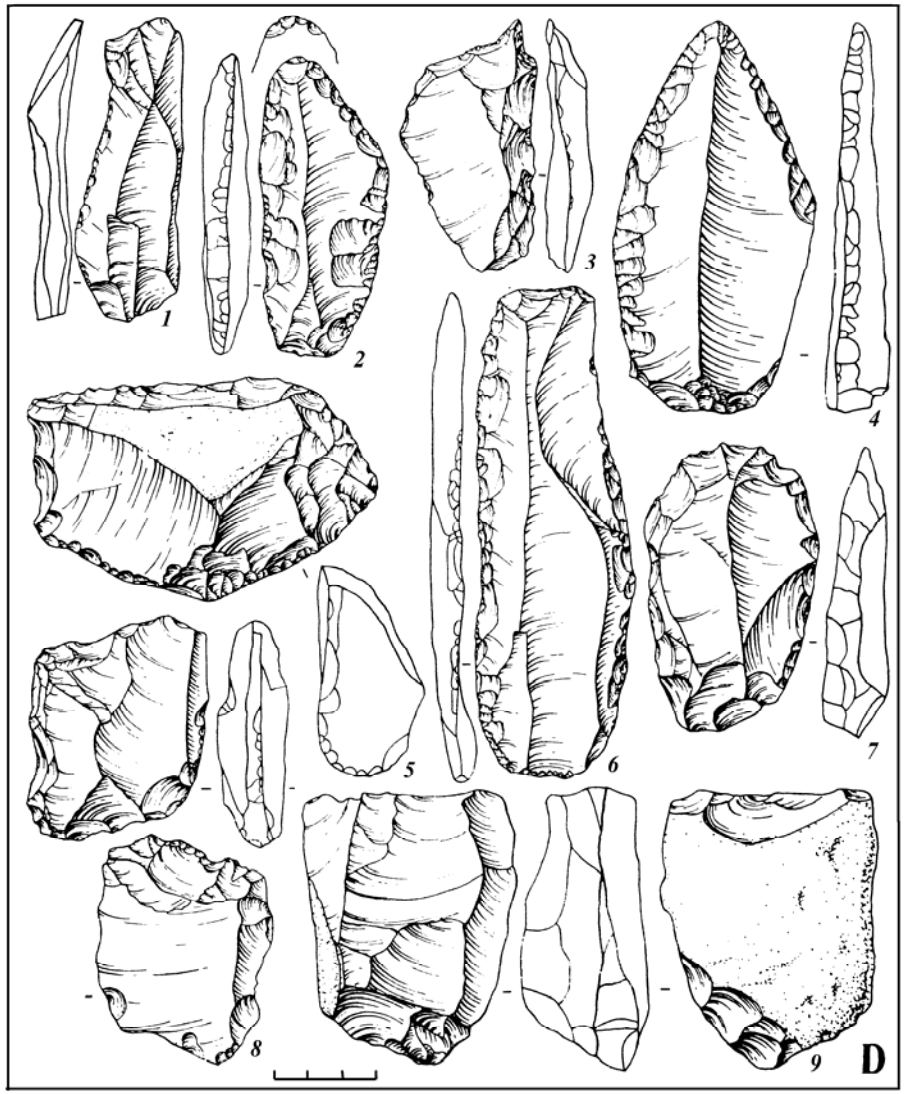
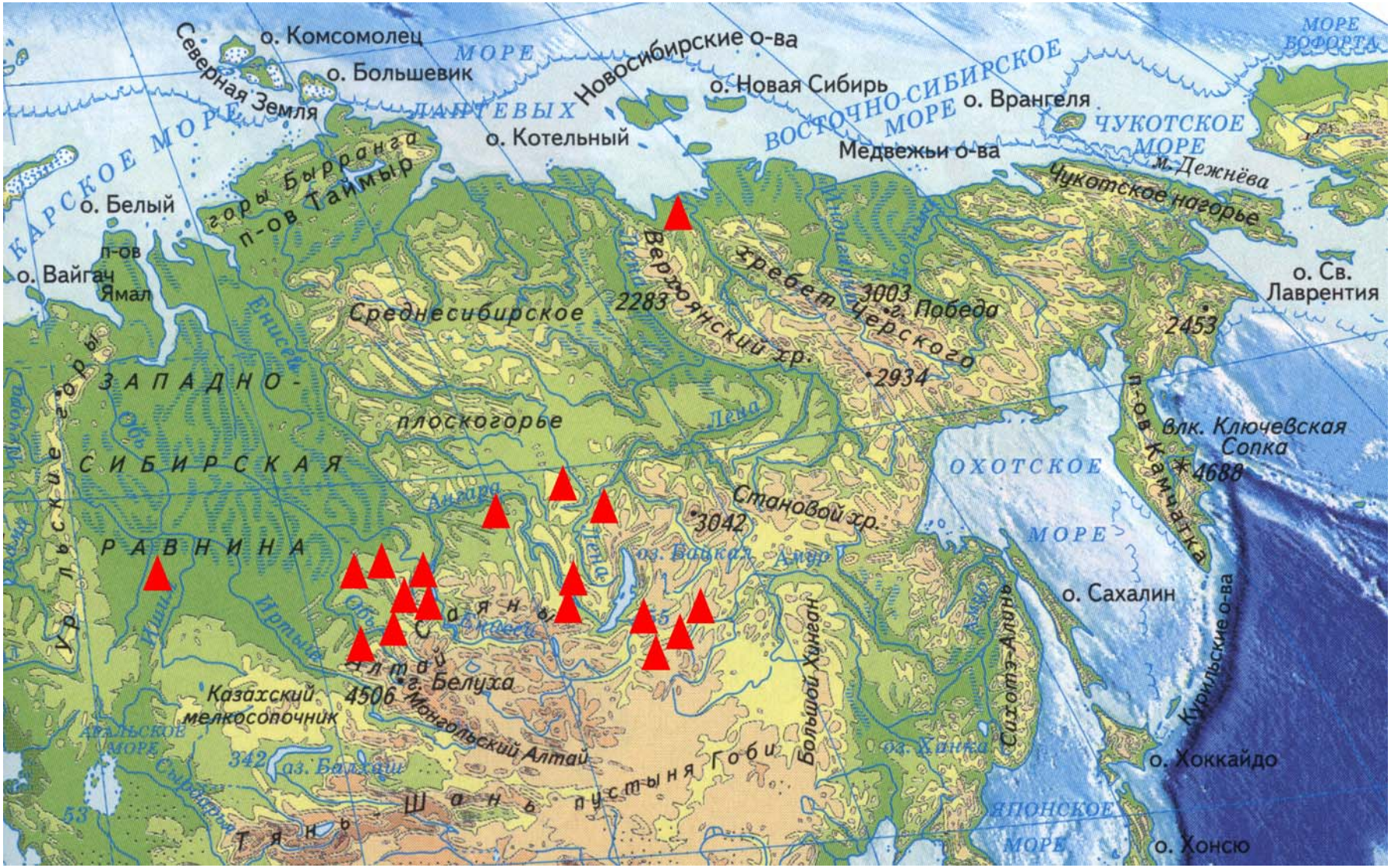
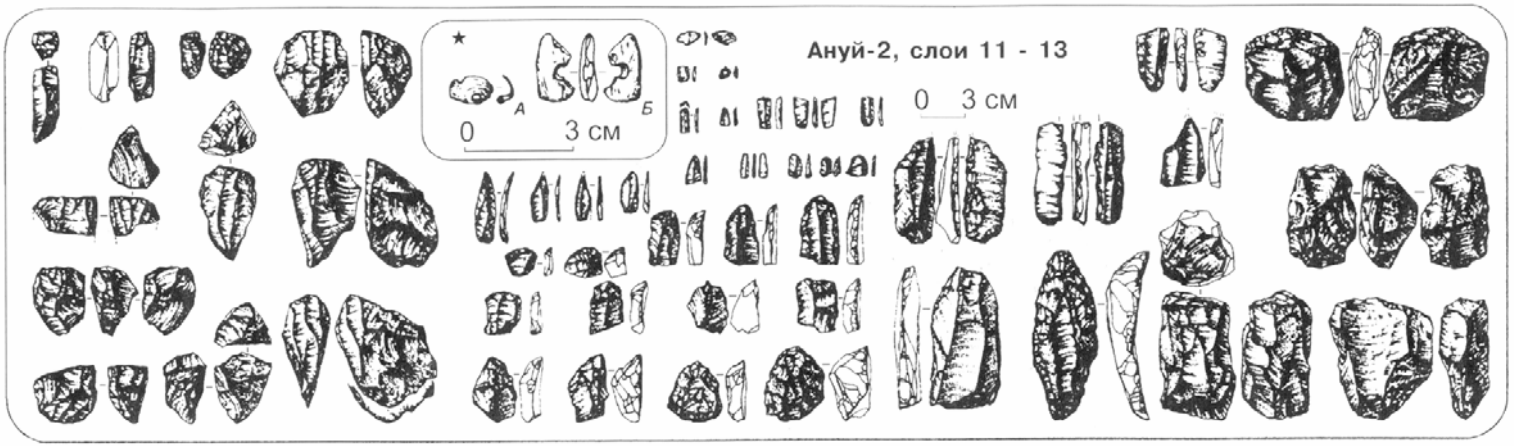


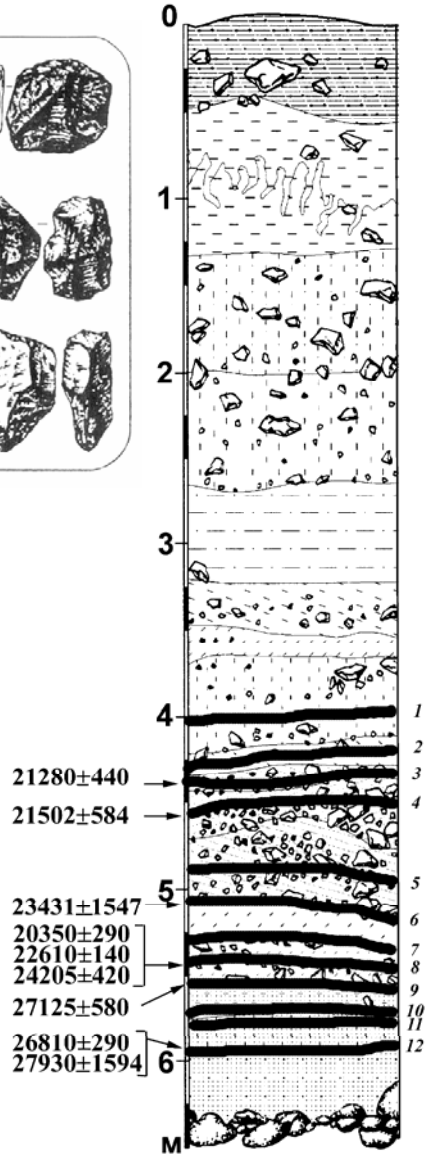
Fig. 9. Tolbaga (continued).

Middle Upper Paleolithic

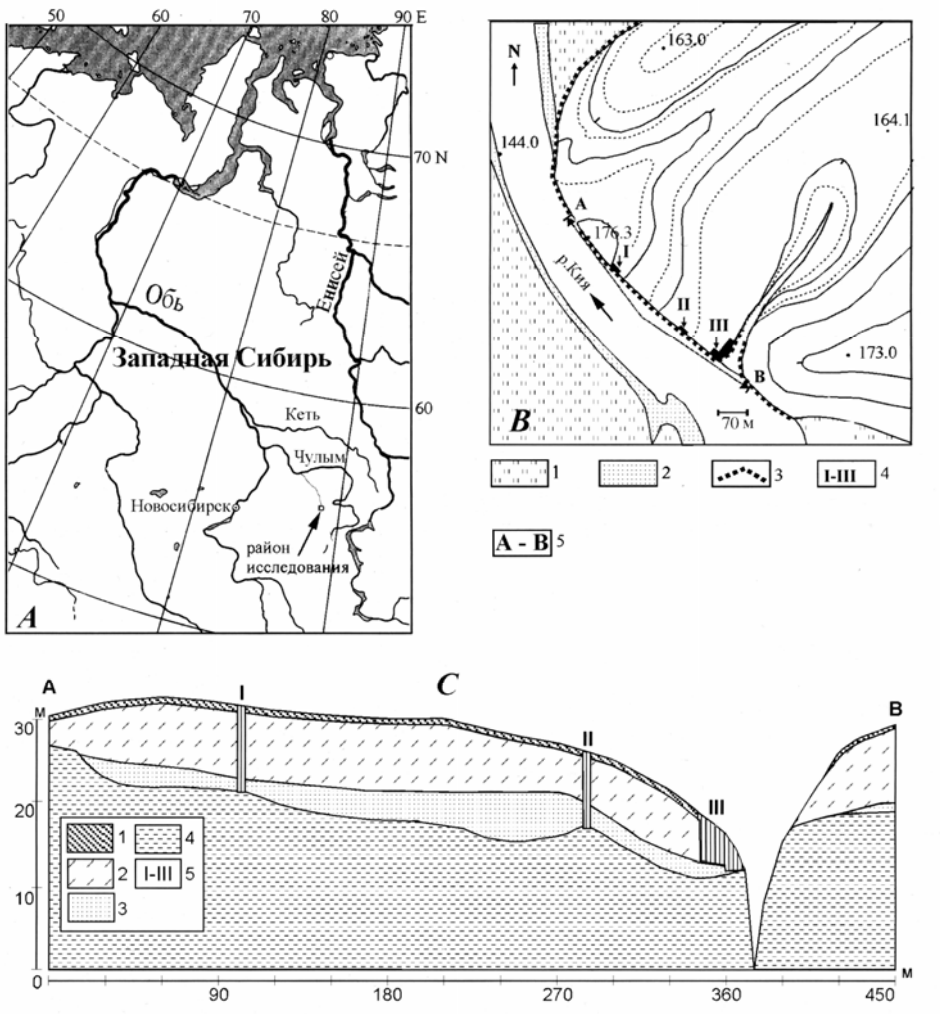


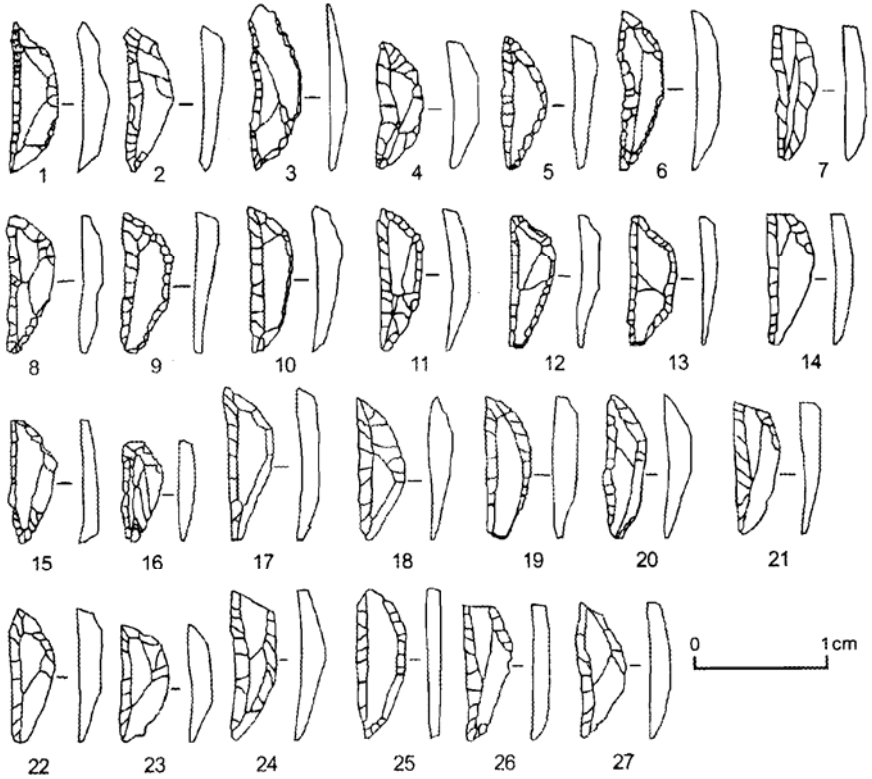
Anui II

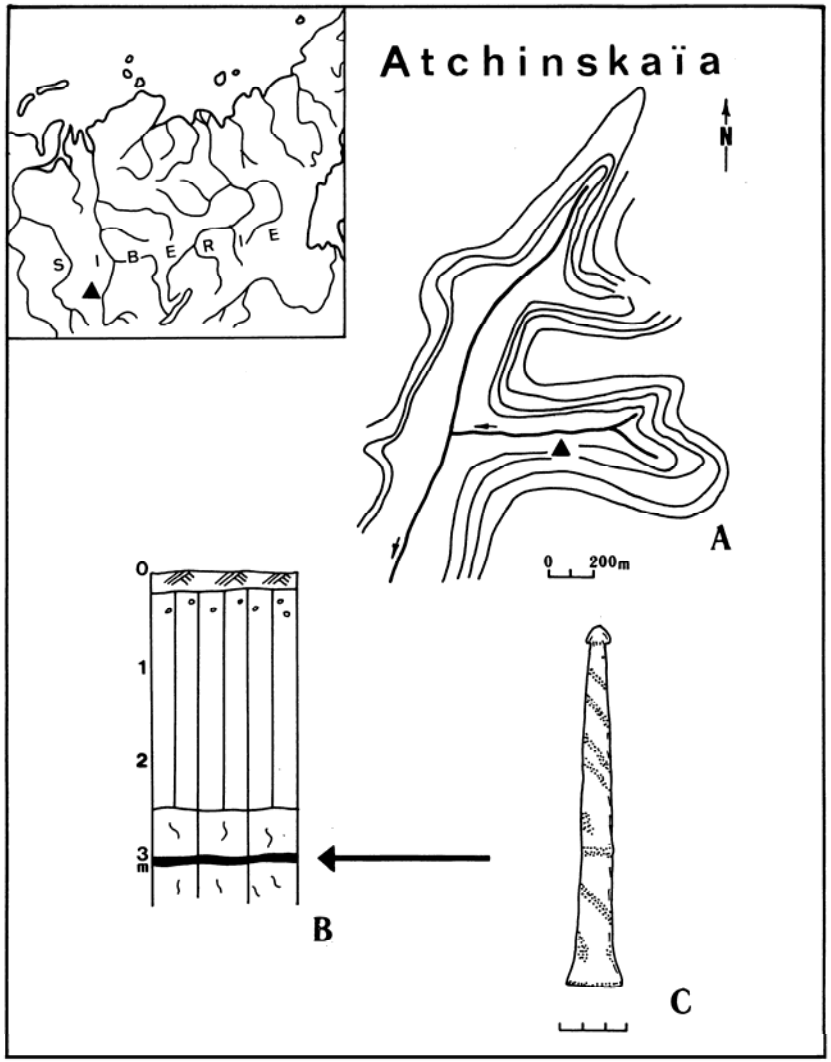

Ануй-2, слои 11 - 13
0 3 см
0 3 см

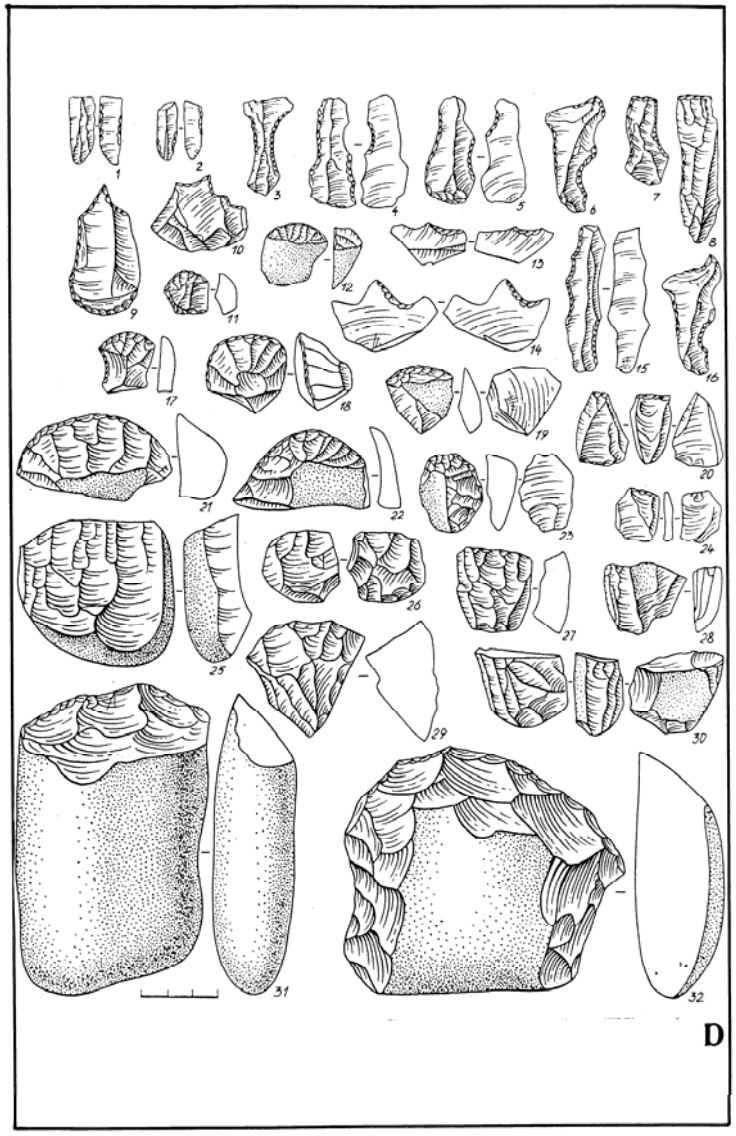

0
1
2
3
4
5
6
М
1
2
3
4
5
6
7
8
9
10
11
12
21280±440
21502±584
23431±1547
20350±290
22610±140
24205±420
27125±580
26810±290
27930±1594

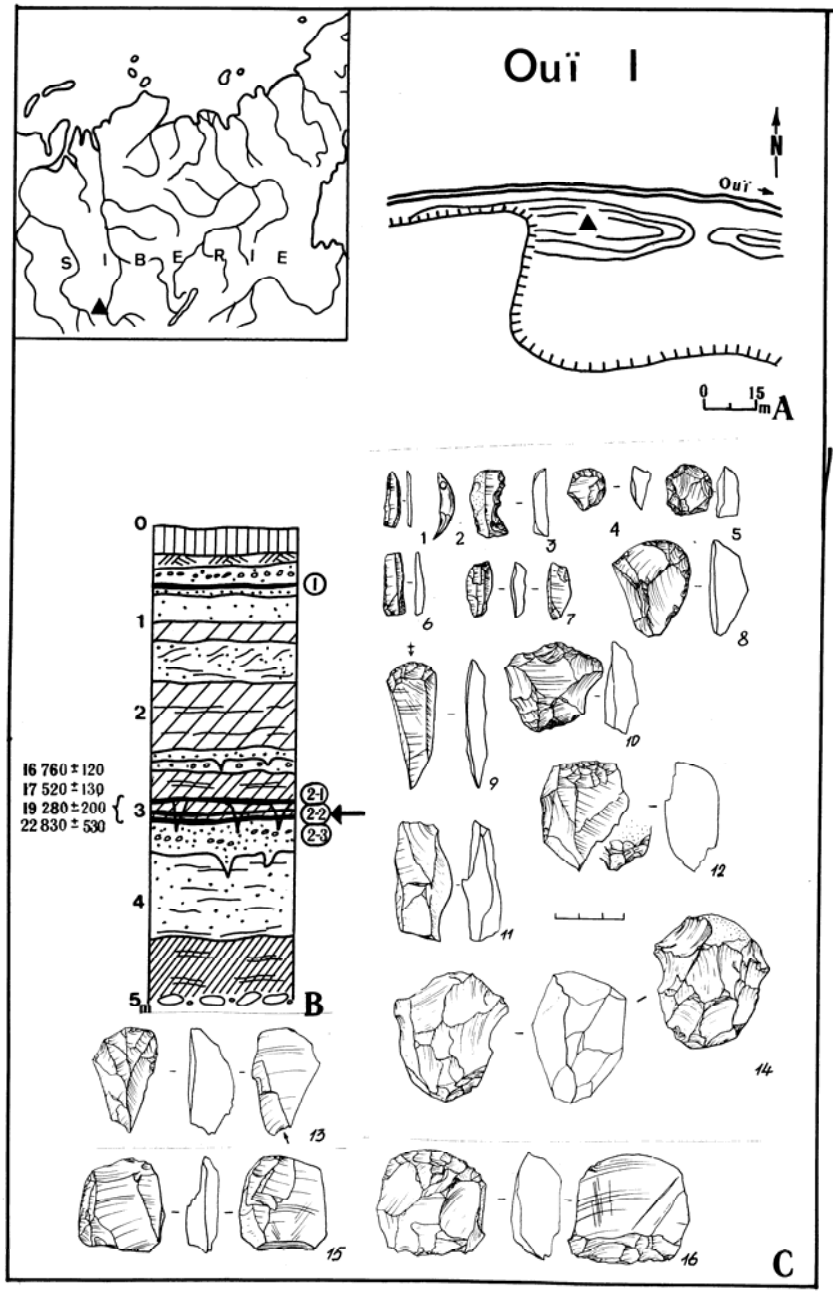
Shestakovo

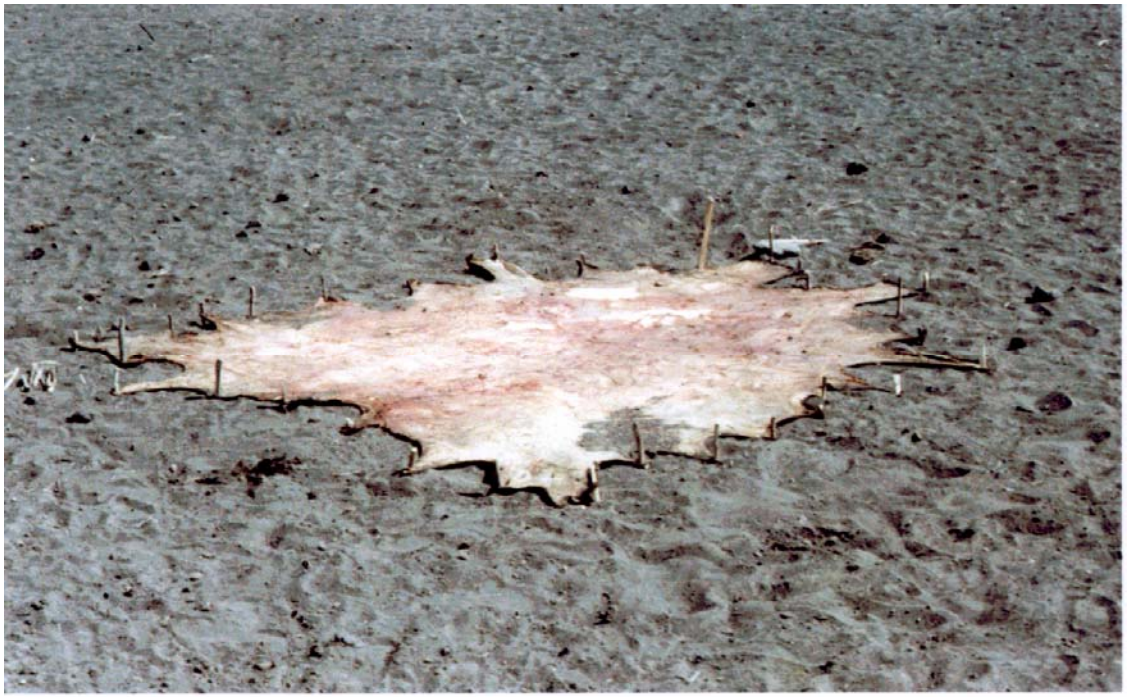

50
60
70
80
90 E
70 N
60
Обь
Енисей
Западная Сибирь
Кеть
Чулым
Новосибирск
район исследования
A
N
163.0
164.1
144.0
A
176.3
I
II
III
B
173.0
р.Кия
70 м
B
1
2
3
I-III
4
A - B
5
A
C
B
I
II
III
M
30
20
10
0
90
180
270
360
450
M
1
2
3
4
I-III
5


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
0
1cm


Atchinskaïa
S I B E R I E
N
0 200m
A
0
1
2
3
B
C

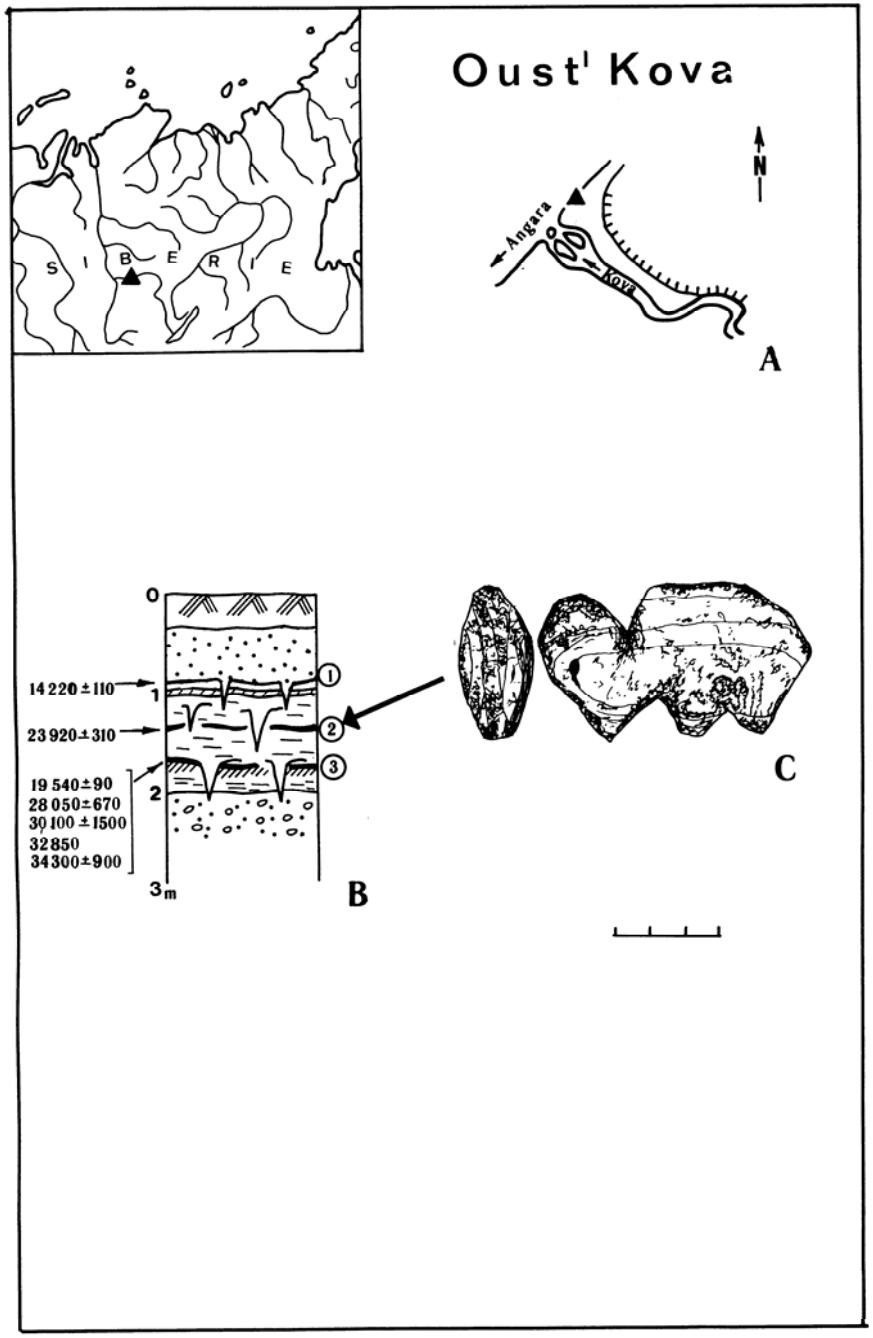

D

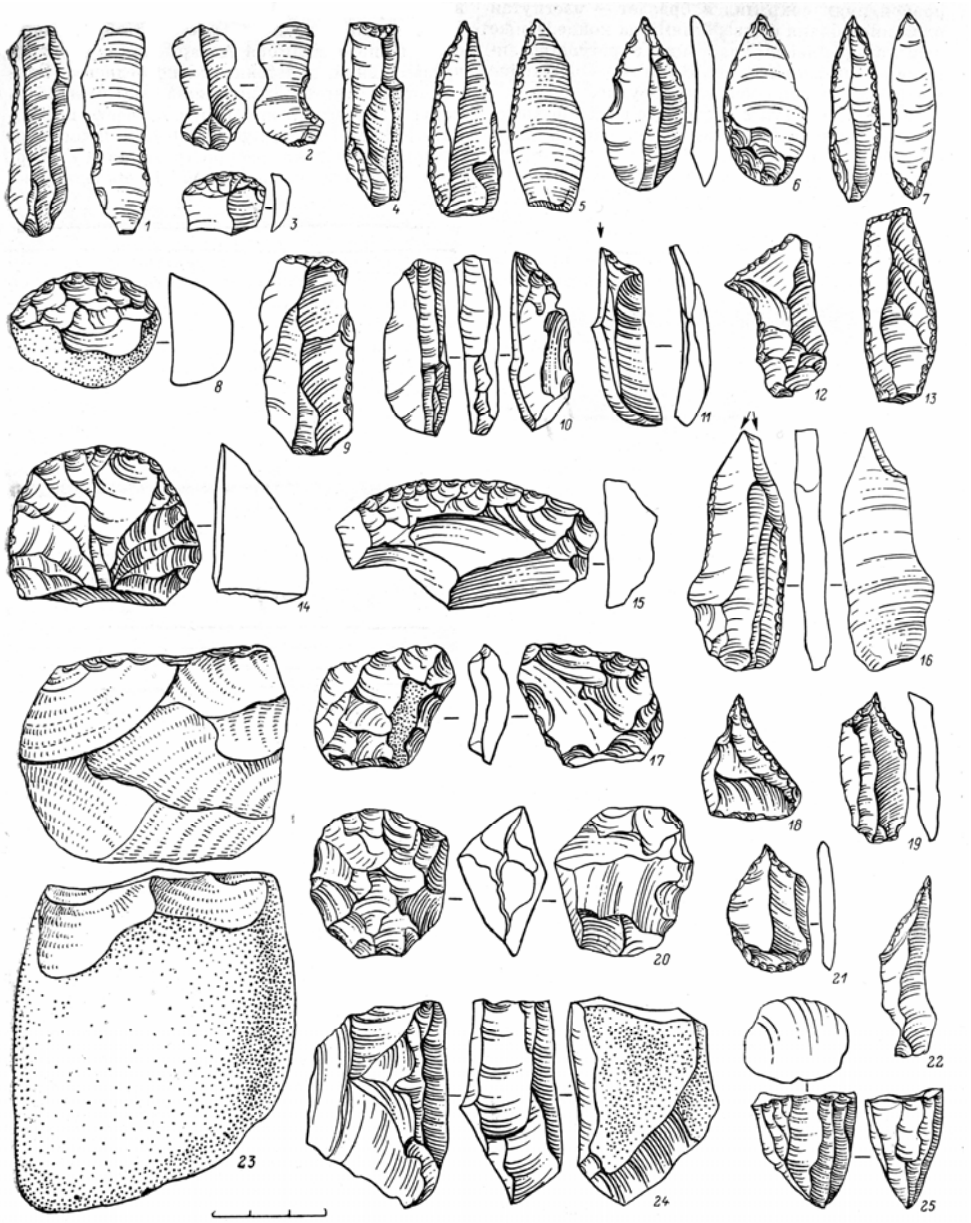

Ouï I
S I B E R I E
N
Ouï
0 15 m A
0
1
2
3
4
5m
16 760 ± 120
17 520 ± 130
19 280 ± 200
22 830 ± 530
1
2-1
2-2
2-3
B
C



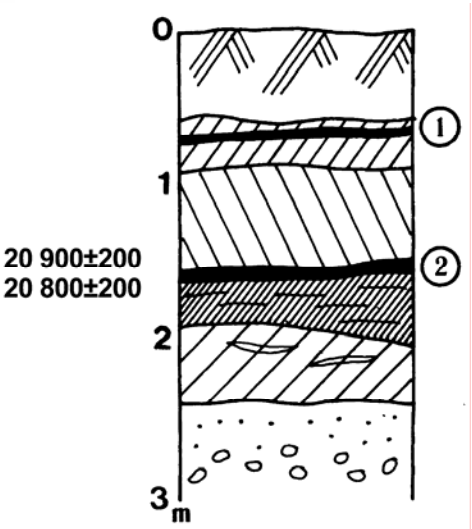
Ui I

Kuilug-Khem I


Oust' Kova
S I B E R I E
N
Angara
Kova
A
0
14 220 ± 110
23 920 ± 310
19 540 ± 90
28 050 ± 670
30 100 ± 1500
32 850
34 300 ± 900
1
2
3m
B
C



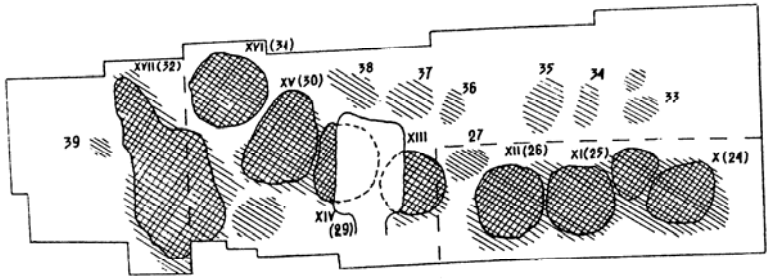
Malta

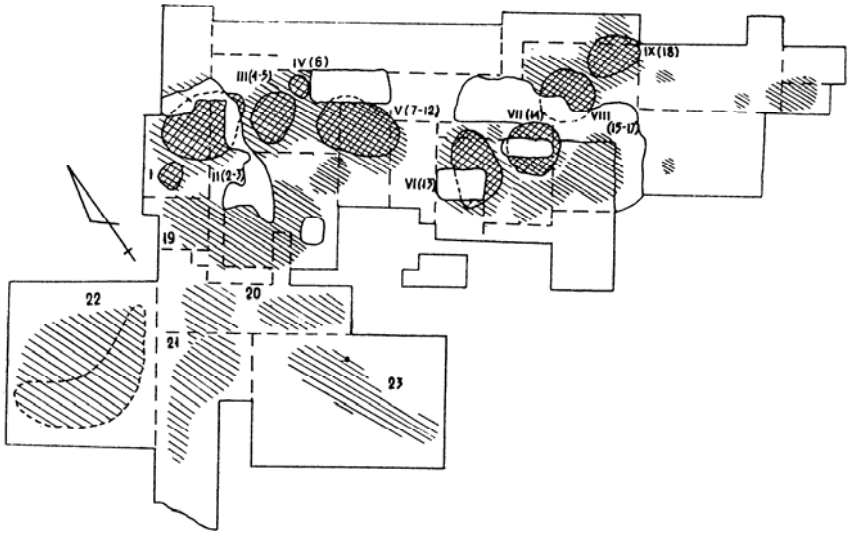



0
1 m

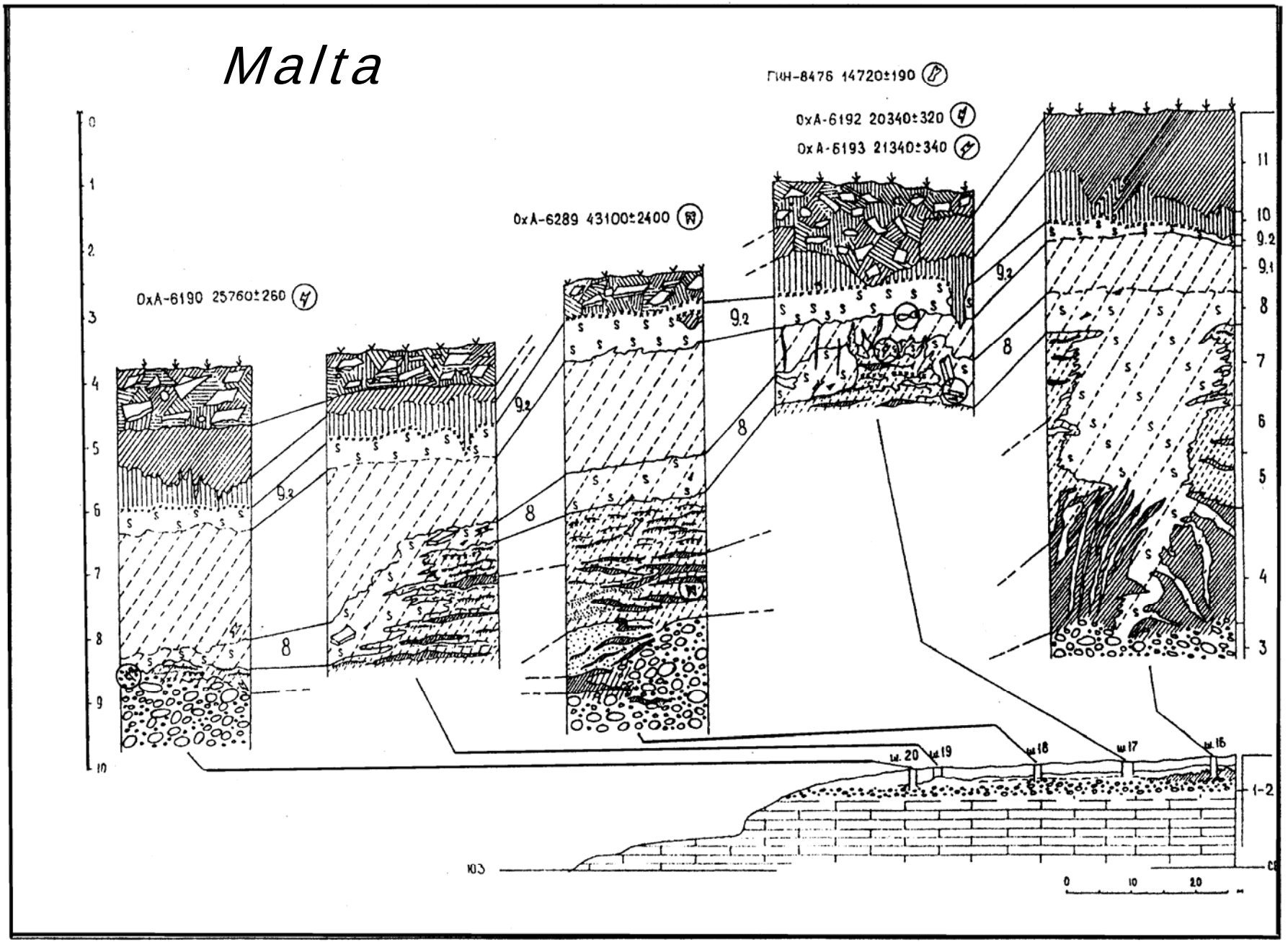

N
1
2
3
4
5
6
7
8
9
10

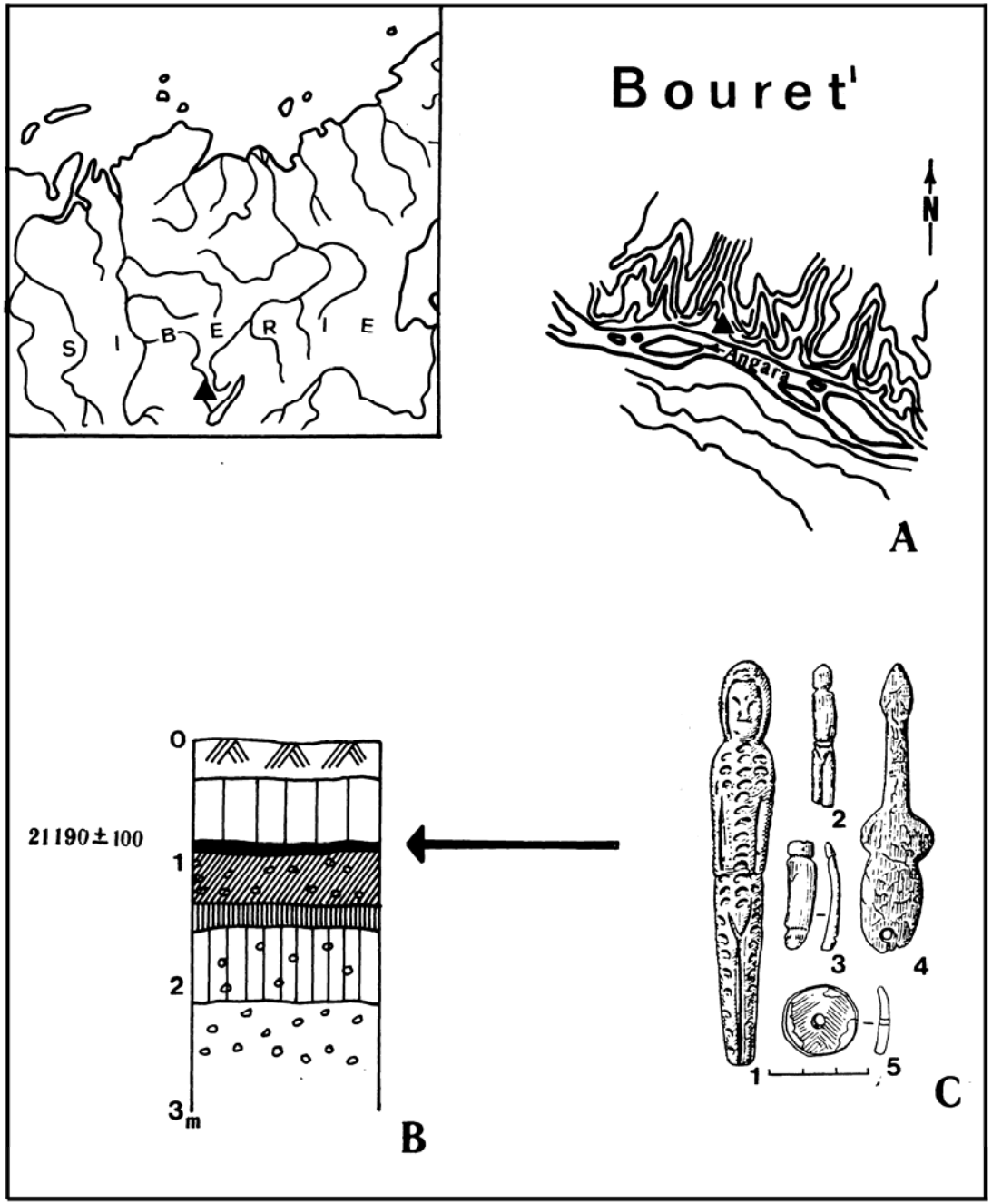
Malta


XVII (32)
XVI (34)
XV (30)
38
37
36
35
34
33
39
XIII
27
XII (26)
XI (25)
X (24)
XIV
(29)

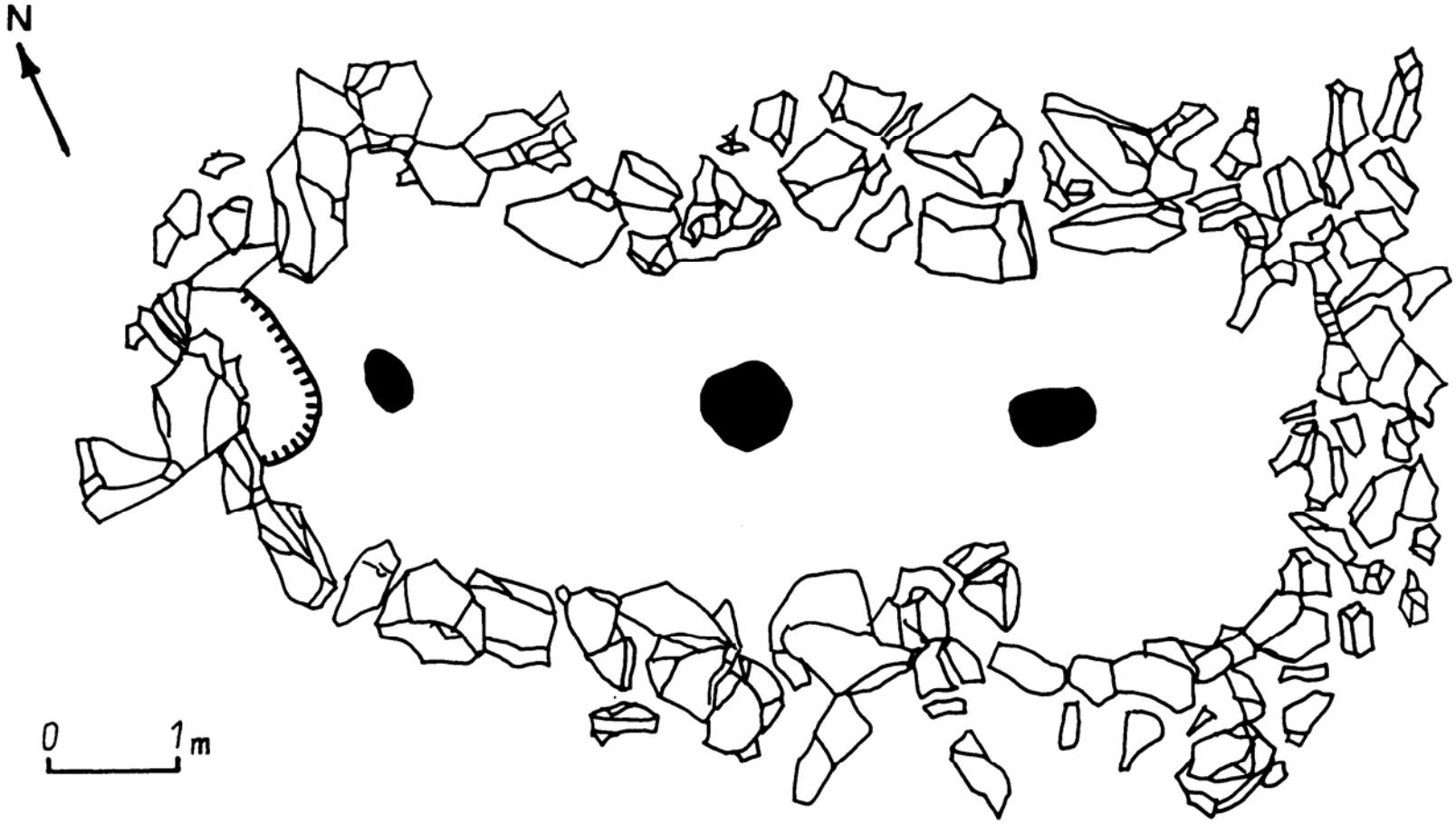

IV (6)
III (4-5)
V (7-12)
IX (18)
VII (14)
VIII
(15-17)
II (2-3)
I
VI (13)
19
20
22
21
23

Malta

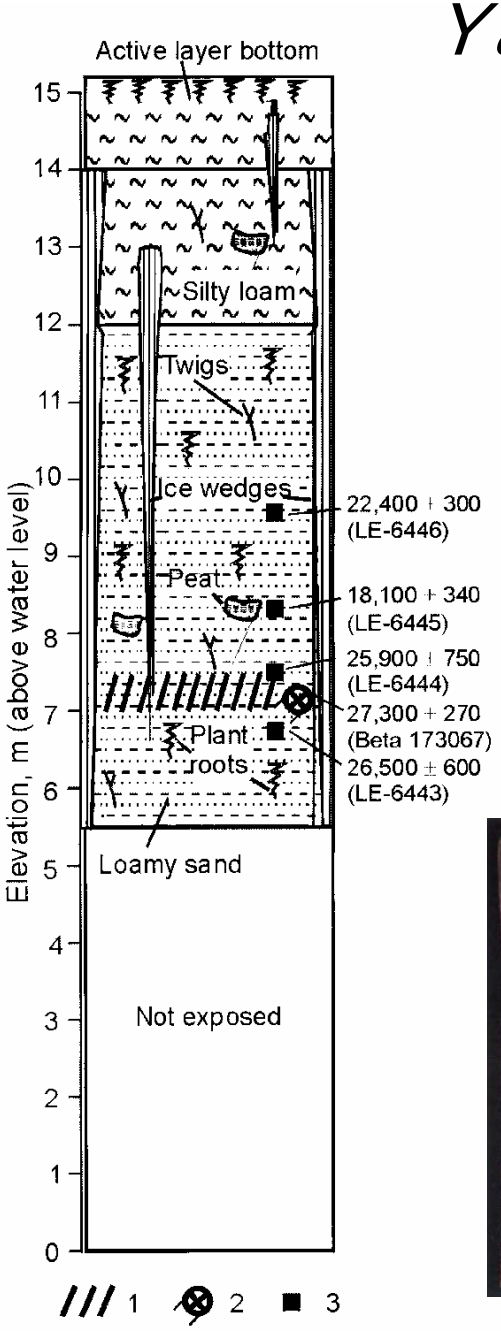

ГИН-8476 14720±190
OxA-6192 20340±320
OxA-6193 21340±340
OxA-6289 43100±2400
OxA-6190 25760±260
9.2
8
0
1
2
3
4
5
6
7
8
9
10
11
10
9.2
9.1
8
7
6
5
4
3
1-2
sd. 20
sd. 19
sd. 18
sd. 17
sd. 16
103
0
10
20
m

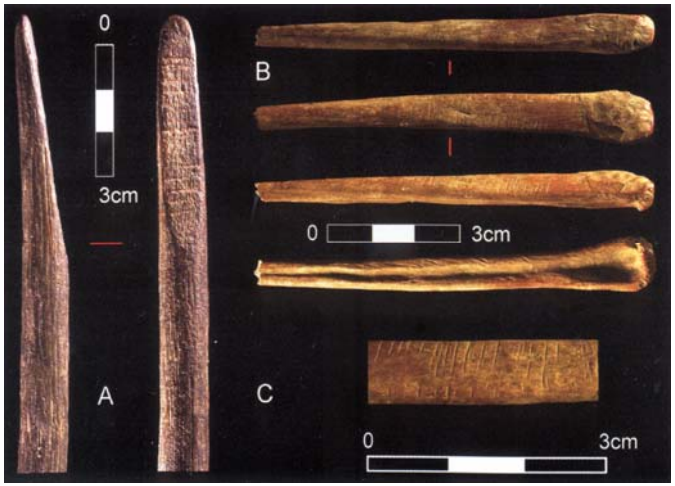

Bouret'
S I B E R I E
N
Angara
A
0
1
2
3m
21190±100
B
1
2
3
4
5
C

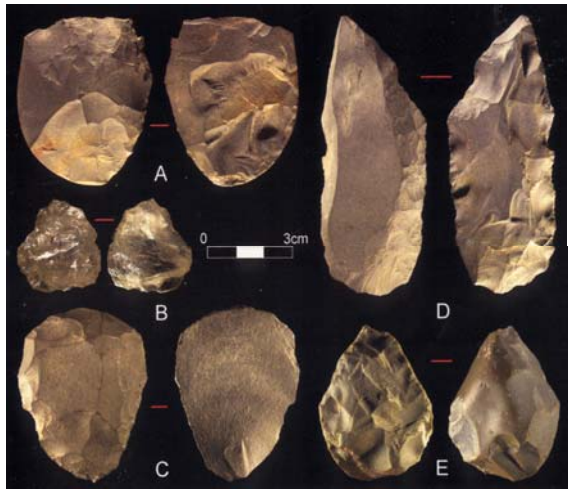
Sannyi Mys



Yana RHS Site







Late Upper Paleolithic

Lugovskoe

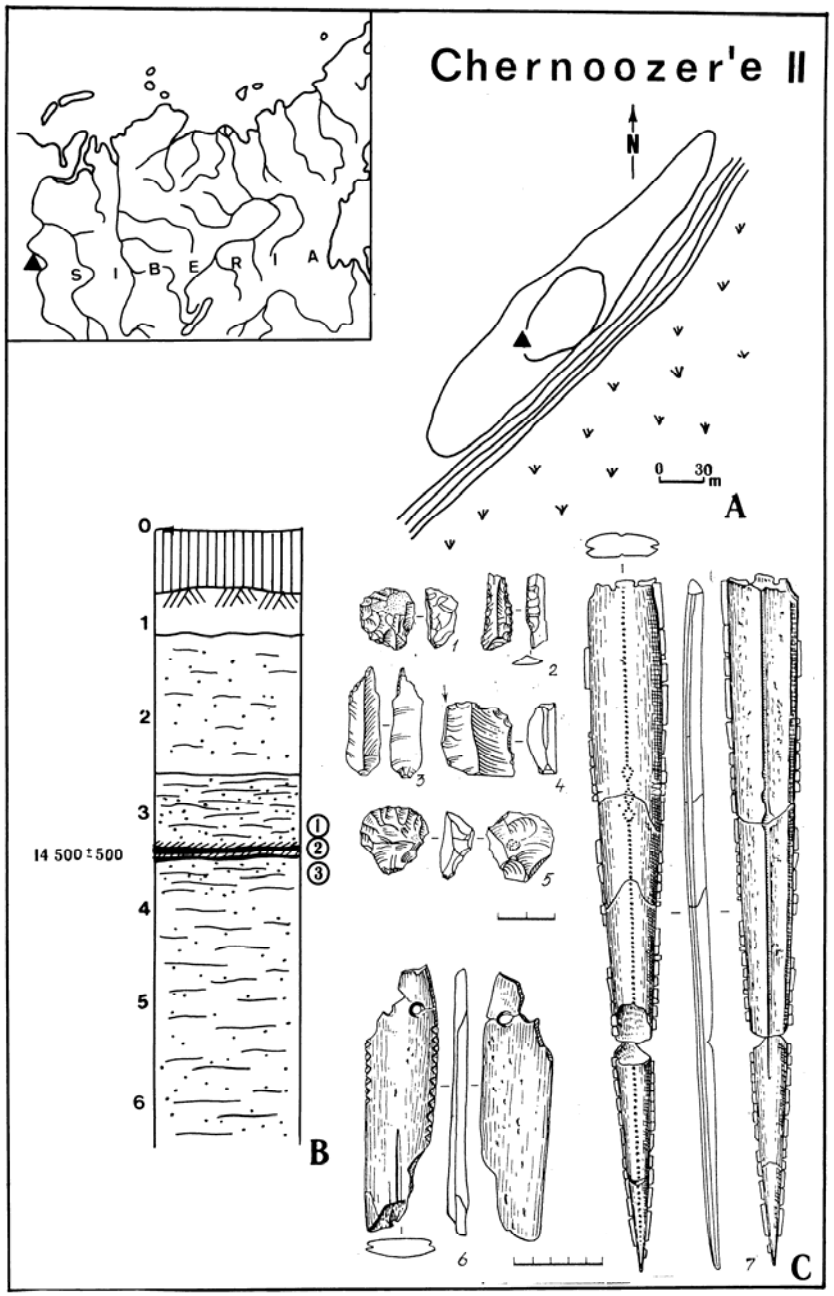
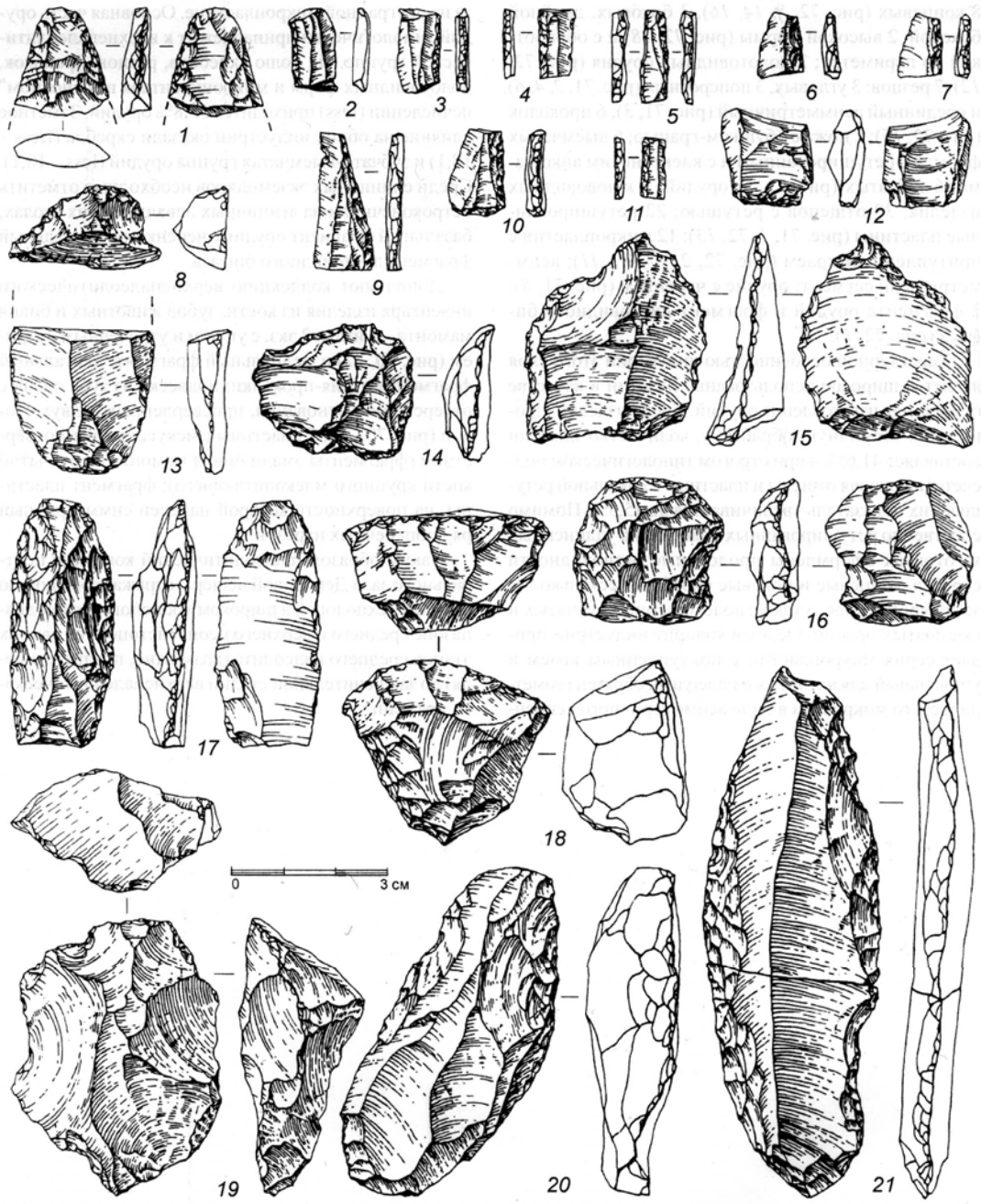
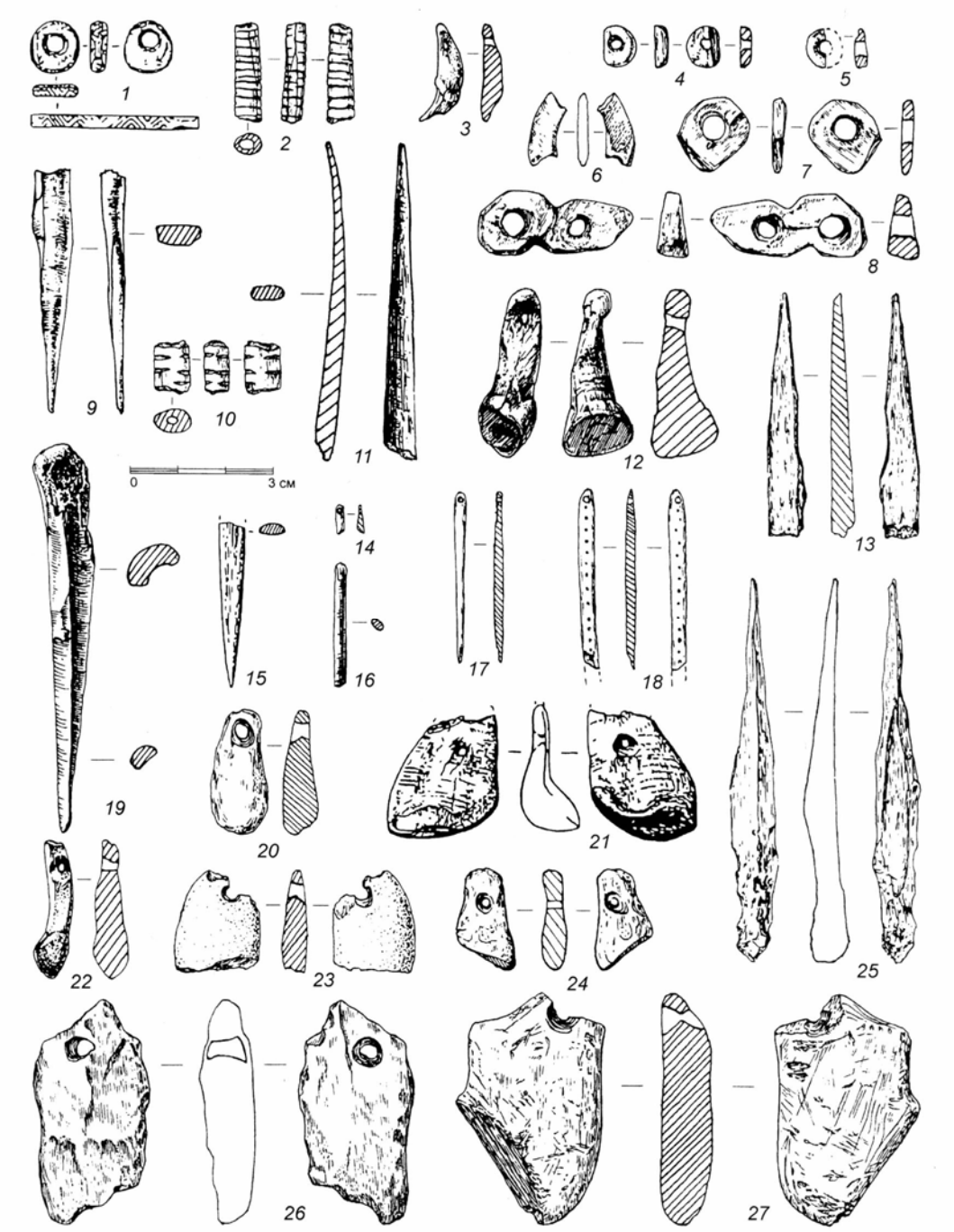


Figure 12. Chernoozer'e II.

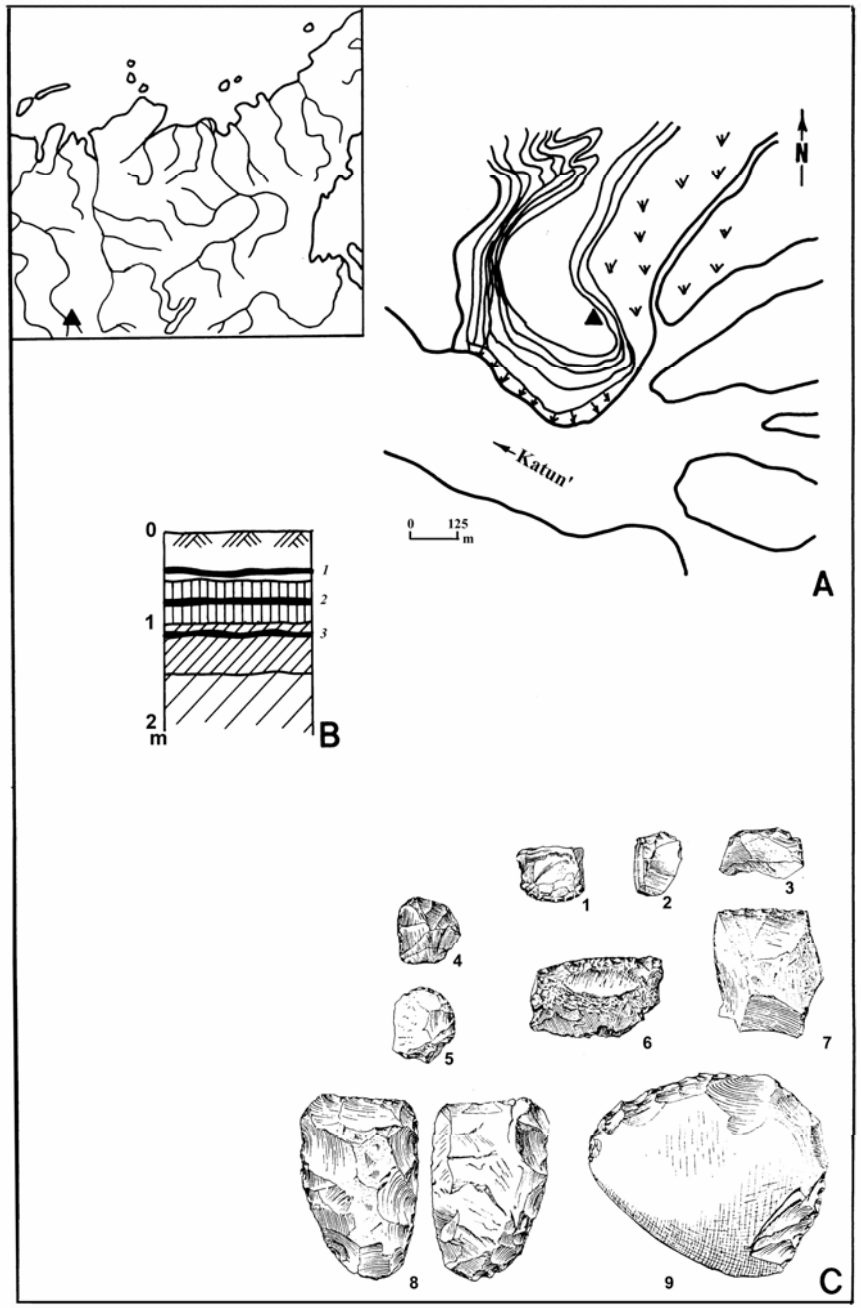


Denisova, Layer 9



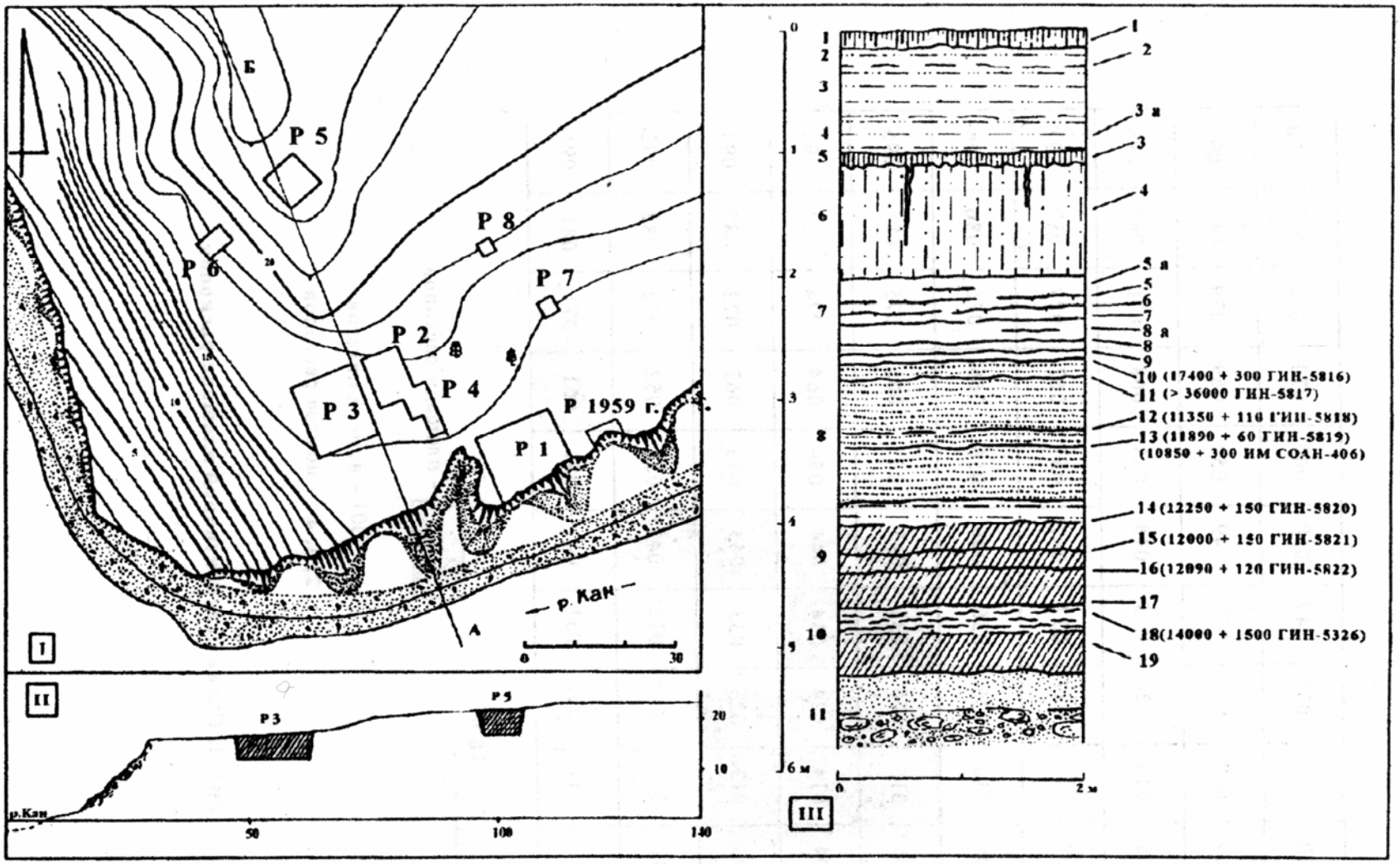
Denisova, Layer 9

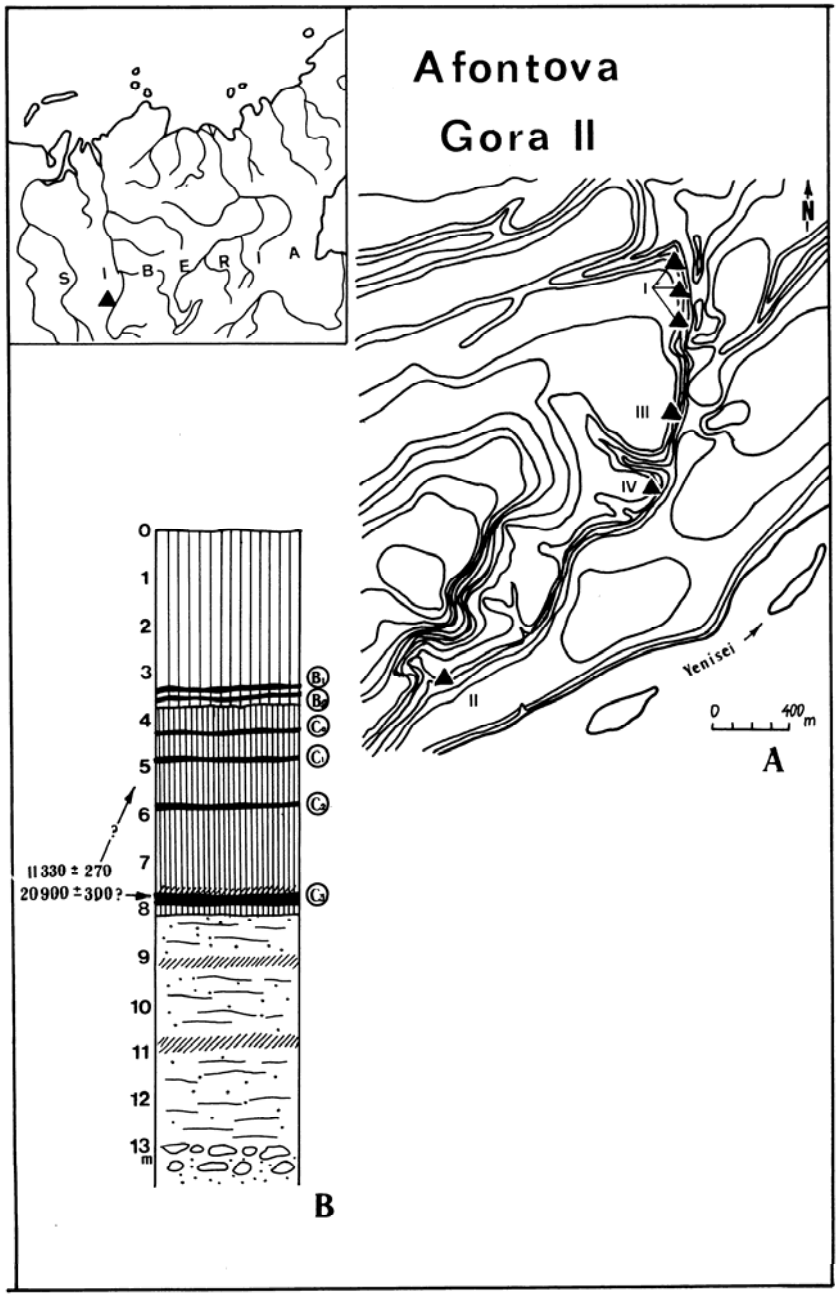
Kaminnaia



Srostki

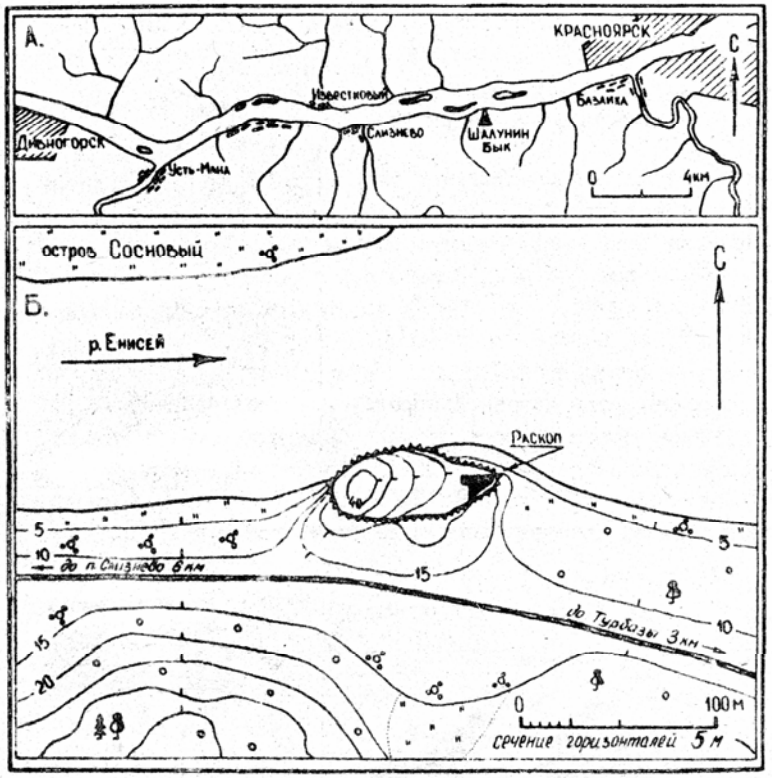
Strizhova Gora

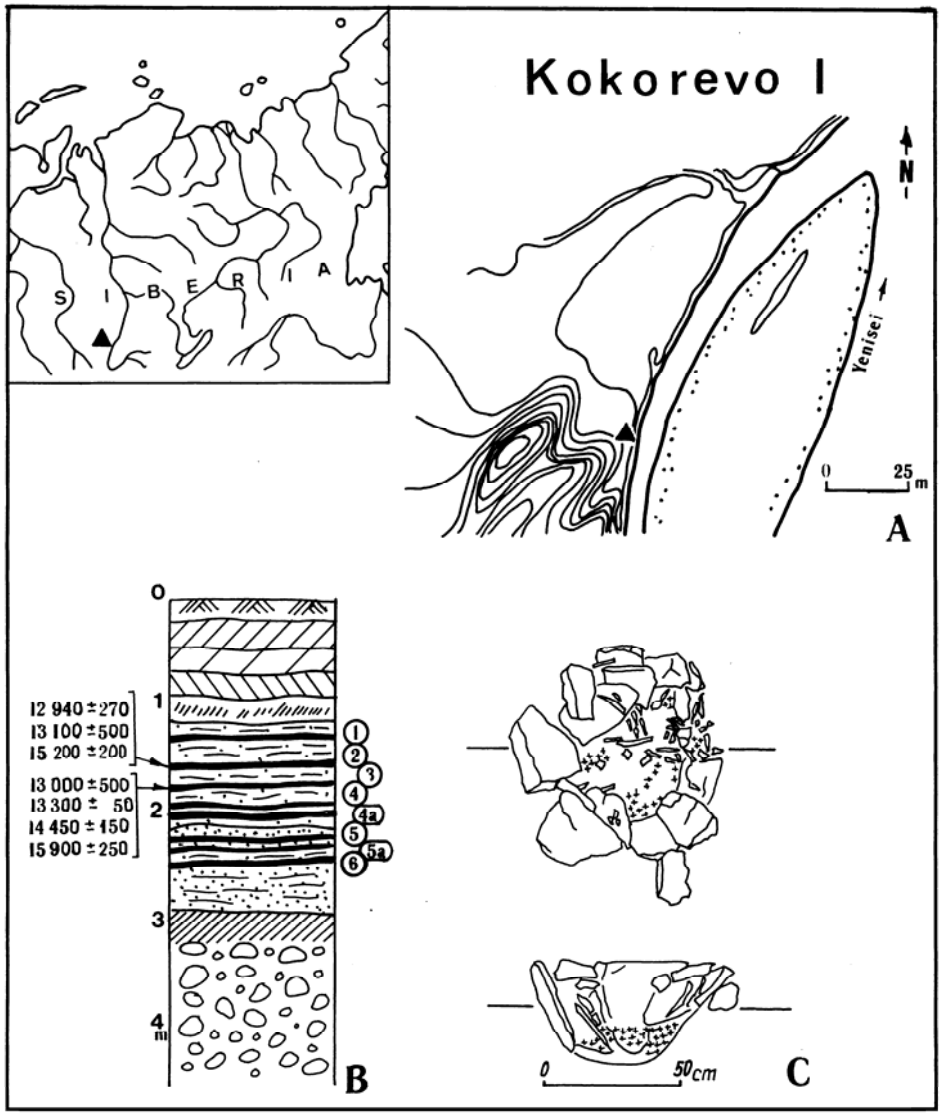


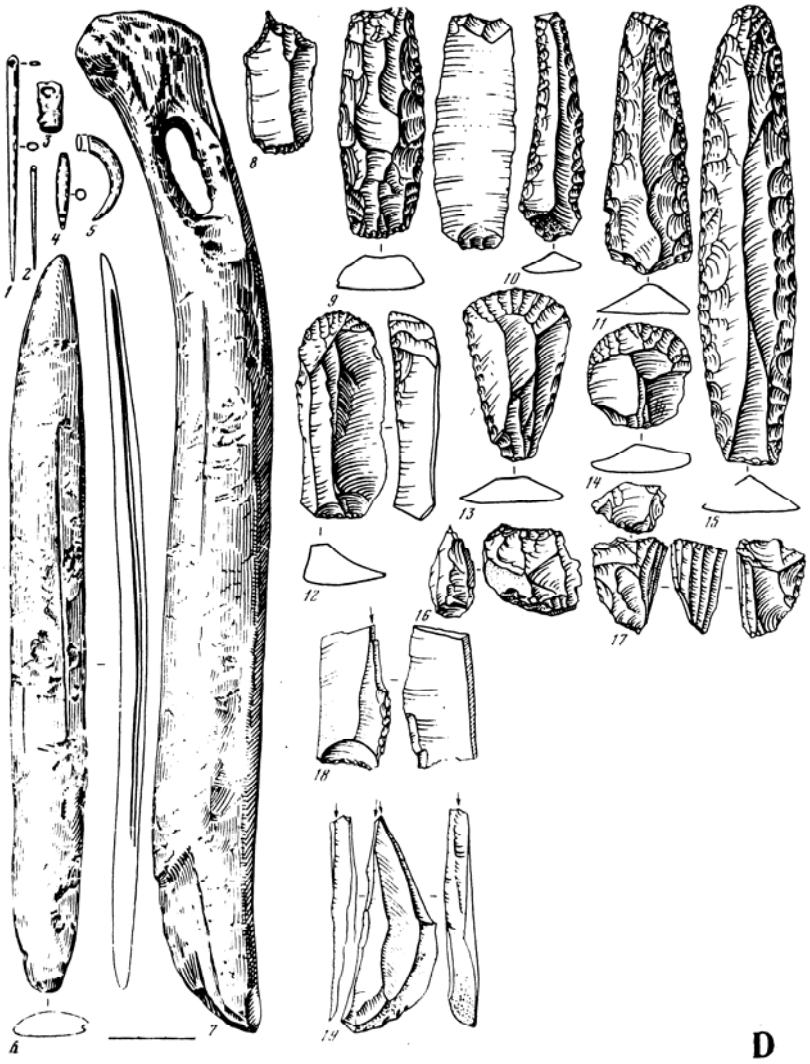

Afontova
Gora II
S I B E R A
N
I
II
III
IV
Yenisei
0 400 m
A
0
1
2
3
4
5
6
7
8
9
10
11
12
13 m
B1
B2
C3
C1
C2
C4
11 330 ± 270
20 900 ± 300?
B

Listvenka

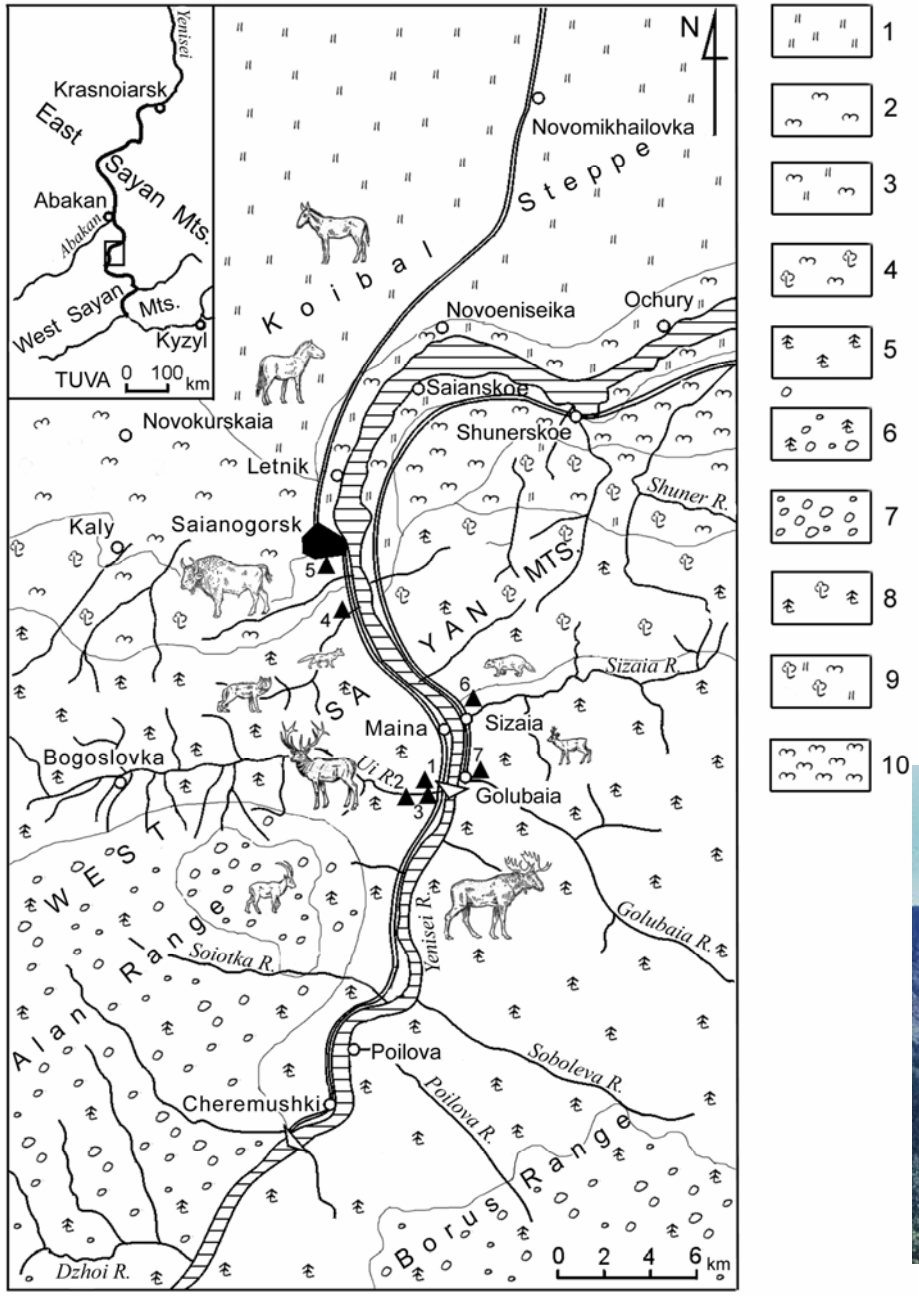
Shalunin Byk



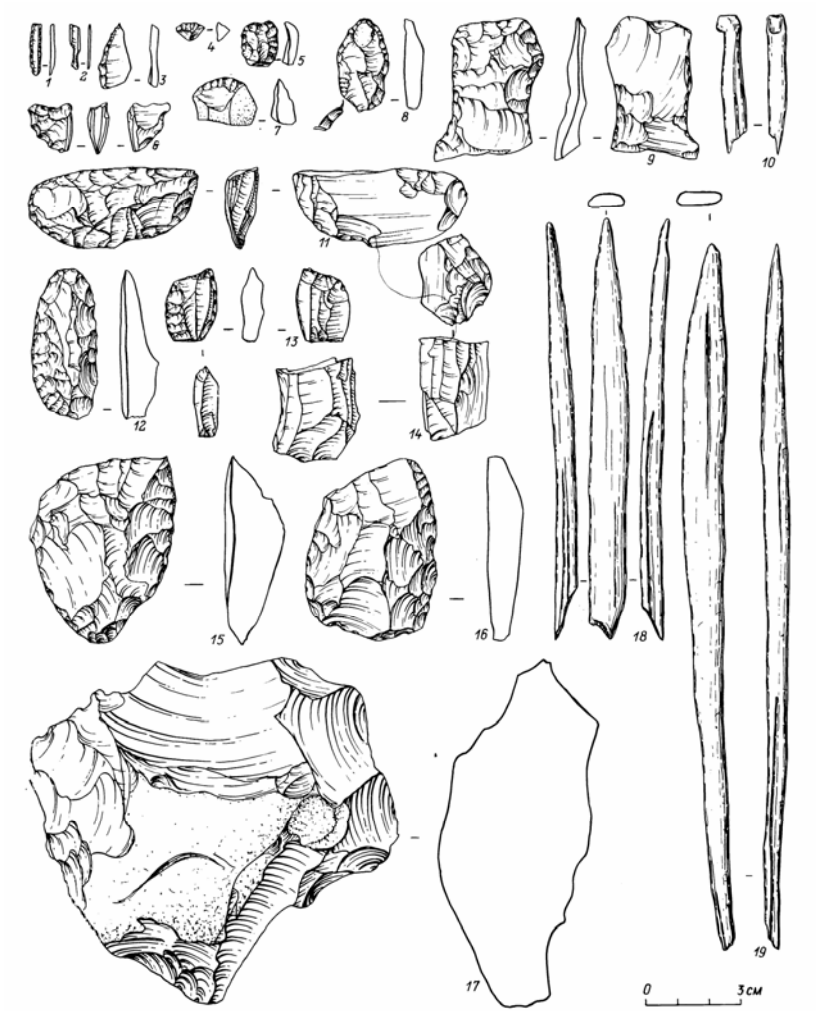

Kokorevo I
S I B E R I A
N
Yenisei
0 25 m
A
0
1
2
3
4
m
12 940 ± 270
13 100 ± 500
15 200 ± 200
13 000 ± 500
13 300 ± 50
14 450 ± 150
15 900 ± 250
1
2
3
4
4a
5
5a
6
B
0 50 cm
C

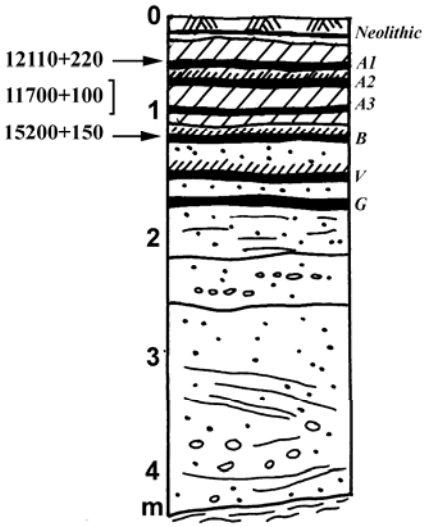

D

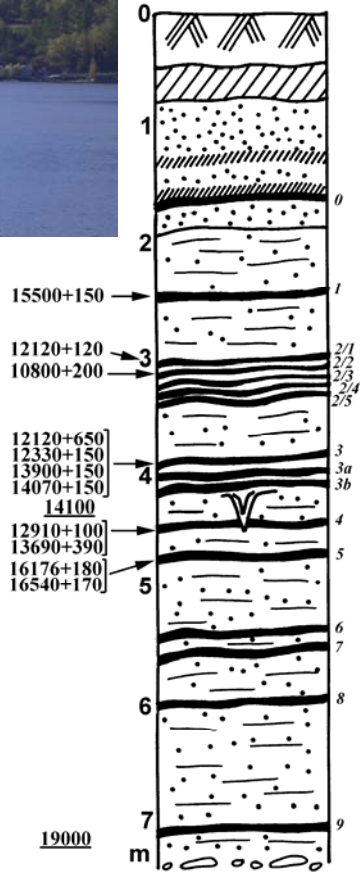
The Maina Region

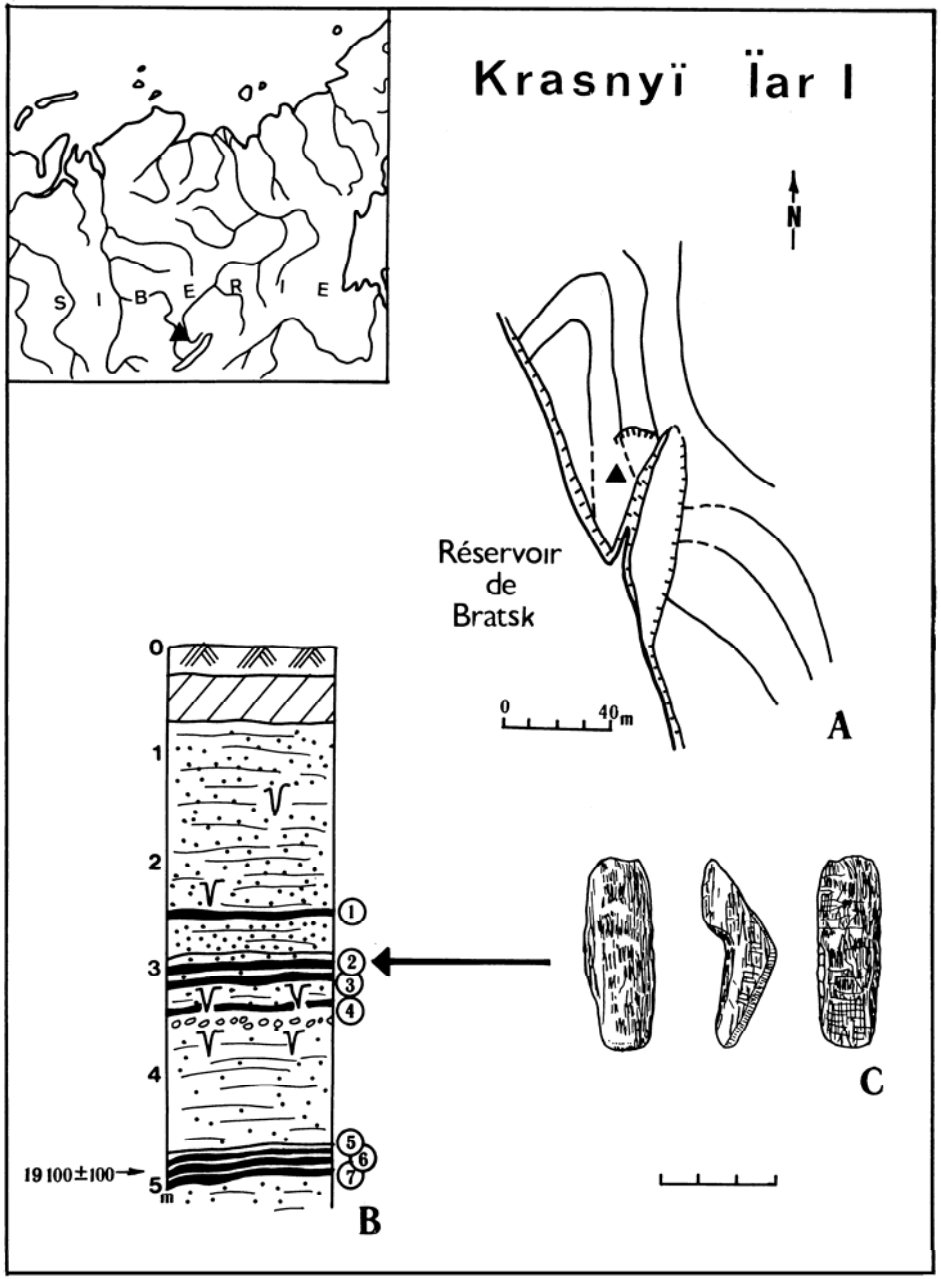


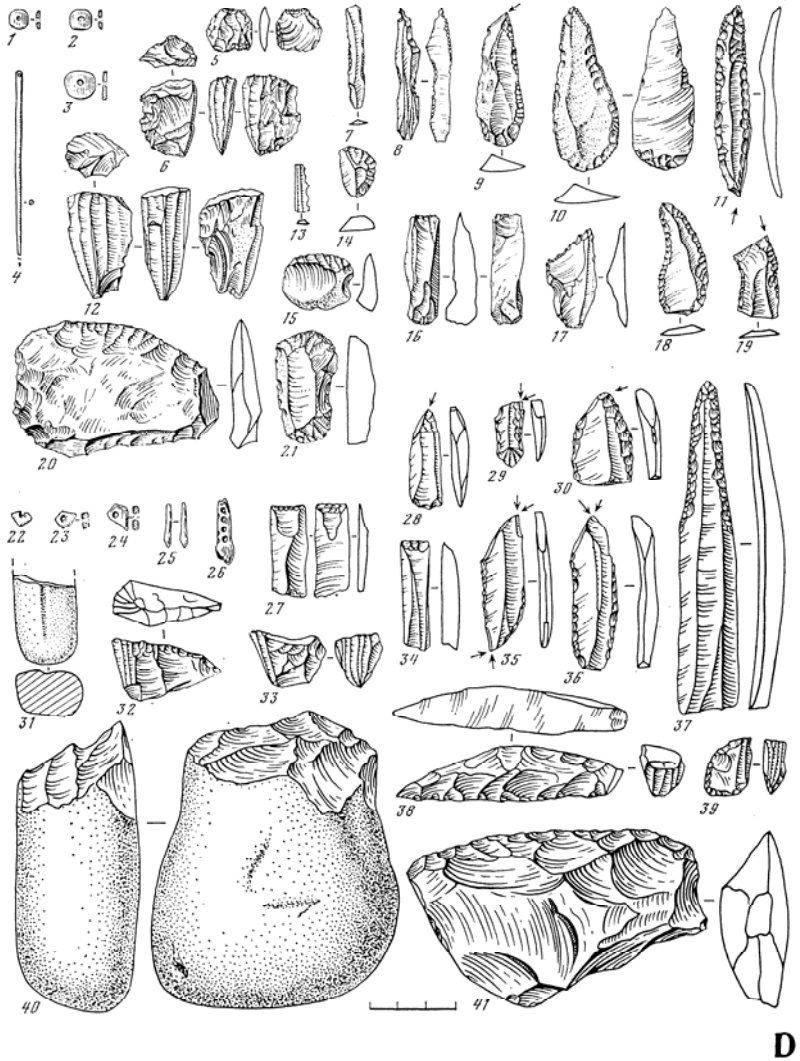
Maininskaia

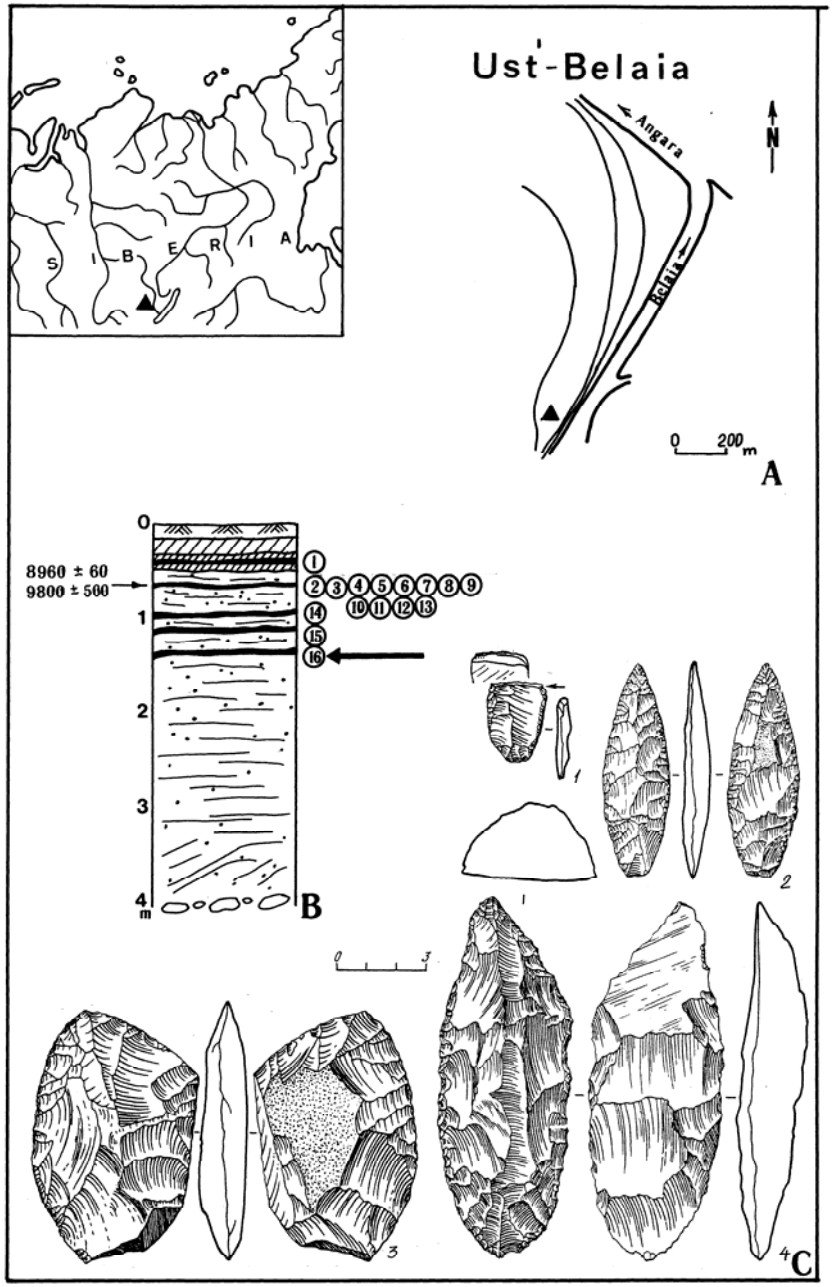


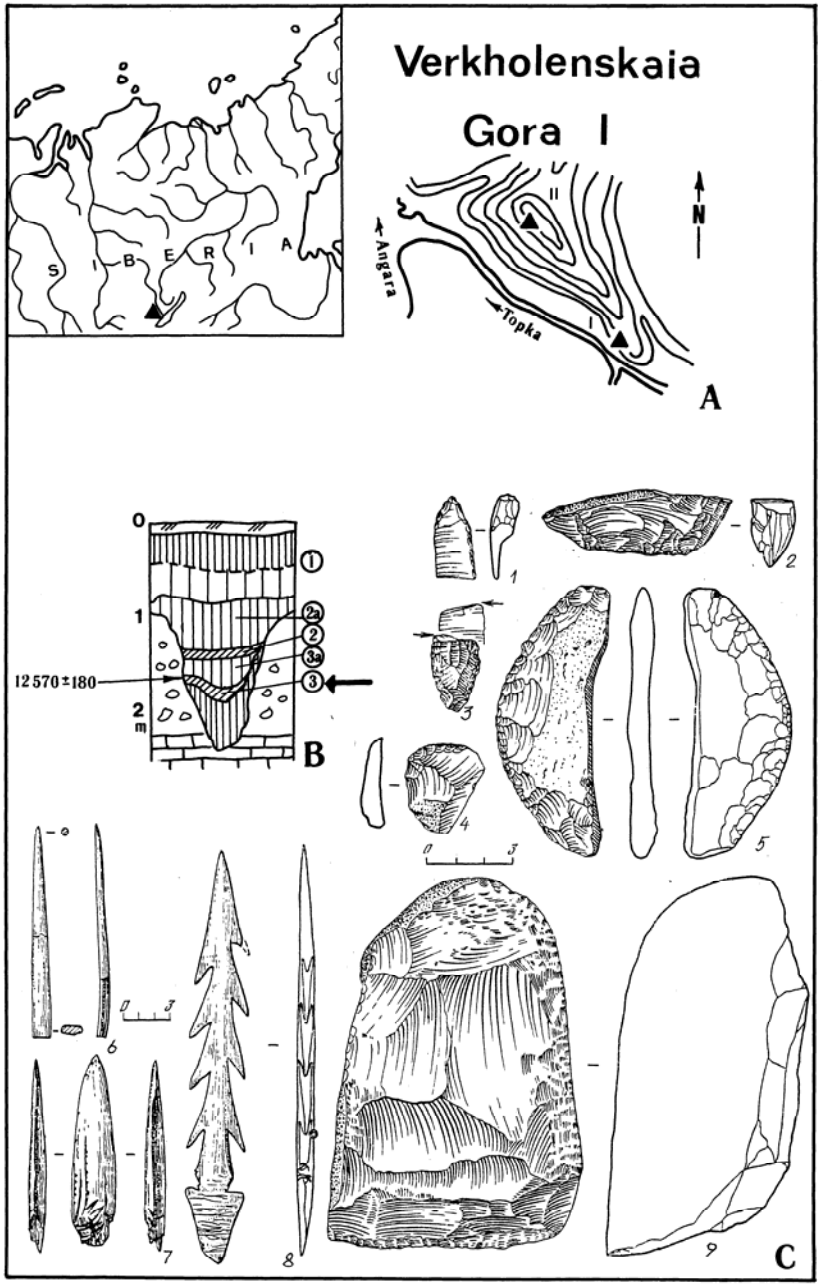


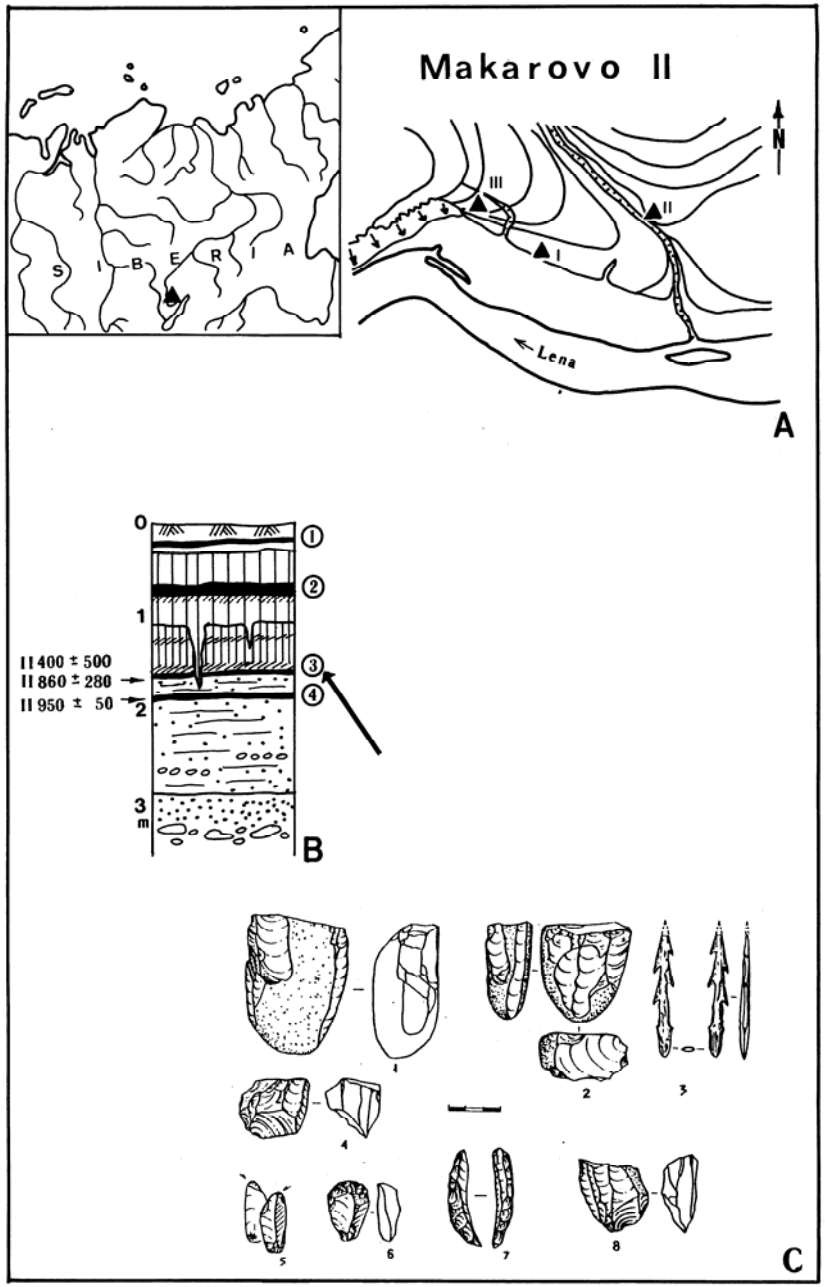


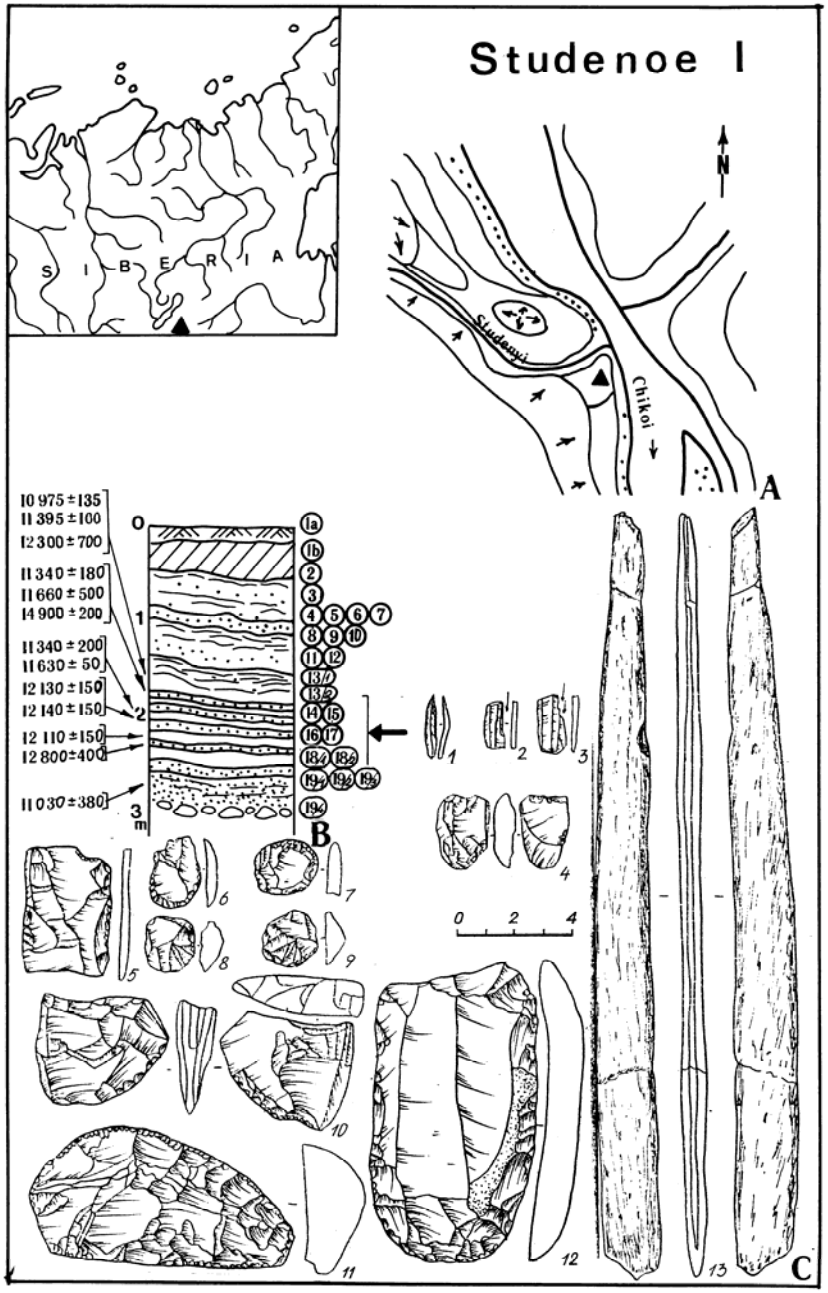

Krasnyï Ïar I
S I B E R I E
N
Réservoir de Bratsk
0 40m
A
0
1
2
3
4
5
m
19 100±100
B
C

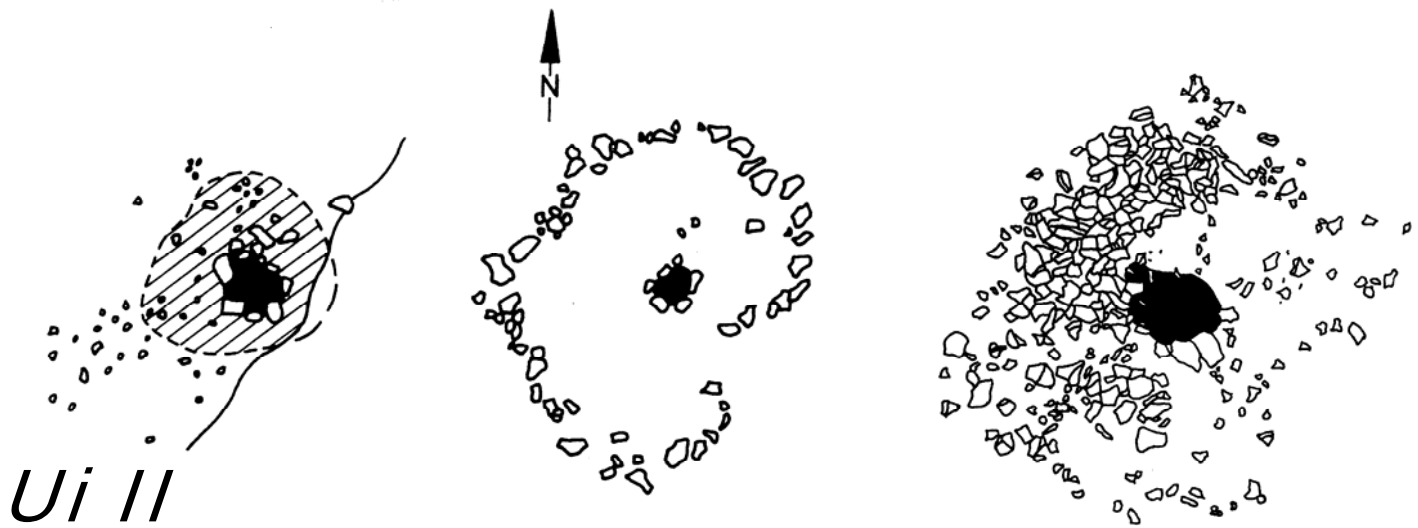

D


Ust'-Belaia
S I B E R I A
Angara
Belaia
N
0 200 m
A
0
8960 ± 60
9800 ± 500
1
2
3
4 m
B
1
2
3
4
C
0 3


Verkholenskaia
Gora I
S I B E R I A
Angara
Topka
N
A
0
1
2
12 570 ± 180
B
C


Makarovo II
S I B E R I A
N
III
II
I
Lena
A
0
1
2
3
m
① ② ③ ④
II 400 ± 500
II 860 ± 280
II 950 ± 50
B
1
2
3
4
5
6
7
8
C

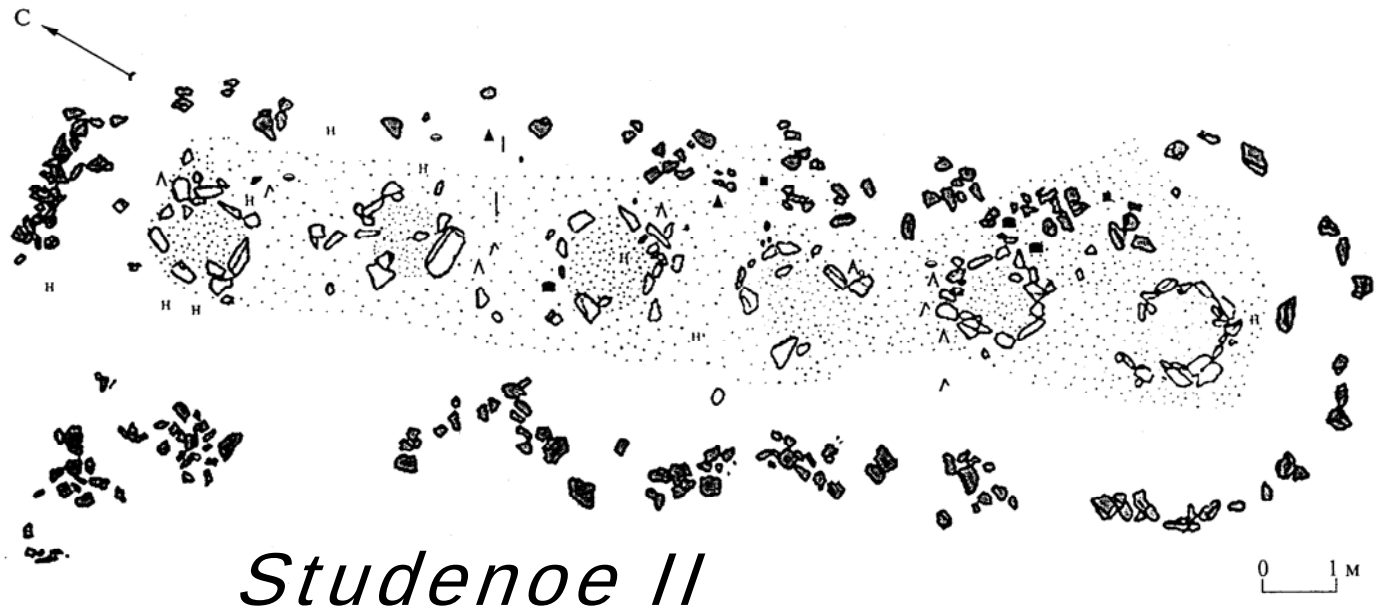

Studenoe I
S I B E R I A
N
Studenaya
Chikoi
A
10 975 ± 135
11 395 ± 100
12 300 ± 700
11 340 ± 180
11 660 ± 500
14 900 ± 200
11 340 ± 200
11 630 ± 50
12 130 ± 150
12 140 ± 150
12 110 ± 150
12 800 ± 400
11 030 ± 380
0
1
2
3 m
1a
1b
2
3
4
5
6
7
8
9
10
11
12
13/1
13/2
14
15
16
17
18/1
18/2
19/1
19/2
19/3
19/4
B
0 2 4
C



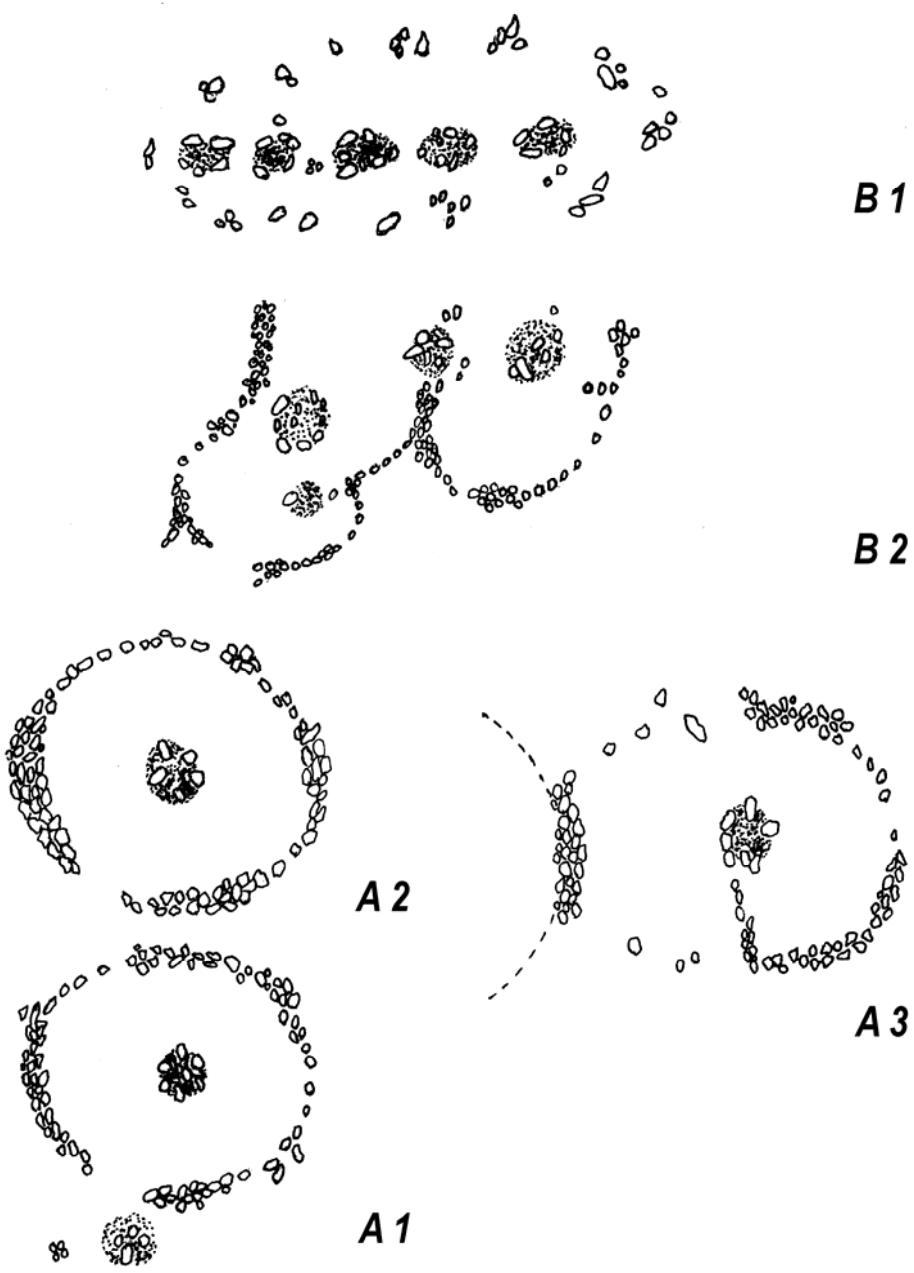
Ui II

Studenoe I

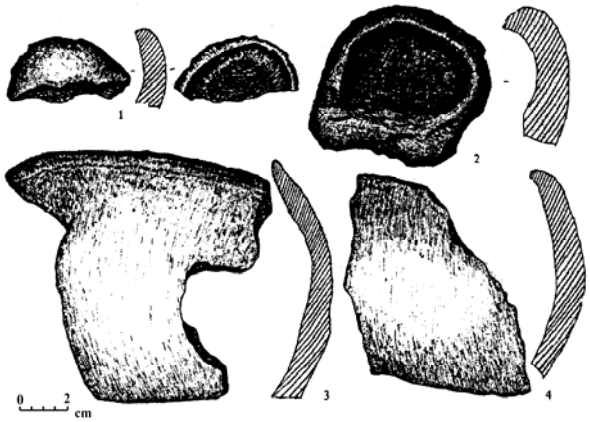
Ust'Menza I

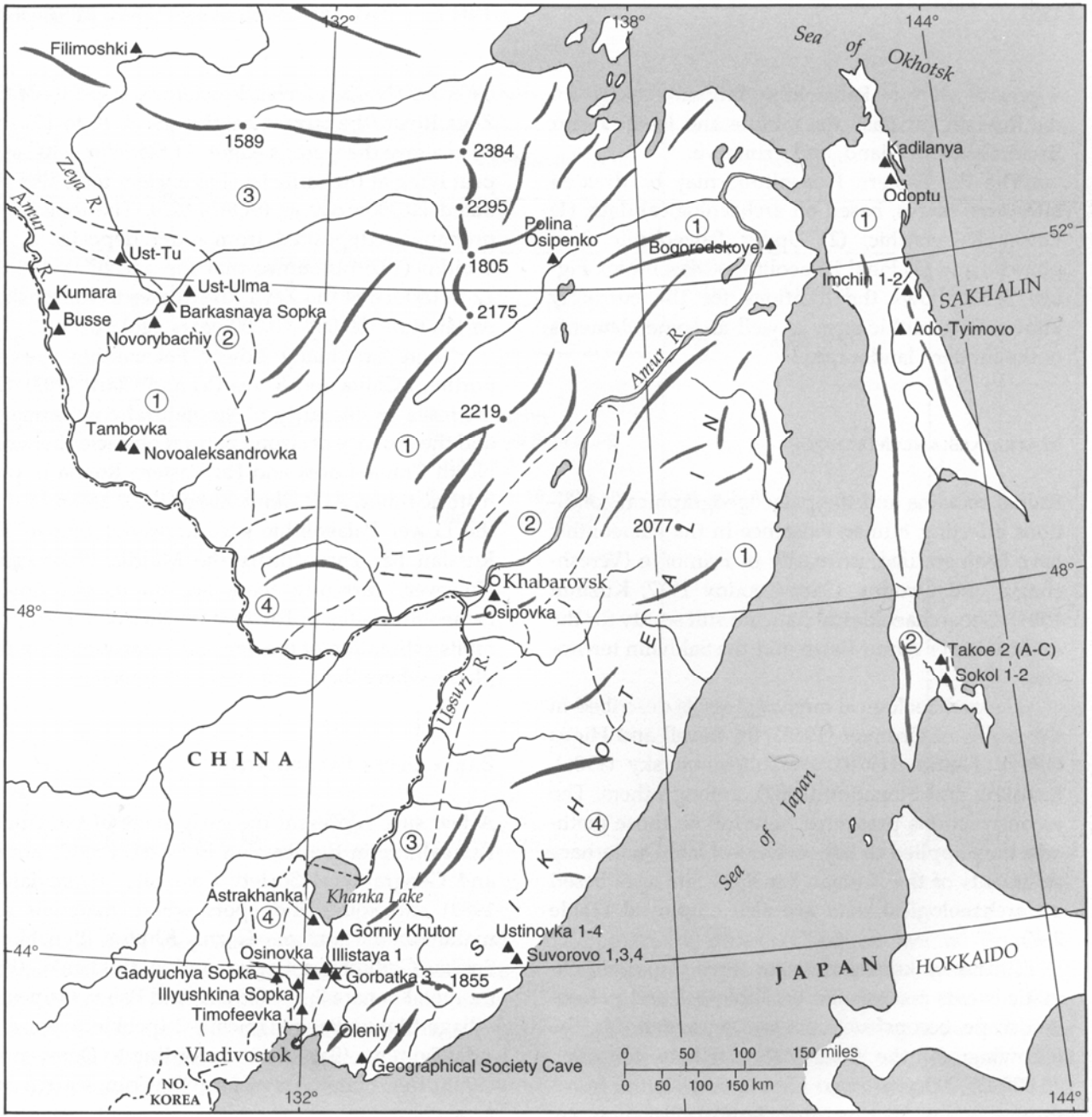


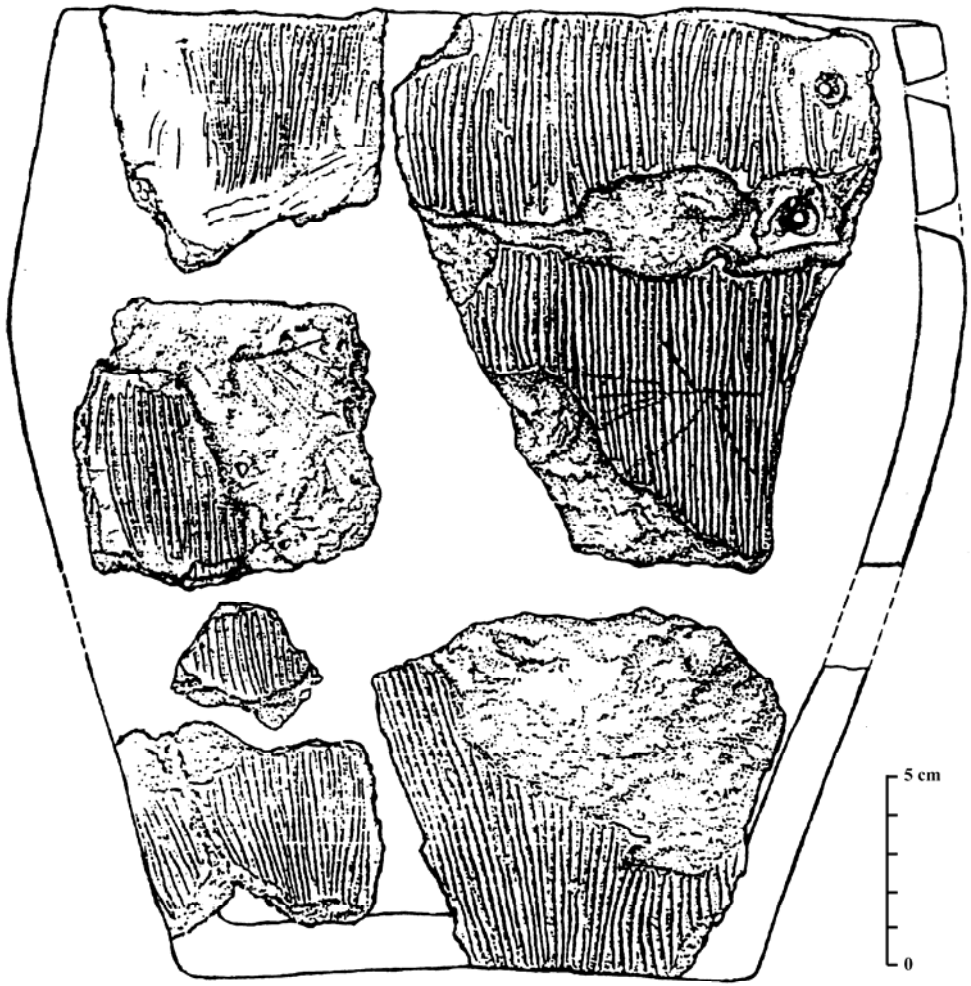
Studenoe II



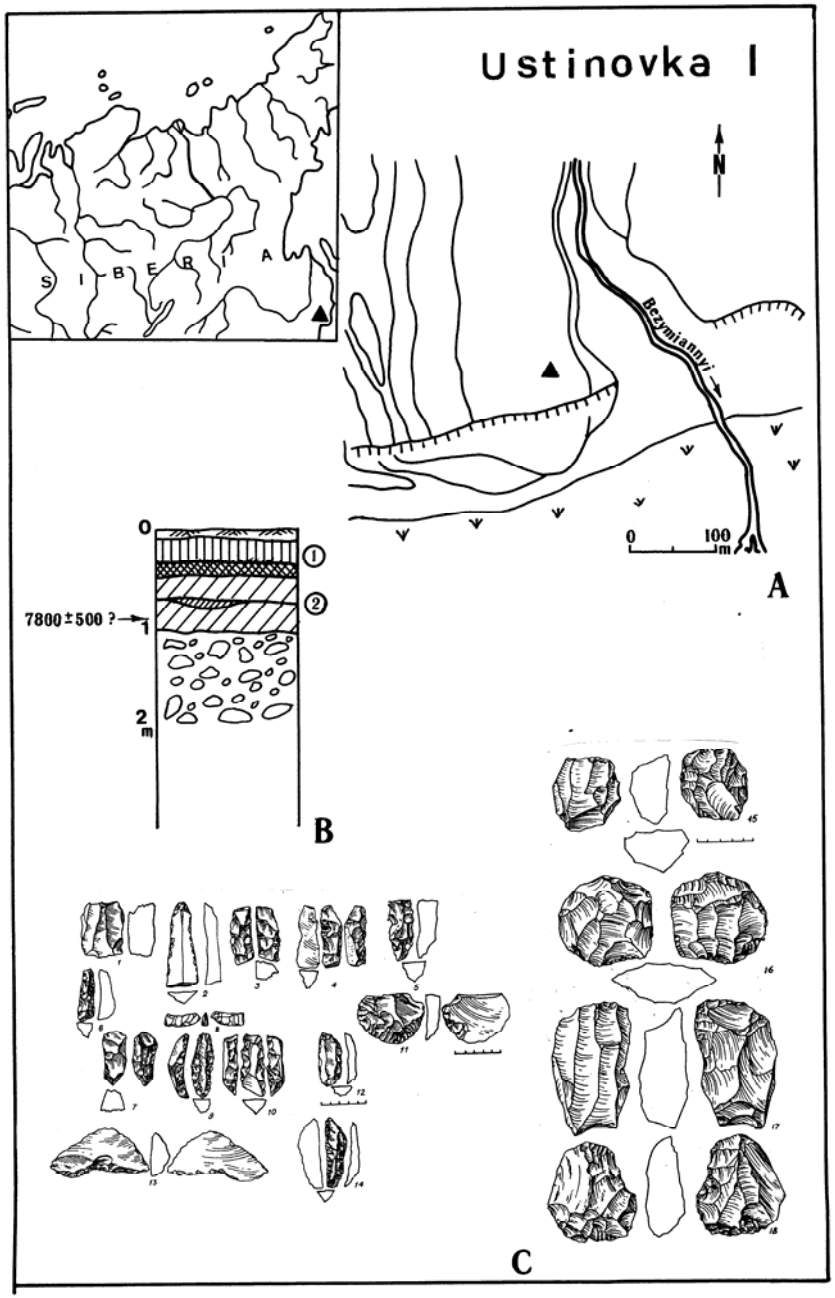
Sokhatino IV

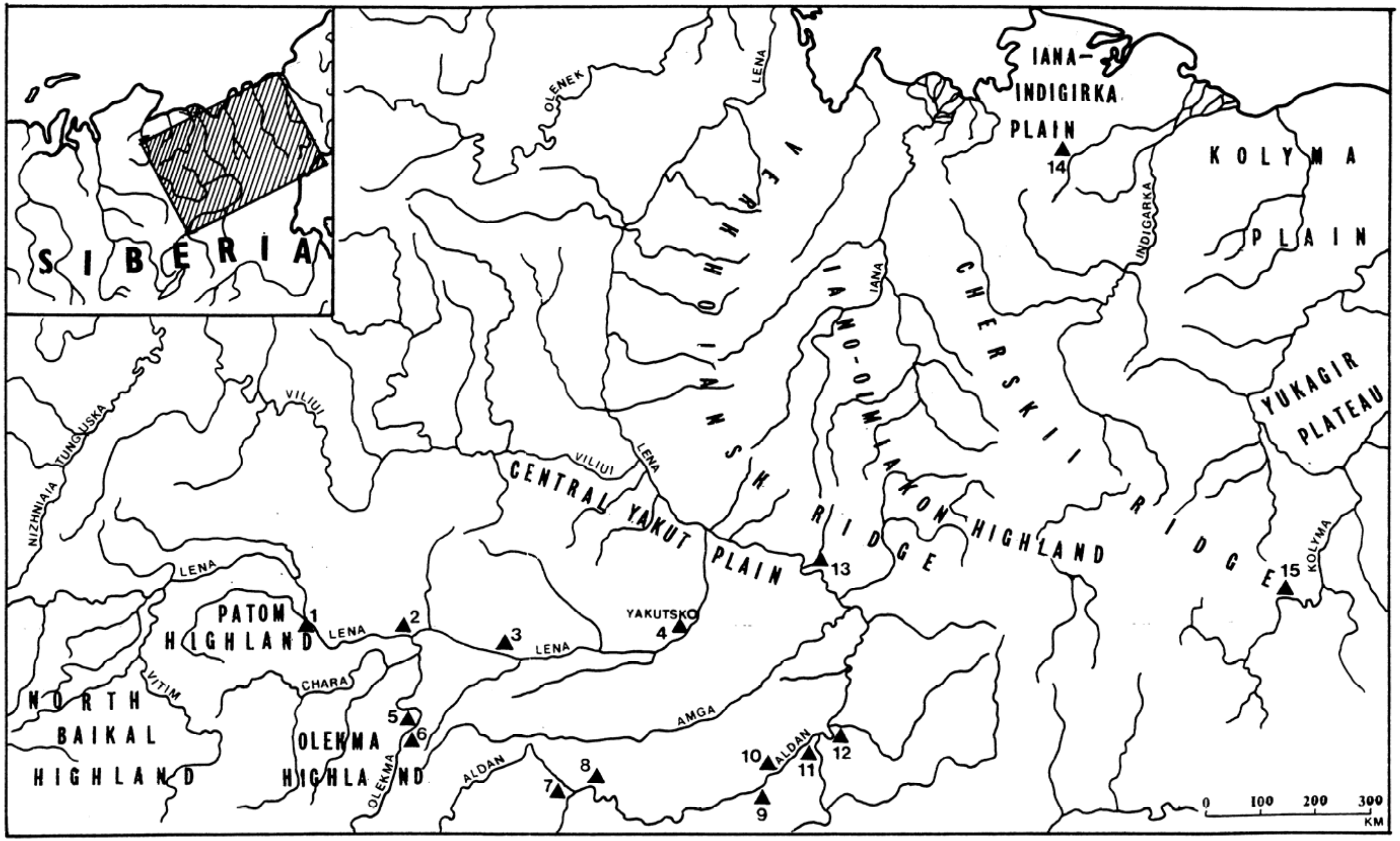



132°
138°
144°
Sea of Okhotsk
Filimoshki
1589
2384
2295
Polina Osipenko
1805
2175
2219
2077
Zeya R.
Amur R.
Ust-Tu
Ust-Ulma
Kumara
Busse
Barkasnaya Sopka
Novorybachiy
Tambovka
Novoaleksandrovka
Bogorodskoye
Kadilanya
Odoptu
Imchin 1-2
SAKHALIN
Ado-Tyimovo
52°
48°
Khabarovsk
Osipovka
Takoe 2 (A-C)
Sokol 1-2
Ussuri R.
CHINA
Sea of Japan
Khanka Lake
Astrakhanka
Gorniy Khutor
Ustinovka 1-4
Suvorovo 1,3,4
Osinovka
Illistaya 1
Gadyuchya Sopka
Gorbatka 3
1855
Illyushkina Sopka
Timofeevka 1
Oleniy 1
Vladivostok
Geographical Society Cave
JAPAN
HOKKAIDO
44°
NO. KOREA
0 50 100 150 miles
0 50 100 150 km

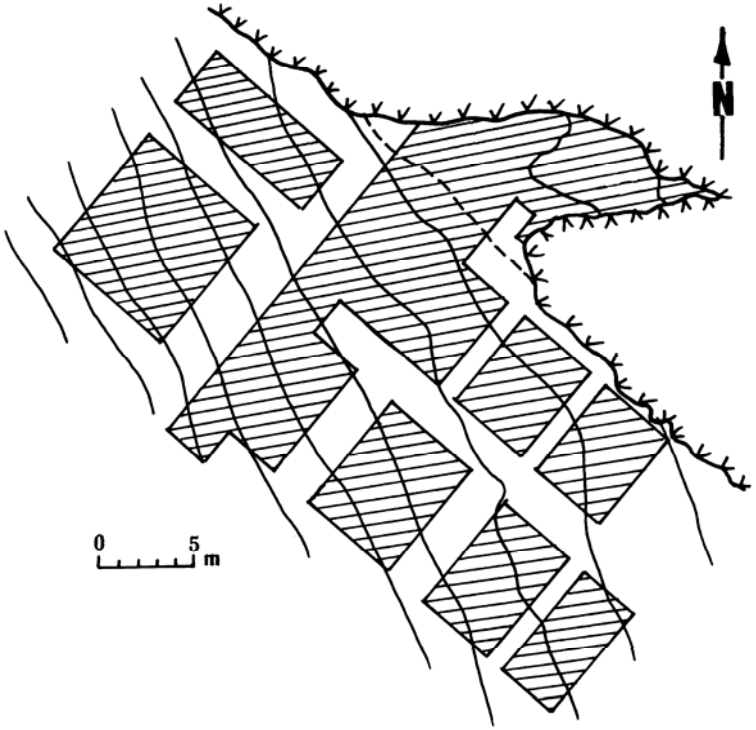


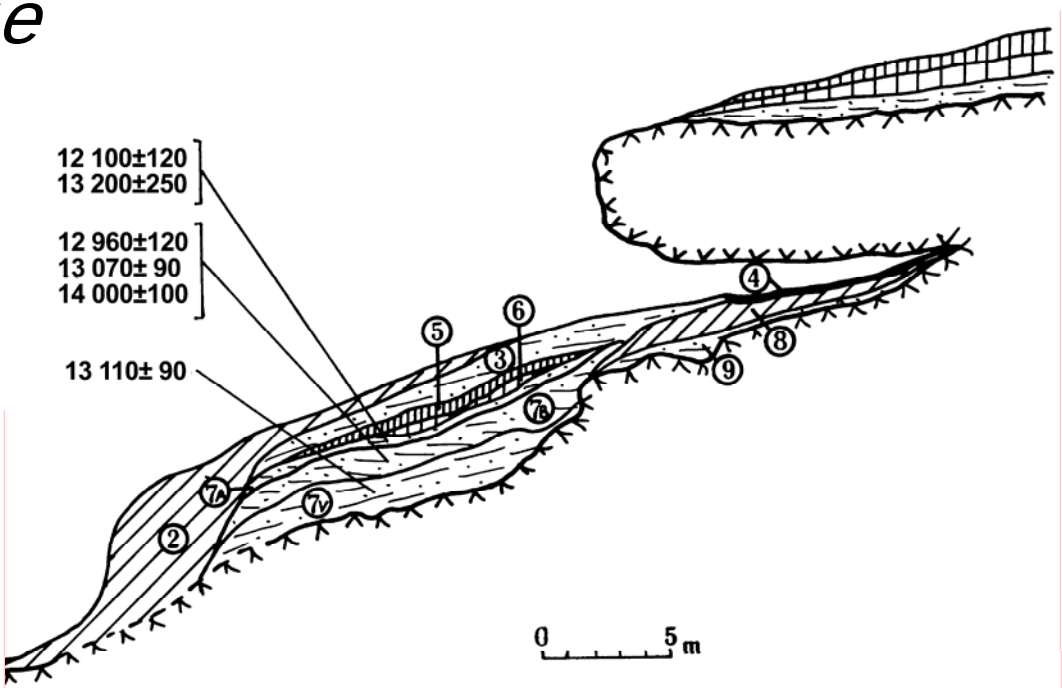
Gasia


Ustinovka I
S I B E R I A
N
Bezymiannyi
0
100
m
A
0
1
2
7800±500 ?
2
m
B
C


SIBERIA
OLENEK
LENA
IANA-
INDIGIRKA
PLAIN
14
KOLYMA
PLAIN
INDIGIRKA
VERKHOIANSK RIDGE
IANO-OIMIAKON HIGHLAND
CHERSKII RIDGE
IANA
YUKAGIR PLATEAU
KOLYMA
15
VILIUI
NIZHNIAIA TUNGUSKA
CENTRAL YAKUT PLAIN
13
YAKUTSK
4
PATOM HIGHLAND
1
2
3
NORTH BAIKAL HIGHLAND
VITIM
CHARA
OLEKMA HIGHLAND
OLEKMA
5
6
ALDAN
7
8
9
10
11
12
AMGA
0 100 200 300
KM

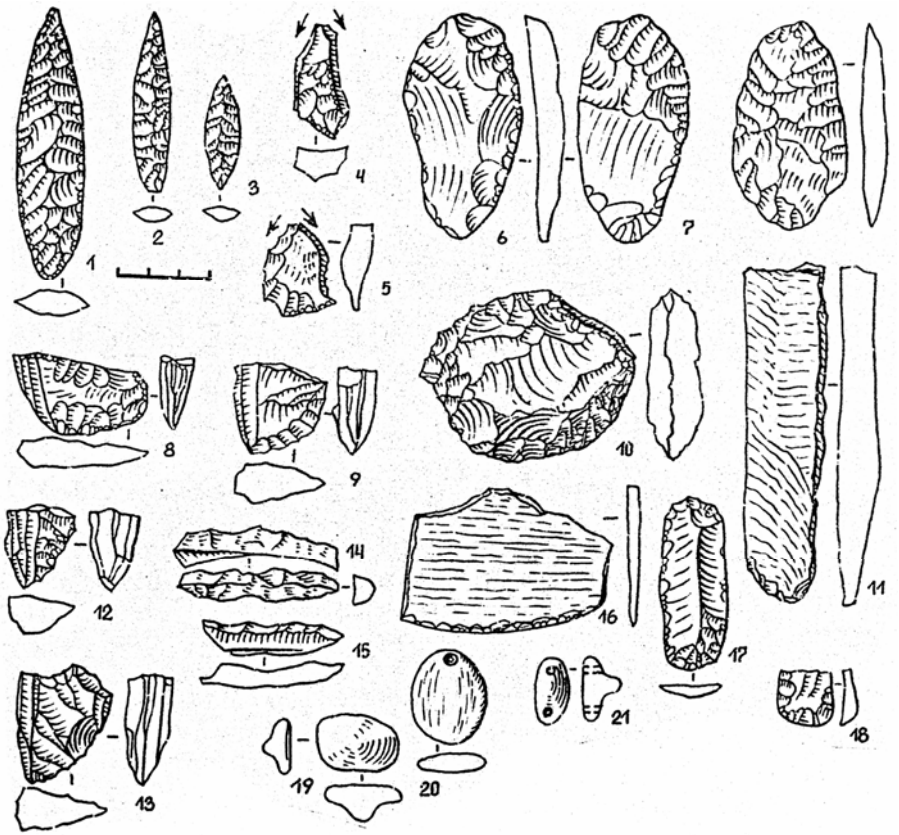
Diuktay Cave

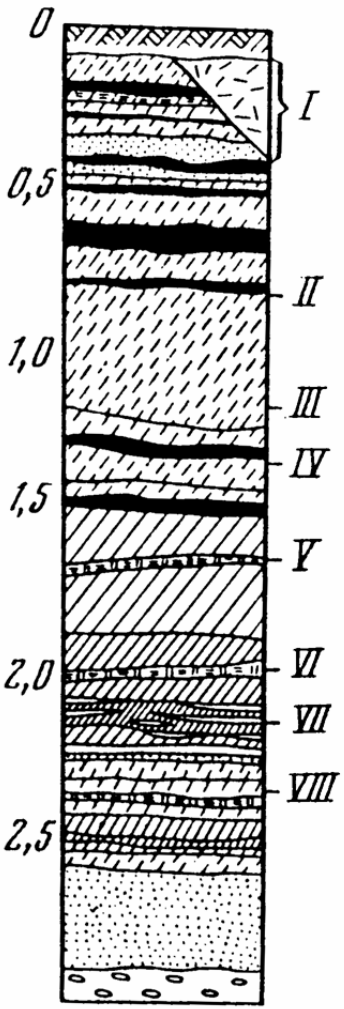




Kamchatka, Ushki Lake

Ushki I


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21


0
0,5
1,0
1,5
2,0
2,5
I
II
III
IV
V
VI
VII
VIII

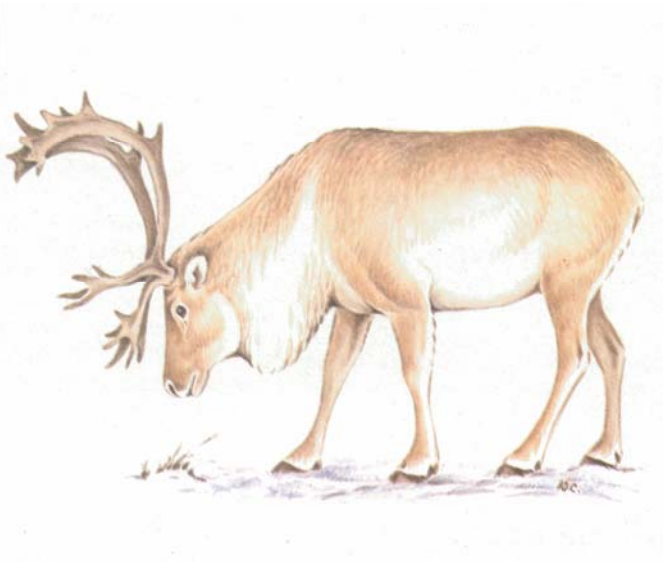
Alaska

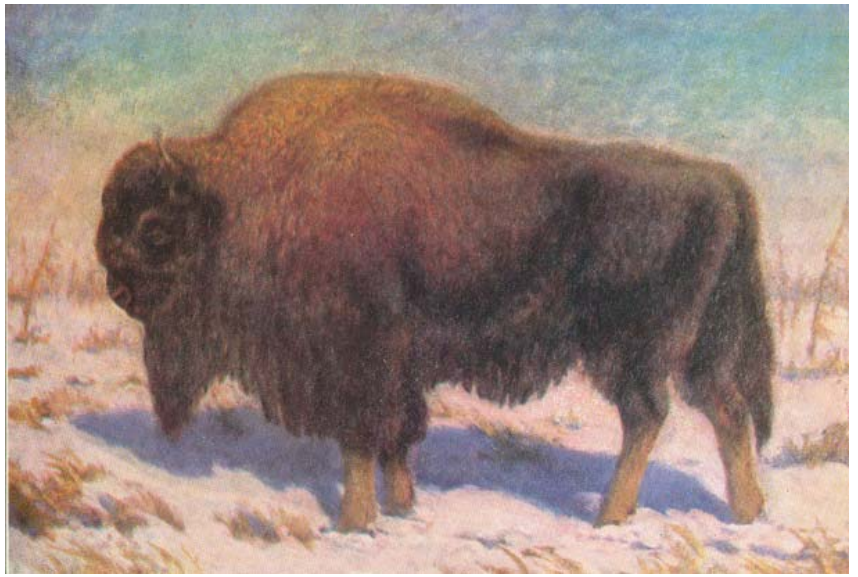
Beringia


Km.
0 500 1 000 1 500

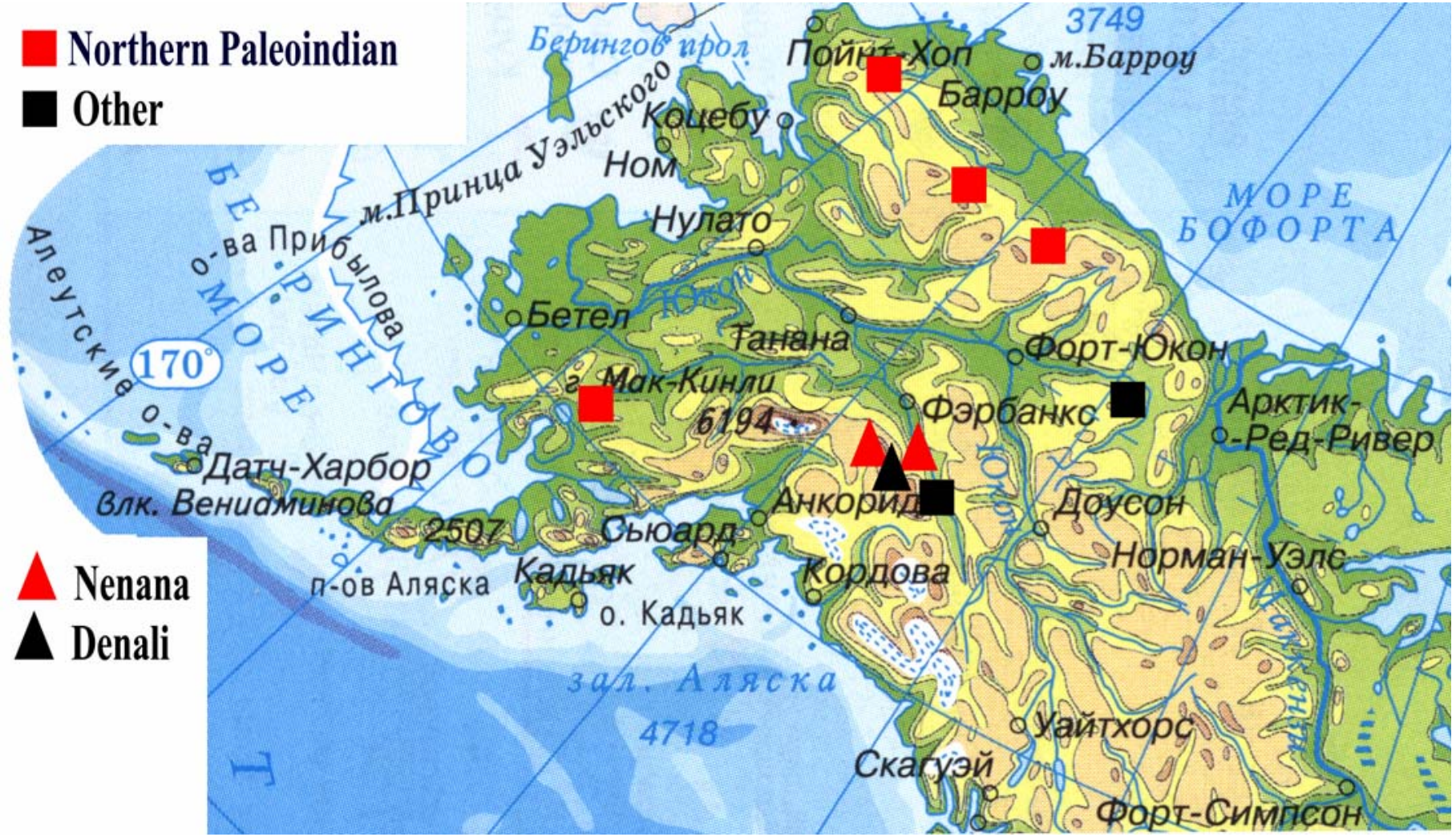

ARCTIC OCEAN
BERINGIA
BROOKS RANGE
SIBERIA
Yukon
ALASKA
ALASKA RANGE
BERING SEA
PACIFIC OCEAN

Beringian Fauna





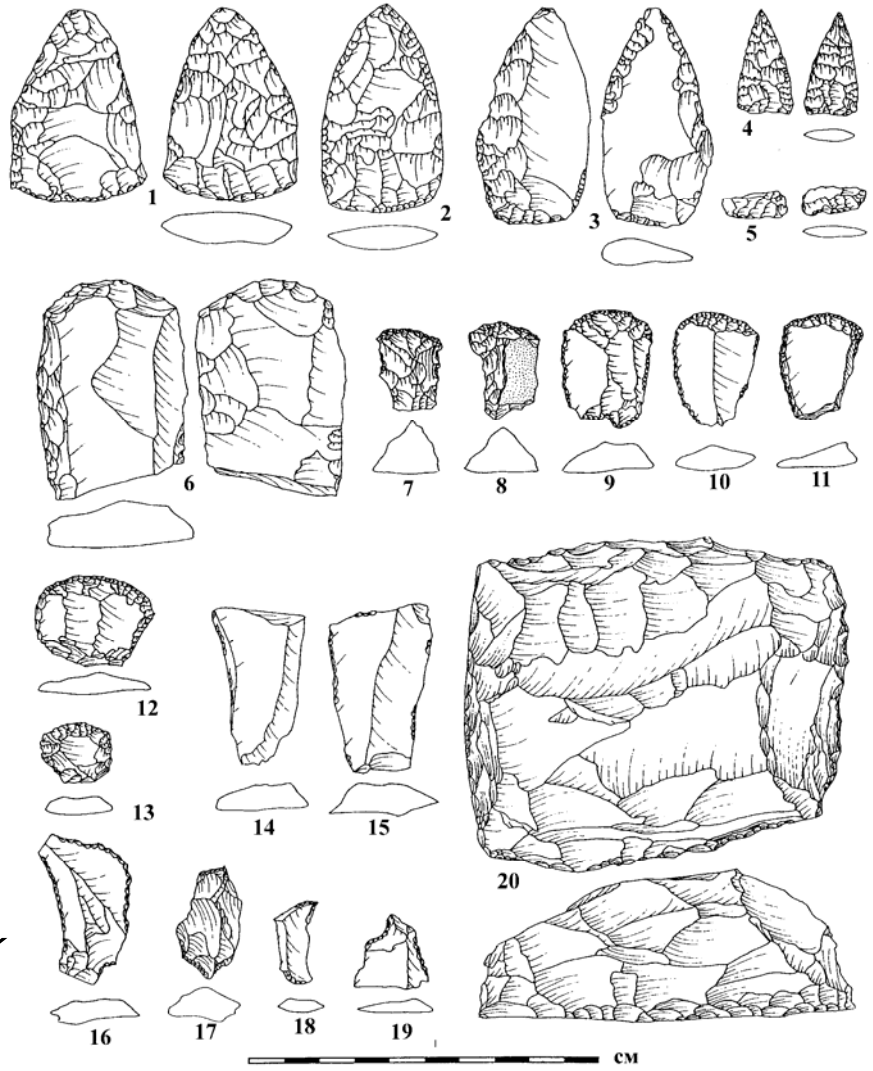
The Early Cultures of Alaska



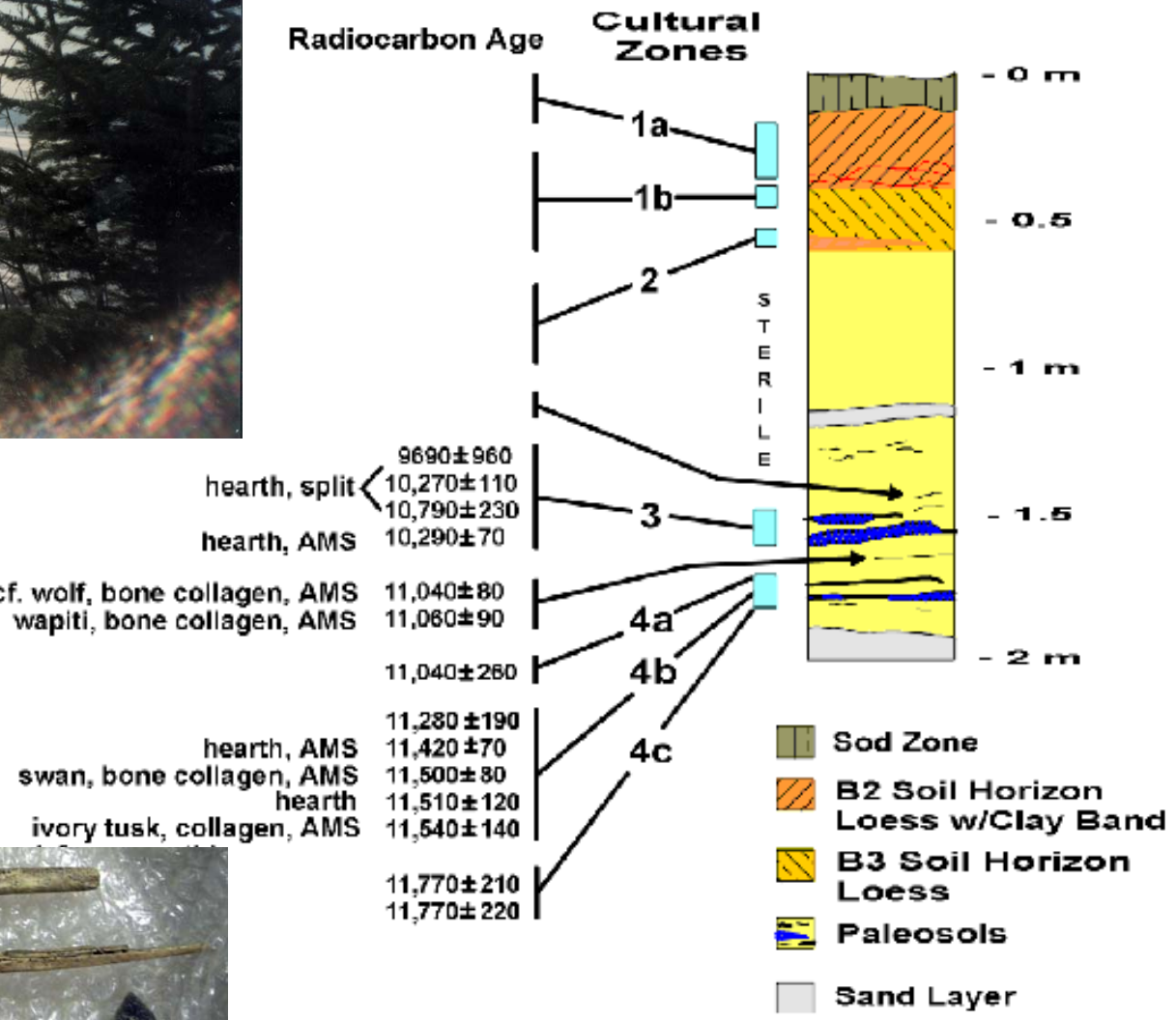
Nenana

Walker Road

Dry Creek

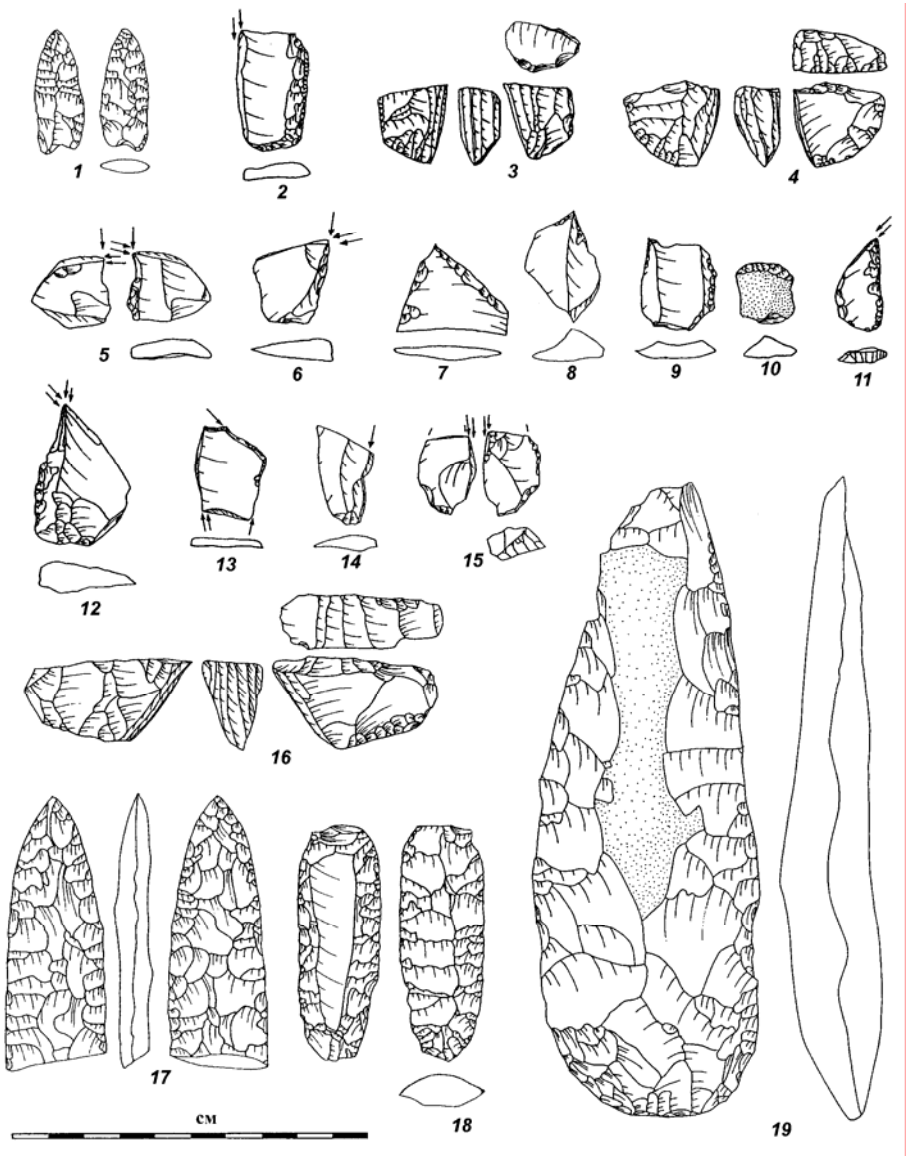


Broken Mammoth

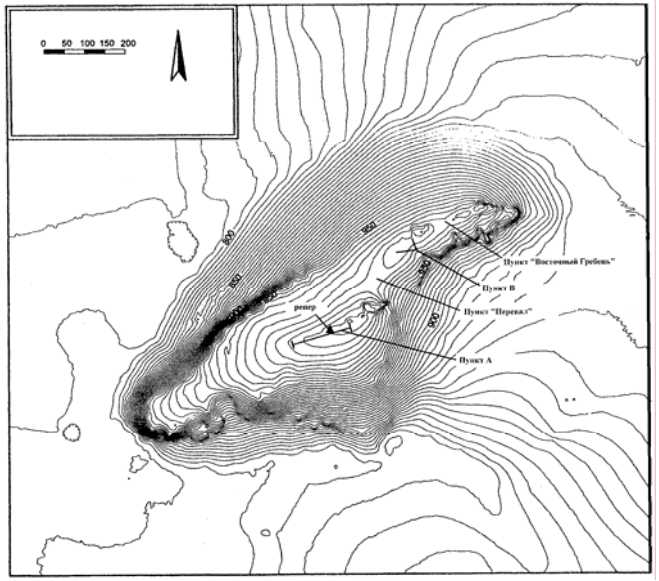


Dry Creek

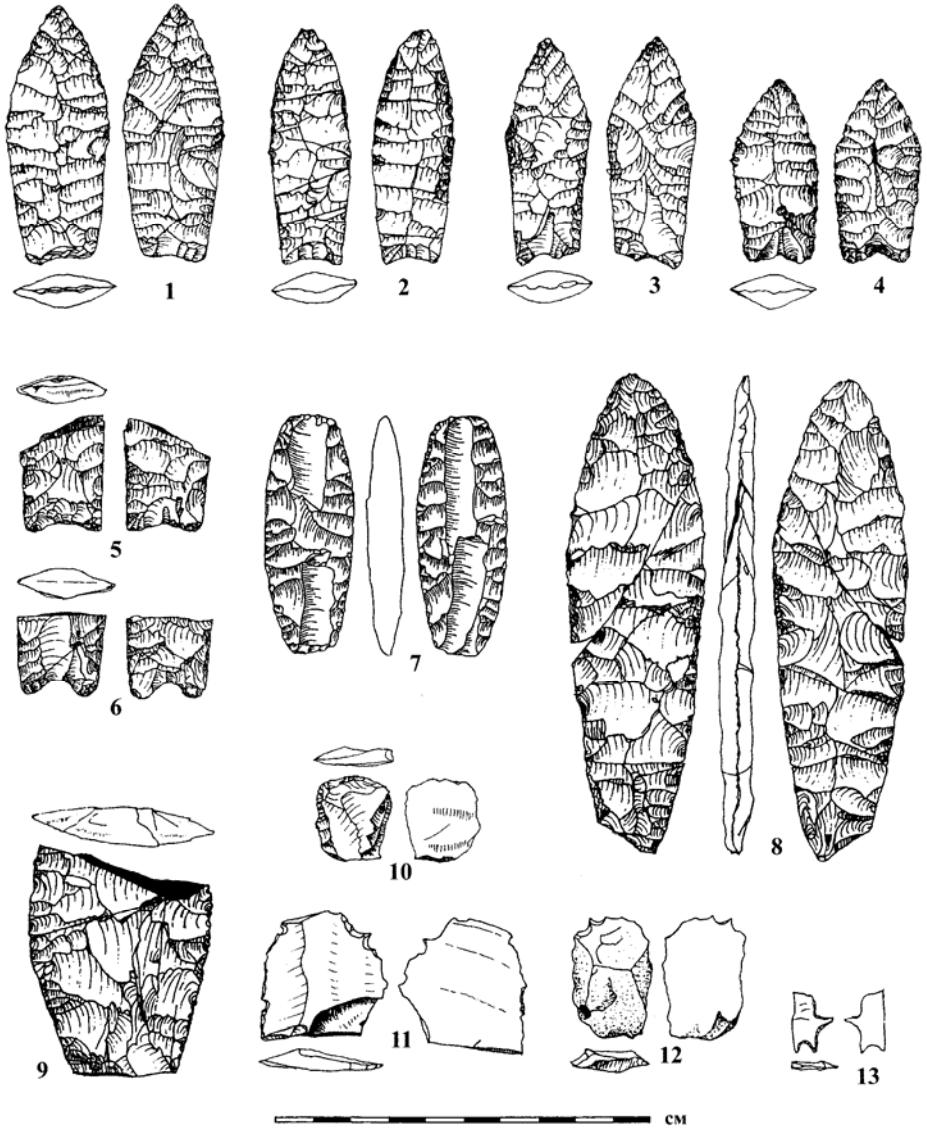
Denali



Northern Paleoindian

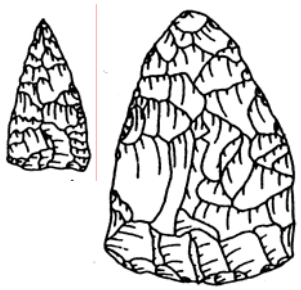


Mesa



Nenana, Denali, and Northern Paleoindian lithic points

Dry Creek (1)



Broken Mammoth (3)

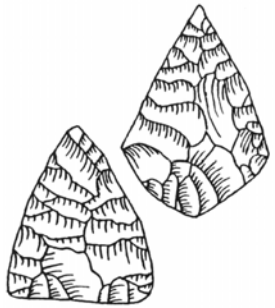
Chugwater (1)

Moose Creek (lower)

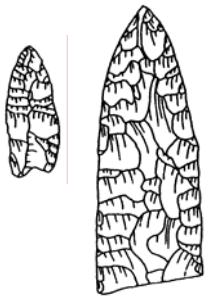
Owl Ridge

Walker Road (1)

Healy Lake



Dry Creek (2)



Swan Point (3)

Mesa

Hilltop

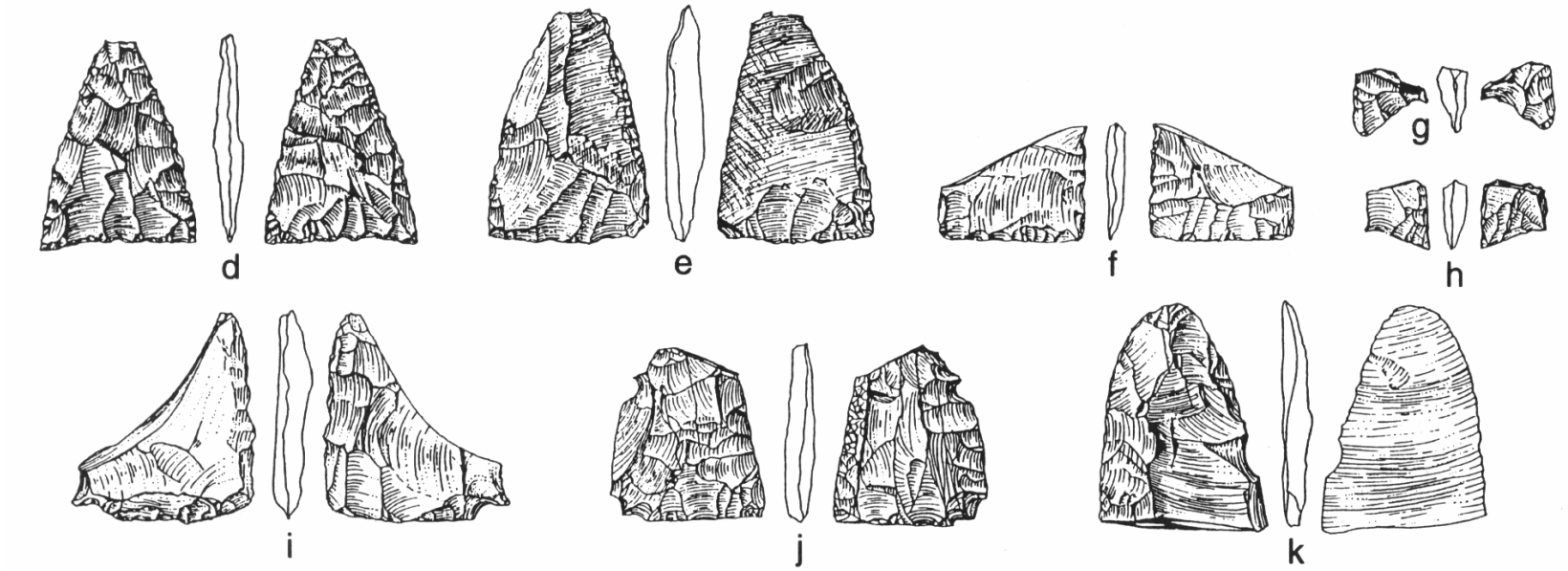
Bedwell

Spein Mountain

Tuluaq

Swan Point

(after: Holmes et al. 1996, Fig. 6-9)

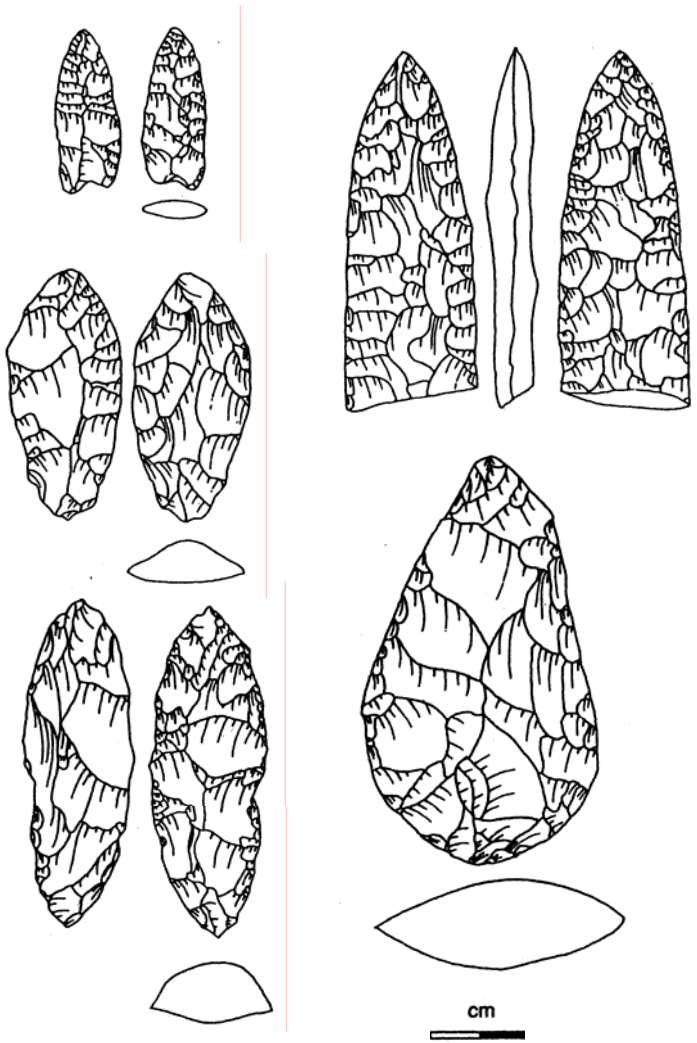


Middle Component

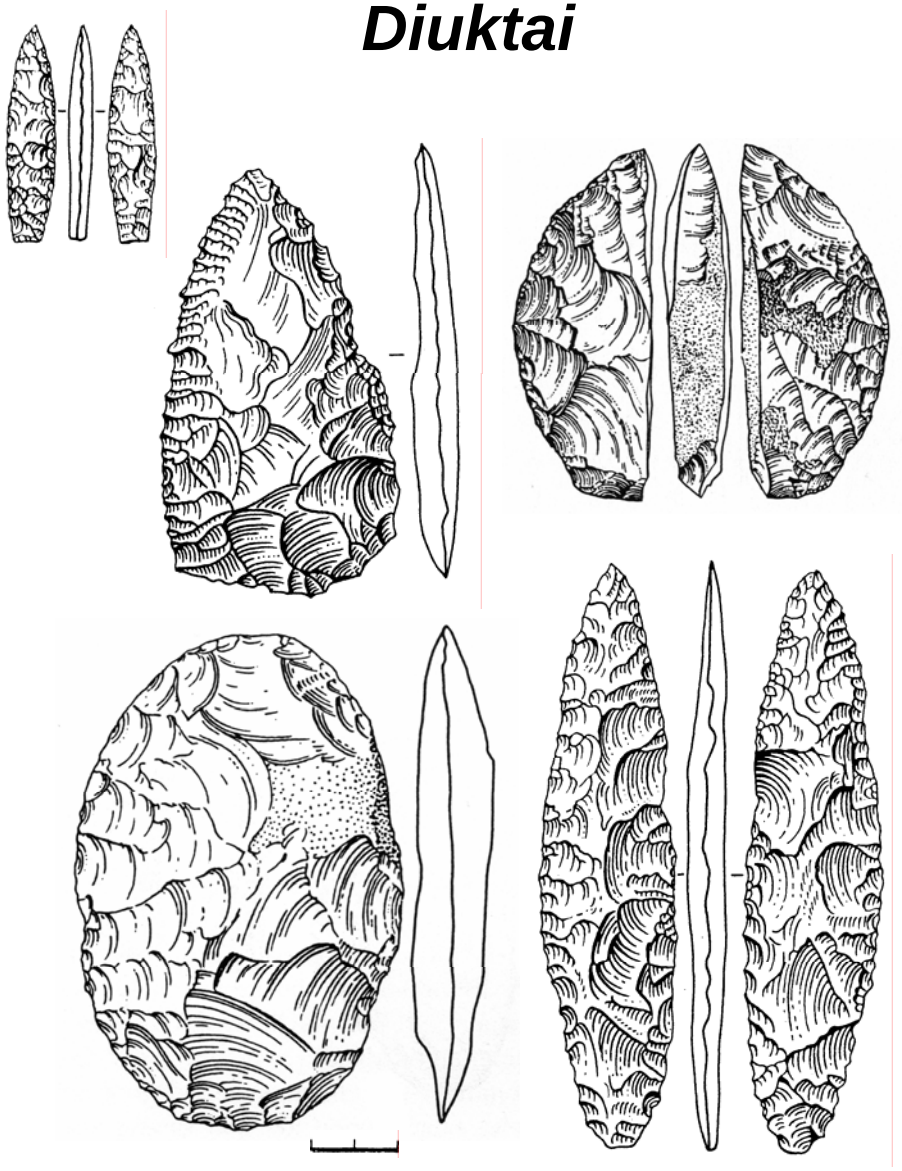
Lower Component

A comparison of the Diuktai and Denali bifaces

Denali



Diuktai



Conclusions:

1. The first scarce human traces in Northern Asia could be referred to the Middle Pleistocene up from the Matyama/Bruhnes boundary as evidenced by the site of Karama at Altay. The Middle Paleolithic remains have been identified in all areas of Southern Siberia from Altay to Trans-Baikal and even beyond this region.

2. The Middle Upper Paleolithic settlement has been identified at the territory yet inhabited during the Early Upper Paleolithic. The warm periods of the Karginsky saw a first human penetration to northernmost areas of Asia up to the modern Arctic Ocean coastline as evidenced by the Yana RHS site dated 27,000 to 29,000 BP.

3. The core area of Northeast Siberia was inhabited from ca. 20,000 cal BP while the time span from 14,000 to 13,000 cal BP evidenced human movement northwards which resulted in the colonization of Alaska (the Nenana Complex). The Final Pleistocene, from 13,000 to 12,000 cal BP, saw the new wave of Asian population as represented by the Paleoarctic Tradition.

Acknowledments

For friendly discussions and easy access to all kinds of data including collections not yet published, I am deeply grateful to Zoya A. Abramova, Sergey N. Astakhov, Anatoliy P. Derevianko, Sergey V. Markin, Mikhail V. Shun'kov, Nikolay I. Drozdov, German I. Medvedev. Mikhail P. Aksenov, Liudmila V. Lbova, Mikhail V. Konstantinov, Michael L. Kunz, Craig Gerlach, Dale R. Guthrie, Ted Goebel, and many other Russian, Canadian and American colleagues.


THANKS FOR YOUR ATTENTION