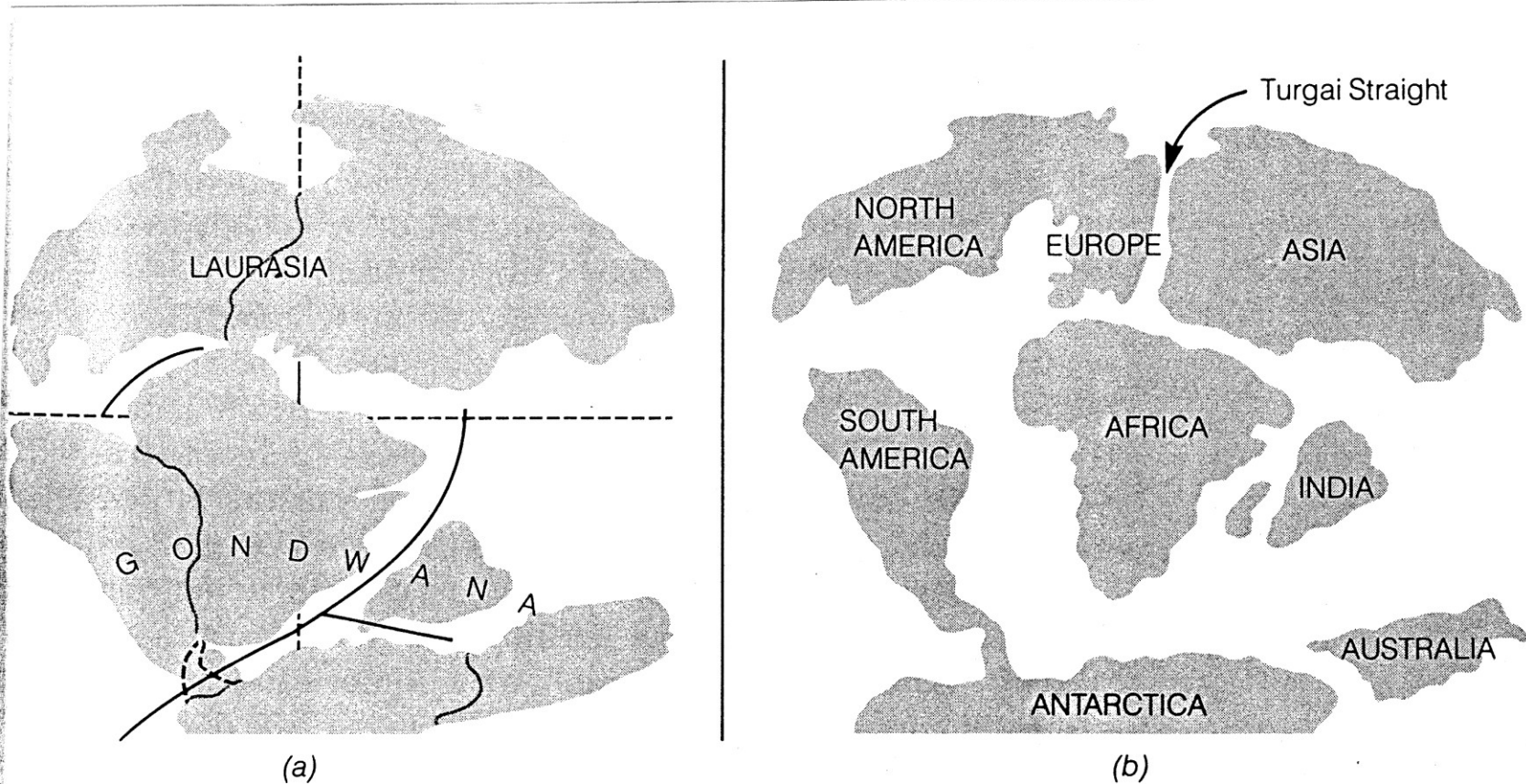


Éra	Perioda	Čas v mil. let	Epocha	Kulturní stupeň	Kulturní období		
K E N O Z O I K U M	kvartér		holocén	neolit	azilien		
		0,01	(svrchní)	mladý	magdalénien solutrén gravettien aurignacien chatelpéronien		
		0,04				střední	moustérien
		0,15		pleistocén (střední)	paleolit (starý)	↑	levalloisien
		0,5	clactonien				
			1				acheuléen
		terciér	2				pliocén
			5	hominoidi, vznik hominidů			
			25	oligocén	antropoidní primáti, vznik hominoidů		
			35	eocén	poloopice, vznik antropoidních primátů?		
	53		paleocén				
	65						praprimáti, poloopice

Figure 9-2 Continental drift. Changes in position of the continental plates from Late Paleozoic to Late Eocene. (a) The position of the continents at the end of the Paleozoic (c. 250 m.y.a.). Pangea is breaking up into a northern land mass (Laurasia) and a southern land mass (Gondwanaland). (b) The position of the continents during much of the Paleocene and Eocene (up to c. 45 m.y.a.). Note that North America and Europe are still joined but are separate from Asia.

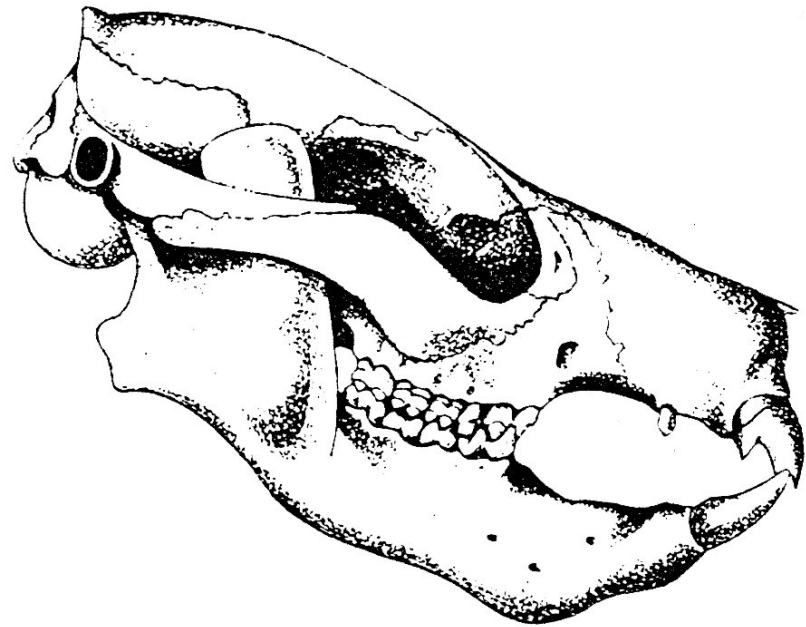


■ Table 4.1

Genera of fossil apes¹

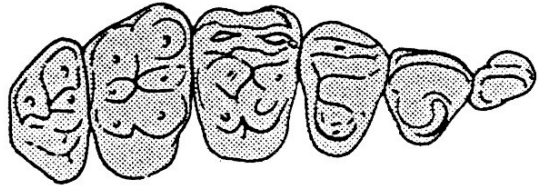
Age	Ma	Genera	Important localities	Country	Material ²
Oligo.	25	<i>Kamoyapithecus</i> ³	Lothidok	Kenya	Craniodental fragments
e M	21	New taxon	Meswa Bridge	Kenya	Craniodental fragments
e M	?20–17.5	<i>Morotopithecus</i>	Moroto	Uganda	Cranial, dental, postcrania
e M	?20–17.5	<i>Kogolepithecus</i> ³	Moroto	Uganda	Dental
e M	19	<i>Ugandapithecus</i> ⁴	Napak/Songhor	K/U	Cranial, dental, postcrania
e M	19	<i>Xenopithecus</i> ³	Koru	Kenya	Craniodental fragments
e M	19	<i>Proconsul</i>	Songhor/Koru	Kenya	Cranial, dental, postcrania
e M	19	<i>Limnopithecus</i> ³	Koru/Songhor	Kenya	Craniodental
e M	19	<i>Rangwapithecus</i> ³	Songhor	Kenya	Craniodental
e M	19	<i>Micropithecus</i> ³	Napak/Koru	K/U	Craniodental
e M	19	<i>Kalepithecus</i> ³	Songhor/Koru	Kenya	Craniodental fragments
e M	17.5–19	<i>Dendropithecus</i> ³	Rusinga/Songhor/Napak/Koru	K/U	Cranial, dental, postcrania
e M	17.5	cf. <i>Proconsul</i> ⁵	Rusinga/Mfangano	Kenya	(Cranial, dental, postcrania)+
e M	17.5	<i>Turkanapithecus</i>	Kalodirr	Kenya	Cranial, dental, postcrania
e M	17.5	<i>Afropithecus</i>	Kalodirr	Kenya	Cranial, dental, postcrania
e–m M	17.5–15	<i>Simiolus</i>	Kalodirr/Maboko	Kenya	Cranial, dental, postcrania
e–m M	17.5–15	<i>Nyanzapithecus</i>	Rusinga/Maboko	Kenya	Craniodental fragments
e M	17	<i>Heliopithecus</i>	Ad Dabtiyah	S. Arabia	Dental
e M	16.5	cf. <i>Griphopithecus</i>	Engelswies	Germany	Dental
e M	16	<i>Griphopithecus</i>	Paşalar/Çandır	Turkey	Cranial, (dental)+, postcrania
m M	15	<i>Equatorius</i>	Maboko/Kipsarimon	Kenya	(Cranial, dental, postcrania)+
m M	15	<i>Mabokopithecus</i>	Maboko	Kenya	Dental
m M	15	<i>Nacholapithecus</i>	Nachola	Kenya	Partial skeleton
m M	13	<i>Pierolapithecus</i>	El Hosteletts de Pierola	Spain	Partial skeleton
m M	13	<i>Kenyapithecus</i>	Fort Ternan	Kenya	Cranial, dental, postcrania
m M	13	<i>Otaviopithecus</i>	Otavi	Namibia	Craniodental, vertebra
m–l M	12–7	<i>Sivapithecus</i>	Potwar Plateau	Pakistan	(Cranial, dental, postcrania)+
m–l M	12–10	<i>Dryopithecus</i>	Rudabánya/Can Llobateres	H/S	(Cranial, dental, postcrania)+

Age	Ma	Genera	Important localities	Country	Material ²
m–l M	?13.5–7	<i>Khoratpithecus</i> ⁶	Ban Sa/Khorat	Thailand	Craniodental fragments
l M	10	<i>Ankarapithecus</i>	Sinap	Turkey	Cranial, dental, postcrania
l M	9.5	<i>Samburupithecus</i>	Samburu	Kenya	Craniodental fragments
l M	9.5	<i>Ouranopithecus</i>	Ravin de la Pluie	Greece	(Craniodental)+, 2 phalanges
l M	9–8	<i>Graecopithecus</i>	Pygros	Greece	Mandible
l M	9–8	<i>Lufengpithecus</i>	Lufeng	China	(Cranial, dental)+, postcrania
l M	8–7	New taxon	Çorakyerler	Turkey	Mandible, maxilla
l M	7	<i>Oreopithecus</i>	Baccinello/Monte Bamboli	Italy	(Cranial, dental, postcrania)+
l M	7–6	<i>Sahelanthropus</i>	Toros-Menalla	Chad	Craniodental
l M	6.5	<i>Gigantopithecus</i>	Potwar Plateau	Pakistan	Mandible
l M	6	<i>Orrorin</i>	Lukeino	Kenya	Craniodental, postcrania
l M	5.8–5.2	<i>Ardipithecus</i> ⁷	Alayla (Middle Awash)	Ethiopia	Craniodental, postcrania

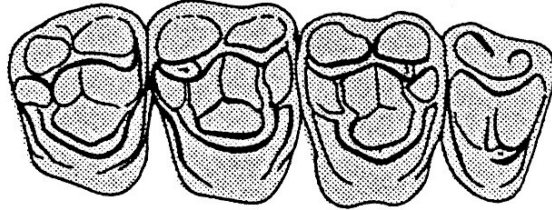


PURGATORIUS

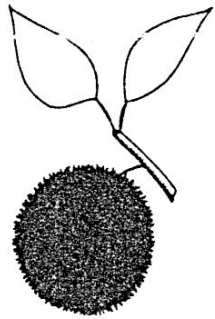
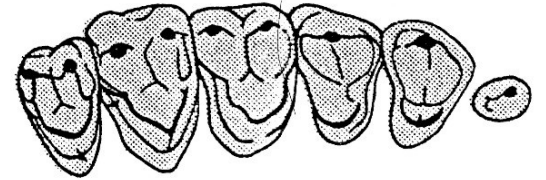
Rooneyia



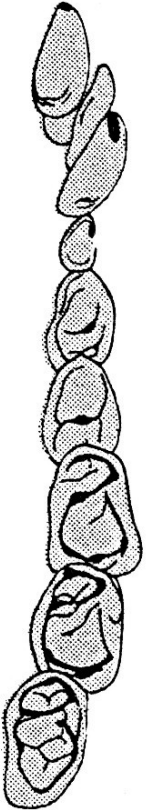
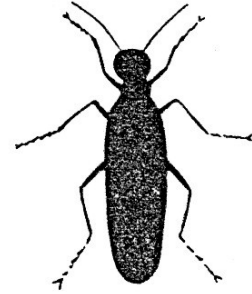
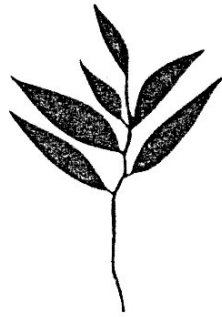
Macrotarsius

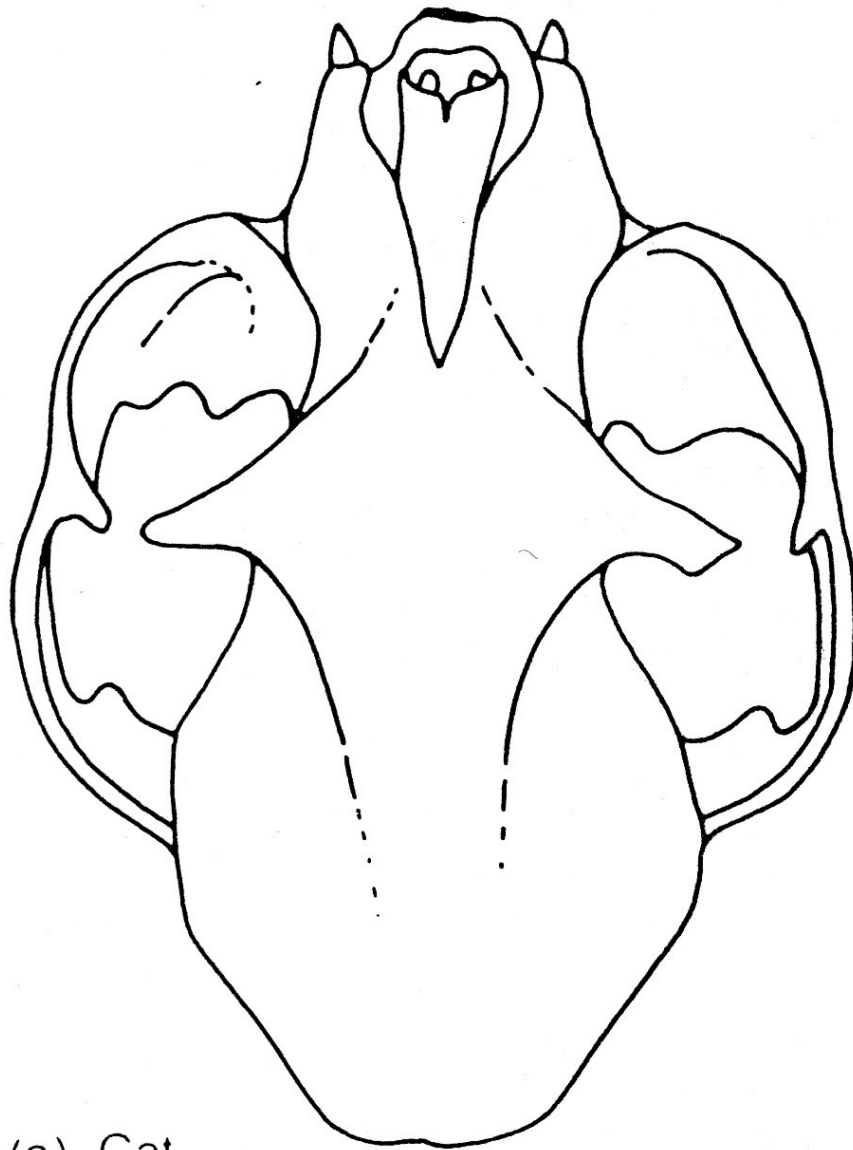


Tetonius

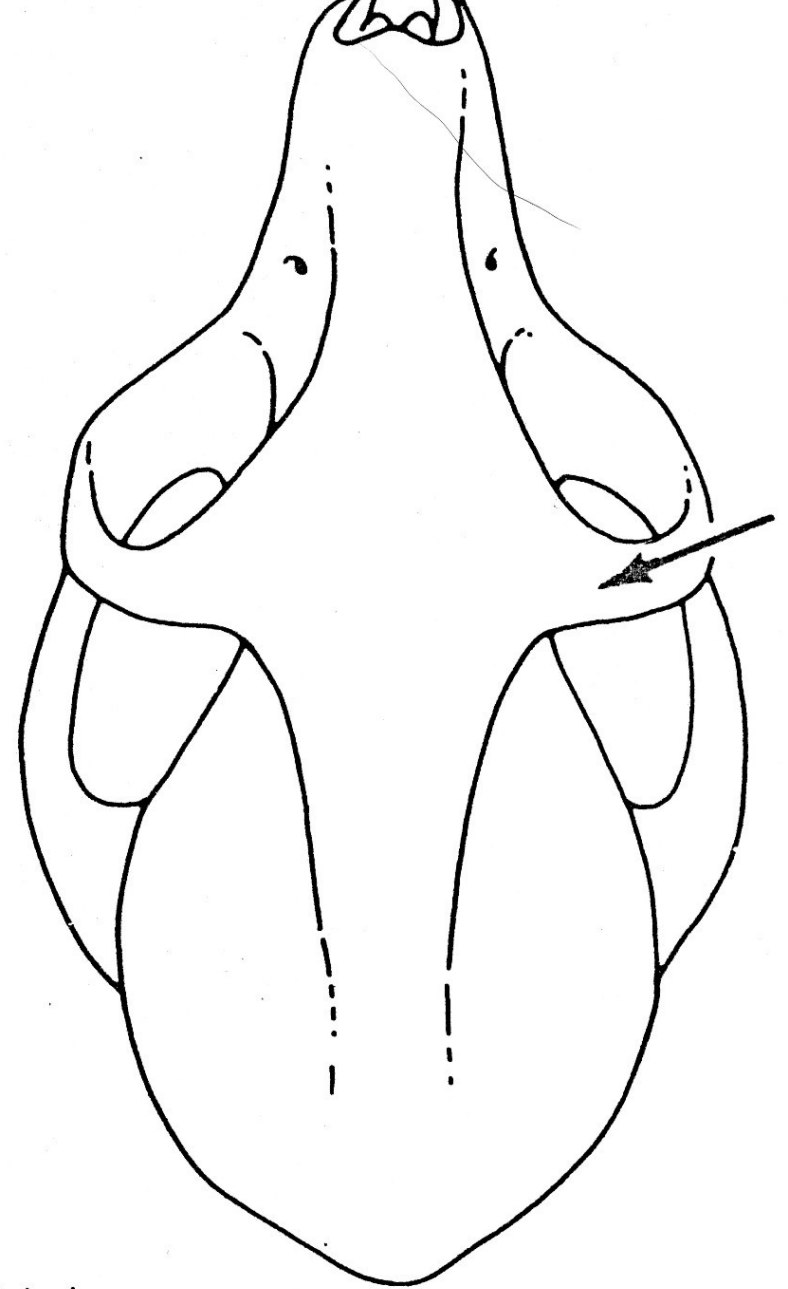


Ekgmowechashala





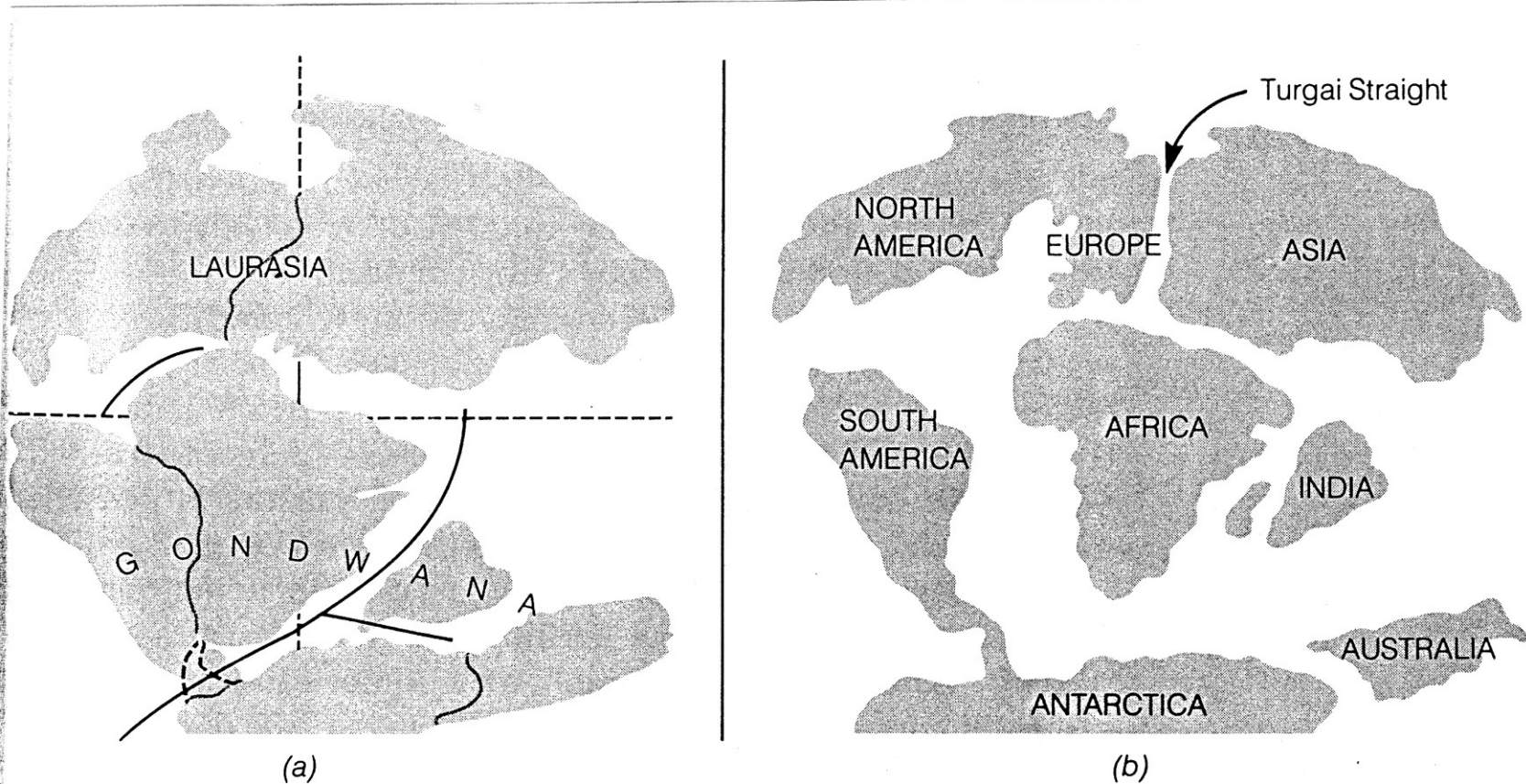
(a) Cat



(b) Lemur

Figure 1 Postorbital bar. A characteristic of primates.

Figure 9-2 Continental drift. Changes in position of the continental plates from Late Paleozoic to Late Eocene. (a) The position of the continents at the end of the Paleozoic (c. 250 m.y.a.). Pangea is breaking up into a northern land mass (Laurasia) and a southern land mass (Gondwanaland). (b) The position of the continents during much of the Paleocene and Eocene (up to c. 45 m.y.a.). Note that North America and Europe are still joined but are separate from Asia.



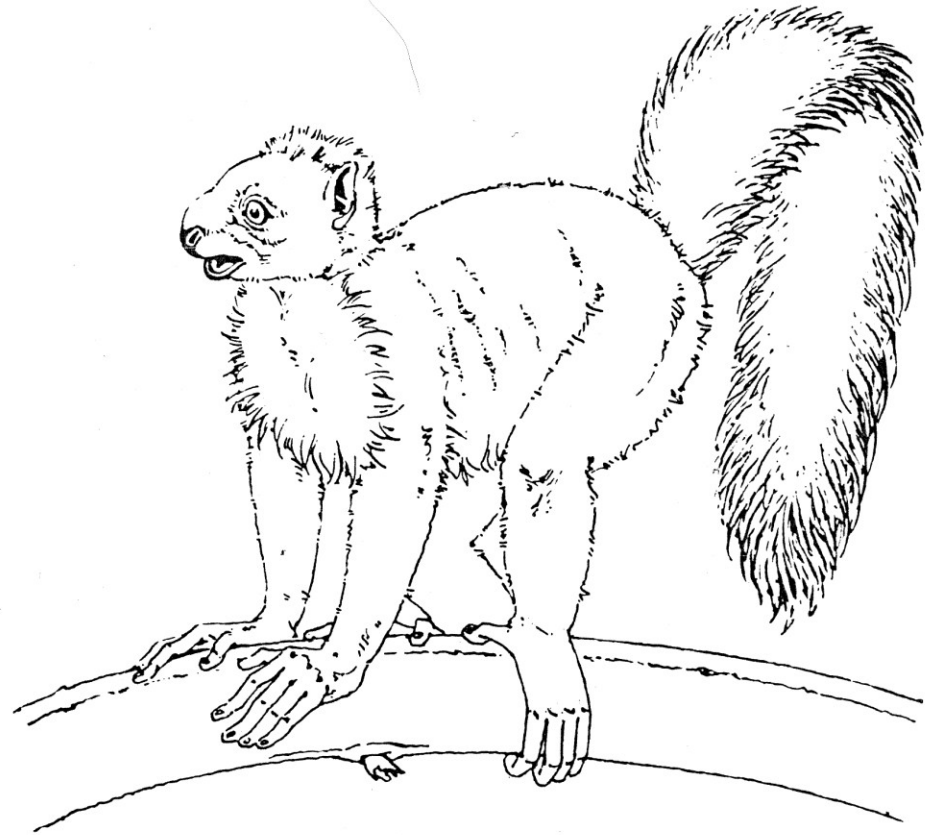
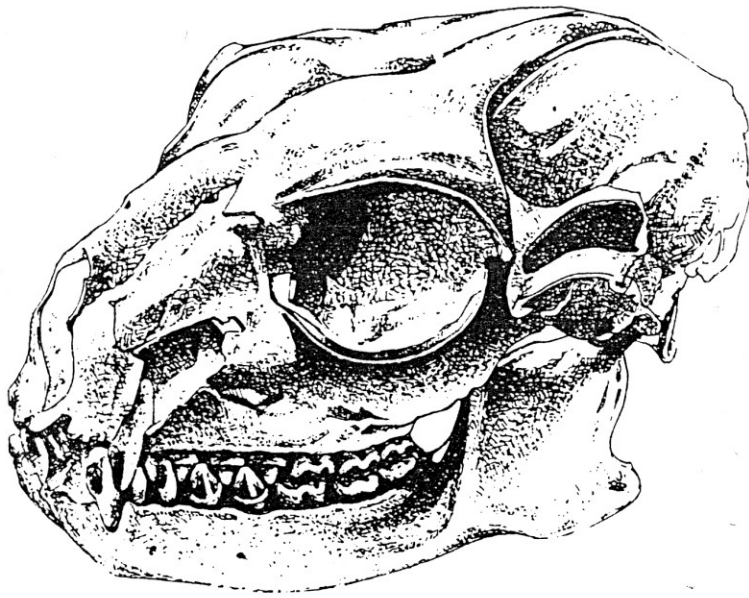


FIGURE 9-1 Smilodectes. An Eocene adapid. (From "The Early Relatives of Man" by E. L. Simons. Copyright © 1964 by Scientific American, Inc. All rights reserved.)

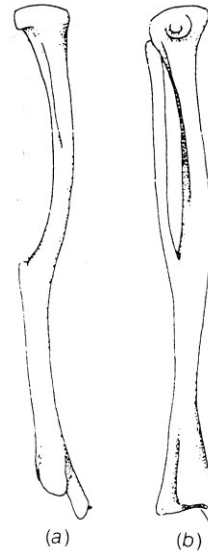
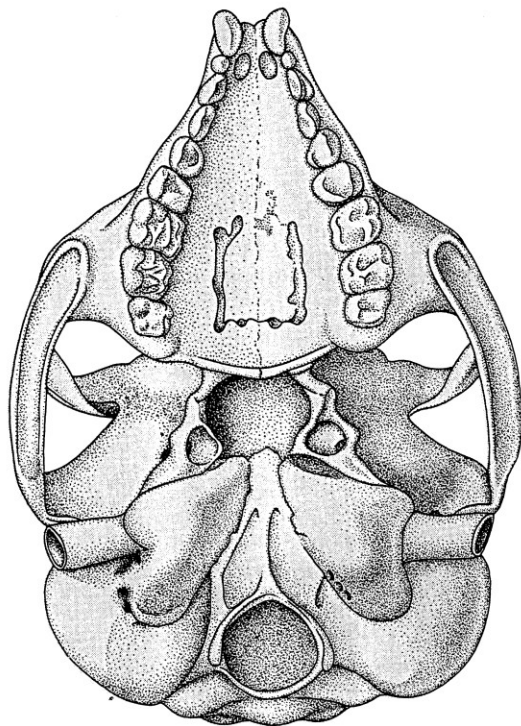
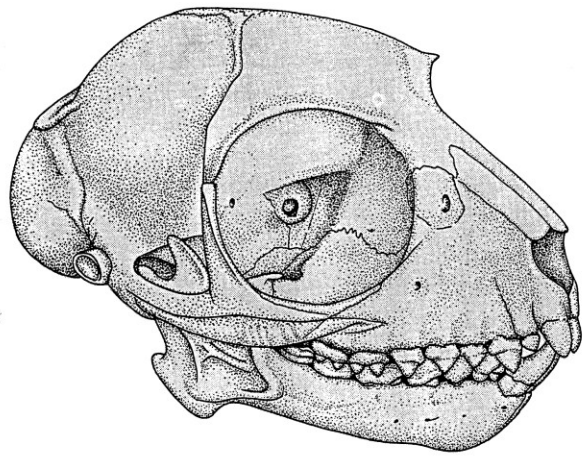


Figure 9-4 Tibio-fibula. (a) *Necrolemur*; (b) modern tarsier. Note the two fused lower leg bones—a characteristic feature of tarsiers. (© 1959 by W. E. Le Gros Clark.)

FIGURE 9-2 *Necrolemur*. The skull of the omomyid *Necrolemur*.

Eocene Primates (53 m.y.-37 m.y.)

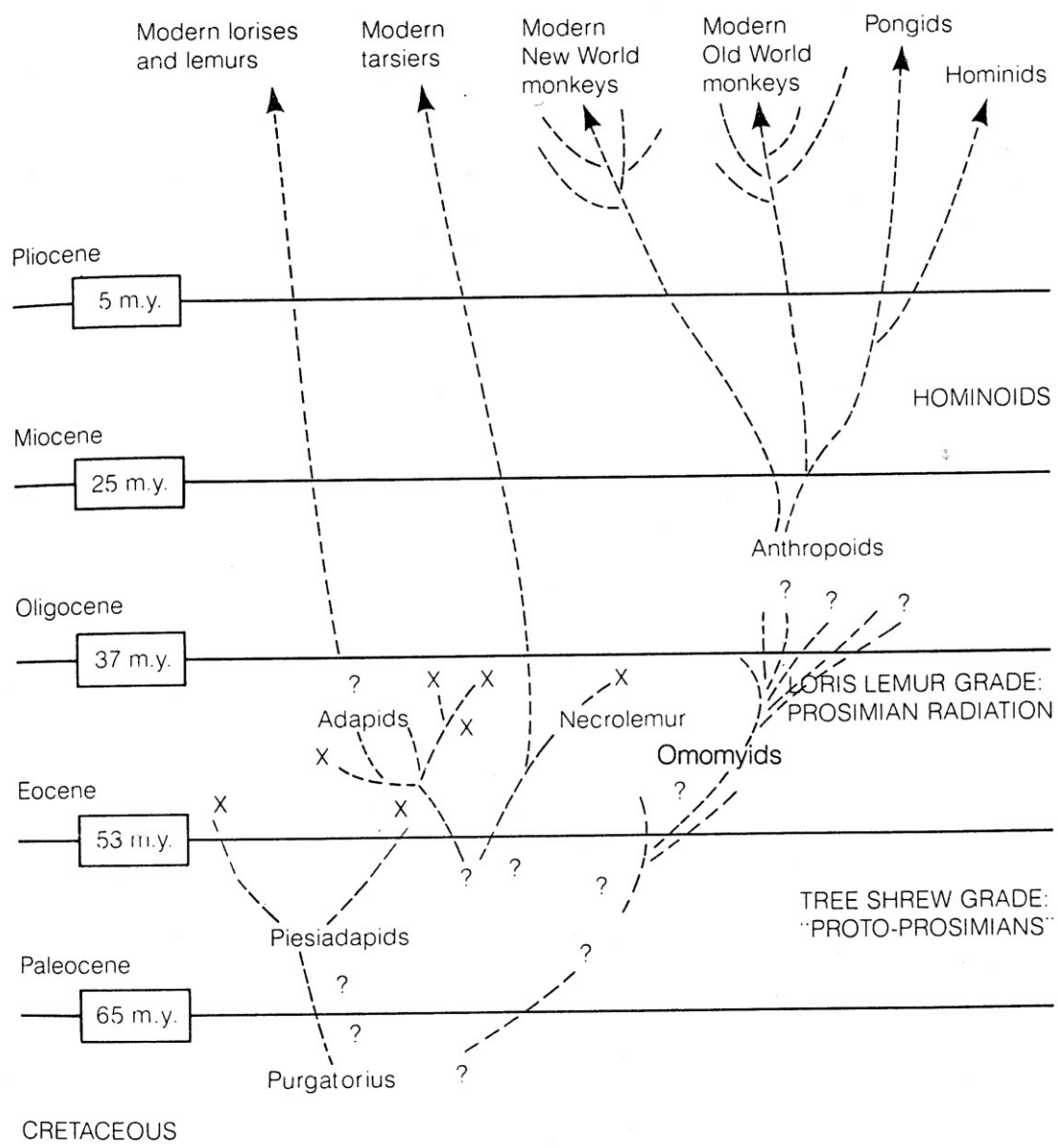


Figure 9-3 Summary, early evolution.

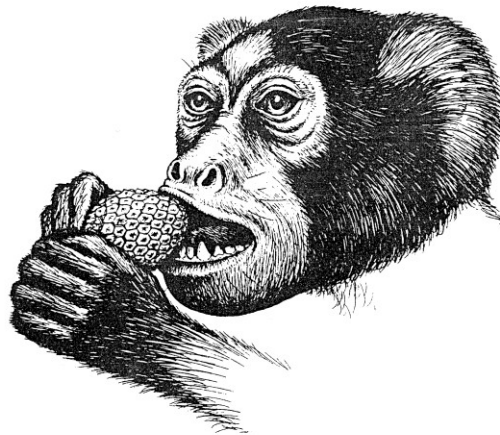
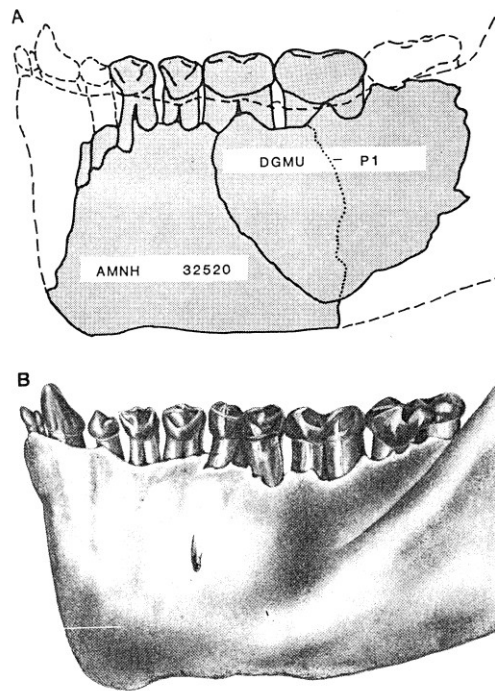
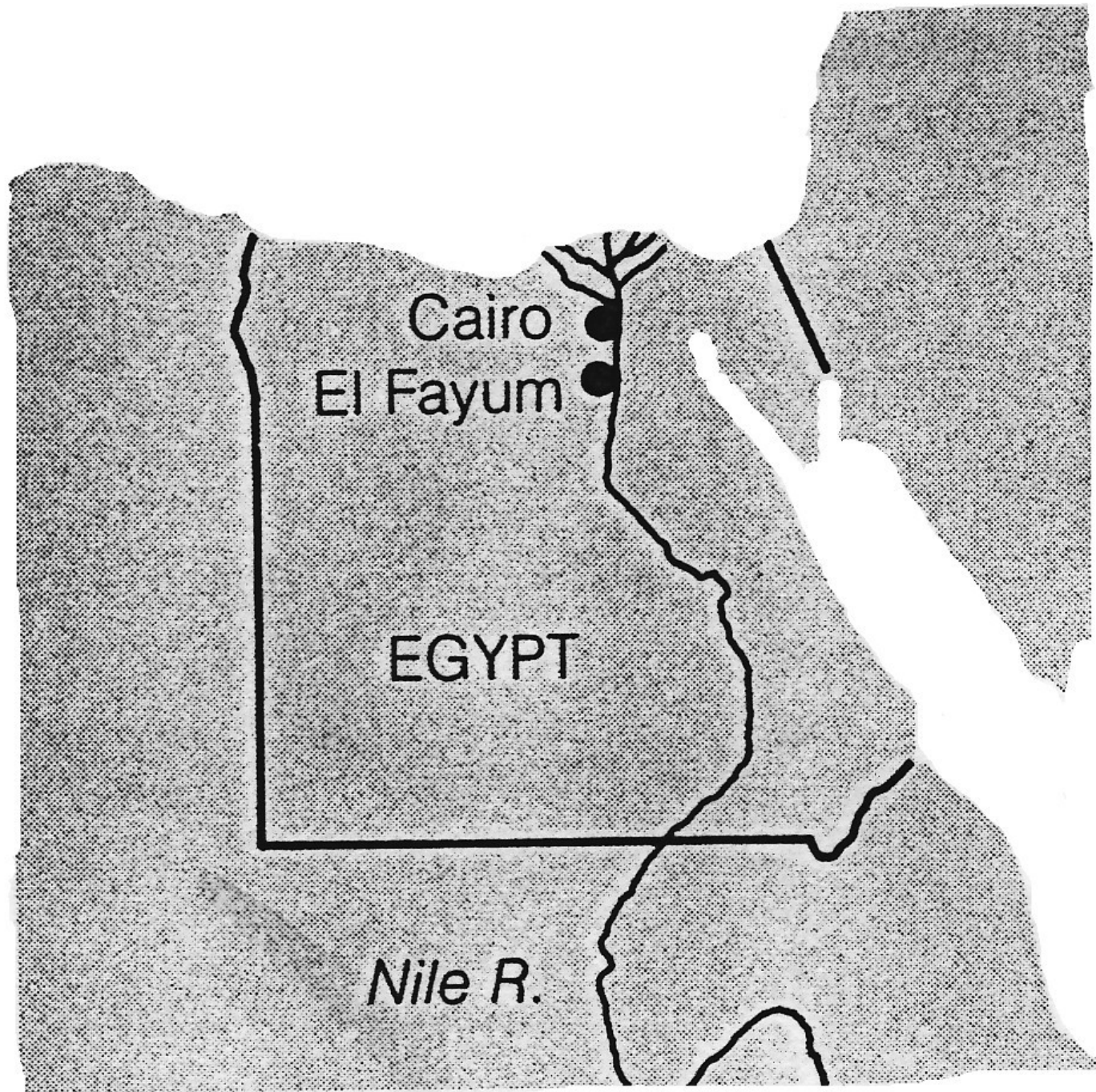


Figure 15-3 Artist's reconstruction of Amphipithecus based on actual fossil evidence and the order of development of anatomical features observed in primate evolution.



15-2 The reconstructed mandible of Amphipithecus.



Cairo
El Fayum

EGYPT

Nile R.

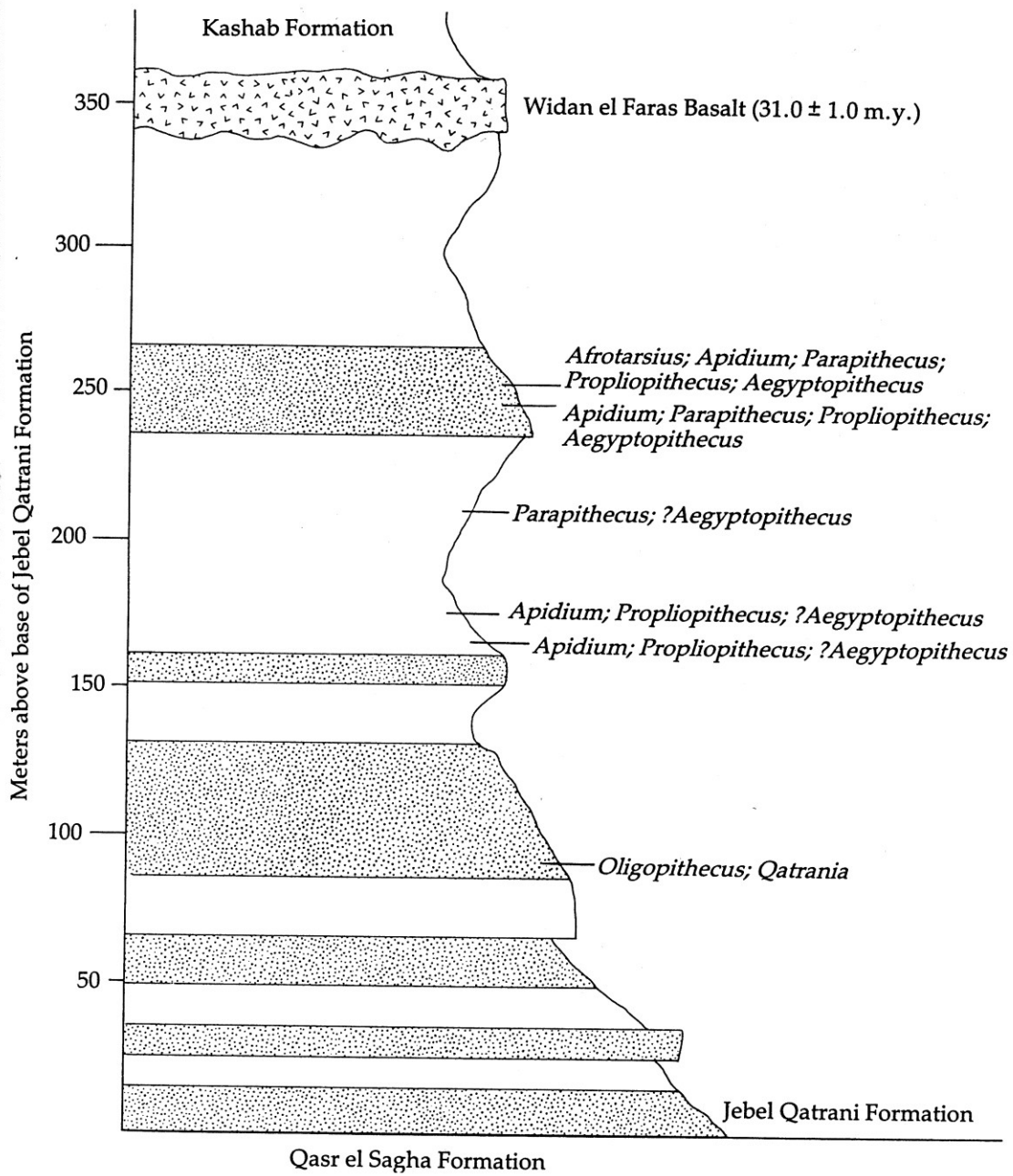


FIGURE 9-4 The Qatrani Formation, Fayu



FIGURE 9-5 *Apidium*. A reconstruction of *Apidium*, a member of the family Parapithecidae from the Fayum.

Oreopithecus bambolii



FIGURE 9-7 *Aegyptopithecus*. The reconstructed postcranial skeleton of *Aegyptopithecus zeuxis*. Bones shown in color have been recovered.

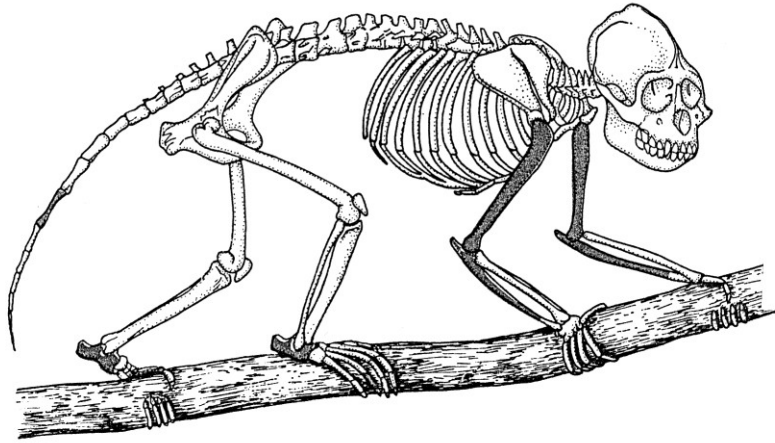
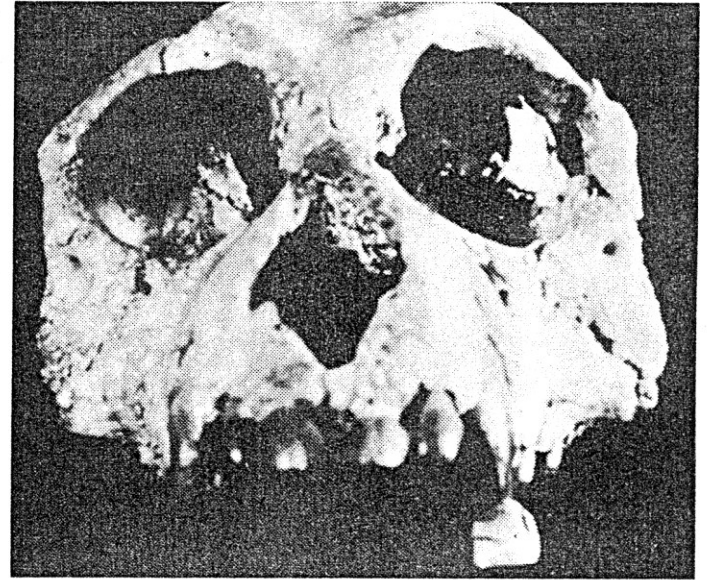
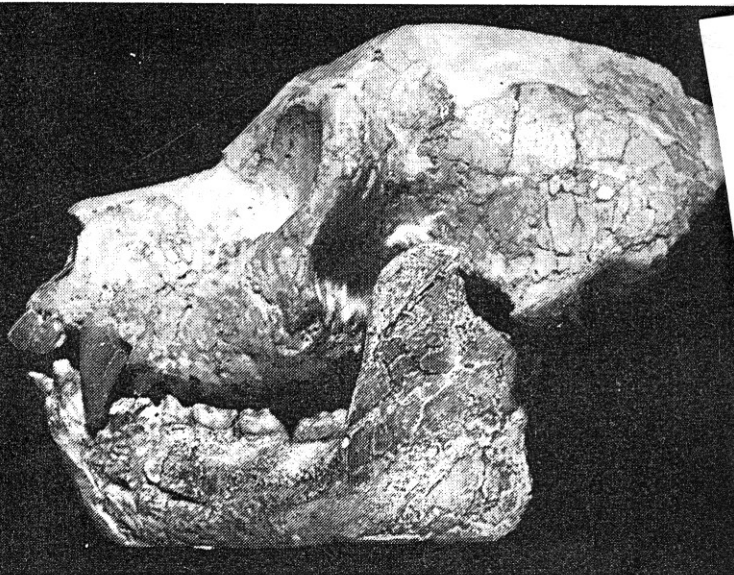
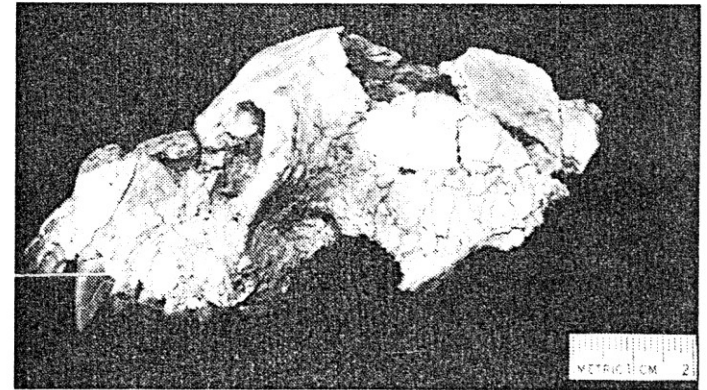


FIGURE 9-6 *Aegyptopithecus*. The reconstructed skull of *Aegyptopithecus zeuxis* from the Oligocene of the Fayum.



(a)



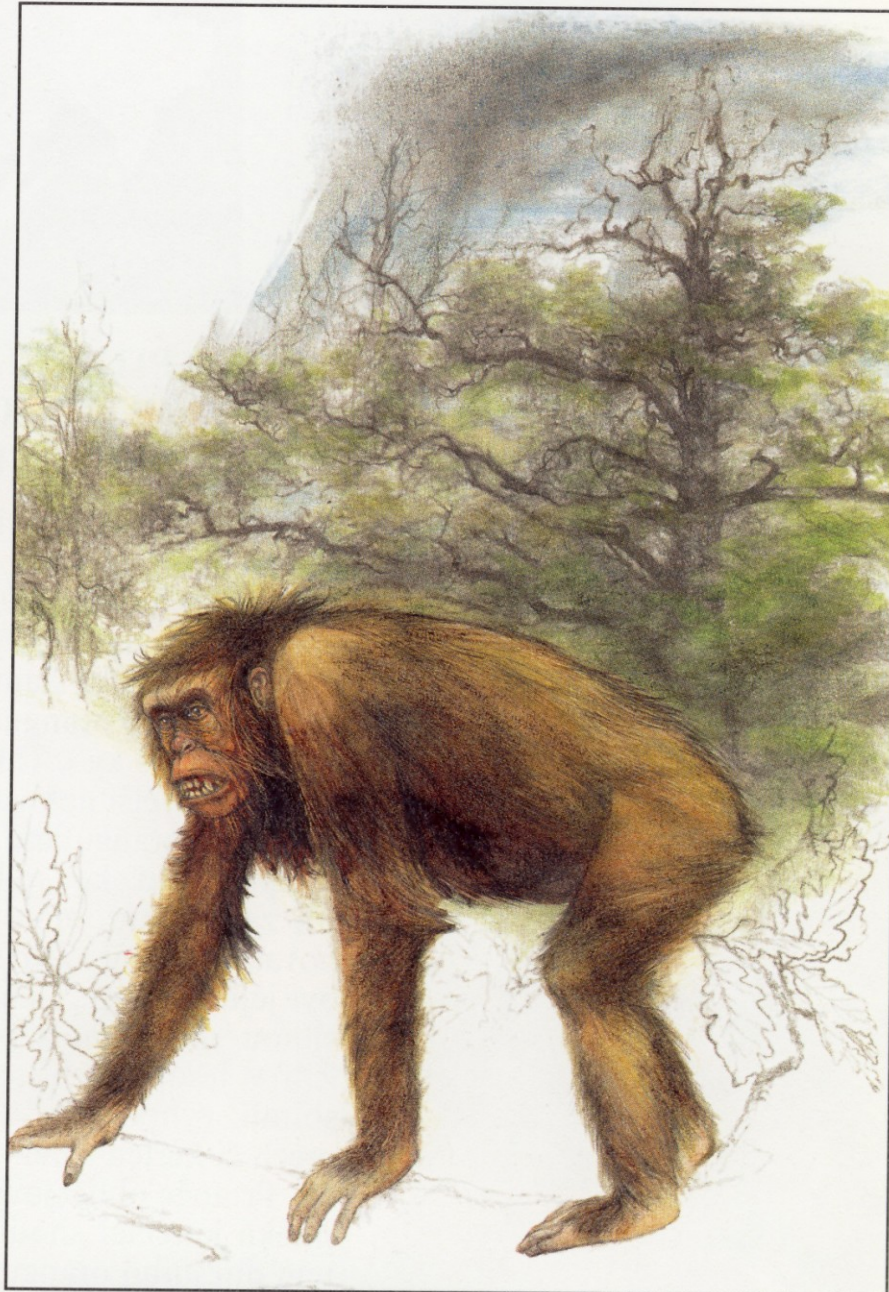
(b)

Figure 9-6 *Aegyptopithecus* skull from the Fayum, Egypt. Oligocene, circa 28 m.y.a., discovered in 1966. (a) Front view; (b) side view.

AEGYPTOPITHECUS
ZEUXIS

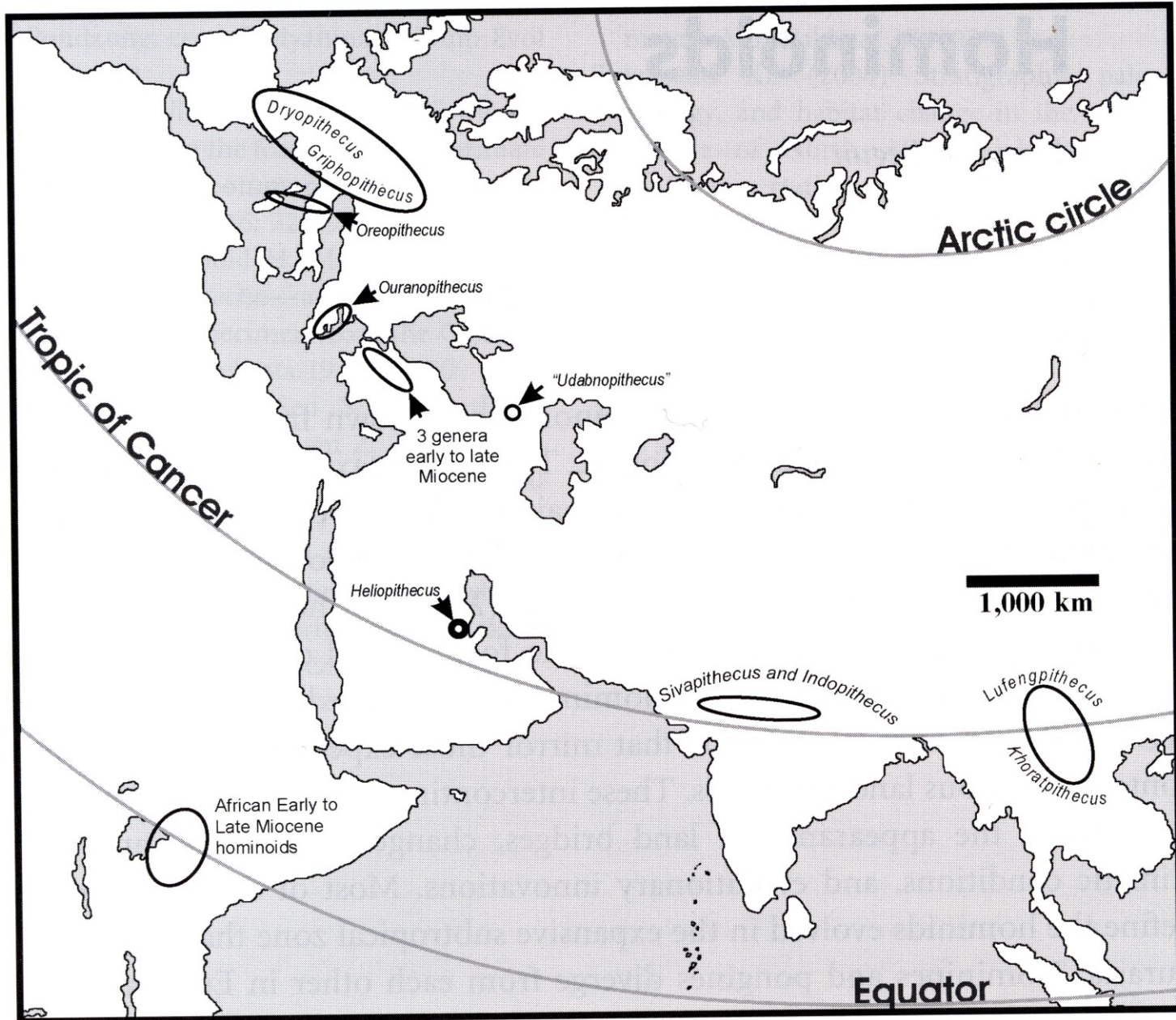


DRYOPITHECUS FONTANI
LIDOOP EVROPSKÝCH LESŮ



■ Figure 4.1

Map showing the location of the Miocene taxa discussed in this chapter





(a)
 TOROVNANI & GORILI LEBKOU ↓



FIGURE 9-10 Proconsul. The lower jaw of *Proconsul africanus* from Rusinga Island, Kenya.



FIGURE 9-12 Proconsul. A reconstruction of the skeleton of *Proconsul africanus*. Bones shown in color have been recovered.

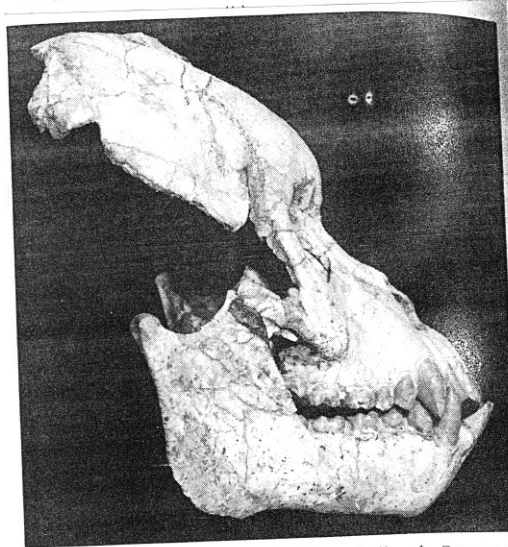
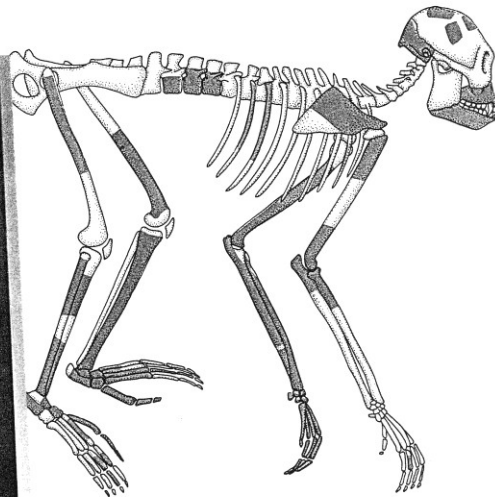


FIGURE 9-11 Proconsul. The skull of *Proconsul*



PROCONSUL AFRICANUS



FIGURE 9-14 *Facial skeleton of Sivapithecus.*

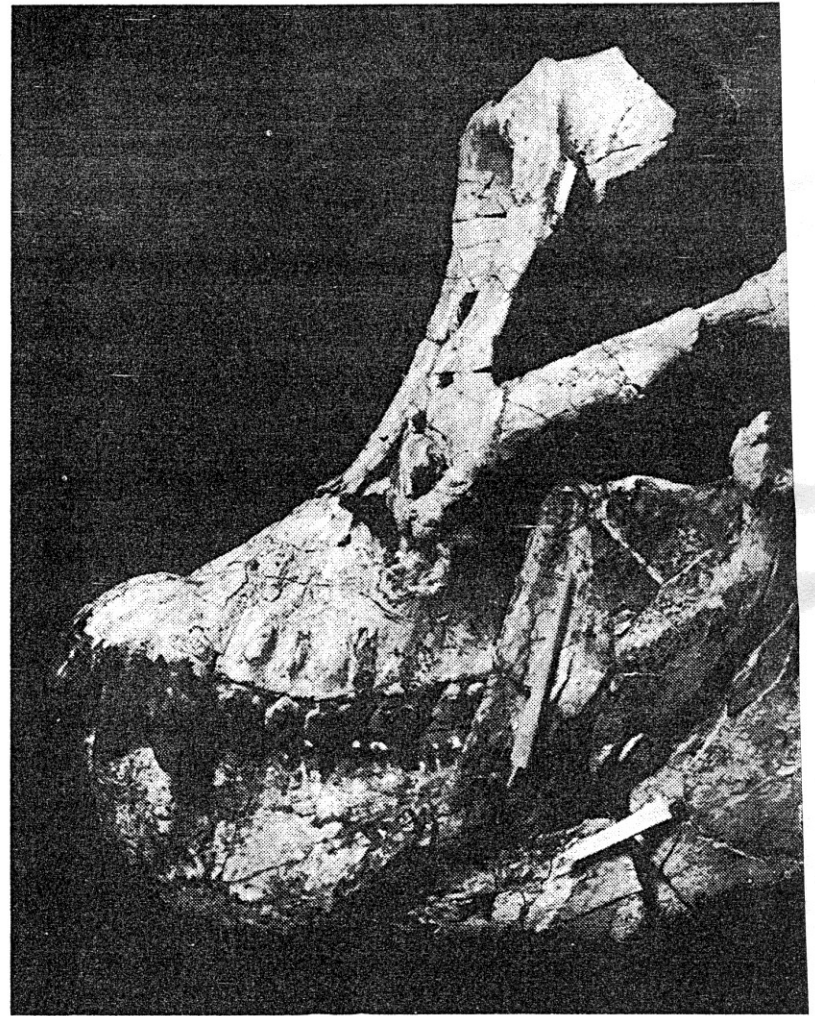
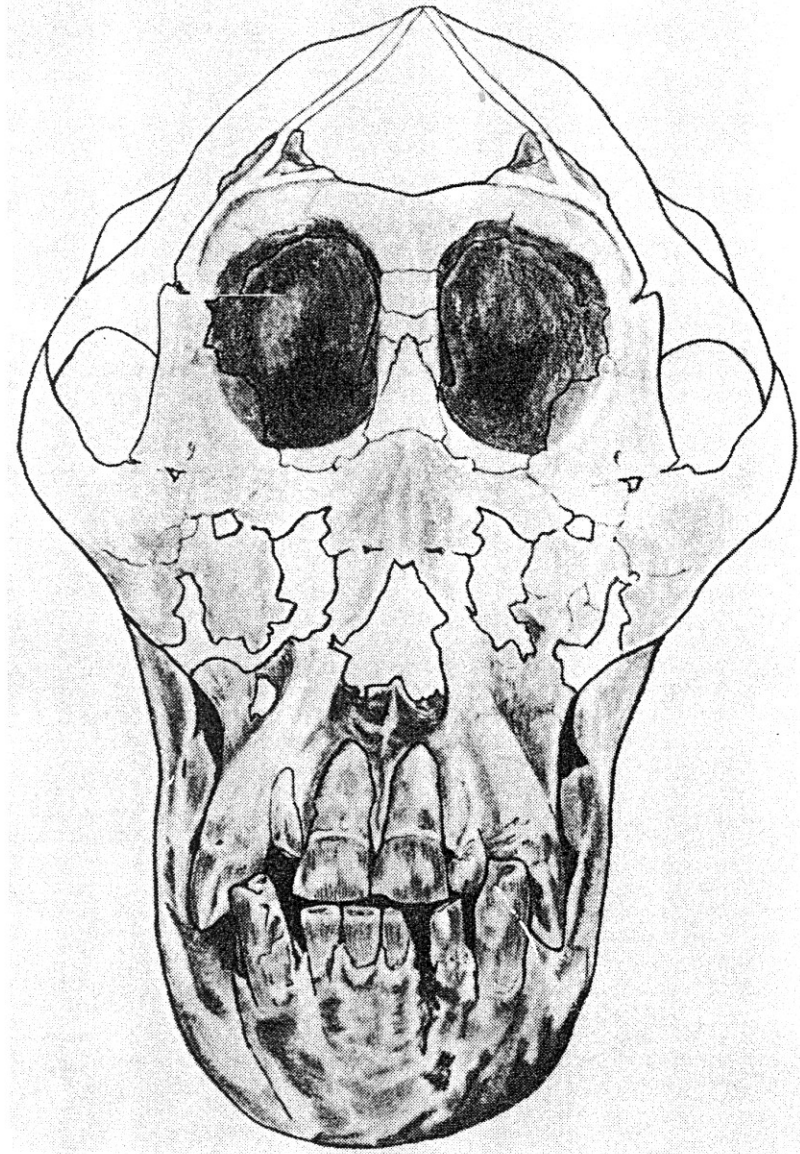
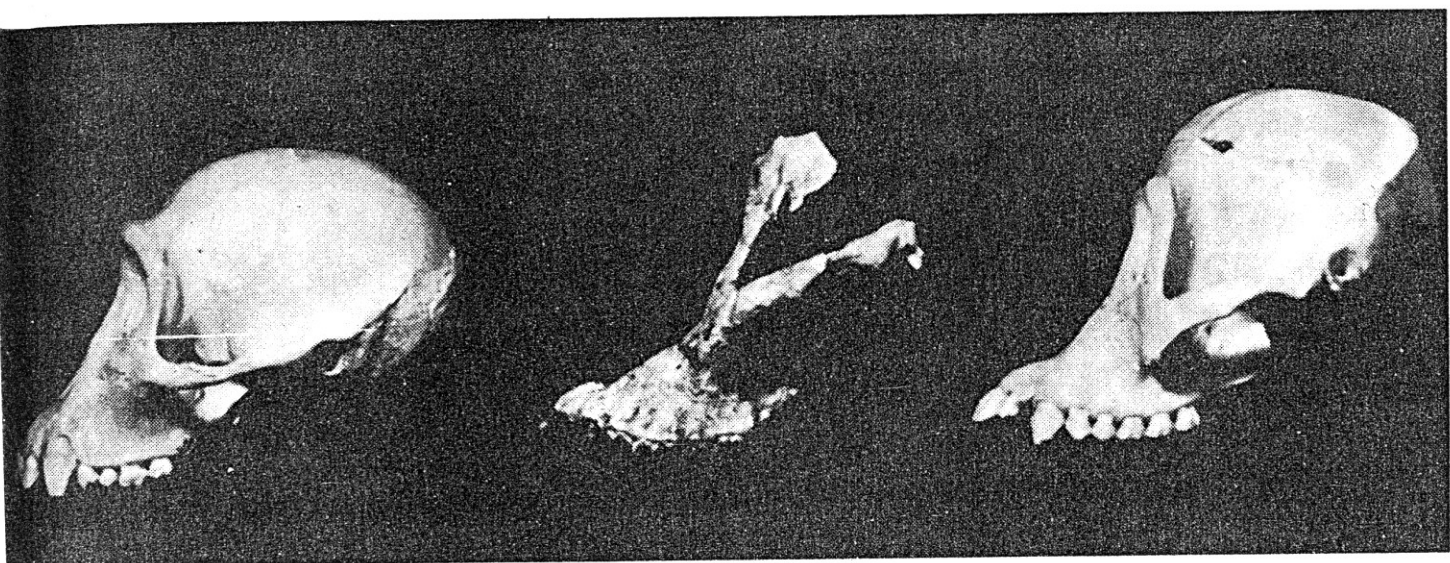
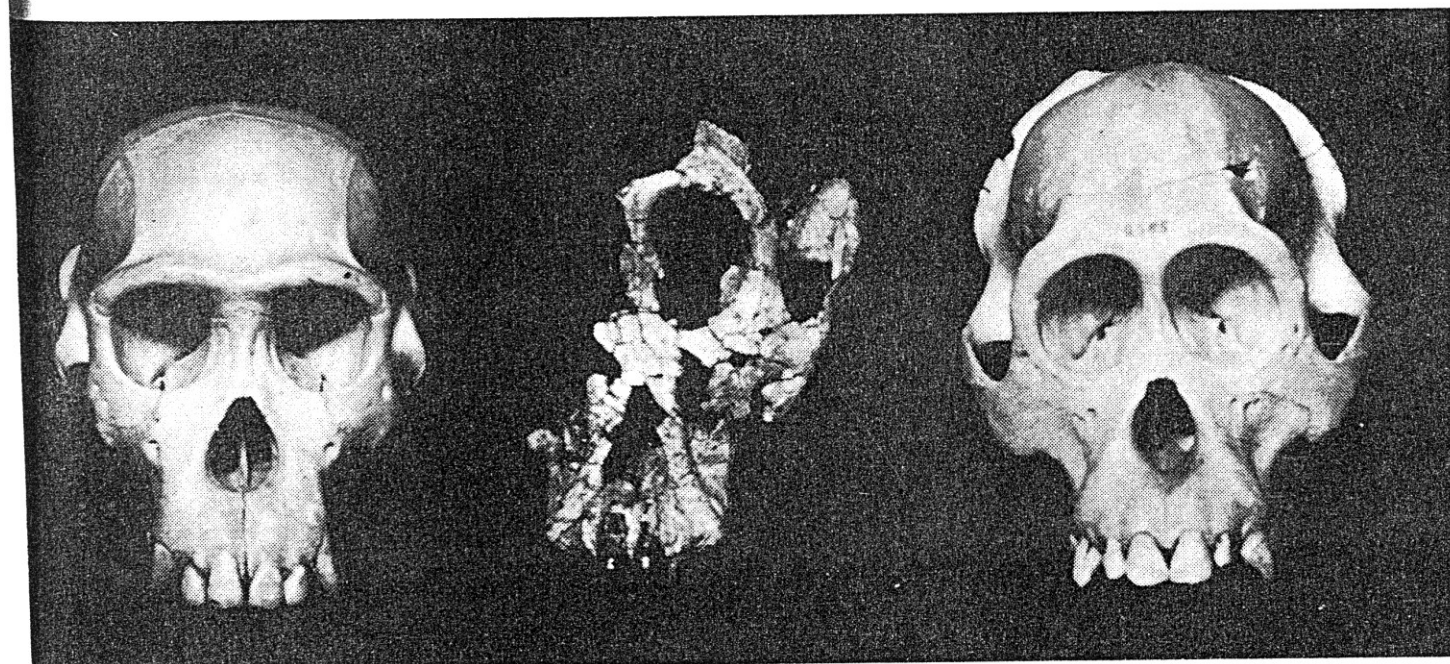


FIGURE 9-13 Sivapithecus. The skull of *Sivapith*

Figure 9-14 Comp
cranium (center) wit
(left) and orangutan
cus fossil is specime
Potwar Plateau, Paki
(a) lateral view; (b) fro



(a)



(b)

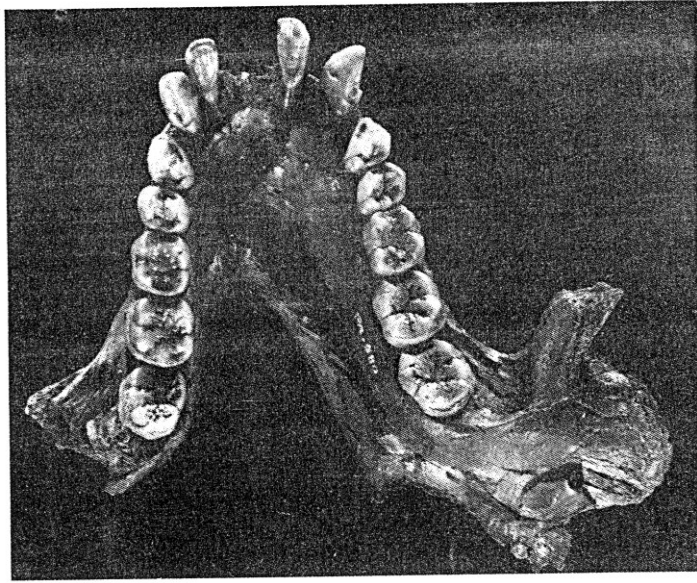


Figure 15-7 A Mandible of Sivapithecus from L.

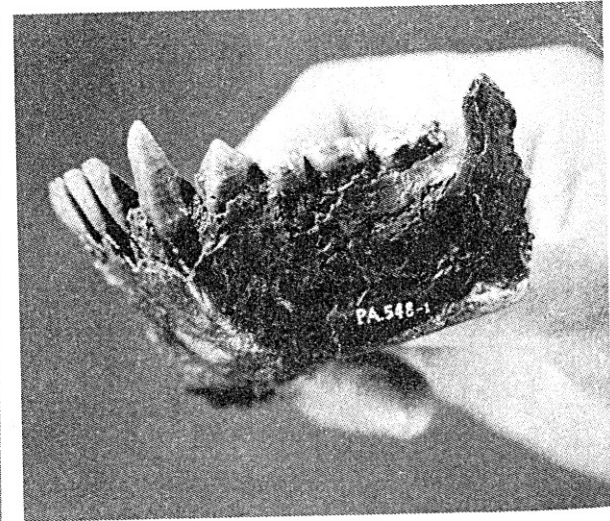
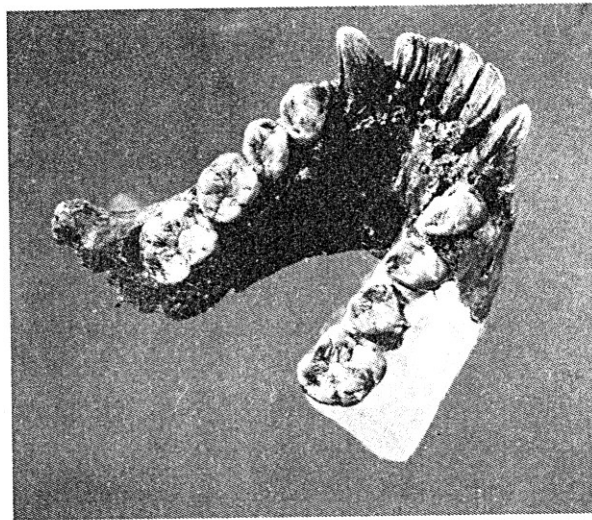


Figure 15-8 (left) Note the large canines and the canine diastema (situated between the canine and the first premolar) of this Sivapithecus mandible. (right) A side view of the same mandible.



SIVAPITHECUS INDICUS



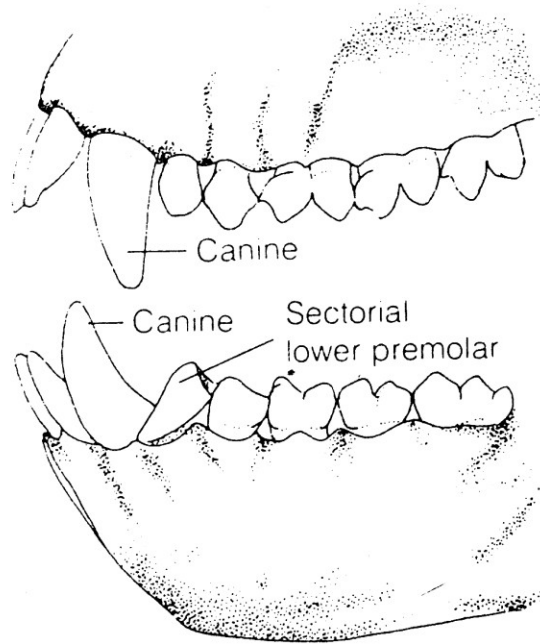


Figure 9-9 Overlapping canines and sectorial lower first premolar. (Shown here in a racaque.)

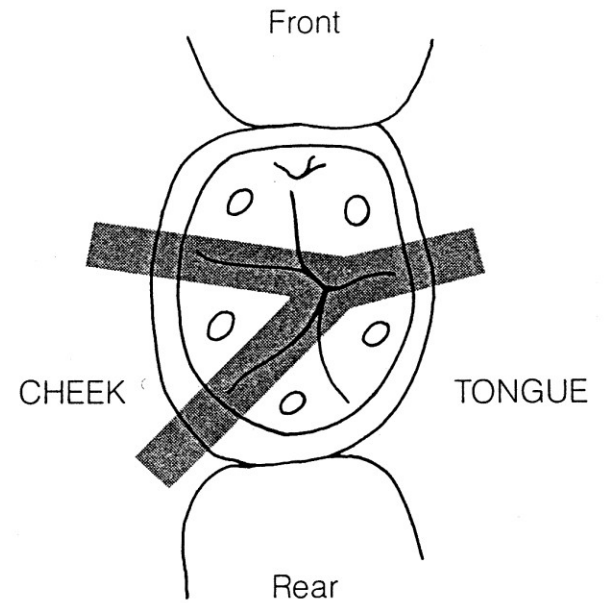


Figure 9-8 The dryopithecine Y-5 pattern. A characteristic feature of hominoid molars.

A taxonomy of the Hominidea

Cercopithecoidea (Magnafamily, new rank)

Hominidea (Magnafamily, new rank)

Proconsuloidea

Proconsul

cf. *Proconsul*

Samburupithecus

Micropithecus

Hominoidea

Hylobatidae

Hylobates

Hominidae

Pierolapithecus

Dryopithecus

Ouranopithecus

Graecopithecus

Sivapithecus

Lufengpithecus

Khoratpithecus

Ankarapithecus

Gigantopithecus

Sahelanthropus

Orrorin

Homo

Ardipithecus

Praeanthropus

Australopithecus

Paraustralopithecus

Paranthropus

Pongo

Pan

Gorilla

Crown hominoids of uncertain status

Kenyapithecus

Oreopithecus

Family incertae sedis

Afropithecus

Morotopithecus

Heliopithecus

Griphopithecus

Equatorius

Nacholapithecus

Otavipithecus

Superfamily incertae sedis

Rangwapithecus

Nyanzapithecus

Mabokopithecus

Turkanapithecus

Magnafamily incertae sedis

Kamoyapithecus

Dendropithecus

Simiolus

Limnopithecus

Kalepithecus

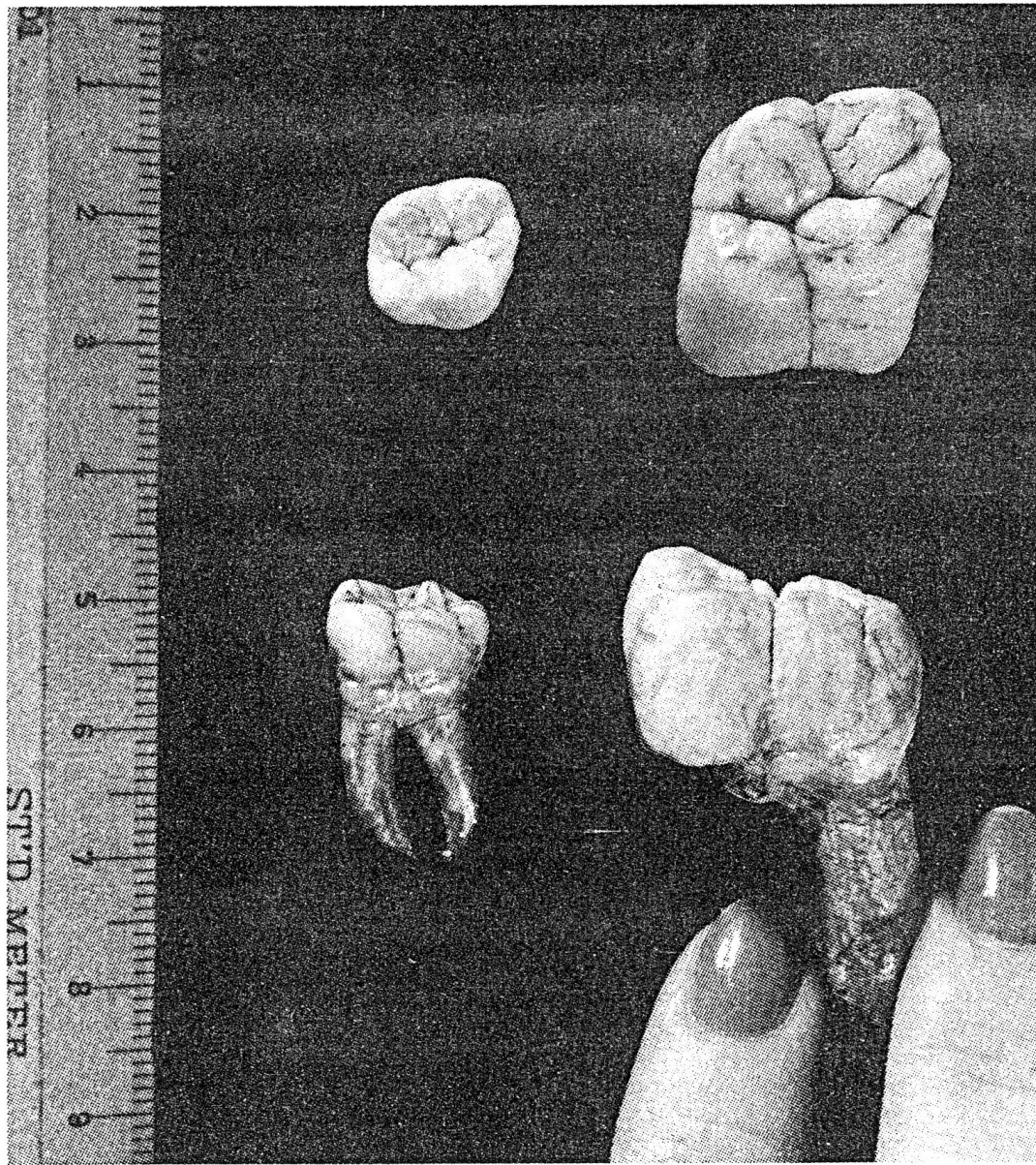
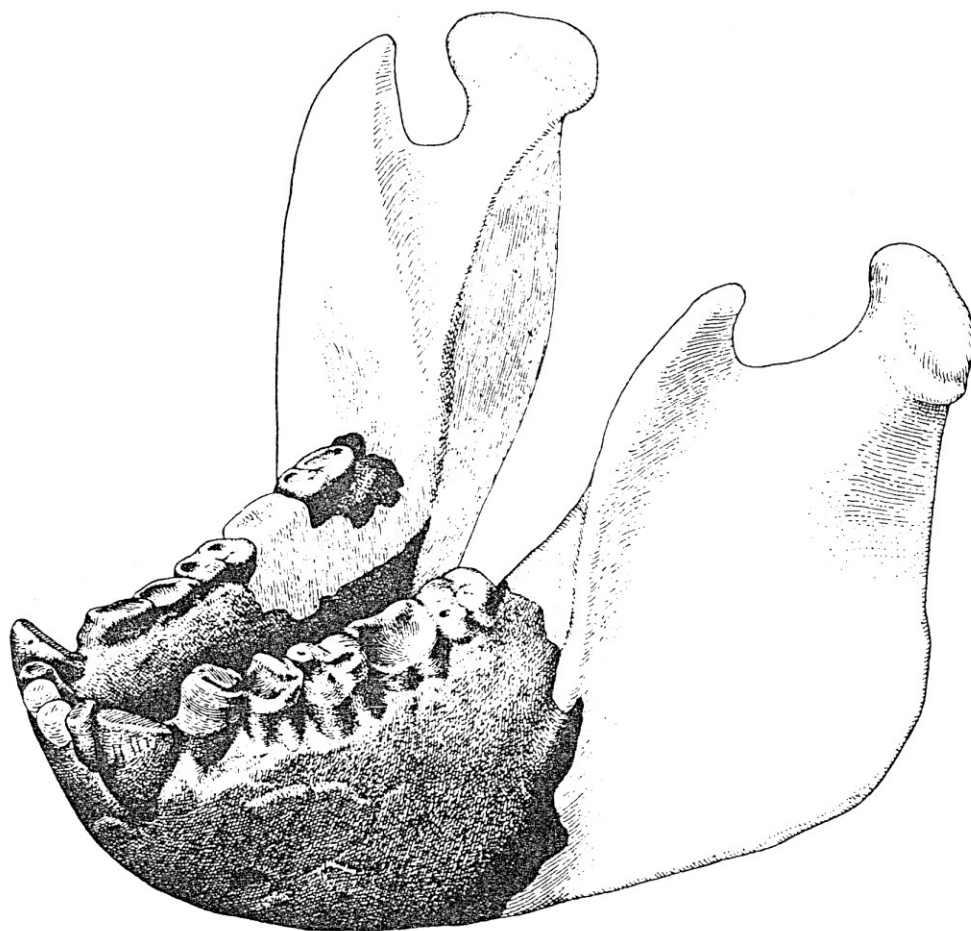
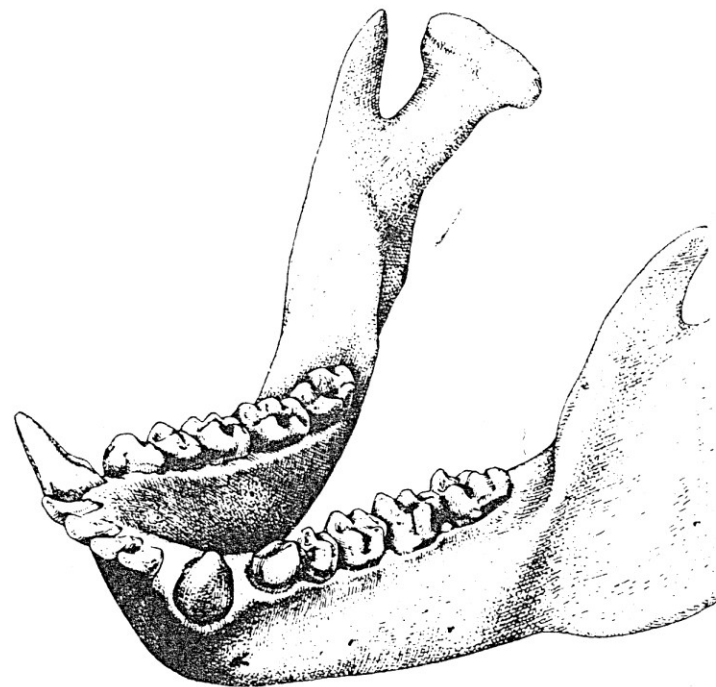


Figure 15-11 Upper and lower molars of Gigantopithecus (right) compared with those of modern humans (left).



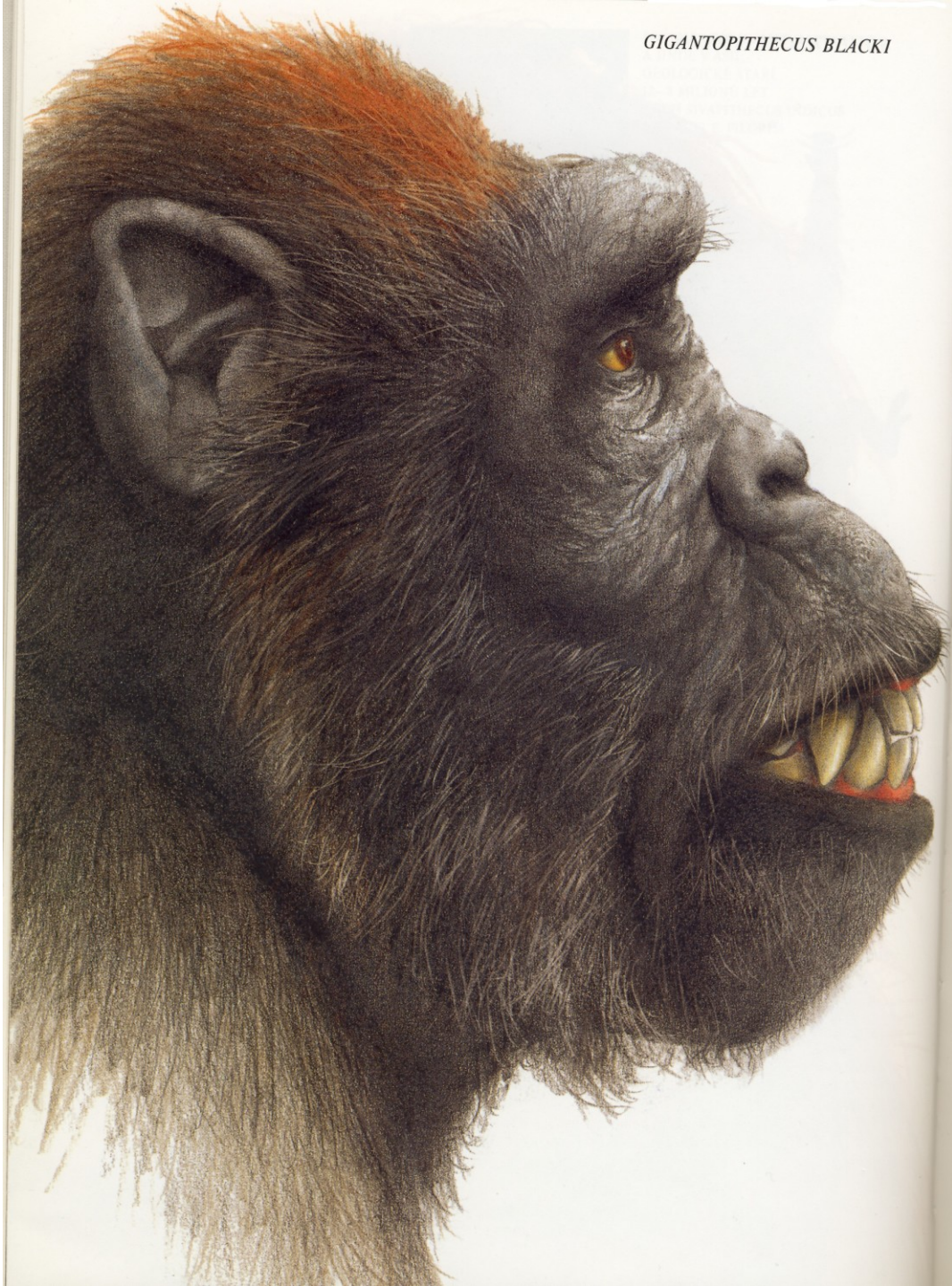
Gigantopithecus



Gorilla

FIGURE 9-15 *Mandibles of Gigantopithecus and Gorilla.* (From "Gigantopithecus" by E. L. Simons and P. C. Ettel. Copyright © 1970 by Scientific American, Inc. All rights reserved.)

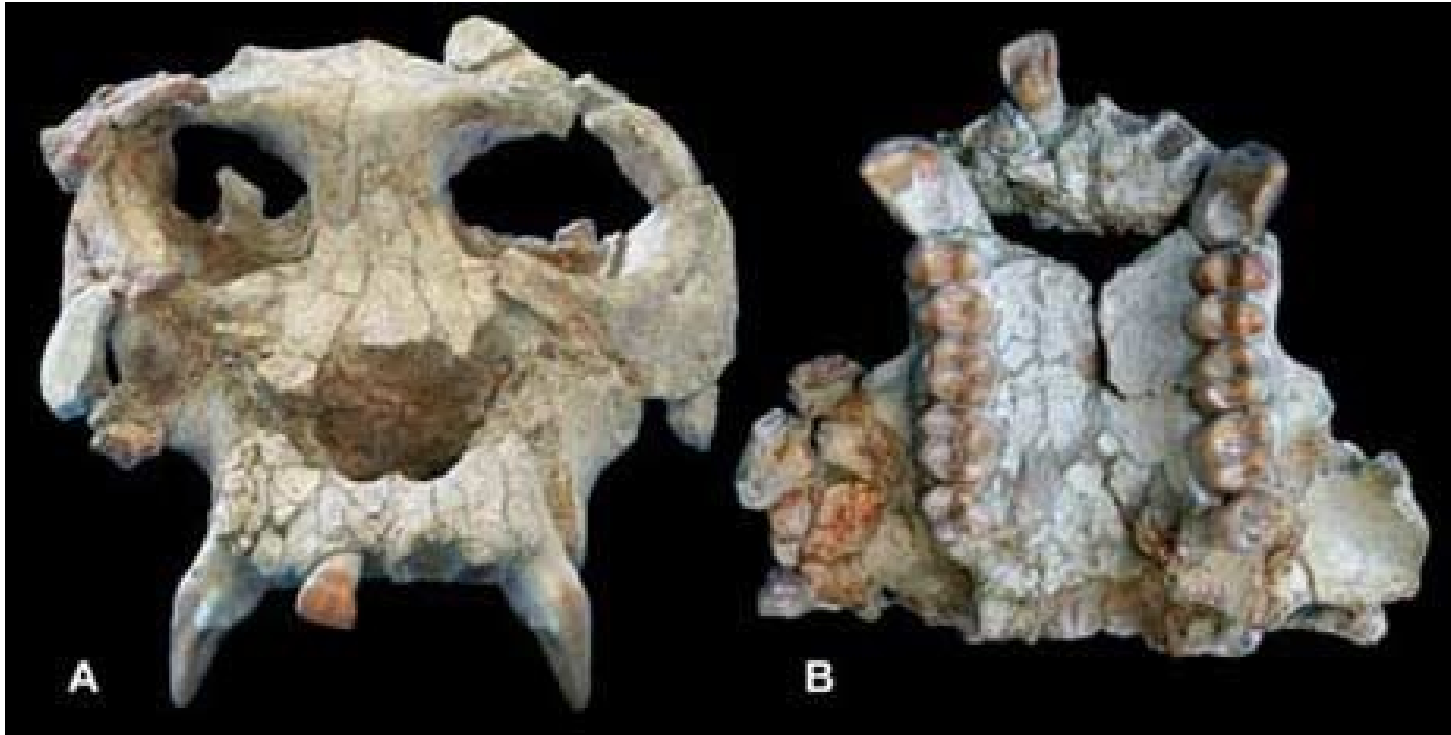
GIGANTOPITHECUS BLACKI





Pierolapithecus catalaunicus

13 mil. let



Pierolapithecus catalaunicus

13 mil. let

Byl objeven v roce 2004 na lokalitě **Els Hostalets de Pierola** v Katalánsku

Nese znaky shodné s lidoopy i ostatními druhy úzkonosých opic

Vzhledem k tomu, že lidoopi se oddělili od úzkonosých opic před 11 až 16 mil. lety, může se jednat o posledního společného předka člověka a lidoopů

Byl adaptován k pohybu po stromech.

- Měl široký a plochý hrudník (podobný moderním lidoopům)
- Pohyblivá zápěstí (měl už dvě předloketní kosti – ulnu a radius, které mu umožňovaly rotaci ruky)
- Lopatky měl postavené svisle na zádech jako lidé a lidoopi

Tyto adaptace mu umožňovaly vzpřímený postoj při šplhání

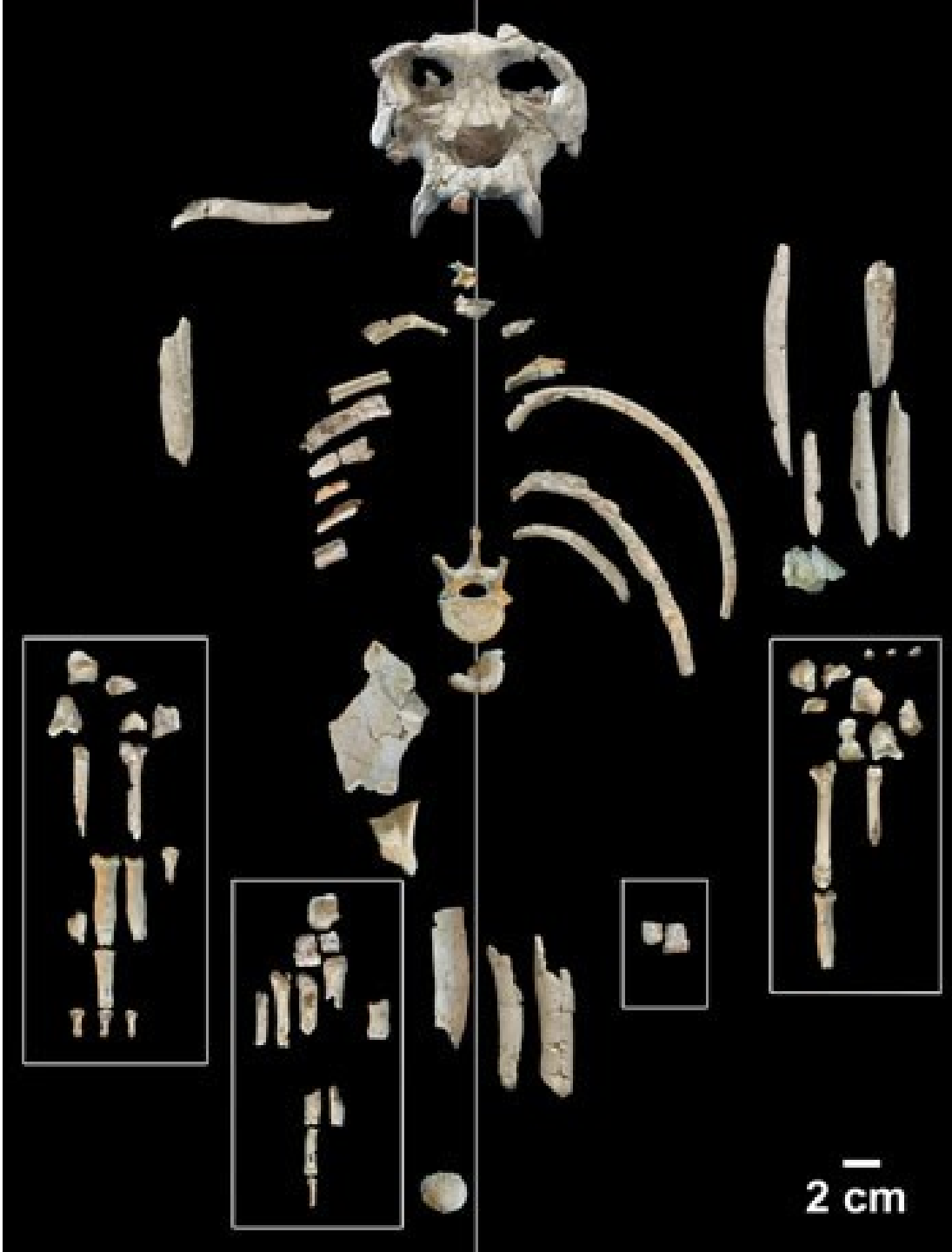
Pierolapithecus catalaunicus

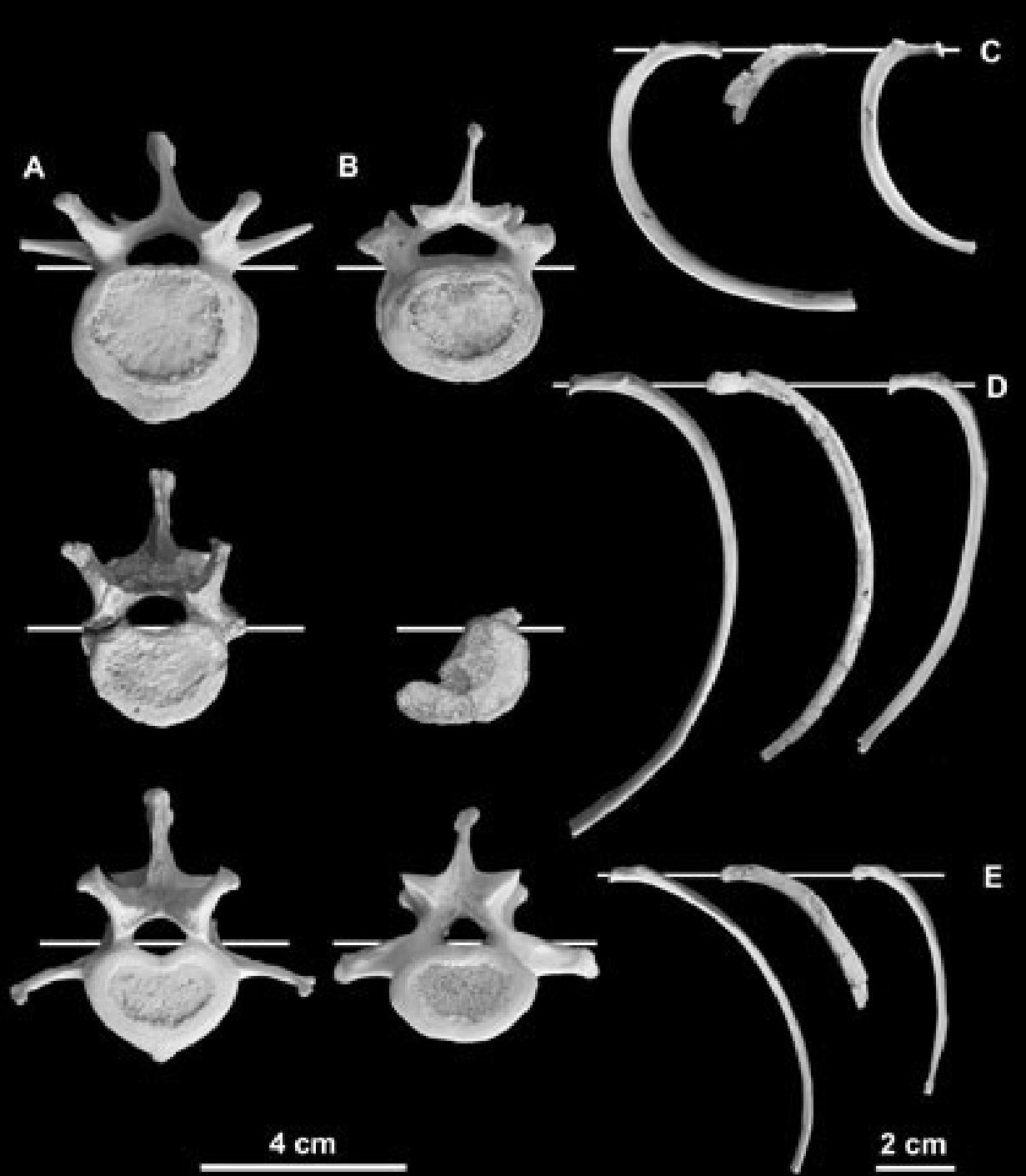
13 mil. let

Objevená fosílie patřila samci

Vážil asi 35 kg, byl menší než šimpanz

Potravně byl jednoznačně adaptován k plodožravosti











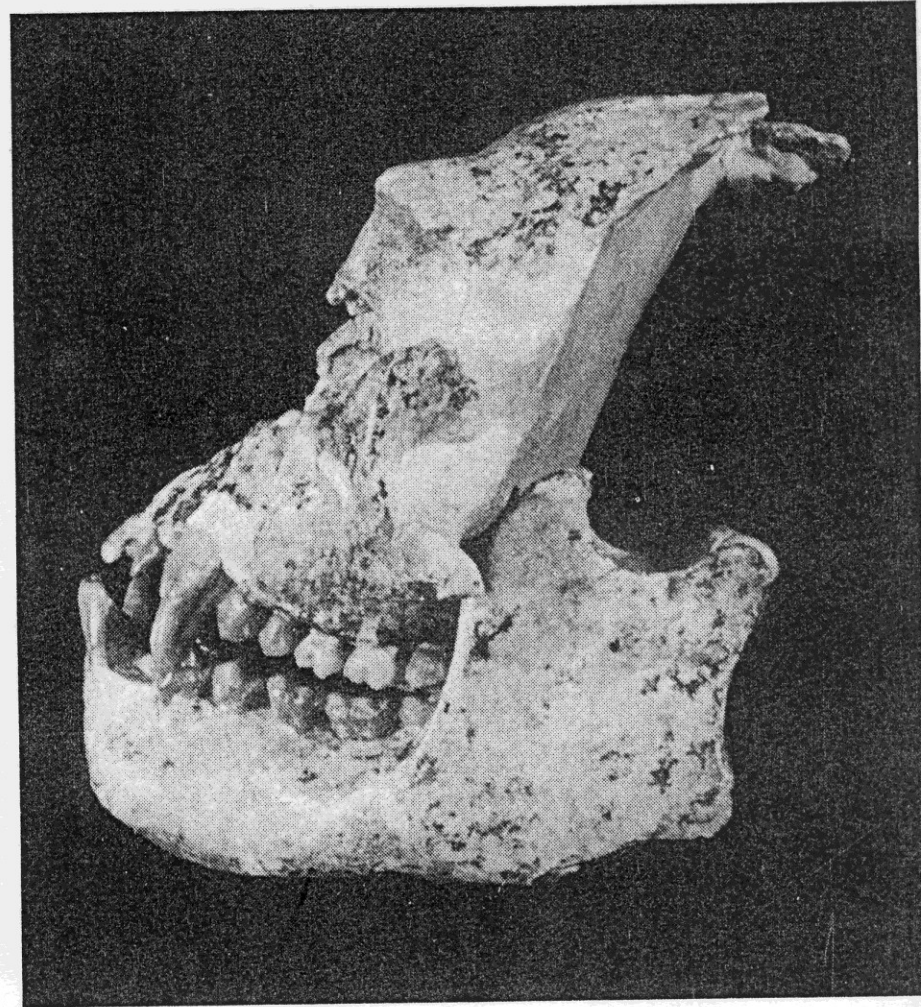
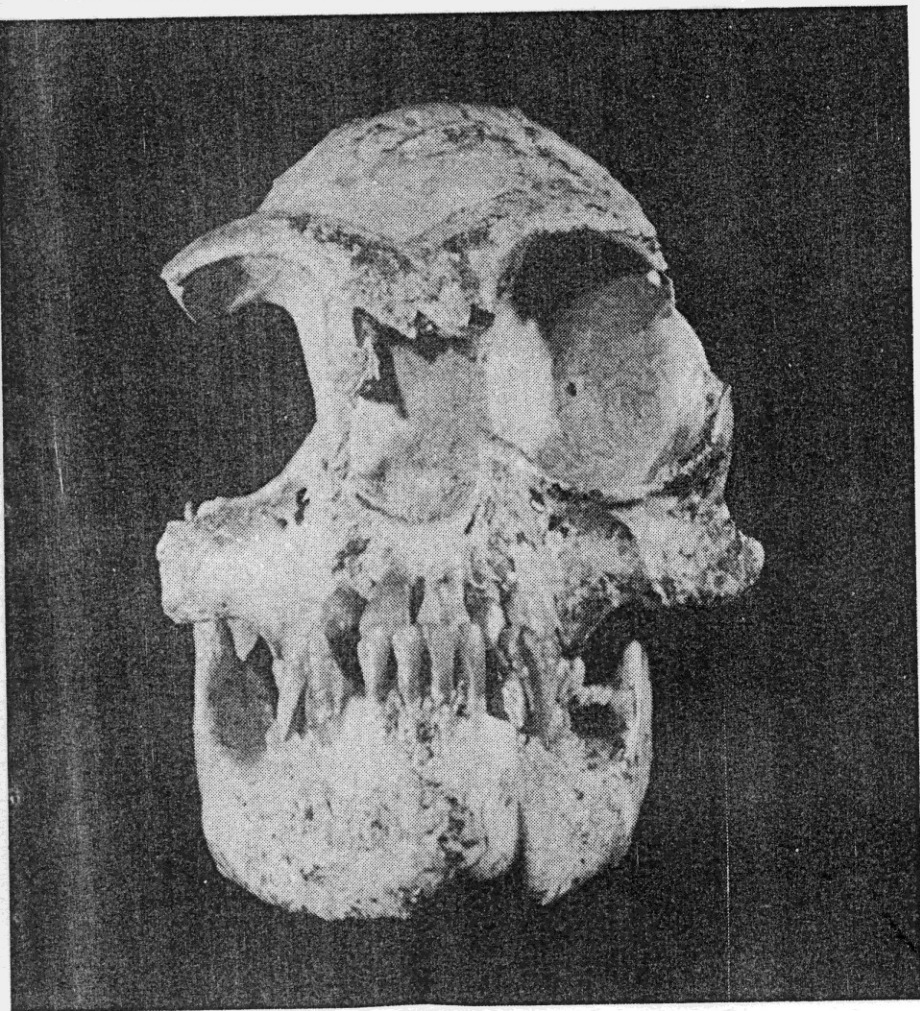


FIGURE 9-16 Pliopithecus.

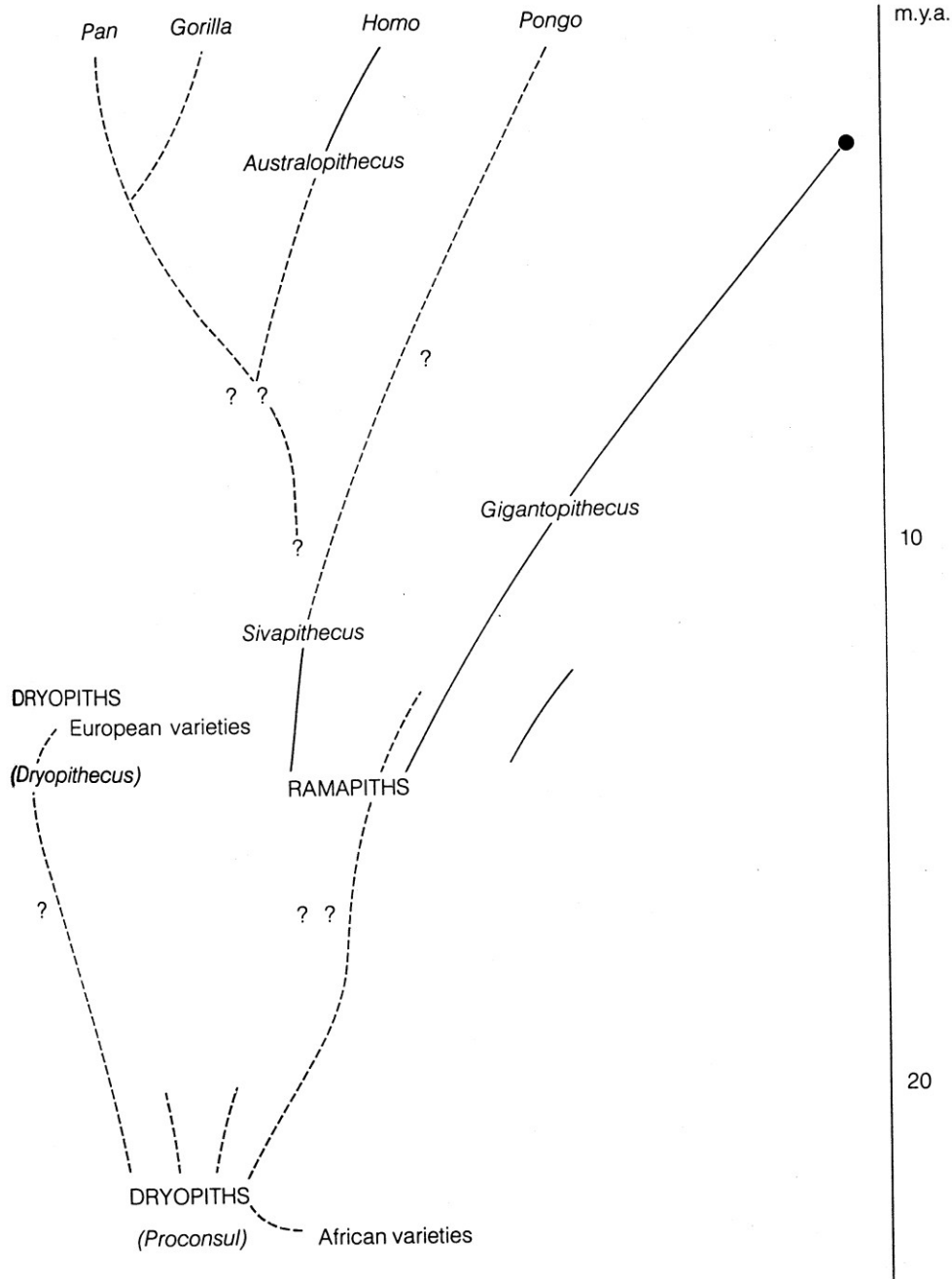


Figure 9-20 A possible relationship of hominoids.

