

SPECIMEN LISTS AND TABLES

ABBREVIATIONS TO TABLES

Areas are shown in parentheses after KNM-ER numbers, followed by zones.

A	zone A
B	zone B
C	zone C
KF IIA	Koobi Fora IIA (see p. 7 and Fig. 1.4)
KF IIB	Koobi Fora IIB
KF III	Koobi Fora III
N.s	<i>Notochoerus scotti</i> zone
M.a	<i>Metridiochoerus andrewsi</i> zone
M.c	<i>Metridiochoerus compactus</i> zone
GB	Galana Boi Beds
GF	Guomde Formation
*	specimen measured at mid height
()	estimated measurement
ant	anterior
ap	anteroposterior length
diap ap	diaphysis minimum anteroposterior diameter
diap tr	diaphysis minimum width
dist	distal
dist ap	distal articular anteroposterior diameter
dist sup tr	distal supra-articular width
dist tr	distal articular width

ect	ectostylid occlusal length
ht	height of crown
int	internal
max	maximum
min	minimum
oc ap	occlusal length
oc tr	occlusal width
PI	protoconal index
plic	number of plications including caballine folds
post	posterior
prox ap	proximal anteroposterior articular diameter
prox tr	proximal articular width
ptc	protocone occlusal length
tr	maximum width

Teeth measurements are taken at the occlusal surface unless otherwise indicated.

Equid 3rd and 4th premolars and 1st and 2nd molars are often difficult to differentiate on isolated teeth, and measurements of the posterior premolars and anterior molars have been grouped together in the tables. Where two sets of measurements are listed under the same accession number, the first set is for P₃ (or M₁) and the second for P₄ (or M₂).

TABLE 5.2.
Hipparion hasumense sp. nov. lower cheek teeth
measurements (mm)

	KNM-ER No., area and zone	oc ap	oc tr	ect	ht
P ₂	2768A (203 B)	27.5	14	2.5	37
	2788A (117 C)	33	14	—	38
P ₃₋₄	2776** (204B)	26	15	4	27
	2776** (204B)	25.5	15	4	35
	2786A (117 C)	30	18	4.5	58
	2788C (117C)	27	16	2.5	47
	2921 (117 B)	28.5	15	3.5	—
	4073 (117C)	27	15	—	56
	4074 (117 B)	24	15	4	25
	4077 (129 B)	—	16	—	31
	4080 (129 B)	28	17	4	34
	4080 (129 B)	26.5	15	4	41
	4084 (129 B)	29	16.5	5	—
	4084 (129 B)	31	15	—	62
	4093 (116 B)	30	14	—	68
	M ₁₋₂	2776** (204 B)	22	12	3
2776** (204 B)		22.5	11	1	31
2788B (117 C)		24	12	4	50
2788D (117C)		26.5	11	—	55
4080 (129 B)		25	14	2.5	30
4084 (129 B)		27	15	5	50
4084 (129 B)		27	14	5	52
4092 (116 B?)		28	13.5	4	59
M ₃	2768B (203 B)	26.5	9.5	—	(47)
	2787 (117 C)	27	11.5	4	43
	4084 (129 B)	(27)	9.5	—	56

** Holotype.

Hipparion sp. A

	KNM-ER No.	Area	Specimen
Zone C	2766	203	Lt P ₃₋₄
Guomde formation	1234	6A	Lt P ₃₋₄
Horizon indet.	335	7A	Rt P ₃₋₄ , Rt M ₁₋₂ , Rt M ₃
	673	KF III	dP ₃ , Rt P ₄ , Rt M ₂

TABLE 5.3.
Hipparion sp. A lower cheek teeth measurements
(mm)

	KNMR-ER No., area and zone	oc ap	oc tr	ect	ht
P ₃₋₄	673A (KF III)	26.2	16	6	51
	1234 (6A GF)	23	15.5	5	30
	2766 (203 C)	(28.5)	17	5	45
M ₁₋₂	673B (KF III)	24	10.3	—	60
	335B (7A?)	25.1	14	4.6	52

Hipparion cornelianum

	KNM-ER No.	Area	Specimen
<i>Notochoerus</i> <i>scotti</i> zone	3539	105	immature cranium

Hipparion cf. ethiopicum

	KNM-ER		Specimen
	No.	Area	
Zone B	4095	116	Rt astragalus
<i>Notochoerus scotti</i> zone	1230	105	Rt maxilla frag (P ⁴ -M ¹)
	1626	105	Lt and Rt mandible
	1770	131	M _{1/2}
	2071	129	Rt M ³
	2072	130	Lt M ^{1/2}
	2751	14	Rt P _{3/4}
	2752	14	Rt M _{1/2}
	2753	14	Rt M ₃
	3990	102	Rt maxilla frag (P ²⁻³)
	4076	14	Lt P _{3/4}
	4079	105	Lt M ^{1/2}
	4082	105	Rt mandible frag (P ₂₋₃)
	4084	129	Rt P ₃ -M ₃
	4086	14	Lt P ^{3/4}
	4087	14	Lt M ₃
	4088	14	Lt M _{1/2}
	4089	129	Rt M ³
	4090	129	Rt M _{1/2}
	4091	129	I, Lt P ^{3/4} , Lt M ^{1/2}
	4094	116	Lt M ³
5353	100	Lt M ³	
5354	100	Lt M _{1/2}	
5357	104	P _{3/4}	
<i>Metridiochoerus andrewsi</i> zone	776	103	P ₂ -M ₃
	1232	8A	Lt M ³
	1235	8A	dist. 3rd metatarsal
	1236	104	Rt M _{1/2}
	1238	6A	dist. tibia
	1244	102	Rt M _{1/2}
	1264	10	Lt M _{1/2}
	1294	103	Rt M ₃
	1295	103	Rt astragalus
	1345	6A	dist. 3rd metatarsal
	1456	104	Lt mandible frags (I ₂ , P ₃₋₄ , M ₃)
	1981	12	Lt M _{1/2}
	2047	123	astragalus
	2053	103	prox. lateral metapodial
	2070	103	Lt M ^{1/2}
2242	103	lateral metapodial frag	

Hipparion cf. ethiopicum cont.

	KNM-ER		Specimen
	No.	Area	
	2264	104	Rt P ₃₋₄
	2638	8B	Rt P ₃₋₄
	3989	119	Rt M _{1/2}
	4005	103	Rt M ₃
	4053	101	Lt M _{1/2} and M frags
	5355	103	Rt astragalus
	5356	104	Lt astragalus
<i>Metridiochoerus compactus</i> zone	1278	103	Rt M ¹⁻²
	2069	103	M ₁₋₂ and associated postcranials
	2656	1A	Lt and Rt M ₃
	2668	11	P ²
	2690	8	Lt astragalus
	5715	103	M ₁₋₂
Guomde Formation	1234	6	Lt P ₃₋₄

TABLE 5.4.
Hipparion cf. ethiopicum and *H. cornelianum* upper
cheek teeth measurements (mm)

	KNM-ER No., area and zone	oc ap	oc tr	ptc	ht	plic
P ²	3990 (102 N.s)	30	21	7.5	(28)	13
	2668 (11 M.c)	32	22	8	47	13
P ³ +	1230 (105 N.s)	25	26.5	11	42	18
	4086 (14 N.s)	25	24	7	59	(11)
	4091 (129 N.s)	24	27	9	21	—
M ¹⁻²	1230 (105 N.s)	23	24	9	42	14
	2072 (130 N.s)	23	22	9	66	14
	†3539 (105 N.s)	(25.5)	(24)	9	—	—
	4079 (105 N.s)	23	22	9	63	(6)
	4091 (129 N.s)	23.5	23	8	30	(10)
	2070 (103 M.a)	22.5	22	—	57	10
M ³	1278 (103 M.c)	24	23	9	50	18
	2071 (129 N.s)	22.5	18	7	56	(8)
	4089 (129 N.s)	23.5	—	10	55	—
	4094 (116 N.s)	23*	21.5*	(9)	60	—
	1232 (8A M.a)	22	21	9.5	35	8
4005 (103 M.a)	23	20	8	(40)	(10)	

† *Hipparion cornelianum*.

TABLE 5.5.
Hipparion ethiopicum and *H. cf. ethiopicum* lower cheek
teeth measurements (mm)

	KNM-ER No., area and zone	oc ap	oc tr	ect	ht
P ₂	1626 (105 N.s)	28	15	6	—
	4082 (105 N.s)	29	16	4	—
	1626 (105 N.s)	24.5	16.5	8	—
	1626 (105 N.s)	23.5	14	6	(30)
	2751 (14 N.s)	26.5	14	2	61
	4076 (14 N.s)	24.5	15	6	45
	4082 (105 N.s)	25	17	6.5	—
	4084 (14 N.s)	24	15.5	6	26
	5357 (104 N.s)	23.5	—	—	64
	776 (103 M.a ²)	28.5	13.5	3.5	40.5
P ₃₋₄	776 (103 M.a ²)	24.5	16	6.5	45
	1456 (104 M.a)	24	16.5	8.5	38
	1456 (104 M.a)	24	15	7	35
	2264 (104 M.a)	25	16	6	42
	2638 (8B M.a)	24.5	15	7	61
	1234 (6 GF)	23	15.5	5	30
1951.4.128**(Omo)	23.5	16.5	7.2	—	
M ₁₋₂	1626 (105 N.s)	23	13.5	7	—
	1626 (105 N.s)	22	12.5	5	—
	1770 (131 N.s)	23.5	13.5	5.5	28
	2752 (14 N.s)	25	11.5	2	62
	4088 (14 N.s)	23	14	6	24
	4090 (129 N.s)	23.5	11.5	5.5	—
	1236 (104 M.a)	21	14	6.5	19
	1264 (10 M.a)	22	12	5	46
	1456 (104 M.a)	(25)	11	—	38
	1981 (12 M.a)	22.5	14	6	41
	6100 (101 M.a)	23	13	6	45
	5354 (100 M.a)	22	13.5	6	37
	5715 (103 M.c)	24	(11.5)	—	60
	776 (103 M.a ²)	22.5	12.5	4.5	51
	776 (103 M.a ²)	24	11	0.5	(56)
	1244 (102 M.a ²)	24	(11)	2	—
3989 (119 M.a)	(21.5)	14	6.5	29	
1951.4.129**(Omo)	23	15	6.2	41	
1951.4.131**(Omo)	23.5	14.7	7.5	44	
M ₃	1626 (105 N.s)	26	11	1	—
	2753 (14 N.s)	25*	10	2	54
	4087 (14 N.s)	(23)	9	—	57
	1294 (103 M.a)	25.5	—	—	—
	1456 (104 M.a)	(26)	11	—	40
	5353 (100 M.a)	27	11	4.5	—
	776 (103 M.a ²)	(24)	—	—	—
	2656 (1A M.c)	25	11	1.5	56
	1951.4.127**	27	12.7	5	42

** *Hipparion ethiopicum* lectotype and associated teeth, Omo,
level unknown.

***Hipparion* sp. B**

	KNM-ER No.	Area	Specimen
<i>Notochoerus</i> <i>scotti</i> zone	1268	130	Rt P _{3,4}
	3985	129	Lt M ³
	4096	130(?)	P _{3,4}
<i>Metridiochoerus</i> <i>andrewsi</i> zone	1231	8A	Rt M ^{1/2}
	1263	10	Rt M ³
	2073	131	Rt M ^{1/2}
	2263	104	Rt M ¹⁻²
	2667	8B	Lt P _{3,4}
	3988	102	Lt P _{3,4}
	4054	101	Lt P ₂ , Lt P _{3,4}
	4083	15	Rt M ³ frag
	5335	10	M ³
	5359	102	RtM ¹⁻²
Horizon indet.	336	104	P _{3,4}

TABLE 5.6.
Hipparion sp. B upper cheek teeth measurements
(mm)

	KNM-ER No., area and zone	oc ap	oc tr	ptc	ht	plc
P ₃₋₄	3988 (102 M.a ²)	23	22	7	66	—
M ¹⁻²	1231 (8A M.a)	23	(19)	8.5	73	—
	2073 (131 M.a)	23	21	10	70	12
	2263 (104 M.a)	22	21	11.5	69	(11)
	5359 (102 M.a)	20.5	20	7.3	55	(13)
M ³	3985 (129 N.s)	19	16	8	35	—
	1263 (10 M.a)	20*	18*	8*	58	—
	5335 (10 M.a)	20*	17*	8*	52	—
	4083 (15 M.a)	18	15	7	46	—

TABLE 5.7.
Hipparion sp. B lower cheek teeth measurements
(mm)

	KNM-ER No., area and zone	oc ap	oc tr	ect	ht
P ₂	4054 (101 M.a)	27	10	-	-
P _{3,4}	1268 (130 N.s)	22.5	13	7	40
	4096 (130 N.s)	24	13	7.5	-
	4054 (101 M.a)	22.5	12.5	6.5	41
	2667 (8B M.a)	22	15	7.2	23
	336 (KF IIB)	22.2	13.9	-	21

TABLE 5.8.
Hipparion hasumense (KNM-ER 2789 and AL 155-6)
and *Hipparion* cf. *ethiopicum* (others) astragali
measurements (mm)

KNM-ER No., area and zone	length		art dist	art dist
	max tr	tr	tr	ap
4095 (116 B)	58	-	38	30
2789 (117 C)	65	61	47	35
1295 (103 M.a)	55	48	41	28
2047 (123 M.a)	60	54	45	32
5355 (103 M.a)	48	45	41	-
5356 (104 M.a)	57	49.5	41	30
2690 (8 M.c)	(55)	(50)	42.5	(30)
AL 155-6 (DDM)	(66.5)	(64)	(50)	36

DDM = Denen Dora Member of the Hadar Formation.

TABLE 5.9. *Hipparion* cf. *ethiopicum* postcranial measurements (mm)

	KNM-ER No., area and zone	diap tr	diap ap	dist sup tr	dist art tr	dist art ap
Metatarsal III	1235 (8A M.a)	27	(24)	37.5	35	30.5
	1345 (6A M.a)	(30)	(28)	40.5	37	29
Tibia	1238 (6A M.a)	38	27.5		61*	41*

* Tibia measurements are maximum not articular.

***Hipparion* sp. indet.**

KNM-ER No.	Area	Specimen
Zone B	4077	129 P frag
<i>Metridiochoerus</i> <i>andrewsi</i> zone	3987	102 upper cheek tooth frag
	3993	103 P ₂ frag

Equus koobiforensis

	KNM-ER No.	Area	Specimen
<i>Notochoerus scotti</i> zone	326	105	Rt mandible (P ₂ -M ₃) and Lt mandible frag (P ₂ -M ₂)
	337	105	Rt M _{1/2}
	1129	129	P ^{3,4}
	1256	105	Rt M ³
	1265	130	Rt P ^{3,4}
	1266	130	Lt M ^{1/2}
	1271	105	Rt M ^{1/2}
	1272	105	Rt M ³
	1484	130	cranium (Lt I ² -M ³ , Rt P ² -M ³)
	1518	105	Lt mandible (P ₂ -M ₃) and Rt M _{1/2}
	2224	131	Lt P ^{3,4}
	2687	105	M ^{1/2}
	2716	129	Lt P _{3,4}
	2740	14	Rt M ^{1/2}
	2741	14	P _{3,4}
	3986	129	Rt P _{3,4}
	4011	14	Lt P _{3,4}
	4014	14	Lt M ^{1/2}
	4015	100	Lt P _{3,4}
	4019	14	Lt M ₃
	4020	102	Lt M ^{1/2}
	4026	129	Rt M _{1/2}
	4027	129	Rt P _{3,4}
	4028	116	Rt P _{3,4}
	4034	130	M ^{1/2}
	4036	129	Rt M _{1,2}
	4037	129	Rt P ₂₋₃
	4043	129	Lt P ^{3,4}
	4044	129	Rt P ^{3,4}
	4046	100	Rt P ₄ , Rt M ₁
	4051	115	Rt mandible frag (P ₂ -M ₂)
	4520	104	cranium (Lt and Rt M ¹⁻³)
	5360	130	Rt mandible frag (P ₂ -M ₃)
5361	100	Lt and Rt mandibles (I ₁ -M ₃)	
5519	102	cranial frags (P ²⁻⁴ , M ³)	
5519	102	maxilla frags (P ²⁻⁴ , M ³)	
<i>Metridiochoerus andrewsi</i> zone	1239	104	premaxilla (I ¹ -C)
	1242	102	Rt M ³
	1243	102	P _{3/4}
	1249	104	Rt M ₃
	1250	104	Rt M ³
	1255	105	Lt M ²
	1260	6A	Rt P ^{3,4}
	1269	105	Lt and Rt M ₁
	1582	104	Rt mandible and symphysis (Lt I ₁₋₃ , Rt I ₁ -M ₃)

Equus koobiforensis cont.

	KNM-ER No.	Area	Specimen
	2061	104	M ₃
	2248	105	Lt P _{3,4}
	2613	7	Rt M ³
	2618	105	Rt M ³
	2670	129	Lt M ^{1/2}
	2691	12A	Lt maxilla frags (P ² -M ³)
	3992	101	Lt M _{1/2}
	4006	103	Rt M _{1/2}
	4025	105	Lt P ^{3,4}
	Guomde Formation	333	105
Galana Boi Beds	2931	117	M _{1,2}
Horizon indet.	320	S. of Koobi Fora Ridge	Lt mandible frag (P _{3,4})
	321	S. of Koobi Fora Ridge	Rt P _{3,4}
	322	S. of Koobi Fora Ridge	Rt P _{3,4}
	672	103	Lt P ²
	674	103?	M ³
	676	102	Lt M ^{1/2}
	679	102	Rt P ^{3,4}
	680	KF IIB	Lt P _{3,4}
	681	KF IIB	Lt P _{3,4}
	690	KF III	Lt mandible frag (M _{1,2})
	3986	129	Rt P _{3,4}

Equus cf. koobiforensis

	KNM-ER No.	Area	Specimen
<i>Notochoerus scotti</i> zone	1276	105	associated limb bones (see pp. 187-188)
	4052	100	Rt 3rd metatarsal
	5358	100	Lt 3rd metatarsal
<i>Metridiochoerus andrewsi</i> zone	1275	105	associated limb bones (see pp. 187-188)
	2054	123	Rt distal radius
	2625	7	Rt astragalus
	3998	102	prox. and dist. Rt radius
Horizon indet.	2317	?	astragalus

TABLE 5.10. *Equus koobiforensis* cranial measurements (mm)

	KNM-ER 1484 (130 N.s) <i>E. koobiforensis</i>	NIH 002* <i>E. sanmeniensis</i>	QSV 226† <i>E. stenonis</i> <i>vireti</i>	SEN 336‡ <i>E. stenonis</i> <i>senezensis</i>	<i>E. grevyi</i> (mean of c.50 specimens)
1	577	580	550	535	531.5
2	325	308	300	297	272.5
3	—	(152)	—	135	133
4	—	(116)	—	110	130.5
5	150	158	145	140	140.5
6	107	125	118	97	111.5
7	110	103	100	104	95.5
7 bis	91.5	90.5	84	83	78.5
8	202	192	186	187	173.5
9	—	—	—	—	83.5
10	53	—	47	50	48.5
10 bis	44	—	37	42.5	40
11	178	156	166	166	157
12	426	420	400	400	394
13	225	—	226	236	212
14	213	—	216	229	210
15	111	—	104	108	106
16	—	—	—	69	85
17	(64)	64.4	69	71	58
17 bis	(46)	—	50	44	40
18	—	—	—	600	597.5
19	13	16	14.5	18	14
20	—	—	—	—	17
21	77	69	61.5	67	63.5
22	61	56.5	57	60	60
23	472	480	445	438	420.5
24	—	(226)	—	232	213.5
25	—	130	—	—	106.5
26	140	143	126	128	138
27	140	—	124	144	147.5
28	98	—	96	110	108
29	81	97	92	93	80.5
30	36	40	42	39	35.5

* Collections of the Institut de Paléontologie, Paris.

† Collections of the Musée d'Histoire Naturelle, Lyon.

‡ Collections of the Naturhistorisches Museum, Basel.

TABLE 5.10. *cont.*

Methods of measurement from Eisenmann and De Giuli 1974; Eisenmann and Turlot 1978; Eisenmann in press *c.*

1	basilar length	16	maximum width of occipital crest
2	palatal length	17	muzzle width
3	distance from palate to vomer	17 bis	minimum muzzle width
4	distance from vomer to basion	18	vertex length
5	muzzle length	19	infraorbital height
6	length of diastema	20	height of external auditory meatus
7	length of premolars (P ²⁻⁴)	21	anteroposterior diameter of orbit
7 bis	length of molars	22	vertical diameter of orbit
8	length of upper cheek teeth row	23	anterior ocular line
9	choanal length	24	posterior ocular line
10	choanal maximum width	25	height of face in front of P ²
10 bis	choanal width between pterygoid processes	26	height of face between P ⁴ and M ¹
11	width maxilla at facial crests	27	height of face behind M ³
12	basilar length minus muzzle length	28	height of cranium behind orbits
13	frontal width	29	width of occipital condyles
14	bizygomatic width	30	width of foramen magnum
15	maximum width cranial vault		

TABLE 5.11. *Equus koobiforensis* upper cheek teeth series measurements (mm)

KNM-ER No., area and zone		P ²	P ³	P ⁴	M ¹	M ²	M ³
		1484 (130 N.s)	oc ap	44	32.5	32	30.5
	ptc	8	11.5	11	11.6	12.6	12.7
	oc tr	29.5	29	28.5	28	26	(23)
	PI	18.2	35.4	34.4	38	42	42.3
5361B (100 N.s)	oc ap	40	32	(28)	—	—	29
	ptc	7	9.3	10	—	—	11
	oc tr	29	31	30	—	—	26
	PI	17.5	29.1	(35.7)	—	—	37.9
2691 (12A M.a)	oc ap	37	30.5	30	26.5	26.5	29
	ptc	6.5	8	10	9.5	10	13
	oc tr	27	30	30	28	27	24
	PI	17.5	26.2	33.3	35.8	37.7	44.8

TABLE 5.12.
Equus koobiforensis isolated upper cheek teeth
measurements (mm)

	KNM-ER No.	oc ap	ptc	oc tr	PI
P ²	672 (103 KF III)	40.5	8.6	25.8	21.2
P ³⁻⁴	1265 (130 N.s)	30	11	—	36.7
	2224 (131 N.s)	31	10.5	—	33.9
	4043 (129 N.s)	33	11.5	29	34.8
	4044 (129 N.s)	(35)	—	33	—
	5519 (102 N.s)	31	9	30.5	29
	1260 (6A M.a)	32	9	28	28.1
	4025 (105 M.a)	30	10	30	33.3
	679 (102?)	30.5	8.8	28.3	28.8
M ¹⁻²	1266 (130 N.s)	30	13.5	27	45
	1271 (105 N.s)	27.5	10	29	36.4
	2687 (105 N.s)	30	14.5	28	48.3
	2740 (14 N.s)	29.5	14	27.5	47.4
	4014 (14 N.s)	26.5	11	28	41.5
	4020 (102 N.s)	30	14.5	26	48.3
	4034 (130 N.s)	27	10.2	28.5	37.8
	1255 (105 M.a)	27.5	12	27	43.6
	2670 (129 M.a?)	32	12	27	37.5
	676 (102?)	28.5	11	26.5	38.6
M ³	1256 (105 N.s)	(27.5)	13	24	(47.3)
	1272 (105 N.s)	29	13	24	44.8
	4520 (104 N.s)	(33)	—	(25)	—
	5519 (102 N.s)	29	12	25	41.4
	1242 (102 M.a)	29	13	24.5	44.8
	1250 (104 M.a)	28.5	13.5	25	47.4
	2613 (7 M.a)	27.5	15.5	25	56.4
	2618 (105 M.a)	29	10	24	34.5
	674A (103 KF III)	28.2	11	24	39

M³ measurements include cement cover and were taken at a height of approximately 30 mm above the roots.

TABLE 5.13. *Equus koobiforensis* lower cheek teeth series measurements (mm)

KNM-ER No., area and zone		P ₂	P ₃	P ₄	M ₁	M ₂	M ₃
1518 (105 N.s)	oc ap	31	28.5	29	25.5	26.5	36.5
	oc tr	14	17	16.5	15.5	15	14
4051 (115 N.s)	oc ap	36	34	30	27.5	29	(36)
	oc tr	17	17.5	(17)	14.5	15	(15)
5360 (130 N.s)	oc ap	35.5	32	30	28	28	35
	oc tr	16	17	17.5	15	14.5	—
5361A (100 N.s)	oc ap	32	30	29	27	27	32
	oc tr	16	17	16.5	14	13.5	13
1582 (104 M.a)	oc ap	36	34	33	28	28	33
	oc tr	15	18	18	16.5	15	14
326-333 (KF IIA)	oc ap	35	31.1	30.3	26.3	28.5	29.3
	oc tr	16.4	16	16.3	14	13	—

TABLE 5.14.
Equus koobiforensis isolated lower cheek teeth
measurements (mm)

	KNM-ER No., area and zone	oc ap	oc tr
P ₂	4028 (116 N.s)	37.7	16.2
	4037 (129 N.s)	(37)	—
P ₃₋₄	2716 (129 N.s)	32	15
	2741 (14 N.s)	28	16.5
	3986 (129 N.s)	31.5	17.5
	4011 (14 N.s)	30	16
	4015 (100 N.s)	33	17
	4027 (129 N.s)	32	15.5
	4037 (129 N.s)	33	17
	1243 (102 M.a)	28	17
	2248 (104 M.a)	28	17
	4046 (100 M.a)	30	16
	680 (KF IIB)	30.2	16
	681 (KF IIB)	29.5	17
	776E (KF III)	29.6	16.5
	320 (S. of Koobi Fora Ridge)	30.2	15.2
	321 (S. of Koobi Fora Ridge)	30.2	16.2
322 (S. of Koobi Fora Ridge)	31.2	16.2	
M ₁₋₂	337 (105 N.s)	30.5	12
	4026 (129 N.s)	29	12
	4036 (129 N.s)	28.5	14
	1269 (105 M.a)	30	13
	3992 (101 M.a)	25	14.5
	4006 (103 M.a)	26	14
	690 (KF III)	29.2	15.2
	690 (KF III)	26.2	14.7
	2931 (117 GB)	28	13.5
M ₃	4019 (14 N.s)	(32)	14
	1249 (104 M.a)	32	12.5
	2061 (104 M.a)	31	13

Equus cf. tabeti

	KNM-ER No.	Area	Specimen
<i>Metridiochoerus andrewsi</i> zone	1211	1	partial cranium (Lt P ³ -M ³ , Rt P ² -M ³)
	1237	6A	prox. anterior 1st phalanx
	5565	130	Lt P ⁴
	5566	130	Lt M ¹
	5567	130	Lt and Rt I ¹⁻³
<i>Metridiochoerus compactus</i> zone	2067	103	3rd metacarpal (pathological?)
	2069	103	3rd metacarpal frags, anterior and posterior 1st phalanges
Horizon indet.	325	Karari Ridge	Lt and Rt maxilla and Lt and Rt mandible frags

Equus sp. indet.

	KNM-ER No.	Area	Specimen
Zone C	4002	102	M _{1/2}
<i>Notochoerus scotti</i> zone	1254	105	Lt M ^{1/2}
	1258	105	Rt P ^{3/4}
	1267	130	Lt M ^{1/2}
	1270	105	Rt M ³
	1273	105	Lt P ⁴
	2052	104	upper cheek tooth
	2059	100	M ₂
	2655	105	Rt P _{3/4}
	2681	105	Rt P ^{3/4}
	3855	102	lower cheek tooth frag
	4012	14	Rt M ^{1/2}
	4018	102	I ¹
	4021	105	M ^{1/2}
	4029	129	M ^{1/2}
	4032	130	upper dM or dP frag
	4040	129	Lt M ₃
	4046	100	Rt M ₁₋₂
	5669	105	P ^{3/4}
	5670	105	M ^{1/2}

(continued overleaf)

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Equus sp. indet. cont.

KNM-ER No.	Area	Specimen	
<i>Metridiochoerus andrewsi</i> zone	661	103	astragalus and calcaneum
	685	103	astragalus, calcaneum, prox. metapodial, lateral metapodial
	901	8	cranium (Lt M ¹⁻³), Rt M ³ and isolated upper teeth
	1222	1	Rt mandible frag (P ₃₋₄)
	1223	1	Lt P ₄ , Lt M ₃
	1224	6	Lt P ₂
	1225	8	Lt P ^{3/4} , Rt M frag
	1226	8	Lt P ³⁻⁴ , Lt M ³
	1229	8A	Rt M ^{1/2}
	1241	104	Rt maxilla frag (P ^{3-M1}) and Lt maxilla frag (P ^{4-M2})
	1245	104	Lt dP ₂ , Rt M ₃
	1246	104	Lt P ₂
	1251	104	Rt P ⁴ , Rt M ¹
	1252	104	Lt P _{3/4}
	1253	102	Rt P _{3/4}
	1257	105	Lt M ¹
	1259	6A	Lt P ^{3-M1} , Rt P ³
	1261	10	Lt M ^{1/2}
	1262	8B	M ^{1/2}
	1274	105	Lt 3rd metacarpal
	1277	103	Rt tibia
	1280	103	Rt P ^{3/4}
	1281	103	Rt M ^{1/2} , Lt M ³
	1282	103	M ^{1/2}
	1284	102	Lt P _{3/4}
	1286	103	Rt maxilla frag (M ³)
	1287	104	P ₂
	1288	103	Lt M ^{1/2}
	1289	102	M ₃
	1290	103	Lt astragalus
	1291	103	dist. 3rd metatarsal, cuneiform
	1292	103	dist. 3rd metatarsal
	1293	103	Rt M ^{1/2}
	1296	103	Lt astragalus
	1297	103	prox. and dist. 3rd metacarpal
	1349	8	dist. Rt radius
	1385	6A	astragalus
	1717	103	prox. 3rd metacarpal
	1980	121	M ^{1/2}
	1982	10	M ^{1/2}
	2048	104	astragalus
	2049	104	astragalus
	2050	121	3rd metacarpal
	2055	104	dist. radius
	2057	104	prox. and dist. 3rd metatarsal
	2062	104	P ²
	2063	102	Rt P ^{3/4} , Lt M ^{1/2} , Lt M ³
	2064	103	Rt P ^{3/4}
	2065	103	Lt M ^{1/2}
	2068	121	Rt P ²⁻³ , Lt P ² , Lt P ⁴ , Lt M ¹ , Lt M ³

Equus sp. indet. cont.

KNM-ER No.	Area	Specimen	
	2140	123	dist. Lt radius
	2148	104	P _{3/4}
	2215	103	juvenile Lt 3rd metacarpal
	2238	130	prox. Lt 3rd metatarsal
	2301	131	3rd metatarsal, phalanx
	2642	8B	Lt M ³
	2664	10	Lt M ³
	2685	15	Rt P ²
	2688	8B	Lt P ^{3/4}
	3994	102	Rt M ^{1/2}
	3996	12	Lt M ^{1/2}
	3997	104	P ₂
	4000	103	Lt P ³
	4007	102	P ₂ , P ₃₋₄
	4009	102	Lt M ₁₋₂ , Lt M ¹⁻²
	4010	102	Lt P ₂
	4022	105	Rt M ₁₋₂
	4023	105	Rt P ₃₋₄
	4030	101	M ¹⁻²
	4033	101	M ¹⁻²
	4038	105	lower cheek tooth frag
	4039	103	M ³
	4041	103	Rt astragalus
	4045	104	lower tooth series
	4049	104	mandibular symphysis with 2I, C
	4050	102	Rt M ¹⁻² , Lt M ³
	4056	103	Rt I ² , Rt P ²⁻³ , Rt M ³
	4065	8B	P ³⁻⁴
	4078	102	M ^{1/2}
	5189	104	Lt M ¹⁻²
	5668	104	M ^{1/2}
	5886	105	P ₂
<i>Metridiochoerus compactus</i> zone	1228	3	Lt M ¹⁻²
	2630	8	Lt M ¹⁻² , Rt and Lt M ₃
	2637	6A	Rt P ₂
	2640	6A	Rt mandible frag (P _{3-M2})
	2654	6A	Rt M ³
	2676	6A	Rt P ₃₋₄
	2695	6	Lt M ³
Horizon indet.	318	S. of Karari Ridge	Rt mandible frag (M ₂₋₃)
	319	S. of Karari Ridge	Rt mandible frag (P ₃₋₄)
	334	103	P ²⁻⁴ , M ²⁻³
	335	1	P ₄ , M ₃
	665	KF III	P ₂
	647	KF III	M ³
	678	130	Lt P ^{3/4}
	684	KF III	P ³⁻⁴ , M ^{1/2} , M ³
	689	103	Rt mandible frag (P ₂₋₄)
	1288	103	Lt M _{1/2}
	5887	KF III	M ³

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TABLE 5.15. Koobi Fora *Equus* cf. *tabeti* and *E.* sp. associated upper cheek teeth measurements (mm)

KNM-ER No., area and zone		P ²	P ³	P ⁴	M ¹	M ²	M ³ *
325 (Karari Ridge) <i>E.</i> cf. <i>tabeti</i>	oc ap			28	24.5	24.3	25.5
	ptc			9.7	7.8	9	11
	oc tr			29	26.2	25.7	22.2
	PI			34.6	31.8	37	43.1
1211 (1 M.a) <i>E.</i> cf. <i>tabeti</i>	oc ap	36	28	27	26	26	26
	ptc	8	9.5	10	9	10.5	—
	oc tr	26	26	23	25.5	23	22
	PI	22.2	33.9	37	34.6	39.6	—
334 (KF III) <i>E.</i> sp. indet.	oc ap	38	28	26.2		24.6	25
	ptc	7.5	8.7	10.9		11	12
	oc tr	(25.5)	27.8	26.9		25	21
	PI	19.7	31.1	41.6		44.7	48
901 (8B M.a) <i>E.</i> sp. indet.	oc ap				24.5	25	24
	ptc				11	10.5	10.5
	oc tr				24.5	24	20.5
	PI				44.9	42	43.7
1241 (104 M.a) <i>E.</i> sp. indet.	oc ap		29.5	27	24	25	
	ptc		10	10.5	10	11	
	oc tr		27.5	28.5	25.5	25.5	
	PI		33.9	38.9	41.7	44	
1259 (6A M.a) <i>E.</i> sp. indet.	oc ap		28	26	25		
	ptc		9	9.5	11		
	oc tr		28	26.5	25		
	PI		32.1	36.5	44		
2068 (121 M.a) <i>E.</i> sp. indet.	oc ap	—	27	26		24	24
	ptc	6	10	10		10	11.5
	oc tr	23.5	25	26		22.5	21
	PI	—	37	38.5		41.7	47.9
4056 (103 M.a) <i>E.</i> sp. indet.	oc ap	—	31				26
	ptc	7	9				10.5
	oc tr	28	—				21.5
	PI	—	29				40.4

* M³ measurements include cement cover and were taken at a height of approximately 30 mm above the roots.

TABLE 5.16.

Koobi Fora *Equus* cf. *tabeti* and *E. sp.* isolated upper premolars measurements (mm)

	KNM-ER No., area and zone	oc ap	ptc	oc tr	PI
P ²	2062 (104 M.a)	40	9	26	22.5
	2685 (15 M.a)	37	6.5	24	17.5
P ³⁻⁴	1258 (105 N.s)	30	11.5	—	38.3
	1273 (105 N.s)	28	12	27	42.8
	2681 (105 N.s)	27.5	9	28.5	32.7
	5669 (105 N.s)	30	—	27.5	—
	1225 (8 M.a)	27	10	25	37
	1226 (8 M.a)	27	12.5	25	46.3
	1251 (104B M.a.)	29	13	27	44.8
	1280 (103 M.a)	30	12.2	28	40.7
	2063 (102 M.a)	28.5	9	26	31.6
	2064 (103 M.a)	30	8	27	26.7
	2688 (8B M.a. ²)	28	8	27	28.6
	4000 (103 M.a)	30	12	26	40
	4033 (102 M.a)	30	10	27	33.3
	4065 (8A M.a)	25	9.5	25.3	38
	**5565 (130 M.a.)	25	8	26	40
	678 (130 KF IIA)	30.6	9	27.5	29.4
	684A (105 KF III)	29.4	14	26.3	47.6
684D (105 KF III)	29.5	13	26.5	44.1	

** *Equus* cf. *tabeti*. (All others *Equus* sp. indet.).

TABLE 5.17.

Koobi Fora *Equus* cf. *tabeti* and *E. sp.* isolated upper molars measurements (mm)

	KNM-ER No., area and zone	oc ap	ptc	oc tr	PI	
M ¹⁻²	1254 (105 N.s)	26	10.5	25	40.4	
	1267 (130 N.s)	25.5	11	—	43.1	
	4012 (14 N.s)	26	10.3	25.5	39.6	
	4021 (105 N.s)	27	10	25	37	
	4029 (129 N.s)	24	10	25	41.2	
	5670 (105 N.s)	24	—	—	—	
	901 (8A M.a)	26	10	25	38.5	
	1229 (8A M.a)	26	8.5	25	32.7	
	1251 (104B M.a)	27	14.5	25.5	53.7	
	1257 (105 M.a)	26	11	24	42.3	
	1261 (10 M.a)	25	10	24	40	
	1262 (8B M.a)	24	11	25	45.8	
	1281 (103 M.a)	27	10	27	37	
	1282 (103 M.a)	23.5	7.5	24	31.9	
	1293 (103 M.a)	25	12.2	26	48.8	
	1980 (121 M.a)	24	9	23	37.5	
	1982 (10 M.a)	23	11.5	23	50	
	2063 (102 M.a)	27	10.2	24	37.8	
	2065 (103 M.a)	25.2	10.2	26	40.5	
	3996 (12 M.a)	24.5	10.5	23	42.8	
	4030 (101 M.a)	25.5	13.5	23.5	52.9	
	4050 (102 M.a)	28.5	9.5	25	37.2	
	4078 (102 M.a)	26.5	9.5	24	35.8	
	5189 (104 M.a. ²)	24.5	10	24.8	40.8	
	5668 (104 M.a)	25	9	—	36	
	1228 (3 M.c)	24	10.5	24	43.7	
	2630 (8 M.c)	24	10	25	41.7	
	684B (103 KF III)	26.4	11.7	25.9	44.3	
	**5566 (130 M.a)	22	8	25	36.4	
	M ³	1270 (105 N.s)	26	—	20	—
		1226 (8 M.a)	26	—	19.5	—
		1281B (103 M.a)	25	11	20	44
		1286 (103 M.a)	25	9.5	22	36
2063A (102 M.a)		26	10.5	22	40.4	
2642 (8B M.a)		25.5	10.5	21.5	41.2	
2664 (10 M.a)		27	11	22	40.7	
4039 (103 M.a)		27	14	22	51.8	
4050 (102 M.a)		26	12	23	46.1	
2654 (6A M.c)		26	11.5	21	44.2	
2695 (6A M.c)		24	12	21	50	
334 (103 KF III)		27	12	21	44.4	
5887 (103 KF III)		26	10	21	38.5	
684C (103 KF III) (22.5)		—	—	20.3	—	

** *Equus* cf. *tabeti*. (All others *Equus* sp. indet.).

TABLE 5.18.
 Koobi Fora *Equus* cf. *tabeti* and *E.* sp. lower cheek
 teeth measurements (mm)

	KNM-ER No., area and zone	oc ap	oc tr
P ₂	1224 (6 M.a)	32	15
	1246 (104 M.a)	33	15.3
	5886 (105 M.a)	33.5	14.5
	1287 (104 M.a)	(32)	14
	4007 (102 M.a)	34	15.5
	4010 (102 M.a)	34	16
	2637 (6A M.c)	32.5	15
	665 (103 KF III)	33.9	14.5
	689 (103 KF III)	30.2	13.2
P ₃₋₄	2655 (105 N.s)	29	15
	1222 (1 M.a)	27	15
	1223B (1 M.a)	27.5	15.5
	1252 (104B M.a)	27	(14.5)
	1253 (102 M.a)	28	(15)
	1284 (102 M.a)	27	13
	2148 (104 M.a)	26	15
	4007 (102 M.a)	29	17
	4023 (105 M.a)	27	15.5
	2640 (6A M.c)	29	14.5
	2640 (6A M.c)	25	14.5
	2676 (6A M.c)	27	14
	319 (2 S. of Koobi Fora Ridge)	(28.5)	—
	319 (2 S. of Koobi Fora Ridge)	27	—
689 (103 KF II)	26.5	14.8	
M ₁₋₂	2059 (100 N.s)	25.5	12
	1288 (103 M.a?)	25	12
	3994 (102 M.a)	26	12
	4009 (102 M.a)	25	12.5
	4022 (105 M.a)	26	13
	4046 (100 M.a)	24	13
	2640 (6A M.c)	23	14
	2640 (6A M.c)	22.5	13
	2676 (6A M.c)	24	14.5
M ₃	4040 (129 N.s)	31	12
	1223A (1 M.a)	28.5	13
	2630 (8 M.c)	29	12
	318 (4 S. of Koobi Fora Ridge)	32	14
	*325 (4 Karari Ridge)	30.3	12.9

* *Equus* cf. *tabeti*. (All others *Equus* sp. indet.).

TABLE 5.19. Koobi Fora *Equus* species third metacarpal measurements (mm)

KNM-ER No., area and zone	max length	diap tr*	diap apt†	prox art tr	prox art ap	magnum facet tr	ant facet tr	unciform facet tr	post facet tr	unciform sup tr	dist art tr	dist art ap	min ap int condyle	max ap int condyle
1275L (105 M.a)	—	31	24.5	49.5	32	41	15.5	—	—	—	—	—	—	—
<i>E. cf. koobiforensis</i>	—	(33)	(26.5)	50.5	32	40	16.5	10	47.2	46.3	35	28.5	29	—
<i>E. cf. koobiforensis</i>	199	22.3	18	(33)	(24)	28.5	—	—	33	33	—	20	22	—
<i>E. cf. tabeti</i>	—	29.5	24	44	28.5	37	13	7	41	41	32	25.5	27.5	—
2069 (103 M.c)	—	28.5	23	46	29	36	15	6	41.5	40	31.5	25	27.5	—
<i>E. cf. tabeti</i>	213	27.5	22.5	43	27	34.5	13	8	42	41	30	25	26.5	—
<i>E. sp. indet.</i>	—	29.5	22.5	43	28.5	35.5	14	6	—	—	—	—	—	—
1274 (105 M.a)	—	30	23	46	29	37	13.5	6	44	44	—	—	27	—
<i>E. sp. indet.</i>	208	—	—	43.5	30	38	13	9	—	—	—	—	—	—
1717 (103 M.a)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>E. sp. indet.</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2050 (121 M.a)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>E. sp. indet.</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2215 (103 M.a)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>E. sp. indet.</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Diaphysis minimum width.

† Diaphysis minimum anteroposterior diameter.

TABLE 5.20. Koobi Fora *Equus* species third metatarsal measurements (mm)

KNM-ER No., area and zone	length	diap tr	diap ap	prox max tr	prox max ap	ecto-		cuboid facct ap	dist sup tr	dist art tr	dist art ap	min ap int condyle	max ap int condyle
						cuneiform facct tr	tr						
5358 (100 N.s) <i>E. cf. koobiforensis</i>	287.5	33	31	52	41	45	11	47.5	45.5	37	29	30.5	30.5
4052 (100 N.s) <i>E. cf. koobiforensis</i>	—	30	—	49.5	40	—	—	47.5	44	35	29	30.5	30.5
1275G (105 M.a) <i>E. cf. koobiforensis</i>	266	31.1	29	49	39.5	44	11.5	44.5	44.2	36.7	27.5	30	30
1291A (103 M.a) <i>E. sp. indet.</i>	—	30	29	—	—	—	—	44	44	33.5	25.5	28	28
1292 (103 M.a) <i>E. sp. indet.</i>	—	—	—	—	—	—	—	44	42.5	34.5	25.5	28.5	28.5
2057 (104 M.a) <i>E. sp. indet.</i>	—	33.5	29	46	41.5	42	9	44.5	43.5	33.5	25.5	(28.5)	(28.5)
2238 (130 N.s) <i>E. sp. indet.</i>	—	—	—	45.5	37.5	40.5	9	—	—	—	—	—	—
2301B (131 N.s) <i>E. sp. indet.</i>	253.5	30	28	(42)	(36)	—	—	44	42.5	—	26	29	29

Equus cf. grevyi

	KNM-ER No.	Area	Specimen
<i>Metridiochoerus compactus</i> zone	1227	1	Rt P ^{3,4}
	1457	103	maxilla (Lt and Rt P ³ -M ³)
	2056	118	Rt mandible frag (P _{2,4})
	2066	103	Lt M ^{1,2}
	2652	6A	Lt P ^{3,4} , Lt P _{3,4}
	2672	6A	M ^{1,2}
	2680	3	Rt P ^{3,4}
	2684	6A	Rt P ^{3,4}
Guomde Formation	4066	6A	M _{1,2}
Galana Boi Beds	4055	117	associated upper and lower teeth (Rt P ² , Rt M ^{1,3} , Lt P ² , Lt M ^{1,3} , Rt P _{3,4} , M _{1,2})
Horizon indet.	677		P ^{3,4}
	2302	102	radius

TABLE 5.21. *Equus cf. grevyi* upper cheek teeth measurements (mm)

	KNM-ER No., area and zone	oc ap	ptc	oc tr	PI
P ₂	1457 (103 M.c)	40	6.5	29	16.2
	4055 (117 GB)	(40)	8	29	(20)
P _{3,4}	1457 (103 M.c)	31	10.5	30	33.9
	1457 (103 M.c)	30	11	29	36.7
	4055 (117 GB)	30	13	31	43.3
	1227 (1 M.c)	30.5	11	—	36.1
	2652 (6A M.c)	29	11	28	37.9
	2680 (3 M.c)	30	10	30	33.3
	2684 (6A M.c)	30.5	11	(26)	36.1
	677 (KF IIB)	29.8	13	29.5	43.6
M ¹	1457 (103 M.c)	27	11	27.5	40.7
	4055 (117 GB)	28	13	29	46.4
M ²	1457 (103 M.c)	28	13	27	46.4
	4055 (117 GB)	27.5	13.5	28	49.1
M ^{1,2}	2066 (103 M.c)	27	12	28	44.4
	2672 (6A M.c)	28	12.5	25	44.6

TABLE 5.22.

Equus cf. grevyi lower cheek teeth measurements (mm)

	KNM-ER No., area and zone	oc ap	oc tr
P ₂	2056 (108 M.c)	35.5	16
P ₃	2056 (108 M.c)	30	18
	4055 (117 GB)	(34)	19
P ₄	2056 (108 M.c)	29.5	18
M ₁	4055 (117 GB)	29	15.5
M _{1,2}	4066 (6A GF)	(28)	12.5

Equus cf. burchelli

	KNM-ER No.	Area	Specimen
<i>Metridiochoerus compactus</i> zone	2678	6A	posterior 1st phalanx
	5700	6A	posterior 1st phalanx

Equidae gen. and sp. indet.

	KNM-ER No.	Area	Specimen
Zone B/C	4001	130	upper cheek tooth frag
	4057	116	dP _{2,4}
<i>Notochoerus scotti</i> zone	4004	102	dP ²
	4013	105	M ³
	4042	105	dist. frag radius
<i>Metridiochoerus andrewsi</i> zone	2300	102	prox. frag femur
<i>Metridiochoerus compactus</i> zone	2677	6A	dP ₂
	2683	6A	dP or dM
Horizon indet.	930	102	skull frag

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